



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

Bidding Documents

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

For the Project

Construction of Center for Solar Technology and Innovation Building (Phase I)

With an Approved Budget for the Contract (ABC) of Eighty-Nine Million Six Hundred Seventy-Four Thousand Eight Hundred Thirty-Seven and 52/100 Pesos (₱ 89,674,837.52)

Invitation to Bid No. Infra 02-005-2026
PhilGEPS Reference No.: 12787295

July 2020
6th Edition

TABLE OF CONTENTS

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

| | |
|---|-----------|
| 11. Program of Works | 13 |
| 12. Instructions, Inspections, and Audits | 14 |
| 13. Advance Payment | 14 |
| 14. Progress Payments | 14 |
| 15. Operating and Maintenance Manuals | 14 |
| Section V. Special Conditions of Contract | 15 |
| Section VI. Specifications | 16 |
| Section VII. Drawings | 44 |
| Section VIII. Bill of Quantities | 45 |
| Section IX. Checklist of Technical and Financial Documents | 48 |
| Section X. Bidding Forms | 50 |

Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

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

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

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

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

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

GFI – Government Financial Institution.

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

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

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

GOP – Government of the Philippines.

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

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

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

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid



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

INVITATION TO BID

For the Project

Construction of Center for Solar Technology and Innovation Building (Phase I)

Invitation to Bid No. Infra 02-005-2026

1. The Tarlac State University, through **Special Budget (SB) 2025** intends to apply the sum of **Eighty-Nine Million Six Hundred Seventy-Four Thousand Eight Hundred Thirty-Seven and 52/100 Pesos (₱ 89,674,837.52)** to payments under the contract for the project: **Construction of Center for Solar Technology and Innovation Building (Phase I)**.

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

2. The Tarlac State University now invites bids for the aforementioned Project. Completion of the Works is required within **Three Hundred Sixty-Five (365) calendar days**. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II. Instructions to Bidders.
3. Bidding will be conducted through open competitive bidding procedures using non- discretionary “pass/fail” criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Interested bidders may obtain further information regarding the bidding and inspect the Bidding Documents from 8:00 A.M. to 5:00 P.M., Tuesday to Friday starting on **February 19, 2026**, at this address:

BAC Secretariat

Motorpool and Administration Building
Tarlac State University
Romulo Blvd., San Vicente, Tarlac City
Tel. No. (045) 606-8110, Extension: 142 / 0998 846 0206
Email: [**tsubacsec2025@gmail.com**](mailto:tsubacsec2025@gmail.com)

5. A complete set of Bidding Documents may be acquired by interested Bidders from **February 19, 2026, to March 11, 2026**, from the aforementioned address upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of **₱ 50,000.00**.

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

6. The Tarlac State University will hold a Pre-Bid Conference on **February 27, 2026 (10:00 A.M.)** at the BAC Conference Room, 3rd Floor, Motorpool and Administration Building, Tarlac State University, Romulo Blvd., San Vicente, Tarlac City which shall be open to prospective bidders.
7. Three (3) copies of the bid proposals (one original, and additional copy 1 and 2) must be submitted to the BAC which must be duly received by the BAC Secretariat through manual submission at the office address indicated in the bidding documents, on **March 11, 2026 at 9:30 A.M.** Failure of bidders to comply with the said request of additional copies shall not be a ground for disqualification.

Late submission shall not be accepted.

Motorpool and Administration Building
 Tarlac State University
 Romulo Blvd., San Vicente, Tarlac City
 Tel. No. (045) 606-8110, Extension: 142 / 0998 846 0206
 Email: tsubacsec2025@gmail.com

8. All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 14.
9. Bid opening shall be on **March 11, 2026, at 10:00 A.M.**, at the BAC Conference Room, 3rd Floor, Motorpool and Administration Building, Tarlac State University, Romulo Blvd., San Vicente, Tarlac City. Bids will be opened in the presence of the bidders' representatives who choose to attend.
10. The Summary of the procurement activities is as follows:

| Activities | Date and Time | Venue |
|--------------------------------|---------------------------------|---|
| Date Posted to PhilGEPS | February 19,2026 | N/A |
| Pre-Bid Conference | February 27, 2026 (10:00 AM) | BAC Conference Room , 3 rd Floor, Motorpool and Administration Building, Tarlac State University, Romulo Blvd., San Vicente, Tarlac City |
| Deadline of Submission of Bids | March 11, 2026 (09:30 AM) | Procurement Unit, BAC Secretariat Office , 2 nd Floor, Motorpool and Administration Building, Tarlac State University, Romulo Blvd., San Vicente, Tarlac City |
| Opening of Bids | March 11, 2026 (10:00 AM) | BAC Conference Room , 3 rd Floor, Motorpool and Administration Building, Tarlac State University, Romulo Blvd., San Vicente, Tarlac City |

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

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


ATTY. GHEROLD C. BENITEZ
 BAC Chairperson – Infrastructure

Section II. Instructions to Bidders

1. Scope of Bid

1. The Procuring Entity, **Tarlac State University** invites Bids for the project: **Construction of Center for Solar Technology and Innovation Building (Phase I)**, with Project Identification Number: Invitation to Bid No. **Infra 02-005-2026**.

