



Republic of the Philippine
TARLAC STATE UNIVERSITY
Romulo Blvd., San Vicente, Tarlac City
Tel. No.: (045) 982 4630
Website: www.tsu.edu.ph

Bidding Documents

(This Bidding Documents is in conformance with the Sixth Edition of the Philippine Bidding Documents for the Procurement of Infrastructure Projects)

For the Project

Construction of COE Academic Building (Phase I)

**With an Approved Budget for the Contract (ABC) of
Seventy-Three Million Two Hundred Thirty Thousand One
Hundred Seventy-Seven and 58/100 Pesos (₱ 73,230,177.58)**

**Invitation to Bid No. Infra 09-012-2025
PhilGEPS Reference No.: 12516281**

**July 2020
6th Edition**

TABLE OF CONTENTS

Glossary of Terms, Abbreviations, and Acronyms	1
Section I. Invitation to Bid	3
Section II. Instructions to Bidders	5
1. Scope of Bid	5
2. Funding Information	5
3. Bidding Requirements	5
4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices	5
5. Eligible Bidders	5
6. Origin of Associated Goods	6
7. Subcontracts	6
8. Pre-Bid Conference	6
9. Clarification and Amendment of Bidding Documents	6
10. Documents Comprising the Bid: Eligibility and Technical Components	6
11. Documents Comprising the Bid: Financial Component	7
12. Alternative Bids	7
13. Bid Prices	7
14. Bid and Payment Currencies	7
15. Bid Security	7
16. Sealing and Marking of Bids	8
17. Deadline for Submission of Bids	8
18. Opening and Preliminary Examination of Bids	8
19. Detailed Evaluation and Comparison of Bids	8
20. Post Qualification	8
21. Signing of the Contract	9
Section III. Bid Data Sheet	10
Section IV. General Conditions of Contract	12
1. Scope of Contract	12
2. Sectional Completion of Works	12
3. Possession of Site	12
4. The Contractor's Obligations	12
5. Performance Security	12
6. Site Investigation Reports	13
7. Warranty	13
8. Liability of the Contractor	13
9. Termination for Other Causes	13
10. Dayworks	13

11. Program of Works	13
12. Instructions, Inspections, and Audits	14
13. Advance Payment	14
14. Progress Payments	14
15. Operating and Maintenance Manuals	14
Section V. Special Conditions of Contract	15
Section VI. Specifications	16
Section VII. Drawings	58
Section VIII. Bill of Quantities	59
Section IX. Checklist of Technical and Financial Documents	62
Section X. Bidding Forms	64

Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

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

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

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

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

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

GFI – Government Financial Institution.

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

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses

or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term “related” or “analogous services” shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

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

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

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

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid



Republic of the Philippine
TARLAC STATE UNIVERSITY
Romulo Blvd., San Vicente, Tarlac City
Tel. No.: (045) 982 4630
Website: www.tsu.edu.ph

INVITATION TO BID

For the Project

Construction of COE Academic Building (Phase I)

Invitation to Bid No. Infra 09-012-2025

1. The Tarlac State University, through **Special Budget (SB) 2025** intends to apply the sum of **Seventy-Three Million Two Hundred Thirty Thousand One Hundred Seventy-Seven and 58/100 Pesos (₱ 73,230,177.58)** to payments under the contract for the project: **Construction of COE Academic Building (Phase I)**.

Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The Tarlac State University now invites bids for the aforementioned Project. Completion of the Works is required within **Three Hundred Sixty-Five (365) calendar days**. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II. Instructions to Bidders.
3. Bidding will be conducted through open competitive bidding procedures using non- discretionary “pass/fail” criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Interested bidders may obtain further information regarding the bidding and inspect the Bidding Documents from 8:00 A.M. to 5:00 P.M., Tuesday to Friday starting on **October 30, 2025**, at this address:

Motorpool and Administration Building
Tarlac State University
Romulo Blvd., San Vicente, Tarlac City
Tel. No. (045) 606-8142 / 0998 846 0206
Email: tsubacsec2025@gmail.com

5. A complete set of Bidding Documents may be acquired by interested Bidders from **October 30, 2025, to November 19, 2025** from the aforementioned address upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of **₱ 50,000.00**.

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

6. The Tarlac State University will hold a Pre-Bid Conference on **November 7, 2025 (10:00 A.M.)** at the BAC Conference Room, 3rd Floor, Motorpool and Administration Building, Tarlac State University, Romulo Blvd., San Vicente, Tarlac City which shall be open to prospective bidders.
7. Three (3) copies of the bid proposals (one original, and additional copy 1 and 2) must be submitted to the BAC which must be duly received by the BAC Secretariat through manual submission at the office address indicated in the bidding documents, on **November 19, 2025 at 9:30 A.M.** Failure of bidders to comply with the said request of additional copies shall not be a ground for disqualification.

Late submission shall not be accepted.

Motorpool and Administration Building
Tarlac State University
Romulo Blvd., San Vicente, Tarlac City
Tel. No. (045) 606-8142 / 0998 846 0206
Email: **tsubacsec2025@gmail.com**

8. All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 14.
9. Bid opening shall be on **November 19, 2025, at 10:00 A.M.,** at the BAC Conference Room, 3rd Floor, Motorpool and Administration Building, Tarlac State University, Romulo Blvd., San Vicente, Tarlac City. Bids will be opened in the presence of the bidders’ representatives who choose to attend.
10. The Summary of the procurement activities is as follows:

Activities	Date and Time	Venue
Date Posted to PhilGEPS	October 30, 2025	N/A
Pre-Bid Conference	November 7, 2025 (10:00 AM)	BAC Conference Room , 3 rd Floor, Motorpool and Administration Building, Tarlac State University, Romulo Blvd., San Vicente, Tarlac City
Deadline of Submission of Bids	November 19, 2025 (09:30 AM)	Procurement Unit, BAC Secretariat Office , 2 nd Floor, Motorpool and Administration Building, Tarlac State University, Romulo Blvd., San Vicente, Tarlac City
Opening of Bids	November 19, 2025 (10:00 AM)	BAC Conference Room , 3 rd Floor, Motorpool and Administration Building, Tarlac State University, Romulo Blvd., San Vicente, Tarlac City

11. The Tarlac State University reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 Revised IRR of RA 9184, without thereby incurring any liability to the affected bidder or bidders.
12. For further information, please refer to:

Ms. Mariel C. Santos
BAC Secretariat
Motorpool and Administration Building
Tarlac State University
Romulo Blvd., San Vicente, Tarlac City
Tel. No. (045) 606 8110 142 / 0998 846 0206
Email: **tsubacsec2025@gmail.com**



ATTY. GHEROLD C. BENITEZ
BAC Chairperson – Infrastructure

ms

10.24.25

Section II. Instructions to Bidders

1. Scope of Bid

1. The Procuring Entity, **Tarlac State University** invites Bids for the project: **Construction of COE Academic Building (Phase I)**, with Project Identification Number: Invitation to Bid No. **Infra 09-012-2025**.

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

2. Funding Information

- 2.1. The GOP through the source of funding as indicated below for **2025** in the amount of **₱ 73,230,177.58**
- 2.2. The source of funding is the **Special Budget**.

3. Bidding Requirements

- 3.1. The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manual and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.
- 3.2. Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or invitation to bid by the BAC through the issuance of a supplemental or bid bulletin.
- 3.3. The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

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

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

5. Eligible Bidders

- 5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

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

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

- 5.3. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated Goods

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

7. Subcontracts

- 7.1. The Procuring Entity has prescribed that subcontracting is not allowed.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at the address indicated in paragraph 6 of the **IB**.

9. Clarification and Amendment of Bidding Documents

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

10. Documents Comprising the Bid: Eligibility and Technical Components

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.
- 10.3. A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.

- 10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.
- 10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

11. Documents Comprising the Bid: Financial Component

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

12. Alternative Bids

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

13. Bid Prices

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

14. Bid and Payment Currencies

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

15. Bid Security

- 15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.
- 15.2. The Bid and bid security shall be valid until **March 19, 2026**. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

- 16.1. Each Bidder **shall submit one copy of the first and second components of its Bid.**
- 16.2. The Procuring Entity may **request additional hard copies** and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.
- 16.3. If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

17. Deadline for Submission of Bids

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

18. Opening and Preliminary Examination of Bids

- 18.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

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

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

19. Detailed Evaluation and Comparison of Bids

- 19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.
- 19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 16 shall be submitted for each contract (lot) separately.
- 19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

20. Post Qualification

Within a **non-extendible period of five (5) calendar days** from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its

latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

21. Signing of the Contract

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

Section III. Bid Data Sheet

ITB Clause			
5.2	For this purpose, contracts similar to the Project refer to contracts for the Construction of COE Academic Building (Phase I).		
7.1	No further instructions.		
10.3	No additional requirements.		
10.4	The minimum work experience requirements for key personnel are the following:		
	Key Personnel	Qualification and Experience	
	Civil Engineer/Architect (Project In-charge)	With at least 3 years of experience in construction project supervision as a licensed Professional.	
	Safety Officer II	- DOLE accredited construction occupation safety officer - With at least 1 year of experience as a Safety Officer in construction projects.	
	Mechanical Engineer	With at least 1 year of experience in construction project supervision as a licensed Professional.	
	Electrical Engineer	With at least 1 year of experience in construction project supervision as a licensed Professional.	
	Foreman	With at least 3 years of experience as foreman in construction project.	
	Welder	- With at least 2 years of experience as welder in construction project. - TESDA NCII holder	
	Electrician	- With at least 2 years of experience as an electrician in electrical installation project. - TESDA NCII holder	
	Plumber	- With at least 2 years of experience as a plumber in plumbing installation project. - TESDA NCII holder	
10.5	The minimum major equipment requirements are the following:		
	Equipment	Min. Capacity	Min. Quantity
	Wheel Loader	2-3 cu.m	1
	Dump Truck	10-16 cu.m	1
	Tamping Rammer	3 HP	2
	Drop Side Truck	2 tons	1
	Bar Cutter	10-32mm Ø rebar	1
	Bar Bender	10-32mm Ø rebar	1
	Concrete Vibrator	2800 rpm	1
	Plate Compactor	3 HP	1
	Concrete Mixer	1-2 Bagger	2
	Welding Machine	300A&600A	2
	The bidder must state and show proof that the equipment to be pledged for the project are owned or leased.		
12	No further instructions.		

15.1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: 1. The amount of not less than ₱ 1,464,603.55 (2 % of ABC), if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit. 2. The amount of not less than ₱ 3,661,508.88 (5 % of ABC) if bid security is in Surety Bond.
19.2	Partial bid is not allowed. The project is packaged in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.
21	The winning bidder shall submit the following documents, which shall form part of the Contract documents: 1. Construction Schedule and S-Curve, 2. Manpower Schedule, 3. Construction Methods 4. Equipment Utilization Schedule 5. Construction Safety and Health Program approved by the Department of Labor and Employment, and PERT/CPM.

Section IV. General Conditions of Contract

1. Scope of Contract

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

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

2. Sectional Completion of Works

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

3. Possession of Site

- 3.1. The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the SCC, which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.
- 3.2. If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

4. The Contractor's Obligations

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

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

5. Performance Security

- 5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.

- 5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

6. Site Investigation Reports

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

7. Warranty

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

8. Liability of the Contractor

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

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

9. Termination for Other Causes

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

10. Dayworks

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

11. Program of Work

- 11.1. The Contractor shall submit to the Procuring Entity's Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the SCC.
- 11.2. The Contractor shall submit to the Procuring Entity's Representative for approval an updated Program of Work at intervals no longer than the period stated in the SCC. If the

Contractor does not submit an updated Program of Work within this period, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

12. Instructions, Inspections and Audits

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

13. Advance Payment

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

14. Progress Payments

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

15. Operating and Maintenance Manuals

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

Section V – Special Conditions of Contract

GCC Clause	
2	Not applicable.
4.1	Upon acknowledgement of receipt of the Notice to Proceed.
6	The site investigation reports are: as indicated in the Technical Specifications.
7.2	As prescribed in Section 62.2.3.2 of the 2016 revised IRR of R.A. 9184.
10	No dayworks are applicable to the contract.
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within five (5) days of delivery of the Notice of Award.
11.2	The amount to be withheld for late submission of an updated Program of Work is ten percent (10 %) of the amount of progress billing for the period.
13	The amount of the advance payment shall not exceed fifteen percent (15 %) of the contract price.
14	Materials and equipment delivered on the site but not completely put in place shall be included for payment.
15.1	The date by which operation and maintenance manuals are required is within ten (10) days after the final inspection. The date by which "as built" drawings are required is ten (10) days after the final inspection.
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is ten percent (10 %) of the final billing.

Section VI – Specifications

SECTION 1 – GENERAL CONDITIONS AND REQUIREMENTS

1.15. SCOPE OF WORK

1.15.1. The project shall cover the completion of the **CONSTRUCTION OF COE ACADEMIC BUILDING (PHASE I)**, which shall include the supervision and furnishing of labor, supplies, materials, equipment, and other incidental services essential to implement and produce the desired work output properly.

1.15. CONTRACT DRAWINGS

1.15.1. Details and extent of work are shown in the Drawings accompanying these specifications.

1.15.2. Sketches and other details not shown in the Drawings shall be furnished by the Engineer/Architect during the phase of construction.

1.15. PARTS OF THE SPECIFICATIONS

1.15.1. These specifications include the following parts in which applicable provisions are binding on this contract.

SECTION 1	GENERAL CONDITIONS AND REQUIREMENTS
SECTION 2	EARTHWORKS
SECTION 3	STRUCTURAL WORKS
SECTION 4	ARCHITECTURAL WORKS
SECTION 5	ELECTRICAL WORKS
SECTION 6	MECHANICAL WORKS
SECTION 7	PLUMBING WORKS

1.15.2. These Specifications are intended to supplement the provisions of the General Building Code to provide the proper construction. It is the duty of the Contractor to examine both carefully, compare and verify dimensions and data furnished by TSU in the case of discrepancy between figures and drawings, the matter should be immediately brought to the Architect/Engineer before any adjustment shall be made by the Contractor.

1.15. WORKMANSHIP

1.15.1. All operations required under all parts of the specifications shall be undertaken with the utmost workmanship and professional quality. Only skilled personnel with sufficient experience in similar operations shall be allowed to undertake the same.

1.15. INSPECTION OF SITE

1.15.1. The Contractor’s Bid shall be deemed as having been prepared with due consideration of the physical conditions at the site. By submitting the Tender, the Contractor certifies that they have conducted a comprehensive inspection and examination of the site and its surroundings. This inspection has informed their understanding of the scope of work, materials required for completion, means of access, and any necessary accommodation. Furthermore, the Contractor attests that they have acquired all relevant information regarding potential risks, contingencies, and any other factors that could influence or impact their Tender. The Contractor acknowledges that failure to inspect and examine the site conditions will not justify any request for additional costs or extensions of time.

