



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

Refurbishment of TSU Amphitheater

**With an Approved Budget for the Contract (ABC) of
Thirteen Million Four Hundred Fifty Nine Thousand Three
Hundred Ten and 66/100 Pesos (₱ 13,459,310.66)**

**Invitation to Bid No. Infra 03-006-2023
PhilGeps Reference No.: 9773627**

**July 2020
6th Edition**

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Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

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

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

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

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

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

GFI – Government Financial Institution.

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

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

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

GOP – Government of the Philippines.

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

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

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

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid



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

Refurbishment of TSU Amphitheater

Invitation to Bid No. Infra 03-006-2023

1. The Tarlac State University, through Special Budget (SB) 2023 intends to apply the sum of **Thirteen Million Four Hundred Fifty Nine Thousand Three Ten and 66/100 Pesos (₱ 13,459,310.66)** to payments under the contract for the project: **Refurbishment of TSU Amphitheater**.

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 **one hundred eighty (180) 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 **May 23, 2023** 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: bacsec@tsu.edu.ph

5. A complete set of Bidding Documents may be acquired by interested Bidders from **May 23, 2023 to June 13, 2023** 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 **₱ 10,000.00**.

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 **May 30, 2023 (10:00 A.M.)** at the Business Center Audio-Visual Room, 2nd Floor, Business Center Bldg., Tarlac State University, Romulo Blvd., San Vicente, Tarlac City which shall be open to prospective bidders.
7. Bids must be duly received by the BAC Secretariat at the address below on or before **June 13, 2023 (10:00 A.M.)**. Late bids 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: bacsec@tsu.edu.ph

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 **June 13, 2023, at 10:00 A.M.**, at the Business Center Audio-Visual Room, 2nd Floor, Business Center Bldg., 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 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.
11. For further information, please refer to:

Ms. Jhenna Micah A. Manankil / Mr. Joshua Jonathan S. Jacinto
BAC Secretariat
Motorpool and Administration Building
Tarlac State University
Romulo Blvd., San Vicente, Tarlac City
Tel. No. (045) 606-8142 / 0998 846 0206
Email: bacsec@tsu.edu.ph

(SGD) DR. MURPHY P. MOHAMMED
BAC Chairperson

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, **Tarlac State University** invites Bids for the project: **Refurbishment of TSU Amphitheater**, with Project Identification Number: **Invitation to Bid No. Infra 03-006-2023**.

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 **2023** in the amount of **₱ 13,459,310.66**.

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 **October 11, 2023**. 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 or renovation of a building.		
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	
	Project Engineer/ Architect	<ul style="list-style-type: none"> • Must be a licensed Civil Engineer/Architect. • With at least 3 years of experience in construction project supervision 	
	Safety Officer	<ul style="list-style-type: none"> • DOLE accredited Construction Occupation Safety Officer • With at least 2 years of experience as a Safety Officer in construction projects. 	
	Foreman	<ul style="list-style-type: none"> • With at least 5 years of experience as Foreman in building construction project 	
10.5	The minimum major equipment requirements are the following:		
	Equipment	Min. Capacity	Min. Quantity
	Drop Side Truck	2 tons	1
	Concrete Mixer	1 Bagger	1
	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	<p>The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts:</p> <ol style="list-style-type: none"> 1. The amount of not less than ₱ 269,186.21 (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 ₱ 672,965.53 (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	<p>The winning bidder shall submit the following documents, which shall form part of the Contract documents:</p> <ol style="list-style-type: none"> 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 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 three percent (3 %) 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

Section IV – Technical Specifications

SECTION 1 – GENERAL REQUIREMENTS

1.1 SCOPE OF WORK

- 1.1.1 The project shall comprise the complete **REFURBISHMENT OF TSU AMPHITHEATER** which shall include the supervision and furnishing of labor, supplies, materials, equipment, and other incidental services that are essential to properly implement and produce the desired work output.
- 1.1.2 The inclusion of the gender perspective in the planning stage was taken into consideration. Observation and analysis in the planning process turned understanding into patterns of behavior; involvement and participation in the activities of men and women; and how the language of space can promote equality between them to ensure effectivity and efficiency of the building design. The identified differences between the roles of men and women demand various design approaches. It, therefore, provides an answer to how gender issues should be addressed in the project.

1.2 CONTRACT DRAWINGS

- 1.2.1 Details and extent of the work are shown in the Drawings accompanying these Specifications.
- 1.2.2 Sketches and other details not shown in the Drawings shall be furnished by the Architect/Engineer at the appropriate phases of construction.

1.3 PARTS OF THE SPECIFICATIONS

- 1.3.1 These Specifications include the following parts whose applicable provisions are binding on this contract:

Section	Description
1	GENERAL REQUIREMENTS
2	DEMOLITION, CLEANING, HAULING, DISPOSAL, AND REPAIR WORKS
3	STRUCTURAL WORKS
4	ARCHITECTURAL WORKS
5	ELECTRICAL WORKS
6	PLUMBING WORKS
7	FURNISHINGS

- 1.3.2 These Specifications are intended to supplement the provisions of the General Building Code in order to provide the proper construction. In the case of difference between plans and specifications, these specifications shall govern. It is the duty of the Contractor to examine both carefully, compare and verify dimensions and data furnished by the 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.

1.4 WORKMANSHIP

- 1.4.1 All operations required under any parts of the work shall be undertaken in a neat, workmanlike manner. Only skilled personnel with sufficient experience in similar operations shall be allowed to undertake the same.

1.5 INSPECTION OF SITE

1.5.1 The Bid may be deemed to have been based on data regarding the physical conditions at the site. As the Contractor acknowledges and warrants that he/she has inspected and examined the site and its surroundings and was fully appraised, by the submission of his/her Bid, as to the nature of the work and materials necessary for the completion of the works, and the means of access to the site, the accommodation he/she may require, and that he/she has obtained all the necessary information as to the risks, contingencies, and other circumstances which may have influenced or affected his/her Bid. No increase in cost or extension of time will be considered for failure to inspect and examine the site conditions.

1.6 VARIATIONS

1.6.1 The Architect/Engineer reserves the right to make variations in the details of work or materials as it may deem fit. These changes may include revisions or modifications of shapes and dimensions of elements that may involve additional expenses to the Contractor that shall be covered by appropriate Variation Orders.

1.7 CONFLICT BETWEEN DRAWINGS AND SPECIFICATIONS

1.7.1 Should there be any conflict between notations on the Drawings and provisions in these Specifications, the same shall be referred to the Architect/Engineer of TSU for resolution.

1.7.2 Any omission in the specifications of work or works to be undertaken but necessary for the completion of work shall be undertaken by the Contractor as if indicated on the Drawings, without extra compensation. Such works shall be done in the usual manner as required as to the quality of both materials and workmanship.

1.8 REJECTIONS

1.8.1 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 has done and is not of the quality required by reasonable interpretation of the Drawings and these Specifications shall be torn down or removed immediately and rebuild or otherwise remedy such work in accordance with the requirements of the drawings and specifications.

1.9 ESTABLISHED GRADE LINE

1.9.1 The contractor shall inspect and examine the individual site conditions. No increase in cost or extension of time will be considered for failure to examine site condition. Control points and elevations will be furnished by the TSU and the Contractor shall be responsible for all other surveys and measurements required to accurately complete the work. Unless otherwise indicated by the TSU.

1.10 AS-BUILT DRAWINGS AND PICTURES

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

1.10.2 The Contractor shall submit to the TSU 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 a 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.).

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

1.11 PERMITS

1.11.1 It shall be the responsibility of the Contractor to secure all permits of every description required to initiate and complete the work under this Contract, except permits obtained by the TSU. The Contractor shall be responsible for complying with all the requirements for the processing and approval of all relevant and necessary permits, including those to be obtained by TSU (i.e. Building Permit, Occupancy Permit, DENR Permit, etc.).

1.12 MOBILIZATION AND DEMOBILIZATION

1.12.1 Upon receipt and acceptance of the Notice to Proceed, the Contractor shall immediately mobilize the workforce, equipment, and materials, and take possession and secure the project site.

1.12.2 Upon final completion of the work, the Contractor shall commence the demobilization of the workforce, equipment, and materials and turn over the project site to TSU.

1.13 BILLBOARD

1.13.1 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 the TSU, and of the dimensions and materials approved by the TSU.

1.14 TEMPORARY FACILITIES

1.14.1 Upon possession of the project site, the Contractor shall immediately erect temporary facilities such as a field office, storage for equipment and materials, latrines, electric and water supply connections, etc., at the location designated by, and using only materials and the manner of construction approved by the 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 comply with the Construction Safety Guidelines for the Infrastructure Projects During the COVID-19 Public Health Crisis based on the Revised Omnibus Guidelines on the Implementation of Community Quarantine in the Philippines by the Inter-Agency Task Force for the management of Emerging Infectious Diseases (IATF) granted authority to the Department of Public Works and Highways (DPWH) to issue Construction Safety Guidelines for allowed government and private construction projects.

1.15.5 The Contractor shall establish and implement safety procedures for all relevant jobs, tasks, and operations.

1.15.6 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.

1.15.7 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 barricades with standard height and stable framing within the construction site as indicated in the plan: do not use "**Blue Sack**".

- 1.15.8 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.
- 1.15.9 The Contractor shall keep a record of all incidents (near-miss or accident) and report the same to the TSU Architect/Engineer.

SECTION 2 – DEMOLITION, CLEANING, HAULING, DISPOSAL, AND REPAIR WORKS

2.1 PREVENTION OF DAMAGE TO ADJOINING PROPERTY

- 2.1.1 The Contractor shall exercise all care to protect and maintain adjacent properties, trees, materials, and other facilities such as conduits, drains, sewers, pipes, and other wires that are to remain in the property and shall restore without cost to TSU all property that may be damaged for whatever reason in the execution of the work.
- 2.1.2 The Contractor shall demolish and repair all the affected areas/structures during construction.

2.2 HAULING AND DISPOSAL

- 2.2.1 All unusable materials and debris resulting from the performance of work shall be removed from the premises and disposed of in the location and manner that shall be approved by TSU. All materials that can be reused shall be hauled and arranged properly by the Contractor before turning them over to TSU.

2.3 SOIL AND WOOD TREATMENT WITH TERMITE

- 2.3.1 **TREATMENT APPLICATION REPORT:** After the application of termiticide is completed, submit a report to the Architect/Engineer of TSU and include the following:

- 2.3.1.1 Date and time of application
- 2.3.1.2 Termiticide brand name and manufacturer
- 2.3.1.3 Quantity of undiluted termiticide used.
- 2.3.1.4 Dilutions, methods, volumes used, and rates of application.
- 2.3.1.5 Areas of application
- 2.3.1.6 Water source for the application
- 2.3.1.7 Moisture content of soil before application in case of soil treatment

2.3.2 PROJECT CONDITIONS

- 2.3.2.1 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.
- 2.3.2.2 Coordinate soil treatment application with excavating, filling, grading, and concreting operations. Treat soil under footings, grade beams, and ground supported slabs before construction.
- 2.3.2.3 Apply wood treatment after framing, sheathing, and exterior weather protection is completed but before electrical and mechanical systems are installed.

2.3.3 QUALITY ASSURANCE

- 2.3.3.1 **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.

2.3.4 WARRANTY

- 2.3.4.1 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.

2.3.5 EXECUTION.

- 2.3.5.1 Examine substrates, areas, and conditions, with 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.
- 2.3.5.2 Proceed with the application only after unsatisfactory conditions have been corrected.

