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

BIDS AND AWARDS COMMITTEE
INFRASTRUCTURE & REPAIRS

Project Reference No.: Infra-2019-07
Date: May 2, 2019

INVITATION FOR NEGOTIATIONS:

NEGOTIATED PROCUREMENT FOR THE RENOVATION OF FACULTY OFFICE AT THE COLLEGE OF ARCHITECTURE AND FINE ARTS (CAFA)

Project reference no. (I-2019-07)

In view of the two (2) failed public biddings, the BulSU through the Income Fund intends to apply the sum of One Million Eight Hundred Ninety Seven Thousand Six Hundred Ninety Six Pesos and 63/100 (₱ 1,897,696.63) being the Approved Budget for the Contract (ABC) to payments under the contract for "**Negotiated Procurement for the Renovation of Faculty Office at the College of Architecture and Fine Arts (CAFA)".**

The following eligibility and technical documents, as well as the Financial Proposal Form ***(Form "E")*** and itemized bid prices and bill of quantities ***(Form "F")***, shall be submitted on or before ***May 23, 2019 (Thursday), 1:00 p.m.*** at the BAC Function Room, 3rd Floor, Hostel, Bulacan State University, City of Malolos, Bulacan. The number of set of documents is one (1) original/certified true copy of the original and three (3) additional photocopies of the first and second components of its bid duly signed by the authorized representative of the bidder.

Legal Documents

1. Registration certificate from the Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives;
2. Mayor's permit issued by the city or municipality where the principal place of business of the prospective bidder is located;
3. Audited financial statements, stamped "received" by the Bureau of Internal Revenue (BIR) or its duly accredited and authorized institutions, for the preceding calendar year, which should not be earlier than two (2) years from bid submission
4. Registration Certificate from Philippine Government Electronic Procurement System (PhilGEPS) – Platinum Membership

Technical Documents

1. Statement of all its on-going government and private contracts, including contracts awarded but not yet started, ***if any***.

2. Statement of the Bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid:

   Similar project refers to commercial interior fit-outs and renovation, costing at least fifty percent (50%) of the ABC equivalent to ₱ 948,848.32.

   Sec IX Bidding Forms (SF-INFR-15)
   This statement shall be supported with:

   - Program of Works (SLCC)
   - Notice of Award or Notice to Proceed or Contract issued by the owners.
   - Owner's Certificate of Final Acceptance; or the Constructors Performance Evaluation Summary (CPES) Final Rating or the Certificate of Completion, must be satisfactory
   - All spaces should be filled up with correct information.

3. Valid Philippine Contractors Accreditation Board (PCAB) License at least:
   Size Range – Small B, License Category- C & D
4. NFCC Computation
5. Bid Securing Declaration
6. Project Requirements:
   a.) Organizational Chart
   b.) List of contractor's key personnel as follows:
   Project Engineer/ Architect*, *Plumber, Foreman, *Electrician, and Laborer (Skilled and Helper)

   Attachments:
   -*The list of contractor's personnel must be supported by complete documents certifying their qualification and experience such as *Bio-Data or Curriculum Vitae, showing complete qualifications and experiences data, including certificates of Seminars and Trainings attended*

   -Key Personnel's Affidavit of commitment to work on the Contract

   c.) List of contractor's major equipment units: *Power Tools/ Hand Tools*
   d.) Detailed Construction Schedule and S-Curve
   e.) Manpower Schedule
   f.) Detailed Construction Methods (as per program of works)
   g.) Detailed PERT/CPM (network diagram)
   h.) Equipment Utilization Schedule.

7. Site Inspection Certificate issued by BulSU-PMO
8. Contractor's Confirmation (Construction Specifications)
9. Certification of Satisfactory Performance (with no negative slippage) from Project Management Office (PMO) or Facilities Management and Maintenance Office (FMMO) for previous and on-going projects with BulSU, if any
10. Omnibus Sworn statement in accordance with Section 25.3 of the IRR of RA 9184 and using the form prescribed herein as ***(FORM "D")***

Financial Documents

1. Duly Signed Financial Bid Form ***(Form "E")***
2. Bill of Quantities ***(Form "F")***
3. Detailed Estimates
4. Cash Flow by the Quarter and Payment Schedule
5. Detailed Unit Price Analysis (all items)
6. Back-up quantity computation sheet/tally sheet as programmed and
7. Preferably with soft copy in compact disc (CD) of the duly priced Bill of Quantities & Detailed Estimates using Microsoft Excel.

An initial meeting for the negotiated procurement with interested suppliers/ contractors will be conducted on ***May 10, 2019 (Friday), 1:30 p.m.*** at the BAC Function Room, 3rd Floor, Hostel, BulSU City of Malolos, Bulacan.

The deadline of submission of the best and final offer is on ***May 23, 2019 (Thursday) 1:00 PM.*** The opening will be on ***May 23, 2019 (Thursday), 3:00 p.m.*** at the same venue.

For further information, please refer to the BulSU- BAC Secretariat at Tel. No. (044) 919-7800 local 1053 or 1054; Fax No. (044) 794-7755.

The BulSU 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 Section 41 of RA 9184 and its IRR, without thereby incurring any liability to the affected bidder or bidders.

HERMOGENA A. BAUTISTA
Chairperson
BAC Infrastructure and Repairs

CHECKLIST OF REQUIREMENTS FOR BIDDERS

ELIGIBILITY, TECHNICAL, AND FINANCIAL REQUIREMENTS SHOULD BE APPROPRIATELY SIGNED AND PROPERLY TABBED AS FOLLOWS:

Class "A" Documents:

ELIGIBILITY DOCUMENTS' ENVELOPE

TAB A

- Registration certificate from the Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives, or any proof of such registration as stated in the **BDS**;
- Mayor's permit issued by the city or municipality where the principal place of business of the prospective bidder is located;
- Audited financial statements, stamped "received" by the Bureau of Internal Revenue (BIR) or its duly accredited and authorized institutions, for the preceding calendar year, which should not be earlier than two (2) years from bid submission; and
- Registration Certificate from Philippine Government Electronic Procurement System (PhilGEPS) – Platinum Membership

TAB B **Statement of all its on-going 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;**

Sec IX Bidding Forms (SF-INFR-15)

This statement shall be supported with:

- Notice of Award or Notice to Proceed or Contract issued by the owners.
- Certificate of Good Standing (No slippage delay).
- All spaces should be filled up with correct information.

Statement of the Bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, in accordance with ITB Clause 5.4.

Note: Similar project refers to ***commercial interior fit-outs and renovation, costing at least fifty percent (50%) of the ABC equivalent to ₱ 948,848.32.***

Sec IX Bidding Forms (SF-INFR-15)

This statement shall be supported with:

- Program of Works (SLCC)
- Notice of Award or Notice to Proceed or Contract issued by the owners.
- Owner's Certificate of Final Acceptance; or the Constructors Performance Evaluation Summary (CPES) Final Rating or the Certificate of Completion, must be satisfactory
- All spaces should be filled up with correct information.

TAB C Valid Philippine Contractors Accreditation Board (PCAB) License at least: **Size Range – Small B, License Category- C & D**

TAB D NFCC computation in accordance with ITB Clause 5.5

Class "B" Documents: If applicable, Joint Venture Agreement in accordance with RA 4566.

Technical Documents:

TAB E Bid Security (Bid Securing Declaration)

TAB F **Project Requirements, which shall include the following:**

- Organizational chart for the contract to be bid;
- List of contractor's personnel as stated in the Invitation for Negotiations
- 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.
- Detailed Construction Schedule and S-curve;
- Manpower Schedule;
- Detailed Construction Methods;
- Detailed PERT/CPM (network diagram);
- Equipment/Tools Utilization Schedule;
- Site Inspection Certificate issued by BulSU-PMO;
- Contractor's Confirmation (Construction Specifications); and
- Certification of Satisfactory Performance (with no negative slippage) from Project Management Office (PMO) or Facilities Management and Maintenance Office (FMMO) for previous and on-going projects with BulSU, if any.

TAB G Sworn statement in accordance with Section 25.3 of the IRR of RA 9184 and using the form prescribed in Section IX. Bidding Forms.

FINANCIAL DOCUMENTS' ENVELOPE

TAB H Duly signed Financial Bid Form
TAB I Duly signed and priced Bill of quantities
TAB J Duly signed and priced Detailed Estimates
TAB K Cash Flow by the Quarter and Payment Schedule
TAB L Detailed Unit Price Analysis (all items)
TAB M Back-up quantity computation sheet/tally sheet as programmed
TAB N Soft copy in compact disc (CD) of the duly priced Bill of Quantities & Detailed Estimates using Microsoft Excel

Notes:

1. Each Bidder shall submit *one (1) original/ certified true copy of the original and three (3) additional certified photocopies of the first (Eligibility/Technical) and second components (Financial) of its bid duly signed and sealed. -Bid Data Sheet 20.3.*
2. Any missing document in the above mentioned checklist is a ground for outright rejection of the bid.

3.In case of discrepancies between this checklist and the bidding documents the latter shall prevail.

4. Any bid submitted after the deadline for submission and receipt of bids prescribed by the BulSU shall be declared "Late" and shall not be accepted by the BulSU.