1.15. CONFLICT BETWEEN PLANS AND SPECIFICATIONS

1.15.1. The documents forming the Contract are to be taken as mutually explanatory of one another. For the purposes of interpretation, the priority of the documents shall be in accordance with the following sequence.

- 1.6.1.1. the Contract and its attachments (Approved Budget for the Contract, Terms of Reference, etc.)
- 1.6.1.2. the Specific Conditions of the Contract
- 1.6.1.3. the General Conditions of the Contract
- 1.6.1.4. the Technical Specifications
- 1.6.1.5. the Drawings
- 1.6.1.6. the Project Schedule and any other pertinent documents

1.15.2. Any omissions in the specifications regarding necessary work or works for the project's completion shall be executed by the Contractor as if such work were explicitly detailed in the drawings, without incurring additional costs. All such work shall be performed in accordance with standard practices, adhering to the requisite quality standards for both materials and workmanship.

1.15.3. Should there be any ambiguity or conflict between indication on drawings and provisions in specifications, the same shall be referred to the Engineer/Architect of TSU for resolution.

1.15. APPROVAL

1.15.1. The Contractor shall submit for the Engineer/Architect's approval, the complete list of manufacturer's names of all equipment and materials they propose to use for the project prior to actual installation on site.

1.15. REJECTIONS

1.15.1. Materials or workmanship not in reasonable conformance with the provision of these specifications shall be rejected at any time during the progress of the work. The Contractor shall receive copies of reports of rejection of materials and workmanship made by the authorized technical representative of TSU. Any part of the work that he/she has done that does not meet the quality required by reasonable interpretation of the plans and specifications shall be torn down or removed immediately and shall be rebuilt or rectified to comply with the requirements of the plans and specifications.

1.15. VARIATIONS

1.15.1. The Engineer/Architect reserves the authority to implement minor adjustments in the work details or materials as deemed necessary. Such modifications may involve revisions to the shapes or dimensions of project elements. Any changes that result in additional costs to the Contractor will be subject to a corresponding adjustment of the contract price, as stipulated in the terms of the agreement.

1.15. AS-BUILT DRAWING AND PICTURES

1.15.1. The Contractor with the approval of the Engineer/Architect shall mark down all the revisions, omissions, and/or additions to the various works on two sets of drawing plans as the construction progresses. One set of the plans as marked shall be submitted to the Engineer/Architect after the completion of work.

1.15.2. The Contractor shall submit to TSU the As-Built Drawings incorporating all changes made and noted in the marked drawings retained by him/her. The As-Built Drawings shall be prepared in reproducible form and submitted together with at least three (3) copies of A3 (11.7 in. X 16.6 in.) and three (3) copies of Blueprint Tracing Size (20 in. X 30 in.).

1.15.3. The Contractor shall submit to TSU pictures of the site before, during, and after construction in reproducible and printed forms.

1.15. BILLBOARD

- 1.15.1. Upon possession of the project site, the Contractor shall immediately erect the Billboard, showing the relevant details of the project, at the location and position designated by TSU and of the dimensions and materials approved by TSU.

1.15. TEMPORARY FACILITIES

- 1.15.1. Upon possession of the project site, the Contractor shall immediately erect temporary facilities such as a field office, storage for equipment and materials, portable toilet, electric and water supply connections, etc., at the location designated by, and using only materials and the manner of construction approved by TSU.

1.15. MOBILIZATION AND DEMOBILIZATION

- 1.15.1. Upon receipt and acceptance of the Notice to Proceed, the Contractor shall immediately mobilize their workforce, equipment, materials, and secure the project site with proper and prompt coordination to the Project-in-Charge.
- 1.15.2. Upon completion of the work, the Contractor shall commence the demobilization of the workforce, equipment, and materials and turn over the project site to TSU.

1.15. CONSTRUCTION OCCUPATION SAFETY AND HEALTH

- 1.15.1. The Contractor shall be responsible for ensuring the safety and health of the personnel assigned at the project site and other parties who may be affected in the implementation of the project.
- 1.15.2. The Contractor shall submit to TSU a copy of the Construction Occupation Safety and Health Program for the project that is duly approved by the Department of Labor and Employment before commencing with the work.
- 1.15.3. The Contractor shall designate a competent and qualified Safety Officer for the whole duration of the project.
- 1.15.4. The Contractor shall establish and implement safety procedures for all relevant jobs, tasks, and operations.
- 1.15.5. All personnel assigned to the project are expected to report for work in their proper uniforms, basic safety gear (helmets, boots, or shoes), and identification cards (IDs). The uniforms, basic safety gear, and IDs shall be provided by the Contractor at his/her own expense.
- 1.15.6. The Contractor shall erect temporary barricades, install early warning and precautionary signs, and provide other safety devices that may be required to keep the job site safe and secured. Use roof sheet or plywood for temporary barricade with standard height and stable framing within the construction site as indicated in the plan: do not use "Blue Sack".
- 1.15.7. The Contractor shall maintain, at the project site, ample supplies of expendable materials for the safety and health of its personnel and other affected parties such as safety tape, first-aid kits, safety gloves, dust masks, etc., the cost of which shall be included in the contract price.
- 1.15.8. The Contractor shall keep a record of all incidents (near-miss or accident) and report the same to the TSU Architect/Engineer.

1.15. PERMITS AND CLEARANCES

- 1.15.1. The Implementing Office shall be responsible for securing all necessary requirements in the application of permits and clearances related to the project.

- 1.15.2. The Contractor shall be responsible for the application of all permits and clearances related to the project, which shall include but not be limited to building permits, occupancy permits, excavation permits, locational clearances environmental compliance certificates, etc.
- 1.15.3. All the professional fees, processing fees, assessment fees, and other payments necessary to secure the permits and clearances required for the project shall be included in the submitted and approved bid by the Contractor.
- 1.15.4. The duly licensed professionals who originally signed and affixed their professional seals to the approved building/renovation permit and corresponding construction documents shall likewise be required to sign and seal the as-built plans and Occupancy Permit application documents. However, professionals may formally relinquish this responsibility by submitting a notarized affidavit explicitly stating their desire to waive their professional accountability for the post-construction documentation. In such instances, the contractor of record shall be responsible for engaging and commissioning duly licensed professionals to prepare, sign, and seal the required as-built drawings and all supporting documents necessary for the issuance of the Occupancy Permit, in accordance with applicable laws and regulatory requirements.
- 1.15.5. Should alterations be required during the construction phase, all modifications must be accurately incorporated into the As-Built Drawings/Plans. The Contractor shall submit these revised As-Built Drawings along with a certification, as mandated by the Office of the Building Official, for the issuance of the occupancy permit. If the alterations impact the structural integrity of the project, the Structural Engineer must provide a detailed design analysis and structural computations certifying the stability and soundness of the modified structure.
- 1.15.6. No additional professional fees shall be granted to the Contractor for any modifications made to the plan that are instructed by the designated design professional.

SECTION 2 – EARTHWORKS

2.3 SCOPE OF WORK

- 2.3.1 The work shall include the excavation, disposal of waste excavation, compaction of base, backfilling, soil and wood treatment with termite, compaction of soil and embankment construction within the limits of the Contract and in accordance with the contract documents. The work shall be completed to the lines, grades, and dimensions and cross-sections shown on the Drawings or as designated by the TSU Architect/Engineer.

2.4 EXCAVATION

- 2.2.1 The Contractor shall excavate the lines, grades and dimensions shown on the Drawings and as necessary to accomplish the work. Excavate to within tolerance of plus or minus 300 mm, except where dimensions or grades are shown or specified as maximum or minimum. Allow for working space.
- 2.2.2 The Contractor shall remove all earth materials containing objectionable materials such as concrete rubble, rubbish, roots, etc., from the areas where the foundations shall be placed and replace with suitable material and compacted.
- 2.2.3 The Contractor shall furnish, place, and maintain such sheeting, shoring, bracing, and underpinning as necessary at locations necessary to support the sides of excavations and to prevent danger to persons or damage to pavements, facilities, utilities, or structures, and to prevent injurious caving or erosion or the loss of ground and to maintain pedestrian and vehicular traffic as directed and required.

- 2.2.4 The Contractor shall implement measures to prevent surface and ground water from entering excavations causing ponding on prepared subgrades, and from flooding the project site and surrounding areas.

2.5 SOIL AND WOOD TREATMENT

- 2.2.1 Treatment Application Report: After the application of termiticide is completed, submit a report to the Architect/Engineer of TSU and include the following:

- 2.2.1.1 Date and time of application
- 2.2.1.2 Termiticide brand name and manufacturer
- 2.2.1.3 Quantity of undiluted termiticide used.
- 2.2.1.4 Dilutions, methods, volumes used, and rates of application.
- 2.2.1.5 Areas of application
- 2.2.1.6 Water source for the application
- 2.2.1.7 Moisture content of soil before application in case of soil treatment

2.2.2 Project Conditions

- 2.2.2.1 Environmental Limitations to ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with the requirements of authorities having jurisdiction.
- 2.2.2.2 Coordinate soil treatment application with excavating, filling, grading, and concreting operations. Treat soil under footings, grade beams, and ground supported slabs before construction.
- 2.2.2.3 Apply wood treatment after framing, sheathing, and exterior weather protection is completed but before electrical and mechanical systems are installed.

2.2.3 Quality Assurance

- 2.2.3.1 Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in the jurisdiction where the Project is located, and who employs workers trained and approved by manufacturer to install manufacturer's products.

2.2.4 Warranty

- 2.2.4.1 Soil Treatment Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor, certifying that termite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

2.2.5 Execution

- 2.2.5.1 Examine substrates, areas, and conditions, with the Applicator present, for compliance with requirements for moisture content of soil per termiticide label requirements, interfaces with earthwork, slab and foundation work, landscaping, utility installation, and other conditions affecting the performance of termite control.
- 2.2.5.2 Proceed with the application only after unsatisfactory conditions have been corrected.

2.2.6 Preparation

- 2.2.6.1 General: Comply with the most stringent requirements of authorities having Jurisdiction and with the manufacturer's written instructions for preparation before beginning the application of termite control treatment. Remove all extraneous Sources of wood cellulose and other edible materials such as wood debris, tree stump and roots, stakes, formwork, and construction waste wood from the soil within and around foundations.
- 2.2.6.2 Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated except previously compacted areas under slab and footings. Termiticides may be applied before placing compacted fill under slabs if recommended in writing by termiticide manufacturer.
- 2.2.6.3 Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

2.2.7 Applying Soil Treatment

- 2.2.7.1 Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturers, so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute treatment evenly.
- 2.2.7.2 Slabs-on-Grade and Basement Slabs: Underground supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
- 2.2.7.3 Foundations: Adjacent soil, including soil along the entire inside perimeter of foundation walls; along both sides of interior partition walls; around plumbing pipes and electric conduit penetrating the slab; around interior column footers, piers, and along the entire outside perimeter, from grade to bottom of the footing. Avoid soil washout around footings.
- 2.2.7.4 Crawl spaces: Soil under and adjacent to foundations as previously indicated. Treat adjacent areas including around the entrance platform, porches, and equipment bases. Apply overall treatment only where attached concrete platforms and porches are on fill or ground.
- 2.2.7.5 Masonry: Treat voids.
- 2.2.7.6 Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.
- 2.2.7.7 Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.
- 2.2.7.8 Protect termiticide solution, dispersed in treated soils and fills, from being diluted until ground supported slabs are installed. Use waterproof barrier Approved Brand and Quality.
- 2.2.7.9 Post warning signs in areas of application.
- 2.2.7.10 Soil treatment perimeter of the building including the soil, plant box and other possible entry of termites by injection method using proven and highly effective

termiteicide and fungicide solution into the soil along the concrete base of the building to link up the termiteicide barrier made on the concrete external wall of the building.

2.3 EMBANKMENT

- 2.3.1 Embankment shall be constructed of suitable materials placed on successive layers distributed uniformly over the full width of the cross section. Each layer shall be spread and bladed by means of a blade grader or other approved equipment at least twice so that the compaction rollers shall bear uniformly on each new layer.
- 2.3.2 Rock and broken concrete from the demolition of old structures may be used on the lower layer of the embankment, only upon the approval of the TSU Architect/Engineer. The size of the rock or concrete shall not exceed the layer thickness requirements. The exposed reinforcing steel from concrete shall be cut and removed.
- 2.3.3 When rock and concrete fragments are used for the embankment, these should be spread uniformly, and the interstices shall be filled with fine material to produce a dense compact layer.
- 2.3.4 The compaction should begin at the outer embankment edges and gradually progress toward the center, rolling in a longitudinal direction so that the full width is uniformly compacted. In order to ensure proper compaction of the embankment slope, overfill by 150 to 300 mm and then trim the embankment to the specified shape.
- 2.3.5 Each layer shall be compacted to a minimum of 98% Standard Proctor density, ASTM D698 method except the last 300 mm up to the finished grade which shall be compacted to 100% Standard Proctor density, ASTM D698 method D.
- 2.3.6 The density of each completed layer shall be checked for each 500 square meters, or a fraction thereof. If test results show that the required density is not achieved, further compaction is necessary.
- 2.3.7 The water content of each layer, before being compacted, must be assessed. The material may require water to be added or be allowed to dry to bring the moisture content close to the optimum in order to make it possible to achieve the required dry density and hence degree of compaction

SECTION 3 – STRUCTURAL WORKS

3.2 SCOPE OF WORK

- 3.2.1 Structural works shall include, where applicable, setting of gravel base, steel reinforcements, formworks, bracing, shuttering, shoring, scaffolding, concreting, vibrating, curing of concrete mixture, testing of steel reinforcement and concrete to complete all work herein specified and shown on drawings.
- 3.2.2 All structural steelworks shall be in accordance with AISC Specification for the Fabrication and Erection of Structural Steel, material, and parts necessary to complete each item, through such work not shown or specified shall be included, such as miscellaneous bolts and anchor supports, braces, and connections, etc.

3.3 CONCRETE WORKS

3.3.1 Materials

3.3.1.1 Concrete Aggregates – shall conform to “Specification for Aggregates” (ASTM G33 latest revision). The maximum size of the aggregates shall not be larger than one-fifth (1/5) of the narrowest dimension between the sides of the forms of the member for which the concrete is to be used and not larger than three-fourth (3/4) of the minimum clear spacing between individual reinforcing bars and in no case larger than two (2) inches in diameter.