2.3.6 PREPARATION

- 2.3.6.1 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.
- 2.3.6.2 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.
- 2.3.6.3 Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

2.3.7 APPLYING SOIL TREATMENT

- 2.3.7.1 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.
- 2.3.7.2 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.
- 2.3.7.3 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.
- 2.3.7.4 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.
- 2.3.7.5 Masonry: Treat voids.
- 2.3.7.6 Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.

- 2.3.7.7 Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.
- 2.3.7.8 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.
- 2.3.7.9 Post warning signs in areas of application.
- 2.3.7.10 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 termiticide and fungicide solution into the soil along the concrete base of the building to link up the termiticide barrier made on the concrete external wall of the building.

2.3.8 WOOD DRENCHING

- 2.3.8.1 Wood drenching directly spray on infested areas of all wooden structures/fixtures, ceiling, beams, floor, partition walls, cracks, built-in cabinets, shelves, and crevices other possible entry of termites using proven and highly effective termiticide solution to control surface infestation and help minimize further structure damage.

2.3.9 TERMITE ABATEMENT MAINTENANCE PROGRAM

- 2.3.9.1 Termite abatement is accomplished by dusting of trophallaxis method, treatment of any sign of infestation using prove and highly effective termiticide solution. Conduct a thorough termite inspection consisting of careful visual observation and checking of all accessible areas for the presence of mud tubes, cast off wings, discolored or decayed wood including door jambs, electrical outlets, panelboards, double walling, and cabinets.

2.3.10 MOUND DEMOLITION

- 2.3.10.1 Termite mound are the homes of subterranean termites where the termite queen lives and lay eggs. Search for these termite mound within the premises/ surroundings by tearing it down gradually to expose the galleries/colonies and to exterminate/capture the termite members ranging from queen, king, soldiers and workers termites, spray with same chemicals to the point of saturation. Rod injection could also be used through the mound up to the depth of about 30cm from where excavation of mounds is not permitted or advisable to avoid landscape/garden/lawn destruction and soil erosion from original landscaping design or image.

2.3.11 RESTORATION

- 2.3.11.1 Patching the drilled holes with the appropriate colors of cement after it has been applied with chemicals to be more effective and ensure maximum long period of time.

2.3.12 DRILLING

- 2.3.12.1 Drill applied termiticide solution at the base of infested wooden door jamb, wood piers that have direct contact to the soil at the ground floor area with ordinary flooring only and, if applicable portion if not all. May require selective drilling ¾" in diameter holes and inject termiticide solution at the rate of two (2) liters per hole.

2.3.13 CHEMICALS TO BE USED

- 2.3.13.1 Should be duly registered by **BUREAU OF FOOD AND DRUGS (BFAD)** friendly Environmental Chemical.
- 2.3.13.2 Certified of product registration and brochure, including material safety data sheet (MSDS).

SECTION 3 – STRUCTURAL WORKS

3.1 TOPSOIL STRIPPING AND STOCKPILING OF EXCAVATED MATERIALS

- 3.1.1 Prior to the excavation and embankment work, topsoil shall be stripped from the affected areas and care shall be taken to avoid contamination of the topsoil and underlying soil.
- 3.1.2 The stripped topsoil shall be stockpiled on site for the subsequent use as topsoil for the embankment.
- 3.1.3 Stockpile excavated material that is suitable for use as backfill until material is needed.
- 3.1.4 Stockpile all materials without intermixing. Place, grade, and shape stockpiles to drain surface water.
- 3.1.5 Stockpile soil materials away from edge of excavations. Do not stockpile materials near or over existing facilities, adjacent property, or completed work, if weight of stockpiled material could induce excessive settlement.
- 3.1.6 Confine material storage to within the Limits of Work and approved work areas. Do not obstruct roads or streets.
- 3.1.7 Do not stockpile excavated material adjacent to trenches and other excavations unless excavation side slopes and excavation support systems are designed, constructed, and maintained for stockpile loads.

3.2 EXCAVATION

- 3.2.1 The Contractor shall excavate to 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.
- 3.2.2 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.
- 3.2.3 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.
- 3.2.4 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.

3.3 EMBANKMENT

- 3.3.1 Embankment shall be constructed of suitable materials placed on successive layers not greater than 150 mm in depth, 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.
- 3.3.2 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 of Section 2.4.1. The exposed reinforcing steel from concrete shall be cut and removed.
- 3.3.3 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.

3.4 MATERIALS

- 3.4.1 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 sides of the forms of the member for which the concrete is to be used not larger than three-fourths (3/4) of the minimum clear spacing between individual reinforcing bars and in no case larger than two (2) inches in diameter.

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

Diameter	Grade
10 mm & above	G40 (276) MPa

3.4.3 Sand and gravel shall be well-graded and free from any deleterious materials. The fine aggregate shall be washed sand and size of course aggregates must be ¾” crushed gravel.

3.4.4 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 has 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.

3.4.5 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 so as to maintain position and shape.

3.4.6 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.

3.4.7 Unless otherwise ordered, forms and shoring shall not be disturbed and shall remain in place for a minimum period of time in accordance with the following schedule.

Foundation	1 day
Walls and Columns	2 days
Beams	14 days

3.5 CONCRETE WORK

3.5.1 Before placing reinforcement and before pouring concrete, remove all loose rusts, mill, scale, oil or other adhering materials which tend to reduce or destroy bond between concrete and reinforcement.

3.5.2 Reinforcing steel bars shall be cut, bent, lapped, or spliced as recommended by 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 standard 90° hook on one end and 135° seismic hook on the other end. Consecutive cross ties with 90° and 135° hook ends shall be alternated.

3.5.3 Reinforcing steel bars shall be placed accurately and secured in place by use of concrete or metal supports, spacer or ties to firmly hold them in their proper positions during pouring and setting of concrete.

3.5.4 All reinforcing bars shall be cleaned thoroughly of all loose rust, soil or other material prior to 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.

3.5.5 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	40 mm

Above Grade	Walls	20mm
Slab on Grade		40 mm

3.5.6 Testing of Deformed 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.

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

3.6 CONCRETE PROPORTION AND CONSISTENCY

3.6.1 CLASSES OF CONCRETE

3.6.1.1 Unless otherwise indicated in the plans, the minimum 28th-day 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 Walls	3,000 psi	¾ in.	4 in.
Columns and Pedestals	3,000 psi	¾ in.	4 in.
Beams and Girders	3,000 psi	¾ in.	4 in.
Suspended Slabs	3,000 psi	¾ in.	4 in.
Slab on Grade	3,000 psi	¾ in.	4 in.
Non-Structural Elements	2,500 psi	¾ in.	4 in.

3.6.2 MEASUREMENT

3.6.2.1 The unit of measure shall be the cubic foot. One bag of cement (188 lbs.) shall be considered as one cubic foot. Water shall be so measured as to insure 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.

3.6.3 MIXING OF CONCRETE

3.6.3.1 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 of having a capacity of one cubic yard or less; for a mixer with a larger capacity, the minimum time shall be increased 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 200 feet 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 the concrete in the 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.

3.6.4 CONVEYING AND PLACING OF CONCRETE

3.6.4.1 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.

- 3.6.4.2 Concrete shall be conveyed from the mixer to forms as rapidly as practicable, by a method that 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 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.
- 3.6.4.3 Dumping concrete into cars or buggies with a free fall or more than three (3) feet will 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 maintain the surface of the concrete as nearly level as possible at all times.
- 3.6.4.4 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.
- 3.6.4.5 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.

3.7 CURING

- 3.7.1 All concrete shall be moist cured for a period of 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 with water, by continuously spraying, or by covering with burlap or other approved materials thoroughly saturated with water and keeping the covering wet by spraying or intermittent housing. Water for curing shall be free from any elements which might cause objectionable staining or discoloration of concrete.

3.8 REPAIR OF CONCRETE

3.8.1 Imperfections

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

- 3.8.1.2 Voids which 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.

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

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

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

3.9 CONCRETE SLAB ON FILL

3.9.1 Concrete slabs on fill shall be laid on a prepared foundation consisting of a subgrade and granular fill with thickness equal to the thickness of overlaying slab except as indicated otherwise. Subgrade shall be rolled, rammed, or tamped layer by layer to a thoroughly compacted foundation. Granular fill shall consist of sound gravel, well grade 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 fill on general storage area and platform shall not be less than 6" thick and all other areas will not be less than 4" thick.

3.10 CEMENT FINISH FOR CONCRETE SURFACES

3.10.1 All concrete surfaces shall be given a finish done and applied in accordance with the following provisions.

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 effectivity elaborate, all lines, projections and marks impressed by the lumber for wood forms, to the general plan of the concrete surface.

3.10.1.2 Rubbed Finished: Unless otherwise specified, a rubbed finished 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.

3.11 CONCRETE FLOORS AND SLABS

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

3.12 INSPECTION

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

3.13 TEST OF CONCRETE

3.13.1 Reasonable number of tests on the concrete may be required by the TSU Engineer/Architect during the progress of the work. Not less than four (4) cylindrical specimens shall be made or each test of which at least two (2) shall be reserved for the 28 days test. Samples shall be secured and molded in accordance with "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

- 3.13.2 To conform to the requirements of this Specifications the average strength of test samples representing each class of concrete shall be equal to or greater than the specified strength and not more than the one strength test in 10 shall have an average value less than 90 percent of the specified strength.

3.14 FAILURE OF TEST SAMPLES

- 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 that 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.
- 3.14.2 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.
- 3.14.3 Should the tests fail to give the required strength, the Engineer TSU shall have the right to order a change in the proportions or in the procedure or curing of the concrete for the rest of the structure.

3.15 STRUCTURAL JOINING WORKS

- 3.15.1 HILTI HIT-RE 500 V3 adhesive shall be used for the structural joining of all steel reinforcements or threaded anchor rods and inserts into existing concrete. Use injectable adhesive exclusively for structural application – rebar connections and heavy anchoring. Only injection tools and static mixing nozzles as recommended by the manufacturer shall be used. The manufacturer's instructions shall be followed. Injection adhesive shall be formulated to include resin and hardener to provide optimal curing speed as well as high strength and stiffness.
- 3.15.2 Concrete Adhesive shall conform to concrete strength limitations for design in accordance with ACI 318.
- 3.15.3 The drilling of holes and application of injectable adhesive for the embedment and anchorage of the dowels grout shall only be done by qualified operators, using only the approved tools and materials, and following the proper procedures for such works.
- 3.15.4 Non-Shrink Grout shall be shrinkage compensated properties in both the plastic and hardened states, multiple fluidities with a single component, good bond to concrete, non-metallic, will not stain or rust, blend of shrinkage-reducing and plasticizing/water-reducing agents, superior freeze/thaw resistance, resistant to oil and water, excellent for pumping; does not segregate, even at high flow, and no build-up on equipment hopper. Use 6,000 psi compressive strength.

SECTION 4 – ARCHITECTURAL WORKS

4.1 MASONRY WORKS

4.1.1 MATERIALS

- 4.1.1.1 All masonry units shall be of approved quality, sound, and free from cracks and other imperfections.

- 4.1.1.2 Non-load Bearing Concrete Hollow blocks shall be used with a minimum compressive strength of 500 psi. The method of sampling for the quality test shall be one (1) quality test for every 10,000 units or fraction thereof, with three (3) specimens for the compression test.
- 4.1.1.3 Reinforcing steel bars shall conform to ASTM Designation A-615-68 specifications for the structural grade.
- 4.1.1.4 Concrete Aggregates – Shall conform to “Specifications for Aggregates” (ASTM G33 latest revision). Sand and gravel shall be well-graded and free from any deleterious materials. Sand and gravel shall be washed and crushed, respectively.
- 4.1.1.5 Cement and aggregates shall be stored in a manner to prevent their deterioration or the intrusion of foreign matter. Materials of deteriorated quality that 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.