Name of the Procuring Entity
Number

Project Reference Number: Infra-2019-07
Name of Project: Negotiated Procurement for the Renovation of Faculty Office at the CAFA
Location of the Project: BulSU Main Campus, City of Malolos, Bulacan

Standard Form Number: SF-INFR-15
Revised on: July 29, 2004

List of All On-going Government & Private Construction Contracts including contracts awarded but not yet started

Business Name : _____

Business Address: _____

Name of Contract/Location Project Cost	a. Date of the Contract	Contract Duration	a. Owner's Name b. Address c. Tel. Nos	Nature of Work	Contractor's Role (ITB Clause 12.1(a)(iii.6)		a. Total Contract Value at Award b. Date of Completion or Est. Completion c. Total Contract Value at completion	% of Accomplishment		Value of Outstanding Works
					Description	% of participation		Planned	Actual	
Government										
Private										

Notes: This statement shall be supported with:

1. Notice of Award or Notice to Proceed or Contract issued by the owners.
2. Certificate of Good Standing (No slippage and delay).
3. All spaces should be filled up with correct information

Submitted by : _____
(Printed Name & Signature)

Designation : _____

Date : _____

Statement of at least one (1) completed contract that is Similar to the Contract to be Bid

(Project equivalent to at least fifty per cent (50%) of the ABC)

Business Name : _____

Business Address: _____

Name of Contract/Location Project Cost	a. Owner's Name b. Address c. Tel. Nos	Nature of Work	Contractor's Role (ITB Clause 12.1(a)(iii.6)		a. Amount at Award b. Amount at Completion c. Duration	a. Date Awarded b. Contract Effectivity c. Date Completed
			Description	% of participation		
Government						
Private						

Notes: This statement shall be supported with:

1. Program of Works
2. Notice of Award or Notice to Proceed or Contract issued by the owners.
3. Owner's Certificate of Final Acceptance; or the Constructors Performance Evaluation Summary (CPES) Final Rating or the Certificate of Completion, must be satisfactory.
4. All spaces should be filled up with correct information.

Submitted by : _____

Designation : _____

Date : _____

BID SECURING DECLARATION FORM

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.

x----------x

NEGOTIATED PROCUREMENT FOR THE RENOVATION OF FACULTY OFFICE AT THE COLLEGE OF ARCHITECTURE AND FINE ARTS (CAFA)
INFRA-2019-07

To: **HERMOGENA A. BAUTISTA**
Chairperson
BIDS AND AWARDS COMMITTEE
Infrastructure and Repairs
Bulacan State University
City of Malolos, Bulacan 3000

I/We[1], 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 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 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;

[1] *Select one and delete the other. Adopt the same instruction for similar terms throughout the document.*

(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;

(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'S AUTHORIZED REPRESENTATIVE]
[Insert Signatory's Legal Capacity]
Affiant

SUBSCRIBED AND SWORN to before me this ___ day of *[month] [year]* at *[place of execution],* Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her [insert type of government identification card used], with his/her photograph and signature appearing thereon, with no. _____ and his/her Community Tax Certificate No. _____ issued on ____ at _____.

Witness my hand and seal this ___ day of *[month] [year]*.

NAME OF NOTARY PUBLIC
Serial No. of Commission _____
Notary Public for _____ until _____
Roll of Attorneys No. _____
PTR No. _____ *[date issued], [place issued]*
IBP No. _____ *[date issued], [place issued]*

Doc. No. _____
Page No. _____
Book No. _____
Series of _____

CONSTRUCTION SPECIFICATIONS

PROJECT TITLE	**RENOVATION OF FACULTY OFFICE AT THE COLLEGE OF ARCHITECTURE AND FINE ARTS**
LOCATION	**Bulacan State University Main Campus, City of Malolos, Bulacan**
OWNER	**Bulacan State University**

Prepared by:

MA. VICTORIA V. UMALI
Civil Engineer, PMO

Submitted by:

AR. MA. SATURNINA C. PARUNGAO
Director, PMO

Approved by:

CECILIA N. GASCON, Ph.D.
University President

Conforme:

_____
CONTRACTOR

DIVISION 1.0 GENERAL CONDITIONS

PART 1.0 GENERAL

1.1 SCOPE OF WORK: The work covered under this Contract is for the construction of the RENOVATION OF FACULTY OFFICE AT THE COLLEGE OF ARCHITECTURE AND FINE ARTS, Main Campus, City of Malolos, Bulacan. It consists of the furnishing all materials, labor, equipment, transportation, incidentals, facilities, and superintendence necessary to complete the project in accordance with true intent these Specifications and Contract Drawings.

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

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

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

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

PART 2.0 MATERIALS

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

2.2 SAMPLES AND INFORMATION ON MATERIALS: When required by the

Specifications, or when called for by the Architect, the Contractor shall furnish, for approval, full Information and satisfactory evidence as to the kind and quality of materials or articles he will incorporate in the work. The Contractor shall furnish, for Architect's and Owner's approval, all samples when so directed and have to be submitted within twenty-five (25) days (or as instructed by the Architect) after the award of the contract. The work shall be in accordance with approved samples. Materials and articles installed or used without such approval shall be at the risk of subsequent rejection.

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

PART 3.0 WORKMANSHIP

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

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

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

3.2 TEMPORARY FACILITIES: The Contractor shall furnish all temporary lights and power and shall pay all expenses in connection therewith. Furthermore, the Contractor shall provide and pay for all water expenses for building purposes that are required by all trades. He shall remove all connections and appliances connected there with prior to the completion of the Contract and leave the premises perfectly clean.

3.3 PROTECTION OF WORK AND OWNER'S PROPERTY: The Contractor shall put up safety measures and continuously maintain adequate protection of all his work from damage and shall protect the Owners property, as well as all materials furnished and delivered to him by the Owner. He shall make good any such damage, injury or loss, except such as may be caused by agents or employees of the Owner, or due to causes considered as an Act of God.

PART 4.0 SUPERVISION AND INSPECTION

4.1 AUTHORIZED REPRESENTATIVE: Whenever the Contractor is not at the site, orders maybe given by the Owner to his authorized representative and shall be accepted and complied to by the superintendent or foreman of the Contractor.

4.2 INSPECTION OF WORK: The Architect or Owner shall, at all times, have access to the work whenever it is in preparation or progress and the Contractor shall provide facilities for such access for inspection. The manner of work and all materials and equipment used therein shall be subject to

inspection, tests, and approval of the Owner.

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

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

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

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

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

DIVISION 2.0 SITEWORKS

PART 1.0 GENERAL

1.1 WORK INCLUDED: Work in this section includes the removal/ hauling of unnecessary existing materials, complete clearing of site and properly enclosure of the area.

DIVISION 06 WOOD AND PLASTIC

SECTION 06100 ROUGH CARPENTRY

PART I – GENERAL

1.1 SCOPE

This section shall includes all labor, materials, equipment and the performance of all operations necessary for the completion of rough carpentry and framing works as indicated in drawings and this specifications.

1.2 SUBMITTALS

1.2.1 **SHOP DRAWINGS:** Submit shop drawings for approval showing essential dimensions and construction details in connection with rough carpentry and framing.

1.2.2 **SAMPLES**: Submit samples of materials for approval of the Architect. Match these samples with the delivered materials prior to use.

1.3 **DELIVERY AND STORAGE**

Deliver materials to site in undamaged condition. Store materials to ensure proper ventilation and drawings and protect against dampness before and after delivery.

1.4 **GENERAL REQUIREMENTS**

1.4.1 **QUALITY OF LUMBER:** Use lumber of best grade available for the respective kinds for various parts of work. Lumber must be well-seasoned, thoroughly dry and free from loose or unsound knots, cups, shakes and other imperfections.

1.4.2 **SUBSTITUTIONS OF LUMBER**: Written approval of the Architect is required in substituting the kind of lumber specified on plans. In case of substitution, a reduction of Contract price is applied equal to the difference in costs of the two kinds of lumber using the current market prices. Substitution made without prior approval will be rejected, removed and changed at the Contractor's expense.

PART II – PRODUCTS

2.1 **MATERIALS**

Conform to the following specifications all materials for carpentry and use whenever called for in the plans or noted in the schedule.

2.1.1 **KINDS OF LUMBER:**

a) **KILN DRY TANGUILE:** For wood frames, studs, ceiling joists, reed facing. and all other lumber and wood work not covered by this specification.

b) **NARRA:** For panel doors and door casings, special mullions and muntins.

2.1.2 **PLYWOOD:** Use ordinary-cut tanguile veneers, water resistant, Class B conforming with commercial standard CS 45, locally manufactured. Use 6, 12, 19 or 25mm thick as indicated in drawings.

2.1.3 **OTHER BOARDS:** Use 8, 10, 12 or 19mm thick, as indicated on drawings, "Omniboard" brand or approved equivalent. Use nails and fasteners as recommended by manufacturer.

2.1.3 **FASTENERS:**

a) **NAILS:** Use locally manufactured common wire or finishing nails as required, smooth shank and zinc coated.

b) **SCREWS:** Use the best available commercial quality, brass or chromium plated.

2.1.4 **GLUE:** Use waterproofed glue of resorcinol formaldehyde synthetic resins or flue as used in the manufacture of the plywood suitable to hot process, malemineura type.

PART III – EXECUTION

3.1 **INSTALLATION**

3.1.1 **WOOD FRAMING AND ROUGH CARPENTRY:**

a) Fit framing closely, set accurately and secure rigidly in place, provide
anchor bolts with nuts and washers, straps and the rods as required.
b) Cut and fill neatly to accommodate other work as required.
c) Use well seasoned, straight, square-edge stacks, free from loose or unsound knots, bark edges or other defects.
d) Make width of plates for walls and partitions the same as the studs to have horizontal ties.
e) For anchors, connectors and fasteners not indicated or specified, use types and sizes necessary to suit field conditions. Unless otherwise indicated or specified, adopt Manufacturer's recommendation for size, type and spacing of nails, screws and bolts. Use zinc-coated hardware for all works exposed to weather or in contact with concrete and apply a brush coat of bituminous paint to lumber surfaces in contact with concrete.