3.3.1.2 Reinforcing steel bars shall conform to ASTM Designation A-615-68 specifications for the structural grade. The grade of reinforcing steel bars shall be as follows:

Diameter	Grade
10 mm Ø	Grade 40 (276 MPa)
12 mm Ø	Grade 60 (414 MPa)
16 mm Ø	Grade 60 (414 MPa)
20 mm Ø	Grade 60 (414 MPa)
25 mm Ø	Grade 60 (414 MPa)

3.3.1.3 Sand and gravel should be well-graded and free from any deleterious materials. The fine aggregate shall be washed sand (vibro) and the size of course aggregates must be ¾” crushed gravel. Do not use river sand.

3.3.1.4 Cement and aggregates shall be stored in a manner as to prevent their deterioration or the intrusion of foreign matter. Materials of deteriorated quality or which have been damaged shall not be used for concrete. Cement whose quality is questionable shall be tested by standard mortar test to determine its suitability for use.

3.3.1.5 Forms shall conform to the shape, lines, and dimension of the member as called for on the plans and shall be substantial and sufficiently tight to prevent leakage of mortar. They shall be properly braced or tied to maintain position and shape.

3.3.1.6 Plywood, metal, plastic materials, or surfaced lumber forms shall be used where it will best give the most advantage in the specific concrete work involved.

3.3.1.7 Unless otherwise ordered, forms and shoring shall not be disturbed and shall remain in place for a minimum period by the following schedule.

Element	Length of Time
Foundation	1 day
Walls and Columns	2 days
Beams	14 days
Suspended Slabs except when additional loads are imposed	14 days

3.3.2 Execution

3.3.2.1 Before placing reinforcement and pouring concrete, remove all loose rust, mill, scale, oil, or other adhering materials that tend to reduce or destroy the bond between concrete and reinforcement.

3.3.2.2 Reinforcing steel bars shall be cut, bent, lapped, or spliced as recommended by the CRSI Handbook and ACI Codes. All lap splices of rebars shall conform to Class B Tension Lap Splice unless noted otherwise. All hook ends shall be standard hooks. All stirrups/ties shall have 135° seismic hooks unless noted otherwise. Cross ties shall have a standard 90° hook on one end and a 135° seismic hook on the other end. Consecutive cross ties with 90° and 135 °hook ends shall be alternated. Reinforcing steel bars shall be placed accurately and secured in place by use of concrete or metal supports, spacers, or ties to firmly hold them in their proper positions during the pouring and setting of concrete.

3.3.2.3 All reinforcing bars shall be cleaned thoroughly of all loose rust, soil, or other material before concrete pouring. No bars partially embedded in concrete shall be field bent, except permitted by the Engineer/Architect. Bars shall not be welded unless authorized by the Engineer/Architect.

3.3.2.4 Maintain minimum concrete cover to traverse bars as follows:

Element	Concrete Cover
Below Grade - Foundation & Walls	75 mm
Below Grade – Columns, Beams, Girders & Pedestals	75 mm
Above Grade – Columns, Beams, Girders & Pedestals	50 mm
Above Grade - Suspended Slabs & Walls	20 mm
Slab on Grade	40 mm

3.3.2.5 Testing of reinforcing steel bars shall conform to ASTM designation of specified materials. Samples of materials for testing shall be provided by the Contractor without extra additional cost to TSU. Likewise, the Contractor shall pay for the cost of testing the samples.

3.3.2.6 All horizontal reinforcements shall be tied to the vertical reinforcement at every intersection with #16 GI tie wire.

3.3.2.7 Pouring of concrete for suspended slab & floor framing must be poured monolithically.

3.3.3 Concrete Proportion and Consistency

3.3.3.1 Classes Of Concrete

3.3.3.2 Otherwise indicated in the plans, the minimum 28th days compressive cylinder strength of concrete with corresponding maximum aggregate size and slump shall be as follows:

Element	28 th Day Strength	Max. Aggregate Size	Slump
Foundation and Shear Walls	4,000 psi	¾ in.	4 in.
Columns and Pedestals	4,000 psi	¾ in.	4 in.
Beams and Girders	4,000 psi	¾ in.	4 in.
Suspended Slabs	4,000 psi	¾ in.	4 in.
Slab on Grade	3,000 psi	¾ in.	4 in.
Non-Structural Elements	2,500 psi	¾ in.	3 in.

3.3.4 Measurement

3.3.4.1 The unit of measure shall be the cubic meter. One bag of cement (40 kg) shall be considered as 0.028 cubic meters. Water shall be so measured as to ensure the desired quantity of successive batches. Measurement of materials for ready-mixed concrete shall conform to standard specifications for ready-mixed concrete, ASTM Designation C-94, where applicable.

3.3.5 Mixing of Concrete

3.3.5.1 All concrete shall be machine mixed except in emergencies such as mixer breakdown during pouring operations where it shall be done by hand and shall stop at the first allowed construction joint. The time of mixing after all cement and aggregates are in the mixer drum shall not be less than one minute for a mixer having a capacity of one cubic yard or less; for a mixer of larger capacities, the minimum time shall be increased by 15 seconds for each additional cubic yard or fraction thereof or additional capacity. All mixing water shall be introduced into the drum and shall rotate at the peripheral speed of about 60.96 meters per minute throughout the mixing period. The entire contents of the mixer drum shall be

discharged before recharging. The time elapsing between the introduction of the mixing water to the cement and aggregates and placing of the concrete in final position in forms shall not exceed 45 minutes. The re-tempering of concrete, i.e., mixing with additional cement, aggregate, or water shall not be permitted.

3.3.6 Conveying and Placing of Concrete

- 3.3.6.1 Water shall be removed from the excavation before concrete is deposited. Any continuous flow of water in the excavation shall be directed through side drains to a slump or be removed by other approved methods to avoid washing the freshly deposited concrete. Debris shall be removed from the space to be occupied by the concrete and forms shall be thoroughly wetted.
- 3.3.6.2 Concrete shall be conveyed from the mixer to forms as rapidly as practicable, by a method which shall prevent segregation or loss of ingredients. There shall be no free vertical drop or loss of ingredients. There shall be no free vertical drop greater than 1.5 meters. Approval of the TSU Engineer/Architect shall be obtained before starting any concrete pouring. Concrete shall be worked readily into the corners and angles of the forms and around all reinforcement and embedded items by depositing the concrete as close as possible to its final position in the forms and consolidating it with the aid of mechanical vibrating and consolidating it with the aid of mechanical vibrating equipment, supplemented by hand spading and tamping. In no case shall vibrators be used to transport concrete inside the forms. Vibrating equipment shall be in the internal type and not be overdone to cause segregation of particles and disturbance of setting concrete but just enough to produce an even heterogeneous distribution of ingredients.
- 3.3.6.3 Dumping concrete into cars or buggies with a free fall or more than three (3) feet shall not be permitted. Hardened or partially hardened splashes or accumulations of concrete on forms or reinforcement shall be removed before the work proceeds. In case the rate of pouring is such as to allow splashes or accumulations to harden, concrete shall be placed with a flexible spout attached to a suitable hopper. Spouts and hoppers are provided to always maintain the surface of the concrete as nearly level as possible.
- 3.3.6.4 Construction Joints – If possible, concreting shall be done continuously until the section is complete. When a stoppage of concrete operations occurs construction joints shall be placed either horizontally or vertically as indicated by the TSU Engineer/Architect and provided with shear keys or dowels to develop a bond. Construction joints shall be as per plan or shall be approved as directed by the TSU Engineer.
- 3.3.6.5 Pouring of concrete for foundations shall be done after the TSU Engineer/Architect has verified the actual soil conditions at the site and approved the start of concreting. No footing shall rest on fill.

3.3.7 Curing

- 3.3.7.1 All concrete shall be moist cured for not less than seven (7) days by an approved method of combination applicable to local conditions. The surface of the concrete shall be kept continuously wet by covering it with water, by continuously spraying, or by covering it with burlap or other approved materials thoroughly saturated with water and keeping the covering web by spraying or intermittent housing. Water for curing shall be free from any elements which might cause objectionable staining or discoloration of concrete.

3.3.8 Repair of Concrete

3.3.8.1 Imperfections

3.3.8.1.1 Repairs shall be completed within 24 hours after removal of forms.

3.3.8.1.2 Voids that appear upon the removal of forms shall be drenched with water and immediately filled with materials of the same composition as that used on the surface and smooth with a wood spatula or float.

3.3.8.2 Where present, large bulges and abrupt irregularities that protrude, shall be removed by brushing, hammering, and grinding.

3.3.8.3 All materials, procedures, and operations used in the repair of concrete shall be approved by the TSU Engineer/Architect.

3.3.8.4 The cost of all material, labor, and equipment used in the repair shall be borne by the Contractor.

3.3.9 Concrete Slab on Fill

3.3.9.1 Concrete slabs on fill shall be laid on a prepared foundation consisting of a subgrade and granular fill with a thickness equal to the thickness of the overlaying slab except as indicated otherwise. Sub-grade shall be rolled, rammed, or tamped layer by layer to a thoroughly compacted foundation. The granular fill shall consist of sound gravel, well graded and of a size that will pass a 1-1/2 inch diameter ring and will be retained on a No.4 screen. Gravel fill shall be without any organic material and debris and shall be compacted to provide an unyielding base. Concrete slab on fills on general storage area and platform shall not be less than 6" thick and all other areas will not be less than 4" thick.

3.3.10 Cement Finish for Concrete Surfaces

3.3.10.1 All concrete surfaces shall be given a finish done and applied by the following provisions:

3.3.10.1.1 Immediately after the removal of forms, all projecting wires and bolts, or other devices used for trying forms, shall be cut off at least one-half (1/2) centimeter beneath the finished surface. All holes, voids, depressions, and other defects shall be thoroughly wetted and then pointed up the soil with cement mortar putty of the same proportion as the mortar used in the body of the work. All exposed surfaces shall be treated in such a manner as to effectively elaborate, all lines, projections, and marks impressed by the lumber for wood forms, to the general plan of the concrete surface.

3.3.10.1.2 Rubbed Finished: Unless otherwise specified, a rubbed finish shall be applied to all exposed concrete surfaces. Concrete surfaces shall be wetted immediately after the forms are removed and then rubbed even and smooth with carborundum brick or other abrasive to a uniform appearance without the application of any cement or another coating before the surface has hardened.

3.3.11 Concrete Floors and Slabs

3.3.11.1 All concrete shall be of such consistency as to require tamping to bring the water to the surface. Tamping shall be done with the least ten (10) centimeters of square-faced tampers.

3.3.12 Inspection

3.3.12.1 Concrete shall be proportioned, mixed, and placed in the presence of the TSU Engineer/Architect; ample notice shall be given before mixing commences.

3.3.13 Test of Concrete

3.3.13.1 Reasonable number of tests on the concrete may be required by the TSU Engineer/Architect during the progress of the work. No less than four (4) cylindrical specimens shall be made for testing, of which at least two (2) shall be reserved for the 28th-day test. Samples shall be secured and molded per “Method of Sampling Concrete” (ASTM Designation C-172) and Method of Making and Curing Concrete Compression and Designation C-21). The Contractor shall provide the samples to be taken at the place of deposit and as specified by the TSU Engineer/Architect, without cost to TSU. The Contractor shall take care of transporting the samples to the approved testing laboratory without cost to TSU.

Specimen	Day of Testing
At least 1	7 th Day
At least 1	14 th Day
At least 2	28 th Day

3.3.13.2 To meet the requirements of these Specifications, the average strength of test samples representing each class of concrete must be equal to or greater than the specified strength. Additionally, no more than one out of every ten strength tests may have an average value of less than 90 percent of the specified strength.

3.3.14 Failure of Test Samples

3.3.14.1 In the case of failure of Test Cylinders to meet the specified strength, the Contractor may at his expense, obtain concrete core samples from the poured, concrete and the compressive strength of the same to be taken by a competent testing authority to determine the conclusive strength and integrity for the concrete poured. Coring shall be done in a manner which shall make possible satisfactory replacement of cored samples. To determine the adequacy of the affected parts, the TSU Engineer shall have the option to order load tests on parts of the structure where concrete strength tests are below 80% of the strength specified.

3.3.14.2 These tests shall be in accordance with ACI recommendations, and the cost shall be borne by the Contractor. Poured concrete with strength less than that required by the specification shall be demolished and provided with an acceptable replacement at the Contractor’s expense.

3.3.14.3 Should the tests fail to give the required strength, the Engineer TSU shall have the right to order a change in the proportions or the procedure or curing of the concrete for the rest of the structure.

3.4 STEEL AND TINSMITHTRY WORKS

3.4.1 Materials: All materials shall conform to that listed below unless noted otherwise on the drawings.

3.4.1.1 All structural beams, structural columns, steel shapes, and plates shall conform to ASTM-A36 (248 MPa) at least commercial type.

3.4.1.2 All structural bolts shall conform to ASTM-A307 (Ft=96.60 MPa, Fv=69.00 MPa) at least commercial type.

3.4.1.3 All stainless-steel pipes shall be S304.

3.4.1.4 All fire exit stair steel tubing, framings, and balusters shall be Galvanized Iron.

3.4.1.5 Welding electrodes shall be E60XX.

3.4.2 Fabrication and Erection

3.4.2.1 Field fabrication shall be kept to a minimum and shop fabrication shall be employed to the greatest extent possible with members shop fabricated as long as practicable with a minimum requirement for field connections. Welding, shearing, gas cutting, chipping, and all other works involved in the fabrication of structural steel shall be done with accuracy and of the highest quality of workmanship within the allowable tolerance prescribed in the AISC Specifications.

3.4.2.2 The steel members shall be shop fabricated and shall be done only by a qualified welder.

3.4.2.3 If for any reason, the TSU Engineer/Architect believes that a defect exists in any weld, it shall be the Contractor's responsibility to repair the questioned weld to the satisfaction of the Engineer/Architect.

3.4.2.4 All steel works after complete erection shall be field painted with the type specified in the section of the painting of this specification. Painting shall not be done on any steel surface that is not thoroughly clean and dry.

3.4.2.5 The steel structures shall be erected plumb and true line and grade. Bracing and support should be provided as necessary to accommodate all loads the structure may encounter. These bracings must remain in place for as long as needed to ensure safety.

3.4.2.6 Connections shall be as shown in the drawings and shall develop the full capacity of the member.

3.4.2.7 Surfaces or joints prepared for welded or anchor bolt connection shall meet the cleanliness requirements for all joint surfaces and contact surfaces within friction-type joints as specified in Section 3, "Bolted Parts of the AISC Specifications".

3.4.2.8 Structural Bearing Pad with Bearing Pad Holder shall be placed in steel column to beam support to absorb the compressive forces of loading.