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
125 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.

4.1.3 WORKMANSHIP

- 4.1.3.1 CHB’s 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 the Engineer.

4.2 ROOFING WORKS

4.2.1 MATERIAL

- 4.2.1.1 All materials intended to be used by the Contractor for the roof cover works shall be subject to the Engineer's/Architect's checking and approval of material quality, design, color, thickness, and size prior to supply and installation. All items supplied shall be free from cracks, chipped edges or corners, or other damages. Storage and safety precautions shall be taken to avoid damage to the accessories.
- 4.2.1.2 Roof sheets shall be approved pre-painted long span Rib-type 0.50 mm thick.
- 4.2.1.3 Flashings and gutters shall be approved pre-painted.
- 4.2.1.4 Use approved PE Foam Double Sided Insulation with welded wire #21.
- 4.2.1.5 All metallic fasteners and fixing accessories shall be corrosion proof and non-metallic fasteners shall be of neoprene.
- 4.2.1.6 Concrete gutter shall be cementitious waterproofing along the side of the roof slab with coated latex paints.
- 4.2.1.7 The 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.
- 4.2.1.8 Flashings and gutters shall lap at least 20 cm over the roofing sheets.
- 4.2.1.9 The intersection of all roofs with vertical walls shall be flashed not less than 20 cm high and all connections shall be made watertight.
- 4.2.1.10 PE Foam Insulation must be placed between the roof sheets and purlins with welded wire mesh #21 support underneath.

4.3 STEELWORKS

4.3.1 REQUIREMENTS

- 4.3.1.1 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 knot shown or specified shall be included, such as miscellaneous bolts and anchor supports, braces and connections, etc.
- 4.3.1.2 Shop drawings, as well as erection drawings, shall be submitted by the Contractor for approval by the TSU Engineer/Architect before any fabrication is made.
- 4.3.1.3 Shop drawings giving complete information necessary for the fabrication of the parts of the structures, including the location, type, and size of all rivet's bolts and welds, shall clearly distinguish between shop and field rivets bolts and welds.
- 4.3.1.4 Shop drawings shall be made in conformity with the best modern practice and with due regard to speed and economy in fabrication.

4.3.2 MATERIALS

- 4.3.2.1 All materials shall conform to that listed below unless noted otherwise on the drawings.
 - 4.3.2.1.1 All structural steel shapes and plates shall be at least commercial type.

- 4.3.2.1.2 All steel pipe and pipe columns shall be at least commercial type.
- 4.3.2.1.3 All structural steel tubing shall be at least commercial type.
- 4.3.2.1.4 All stainless-steel pipes shall be at least commercial type.
- 4.3.2.1.5 Anchor bolts embedded in concrete or concrete masonry shall conform to ASTM A36.
- 4.3.2.1.6 All nuts shall conform to A563, Grade A, for A307 or A36 bolts. Nuts for A325 and A490 bolts shall conform to A563, Grade DH, heavy hex, or A194, Grade ZH, heavy hex.
- 4.3.2.1.7 Galvanized Perforated Metal Round Hole Staggered Sheet shall be 1.20m x 2.40m x 2.0 mm thick and at least commercial type.



- 4.3.2.1.8 Welding electrodes shall be E70XX.

4.3.3 FABRICATION

- 4.3.3.1 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 the workmanship within the allowable tolerance prescribed in the AISC Specifications.

4.3.4 WELDING

- 4.3.4.1 The technique, appearance, and quality of welds and the methods of correcting defective work shall conform to the American Welding Society in building construction. Welding in the shop and field shall be done only by certified operators to perform the work required as shown in the approved drawings. Surfaces to be welded shall be free from the loose side, rust, grease, paint, and other foreign materials.
- 4.3.4.2 Temporary weld and assembly attachments shall be kept to a minimum. All temporary attachments that are welded shall be removed by a flame torch above the parent metal surface and ground to a smooth surface by power grinding.
- 4.3.4.3 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.
- 4.3.4.4 A note shall be made on the plans and on the shop drawings of those joints or groups of joints in which it is especially important that the welding sequence and techniques of welding be carefully controlled to minimize welding under restraint and to avoid undue distortion. Weld strength called on the plans and the shop drawings shall be made net effective lengths.

- 4.3.4.5 Welding symbols used on the plans and shop drawings shall preferably be the American Welding Society Symbols. Other adequate welding symbols may be used, provided a complete explanation thereof is shown on the plans or drawings.

4.3.5 CONNECTIONS AND HOLES

- 4.3.5.1 Connections shall be as shown in the drawings and shall develop the full capacity of the member.
- 4.3.5.2 Surfaces or joints prepared for welded or anchor bolt connection shall with the cleanliness requirements of all joint surfaces and contact surfaces within friction types joints as specified in Section 3, "Bolted Parts of the AISC Specifications".
- 4.3.5.3 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 burst resulting from drilling or roaming operations shall be removed with a tool that reaches 1/16" (1.588mm) level around the bolt holes.

4.3.6 QUALITY CONTROL PROCEDURES

- 4.3.6.1 Shall be practiced by the Fabricator to assure high quality in the work. In addition to the fabricator's quality control procedures, materials and workmanship shall be subject to inspection by the qualified Engineer/Architect representing the TSU. The fabricator shall cooperate harmoniously with the Engineer/Architect to avoid interruption in the work when the correction will be needed.

4.3.7 REJECTIONS

- 4.3.7.1 Materials or workmanship not in reasonable conformance with the provisions of these specifications shall be rejected at any time during the progress of the work.
- 4.3.7.2 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 has been done and is not of the quality required by the reasonable interpretation of the plans and specifications shall be torn down or removed immediately and rebuilt or otherwise remedy such work in accord with the requirements of the plans and specifications.
- 4.3.7.3 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.
- 4.3.7.4 Final inspection by the Engineer/Architect of the TSU must be done before any delivery of the fabricated structural steel frames, members, and accessories are made upon the advice of the Contractor.
- 4.3.7.5 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.

4.3.8 ERECTION

- 4.3.8.1 The steel structures shall be erected plumb and true line and grade. Bracing and supports shall be introduced whenever necessary to take care of all the loads to which

the structure may be subjected. Such bracings shall be left in the places as long as may be received for safety.

- 4.3.8.2 Base plates shall be supported on steel wedges on shims until the supported member shall have been lined and plumb, following which the entire bearing area shall be grouted solid with non-shrink cement grout. Grouting mortar shall be of the commercial type approved by the TSU Engineer/Architect and the method of use shall be recommended by the manufacturer.

4.3.9 MARKING

- 4.3.9.1 Shop fabricated members shall be marked prior to 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 enamel paint.

4.3.10 SHOP PAINTING

- 4.3.10.1 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 prior to 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 which shall be field welded or connected shall not be painted.

4.3.11 FIELD PAINTING

- 4.3.11.1 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.

4.4 CEILING AND CLADDING WORKS

4.4.1 SUBMITTAL

- 4.4.1.1 Submit product information from manufacturers for each type of product specified to include brochures, catalogs, samples, and certificates of test reports, quality compliance, and accreditation from the foreign manufacturer for the authenticity of locally distributed materials.

4.4.2 DELIVERY, STORAGE, AND HANDLING

- 4.4.2.1 Deliver materials in manufacturer's original unopened packages clearly marked with identifying information. Protect materials as recommended by the manufacturer.
- 4.4.2.2 Store materials, keep 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.

4.4.3 MATERIALS

- 4.4.3.1 Fiber cement board shall be 4.5mm thick, 1220 mm in width 2440 mm in length, non-combustible, high strength, fine finish, sound and heat insulator, waterproof, and easy to install.
- 4.4.3.2 12mm thick. Gypsum Board Ceiling. Approved brand and quality.

- 4.4.3.3 12mm thick. Perforated Gypsum Board Ceiling. Approved brand and quality.
- 4.4.3.4 8.0mm thick. Decorative PVC Panel Ceiling. Approved brand and quality.
- 4.4.3.5 Main Tee Runner (Baked White) shall be 0.30 mm thick x 32 mm spaced at 600 mm (max.) on both ways.
- 4.4.3.6 Tee Runner (Baked White) shall be 0.30 mm thick x 25 mm spaced at 600 mm (max.) on both ways.
- 4.4.3.7 Wall Angle (Baked White) shall be 0.40 mm thick 22 x 22 mm.
- 4.4.3.8 Metal Furring Channel shall be 0.60mm thick x 19mm x 50mm spaced at 600mm (max.) on both ways.
- 4.4.3.9 All metal angle bar, attached to slab/roof framing by a suspension clip and 6 mm diameter hanger rod joiner spaced at 1200 mm (max.) on both ways.
- 4.4.3.10 Complete with screws, accessories, and 0.40 mm x 25 mm x 25 mm corner bid Ceiling Framing System, double U-clip, G.I. Wires #16, and complete accessories.
- 4.4.3.11 Adhesives for joint, fillers, and fastener concealment shall be of the types recommended in writing by the board manufacturer and as approved for the following uses:
 - 4.4.3.11.1 Embedding compounds for first and second coats.
 - 4.4.3.11.2 Finishing compound for +the final coat.
- 4.4.3.12 Aluminum Composite Panel (ACP) shall be Weather-resistant; ultraviolet (UV) resistant acid and alkali resistant light weight, good strength dust easy to clean, easily to be processed and installed. ACP shall be plumbed and leveled accurately. Approved brand, type, and quality.

4.4.4 INSTALLATION

- 4.4.4.1 Ceiling framing systems: Framing for furred ceilings shall be installed at the locations indicated and shall conform to the standards.
- 4.4.4.2 Suspended ceilings: Ceiling framing shall consist of 38mm steel main runner channels suspended plumb from structural slab or frame by hanger wires or straps, spaced at not less than 1.20m on center. Hanger wires shall be wrapped around the reinforcing bars, of the supporting concrete-slab construction with twists before concrete is placed or shall be shaped into 100mm diameter loops and embedded at least 50mm in the concrete or shall be attached to approve inserts. Hanger wires shall be looped around the bottom chord of the open-web steel joist and shall receive three full turns around itself, or around structural steel members, or to attached beam clamps and shall receive three full turns around itself. The hanger Strap shall be hung plumb and connected with 10mm galvanized bolts and nuts to anchors made of hanger strap set in the concrete or shall be looped around structural framing and connected to itself with 10mm galvanized bolts and nuts. Main runner channels shall be located within 150mm of parallel walls and shall be cut short of abutting wall 12mm plus or minus 6mm. Where channels are spliced, the ends shall be overlapped not less than 300mm with flanges of channels interlocked and securely tied near each end of the splice with two loops of 1.0mm tie wire or the ends may be joined by approved standard main runner coupling Splices shall be staggered.
- 4.4.4.3 Attached ceilings: 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.