PART IV - SCHEDULE OF SPECIFICATIONS

4.1 **SCOPE**

4.1.1 Lumber of approved quality required for the various parts of the work shall be used
4.1.2 Kiln-dried Tanguile for all nailers.

SECTION 06200 FINISH CARPENTRY

PART I – GENERAL

1.1 **SCOPE**

This section includes all materials, labor, equipment and the performance of all operations necessary for the completion of all finishing carpentry and millwork indicated on plans and specifications.

1.2 **GENERAL REQUIREMENTS**

1.2.1 **DELIVERY AND STORAGE**: Deliver materials to site in undamaged condition. Stack lumber and millwork to ensure proper ventilation and drainage. Protect materials against dampness before and after delivery. Store under cover in well- ventilated enclosure, not exposed to extreme changes of temperature and humidity. Do not store finished lumber and millwork in buildings until concrete, masonry and plaster are dry.

1.2.2 **SIZES AND PATTERN**: Work lumber to pattern or shapes indicated. Shaped material shall conform to the standard patterns indicated in current grading rules for the species.

1.2.3 **MOISTURE CONTENT**: The maximum moisture content of treated or untreated finish lumber and millwork shall be 15% at the time of delivery to the job site.

1.3 **SUBMITTALS**

1.3.1 **SAMPLES:** Furnish for approval of the Architect samples of each type of material with quantities as requested. Match these samples with the delivered materials prior to installation

1.3.2 **SHOP DRAWINGS:** Furnish shop drawings and cuts as necessary for the fabrication and erection of prefabricated millwork. Show all detail and erection data. Indicate the materials and species, arrangements, profiles of mouldings, thickness, sizes of parts, fastenings, clearances, assembly/erection details and necessary connections to work of other trades. Do not deliver to site until shop drawings and cuts have been approved and returned to the Contractor. contractor shall be responsible for all errors in detailing and fabrication and for correct fitting of mill fabricated items.

PART II – PRODUCTS

2.1 MATERIALS

2.1.1 **LUMBER:** Materials for finishing and mill work shall be selected from the following specie: Tanguile, Apitong, Narra or as directed by the Architect. For either stain or natural finish millwork, the grade shall be of the highest of the specie. For the paint finish mill work, the grade shall be of the second grade of the specie.

2.1.2 **PLYWOOD/ PLYBOARD:** Conforming to commercial standard, locally manufactured.

a) For material to be painted, use ordinary rotary-cut tanguile veneers, water resistant, Class B.

b) For material to be varnished or to receive wallcovering, use ribbon-grained tanguile veneers water resistant, Class B.

PART III – EXECUTION

3.1 WORKMANSHIP

All wood finish and millwork shall be true to details, clean and sharply defined. Panels must be set to allow for free movement in case of swelling or shrinkage. Means of fastening various parts together shall be concealed.

3.2 ERECTION

3.2.1 **FINISH**

a) Mill, fabricate and erect interior finish of wood as indicated in drawings.
Machine-sand at the mill and hand-sand smooth at the job.

b) Interior trim set against concrete, masonry or wood shall be separated with 6 mm stone-cut joints.

c) Intersecting plywood veneers or plywood panels shall be finished with a corner trim of wood with the same specie and finish as the plywood.

d) Make joints tight and in a manner to conceal shrinkage. Secure trim with fine finishing nails, screws or glue where required.

e) Set nails for putty stopping.

f) For woodworks to receive pickle finish, bleach wood by using a commercial

"two-way" bleach. Apply a coat of silver gray stain (or a color as specified by the architects), and let it soak into the pores before wiping off the surface. Then apply a final coat of water-white lacquer.

g)All mouldings which terminate at corners or ends of walls shall be mitered.

3.2.2 **WOOD DOOR, JAMBS AND HEAD:** Set frames plumb and level and brace until built-in. Anchor wood frames to masonry with approved metal anchors on each side of jamb. Place top and bottom anchors 200 mm from head to floor.

3.2.3 **WOOD SHELVING:** Each shelf shall be supported on a continuous wood cleat at walls when necessary. Secure cleats to masonry walls by expansion bolt or approved fastening device. Wood shelving shall have a minimum thickness of 12mm for 1m span and 19mm beyond 1m span.

3.2.4 **BUILT-IN CABINETS AND COUNTER TOPS (MILL MADE):** Fabricate counters and cabinets in accordance with details. Only sound kiln-dried lumber or plywood shall be used. Erect cabinets straight, level and plumb and securely anchor in place. Scribe and closely fit cabinets to adjacent work. Provide necessary ground and anchors for securing cabinet work in place.

3.2.5 **WOOD FRAMES TO RECEIVE FIXED GLASS:** Where fixed glass is set on wood frames, thoroughly prime rabbets and wood stops. Fit stops and secure in place loosely with chrome plated oval-head screws.

3.3 **HARDWARE INSTALLATION**

Accurately fit and install all finish hardware items required. If surface-applied hardware is fitted and applied before painting, remove all such items, except butts, and reinstall after painting work is completed.

PART IV – SCHEDULE OF SPECIFICATIONS

4.1 **SCOPE**

4.1.1Kiln-dried Tanguile for all mouldings, baseboard, edgings and trims.

4.1.2Kiln-dried Narra for panel doors and jambs.

4.1.3Kiln-dried Yakal for all other door jambs in direct contact with concrete.

4.1.4 3mm, 6mm, 12mm,19mm or 25mm marine plywood for door veneers, ceilings, partitions as shown on plans.

4.1.5 Kiln-dried Almaciga for all cornice mouldings or as approved by Architect.

SECTION 06400 ARCHITECTURAL WOODWORK

PART I – GENERAL

1.1 **SCOPE**

This section includes all materials, labor, equipment and the performance of all operations necessary for the completion of all cabinet works and

other architectural woodworks of the project as indicated on drawings and this specification.

1.2 **DEFINITION**

1.2.1 **CABINET WORKS**: Cabinet works as defined herein, includes all built-in cabinets, counters, shelvings and other similar items as may be called for by the plans.

1.3 **SUBMITTALS**

1.3.1 **SAMPLES:** Submit samples of materials and pre-fabricated items for the Architect's approval. Match these samples with the delivered materials and items prior to installation.

1.3.2 **SHOP DRAWINGS:** Submit full-sized detailed shop drawings of all cabinets and woodworks before fabrication for approval by the Architect.

PART II – PRODUCTS

2.1 **MATERIALS**

2.1 .1 **LUMBER:** Shall be of approved quality of the respective types as specified.

2.1.2 **PLYWOOD:** Use ordinary rotary cut tanguile veneers, water resistant, Class B conforming with commercial standard CS 45, locally manufactures. Use 6 mm, 12, 19 or 25 mm thick as indicated in drawings.

2.1.3 **HARDWARE AND ACCESSORIES:** All hardware items like concealed hinges, cabinet and drawer locks, closet cylinder locks, cabinet door and drawer pulls, catches, bolts, hasps, etc. shall be of types suitable to the service required and needed in their operation as required by the Architect.

PART III – EXECUTION

3.1 **WORKMANSHIP**

All required cabinet wood works shall be executed in the best way possible. Only capable and well experienced workmen shall be assigned to do finishing carpentry work. Whenever practicable, all cabinet wood work items that are not constructed integrally with the building shall be assembled in shop and shall be pre-finished throughout, ready to receive the finishes before delivery to the site. In addition to the machine-sanding, all interior and exterior surfaces shall be smoothened by hand and free from machine and tool marks, abrasions, raised and other undesirable.

PART IV – SCHEDULE OF SPECIFICATIONS

4.1 **SCOPE**

4.1.1 16mm, 12mm, 19, 25mm marine plywood for cabinets, shelves, closets, drawers and

4.1.2 Kiln-dried Tanguile for all edgings, trims, etc.

DIVISION 4.0 MASONRY

SECTION 4.01 CONCRETE MASONRY UNIT WORK

PART 1 GENERAL

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

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

1.3 PART 2 MATERIALS

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

Class A – 900 psi
Class B – 750 psi

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

PORTLAND CEMENT shall Portland ASTM C150-68 Type I

SAND shall conform to PNS 18 type 1.

WATER for mixing shall be potable.

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

PART 3 PROPORTIONS, MEASUREMENT AND MIXING

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

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

masonry is less than 20 mm.

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

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

PART 4 ERECTION

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

4.2 MORTAR JOINTS shall be uniform in thickness, and the average thickness of any three consecutive joints shall be 10 mm to 12 mm. Changes in coursing or bonding after the work is started will not be permitted. Exposed joints shall be rolled slightly concave with a round or other approved jointer when the mortar is thumbprint hard. The jointer shall be slightly larger than the width of the joint so that complete contact is made along the edges of the units, compressing and sealing the surface of the joint. Joints in masonry that will not be exposed shall be struck-flush. Horizontal joints shall be struck-flush. Horizontal joints shall be rolled first. Joints shall be brushed to remove all loose and excess mortar. All horizontal joints shall be level; vertical joints shall be plumb and in alignment from top to bottom of wall, within a tolerance of plus or minus 12 mm.