3.4.2.9 Holes shall be punched or drilled at right angles to the surface of the metals and shall be enlarged by burning. Holes shall be clean-out without rugged edges. Outside bursts resulting from drilling or roaming operations shall be removed with a tool that reaches 1/16" (1.588mm) level around the bolt holes.

3.4.2.10 Holes for the structural column and structural beam connections shall be fabricated off-site.

3.4.3 Inspection

3.4.3.1 Materials, equipment, and tools intended to be used for the work shall be inspected and approved by the TSU Architect/Engineer.

3.4.3.2 Each completed stage of the work shall be inspected and approved by the TSU Architect/Engineer before the next stage of the work can commence.

3.4.3.3 Before any Structural Steel Frame Fabrication is done by the Contractor, all materials intended to be used by the Contractor for the project shall be inspected for proper checking and approval of material thickness, quality, and sizes.

3.4.3.4 Final inspection by the Engineer/Architect of the TSU must be done before any delivery of the fabricated structural steel frames, members, and accessories. This inspection is made upon the advice of the Contractor.

3.4.3.5 Failure on the part of the Contractor to notify the TSU Engineer/Architect of the inspection of the materials intended to be used for the project before the start of any fabrication and final inspection of the fabricated structural steel frames, members, and accessories before any delivery is made will be at the risk of the Contractor for any subsequent rejection.

3.4.4 Marking

3.4.4.1 Shop fabricated members shall be marked before delivery to facilitate the erection of the members. Markings shall be listed and given descriptions and copies of which shall be furnished to the field and the TSU. Markings shall be neatly painted on the members with a distinctive color of quick-dry enamel paint.

3.4.5 Shop Painting

3.4.5.1 Steelworks to be encased in concrete shall not be painted. All other steelworks shall be given one coat of shop paint of Epoxy Primer, applied thoroughly and evenly to dry surfaces, which have been cleaned, by brush, spray roller coating, flow coating, or dipping at the selection of the fabricator. Steelwork before painting and after inspection and approval shall be clean of loose mill scale, loose rust, weld slag or flux deposit, dirt, and other foreign materials. Oil and grease shall be removed by a solvent. Parts of the steelwork that shall be field welded or connected shall not be painted.

3.4.6 Field Painting

3.4.6.1 All steelworks after complete erection shall be field painted with the type specified in the section of the painting of this specification. Painting shall not be done on any steel surface that is not thoroughly clean and dry.

SECTION 4 – ARCHITECTURAL WORKS

4.1 MASONRY AND PLASTERING WORKS

4.1.1 Scope

4.1.1.1 The work includes the furnishing of all materials, labor, equipment, and performing all the necessary operations in connection with masonry and plastering works.

4.1.2 Masonry and Plastering

4.1.2.1 Mortar cells of CHB shall consist of one (1) part to cement to three (3) parts sand by volume with sufficient water. It shall be a workable cement-sand mixture attaining a 28th-day compressive strength of 1500 psi.

4.1.2.2 Vertical and horizontal reinforcements shall be provided in masonry. CHB walls shall be reinforced as follows:

Thickness	Horizontal Reinforcement	Vertical Reinforcement
100 mm	10 mm Φ @ 600 mm O.C.	10 mm Φ @ 600 mm O.C

4.1.2.3 Mortar for plastering shall be proportioned one (1) part cement to three (3) parts sand with sufficient water. Use 50 mm thick cement plastering for exterior walls and 25 mm thick cement plastering for interior walls.

4.1.3 Workmanship

4.1.3.1 CHBs shall be laid plumbed and leveled accurately. Laid units of blocks shall be wetted before laying another unit or layer. Damaged units shall not be used. Units shall be cut accurately to fit all plumbing ducts, and openings for electrical works; all holes shall be neatly patched.

4.1.3.2 Units shall be placed while the mortar is soft and plastic and shall be used within two and a half (2.5) hours of initial mixing. Mortar that has stiffened should not be used. Any unit disturbed to the extent that the initial bond is broken after initial positioning shall be removed and re-laid in fresh mortar. All cells of CHB units shall be fully grouted.

4.1.3.3 Where CHB walls adjoin columns, beams, and walls, dowels of the same size as the vertical or horizontal reinforcement shall be provided.

4.1.3.4 No construction support shall be attached to the CHB wall except where specifically permitted by TSU.

4.2 FLOOR, WALL, AND FINISHING WORKS

4.1.4 General

4.1.4.1 Prepare floors and walls to receive tiles and install them directly to their corresponding surfaces. Deliver materials to the job in the manufacturer's unopened containers with the manufacturer's brand and name clearly marked thereon.

4.1.5 Preparation

4.1.5.1 Non-Skid Porcelain Floor Tiles, Vitrified, Accent, etc. Tiles - All cement surfaces to receive tiles or similar finish shall be structurally sound, plumb, level, and true, free from dust, dirt, grease, calcimine water, or other foreign matter.

4.1.6 Materials

4.1.6.1 Floor Finish

- 4.1.6.1.1 Smooth Cement Floor Finish with Epoxy Paint (Color: Gray) should be used for the hallway.
- 4.1.6.1.2 600 mm x 600 mm Porcelain Floor Tiles should be used for classrooms: Approved brand and quality.
- 4.1.6.1.3 600 mm x 600 mm Non-Skid Porcelain Floor Tiles should be used for all toilets, comfort rooms: Approved brand and quality.

- 4.1.6.1.4 Concrete Fine Broom Finished should be for the finishing of PWD Ramp.
- 4.1.6.1.5 #10 Pebble Washout Finish shall be used for finishing the stairs from ground floor to fifth floor.
- 4.1.6.2 Waterproofing for toilets, roof deck & 0.10 m high interior wall (surface preparation, application of three coats of cementitious waterproofing). Approved brand and quality of admixture for waterproofing shall be used.
- 4.1.6.3 Fabrication and installation of 18mm thk. White melamine laminated high gloss MDF board with 25mm x 25 mm x 3.0 mm white powder coated aluminum perimeter frame and holder (White Board).
- 4.1.6.4 Provide 12mm thick. Waterproof Compact Laminated Board for the cubicle partitions in toilet.
- 4.1.7 Tile Installation
 - 4.1.7.1 Clean the existing flooring.
 - 4.1.7.2 Lay tiles in straight square patterns and cover them from wall to wall. Where the manufacturer's instruction requires priming of concrete floors, work the primer well into the surface of the concrete with stiff brushes or a straight-edge steel trowel, using the minimum quantity, which will assure complete coverage. Allow the primer to dry thoroughly. Install the tile in such a manner that each tile is in contact with each adjacent tile and that the entire undersurface of each tile will be securely bonded.
 - 4.1.7.3 Layout the field from the midpoint of the axis of the room so that the opposite end tile will be equal in width. The width of the tile shall be subject to the variation required by the dimensions of the room and the size of the tile used. Scribe the end tile to the wall and cut in a manner that will ensure clean sharp edges.
 - 4.1.7.4 Apply adhesive following the manufacturer's recommendation. Secure cove base to walls with adhesive as specified for floor tiles.
- 4.1.8 Cleaning
 - 4.1.8.1 Clean flooring of adhesive and other soiling. Remove adhesive with a putty knife and steel wool or with a cloth moistened with a neutral soap of a type approved by the manufacturer. The use of solvents and wet mopping is prohibited.
- 4.1.9 Protection
 - 4.1.9.1 After cleaning, protect the floor until acceptance of the building.
- 4.1.10 Guarantee
 - 4.1.10.1 Floors shall be guaranteed by the manufacturer against defects in its floor tiles and by the Contractor against defects in workmanship for one year from the date of completion.

4.2 CEILING WORKS, CLADDING WORKS AND DRYWALL PARTITIONS

4.2.1 Scope Of Work

4.2.1.1 This section shall include all materials, labor, materials, tools, equipment, and services necessary to complete the ceiling and wall works.

4.2.2 Submittal

4.2.2.1 Submit product information from manufacturers for each type of product specified including brochures, catalogs, samples, and certificates of test reports, quality compliance, and accreditation from foreign manufacturers for authenticity of locally distributed materials.

4.2.3 Delivery, Storage, And Handling

4.2.3.1 Deliver materials in manufacturer's original unopened packages clearly marked with identifying information. Protect materials as recommended by the manufacturer.

4.2.3.2 Store materials, keep them dry, and protect against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes. Stack gypsum panels on a level surface to prevent sagging.

4.2.4 Material

4.2.4.1 Ceiling

4.2.4.1.1 All rooms from ground floor to fifth floor, 12mm thick. Gypsum Board and

12 mm thick. Perforated Gypsum Board on metal furring frame should be used in all classrooms, Approved brand, type, and quality.

4.2.4.1.2 For toilets and comfort rooms, 4.5 mm thick Fiber Cement Board should be used; Approved brand, type, and quality.

4.2.4.1.3 Pre-painted spandrel shall be 0.50mm thick on framing system. Provide air ventilation holes and moldings ceiling system.

4.2.5 Installation

4.2.5.1 Framing for furred ceilings shall be installed at the locations indicated in the drawings and shall conform to the standards.

4.2.5.2 Ceiling framing shall be suspended plumb from the structural slab or steel roof frame by hanger wires or straps, spaced no more than 1.20 m on centers. Hanger wires shall be:

4.2.5.2.1 wrapped around the reinforcing bars, of the supporting concrete-slab construction with twists before concrete is placed, or

4.2.5.2.2 shaped into 100 mm diameter loops and embedded at least 50 mm in the concrete, or

4.2.5.2.3 attached to approved inserts.

4.2.5.3 Hanger wires shall be looped around the bottom chord of the open-web steel joist, receiving three full turns around itself or structural steel members, or attached using beam clamps with three full turns. The Hanger Strap must be hung plumb and connected using 10 mm galvanized bolts and nuts to anchors embedded in the concrete or looped around structural framing and connected with 10 mm galvanized bolts and nuts.

- 4.2.5.4 When splicing channels, ensure the ends overlap by at least 300 mm. The flanges of the channels should interlock and be securely fastened with rivets.
- 4.2.5.5 Framing is not required for ceilings attached to structural members, except for framing openings as specified. Furring as hereinafter specified shall be attached directly to structural members.
- 4.2.5.6 Steel channels shall be provided where steel furring is indicated for screw attachment of boards.
- 4.2.5.7 Furring shall be spliced with 200 mm nested laps securely tied near each end of the lap, with two loops of 1.0 mm tie wire. Splices shall be staggered.
- 4.2.5.8 Where the board abuts dissimilar wall materials, finish the perimeter of ceilings with an edge bead trim strip applied to the wall and accurately aligned with the finished ceiling. The board edges adjoining walls shall be laid on the horizontal leg of the trim strip against a continuous bead of approved sealant.
- 4.2.5.9 Special framing for beams, columns, soffits, and other special items shall be sized and built to the shapes or forms indicated by rigidly securing each intersection with board screws.
- 4.2.5.10 Provide support members at ceiling openings such as required for access panels, recessed light fixtures, and air supply or exhaust. Support members of not less than 38 mm main runner channels and suspension wires or straps shall be located to provide at least the minimum support specified herein for furring and board attachment.
- 4.2.5.11 The Board shall be applied with the separate boards in moderate contact but not forced into place at internal and external corners. Conceal cut edges with the overlapping covered edges of abutting boards. The boards shall be so staggered that the corners of any boards will not meet a common point except in vertical corners.
- 4.2.5.12 Apply the board to the ceilings with the long dimension perpendicular to the furring members. Alternatively, the long dimension may be applied parallel to furring members spaced 0.40 meters apart, provided end joints are properly supported.

4.2.6 Cleaning and Protection

- 4.2.6.1 Promptly remove any residual joint compound from adjacent surfaces not indicated to receive texture.
- 4.2.6.2 Provide final protection and maintain conditions, in a manner acceptable to the Installer, that ensures gypsum board assemblies are without damage or deterioration at the time of construction completion.

4.2.7 Drywall Works

- 4.2.7.1 For Dry Wall Partition: Boards must be 9 mm thick Fiber Cement Board fastened with blind rivet, framed with 50 mm x 100 mm x 1.5mm thick GI C-Purlins horizontal and vertical framing. Use self-drilling screws to install drywall boards or as indicated or instructed by the architect. Use a 1" concrete nail to fasten the base and top wall track.
- 4.2.7.2 Use 1 ½" self-drilling metal screw to install fiber cement boards to the steel frame.

4.3 PAINTING WORKS

4.3.1 Scope Of Work

- 4.3.1.1 The Contractor shall furnish all materials, labor, equipment, and services required to complete the entire painting works herein called for. Painting works shall include the repainting of walls, columns, beams, railings, window frames, etc. of the existing building as specified hereinafter and required thereto.
- 4.3.2 Material
 - 4.3.2.1 The brand of painting materials to be used shall be approved by TSU.
 - 4.3.2.2 All steel must be painted with epoxy primer and a topcoat of quick-dry enamel.
 - 4.3.2.3 All interior walls must be painted with off-white semi-gloss latex paint.
 - 4.3.2.4 All ceilings must be painted with flat latex paint.
 - 4.3.2.5 All paint materials shall be delivered to the job site in their original containers. with labels and seals unbroken.
 - 4.3.2.6 Except for ready-mixed materials in original containers, all mixing shall be done at the job site. No materials are to be reduced or changed except as specified by the manufacturer of the said materials. The use of white zinc (lithopone) is prohibited.
- 4.3.3 Colors
 - 4.3.3.1 All colors of paints and varnishes shall be in accordance with the color scheme approved by TSU.
 - 4.3.3.2 Submit samples of the proposed colors for approval. Only colors that have been approved may be used.
 - 4.3.3.3 No painting shall commence until color schemes have been approved by the Engineer/Architect.
 - 4.3.3.4 Finishes for different portions of the work must be indicated in the Schedule of Specifications.
- 4.3.4 Surface Examination and Preparation
 - 4.3.4.1 Before commencement of the work, the Contractor shall examine the surfaces to be applied with paints so as not to compromise the quality and appearance of a painting of finishing work.
 - 4.3.4.2 No painting shall be done under conditions that may compromise the quality or appearance of the paint or finish.
 - 4.3.4.3 All surfaces to be painted must be cleaned and in proper condition before application.
 - 4.3.4.4 Voids, cracks, and all other kinds of defects shall be repaired with proper patching materials and finished flush with the surrounding surfaces.
- 4.3.5 Surface Conditioning
 - 4.3.5.1 Apply topcoat on existing concrete and masonry surfaces.