- 4.4.4.4 Furring: Steel channels or steel studs shall be provided where steel furring is indicated for screw attachment of boards.
- 4.4.4.4.1 Ceilings: Hat-shaped furring members shall be spaced 0.40m on centers and securely attached across suspended runner channels or structural framing members with wire clips or a double-strand of 1.0mm tie wire saddle-tied at each crossing. Ends of wire ties shall receive three full twists. Furring shall be spliced with 0.20m nested laps securely tied near each end of the lap, with two loops of 1.0mm tie wire. Splices shall be staggered. Furring channels shall be located within 50mm of walls. Where board abuts dissimilar wall materials, the perimeter of ceilings shall be finished with an edge bead trim strip applied to the wall and accurately aligned with the finished ceiling. Board edges adjoining walls shall be laid on the horizontal leg of the trim strip against a continuous bead of approved type sealant.
- 4.4.4.5 Steel Framing: Non-load-bearing walls and partitions shall be framed with 64 mm and 92 mm steel studs and runners installed as indicated and as hereinafter specified. Studs shall be spaced not more than 0.60 m on centers and end studs in adjoining walls shall be interconnected with screws spaced at not more than 0.60m on centers.
- 4.4.4.5.1 Ceiling runners: Shall be accurately aligned and securely attached to floors and structural ceilings or roof decks except where partition ceiling runners are applied directly to finish material of continuous ceilings. Attachment shall be by expansion shields, machine bolts, or other approved method, at not more than 0.60 m centers and to furred ceilings by board screws at each furring member. Furring will be provided at ceiling runners oriented parallel to the direction of furring members. Runners shall extend beyond open-end partitions for 0.30 m. Upon installation of end studs, runner extensions shall be bent and nested with the stud and attached thereto with two board screws. The runner shall be in the longest possible lengths with butt joints between lengths.
- 4.4.4.5.2 Studs: Shall be positioned plumb in ceiling and floor runners and securely attached with not less than one board screw on each side of the stud ends. Stud shall be installed in continuous lengths with no splicing in lengths up to 5 m for 92 mm studs, 3.5 m for 75 mm studs, and 3m for 64 mm studs.
- 4.4.4.5.3 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.
- 4.4.4.6 Ceiling openings: Support members shall be provided 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. Intermediate structural members, although not a part of the structural system, shall be provided for attachment or suspension of support members.
- 4.4.4.7 Application: Board shall be applied with the separate boards in moderate contact but not forced into place at internal and external corners the cut edges of the boards shall be concealed by the overlapping covered edges of the abutting boards. The boards shall be so staggered that the corners of any boards will not meet a common point except in vertical corners.
- 4.4.4.7.1 Ceilings: Board shall be applied to the ceilings with the long dimension of the board, at right angles to the furring members. Board may be applied with the long dimension parallel to furring members that are spaced 0.40 m on centers when attachment members are provided at end joints.

4.4.5 CLEANING AND PROTECTION

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

4.4.6 ROOF EAVES

- 4.4.6.1 Roof eaves ceiling must be 0.50 mm thick. Pre-Painted Wood Texture Spandrel with air ventilation including framing and mouldings.
- 4.4.6.2 8.0mm thick. Decorative PVC Panel Ceiling. Approved brand and quality.

4.5 PAINTING WORKS

4.5.1 MATERIAL

- 4.5.1.1 The brand of painting materials to be used shall be approved by the Architect/Engineer.
- 4.5.1.2 All paint materials shall be delivered to the job site in their original containers with labels and sealed unbroken.
- 4.5.1.3 With the exception of ready-mixed materials in original containers, all mixing shall be done at the Jobsite. No materials are to be reduced or changed except as specified by the manufacturer of the said materials. The use of white zinc (lithopones) will not be allowed.

4.5.2 COLORS

- 4.5.2.1 All colors of paints and varnishes shall be in accordance with the color scheme approved by the TSU.
- 4.5.2.2 Samples of the color to be used shall be submitted and those approved shall be strictly followed. No painting shall be started before these color schemes are approved by the Architect/ Engineer.
- 4.5.2.3 Finishes for the different portions of the work shall be specifically indicated in the Schedule of Specifications.

4.5.3 CONSTRUCTION REQUIREMENTS

- 4.5.3.1 The Contractor prior to the commencement of the work shall examine the surfaces to be applied with paints not to jeopardize the quality and appearance of a painting of finishing work.

4.5.4 SURFACE EXAMINATION AND PREPARATION

- 4.5.4.1 No painting shall be done under conditions that may jeopardize the quality or appearance of the painting or finishing.
- 4.5.4.2 All surfaces to receive paint should be cleaned and in proper condition.

4.5.5 SURFACE CONDITIONING

- 4.5.5.1 Concrete and masonry surfaces shall be coated with a concrete neutralizer and allowed to dry before any painting primer is applied.
- 4.5.5.2 When surfaces are dried, apply the first coating. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound. After all, defects are corrected, apply the finish coats as specified in the Plan in accordance with the approved color scheme.
- 4.5.5.3 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.
- 4.5.5.4 Metal surfaces shall be primed with epoxy primer as specified before the final/topcoat is applied.
- 4.5.5.5 For epoxy-primed surfaces, the topcoat/finishing coat should be applied not more than seven (7) days after priming to ensure good inter-coat adhesion. Otherwise, re-priming is needed.

4.5.6 IN ADDITION, THE CONTRACTOR SHALL UNDERTAKE THE FOLLOWING

- 4.5.6.1 Voids, cracks, and all other kinds of defects shall be repaired with proper patching materials and finished flush surrounding surfaces.
- 4.5.6.2 Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.
- 4.5.6.3 No painting works shall be done during rainy or damp weather.

4.5.7 APPLICATION

- 4.5.7.1 Paints, when applied by brush, shall be non-fluid; thick enough to lay down an adequate film of wet paint. Brush marks shall be flawed out after the application of paint.
- 4.5.7.2 Paints prepared for application by roller must be similar to brushing paint. It must be non-sticky when thinned to spraying viscosity to break up easily into droplets.
- 4.5.7.3 Paint is atomized by high-pressure pumping rather than broken up by the large volume of air mixed with it. This procedure changes the required properties of the paint.

4.5.8 MIXING AND THINNING

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

4.5.9 STORAGE

- 4.5.9.1 All materials to be used for this Item shall be stored in a single place to be designated by the Architect and such place shall be kept neat and clean at all times.
- 4.5.9.2 Necessary precautions to avoid fire must be observed by removing oily rags, waste, etc. at the end of daily work.

4.5.10 CLEANING

4.5.10.1 All clothes and cotton waste which is fire hazards shall be placed in a metal container or destroyed at the end of daily work.

4.5.10.2 Upon completion of the work, all staging, scaffolding, and paint containers shall be removed and disposed of.

4.5.10.3 Paint drips, oil, or stains on adjacent surfaces shall be removed and the entire job left clean and acceptable to the supervising Architect/Engineer.

4.6 COUNTERTOP, WALL, AND FLOOR FINISHES

4.6.1 GENERAL

4.6.1.1 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.

4.6.2 PREPARATION AND INSTALLATION

4.6.2.1 Non-Skid Ceramic 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.

4.6.2.2 Wash Pebble #10 - All cement surfaces to receive wash pebble or similar finish shall be structurally sound, plumb, level, and true, free from dust, dirt, grease, calcimine water, or other foreign matter. Repair any cracks in the floor before installation, use a joint repair sealant injected into the cracks. Seal the surface of the floor with a two-part component varnish to stabilize the pebbles in place and smooth the surface. Pebble washed finished including 1 coat stone pave sealer, all in accordance with manufacturers instruction.

4.6.3 MATERIALS

4.6.3.1 200 mm x 1200 mm x 3.0 mm thk. Vinyl Tiles including adhesive: Approved brand and quality.

4.6.3.2 200 mm x 1200 mm Non-Skid Ceramic Floor Tiles: Approved brand and quality.

4.6.3.3 200 mm x 1200 mm Glazed Ceramic Floor Tiles: Approved brand and quality.

4.6.3.4 600 mm x 600 mm Non-Skid Ceramic Floor Tiles: Approved brand and quality.

4.6.3.5 300 mm x 600 mm Ceramic Decorative Border Wall Tiles: Approved brand and quality.

4.6.3.6 300 mm x 600 mm White Ceramic Wall Tiles: Approved brand and quality.

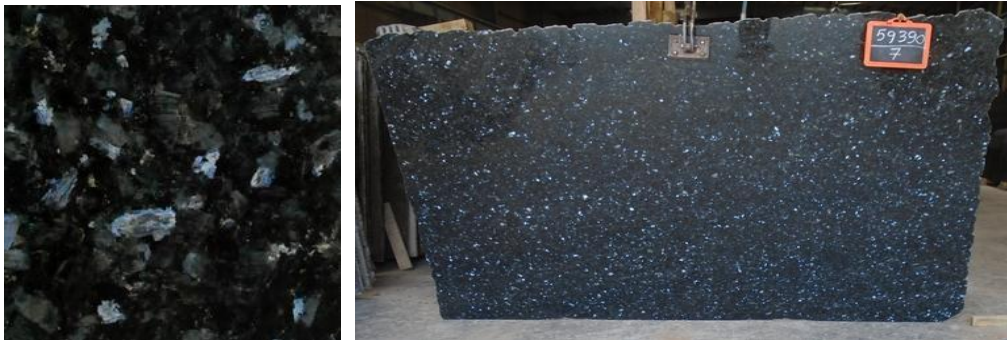
4.6.3.7 Adhesive installation material shall be using any liquid nails or rugby. Approved brand and quality.

4.6.3.8 Black Rubber Stair Nosing. Approved brand and quality.



- 4.6.3.9 Araal slate decorative stone shall at least ½” thk. and 30cm diameter (color dirty white).
- 4.6.3.10 Waterproofing for comfort rooms & 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.
- 4.6.3.11 ¾” thk. Black Blue Emerald solid granite Countertop with manual shutoff faucet handlebar type chrome finish and complete accessories (valve, p-trap, etc.): Approved type, quality, and brand.

4.6.3.12



4.6.4 ACOUSTIC PANEL FOR WALLS

4.6.4.1 The Technical Characteristic of all Acoustic Panel for Walls must be:

- 4.6.4.1.1 Sound absorption: polyester fiber is combed, punched, heated, and compressed together. The unique porous structure can absorb the noise effectively.
- 4.6.4.1.2 Fire resistance: special raw material combines, special manufacturing to ensure the fire retardant. A grade based on ASTM-E84
- 4.6.4.1.3 Heat preservation: porous polyester batts can keep thermal inside to save energy.
- 4.6.4.1.4 Environment-friendly: no toxic, without any glue or formaldehyde.
- 4.6.4.1.5 Moisture-proof: in the wet environment, the panel can be anti-fungal.
- 4.6.4.1.6 3.0mm thick Polyester Fiber Felt including adhesive. Approved brand and quality.



4.6.4.1.7 3/4" thick marine plywood with 130mm thick Acoustic Foam on 3.0mm thick Polyester Fiber Felt including adhesive. Approved brand and quality.

4.6.4.1.8 Adhesive installation material shall be using any liquid nails. Approved brand and quality.

4.6.5 ACOUSTIC PANEL MATERIALS

4.6.5.1 Structure: 3/4" thk. Marine Plywood in Paint Finish with
Liquid Nail Adhesives
Inner Layer: 130mm Thk. Acoustic Foam FR 28kg /cu.m
Outer Layer Finish: Polyester Fiber Felt Acoustic Sheet

4.6.6 TILE INSTALLATION

4.6.6.1 Lay tiles in straight square patterns and cover 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 tile in such, a manner that each tile is in contact with each adjacent tile and that the entire under- surface of each tile will be securely bonded.

4.6.6.2 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.

4.6.6.3 Apply adhesive in accordance with the manufacturer's recommendation. Secure cover base to walls with adhesive as specified for floor tiles.

4.6.7 CLEANING

4.6.7.1 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.

4.6.8 PROTECTION

4.6.8.1 After cleaning, protect the floor until acceptance of the building.

4.6.9 GUARANTEE

4.6.9.1 Floors shall be guaranteed by the manufacturer against defects in its floor tiles and by the Contractor against defects in workmanship for a period of one year from the date of completion.

4.7 DOORS, WINDOWS, CUBICLE PARTITION, AND OTHER ACCESSORIES

4.7.1 SCOPE

4.7.1.1 All existing doors and windows shall be removed and replaced with appropriate items as shown on the plans. See the architect's approved shop drawings and details showing fabrications. Protect glass from breakage before and after installation.