4.3 CONCRETE MASONRY UNIT WORK. The first course of concrete masonry units shall be laid in a full bed of mortar for the full width of the unit; the succeeding courses shall be laid with broken joints. The bed-joints of concrete masonry unit shall be formed by applying the mortar to the entire top surfaces of the inner and outer face shell. The head joints shall be formed by applying the mortar for a width of about 25-mm to the ends of the adjoining units laid previously. The mortar for joints shall be smooth, not furrowed, and shall be of such thickness that it will be forced out of the joints as the units are being placed in positions. Where anchors, bolts, and ties occur within the cells of the units, such cells shall be filled with mortar or grout as the work progresses. Concrete masonry units shall not be damped before or during laying.

4.4 REINFORCING shall be positioned accurately as indicated. As masonry work progresses, vertical reinforcing shall be rigidly secured in place at vertical intervals as indicated. Reinforcing shall be embedded in grout as

grouting proceeds. The minimum clear distance between masonry and vertical reinforcement shall be not less than 12 mm. Unless indicated or specified otherwise, splices shall be formed by lapping bars not less than 20 bar diameters and wire tying them together.

4.5 BONDING AND ANCHORING. Masonry walls and partitions shall be accurately anchored or bonded at points where they intersect, and where they abut or adjoin the concrete frame of a building. All anchors shall be completely embedded in mortar.

4.6 GROUT PLACEMENT. Grouting shall be performed from interior side of walls, except as approved otherwise. Sills, ledges, offsets and other surfaces to be left exposed shall be protected from grout droppings; grout falling on such surfaces shall be removed immediately.

DIVISION 08 DOORS AND WINDOWS
SECTION 08210 WOOD DOORS

PART I – GENERAL

1.1 **SCOPE**

This section includes all labor, materials, equipment and the performance of all operations necessary for the completion of fabrication and installation of all wooden doors as indicated on drawings and this specifications.

1.2 **SUBMITTALS**

1.2.1 **SHOP DRAWINGS:** Before placing orders and start of fabrication and when called for by the Architect, the Contractor shall submit to the Architect for approval, shop drawings of all wooden doors including details of section and hardwares.

1.2.2 **CUTS AND SAMPLES:** Furnish for approval, cuts, descriptive material and samples showing each type of door included. Show sizes, thickness, construction, methods of assembly, sticking and all other necessary information. Before delivery of doors to the site, submit a sample section of each type of door.

1.3 **GENERAL REQUIREMENTS**

1.3.1 **STORAGE AND PROTECTION OF DOORS:** Protect wood doors and frames against damage and dampness. Store them under cover in a well-ventilated place where they will not be exposed to extreme changes in temperature and humidity. Do not store doors and frames in any place under construction until concrete, masonry work and plaster are dry. Replace units when damaged due to lack of adequate protection or care in installation.

1.3.2 **PROVISIONS FOR HARDWARE:** Provide lock blocks on hollow core doors which are scheduled or specified to receive floor hinges.

1.3.3 **DOOR DESIGNS, SIZES AND THICKNESS:** Use door designs, sizes and

thickness as indicated or scheduled. Wood doors shall have an overall thickness of 50 mm unless otherwise specified by the Architect.

PART II – PRODUCTS

2.1 MATERIALS

Doors and door frames shall be manufactures of thoroughly seasoned kiln-dried wood, of grade and specie as specified under Division 6. Wood doors shall be products of reputable manufacturers approved by the Architect.

2.2 FABRICATION OF DOORS AND FRAMES:

2.2.1 **WOOD DOORS:** Shall be of the type, sizes and thickness indicated. Top and bottom edges of all interior and exterior shall be given a coat of lead and oil priming paint or a coat of water resistant varnish after cutting and fitting and prior to installation works. Doors shall be panel and/or glazed as indicated. Glass shall be clear, ordinary, 6.3 mm (1/4") thick or as indicated in the plans.

2.2.2 **FLUSH DOORS:** Shall be hollow core of thickness indicated on drawings and fabricated as such that the core and frame assembly shall be bonded to face veneers. Flush doors shall be three (3) ply, 6 mm thick, ordinary, waterproofed or marine kind of plywood as indicated in the schedule. Stiles and rails shall have mortised joints at corners. The core shall be a grid pattern of horizontal and vertical interlocking wood strips and reinforced with wood block inserts for lock sets and other hardware as necessary. Doors shall be painted or with designs as indicated on drawings.

2.2.3 **BAR TYPE SWING DOORS:** Shall be of flush door or louvered type with 6 mm Tanguile plywood face veneer with double acting gravity hinges.

2.2.4 **WOOD DOOR FRAMES:** Shall be of the design, sizes and thickness indicated in the **Schedule of Doors**. Frames shall be set to plumb and true and braced to prevent distortion. Frames in wooden walls or partitions shall be secured with finishing nails or as indicated. In concrete or masonry walls, frames shall be secured by anchor bolts or as shown on drawings.

PART III – EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

Construct all doors and frames to sizes shown and indicated on drawings. Glue all door frames, cores and plywood veneers together and hot-press into a one-piece panel. Glue edge strips around edges of doors. Hold doors in retainers until the glue has set, then re- dry to remove all moisture contained in the glue. Drum-sand and belt-sand the assembled door into a smooth finish ready for varnish or paint. Cut in uniform finish all louver blades and fasten to the frames in an approved manner.

3.2 INSTALLATION

For door frames, set frames plumb and square, double-wedges and fastened with finishing nails. Provide solid blocking behind jambs at butts and lock strikes. Space blocking not more than 400 mm on centers. For doors, fit, hang and trim as indicated and specified. Provide 1.60 mm clearance at sides and top, and 5 mm over thresholds. Provide 10 mm clearance at bottoms where no thresholds occur. Apply hardware with fastenings of the size, quality, quantity and finish as specified.

SECTION 08800 GLAZING

PART I – GENERAL

1.1 SCOPE

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

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

1.2 SUBMITTALS

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

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

1.3 QUALIFICATIONS

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

1.4 DELIVERY, PROTECTION AND STORAGE

All glass shall be carefully packed for transportation, exercising reasonable precaution to insure avoidance of damage during transit. Use care in unloading, unpacking and storage on arrival at job site to avoid damage. Deliver all glazing accessory materials in manufacturer's original unopened containers, clearly marked as to their contents. Store all materials at the job site, in a manner assuring its safety from all forms of damage. Screen from paint, plaster, welding splatter, construction scum and the like. Protect glass from soiling, condensation, etching, etc. Follow manufacturer's instructions rigidly.

1.5 GUARANTEE

Guarantee shall be under Section 08912 Glazed Aluminum Curtain Walls.

PART II - PRODUCTS

2.1 **MATERIALS**

2.1.1 **GLASS:**

a) **INSULATED GLASS (FAÇADE):** 25mm hermetically sealed units or as specified in the drawing.

b) **SINGLE THICKNESS GLASS (FAÇADE):** Provide in thickness, and/or tempered or heat-strengthened, as required. *Guardian* TS-20 or approved equal.

c) **FRAMELESS GLASS DOORS:** Clear monolithic, minimum 12.5mm thickness in either heat-strengthened, or annealed. *Guardian* or approved equal.

d) **MIRRORS:** Silvering quality float glass 6 mm thickness, recommended for high humidity usage. Double silvered protected by a coat of electrodeposited copper. Furnish with edges polished, in one piece unless otherwise specified.

2.1.2 **GLAZING MATERIALS:**

a) **GLAZING TAPE:** Preformed butyl; with integral spacing device, 10-15 durometer hardness, papered release.

b) **SETTING BLOCKS:** Neoprene: 70-90 durometer hardness, 100 x 10 x 6 mm.

c) **SPACE SHIMS:** Neoprene 50 durometer hardness, 76 x 3 x 6 mm.

2.1.3 **GLAZING COMPOUND:**

a) Modified oil type, color grey, non-hardening, knife grade for wood and metal frames.

b) SEALANT: One component polysulphide, color as selected, having a shore “A” hardness of 15 to 25.

PART III – EXECUTION

3.1 **PREPARATION**

Examine all surfaces to which glazing will be applied. Start of work means acceptance of conditions. Examine all glass for spalling, hairline cracks and other defects, which might impair performance after installation. Clean all glass prior to installation.

3.2 **INSTALLATION**

a. Comply with the Performance Standards stipulated in Section 08912 Glazed Aluminum Curtain Walls.

b. All glass and glazing shall conform to all applicable codes and governing authorities including glazing safety standards.

c. Center glass in glazing rabbet to maintain specified clearances at perimeter on all four sides. Maintain centered position of glass in rabbet and provide the required sealer thickness on both sides of glass.

d. Provide glass thickness and heat treatment to meet the following design criteria:

1. To resist temperature stress breakage.
2. Maximum glass deflection to be less than 12.5 mm.
3. The statistical probability of breakage at Design Wind Pressure to be

less than 8 lights per 1,000 lights.

e. Edge preparation of all glass shall conform to manufacturer's printed standards and the latest standards of the Flat Glass Marketing Association.

f. Refer to building elevation sheets for extent of required window wall and exterior cladding mock-ups for testing and visual review. At which time all anchorage details of window wall subframe are to be reviewed.

g. All butt joints are to have concealed back up captive sealant.

h. Locate tong marks on glass along edge which will be concealed in glazing system.

i. Polish exposed glass edges. Do not polish edges to receive silicone sealant.

j. Stop bead glazing shall consist of elastic glazing compound for bedding glass in metal frames. Prior to placing glass in rabbet, apply a sufficient quantity of compound in rabbet so that excess is expelled when glass is pressed into position to ensure that the glass in rabbet is completely covered by compound. Place setting blocks and spacer shims as required. Press glass into position.