- 4.3.5.2 Patch and seal hairline cracks and uneven areas with approved putty or patching compound. After correcting all defects, apply the finish coats as specified in the Plan, following the approved color scheme.
- 4.3.5.3 Metals shall be clean, dry, and free from mill scale and rust. Remove all grease and oil from surfaces. Wash unprimed galvanized metal with the etching solution and allow it to dry.
- 4.3.5.4 Metal surfaces shall be primed with epoxy primer.
- 4.3.6 Application
 - 4.3.6.1 Paints, when applied by brush, shall be non-fluid; and thick enough to lay down an adequate film of wet paint. Brush marks must be smoothed out after the application of paint.
 - 4.3.6.2 Paints intended for roller application must be similar to those used for brushing paint. The paint should not be sticky when thinned.
- 4.3.7 Workmanship
 - 4.3.7.1 Experienced and skilled craftsmen shall perform all work to ensure finished work of first-class quality, appearance, and durability.
 - 4.3.7.2 All paints and other coatings shall be mixed and applied strictly following the manufacturer's printed instructions.
- 4.3.8 Mixing And Thinning
 - 4.3.8.1 At the time of application, paint shall show no sign of deterioration. Paint shall be thoroughly stirred, strained, and kept at a uniform consistency during application.
 - 4.3.8.2 When thinning is necessary, this may be done immediately before application following the manufacturer's directions, but not more than 1 pint of suitable thinner per gallon of paint.
 - 4.3.8.3 Kerosene shall not be used as paint thinner. Paints from the different manufacturers shall not be mixed.
- 4.3.9 Storage
 - 4.3.9.1 All materials to be used for this item shall be stored in a single place designated by TSU. This storage area must always be kept neat and clean.
 - 4.3.9.2 Take necessary precautions to prevent fire hazards by removing oily rags, waste, and other flammable materials at the end of each workday.
- 4.3.10 Cleaning
 - 4.3.10.1 All clothes and cotton waste that pose a fire hazard must be placed in metal containers or destroyed at the end of each workday.
 - 4.3.10.2 Upon completion of the work, remove all staging and paint containers, and dispose of them appropriately.
 - 4.3.10.3 Remove any paint drips, oil, or stains from adjacent surfaces. Ensure the entire area is left clean and acceptable to the supervising Architect/Engineer.

4.4 DOORS AND WINDOWS

4.4.1 Scope Of Work

- 4.4.1.1 The Contractor shall furnish all materials, labor, equipment, tools, and services necessary to complete all specified work as shown in the drawings.
- 4.4.1.2 Remove and replace all existing doors and windows with items specified in the plans. See the architect's approved shop drawings and details showing fabrications. Protect glass from breakage before and after installation.
- 4.4.1.3 Provide all necessary hardware to complete the work. All hardware must be approved by TSU.

4.4.2 Materials

4.4.2.1 Doors

- 4.4.2.1.1 Door shall be GA.18 GI Sheet panel, GA.16 GI sheet door jamb with honeycomb insulation.

- 4.4.2.1.2 Stainless steel heavy duty single cylinder deadbolt.



- 4.4.2.1.3 300mm x 100mm x 1.5mm thick round heavy-duty stainless-steel pull handle with plate.



- 4.4.2.1.4 Automatic heavy-duty stainless-steel door closer.



- 4.4.2.1.5 All doors used must conform to the types and thicknesses specified in the Schedule of Specifications and as indicated on the drawings.

4.4.2.2 Windows

- 4.4.2.2.1 All windows shall be aluminum awning windows with 6.0 mm thk. Reflective tempered bronze glass.

4.4.2.3 Glass And Glazing

- 4.4.2.3.1 The glass used must conform to the types and thicknesses specified in the Schedule of Specifications and as indicated on the drawings.

4.4.3 Shop Finish

- 4.4.3.1 Unless otherwise specified in the Schedules of Specifications all steel doors, windows, and frames are to be bonderized.

4.4.4 Dimensions

- 4.4.4.1 The Contractor must verify all dimensions of the openings as shown in the drawings at the job site before fabricating the doors and windows.

4.4.4.2 Execution

- 4.4.4.2.1 Glasses must be accurately cut to fit and have uniform bearing across the entire width of the pane. Apply a thin layer of putty to the rebate, set the glass, and press it until an even bed is achieved. Remove any excess putty from each side, ensuring it is flush with the edge of the rebate.
- 4.4.4.2.2 Any glass breakage occurring during execution or due to faulty installation must be replaced by the Contractor at no additional cost.

4.5 ROOFING WORKS

4.5.1 Scope of Work

- 4.5.1.1 The Contractor shall furnish all materials, labor, equipment, tools, and services necessary to complete all specified work as shown in the drawings.
- 4.5.1.2 Remove and demolish all the unnecessary structures and obstructions to execute this item.
- 4.5.1.3 Provide all necessary hardware to complete the work. All hardware must be approved by TSU.

4.5.2 Materials

- 4.5.2.1 Roof sheets shall be approved 0.50 mm thick Pre-painted Long Span Rib-type. Approved type and quality.
- 4.5.2.2 Gutter and flashing shall be approved 0.50 mm thick Pre-painted Plain Sheet. Approved type and quality.
- 4.5.2.3 Use approved PE Foam Double Sided Insulation with 10 mm thick with 12.5 mm welded wire #21. Approved type and quality.
- 4.5.2.4 All metallic fasteners and fixing accessories shall be corrosion proof and non-metallic fasteners shall be of neoprene.

4.5.3 Workmanship

- 4.5.3.1 Length of roof sheets shall be in accordance with the actual dimension of the roof framing. These shall be verified prior to purchasing or ordering.

- 4.5.3.2 Flashings and gutters shall be lap at least 20 cm over the roofing sheets.
- 4.5.3.3 The intersection of all roofs with vertical walls shall be flashed not less than 20 cm high and all connections shall be made watertight.
- 4.5.3.4 PE Foam Insulation must be placed between the roof sheets and purlins with welded wire mesh #21 support underneath.
- 4.5.4 Fabrication and Installation
 - 4.5.4.1 Length of roof sheets shall be in accordance with the actual dimensions of the roof framing. These shall be verified prior to purchasing or ordering.
 - 4.5.4.2 Gutter and flashing shall be lapped at least 20 cm over the roofing sheets. The ridge rolls shall be riveted.
 - 4.5.4.3 The intersection of all roofs with vertical walls shall be flashed not less than 20 cm high and all connections shall be made watertight.

SECTION 5 – ELECTRICAL WORKS

5.1 SCOPE OF WORK

- 5.1.1 The Contractor shall provide all materials and equipment and perform all the work necessary for the complete execution of the electrical work specified herein; except as otherwise excluded, and which without excluding the generality of the foregoing, shall include but not be limited to the following principal items of work. All work shall be in accordance with the governing codes and regulations and with the specifications, except when the same shall conflict with such codes, etc. in which case the latter shall then govern.
 - 5.1.1.1 Provide a completely new electrical system for the building.
 - 5.1.1.2 Provide a completely new fire detection and alarm system for the building.
 - 5.1.1.3 Provide rough ins of auxiliary layout for the building.
 - 5.1.1.4 All necessary materials, accessories, and consumables needed to install properly, terminate wires, and execute electrical works shall be considered.
 - 5.1.1.5 Complete testing of all electrical systems.
 - 5.1.1.6 Optional items of work.
 - 5.1.1.7 If anything has been omitted in any items of work or materials usually furnished, which are necessary for the completion of the Electrical Works as outlined herein before, then such must be and are hereby included in this section of the work.

5.2 GENERAL

- 5.2.1 Codes, Regulations, and Ordinances
 - 5.2.1.1 The electrical item under this contract is to be installed according to the requirements of the latest Philippines Electrical Code, the rules and regulations of the Authority concerned and the requirements of the Power Company. Nothing contained in these specifications or shown on the drawings shall be construed as to

conflict with the National and Local Ordinances or Laws governing the installation of electrical work, and all laws and ordinances are hereby made part of these specifications. The Contractor is required to meet the requirements thereof.

5.2.2 Plans and Drawings

5.2.2.1 The Contract Drawings, which constitute an integral part of this contract, shall serve as workings drawings. They indicate the general layout of the complete electrical system and show arrangements of feeders, circuits, outlets, switches, control panel boards, service equipment, fixtures, and other works.

5.2.2.2 The Contractor shall check architectural, structural, and plumbing plans to avoid possible installation conflicts. Should drastically changes from original plans be necessary to resolve such conflicts, the Contractor shall notify the Engineer/Architect and shall secure from him written approval and agreement concerning necessary changes and adjustments before altered installation work is started

5.2.3 Minor Modifications

5.2.3.1 The plans as drawn are based upon architectural plans and details show conditions as accurately as is possible to indicate them in scale. The plans are diagrammatical and do not necessarily show all fittings, etc., necessary to fit the conditions. The locations of lighting fixtures and switches shown on the plans are approximate. The Contractor shall be responsible for the proper location to make them fit with architectural details.

5.2.4 Guarantees

5.2.4.1 The Contractor shall guarantee that the electrical system is free from all grounds and all defective workmanship and materials and will remain so for a period of one (1) year from the date of acceptance of the work. Any defects, appearing within the aforesaid period, shall be remedied by the Contractor at his own expense.

5.2.4.2 The Contractor shall indemnify and save harmless the TSU and his duly authorized representative from and against all liability for damages arising from injuries or disabilities to persons or damage to property occasioned by any act or omission of the Contractor, including all expenses, legal or other, which may be incurred by the TSU in the defense of any claim, action, or suit.

5.2.5 Samples and Drawings

5.2.5.1 The Contractor shall submit to the Engineer/Architect for approval samples of fixtures, conduit, wire, wiring devices, finished plates and of any item as may be required by the Engineer/Architect.

5.2.5.2 Prepare and submit for approval shop drawings or catalogs of equipment appliances and fixtures.

5.3 INSTALLATION REQUIREMENTS

5.3.1 All materials shall be new and shall conform to the standards specified in the Philippine Electrical Codes and others such as IEEE, AIA, IEEA and NEMA, for every case where such standard has been established for the particular type of materials in question.

5.3.2 All materials on all systems shall comply with the following specifications unless specifically accepted, and all materials that were not specified shall be of the best of their respective kind.

5.3.3 Cutting and Fitting

5.3.3.1 Contractor shall do all cutting and fitting required for the installation of the electrical items and coordinate with the work of other trades, in accordance with the drawings and in a manner satisfactory to the Engineer/Architect.

5.3.4 Inserts, Anchor, Etc.

5.3.4.1 Furnish to the proper trades all inserts, anchors or other required items, which are to be built in by them for securing all hangers or other supports of conduit and for anchorages for electrical equipment.

5.3.5 Ground Tests

5.3.5.1.1 The entire installation shall be free from improper grounds and from short circuits.

5.3.5.1.2 Ground testing shall be performed and shall meet the standard resistance required by the NFPA, IEEE and PEC.

5.3.5.2 Performance Test

5.3.5.2.1 It shall be the responsibility of the Contractor to test all systems of the entire electrical installation for proper operational conditions. These conditions shall apply to the power and lighting installations as well as the fire alarm system and motors.

5.4 MATERIALS

5.4.1 Wires and Cables

5.4.1.1 The installation shall be free from improper grounds and short circuits. All wires shall be copper, soft-drawn, and annealed, shall be of 98% conductivity, shall be smooth and fine and of a cylindrical form, and shall be within 1% of the actual size called for.

5.4.1.2 Wires shall be color coded as follows:

Line 1 --- Red Line 2 --- Yellow Line 3 --- Blue Ground --- Green

5.4.1.3 All wires and cables shall comply with the requirements as to the particular usage and approved brand.

5.4.2 Pipes

5.4.2.1 Wiring shall be done in PVC Pipe for embedded and in RSC, IMC, and EMT for run exposed; it shall be Schedule 40.

5.4.2.2 No tubing shall be used in any system smaller than ½" electric trade size, nor shall have more than four 90-degree bends in any one run, and where necessary pull, boxes shall be provided as directed.

5.4.2.3 No wire shall be pulled into any conduit until the conduit system is complete in all details and in the case of concealed work until all rough plastering or masonry has been completed in every detail.

5.4.2.4 The ends of all conduits shall be tightly plugged to exclude plaster, dust, and moisture while the building is in the process of construction. All conduit ends shall be reamed to remove all burrs

5.4.3 Junction and Pull Boxes

5.4.3.1 PVC Junction and pull boxes shall be provided as indicated or as required for facilitating and pulling of wire and cables. Pull boxes in finished places shall be located and installed with permission and to the satisfaction of the contracting officer.

5.4.4 Panelboard

5.4.4.1 All panelboards shall be dead front construction, furnished with trims for flush or surface mounting as required. Cabinets shall be of code gauge steel with gutters at least 4 inches wide and wider if necessary. The trim for all panels shall be finished in gray enamel over a rust inhibitor.

5.4.4.2 Panelboards shall have labels as well as branch circuits load for identification.

5.4.5 Overcurrent Protection

5.4.5.1 Provide individual circuit breakers, safety switches, and disconnect switches as where indicated. Voltage ratings shall be suitable in each case of service application.

5.4.5.2 Circuit breakers shall be used for current protection purposes and shall be enclosed in suitable metal housing of type required by location.

5.4.5.3 Enclosure shall be General Purpose, NEMA type, and shall almost all the requirements and specifications of the Philippine Electrical Code

5.5 LIGHTING SYSTEM

5.5.1 Install all lighting fixtures as specified or at locations shown in plans or as directed by the Engineer/Architect.



2 x 18W T8 Tube light Troffer type
with Louver and Aluminum reflector
Surface mounted (Daylight)



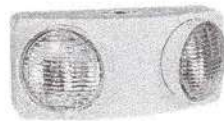
1 x 18W T8 Tube light Troffer type with
Louver and Aluminum reflector
Surface mounted (Daylight)



in Weatherproof type housing
Surface mounted (Daylight)

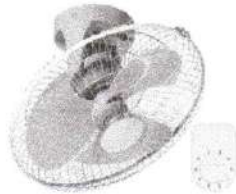


12W and 18W Square LED Panel
Light Surface Mounted (Daylight)



LED Emergency Light with One gang
outlet

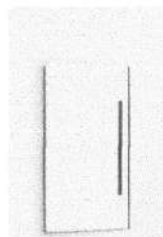
5.5.2 Ceiling Fan shall be 16" diameter, 4-Speed Fan Switch, and with thermal fuse protection.



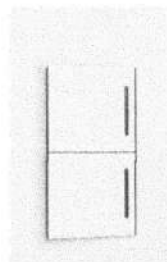
5.5.3 LED Emergency Exit Signage shall have a design label with exit, running man, and arrow sign with Aluminum housing and acrylic clear panel.



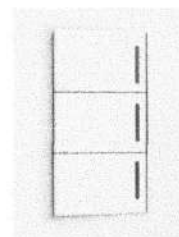
5.5.4 Wall switches shall be rated at 15 amperes, 250 volts, one way or as required. Switches shall be of quiet and automatic action type, silver contact, feather touch operation, and white.