4.7.1.2 Provide all hardware/s not herein specifically mentioned but are necessary to complete the work. The architect shall approve all such hardware/s.

4.7.2 DOORS

- 4.7.2.1 Where so shown on drawings, doors shall be of the following type unless otherwise specifically noted in the Schedule of Specifications with complete necessary hardware.
- 4.7.2.2 Panel Wood Door and Jamb: Approved brand and quality.
- 4.7.2.3 Stainless Steel Lever Type Doorknob shall be heavy-duty: Approved brand and quality.
- 4.7.2.4 PVC Door and Jamb: Approved brand and quality.
- 4.7.2.5 Single Cylinder Stainless Steel Deadbolt: Approved brand and quality.
- 4.7.2.6 Glass Door: 12mm Thick Tempered Glass with frosted decals single panel swing frameless double glass door with closer and S304 stainless 35mm Ø H-Type door handle and complete accessories.



35mm Ø H-Type Door Handle, 1.5m Length

- 4.7.2.7 Panel Semi-solid Wooden Door and Jamb with louvers & kick plate: Approved brand and quality.

4.7.3 WINDOWS

- 4.7.3.1 Type: Window types will be as shown on the Schedule of Doors and Windows or specified on the Schedule of Specifications.
- 4.7.3.2 Hardware and Operation: All hardware and other attachments necessary to ensure proper operation of ventilators shall be as per the manufacturer's specifications. These must affect the tight close of vents when locked. Locking handles, catches keepers, etc.
- 4.7.3.3 Glazing: Windows shall be designed for glazing from the outside with steel casement putty and spring wire glazing clips.
- 4.7.3.4 Aluminum awning windows shall be 6mm thick reflective bronze glass. See the schedule of windows in the plan.
- 4.7.3.5 The aluminum fixed corner window shall be 6mm thick reflective bronze glass. See the schedule of windows in the plan.
- 4.7.3.6 Aluminum fixed windows shall be 12mm thick tempered reflective bronze glass. See the schedule of windows in the plan.
- 4.7.3.7 Aluminum transom windows shall be 6mm thick reflective bronze glass. See the schedule of windows in the plan.

4.7.3.8 Aluminum Awning White Powder Coated with one way reflective (exterior) Reflective bronze glass: Approved brand and quality.

4.7.4 SHOP FINISH

4.7.4.1 Unless otherwise specified in the Schedules of Specifications all-steel doors, windows and frames will be bonderized.

4.7.5 DIMENSION TO BE VERIFIED

4.7.5.1 All dimensions of opening as shown on drawings must be verified by the Contractor at the job site before fabrication of door and windows.

4.7.6 TOILET PARTITION

4.7.6.1 Where so shown on drawings, toilet partition shall be of the following type unless otherwise specifically noted in the Schedule of Specifications with complete necessary hardware.

4.7.6.1.1 Compact Laminated Cubicle Partition w/ door. Wall shall be Phenolic anti-bacterial waterproof toilet partition 12 mm w/ back-to-back hpl color including hinges, lock indicator, KF-A 106 bottom support, doorknob & coat hook and using stainless accessories, aluminum headrail, U-channel & door stopper w/ rubber seal: Approved brand and quality.



Cubicle Partition

4.7.7 GLASS AND GLAZING

4.7.7.1 MATERIALS

4.7.7.1.1 Glasses to be assigned to the different portions of the work shall be of types and thickness as noted in the Schedule of Specifications and as indicated on drawings.

4.7.7.2 PUTTY AND INSTALLATION OF GLASS

4.7.7.2.1 Glass in steel sashes shall be bedded and back-puttied and held in place with at least (4) glazing clips per line. All glazing putty to be used shall be an approved glazing compound.

4.7.7.2.2 Glasses to be assigned to the different portions of the work shall be of types and thickness as noted in the Schedule of Specifications and as indicated on drawings.

4.7.7.3 EXECUTION

4.7.7.3.1 All glasses shall be accurately cut to fit and with equal bearing on the entire width of the pane. The thin layer of putty shall be applied to rebate and set glass; pressing until an even bed is secured. Remove excess putty from each side flush with the edge of the rebate.

4.7.7.3.2 Glass breakage caused in executing the work or faulty installation shall be replaced by the Contractor without extra cost.

4.7.8 HARDWARE

4.7.8.1 SCOPE OF WORK

4.7.8.1.1 The Contractor shall furnish and install all necessary hardware for doors and windows to leave the work complete, although not specifically mentioned herein.

4.7.8.2 MATERIAL

4.7.8.2.1 All hardware shall conform in quality and finish to the rest of the hardware specified. The sample shall be approved by the Architect/Engineer prior to installation.

4.7.8.3 HEAVY-DUTY HINGES

4.7.8.3.1 All doors with a width, not more than 0.9 m shall have three hinges, and four hinges for more than 0.9 m width. Approved brand and quality.

4.7.8.4 LOCKSETS

4.7.8.4.1 All doors shall be Chromium-plated on brass. The contract shall install and fit each door lockset, all in accordance with the manufacturer's standard installation.

4.8 LANDSCAPING WORKS

4.8.1 Provide at least one person/foreman who shall be present at all times during the execution of this portion of the Work and who shall be thoroughly familiar with the type of materials, design methods, details, etc. being installed and the best methods for their installation and who shall direct all work performed under this Section.

4.8.2 This designated person/foreman shall be present at all landscape pertinent pre-construction meetings, other meetings, and on-site throughout the duration of the landscape portion of the project. This designated individual is the main point of contact between all parties involved as it relates to his/her construction procedure.

4.8.3 This designated person/foreman shall also be the main point of contact for all submittals, samples, and project notifications as outlined herein.

4.8.4 This designated person/foreman shall be familiar with all Drawings and Specifications included in the Contract Documents to ensure continuity for the project and provide clear direction for all consultants involved.

4.8.5 SUBMITTALS

4.8.5.1 Before any planting materials are delivered to the job sites, submit to the Project-In-Charge a complete list of nurseries where plants are to be obtained and any substitutions proposed to be installed.

4.8.5.2 The TSU Representative reserve the right to reject any plant material delivered to the site that is not in conformance with the requirements of this section. Remove rejected trees or shrubs immediately from the Project site.

4.8.6 PRODUCT HANDLING

4.8.6.1 Deliver all materials in sealed containers. Materials that become damaged and unsuitable for use shall be replaced.

4.8.6.2 Temporary Storage and Protection

4.8.6.2.1 Protect plants at all times from sun and drying winds.

4.8.6.2.2 Plants that cannot be planted immediately on delivery shall be kept in the shade, well-protected with soil, shredded hardwood mulch, straw, or other acceptable material, and shall be kept well-watered.

4.8.6.2.3 In the event of damage, immediately make all repairs and replacements necessary for the approval of the Project-In-Charge and at no additional expense to the TSU.

4.8.7 PRODUCT SAMPLES

4.8.7.1 Items to be submitted prior to installation for approval by the Project-In-Charge include, but are not limited to the following items:

4.8.7.1.1 Eugenia Red

4.8.7.1.2 Eugenia Ball Topiary Plant

4.8.7.1.3 Bermuda Grass



Eugenia Red



Bermuda Grass



Eugenia Ball Topiary

4.8.8 MATERIALS

4.8.8.1 Plants

4.8.8.1.1 All trees, plants, and shrubs shall be sound, healthy, and vigorous.

4.8.8.1.2 All plant material should be free of insects, their eggs, and larvae.

4.8.8.1.3 Plants shall be free of mechanical or cultural injury by rodents, and free of noticeable after effects, borers, and other pests.

4.8.9 EXECUTION

4.8.9.1 Inspection

- 4.8.9.1.1 Prior to all work in this section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
- 4.8.9.1.2 Verify that all topsoil installation methods and approvals have been completed in accordance with this section.
- 4.8.9.1.3 Verify that all proposed work areas are free of weeds and rocks 3/4 inch in diameter or larger.
- 4.8.9.1.4 Verify percentage of compaction of existing subsoil and topsoil installation is acceptable for healthy, plant growth and root establishment with appropriate percentages of soil particles, water, and air per cubic foot.
- 4.8.9.1.5 Verify with the Project-In-Charge that topsoil installation has been approved.

4.8.9.2 Discrepancies

- 4.8.9.2.1 In the event of any discrepancies, immediately notify the Project-In-Charge.
- 4.8.9.2.2 Do not proceed with the installation in the areas of discrepancies until after such discrepancies have been fully resolved.
- 4.8.9.2.3 If quantities listed in Plant Material List do not correlate with plantings indicated on the plan, the quantities on the plan shall govern.

4.8.10 PLANTING

4.8.10.1 General

- 4.8.10.1.1 Topsoil for planting operations shall be furnished by the Contractor as specified within.
- 4.8.10.1.2 Provide positive drainage away from all buildings and around or away from all planting beds to prevent ponding of water. Do not raise bed grades or finished grades above finished floor elevations, keep at least 50 mm below Ground Floor Level.
- 4.8.10.1.3 Give notification to Project-In-Charge of completion of Earthwork prior to proceeding with the installation of topsoil. Project-In-Charge to approve sub-grade soil conditions prior to the installation of any topsoil.
- 4.8.10.1.4 Give notification to the Project-In-Charge of completion of Topsoil work prior to proceeding with planting operations. Project-In-Charge to approve topsoil installation prior to the installation of any plant material.

4.8.10.2 Shrubs

- 4.8.10.2.1 Planting areas shall have a backfill soil mixture minimum depth of 6" for all plants.
- 4.8.10.2.2 Remove all twine, wires and burlap from the top one-third of root ball.

- 4.8.10.2.3 On the bottom of all plant areas, add and lightly tamp a layer of planting backfill soil mixture at least six inches (6") thick or as much as necessary so that the ball or roots will rest thereon when the plant is set to the required grade.
- 4.8.10.2.4 Set all plants so that when they are settled, they will bear the same relation to the required grade as they bore to the natural grade before being transplanted. Make adjustment of position where necessary or as directed.
- 4.8.10.2.5 Plant in topsoil backfill mix in the center of the pit unless otherwise specified on the Drawings. Remove all non-treated or non-rot-proofed burlap, ropes, stave, etc., off-sides and tops of balls and remove from the pit before it is filled in.
- 4.8.10.2.6 Width of the pits-at least 2 times greater in diameter than their ball of earth or spread of roots.
- 4.8.10.2.7 Set shrubs so as to allow sufficient depth. Properly set the crown of plant at the finished surface of the bed.
- 4.8.10.2.8 Backfill topsoil and fertilizer mix about the roots and thoroughly settles by watering.

4.8.10.3 Protection

- 4.8.10.3.1 Protect all planting areas and plants from damage. If any plants are injured, treat and replace as required. Execute no work in or over prepared planting areas, or adjacent to planting without proper safeguards and protection.

4.8.10.4 Maintenance During Installation

- 4.8.10.4.1 Maintain immediately following the accomplishment of planting operations of any plant unit. Owner to supply water for planting, Contractor to supply all labor and equipment for the watering operation until final acceptance. Contractor to supply landscape watering for maintenance whether a permanent irrigation system is installed or not.
- 4.8.10.4.2 Soak root balls and spray foliage on all trees and shrubs with water, where required, during the evening after sundown or otherwise as directed. Keep all plantings in a healthy, growing condition by watering, weeding, cultivating, pruning, spraying, trimming and by performing any other necessary operations of maintenance.
- 4.8.10.4.3 The Contractor shall be responsible for continued proper care of the lawn areas during the period when the grass is becoming established. The period of maintenance for all lawns areas shall extend for sixty (60) days with three mowing required or as long as necessary to establish over the entire lawn area a uniform stand of grasses as specified, free of weeds and undesirable grasses. After the required maintenance period and upon acceptance of lawn areas by the Project-In-Charge, the Owner will assume maintenance responsibility. Fertilizing and Mowing shall be included in the maintenance of the lawn until final acceptance. These operations may extend past outlined thresholds if final acceptance does not occur within the first sixty (60) days.
- 4.8.10.4.4 Maintain shrubs and other plants until final acceptance, but in no case less than 60 days after substantial completion of planting.