3.3 **REPLACEMENT AND CLEANING**

Upon completion of the work, all glass surfaces shall be thoroughly cleaned on both sides, and all labels, paint spots, compounds and other defacements shall be removed. Cracked, broken and imperfect glass shall be replaced at no additional cost.

DIVISION 9 FINISHES

A. FLOOR FINISHES – Refer to plans for the details. Sample of all materials shall be submitted to the Procuring Entity for approval as to color and quality workmanship.

B. WALL FINISHES - Refer to plans for the details. Sample of all materials shall be submitted to the Procuring Entity for approval as to color and quality workmanship.

C. CEILING FINISHES - Refer to plans for the details. Sample of all materials shall be submitted to the Procuring Entity for approval as to color and quality workmanship.

D. PAINTING WORKS - Contractor shall provide all labor, material, and equipment and perform all operations necessary for all painting work specified including the painting of walls, ceiling, and other exposed part of the structure that requires paints.

All work shall be done by thoroughly qualified painters in a neat and workmanlike manner. All work which shows carelessness or lack of skill in execution or is defective due to any other cause will be rejected. Said work shall be redone to satisfaction of Owner prior to acceptance of work.

Minimum drying time between each coat shall be 24 hours.

Contractor shall protect freshly painted or epoxied surfaces from accumulation of dust, dirt, water, or other foreign materials, whatever the cause or source.

Any damaged surfaces shall be wiped clean, sanded, or stripped to a clean, dry condition and recoated to satisfaction of Owner.

Contractor shall protect all parts of the work site during his operation. Tarps and cloths shall be placed where required to protect floors and equipment from spatter and droppings. Electric switchplates, lighting fixtures, nameplates, hardware, glass, and all other items not to be painted or epoxied shall be removed, covered, or otherwise protected during coating operations. Contractor shall clean or otherwise restore any surfaces which are painted or epoxied as a result of Contractor's failure to provide proper protection and said restoration shall be performed to satisfaction of Owner.

DIVISION 12 FURNISHINGS/ EQUIPMENT

The Contractor shall supply and delivery /install all the required furniture and equipment at respective office as specified in the drawing and as approved by the Architect.

DIVISION 15.0 MECHANICAL

SECTION 15400 PLUMBING FIXTURES AND EQUIPMENT

Part 1 GENERAL

SCOPE/WORK INCLUDED. Work in this section includes furnishing all labor, materials, equipment, incidentals, procedures and supervision necessary for the installation of the plumbing system.

1.1 SUBMITTALS. The Contractor shall furnish, for approval, full Information and satisfactory evidence as to the kind and quality of materials or articles he will incorporate in the work.

1.2 QUALIFICATION OF WORKMEN. Only competent workmen, who have been thoroughly trained and experienced in the skills required and who are completely familiar with the materials involved and with the requirements of his work, shall be engaged.

1.3 GENERAL REQUIREMENTS. The project drawings shall show the general requirements as to sizes, arrangement, extent of piping, and location of equipment. Unless otherwise indicated or specified herein, all work shall be accomplished in accordance with the National Plumbing Code.

PART 2 PRODUCTS AND MATERIALS

2.1 PIPES AND FITTINGS

a) SOIL, WASTE, AND VENT PIPES shall be approved by the Architect/Engineer In-Charge.
   1. PVC cement shall be as recommended by the PVC pipe manufacturer, solvent type.

b) COLD AND HOT WATER LINE PIPES shall be approved by the Architect/Engineer In-Charge.
   1. Couplings and pipe fittings shall be of the heavy duty type and as recommended by the pipe manufacturer.

c) VALVES
   1. Angle, check and glove valves shall be bronze, 125 pounds, and type

as suitably for the application. Check valves shall be swing types.

2. Gate valves. All valves used for shut-off valves or gate valves shall be bronze, with screwed ends, and 125 pounds' pressure capacity.
3. Clean-outs shall be provided in all soil, storm or waste lines at every change in direction greater than 45 degrees, size same as the pipe served. Clean-outs shall be extended to an easily accessible place or where indicated on the drawings.
4. Pipe sleeves shall be installed and properly secured in place at all points where pipes pass through masonry or concrete, except un-framed floors on earth with sufficient diameter to provide approximately 6 mm clearance around the pipe or insulation. Pipe sleeves in walls, partitions and through floors shall be of PVC pipe, schedule 40.
5. Pipe hangers, inserts and supports shall be provided to all horizontal runs of pipes and shall be hanged with adjustable wrought iron or malleable iron pipe hangers spaced not over 1.5 meters apart for PVC pipes and 3.0 meters apart for steel pipes. Trapeze hangers may be used in place of separate hangers on pipes running parallel to and close to each other.
6. Shock absorbers or air capped chambers shall be provided, where shown on the drawings, on all individual branch water lines to equipment or fixtures.

d) HOSE BIBB shall be with metal handle, heavy duty type, chrome plated, compression type, with hose threads; size shall be as indicated.

a) FAUCETS for water system shall be approved by the Architect/Engineer In-Charge, manufactured by American Standard or as specified herein or as indicated shall be heavy-duty type, chrome-plated and or as specified in Miscellaneous Specialties.

b) FLOOR DRAIN shall be stainless steel with strainer, size 100 mm x 100 mm with stainless fastening screw.

c) TOILET AND BATH FIXTURES AND ACCESSORIES shall all be American Standard as specified in Miscellaneous Specialties.

PART 3 INSTALLATION

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

3.2 ALL PIPING shall be properly supported or suspended on stands, clamps, hangers, or equivalent of approved design. Supports shall be installed in such a manner to permit pipe free expansion and contraction while minimizing vibration. Do not install pipes in a manner that interferes with other pipes, ducts, conduits, equipment and adjacent structures of the building. The arrangement, positions and connection of pipes, fixtures, drains, valves, and the like indicated on the drawings shall be followed as closely as possible. All pipes shall be cut accurately to measurement and shall be worked into place without springing and forcing. Changes in pipes shall be made with reducing fittings. Pipes shall not pass through columns, footings, and beams, except where noted on the drawings.

3.3 ROUGH-IN FOR PIPES AND FITTINGS shall be carried along with the building construction. Correctly located openings of proper sizes shall be provided where required in the walls and floors for the passages of pipes. All items to embedded in concrete shall be thoroughly cleaned and free from all rust and scale.

3.4 PIPES IN TRENCHES. Sewer and water piping shall be placed in separate trenches.

3.5 INSTALLATION OF SCREW-JOINTED PIPING. All pipes shall be cut accurately according to measurements established by the contractor and shall be worked into place without springing or forcing. Proper provision shall be made for the expansion and contraction of all pipelines. Pipe and fittings shall be free from fins and burrs. Screw joints shall be made with a lubricant applied on the male threads only; threads shall be full cut and not more than three threads on the pipe shall remain exposed. All exposed ferrous pipe threads after being installed and tested shall be given one coat of zinc chromate and enamel paint.

3.6 INSTALLATION OF FIXTURES. Connections between the earthenware of fixtures and the flanges on soil pipe shall be made gas and watertight. All bulk material including putty and plastics shall not be used for gaskets. Floor drains shall be secured in a water tight manner.

3.7 PROTECTIVE COATING FOR GALVANIZED STEEL PIPING BURIED IN THE GROUND. All galvanized steel piping buried in the ground shall be given a protective coating of zinc chromate primer and enamel paint.

PART 4 QUALITY ASSURANCE

4.1 TESTS. All defects disclosed by tests shall be rectified and the test repeated. All labor, materials and equipment used for tests shall be provided by the contractor.

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

b) SANITARY PIPING. Before the installation of any fixture, the ends of the system shall be capped and all lines filled with water to the roof or 3 m above the highest fixture connections if test is done in sections or by floors and allowed to stand for at least 30 minutes without leakage. Test tees having cast iron screwed plugs shall be installed in the vertical stacks when tests are made in sections or by floors. Test within building shall be made with piping exposed. Underground piping shall be tested before backfilling.

c) PLUMBING SYSTEMS AND EQUIPMENT. Plumbing system and equipment after complete installation shall be given an in service tests. All fixtures are installed the entire vent and sewer systems shall have a final test. Final test shall be either the smoke or peppermint test. Before proceeding with either test all traps shall be filled with water. Smoke test shall be accomplished by filling the entire sewer system with a pungent thick smoke produced by one or more smoke machines. When smoke

appears at stack openings on the ceiling or roof, they shall be closed. A pressure equivalent to a 25 mm water column shall be exerted and maintained for 15 minutes before inspection starts. Peppermint tests shall be accomplished by introducing a minimum of 2 ounces of oil of peppermint into each stack. All stacks and line openings shall be closed during test, for a minimum period of 1/2 hour.

PART 5 GUARANTEE

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

SECTION 15.02 EXTERIOR SANITARY SEWER SYSTEM

PART 1 GENERAL

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

PART 2 MATERIALS

2.1 POLYVINYL CHLORIDE (PVC)

a) Sewer piping shall be approved by the Architect/Engineer In-Charge, size as indicated or 0.20 m in diameter or equivalent Philippine National Standard.
b) Fittings and specials for use with PVC pipe shall have a strength not less than the pipe and shall be manufacturer's standard product, as approved.
c) Jointing material. Coupling and sealing rings for pipe couplings and fittings shall conform to manufacturer's recommendation, as approved.

2.2 CONCRETE PIPES. Pipes from septic tank to the storm drainage line shall be tongue and groove non-reinforced concrete pipes.