One Gang Switch with
Reflector



Two Gang Switch with
Reflector



Three Gang Switch
with Reflector



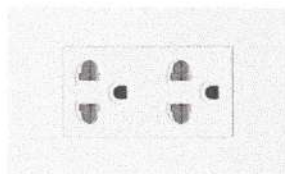
One Gang 3-way
Switch with Reflector



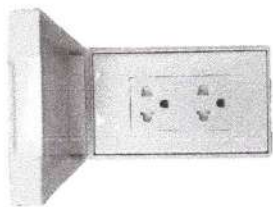
One Gang 4-way
Switch with Reflector
1 x 18W T8 Tube light

5.6 POWER OUTLET SYSTEM

- 5.6.1 Receptacle outlet shall be flush mounted duplex universal outlet rated at 16 amperes, 250 volts.

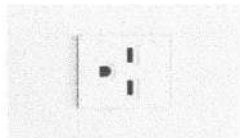


Duplex Universal Outlet



Duplex Universal Outlet with Weatherproof cover

- 5.6.2 Air Conditioning unit outlet shall be flush mounted rated at 20 amperes, 250 volts.



Aircon Outlet

- 5.6.3 Provide 40AT, 3-pole molded case circuit breaker in NEMA 3R enclosure at locations shown in plans for booster pump. Verify mounting height during construction.

5.7 MAIN DISTRIBUTION PANEL

- 5.7.1 For Service Equipment, install 1250 AT, 3-pole molded case circuit breaker in NEMA 4X enclosure. Provide an extra one slot at the line side of Main Circuit Breaker for future tapping of supply line for Fire Pump.
- 5.7.2 Busbar Gutter shall be not less than 1250 A with 4 circuit load slots.

5.8 FIRE DETECTION AND ALARM SYSTEM

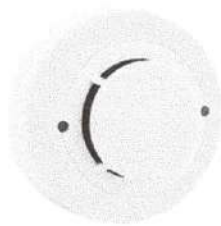
- 5.8.1 8-Zone Fire alarm control panel shall have fault supervision, disablement zones, evacuation, silence mode, UL listed, and the following specifications:

▪ AC Input	: 240 VAC
▪ Internal power supply	: 27.2VDC
▪ DC Output	: 24VDC
▪ Frequency	: 50/60 Hertz
▪ Voltage for MCU	: 5V for MCU
▪ Auxiliary output	: 24 VDC +/- 10%, 100mA max
▪ Batteries	: 2 pcs 12V/2.3Ah – 24VDC
▪ Battery low voltage protection	: 21 V
▪ Sounder output	: 2 pc
▪ EOL resistor for zone	: 6.8 kilo ohms, 0.25 watt
▪ EOL resistor for outputs	: 6.8 kilo ohms, 0.25 watt
▪ Environment	: Class A temp. range: -5 °C to 50 °C



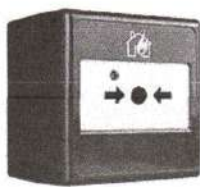
5.8.2 Smoke detector shall have two LEDs which provide 360 degrees visible alarm indication, flashes every six seconds to indicate power, UL listed, and the following specifications:

- Operating voltage range : 9 to 28 VDC Non-polarized
- Standby current : 120uA at 24 VDC
- Max. alarm current (LED on) : 15 mA at 24 VDC
- Voltage for MCU : 2,700 K – 3,000 K (Warm White)
- Operating temp. range : -10 °C to 50 °C
- Smoke alarm sensitivity : 0.1 – 0.15 dB / m



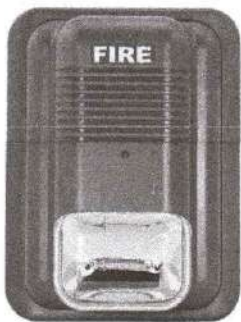
5.8.3 Manual call point shall be semi-flush or surface mounting, lever re-usable (non-glass break), with LED indicator, UL listed, and the following specifications:

- Main voltage : Zone 24 VDC or 12 VDC
- Operating current : Monitoring status 20uA
- Indicator : Alarm status 15mA
- Protection class : Red alarm indicator flashes when it is under normal condition
- Environmental : IP30
- : Class A temp. range: -5 °C to 40 °C



5.8.4 Strobe Horn shall be intelligent horn strobe which can be configure with Conventional fire alarm control panel, UL listed, and the following specifications:

- Work voltage : 18 VDC- 28 VDC
- Work current : 10 mA to 60 mA
- Flash Period : ≤1.0 S
- Alarm SPL : ≥100dB



5.9 AUXILIARY LAYOUT

- 5.9.1 Rough ins with CAT6 cables inside the conduit shall be provided for future installation of CCTV camera devices and Access points. Use PVC Utility boxes for each proposed location.
- 5.9.2 Data cabinets shall be wall mounted with removable side panels including at least 6-slot power distribution units, exhaust fans, and complete accessories.

SECTION 6 – MECHANICAL WORKS

6.1 AUTOMATIC FIRE SPRINKLER SYSTEM

6.1.1 Scope of Work

- 6.1.1.1 This specification covers the equipment, materials, components, and labor including necessary services to complete the installation of the Automatic Fire Sprinkler System.
- 6.1.1.2 All materials and work for the Automatic Fire Sprinkler System shall be in accordance with applicable portions of the latest version of the following standards unless otherwise indicated.
 - 6.1.1.2.1 NFPA – National Fire Protection Association
 - 6.1.1.2.2 ASTM – American Society for Testing Material
 - 6.1.1.2.3 AWS – American Welding Society
 - 6.1.1.2.4 UL – Underwriters Laboratories Inc.
 - 6.1.1.2.5 FM – Factory Mutual
 - 6.1.1.2.6 National Building Code of the Philippines
 - 6.1.1.2.7 Philippine Mechanical Code
 - 6.1.1.2.8 RA 9514 – The Fire Code of the Philippines

6.1.2 Quality Assurance

- 6.1.2.1 The complete automatic fire sprinkler system installation shall be made by an approved installer, specializing in fire protection work, having not less than five (5) years' experience in installing fire protection systems.
- 6.1.2.2 All equipment shall be UL-listed, and FM approved or equivalent.

6.1.3 Delivery, Storage, and Handling

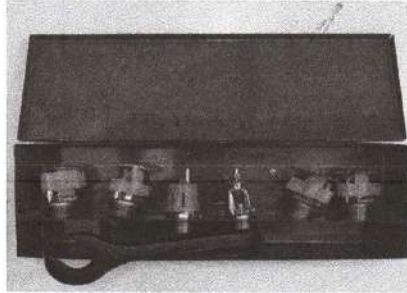
- 6.1.3.1 Equipment and materials shall be handled, stored, and protected to prevent damage before and during installation in accordance with the manufacturer's recommendations. Damaged or defective items shall be replaced.

- 6.2.3.1 Delivered materials in original package, containers, skid loads, or bundles bearing brand names and identification of source of manufacturer or supply.
- 6.3.3.1 Delivered materials and equipment shall be protected from weather, direct sunlight, surface damage, corrosion, and construction traffic activity.
- 6.4.3.1 Installer shall make necessary provisions to protect systems from damage, deterioration, and environmental conditions during installation and until the automatic fire sprinkler systems is fully operational.
- 6.1.4 Valves and Accessories
 - 6.1.4.1 All valves and accessories shall be approved by UL/FM.
 - 6.1.4.2 Check valve - check valve shall be clear open, swing type check valve with flange or threaded inspection plate.
 - 6.1.4.3 Gate Valve & Control Valve - gate valves and control valves shall be outside screw and yoke (O.S.&Y.) Type, supervised which open by counterclockwise rotation. Butterfly-type control valves are not permitted.
- 6.1.5 Pipes and Fittings
 - 6.1.5.1 Pipes shall be Schedule 40 Black Iron Pipe Seamless Plain Ends ASTM A53 Gr. B.
 - 6.1.5.2 Fittings shall be welded, threaded, or grooved-end type.
 - 6.1.5.3 Underground pipes and fittings shall be protected against corrosion.
 - 6.1.5.4 Rubber gasketed grooved-end pipe and fittings with shall be permitted in pipe sizes 40 mm (1.5 inch) and larger. Fittings shall be UL listed, or FM approved for use in dry & wet standpipe systems. Fittings, mechanical couplings, and rubber gaskets shall be supplied by the same manufacturer.
- 6.1.6 Fire Fighting Equipment
 - 6.1.6.1 Sprinklers
 - 6.1.6.1.1 Sprinkler heads (pendent, upright and sidewall) shall be UL/FM approved.
 - 6.1.6.1.2 Sprinkler heads (pendent, upright and sidewall) shall be Quick Response, K=5.6(80.@Metric), 155°F (68 °C), 1/2" NPT, Chrome Plated Type Sprinkler.
 - 6.1.6.1.3 Pendent sprinkler heads shall be installed with escutcheon triple chrome plated.



- 6.1.6.2 Fire Sprinkler Heads Cabinet

- 6.1.6.2.1 Fire sprinkler spare head boxes provide storage for spare fire sprinkler heads and head wrench. For use with 1/2" fire sprinkler heads. Slotted for easy mounting. Powder coated Red.
- 6.1.6.2.2 6 pcs for 300 sprinkler heads.
- 6.1.6.2.3 12 pcs for 300 to 1000 sprinkler heads.
- 6.1.6.2.4 4 for 1000 sprinkler heads and above.



6.1.7 Fire Hose Cabinet

- 6.1.7.1 Fire Hose Cabinet shall be UL/FM approved.
- 6.1.7.2 Fire Hose Cabinet connected to the Automatic Fire Sprinkler System the cabinet shall be 700mmx815 x 203mm (24" x 27" x 8"), 18 gauge cold rolled steel and 610 x610mm. The hose shall be a lightweight polyester jacket and 30 meters (100ft) long with nozzle.

6.1.8 Fire Department Connection

- 6.1.8.1 Fire Department Connection shall be UL/FM approved.
- 6.1.8.2 Fire department connections (FDC) shall be 65 x 65 x100mm (2 1/2" x 2 1/2" x 4") quick-connect fitting, with protective coupling cap and suite to couplings of the local fire brigade department.
- 6.1.8.3 Fire department connection shall be installed not less than 500mm and not more than 1200mm above finished floor level.
- 6.1.8.4 Fire department connection shall be Dual Snoot Flush Mounted, Brass Type.
- 6.1.8.5 Provide identification sign for each fire department connection.
- 6.1.8.6 Identification sign shall indicate "AUTO. SPRNK or STANDPIPE".



6.1.9 Miscellaneous

- 6.1.9.1 Hangers And Supports

- 6.1.9.1.1 All hangers and supports shall be made of steel or other durable and noncombustible materials. Wood, wire, or perforated strap iron shall not be used as permanent hangers or supports. Hangers that penetrate finished ceilings shall be provided with a chrome or nickel-plated escutcheon plate.
- 6.1.9.1.2 Anchorage in concrete – expansion shield should preferably be used in a horizontal position in the sides of concrete beams.
- 6.1.9.1.3 Expansion shield in vertical position. When pipes 100 mm and larger are supported entirely by expansion shield in the vertical position, the supports shall be spaced not more than 3.0 meters apart.
- 6.1.9.1.4 Pipe hangers should be installed at every 1.5 meters and should be anchored to slab system or metal and so as not to interfere with the free expansion and contraction of piping, and all nuts and bolts shall be drawn up tight.
- 6.1.9.1.5 Ceilings should be restored back to the original location and physical properties.
- 6.1.9.1.6 Hangers shall be capable of withstanding the test loadings given in the NFPA rules. When installed and subjected to the test loadings, the hanger shall not rupture, pull out, distort or otherwise be damaged and hangers shall not show permanent distortion resulting in a change in level.

6.1.9.2 Pipe Sleeves

- 6.1.9.2.1 Furnish, install and responsible for the location of proper sleeves for all pipes passing through floor, walls, partitions, or other building construction. Where sleeves occur in concrete construction, they shall be set before concrete is poured. Set sleeves and anchors in a suitable manner so that they will not become displaced. Sleeves for piping passing through walls and floors in concealed spaces shall be cut flush with walls or floor.
- 6.1.9.2.2 Sleeves passing through foundation walls or exterior walls, or where seepage may occur, shall be thoroughly waterproofed.
- 6.1.9.2.3 Sleeves passing through walls and floors between rooms shall be filled from both ends of sleeve with fireproof insulation material of a fire rating equal to that of the wall or floor.

6.1.9.3 Underground Piping

- 6.1.9.3.1 Vinyl corrosion protection tape, concrete thrust blocking and concrete anchor blocking shall be provided for every 1.5 meter of underground piping.

6.1.9.4 Identification

- 6.1.9.4.1 Painting finish (type, quality, and color) to all fire protection pipework shall comply with the requirements of local code. Piping shall be painted with one (1) coat of epoxy primer and two (2) coats of epoxy enamel.
- 6.1.9.4.2 All equipment shall have a nameplate that identifies the manufacturer's name, address, type or style, model or serial number, and catalog number.

6.1.10 Execution

- 6.1.10.1 Install a complete Automatic Fire Sprinkler System with all piping, valves, hangers, signs, valves, tests, etc., as indicated in the drawings and as specified herein.
- 6.1.10.2 Furnish and install all drain piping, flushing, connections, drain plugs, drain valves, etc., at drain points and all low points.
- 6.1.10.3 Seal all valves, not provided with tamper switches, in open position by approved means.
- 6.1.10.4 Care shall be exercised in the installation of the piping so that the system will drain by gravity, back through branches.
- 6.1.11 Testing
 - 6.1.11.1 All tests shall be done in the presence of the representative of the Tarlac State University or any inspecting authority.
 - 6.1.11.2 All instruments, tools, materials and labor required to perform these tests shall be provided.
- 6.1.12 Warranty
 - 6.1.12.1 All materials, equipment and installation shall be guaranteed for a period of one (1) year from the date of acceptance against failure of components resulting from normal use or factory defects. Any defective parts or equipment in the system during the term of guarantee shall be repaired or replaced by the contractor at his own expense.

6.2 STANDPIPE

6.2.1 Scope of Work

- 6.2.1.1 This specification covers the equipment, materials, components, and labor including necessary services to complete the installation of the Automatic Fire Sprinkler System.

6.2.2 Material

6.2.2.1 Pipes and Fittings

- 6.2.2.1.1 Pipes shall be Schedule 40 Black Iron Pipe Seamless Plain Ends ASTM A53 Gr. B.

- 6.2.2.1.2 Fittings shall be welded, threaded, or grooved-end type.

- 6.2.2.1.3 Underground pipes and fittings shall be protected against corrosion.