SECTION 5 – ELECTRICAL WORKS

5.1 SCOPE OF WORK

- 5.1.1 The work under this section shall include the furnishing of labor, materials, equipment, and services required to construct and install the new electrical system which include, but is not limited to, the following main items:
 - 5.1.1.1 Complete new electrical system for the building.
 - 5.1.1.2 Complete new fire detection and alarm system for the building.
 - 5.1.1.3 Complete new roughing-ins of structured cabling system for the building.
 - 5.1.1.4 Complete new roughing-ins of closed-circuit television system for the building.
 - 5.1.1.5 Complete new roughing-ins of speaker system for the building
 - 5.1.1.6 Complete testing of all electrical system.
 - 5.1.1.7 Optional items of work.
 - 5.1.1.8 All tapping shall be executed inside the ceiling unless indicated in the plan and on the mounting type of equipment.
 - 5.1.1.9 If anything has been omitted in any items of work on 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 CODES, REGULATIONS AND ORDINANCES

- 5.2.1 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.

5.3 PLANS AND DRAWINGS

- 5.3.1 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.
- 5.3.2 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.

5.4 SAMPLES AND DRAWINGS

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

5.4.2 Prepared and submit for approval shop drawings or catalogs of equipment appliances and fixtures.

5.5 MINOR MODIFICATIONS

5.5.1 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, convenience outlets, air conditioning outlets and switches shown on the plans are approximate. The Contractor shall be responsible for the proper location in order to make them fit with architectural details.

5.6 STANDARD OF MATERIALS

5.6.1 All materials shall be new and shall conform to the standards specified in the Philippine Electrical Codes and other such as IEEE, AIA, IEEA and NEMA, for every case where such standard has been established for the materials in question

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

5.6.3 Samples of all materials shall be submitted for approval as required by the Engineer/Architect.

5.7 INSTALLATION REQUIREMENTS

5.7.1 GROUND TESTS

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

5.7.1.2 Copper ground rods shall be installed at least 8 feet below from the surface of the ground.

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

5.7.2 PERFORMANCE TEST

5.7.2.1 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.

5.7.3 WIRE AND CABLE

5.7.3.1 Wires shall be color coded as follows:

5.7.3.2 Line 1 --- Red Line 2 --- Yellow Ground --- Green

5.7.3.3 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 sized called for.

5.7.3.4 All wires and cables shall comply with the requirements as to the usage.

5.7.3.5 All wires and cables for lighting and power system shall be moisture and heat resistant rubber or thermoplastic insulate. It must be in conformity with the Philippine Electrical Code when used in damp or unit location. Wires shall be stranded for sizes #12 AWG.

5.7.3.6 For lighting and power systems, no wire shall be smaller than #12 AWG shall be used.

5.7.3.7 All wires and cables to be used shall be approved brand.

5.7.4 PIPES

5.7.4.1 Wiring shall be done in PVC Pipe for embedded and in RSC or EMT for run exposed; it shall be Schedule 40.

5.7.4.2 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.

5.7.4.3 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.

5.7.4.4 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.

5.7.4.5 Provide proper hanger and support for conduits which will be hanged over the ceiling, and it shall be free from sagging.

5.7.5 OUTLETS BOXES AND FITTINGS

5.7.5.1 All outlets of whatever kind for all systems shall be provided by a suitable fitting, which shall be either a box or other device especially designed to receive the type of fitting to be mounted thereon.

5.7.5.2 The Contractor shall consult with the Contracting Officer as to the nature of the various fittings to be used before installing his outlet fittings and shall conform strictly in the use of fittings to the nature of the compliance to be mounted on them, so that the work, when completed will be finished design.

5.7.5.3 All outlets on exposed conduit work shall be provided by a galvanized pressed steel outlet boxes of standard make. The boxes shall be especially designed for apparatus required.

5.7.5.4 All outlets on concealed conduit work shall be provided by PVC outlet boxes of standard make. The boxes shall be especially designed for apparatus required.

5.7.6 JUNCTION AND PULL BOXES

5.7.6.1 Weatherproof 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 the permission and to the satisfaction of the contracting officer.

5.7.6.2 Auxiliary gutter pull boxes shall be provided in the electrical room for proper management of wires and cables going to the main distribution panel board.

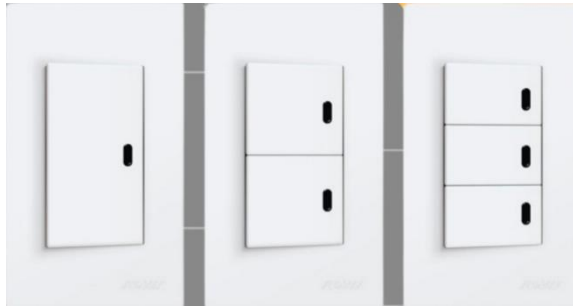


NEMA-1 Auxiliary Gutter

*Box size will vary depending on its purpose

5.7.7 WALL SWITCHES

- 5.7.7.1 Wall switches shall be rated at 15 amperes, 250 volts, one way or as required. Switches shall be with LED, quiet and automatic action type, silver contact, feather touch operation, colored matte black. Switches to be used shall be approved brand by the Engineer/Architect.



- 5.7.7.2 Weatherproof cover shall be provided for lighting switches located outdoors.

5.7.8 POWER RECEPTACLES

- 5.7.8.1 Receptacle's outlet shall be for flush mounting duplex rated at 10 ampere, 250 volts "T" slot socket-outlet, white. Receptacles to be used shall be approved brand by the Engineer/Architect.



5.7.9 PLATES

- 5.7.9.1 All switch and receptacle plates shall be of Bakelite white finish, and of approved brand.

5.7.10 PANEL AND DATA CABINETS

- 5.7.10.1 Electrical panel board shall be with dead front construction, furnished with trims for flush. Dead front shall be made of hinged door mechanism.
- 5.7.10.2 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. Manufacturer's show drawings shall be submitted to the Engineer/Architect for approval.

5.7.11 INDIVIDUAL BREAKERS AND SWITCHES

- 5.7.11.1 Provide individual circuit breakers, safety switches and disconnect switches as where indicated. Voltage ratings shall be suitable in each case of service application.
- 5.7.11.2 Enclosure shall be General Purpose, NEMA type, and shall almost all the requirements and specifications of the Philippine Electrical Code.
- 5.7.11.3 Circuit breakers shall be capable of being closed and operated by hand without employing and other source of power.

5.7.11.4 Safety and disconnected switches shall be fusible or non-fusible as required end of size as indicated on plans.

5.7.11.5 Circuit breaker to be used shall be of approved brand and KAIC rating.

5.7.12 DISCONNECTING MEANS

5.7.12.1 Disconnecting means shall be provided as indicated on the drawings at each motor location.

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

5.7.12.3 Unfused safety switches shall be used where disconnecting means only are required and the current supply to same is protected by a circuit breaker at the panel board, shall be totally enclosed.

5.7.13 LIGHTING SYSTEM AND OTHER FIXTURES

5.7.13.1 The lighting system and other fixtures shall be complete in every aspect, all indicated on the plan or specified.

5.7.13.2 All work for the lighting system inside the ceiling shall be done utilizing knob and tube work and lighting circuits shall be balanced at the panels.

5.7.13.3 Mounting heights of devices shall be as follows:

Local Switches: 1.4m from FFL.

Convenience Outlet: 0.30m above floor or above counters, or as
directed by the TSU Architect/Engineer.

A.C. Outlets: At convenient height near the equipment

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

5.7.13.5 Submit samples of each fixture to the Engineer/Architect for approval prior to installation.

5.7.13.6 All lighting fixtures shall be selected by the Engineer/Architect.

5.7.13.6.1 20 Watts Recessed COB LED Square Downlight

- Wattage : 20 Watts
- Luminous flux : 4,800 lumens
- Dimension : 118mm x 118mm
- Color temp. : 3,500K – 4,500K (Nature White)
- Material : Aluminum housing and clear glass cover
- Light source : LED COB (High Brightness)
- Beam angle : 120 degrees
- Life duration : 50,000 hours
- Input voltage : 85 VAC – 265 VAC, 50/60 Hz
- Application : Recessed Mount
- IP rating : IP 40



5.7.13.6.2 18 Watts LED Panel Downlight [Color: Warm White and Daylight]

- Wattage : 18 Watts
- Luminous flux : 1,800 lumens
- Dimension : 203mm x 203mm
- Color temp. : 2,700 K – 3,000 K (Warm White)
& 6,000 K – 6,500 K (Daylight)
- Material : Aluminum housing and frosted plastic composite cover
- Light source : LED SMD (High Brightness)
- Beam angle : 180 degrees
- Life duration : 50,000 hours
- Input voltage : 85 VAC – 265 VAC, 50/60 Hz
- Application : Recessed mount
- IP rating : IP 40
- Shape : Square



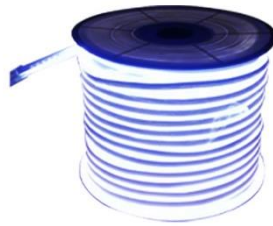
5.7.13.6.3 Watts Recessed LED Emergency Light

- Wattage : 3 Watts
- Luminous flux : 200 lumens
- Dimension : N/A
- Body Color : White
- Material : Aluminum housing and plastic composite lens
- Light source : 1pc LED COB (High Brightness)
- Burning time : 90 minutes
- Life duration : 50,000 hours
- Input voltage : 220 VAC – 240 VAC, 50/60 Hz
- Battery type : Ni-Cd SC
- Protection : Over-charge and over-discharge protection
- IP rating : IP 40
- Application : Ceiling mounted



5.7.13.6.4 Outdoor SMD LED Strip light [Color: Warm White and Ice Blue]

- Wattage : 18.04 Watts per meter
- Color temp. : 8,000 K (Ice Blue)
: 2,700 K – 3,500 K (Warm White)
- Beam angle : 120 degrees
- Input voltage : 85 VAC – 265 VAC
- Frequency : 50/60 Hertz
- IP rating : IP 66 (Good for outdoor and indoor)



5.7.13.6.5 6" E27 Cylindrical Downlight with 12W LED Bulb

- Wattage : 12 Watts
- Dimension : 6" Ø x 220mm (Height)
- Holder : E27
- Lamp : Round white metal sheet without cover
- Reflector : Mirrored reflector
- Mount : Surface mounted
- Color temp. : 2,700 K – 3,500 K (Warm White)
- Material : Aluminum PCB and frosted plastic composite cover
- Light source : LED SMD (High bright)
- Beam angle : 120 degrees
- Life duration : 50,000 hours
- Input voltage : 85 VAC – 265 VAC. 50/60 Hz
- IP rating : IP 40



5.7.13.6.6 Watts Architectural SMD LED Track Light

- Wattage : 10 Watts
- Luminous Flux : 1,000 lumens
- Color temp. : 2,700 K – 3,500 K (Warm White)
- Material : Aluminum Housing + PC Lens
- Light source : High Brightness LED
- Beam angle : 15, 30, 45 degrees
- Body Color : White
- Input voltage : 85 VAC – 265 VAC. 50/60 Hz
- IP rating : IP 40



5.7.14 SERVICE ENTRANCE

5.7.14.1 The Contractor shall furnish and install a 1Ø, 2-wire, 230 volts, 60 hertz in a 2" dia. PVC conduit for electrical line and 1" dia. for LAN line with pulling G.I. wire embedded in a concrete encasement going to the concrete pedestal.