2.3 SEWER MANHOLE

a) GENERAL. Sewer manhole shall be constructed of concrete with cast-iron frame and cover. The invert channels shall be smooth and semi-circular in shape, conforming to the inside of the adjacent storm sewer section. Changes in direction of flow shall be made with a smooth curve of as large a radius as the size of the inlet and box will permit. The invert channels shall be formed directly on the concrete of the inlet base and shall be constructed by laying full section sewer pipe through the inlet and breaking out the top half after the surrounding concrete has hardened. The floor of the manhole outside the channels shall be smooth and shall slope toward the channels not less than 25 mm per foot nor more than 50 mm per foot.
b) MANHOLE COVER shall be pre-cast concrete. Cover shall be of type and size indicated. The word "SEWER", at least 50 mm high, shall be marked or cast into cover so as to be plainly visible.

2.4 SEPTIC TANK. Provide septic tank as indicated with complete piping and fittings. Cover shall be pre-cast concrete of type and size indicated. The word "SEPTIC" at least 50 mm high, shall be marked or cast into cover so as to be plainly visible. Septic tank cover shall be provided with steel lifting handle.

2.5 REINFORCED CONCRETE FOR SEWER MANHOLE AND SEPTIC TANK shall be as specified in Section: Cast-In-Place Concrete.

PART 3 INSTALLATIONS

3.1 PIPE LAYING

a) PIPE LAYING shall precede upgrade with the groove ends of tongue and groove pipe pointing in the direction of the flow. Each pipe shall be laid accurately to the line and grade shown on the drawings. Pipe shall be laid and centered so that the sewer has a uniform invert. As the work progresses, the interior of the sewer shall be cleaned of all superfluous materials.
b) BEFORE MAKING A PIPE JOINT, all surfaces of the portions of the pipe to be joined shall be cleaned and dry. Lubricants, primers and adhesives shall be used as recommended by the pipe manufacturer. The joints shall then be placed, fitted, jointed, and adjusted to obtain the degree of water tightness required.
c) TRENCHES shall be kept free of water and as dry as possible during bedding, lying, and jointing and for as long a period as required. When work is not in progress, open ends of pipe and fittings shall be satisfactorily closed with wood blocks or bulkheads so that no trench water or other material will enter the pipe or fittings.
d) BACKFILL. As soon as possible after the joint is made, sufficient backfill material shall be placed along the pipe to prevent pipe movement off line or grade.
e) SURFACE CLEAN-OUT. Cast-iron or PVC clean-out shall be provided, as indicated.
f) JOINTS BETWEEN DIFFERENT PIPE MATERIALS shall be made as specified, using approved jointing materials.

PART 4 QUALITY ASSURANCES

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

PART 5 CLEAN-UP

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

DIVISION 16 ELECTRICAL

SECTION 16.1 ELECTRICAL SYSTEM

PART 1 - GENERAL

1.01 EXPLANATION

OWNER– GENERAL CONTRACTOR – ELECTRICAL CONTRACTOR RELATIONSHIP

a. The Electrical Work is a Specialty Trade, which shall be performed by a Contractor hereinafter referred to as the CONTRACTOR.
b. The scope of work and responsibility of the CONTRACTOR is stipulated in these specifications and is treated separately from the function of the General Contractor and other Specialty Trade Contractors for the sole purpose of delineating the electrical work.

c. Should the General Contractor subcontract the Electrical Work to a Specialty Trade CONTRACTOR all responsibilities and function of the CONTRACTOR stipulated in the Specification shall be assumed by the General Contractor.
d. There shall be no contractual relation between the Owner and the specialty Trade Contractor subcontracted by the General Contractor.

1.02 GENERAL REQUIREMENTS

a. Visit the site and ascertain local conditions, facilities and other conditions as may affect the work. The CONTRACTOR will be deemed to have done this before preparing his proposal and no subsequent claim on the ground of inadequate or inaccurate information will be entertained.

b. The CONTRACTOR shall strictly implement and observe safety all the time. Thus, provide all necessary pre-caution, signages and barriers to protect general public from any harm caused by the work from the building site.
c. The work of the CONTRACTOR consist of furnishing all labor, supervision, equipment and materials, and performing all operations in connection with the electrical system shown on the Drawings, to bring the electrical system to operating condition and ready for use by the Owner.

1.03 SPECIFIC CONDITIONS

a. The performance of the equipment and materials installed shall be as specified and the quality of the installation is in accordance with the specification and good practice.
b. The works shall be carried out in accordance with the requirements of all authorities having jurisdiction over the works and/or approval required there from. Such notice shall be provided and the application shall be prepared accompanied by such plans and information as may be called for and/or obtain such approval.
c. Reference Codes and Standards listed are applicable in respect of all materials and workmanship except where in conflict with the provisions of this specification. Where this specification expressly requires standards higher than or different from those applicable under the relevant standard or documents, this specification will take precedence.
d. Where special conditions exist which would make compliance with these specification unusually difficult, then details should be submitted in writing to the Engineer, who may grant an exemption, any such exemption granted shall be obtained in writing from the Engineer by the party seeking the exemption.
e. Any items of equipment offered and not listed under Preferred Equipment must be approved by the Engineer. Any such exemption granted shall be obtained in writing from the Engineer by the party supplying the equipment.

1.04 WORK BY OTHERS

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

a. Service connection to the Power utility company’s facilities.

b. Others as may be specified in the Drawing, elsewhere in the specification, the addenda, or in the contract documents.

1.05 INTENT

a. It is the intention of the Specifications and Drawings to call for finished work tested and ready for operation, and/or continuation.

b. Any apparatus, appliance, material, or work not shown in drawings but mentioned in the Specifications or vice versa, or any incidental accessories necessary to make the work complete in accordance with the scope set forth elsewhere, even if not particularly specified, shall be furnished, delivered and installed by the CONTRACTOR without additional expenses to the Owner.

c. Minor details not usually shown or specified but necessary for proper installation and operation shall be included in the Contractor's estimate, the same as if herein are specified.

d. With submission of bid, the CONTRACTOR shall give written notice to the Architect of any materials or apparatus believed inadequate or unsuitable in violation of laws, ordinances, rules and necessary items of work omitted. In the absence of such written notice, it is mutually agreed that the CONTRACTOR has included the cost of all required items in his proposal and that he will be responsible for the approved satisfactory functioning of the entire system without extra compensation.

1.06 DRAWINGS

a. The Drawings accompanying this specifications, addendum drawings and additional detail or clarification drawings as may be subsequently prepared by the ENGINEER and shop drawings as may be submitted by supplier and/or manufacturer are hereby made part of this specifications.

b. The Contractor shall follow drawings in laying out work and check drawings of the other trade to verify spaces in which work will be installed. If directed by the ENGINEER, the CONTRACTOR shall, without extra charge, make reasonable modifications in the layout as needed to prevent conflict with work of other trade or for proper execution of the work.

1.07 EXTRA WORK AND CHANGE ORDERS

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

1.08 TEMPORARY FACILITIES

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

1.09 INSPECTIONS AND TESTS.

The ENGINEER or his representative shall be allowed access to all parts of the work at all times and shall be furnished such information and assistance by the CONTRACTOR as may be required to make a complete detailed inspection .

1.10 LEAVING THE SITE

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

1.11 SUSPENSION OR DELAYS

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

1.12 CLEANING UP

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

PART 2 - GENERAL REQUIREMENTS (ELECTRICAL)

1.01 CODES AND REGULATIONS

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

a. All wiring, installation, equipment and test shall be carried out in strict compliance and in accordance with the provisions of the latest edition of Philippine Electrical Code (PEC) including amendments and rulings.
b. The ordinances, rules and regulations of City/Municipality and the local utility company concerned.

1.02 PERMITS AND APPROVAL

All permits and electrical fees required for this work shall be obtained by and at the expense of the contractor. The contractor shall furnish and transmit to BulSU/PMO copies of certificates of inspection and approval after completion of the work. The Contractor shall prepare all as-built plans and all other paper work required by the approving authorities.

PART 3 WORK STANDARDS

1.01 STANDARDS OF WORKMANSHIP

a. The contractor shall execute all work in a neat and workmanlike manner and shall do all necessary work whether it is clearly specified in these specifications or shown on the drawing or not. All works shall be done in accordance with the best practices employed in modern electrical installations.

b. The CONTRACTOR shall employ only competent and efficient workmen using proper tools and equipment. A licensed Electrical practitioner shall be assigned and maintained at the jobsite during the entire course of the project and shall Upon written request of the ENGINEER, discharge or otherwise removed from work any employee who is, in the opinion of the ENGINEER, contrary to instructions or conducts himself improperly.

1.02 REMOVAL OF DEFECTIVE OR UNAUTHORIZED WORK

Any defective work whether the result of poor workmanship, defective materials, damage through carelessness or any other cause, found to exist prior to acceptance

of, or final payment for, the work shall be removed immediately and replaced by work and materials which shall conform to these specifications, or shall be otherwise remedied in acceptable manner.

1.03 COORDINATION WITH OTHER CONTRACTORS

The CONTRACTOR shall arrange his work and dispose his materials so as not to interfere with the work or storage of materials of the other Contractors. If the CONTRACTOR installs his electrical work before coordinating with the work of other trades, he shall make necessary changes in his work to correct the condition without extra charge.