6.2.2.2 Fire Hose Cabinet

- 6.2.2.2.1 Fire Hose Cabinet shall be UL/FM approved.
- 6.2.2.2.2 Fire Hose Cabinet connected to the Standpipe, the cabinet shall be 700mmx815 x 203mm, 18 gauge cold rolled steel and 610 x610mm. The hose shall be a lightweight polyester jacket and 30 meters (100ft) long with nozzle.

6.2.3 Testing

- 6.2.3.1 Test Pressure: The system shall be subjected to a pressure of 200 psi (13.8 bar) or above the system's maximum operating pressure, whichever is greater.

6.2.3.2 Duration: Maintain the pressure for 2 hours without any pressure drop.

6.3 CONDENSATE DRAINPIPE

6.3.1 Scope of Work

6.3.1.1 This specification covers the materials, and labor including necessary services to complete the installation of the condensate drainpipe.

6.3.2 Material

6.3.2.1 Pipes and Fittings

6.3.2.1.1 Pipes shall be 25mm Ø PVC Blue Pipe.

6.3.2.1.2 Pipe must comply with Philippine National Standards (PNS) or equivalent for PVC pipes.

SECTION 7 – PLUMBING WORKS

7.1 SCOPE OF WORK

7.1.1 Furnish all materials, labor, tools, equipment and other facilities and the satisfactory performance of all work necessary for the complete installation, testing and operation of the plumbing system in accordance with the applicable drawings and this section of the specifications consisting of, but not necessarily limited to:

7.1.1.1 Installation of sanitary pipes, which includes the soil, waste, and vent pipe system, to be connected to the proposed septic tank.

7.1.1.2 Installation of new water distribution and pump system.

7.1.1.3 Leakage testing of the toilet flooring and sanitary pipe system.

7.1.1.4 Pressure and leakage testing of the water distribution and pump system.

7.1.1.5 Installation of plumbing fixtures, fittings, and accessories.

7.1.1.6 Construction of the Proposed Septic Tank, including Waterproofing of Inside Perimeter Wall and Slab Surfaces of Digestive and Leaching Chambers (surface preparation, application of 5 coats of cementitious waterproofing). Approved brand and quality of admixture for waterproofing shall be used.

7.1.1.7 Waterproofing of Toilets and 0.30m height on edge of interior wall and slab ledges (surface preparation, application of 5 coats of cementitious waterproofing). Approved brand and quality of admixture for waterproofing shall be used.

7.1.1.8 All additional work required to ensure the complete operation of the new plumbing system (sanitary, water supply, and pump systems) for the project. All work must comply with applicable laws of the Republic of the Philippines and local codes and ordinances.

7.1.2 All plumbing work and pipe sizes must adhere to the National Plumbing Code of the Philippines and local requirements and ordinances.

- 7.1.3 The Contractor must review all architectural, structural, and electrical plans, along with this specification. The Contractor is responsible for investigating all potential interferences and existing site conditions affecting the installation and operation of the new plumbing system.
- 7.1.4 The drawings detail the pipes, valves, and appliances for the project. Any items not specifically mentioned but necessary for the complete system, in accordance with best plumbing practices and to the satisfaction of the Engineer/Architect, must also be furnished and installed.

7.2 PLUMBING FIXTURES AND ACCESSORIES

- 7.2.1 All plumbing fixtures and accessories must conform to Philippine standards and meet the following specifications:

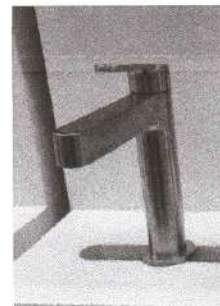
- 7.2.1.1 Water Closet Dual Flush, push button type w/ heavy duty stainless bidet faucet and complete accessories– 4/6 liters standard or equal water closet pan and cistern complete with heavy duty soft closing seat and cover. Approved type, quality, and brand.



- 7.2.1.2 Wall Hung Urinal- (L 480 mm x W 335 mm x H 745 mm) top inlet urinal water saving w/ button type flush valve 0.8Gpf manual shutoff and complete accessories (valve, etc.). Approved type, quality, and brand.



- 7.2.1.3 Rectangular Vessel Countertop Lavatory with manual shutoff single handle type faucet S304 stainless finish and complete accessories (valve, p-trap, etc.). Approved type, quality, and brand.



- 7.2.1.4 Wall Hung Lavatory with manual shutoff single handle type faucet S304 stainless finish and complete accessories (valve, p-trap, etc.). Approved type, quality, and brand.



- 7.2.1.5 20 mm Ø Hose Bibb should be a heavy-duty stainless S304 body with thread. Approved type, quality, and brand.



- 7.2.1.6 100 mm x 100 mm S304 Floor Drain: Approved type, quality, and brand.



7.3 SOIL, WASTE, DRAIN AND VENT PIPES

7.3.1 Installation

- 7.3.1.1 All sewer lines shall be pitched 6 mm per 300 mm (1/4" per foot) for soil pipes and no case flatter than 3 mm per 300 mm (1/8" per foot) for waste pipes.
- 7.3.1.2 Changes in pipe sizes for soil, waste, and drain lines must be made using reducing fittings or reducers. Changes in direction should use forty-five-degree (45°) wyes or long sweep bends, with sanitary tees permitted for vertical stacks. Short quarter bends or elbows may be used where the direction changes from horizontal to vertical, and on the discharge from the water closet.

7.3.2 Traps

- 7.3.2.1 Each plumbing fixture must have a separate, vented water-sealed trap installed as close to the fixture outlet as possible, but in no case at a distance greater than 600 millimeters. Traps shall be of the same diameter as the waste pipes from the fixtures which they shall serve; all traps shall have a water seal of at least 32 millimeters with a brass thumbscrew clean out at the bottom of the seal.

7.3.3 Vent

- 7.3.3.1 Vents shall be taken from the crown of the fixtures, except for water closet traps, in which case, the branch line shall be vented below the trap and above all small waste line inlets, so connected as to prevent obstructions. Each vent pipe shall run

separately above the fixtures into the adjacent soil pipes, not more than 1.50 meters. If more than this distance, the vent shall run independently through the roof.

7.3.3.2 A vent line shall, wherever practicable, be a direct extension of a soil or waste line.

7.3.3.3 Main vent risers at 4.5 meters or longer shall be connected at the foot with the main water or soil pipes below the lowest vent outlet with a forty-five-degree connection.

7.3.4 Pipes and fittings

7.3.4.1 Soil Waste Pipe – shall be Polyvinyl Chloride (PVC) pipes, Series 1000.

7.3.4.2 Vent Pipes – shall be Polyvinyl Chloride (PVC) pipes, Series 1000.

7.3.5 Joints and Connections

7.3.5.1 All joints shall be air and watertight.

7.3.5.2 PVC Pipes and Fittings – socket type with PVC solvent cement, elastomeric rubber O-ring gasket, or as per the Manufacturer's recommendations.

7.3.5.3 Dissimilar Pipes – Use adaptor fittings.

7.4 WATER DISTRIBUTION AND PUMP SYSTEM

7.4.1 Pipes and Fittings

7.4.1.1 Waterline pipes and fittings shall be Polypropylene Random Copolymer (PPR) PN20 pipes.

7.4.2 Installation

7.4.2.1 The piping shall be extended to all fixtures, outlets and equipment from the gate valves installed in the branch near the riser.

7.4.2.2 The water supply piping at each fixture shall be provided with a shutoff valve and union, whether indicated on the drawings or not, which will permit isolation and disconnection of each item without disturbing the remainder of the system.

7.4.2.3 All pipes shall be cut accurately to measure and shall be worked into place without springing or facing. Care shall be taken so as not to weaken the structural portions of the building.

7.4.2.4 Changes in sizes shall be made by reducing fittings.

7.4.3 Main Water Supply System

7.4.3.1 Water Flow Meter shall be 50 mm Ø, Heavy Duty 10bars Cast Iron Body, Dry dial Flange type with Flanges bolts nuts.



7.4.3.2 Gate Valve shall be 50 mm Ø Heavy Duty Brass Body Non-Rising Stem Gate Valve 200psi W.O.G., 125psi Saturated Steam Pressure – Threaded.



7.4.3.3 Check Valve shall be 50 mm Ø Heavy duty Brass Body Swing Check Valve 200psi W.O.G., 125psi Saturated Steam Pressure – Threaded Type



7.4.3.4 Gibault Joint for Steel Pipe and PVC shall be 50 mm Ø, Cast Iron Body.



7.4.3.5 G.I. Slip on Flange shall be 50 mm Ø, 150 lbs.



7.4.3.6 G.I. Nipple and Elbow shall be 50 mm Ø, S40 Commercial G.I. Pipe.



7.4.3.7 Provide Concrete Thrust Block specified and shown on the drawings.

7.4.3.8 Water Supply Line – shall be HDPE Blue Pipe SDR 11 PE100.



- 7.4.3.9 2" Ø x 2" Ø uPVC Saddle Clamp shall be used for connecting the existing water line supply to the proposed water line supply.

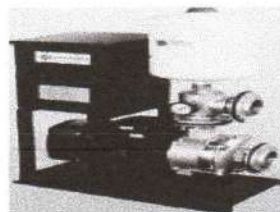


7.4.4 Pump Unit and Storage Tank

- 7.4.4.1 5.0 HP Water Transfer Pump, 1 (one) Stainless Steel Multi-Staged Centrifugal Pump, Pressure Transmitter, Pressure Switch, Pressure Gauge, Float Switch for Pump Dry-Running Prevention. 75 GPM against 33.5 m TDH, 3500 RPM, 220V, 3 Phase, 60 Hz, Stainless Steel S304 Casing, Impeller and Shaft Material.



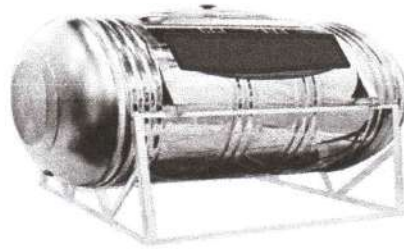
- 7.4.4.2 1.00 HP Inverter-Controlled Constant Pressure Pump (Contains 1VFD motor, stainless steel horizontal multi-staged centrifugal pump, baseplate, GI pipes & fittings, 2" Check Valve, 2" Gate Valve, Pressure Gauge, Pressure Switch, Pressure Transmitter, 3-L Diaphragm Pressure Tank, and an Inverter in a Control Panel-Standard Mechanical Seal)
- 7.4.4.3 2.00 HP Inverter-Controlled Constant Pressure Pump (Contains 1VFD motor, stainless steel horizontal multi-staged centrifugal pump, baseplate, GI pipes & fittings, 2" Check Valve, 2" Gate Valve, Pressure Gauge, Pressure Switch, Pressure Transmitter, 8-L Diaphragm Pressure Tank, and an Inverter in a Control Panel-Standard Mechanical Seal)



- 7.4.4.4 Water Holding Tanks: 1055 Gallons/4000 L S304 Stainless Steel Vertical Cylindrical Water Storage Tank (diameter = 1.83 m and total height = 2.37 m) with a stainless-steel float valve, durable steel stand and stainless-steel ladder.

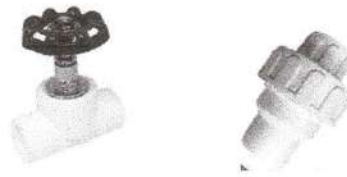


- 7.4.4.5 Elevated Water Tanks: 526 Gallons/2000 L S304 Stainless Steel Horizontal Cylindrical Water Storage Tank (diameter = 1.52 m, length = 1.93 m and height = 1.50 m) with a stainless-steel float valve, durable steel stand and stainless-steel ladder.

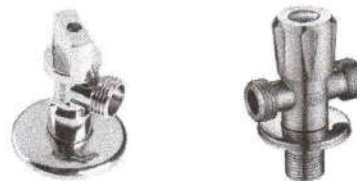


7.4.5 Valves

- 7.4.5.1 Gate Valves and Check Valves installed inside the building and on the pump rooms shall be Polypropylene Random Copolymer (PPR). Approved type, quality, and brand.



- 7.4.5.2 Angle Valve shall be heavy-duty stainless chrome plated valves (1-way and 2-way valve): Approved type, quality, and brand.



7.5 RAINWATER SYSTEM

7.5.1 Connections and Installation

- 7.5.1.1 Rainwater piping shall not be used as soil, waste, and vent pipes.
- 7.5.1.2 Rainwater piping installed in locations where they may be subjected to damage shall be protected.
- 7.5.1.3 Roof drains, overflow drains, and rainwater piping used in a building construction shall be previously tested and accepted in conformity with the provisions of this Code.

7.5.2 Materials

- 7.5.2.1 Rainwater downspout or conductor piping placed within the interior and exterior of the building shall be of PVC DWG Series 1000 or other approved materials.

7.5.2.2 Roof drain shall be made of stainless steel or other corrosion-resistant materials.

7.6 MISCELLANEOUS

7.6.1 Cleanout shall be PVC or Brass type, designed to be gas and watertight. They must allow for quick and easy plug removal to provide ample space for cleansing tools.

7.6.2 Cleanout shall be of the same size as the pipe.

7.6.3 The cleanout located inside the building shall be placed on the flooring level and provided with a brass cover. Additionally, use PVC cover for cleanout located outside the building.



Cleanout with Brass
Cover



Cleanout with PVC
Cover

7.7 DEFECTIVE WORK

7.7.1 If any defects are found during inspection or testing, the defective work or materials shall be replaced, and the test shall be repeated until satisfactory to the Project-In-Charge.

7.7.2 All repairs to the piping shall be made with new materials at the expense of the Contractor.

7.7.3 Caulking of screwed joints or holes will not be accepted.

7.8 PERFORMANCE TEST

7.8.1 The Contractor is responsible for testing all systems of the entire plumbing installation to ensure proper operational condition. These tests must be conducted in the presence of the Project-in-charge.