5.7.14.2 The Contractor shall install a grounding system for the building connected from the ground bus bar of the main panel board going to the copper ground rod.

5.7.15 FIRE DETECTION AND ALARM SYSTEM

5.7.15.1 Fire alarm control panel shall have fault supervision, disablement zones, evacuation, silence mode and the following specifications:

- AC Input : 230 VAC
- DC Output : 10mm x 2mm
- Frequency : 50/60 Hertz
- Voltage for MCU : 2,700 K – 3,000 K (Warm White)
- Current at 24VDC from PSE : Flexible circuit board
- Maximum current from PSE : SMD 5050
- Batteries current : 1.85 A maximum
- Auxiliary output : 24 VDC +/- 10%, 100mA max
- Batteries : 2 pcs 12V/2.3Ah sealed lead acid gel
- Battery replace resistance : 2 ohms +/-10%
- Battery low voltage protection : 22.2 V

- Max detectors per zone : 20 (except manual call points)
- Zone alarm current : 6 mA min. / 27mA max.
- Sounder output : 2pc 0.75A max.
- Fire protection : 100 mA max.
- Fire routing : 100 mA max.
- Fault routing : 100 mA max.
- Communication protocol : 2 wires RS485 bus system
- Relay contacts rating : Dry contacts (NO/NC) 1A, 24 VDC
- EOL resistor for zone : 6.8 Kilo ohms, 1 watt
- EOL resistor for outputs : 6.8 Kilo ohms, 1 watt
- Fuse on power board : 3 A / 250 V glass tube fuse 20mm
- Fuse on EMI Board : 1 A / 250 V glass tube fuse 20mm
- Environment : Class A temp. range: -5 °C to 40 °C
- Terminal blocks rating : All terminals rated for 12 to18 AWG



5.7.15.2 Smoke detector shall have two LEDs which provide 360 degrees visible alarm indication, flashes every six seconds to indicate power 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



5.7.15.3 Conventional manual call point shall be semi-flush or surface mounting, lever re-usable (non-glass break), with LED indicator and the following specifications:

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



5.7.15.4 Fire alarm bell shall be 8 inch in size, easy to install, low power consumption, large volume, crisp ring tones and the following specifications:

- Work voltage : 12 VDC, 24 VDC or 230 VAC
- Work current : 50 mA at 24 VDC
- Volume : 96 dB
- Environmental : -10 °C to 50 °C
-



5.7.15.5 Red flash light shall be compact, easy to install, lower power consumption, high brightness of flash and the following specifications:

- Operating voltage : 24 VDC
- Flash period : 3 seconds
- Temperature range : -10 °C to 50 °C



5.7.15.6 New fire alarm and detection system and shall be installed in reference to location showed in the plan.

5.7.15.7 Wires for fire alarm and detection system shall be 1.25mm² TF stranded twisted two conductor of approved brand.

5.7.15.8 Submit samples of each fixture to the Engineer/Architect for approval prior to installation.

5.7.16 CCTV SYSTEM AND STRUCTURED CABLING SYSTEM

5.7.16.1 All equipment and cabling devices shall be unsupplied, hence, rough-ins shall be installed for all locations shown on the CCTV and structured cabling layouts for future installation the devices.

- 5.7.16.2 3/4" dia. PVC pipe with G.I. wire inside shall be installed as a conduit for future installation of Category 6 cables.
- 5.7.16.3 2" x 4" PVC utility box with blank plate shall be installed on the surface of the ceiling for future installation of cabling devices, equipments, and termination of Category 6 cables of structured cabling system.
- 5.7.16.4 4" x 4" PVC junction box with cover shall be installed inside the ceiling for future installation of cabling devices, equipments, and termination of Category 6 cables of structured cabling system.
- 5.7.16.5 5" x 5" PVC square box shall be used as pullbox for future installation of Category 6 cables.

5.7.17 CONSUMABLE HARDWARE

- 5.7.17.1 Other materials needed as an accessory to finish installing electrical and electronic fixtures shall be considered as consumable hardware.
- 5.7.17.2 Conduit hangers, PVC connectors, G.I. wires, cable tie, brackets, electrical tape, tox and screw shall be considered as consumable hardware.

SECTION 6 – PLUMBING WORKS

6.1 SCORE OF WORK

- 6.1.1 This scope covers the furnishing of all materials, labor, tools, equipment, and other facilities, including the satisfactory performance of all work necessary to complete the installation, testing, and operation of the new plumbing system of the building in accordance with the applicable drawings. This section consists of but is not necessarily limited to the following:
 - 6.1.1.1 Installation of new soil, waste, and vent pipe systems to be connected to the new septic tanks.
 - 6.1.1.2 Construction of two septic tanks.
 - 6.1.1.3 Installation of new storm drainage system.
 - 6.1.1.4 Installation of new water distribution system.
 - 6.1.1.5 Installation of new plumbing fixtures, fittings, and accessories.
 - 6.1.1.6 Leakage testing of the sanitary pipe system.
 - 6.1.1.7 Flood testing of the Concrete Gutter.
 - 6.1.1.8 Pressure and leakage testing of the new water distribution system of the building.
 - 6.1.1.9 Any and all other work involved in providing the complete operation of the new plumbing system (water distribution system, sanitary pipe system and storm drainage system) to the above-named project. All work shall be performed in accordance with the requirements of all applicable laws of the Republic of the Philippines and all codes and ordinances of the locality.

6.2 GENERAL

- 6.2.1 All plumbing works to be done and sizes of pipes to be used shall be in accordance with the National Plumbing Code of the Philippines and the requirements and ordinances of the locality.
- 6.2.2 The Plumbing Contractor is required to refer to all architectural, structural, and electrical plans, including this specification. The contractor shall investigate all possible interference and existing site

conditions affecting his work for the complete installation and operation of the new plumbing system of the building.

6.2.3 The drawings show the pipes, valves, fixtures, and appliances to be used and installed in the project. All other items, whether specifically mentioned or not indicated on the drawings, shall be furnished, and installed if necessary to complete the system in accordance with the best practice of the plumbing trade and to the satisfaction of the Engineer/Architect.

6.2.4 The Plumbing Contractor shall assume the cost of the entire responsibility for any change in the work shown on the Contract Drawings which may be occasioned by the approval of materials other than those specified.

6.3 APPROVAL

6.3.1 The Contractor shall submit for the Architect/Engineer's approval, the complete list of manufacturer's names of all equipment and materials he proposes to use.

6.3.2 After the approval of the above list, and before the purchase of any equipment or material, the Contractor shall submit to the Architect's/Engineer's approval the detailed information consisting of manufacturer's bulletins and shop drawings.

6.4 WORKMANSHIP AND INSTALLATION

6.4.1 All work shall be performed in first-class and neat workmanship by plumbers, skilled in their trades, and shall be satisfactory to the Architect/Engineer.

6.4.2 The work throughout shall be executed in accordance with the best practice of the trade and the best and most thorough manner under the direction of a licensed Master Plumber and to the satisfaction of the Engineer/Architect. The TSU Engineer/Architect is the one who will interpret the intent of the contract drawings and specifications and shall have the power to reject any work and/or materials which are not in full accordance therewith.

6.4.3 No piping in any location shall be closed-up or furred-in before the examination and testing by the TSU Architect/Engineer.

6.5 SOIL, WASTE, DRAIN, AND VENT PIPES

6.5.1 Installation

6.5.1.1 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.

6.5.1.2 All changes in pipe sizes on soil, waste and drain lines shall be made with reducing fittings or reducers. All changes in direction shall be made by the appropriate use of forty-five degrees (45°) wyes, or long sweep bends, except that sanitary tees may be used on vertical stacks. Short quarter bends or elbows may be used in soil and waste lines where the change in direction is from the horizontal to the vertical and on the discharge from the water closet.

6.5.2 Traps

6.5.2.1 Every plumbing fixture shall be separately trapped by a vented water-sealed trap as close to the fixture outlets as the conditions allow, but in no case at a distance greater than 600 millimeters. In the case of the upper or the only fixture on a soil pipe extended full size through the roof, a vent shall not be required when said fixture has its center stack. 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 cleanout at the bottom of the seal.

6.5.3 Vent

- 6.5.3.1 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 be run separately above the fixtures into the adjacent soil pipes, a distance not more than 1.50 meters. If more than this distance, the vent shall run independently through the roof.
- 6.5.3.2 A vent line shall be wherever practicable, a direct extension of a soil or waste line.
- 6.5.3.3 Main vent risers at 4.5 meters long or more shall be connected at the foot with the main water or soil pipes below the lowest vent outlet with a forty-five degrees connection.

6.5.4 Joints and Connections – All joints shall be air and watertight.

6.6 PIPES AND FITTINGS SCHEDULE

- 6.6.1 Soil Waste Pipe – shall be Polyvinyl Chloride (PVC) pipes, Series 1000.
- 6.6.2 Vent Pipes – shall be Polyvinyl Chloride (PVC) pipes, Series 1000.
- 6.6.3 Drainage Lines – shall be Polyvinyl Chloride (PVC) pipes, Series 1000.

6.7 JOINTING

- 6.7.1 PVC Pipes and Fittings – socket type with PVC solvent cement, elastomeric rubber O-ring gasket, or as per the Manufacturer's recommendations.
- 6.7.2 Polypropylene – High-density pipes and brass fittings and joints shall be used.
- 6.7.3 G.I. Pipes and Fittings – Carefully reamed threaded joints. Apply seal type, or paint with red lead paint at all joint lengths.
- 6.7.4 Dissimilar Pipes – Adaptor fittings shall be used.

6.8 IDENTIFICATION AND APPROVAL OF MATERIALS

- 6.8.1 Each length of pipe, fittings, traps, fixtures, and device used in the plumbing system shall have cast, stamped, or marked on it, the manufacturer's trademark or name, the weight, type, and class of products when so required by the Standards.

6.9 WATER DISTRIBUTION SYSTEM

6.9.1 Pipes and Fittings

- 6.9.1.1 Water line pipes and fitting shall be Polypropylene Random Copolymer (PPR PN16) pipes.

6.9.2 Installation

- 6.9.2.1 The piping's shall be extended to all fixtures, outlets, and equipment from the gate valves installed in the branch near the riser.
- 6.9.2.2 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.

6.9.2.3 All pipes shall be cut accurately to measurement 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.

6.9.2.4 Changes in sizes shall be made with reducing fittings.

6.10 MISCELLANEOUS

6.10.1 Cleanout shall be PVC or Brass type, gas and watertight, and shall be provided with quick and easy plug removal to allow ample space for cleansing tools

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



Cleanout with Brass Cover



Cleanout with PVC Cover

6.10.3 The cleanout shall be of the same size as the pipe up, the location of which must be extended to an easily accessible place.

6.10.4 Valves shall be provided on all water supplies to fixtures as specified.

6.11 DEFECTIVE WORK

6.11.1 If the inspection or test shows any defect, such defective work or material shall be replaced, and the test shall be repeated until satisfactory to the Project-In-Charge.

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

6.11.3 No caulking of screwed joints or holes will be accepted.

6.12 PERFORMANCE TEST

6.12.1 It is the responsibility of the Contractor to test all systems of the entire plumbing installation for proper operational condition. The test shall be conducted in the presence of the TSU.