PART 4 - MATERIALS

1.01 STANDARD OF MATERIALS

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

1.02 EQUIVALENTS

a. Where the Technical Specifications or the Drawings give the name of the manufacturers and / or catalog number of materials, it is given as a guide to the size, strength, quality or class of the materials, desired and shall be interpret to mean that item or another fully equal for the service intended. Substitution shall be subject to prior written approval of the ENGINEER.

b. The apparent silence of the Specification and Drawings as to any detail, or apparent omission from them of a detailed description concerning any materials shall be required to mean that only material of first class quality shall be used.

1.03 APPROVAL

a. All materials shall be subject to the approval of the ENGINEER All materials and equipment installed without prior approval of the ENGINEER shall be at the risk of subsequent rejection.

b. Approval by the ENGINEER shall not relieve the CONTRACTOR of the responsibility of inspecting such materials for defects or nor-conformance with the Specifications.

1.04 DEFECTIVE MATERIALS

a. All materials not conforming to the requirements of the Specifications shall be considered as defective.

b. No defective material, the defect of which has been subsequently corrected, shall be re-used only until the ENGINEER has given approval.

PART 5 - SUBMITTALS

The CONTRACTOR shall, within twenty-five (15) days after the award of the contract, submit for the approval of the ENGINEER a list of materials he proposes to use in the Work, including such samples, catalog, drawings, and descriptive data as for review and evaluation.

1.01 SHOP DRAWINGS

The CONTRACTOR shall submit to the ENGINEER with such promptness as not to cause delay in his work or in that of any CONTRACTOR, three (3) copies of all shop Drawings and the schedules required by the work. The shop drawing shall give complete information on the proposed equipment/fixture. Each item of the drawings

shall be properly labeled, indicating the intended service of the material, the job name, and Contractor's name.

1.02 "AS-BUILT" DRAWINGS

Upon substantial completion of the project (more than 95% complete), the CONTRACTOR shall submit to the OWNER three (3) sets of "AS-BUILT" Drawings showing all changes and deviations from the contract drawings duly signed and sealed by the Engineer in charge. The "AS-BUILT" Drawings shall be identical to the contract drawings except for the said changes and deviations. An initial layout should be submitted on A3 size paper for checking and approval of PMO. Final' As-Built Plans" on A3 size and CD (Soft & Hard copies) upon final testing and commissioning shall be submitted as a requirement prior to the final acceptance of the project.

1.03 GUARANTEE

The CONTRACTOR shall furnish the OWNER a written guarantee covering the satisfactory operation of the electrical installation in all its parts for a period of one (1) year from the date of final acceptance. During this period, the CONTACTOR shall repair or replace any defective work/materials and pay for any repair or replacement costs.

PART 6 PROTECTION

1.01 CONTRACTOR'S WORK AND MATERIALS

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

1.02 INJURY TO PERSONS OR DAMAGE TO PROPERTY

The CONTRACTOR shall be responsible for all injury to persons and damage to property caused by the works or by workmen and shall be liable for any claims against the owner on account of such injury and/or damage. The CONTRACTOR shall likewise take necessary precautions to protect the property of the OWNER against rain or other inclemency of the weather and against theft.

SECTION 16.2 BASIC MATERIALS AND METHOD

PART 1 - RACEWAY MATERIALS AND WORKMANSHIP

1.01 GENERAL

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

1.02 MATERIAL SPECIFICATIONS

Raceway materials shall be as hereunder specified:

a. Rigid Steel Conduit (RSC) shall be hot–dipped galvanized manufactured to U.L and ANSI Standard, 3 meters in length, taper threaded at both ends with one coupling, conduit shall be of approved brand, or any PS approved local equivalent.
b. PVC Conduit shall be schedule 40 or thick wall un-plasticized PVC (up) pipe 3 meters in length for electrical use (red, orange), it shall be suitable for installation in concrete slab and manufactured to PSA Standard.
c. Flexible PVC Conduit shall be corrugated Polyvinyl Chloride (PVC) and shall be manufactured to applicable PSA Standard.
d. Fittings for rigid steel conduit shall be U.L listed or PS approved local equivalent. Connectors and coupling shall be approved for the purpose, U.L listed.

e. Other raceway not mentioned above but called for of the drawings shall be as specified thereon.

1.03 INSTALLATION

a. Not more than four (4) 90 degrees bends shall occur in any run. When it becomes necessary to have more than (4) 90 degree bends in any run, an intermediate pull box is required and shall be free of dents or flattening. Field bends shall not be allowed for conduits larger than 20 mm dia. trade size except by hydraulic or motor operated benders.

b. All raceways run shall be in underground, ceilings and walls. Embedded runs shall be installed in such manner as not to weaken or interfere with the structure of the building, as approved by the structural engineer. No horizontal runs of embedded conduit or tubing shall be permitted in solid walls and partitions. Raceway shall be of ample size to permit the ready insertion and withdrawal of conductors without abrasion. All joints shall be cut square, reamed smooth, and drawn up tight.

c. Hangers and supports

c.1 Raceway shall be securely and rigidly supported to the building structure in a neat and workmanlike manner and wherever possible, parallel runs of horizontal raceways shall be grouped together of adjustable trapeze hangers. Support spacing shall not be more than 3,000 mm.

c.2 Single raceway 32 mm dia. and larger run concealed horizontally shall be Supported by suitable beam clamps or split-ring hangers with support rod. Multiple runs shall be grouped together of trapeze hangers where possible.

c.3 Raceways 25 mm dia. and smaller run concealed above a ceiling may be supported directly to the building structure with strap hangers or no. 14 gauge galvanized wire provided the support spacing does not exceed 1220 mm.

c.4) Raceways shall be firmly supported and fastened at 3,000 mm. intervals and within 0.90 meter of each outlet or cabinet.

PART 2 OUTLET BOXES

1.01 GENERAL

Install all junction and outlet boxes as shown of the drawings or as required by the construction. The drawings indicate only the approximate location of each fixture, receptacle, special purpose outlet and wall switch. The exact location shall be determined later at the site as the work progresses. The right is reserved by the Engineer to change the exact location of any switch, light outlet, receptacle outlet and any other outlet in any room before the same is installed.

1.02 MATERIAL SPECIFICATIONS

a. Outlet and junction boxes shall be PVC molded or approved equal where not exposed to the weather and case metal boxes where exposed to the weather as in outdoors or roof deck installations.

b. The allowable conduit fill as given by the PEC shall not be exceeded. Deep boxes, box rings and raised plastic covers shall be used, when necessary, to obtain required conductor capacity.

1.03 INSTALLATION

a) Receptacle Outlet Boxes. Wall receptacles shall be mounted approximately 300 mm above the finished floor (AFF) at center unless otherwise noted.

All receptacle outlet boxes shall be equipped with grounding leaf which shall be connected tag rounding terminal of device; the leaf shall be properly bonded to the box and to the separate ground wire if any.

b) Switch Outlet Boxes. Wall switch shall be mounted approximately 1200mm above the finished floor (AFF) at center unless otherwise noted. When the switch is mounted in a masonry wall, the bottom of the outlet box shall be in line with the bottom of a masonry unit.
c) Lighting Fixture Outlet Boxes. The lighting fixtures outlet boxes shall be furnished with the necessary accessories to install the fixture. The support must be such as not to deepen of the outlet box supporting the fixture. The supports for the lighting fixtures shall be independent of the ceiling system or as required.
d) Boxed for outlet of auxiliary systems shall be as specified elsewhere in these Specification or as shown on the drawings

PART 3 - CONDUCTOR MATERIALS AND WORKMANSHIP

1.01 GENERAL

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

1.02 CONDUCTOR SPECIFICATIONS

a. Conductors used in the wiring system shall be of soft-annealed copper having conductivity of not less than 98 % of that of pure copper and insulate for 600 volts THHN/THWN.

b. The wires and cables shall be delivered to the site in its original package.

Whenever possible, plainly marked or tagged as follows.

1. Size, kind, and insulation of wire.
2. Name of the Manufacturer.
3. Trade name of wire.

1.03 CONDUCTOR WORKMANSHIP

a. Install conductors in all raceways as required to a neat and workmanlike manner. Empty conduits, as noted, shall have a No. 14 gauge galvanized pull wire left in place for future use. No wires shall be drawn into the raceways until all works are finished, which may cause injury harm or injury.
b. Conductors shall be color-coded in accordance with the PEC or as indicated. Grounding wires should always be colored white. Main feeders and Sub-feeders shall be tagged in all pull, junction, and outlet box and in the gutter of panels with approved markers.
c. No lubricant other than powdered soapstone or approved pulling compound may be used when pulling conductors.
d. At least 200 mm of slack wire shall be left in every outlet box whether it be used or left for future use.
e. All conductors and connection should be tested free of grounds, short or open circuit before turnover of the job to the owner.
f. Unless otherwise indicated in the drawings or specified, number of conductors constituting a single or branch circuit shall be drawn in one conduit.

SECTION 16.3 SERVICE ENTRANCE AND DISTRIBUTION SYSTEM

PART 1 - SERVICE ENTRANCE

1.01 GENERAL

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

1.02 MATERIALS

a. Conduit used for service-entrance shall be galvanized rigid steel conduit (RSC), or approved equal.

b. Conductors for service entrance shall be copper, type THWN, THHN or approved equal.

1.03 SCOPE

a. Verify with the electric utility company serving the project the point of connection to the utility facilities before preparing the bid and include therein all work entailed for such connection.

b. Metering and transformer facilities include all materials, labor, electrical Permit and charges that the utility company and municipality may require for the purpose of installing metering connection shall be shouldered by the owner and not the contractor, otherwise, maybe indicated in the program of works.