Section VII. Drawings

Please refer to the PDF file named “Drawings” in the folder “**Construction of COE Academic Building (Phase I)** ” at the TSU website: [**https://www.tsu.edu.ph/opportunities/bid-opportunities/2025-bid-opportunities/**](https://www.tsu.edu.ph/opportunities/bid-opportunities/2025-bid-opportunities/)

Section VIII. Bill of Quantities

1. General

- 1.1. The Bill of Quantities (BOQ) shall be read and construed in conjunction with the Conditions of Contract, Specifications, and Drawings and the Bidder shall provide the prices for the full scope of the work covered by the Contract. No claim for variations shall be considered on account of the Bidder's failure to comply with this provision.
- 1.2. Although the BOQ was prepared with due diligence, all quantities given therein shall be deemed to be estimated quantities and are not guaranteed to be actual and correct. The Bidder shall be deemed to have checked and verified the quantities in the preparation of his/her Bid. Any claim whatsoever for any positive variation in the actual quantities furnished versus the BOQ shall not be accepted, unless stipulated elsewhere in the Contract. Upon award of the Contract, the priced BOQ shall be used solely for evaluating work accomplishment payments due to the Contactor.
- 1.3. The Bidder shall check that each copy of the BOQ is complete in the number of pages and in the reproduction of each page.
- 1.4. The descriptions in the Bill of Quantities may not be complete and the Bidder must refer to the Specifications and Drawings.
- 1.5. The Bidder shall not change any description or specification, and remove or omit any of the item, or part of any of the item of the BOQ without the proper notification of the authorized person of TSU.
- 1.6. Prices shall be given in Philippine Peso taken to two decimal places. A comma shall be used to separate triple digits and a point or dot to separate the decimal portion (e.g., 1,355,076.45)
- 1.7. Identical work items occurring in separate sections shall not be priced at different rates, unless it is the deliberate intention.

2. Units

Symbol	Unit	Description
lot	lot	Although not a standard unit of measure, in this BOQ it shall be construed as a collection of all the materials (accessory, fitting, fixture, consumable, etc.) required for a particular scope of work
m ²	square meter	Area; it shall be construed as the coverage area or surface area
m ³	cubic meter	Volume
pc	piece	Used for discrete or countable materials
set	set	Although not a standard unit of measure, in this BOQ it shall be construed as the complete set of the major material component and its auxiliaries or accessories to be operational or functional

3. Rates

Rates and Prices shall be all inclusive, comprehensive, and include the following:

- 3.1. All obligations imposed by the Contract,
- 3.2. Complying in every respect with the requirements and the considerations of the Specifications and Drawings,
- 3.3. Labor for all scope of works and all associated costs,
- 3.4. Materials and goods and all associated costs,
- 3.5. Use of equipment and tools,
- 3.6. Any additional labor usually associated with measured items.
- 3.7. All necessary protection of the Works and removal of all temporary coverings and supports,
- 3.8. All utilities such as electricity, water, etc.,
- 3.9. Repair works on all damaged portions affected by the Works,
- 3.10. Cleaning of site, cleaning, and hauling of debris,
- 3.11. All safety and health aspects of the Works,
- 3.12. All required materials tests and its associated costs,
- 3.13. All applicable taxes, duties, charges, and relevant permits,
- 3.14. Overhead & profit.

4. Bidder's Priced Bill of Quantities

2. The Bidder shall present the detailed breakdown of the **Bid Price** using the form **Bill of Quantities** in PDF format which should be downloaded from the File Folder "**Construction COE Academic Building (Phase I)**" with the file name "**Bill of Quantities**", from the TSU website: <https://www.tsu.edu.ph/opportunities/bid-opportunities/2025-bid-opportunities/>
- 4.1. The Bidder shall provide the following information or data in the spaces provided
 - 4.1.1. [*Bidder's Letterhead*],
 - 4.1.2. [*Date*],
 - 4.1.3. [*Signature*],
 - 4.1.4. [*Name of Authorized Signatory*], and
 - 4.1.5. [*Title/Position of Authorized Signatory*].
- 4.2. The contents of the following columns shall not be altered or removed: Column Heading (column number)
 - 4.2.1. **Item No. (1)**,
 - 4.2.2. **Work Description (2)**

4.2.3. **Quantity. (5)**, and

4.2.4. **Unit (6)**.

4.3. For the rows with entries in the columns **5** and **6**, the Bidder shall provide the following prices, in Philippine peso, in the appropriate columns: Column Heading (column number)

4.3.1. **Direct Cost (7)** – the aggregate cost of materials, labor, and equipment utilization,

4.3.2. **Indirect Cost (8)** – the sum of overhead cost, contingency, miscellaneous, and profit,

4.3.3. **Total Direct & Indirect Cost (9)** – the sum of the values in columns **(7)** and **(8)**,

4.3.4. **Value Added Tax (10)** – the tax to be charged for the work item,

4.3.5. **Total Cost (11)** – the sum of the values in columns **(9)**, and **(10)**, and

4.4. The Sub-Total for every work cluster shall be the sum of all priced items included in that section.

4.5. The Total Bid Price shall be the sum of all the total cost for the priced work items and shall be stated in words and figures in the spaces provided at the bottom row of the table.

4.6. The Bid shall be deemed “**non-responsive**” if a price is required for a work item, but no price is indicated. Placing a zero (0) or a dash (-) in the cells that requires prices shall be interpreted to mean that the work item is being offered at no cost or for free by the Bidder.

4.7. The printed Priced BOQ shall be duly signed and all pages must bear the signature or initial of the authorized signatory of the Bidder.

5. Detailed Estimate

3. The specific costs (Material, Labor & Equipment, etc.) for the work items in the Priced BOQ shall be obtained from the detailed estimates using the form for **Detailed Unit Price Analysis**, in PDF format which should be downloaded from the File Folder “**Construction of COE Academic Building (Phase I)**” with the file name “**DUPA**”, from the TSU website: <https://www.tsu.edu.ph/opportunities/bid-opportunities/2025-bid-opportunities/>

5.1. The unit Man-Days used in the DUPA shall mean the number of days for one man to complete the task or for the number of men required to complete the task in one day (e.g., 8 Man-Days = 1 Man x 8 Days = 2 Men x 4 Days = 4 Men x 2 Days = 8 Men x 1 Day).

6. Bidder’s Responsibility

6.1. It shall be the responsibility of the Bidder to verify that the unit and quantity indicated in the DUPA for a particular work item are the same as those in the Bill of Quantities for the same work item.

Section IX. Checklist of Technical and Financial Documents

This Checklist of Technical and Financial Documents is provided to guide the Bidder in preparing his/her bid. The checklist may be used by the Bidder to verify if the Bid includes all the prescribed documents.

The Bidder, in submitting the required documents, must use the prescribed forms found in Section X. Bidding Forms. However, should a bidder choose to use a different formatting style for a required document, the bidder must ensure that the substance in the form given in Section X for that particular document is substantially captured in the equivalent document.

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

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

Technical Documents

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

Financial Documents

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

Class "B" Documents

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

II. FINANCIAL COMPONENT ENVELOPE

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

Other documentary requirements under RA No. 9184

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

Section X. Bidding Forms

TABLE OF CONTENTS

I. Eligibility and Technical Documents		
b.	Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid;	46
c.	Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules	47
e.	Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission <u>or</u> original copy of Notarized Bid Securing Declaration	48
	Organizational chart for the contract to be bid	49
	Note: There is no TSU prescribed form. The Bidder may follow any appropriate format. However, the required Key Personnel must be reflected in the Chart, and it shall be duly signed.	
f.	List of contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;	50
	List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be	52
g.	Original duly signed Omnibus Sworn Statement (OSS) <u>and</u> if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.	53
h.	The bidder's computation of Net Financial Contracting Capacity (NFCC).	55
II. Financial Documents		
j.	Financial Bid Form	56
k.	Bid Prices in the Bill of Quantities	
	Note: Bidder should download and use the Bill of Quantities in PDF format provided in the File Folder " Construction of COE Academic Building (Phase I) " with the file name " Bill of Quantities " from the TSU website: www.tsu.edu.ph .	
l.	Detailed estimates, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid.	
	Note: Bidder should download and use the Detailed Unit Price Analysis in PDF format provided in the File Folder " Construction of COE Academic Building (Phase I) " with the file name " DUPA " from the TSU website: www.tsu.edu.ph .	
m.	Cash Flow by quarter or payment schedule	
	Note: There is no TSU prescribed form. The Bidder may use any appropriate form which must be duly signed.	

[Bidder’s Letterhead]

[Date]

To: Tarlac State University
Re: Invitation to Bid No.

Statement Of Single Largest Completed Contract Similar To The Contract To Be Bid

Row 1: Name of Contract Row 2: Location	Contract Price	Row 1: Procuring Entity/Owner Row 2: Address Row 3: Contact Person/Tel. No.	Nature of Work	Contract Duration	Date of Award	Date Started	Date Completed

Attached herewith are the following documents: Contract Agreement, Notice of Award, Notice to Proceed, Certificate of Final Inspection, Certificate of Acceptance, and CPES (or equivalent performance evaluation rating), as evidence in support of the foregoing information.

I/We certify that the foregoing information and all the supporting documents are true and correct.

[Signature]
[Name of Bidder]

BID SECURING DECLARATION

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

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

To: Tarlac State University,
Romulo Blvd., San Vicente Tarlac City

I/We, the undersigned, declare that:

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

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

*[Insert NAME OF BIDDER OR ITS
AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant*

[Jurat]

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

[Bidder's Letterhead]

[Date]

To: Tarlac State University
Re: Invitation to Bid No.

We certify that, if the Contract covered by the aforementioned Invitation to Bid is awarded to [BIDDER], we shall employ the following persons to occupy the key positions of the workforce which shall be deployed to implement the project.

LIST OF KEY PERSONNEL		
Name	Position	Duties and Responsibilities
	Civil Engineer/Architect (Project In-charge)	
	Safety Officer II	
	Mechanical Engineer	
	Electrical Engineer	
	Foreman	
	Welder	
	Electrician	
	Plumber	

Attached herewith are the Curriculum Vitae of the above-named persons for your evaluation.

[Signature]
[Name of Bidder/Authorized Representative]

[Bidder's Letterhead]

[Date]

To: Tarlac State University
Re: Invitation to Bid No.

CURRICULUM VITAE OF KEY PERSONNEL

POSITION			NAME		
DATE OF BIRTH	HEIGHT	WEIGHT	SEX	CIVIL STATUS	NATIONALITY
PROFESSION			PRC ID NO.	DATE OF REGISTRATION	VALID UNTIL
HOME ADDRESS			CURRENT STATUS OF EMPLOYMENT		
			COMPANY/ ADDRESS		POSITION
RELEVANT WORK EXPERIENCE					
COMPANY/ADDRESS		POSITION	BRIEF JOB DESCRIPTION		INCLUSIVE DATES
RELEVANT TRAININGS					
TITLE OF TRAINING		INCLUSIVE DATES	PLACE	TRAINING PROVIDER	
EDUCATIONAL QUALIFICATIONS					
DEGREE EARNED (Please enumerate all; if not a college graduate, indicate highest level of education earned)			YEAR GRADUATED	NAME OF INSTITUTION	

I certify that the information furnished above are true and correct and that I have voluntarily furnished the foregoing information on my own free will.

I further certify that, if the Contract covered by the aforementioned Invitation to Bid is awarded to [BIDDER], I shall willingly assume the position of [POSITION] for the [BIDDER].

[Signature]
[Name of Prospective Key Personnel]

We certify that, if the Contract covered by the aforementioned Invitation to Bid is awarded to [BIDDER], we shall engage the services of [Name of Prospective Key Personnel] as the [POSITION] for the entire duration of the project covered by the Contract, in accordance with the law.

[Signature]
[Name of Bidder/Authorized Representative]
[Position or Title]

[Bidder’s Letterhead]

[Date]

To: Tarlac State University
Re: Invitation to Bid No.

We certify that, if the Contract covered by the aforementioned Invitation to Bid is awarded to [BIDDER], we shall provide and use the equipment listed below in the implementation of the project.

List of Major Equipment								
	Qty.	Model/Year Manufactured	Capacity/Size	Plate No. (if applicable)	Motor No./Body No. (if applicable)	Present Location	Condition	Mode of Acquisition (Owned or Leased)
1.								
2.								
4.								
6.								
7.								
8.								
9.								
10.								

Attached herewith are the *Certificate(s) of Registration, Official Receipt(s), and Lease Agreement(s)* for the aforementioned equipment.

[Signature]
[Name of Bidder or Authorized Representative]
[Position or Title]

OMNIBUS SWORN STATEMENT

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

AFFIDAVIT

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

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

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

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

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

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

[If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, **by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;**

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

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

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

[If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, Procurement Agent if engaged, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

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

[If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of [Name of Bidder] is related to the Head of the Procuring Entity, Procurement Agent if engaged, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC

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

7. *[Name of Bidder]* complies with existing labor laws and standards; and
8. *[Name of Bidder]* is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:
 - a. Carefully examining all of the Bidding Documents;
 - b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
 - c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
 - d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.
9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.
10. **In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.**

IN WITNESS WHEREOF, I have hereunto set my hand this ___ day of ___, 20__ at _____, Philippines.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]

[Insert signatory's legal capacity]
Affiant

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice] 73

[Bidder's Letterhead]

[Date]

To: Tarlac State University
Re: Invitation to Bid No.

NET FINANCIAL CONTRACTING CAPACITY

Based on our Income Tax Return and Audited Financial Statement for the Fiscal Year [YEAR], duly submitted to the Bureau of Internal Revenue, and which form part of our Bid, the summary of our firm's financial condition is as given below:

		Year [YEAR]
1.	Total Assets	
2.	Current Assets	
3.	Total Liabilities	
4.	Current Liabilities	
5.	Net Worth (1-3)	
6.	Net Working Capital (2-4)	

Based on theaforementioned data and the Value of Outstanding Works from the Statement of All Ongoing Government and Private Contracts, which also form part of our Bid, our Net Financial Contracting Capacity (NFCC) is:

NFCC = [(current asset minus current liabilities) (**15**)] minus [value of all outstanding or uncompleted portions of the projects under ongoing contracts including awarded contracts yet to be started coinciding with the contract to be bid].

NFCC =

I/We certify that the foregoing information and all of the supporting documents are true and correct. ⁷⁴

[Signature]
[Name of Bidder or Authorized Representative]
[Position or Title]

[Bidder's Letterhead]

[Date]

FINANCIAL BID FORM

Date : _____

Project Identification No. : _____

To: [name and address of Procuring Entity]

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

- a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project: [insert name of contract];
- b. We offer to execute the Works for this Contract in accordance with the PBDs;
- c. The total price of our Bid in words and figures, excluding any discounts offered below is: [insert information];
- d. The discounts offered and the methodology for their application are: [insert information];
- e. The total bid price includes the cost of all taxes, such as, but not limited to: [specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties], which are itemized herein and reflected in the detailed estimates,
- f. Our Bid shall be valid within the a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;
- g. If our Bid is accepted, we commit to obtain a Performance Security in the amount of [insert percentage amount] percent of the Contract Price for the due performance of the Contract, or a Performance Securing Declaration in lieu of the the allowable forms of Performance Security, subject to the terms and conditions of issued GPPB guidelines¹ for this purpose;
- h. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;
- i. We understand that this Bid, together with your written acceptance thereof⁷⁵ included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and
- j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.
- k. We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity].
- l. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Date: _____

¹ currently based on GPPB Resolution No. 09-2020