6.13 PLUMBING FIXTURES AND ACCESSORIES

6.13.1 All plumbing fixtures shall be Philippines standard with complete accessories.

6.13.1.1 Water Closet w/ Heavy-duty S304 Bidet Faucet with complete accessories: Dual flush and push-button type, 4/6 liters standard or equal, with water closet pan and cistern and heavy-duty soft closing seat and cover. Approved type, quality, and brand.



- 6.13.1.2 Wall Hung Urinal with complete accessories: H=680mm x W=240mm x L=340mm, Top inlet urinal water saving w/ button type flush valve and 0.8Gpf manual automatic shutoff. Approved type, quality, and brand.



- 6.13.1.3 Rectangular Vessel Wash Basin with complete accessories: 590mm x 365mm x 130mm with manual type shutoff faucet handlebar chrome finish. Approved type, quality, and brand.



- 6.13.1.4 Wall Mounted Wash Basin with complete accessories: L=585mm x W=425mm x H=500mm short pedestal basin with manual shutoff faucet handlebar type chrome finish. Approved type, quality, and brand.



- 6.13.1.5 Heavy-duty S304 Hose Bibb with thread: Approved type, quality, and brand.



- 6.13.1.6 6" x 6" S304 Floor Drain. Approved type, quality, and brand.



- 6.13.1.7 Check Valves and Gate Valves shall be heavy-duty brass body with complete accessories. Approved type, quality, and brand.



6.13.1.8 4" Ø x 40mmØ Split Pipe Saddle Clamp with complete accessories. Approved type, quality, and brand.



6.13.1.9 1" Ø Heavy-duty Brass Water Meter with complete accessories. Approved type, quality, and brand.



SECTION 7 – FURNISHING

7.1 GENERAL

7.1.1 The work includes the supply of materials and performing labor necessary for the complete installation of all furnishings as shown or indicated on drawings and as specified herein.

7.2 SCOPE

7.2.1 Provision of the following furnishings with complete accessories as indicated in the plan.

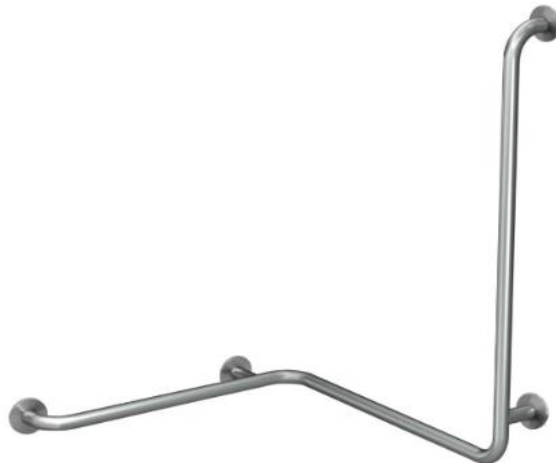
7.2.2 All furnishings to be installed must be approved by the FDMO and End-User.

7.3 MATERIAL

7.3.1 Mirrors: 1.0m x 0.60m x 6 mm thk. Beveled Edge Lead-Free Mirror with 6 mm Ø S304 Stainless Mirror holder: Approved type, quality, and brand.



7.3.2 Stainless Steel PWD Hand Railing shall be 32mmØ S304 including escutcheon plate with complete accessories. Approved type, quality, and brand.



7.3.3 Stainless Tissue Holder. Approved type, quality, and brand.



7.3.4 100mm x 200mm 5mm thk. Stainless Dressing Room and Rest Room Signages (Men and Women).
Approved type, quality, and brand.



7.3.5 210mm x 180mm x 5mm thk. High-Grade Aluminum Alloy Frame Toilet Signage (All Gender PWD Restroom). Approved type, quality, and brand.



7.3.6 250mm x 400mm Fire Exit Signages (Glow in the Dark). Approved type, quality, and brand.



7.3.7 200mm x 300mm Entrance/Exit Signages (Glow in the Dark). Approved type, quality, and brand.



7.3.8 Ergo dynamic Theater Chair (Interconnected/ Sharing) including accessories and consumables.
Approved brand and quality.

Product Code: TCHR-02



Section VII. Drawings

Please refer to the PDF file named “Drawings” in the folder “**Refurbishment of TSU Amphitheater**” at the TSU website: www.tsu.edu.ph / **<https://www.tsu.edu.ph/opportunities/bid-opportunities/2023-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

12. The Bidder shall present the detailed breakdown of the **Bid Price** using the form **Bill of Quantities** in Microsoft Excel format which should be downloaded from the File Folder "**Refurbishment of TSU Amphitheater**" with the file name "**Bill of Quantities**", from the TSU website: <https://www.tsu.edu.ph/opportunities/bid-opportunities/2023-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. **Work Item Qty. (3)**, and

4.2.4. **Work Item Unit (4)**.

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 (5)** – the aggregate cost of materials, labor, and equipment utilization,

4.3.2. **Indirect Cost (6)** – the sum of overhead cost, contingency, miscellaneous, and profit,

4.3.3. **Total Direct & Indirect Cost (7)** – the sum of the values in columns **(5)** and **(6)**,

4.3.4. **Value Added Tax (8)** – the tax to be charged for the work item,

4.3.5. **Total Cost (9)** – the sum of the values in columns **(7)**, and **(8)**, and

4.3.6. Cost per Unit of Work Item (10) – the quotient of the values in column **(9)** divided by the values in Column **(3)**.

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

13. 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 Microsoft Excel format which should be downloaded from the File Folder “**Refurbishment of TSU Amphitheater**” with the file name “**DUPA**”, from the TSU website: <https://www.tsu.edu.ph/opportunities/bid-opportunities/2023-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.

A. Eligibility and Technical Documents (<i>Contents of Envelope 1</i>)	
<input type="checkbox"/>	1. Photocopy of valid PhilGEPS Certificate of Registration (Revised and updated in accordance with GPPB Resolution No. 15-2021)
<input type="checkbox"/>	2. Statement of all on-going government and private contracts, including contracts awarded but not yet started, if any
<input type="checkbox"/>	3. Statement of Single Largest Completed Contract (SLCC), similar to the contract to be bid, in accordance with BDS clause 5.2
<input type="checkbox"/>	4. Audited Financial Statements stamped “received” by the BIR or its duly accredited and authorized institutions
<input type="checkbox"/>	5. NFCC computation
<input type="checkbox"/>	6. Photocopy of valid PCAB License and Registration
<input type="checkbox"/>	7. <i>If applicable</i> , a valid Joint Venture Agreement (JVA), 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
<input type="checkbox"/>	8. Bid Securing Declaration or Bid Security, in the form, amount and validity period, as prescribed in ITB Clause 15.1
<input type="checkbox"/>	9. Organizational Chart for the contract which shall be duly signed
<input type="checkbox"/>	10. List of the Contractor’s key personnel to be assigned to the contract to be bid, with their Curriculum Vitae, which shall be duly signed
<input type="checkbox"/>	11. List of the Contractor’s equipment to be pledged to the contract to be bid, which shall be duly signed
<input type="checkbox"/>	12. Omnibus Sworn Statement, which shall be duly notarized
B. Financial Documents (<i>Contents of Envelope 2</i>)	
<input type="checkbox"/>	1. Financial Bid Form in the prescribed form
<input type="checkbox"/>	2. Bid Prices in the Bill of Quantities
<input type="checkbox"/>	3. 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
<input type="checkbox"/>	4. Cash flow by quarter or payment schedule

Section X. Bidding Forms

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5.	NFCC computation	72
8.	Bid Securing Declaration or Bid Security, in the form, amount and validity period, as prescribed in ITB Clause 15.1	73
9.	Organizational Chart for the contract which shall be duly signed 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.	
10.	List of the Contractor’s key personnel to be assigned to the contract to be bid, with their Curriculum Vitae, which shall be duly signed	75
11.	List of the Contractor’s equipment to be pledged to the contract to be bid, which shall be duly signed	78
12.	Omnibus Sworn Statement, which shall be duly notarized	79
B. Financial Documents		
1.	Financial Bid Form	81
2.	Bid Prices in the Bill of Quantities Note: Bidder should download and use the Bill of Quantities in Microsoft Excel format provided in the File Folder “ Refurbishment of TSU Amphitheater ” with the file name “ Bill of Quantities ” from the TSU website: www.tsu.edu.ph .	
3.	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 Microsoft Excel format provided in the File Folder “ Refurbishment of TSU Amphitheater ” with the file name “ DUPA ” from the TSU website: www.tsu.edu.ph .	
4.	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.

List of All Ongoing Government and Private Contracts, Including Contracts Awarded But Not Yet Started

Row 1: Name of Contract Row 2: Location of Project Row 3: Contract Price	Row 1: Procuring Entity/Owner Row 2: Contact Person/Address Row 3: Telephone No.	Nature of Work	Contractor's Role		Row 1: Date of Award Row 2: Date Started Row 3: Date of Completion	% of Accomplishment		Value of Outstanding Works
			Description	% of Participation		Planned	Actual	

Attached herewith are the following documents: Notice of Award, Notice to Proceed, and Certificate of Accomplishments (or Statement of Work Accomplished), 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 or Authorized Representative]
[Position or Title]

[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 or Authorized Representative]
[Position or Title]

[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 the aforementioned 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.

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

Bid-Securing Declaration

Republic of the Philippines
City/Municipality Of _____) S.S.

x-----x

Invitation to Bid *[Insert reference number]*

To: **Tarlac State University**

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 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 written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1 (f), of the IRR of RA 9184; without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid-Securing Declaration shall cease to be valid on the following circumstances:
 - a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
 - b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and
 - i) I/we failed to timely file a request for reconsideration or
 - ii) I/we filed a waiver to avail of said right;
 - c. I am/we are declared as 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]*.

[Signature]
[Name of Bidder's Authorized Representative
[Signatory's legal capacity]
Affiant

SUBSCRIBED AND SWORN to before me this ___ day of *[month]* *[year]* at *[place of execution]*, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-

13-SC). Affiant/s exhibited to me his/her *[insert type of government identification card used]*, with his/her photograph and signature appearing thereon, with no._____.

Witness my hand and seal this____day of *[month]* *[year]*.

[Name and Signature of Notary Public]

Serial No. of Commission _____

Notary Public for_____ **until**_____

Roll of Attorneys No. _____

PTR No._, *[date issued]*, *[place issued]*

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

Doc. No. ____

Page No. Book

No. Series of _.

[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
	Project Engineer/ Architect	
	Safety Officer	
	Foreman	

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.

16. 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 (Revised)

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

A F F I D A V I T

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

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

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

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

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

[If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [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, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

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

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

7. *[Name of Bidder]* complies with existing labor laws and standards; and
8. *[Name of Bidder]* is aware of and has undertaken the 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 ___~~80~~ 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]

[Bidder's Letterhead]

[Date]

FINANCIAL BID FORM

To: Tarlac State University
Re: Invitation to Bid No: Infra 01-004-2021

We, the undersigned, declare that:

- (a) We have examined and have no reservation to the Bidding Documents, including Addenda, for the Contract [insert name of contract];
- (b) We offer to execute the Works for this Contract in accordance with the Bid and Bid Data Sheet, General and Special Conditions of Contract accompanying this Bid;

The total price of our Bid, excluding any discounts offered below is: [insert information];

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

- (c) Our Bid shall be valid for a period of [insert number] days from the date fixed for the Bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) If our Bid is accepted, we commit to obtain a Performance Security in the amount of [insert percentage amount] percent of the Contract Price for the due performance of the Contract;
- (e) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from the following eligible countries: [insert information];
- (f) We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;
- (g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the Funding Source;
- (h) We understand that this Bid, together with your written acceptance thereof included ⁸¹in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and
- (i) We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.
- (j) **We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity].**
- (k) **We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.**

Name: _____

In the capacity of: _____

Signed: _____

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

Date: _____