PART 2 - FEEDERS AND BRANCH CIRCUITS

1.01 GENERAL

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

1.02 MATERIALS

a. Raceways shall be indicated on the drawings.

b. Conductor type shall be as indicated on the drawings. No wire smaller than 2.0 mm diameter or 3.5 square mm (AWG No. 12) shall be used for lighting or power circuit except for grounding. Grounding wires should always be colored white. Conductors smaller than 3.5 square mm shall be solid or stranded and conductors 5.5 square mm and larger shall be stranded.

1.03 INSTALLATION

a. Feeder conductors and raceways shall be installed as shown on the drawings and no change in size shall be made without written consent of the ENGINEER. Feeder conductors shall be continuous, and without splices between terminals unless expressly indicated in the drawings. When feeders are run in multiple, they shall be exactly of the same length to avoid unbalanced division of the current.

b. The drawings indicate the general methods of installation of all circuit wiring and the outlet which are to be supplied for these circuits. Branch circuit raceways shall be run from outlet to panel boards as direct as the building conditions will allow.

PART 3 ENCLOSED CIRCUIT BREAKERS

1.01 GENERAL

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

1.03 MATERIAL SPECIFICATIONS

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

1.04 INSTALLATION

The Enclosed Circuit Breaker shall be flush mounted / wall mounted or in Accordance with the PEC. The CONTRACTOR shall provide all mounting materials.

PART 4 - PANEL BOARDS – CIRCUIT BREAKERS

1.01 GENERAL

Furnish and install Panelboards with circuit breakers (MCCB or Bolt-On Type) assembly as indicated in layout, load schedule and where shown on the drawings.

1.02 MATERIAL SPECIFICATIONS

a) Provide molded-case circuit breakers of frame, trip rating and interrupting capacity as shown on the drawings. Also provide the number of spaces for future circuit breakers as shown in the load schedule. The circuit breakers shall be quick-make, quick-break, thermal magnetic trip indicating, and have a common trip on all multiple breakers with internal trip mechanism.

b) Bus bar connections to the branch circuit breakers shall be the three phase-sequence type. Single-phase three wire bus barring shall be such that any two adjacent single-pole breakers are connected to opposite polarities in such a manner that two- pole breakers can be installed in any location..

c) Terminals for feeder conductors to the panel board mains and neutral shall be suitable for the type of conductor specified. Terminal for branch-circuit wiring both breaker and neutral shall be suitable for the type of conductor specified.

d) The Panel board bus assembly shall be enclosed in a steel cabinet. The size of the wiring gutters and gauge of steel shall be in accordance with NEMA Standards. And shall be fabricated from galvanized steel or equivalent rust resistant steel.

e) On the inside of the steel cabinet, provide a printed panel directory which will indicate the location of the equipment or outlet supplied by each circuit.

f) All circuit breakers should be GE, SCHNEIDER or approved equal. All are bolt-on type. There shall be no intermixing of circuit breakers brand.

1.03 INSTALLATION

a. Before installing panel boards, check all the architectural drawings for possible conflict of space. Adjust the location of the panel boards to prevent such conflict with other items.

b. When the panel boards is recessed into a wall serving an area with accessible. Ceiling space, provide and install an empty conduit system for each spare circuit for future wiring. A 20mm conduit shall be stubbed into the ceiling space above the panel board's as such accessible ceiling space exists.

c. The panel boards shall be mounted in accordance with the PEC. Furnish all materials for mounting the panel boards

PART 5 - WIRING DEVICES

1.01 GENERAL

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

1.02 MATERIAL SPECIFICATIONS

a. Switches should be equal or greater than 10A, 250V except as otherwise noted. Terminals shall be screw type or approved equal.

b. General use receptacle shall be at least 15A, 250V grounding type unless otherwise indicated on the drawings. Terminal shall be screw type or approved equal.

c. Special purpose receptacles shall be as called for on the Drawings. Matching twist lock plugs should be supplied.

1.03 INSTALLATION

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

PART 6 LIGHTING

1.01 GENERAL

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

1.02 SPECIFICATION

a. Fixture type shall be as indicated on the Drawings/Program of Works. LED are the priority unless specified by the designer.

b. LED tubes shall be high power factor or high frequency (electric) energy saving type. High power factor and rated at more than 30k hrs of operation. The ballast shall be subject to one (1) year manufacturer's guarantee. The guarantee shall be filed with the Owner. The ballast shall indicate Bureau of Product Standards approval with "PS" Mark.
c. Lighting fixture housing shall be G.A 22 minimum, with baked enamel and aluminum louver Finish
d. Down lights and/or pin lights shall be of heavy gauge spun aluminum with wooden plaster level and equipped with the lamp type indicated on the drawings. Pin lights shall have no live parts exposed at the back of the fixtures. Minimum opening diameter shall be 150 mm and minimum depth shall be 200mm.
e. Special lighting requirements shall be as indicated in the drawings.
f. Provide grounding on lighting fixtures with grounding terminals.

1.02 INSTALLATION

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

a. Contain all necessary relays, meters, resistance, and thermal cutouts, terminals and fuses for the control and double supervision of the system. Panel shall contain the number of zone and station circuits required. A trouble bell shall be provided for external connection.
b. All interior wiring shall be in strict accordance with the NFPA Codes 72 and all local electrical and fire codes applying. Size and number of wire shall be in accordance with the wiring diagram supplied by manufacturer of fire alarm system, but shall not be less than as shown on the drawings.
c. All materials and equipment shall be U.L listed.

PART 7 - ACU AND OTHER SPECIAL EQUIPMENT

a. Installed Air-conditioning units are types with inverter technology and should be installed by authorized certified installers.

b. Specifications and mounting of units shall be as per drawing. Shop drawings for drains should be provided as necessary.

c. ECB should be provided equal to or higher than specified depending on the advice of authorized certified installer.
g. Special equipment will be given separate ECB depending on the drawing/load schedule even if it is not specifically specified on the drawings.

- END -

Prepared by:

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Civil Engineer, PMO

Submitted by:

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

Approved by:

Teody C. San Andres, Ph.D.
Vice President, Exec.
Operations

Conforme:

_____
CONTRACTOR

FORM "D"

Omnibus Sworn Statement

REPUBLIC OF THE PHILIPPINES)
CITY/MUNICIPALITY OF _____) S.S.

A F F I D A V I T

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 **Negotiated Procurement for the Renovation of Faculty Office at the College of Architecture and Fine Arts (CAFA) INFRA-2019-07***, 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 **Negotiated Procurement for the Renovation of Faculty Office at the College of Architecture and Fine Arts (CAFA) INFRA-2019-07***,* 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;

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, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

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

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

7. *[Name of Bidder]* complies with existing labor laws and standards; and

8. *[Name of Bidder]* is aware of and has undertaken the following responsibilities as a Bidder:

   a) Carefully examine all of the Bidding Documents;

   b) Acknowledge all conditions, local or otherwise, affecting the implementation of the Contract;

   c) Made an estimate of the facilities available and needed for the contract to be bid, if any; and

   d) Inquire or secure Supplemental/Bid Bulletin(s) issued for the **Negotiated Procurement for the Renovation of Faculty Office at the College of Architecture and Fine Arts (CAFA) INFRA-2019-07*.***

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.

IN WITNESS WHEREOF, I have hereunto set my hand this __ day of ___, 2019 at _____, Philippines.

_____
Bidder's Representative/Authorized Signatory

SUBSCRIBED AND SWORN to before me this ___ day of *[month] [year]* at *[place of execution],* Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her [insert type of government identification card used], with his/her photograph and signature appearing thereon, with no. _____ and his/her Community Tax Certificate No. _____ issued on ____ at _____.

Witness my hand and seal this ___ day of *[month] [year]*.

NAME OF NOTARY PUBLIC
Serial No. of Commission _____
Notary Public for _____ until _____
Roll of Attorneys No. _____
PTR No. _____*[date issued], [place issued]*

IBP No. _____ *[date issued], [place issued]*

Doc. No. _____
Page No. _____
Book No. _____
Series of 2019

FINANCIAL PROPOSAL

Date: _____
IB[2] Nº: _____

HERMOGENA A. BAUTISTA
Chairperson, BAC (Infrastructure & Repairs)
BULACAN STATE UNIVERSITY
Guinhawa, City of Malolos, Bulacan

We, the undersigned, declare that:

(a) We have examined and have no reservation to the Bidding Documents, including Addenda, for the Contract **Negotiated Procurement for the Renovation of Faculty Office at the College of Architecture and Fine Arts (CAFA) INFRA-2019-07.**

(b) We offer to execute the Works for this Contract in accordance with the Bid and Bid Data Sheet, General and Special Conditions of Contract accompanying this Bid;

The total price of our Bid, excluding any discounts offered below is: *[insert information]*;
The discounts offered and the methodology for their application are: *[insert information]*;

(c) Our Bid shall be valid for a period of *[insert number]* days from the date fixed for the Bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(d) If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]* percent of the Contract Price for the due performance of the Contract;

(e) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from the following eligible countries: *[insert information]*;

(f) We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;

(g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the Funding Source;

[2] If ADB, JICA and WB funded projects, use IFB.

(h) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and

(i) We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.

(j) 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 **Negotiated Procurement for the Renovation of Faculty Office at the College of Architecture and Fine Arts (CAFA) INFRA-2019-07** of the *BULACAN STATE UNIVERSITY.*

(k) 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: _____
In the capacity of: _____
Signed: _____
Duly authorized to sign the Bid for and on behalf of: _____
Date: _____