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 **2026** in the amount of **₱ 89,674,837.52**
- 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 **July 9, 2026**. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

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

17. Deadline for Submission of Bids

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

18. Opening and Preliminary Examination of Bids

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

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

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

19. Detailed Evaluation and Comparison of Bids

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

20. Post Qualification

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

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

21. Signing of the Contract

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

Section III. Bid Data Sheet

| ITB Clause | | | |
|------------|--|--|---------------|
| 5.2 | For this purpose, contracts similar to the Project refer to contracts for at least three (3) -Storey High 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 2 years of experience in construction project supervision | |
| | Registered Electrical Engineer / Master Electrician | <ul style="list-style-type: none"> • Must be a licensed Electrical Engineer / Master Electrician • With at least 2 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 | |
| | Registered Master Plumber | <ul style="list-style-type: none"> • Must be a licensed Master Plumber. • With at least 2 years of experience in construction project supervision | |
| 10.5 | The minimum major equipment requirements are the following: | | |
| | Equipment | Min. Capacity | Min. Quantity |
| | • Dump Truck | 10 cu. m. | 1 |
| | • Drop Side Truck | 2 tons | 1 |
| | • Loader | 4 cu. m. | 1 |
| | • Backhoe | 0.75 cu. m. | 1 |
| | • Concrete Vibrator | 2800 rpm | 1 |
| | • Mini Roller Compactor | 1 ton | 1 |
| | • Concrete Mixer | 1 bagger | 1 |
| | • Welding Machine | 300A | 1 |
| | • Hand Pressure Test Pump | 500 psi | 1 |
| | • Automatic Level | Minimum focus distance: 0.2m from end of telescope, 0.3m from instrument center | 1 |
| | The bidder must state and show proof that the equipment to be pledged for the project are owned or leased. | | |
| 12 | No further instructions. | | |

| | |
|------|---|
| 15.1 | <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 ₱ 1,793,496.75 (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 ₱ 4,483,741.88 (5 % of ABC) if bid security is in Surety Bond. |
| 19.2 | <p>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.</p> |
| 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 updated Program of Work at intervals no longer than the period stated in the SCC. If the

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

12. Instructions, Inspections and Audits

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

13. Advance Payment

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

14. Progress Payments

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

15. Operating and Maintenance Manuals

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

Section V – Special Conditions of Contract

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

Section VI – Specifications

SECTION 1 – GENERAL CONDITIONS AND REQUIREMENTS

1.1 SCOPE OF WORK

1.1.1 The project shall cover the **CONSTRUCTION OF CENTER FOR SOLAR TECHNOLOGY AND INNOVATION BUILDING (PHASE I)**, which shall include the supervision and furnishing of labor, supplies, materials, equipment, and ancillary services necessary to effectively execute and deliver the required work output in accordance with the contract and project specifications.

1.2 CONTRACT DRAWINGS

1.2.1 Details and extent of 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 during the pace 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 CONDITION AND REQUIREMENTS |
| 2 | EARTHWORKS |
| 3 | STRUCTURAL WORKS |
| 4 | ARCHITECTURAL WORKS |
| 5 | ELECTRICAL WORKS |
| 6 | PLUMBING WORKS |
| 7 | MECHANICAL WORKS |

1.4 WORKMANSHIP

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

1.5 INSPECTION OF SITE

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

1.6 CONFLICT BETWEEN PLANS AND SPECIFICATIONS

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

- (a) the Contract and its attachments (Approved Budget for the Contract, Terms of Reference, etc.)
- (b) the Specific Conditions of the Contract
- (c) the General Conditions of the Contract
- (d) the Technical Specifications
- (e) the Drawings
- (f) the Project Schedule and any other pertinent documents

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

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

1.7 APPROVAL

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

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

1.8 REJECTIONS

1.8.1 All materials and workmanship must strictly comply with the specifications outlined in this contract. Any materials or workmanship failing to meet these standards may be rejected at any stage during project execution. The Contractor will receive formal documentation of any rejection issued by the authorized technical representative of TSU. Any completed work found to be non-compliant with the quality and specifications required by the project plans shall be promptly dismantled, removed, and reconstructed or otherwise corrected to meet all contractual and technical requirements.

1.9 VARIATIONS

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

1.10 AS-BUILT DRAWING AND PICTURES

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

1.10.2 The Contractor shall submit As-Built Drawings to TSU, reflecting all modifications made and documented in the marked drawings retained by the Contractor. The As-Built Drawings shall be prepared in a reproducible format and provided alongside a minimum of three (3) A3-sized copies (11.7 in. x 16.6 in.).

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

1.11 MOBILIZATION AND DEMOBILIZATION

1.11.1 Upon receipt and acceptance of the Notice to Proceed, the Contractor shall immediately mobilize their workforce, equipment, materials, and secure the project site with proper and prompt coordination to the Project-in-Charge.

1.11.2 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.

1.12 BILLBOARD

1.12.1 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.

1.13 TEMPORARY FACILITIES

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

1.14 CONSTRUCTION OCCUPATIONAL SAFETY AND HEALTH

1.14.1 The Contractor shall be responsible in 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.

1.14.2 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.

1.14.3 The Contractor shall designate a competent and qualified Safety Officer for the whole duration of the project.

1.14.4 All personnel assigned to the project are expected to report for work in their proper uniforms, basic safety gears (helmets, boots or shoes), and identification cards (IDs). The uniforms, basic safety gear, and IDs shall be provided by the Contractor at their own expense.

1.14.5 The Contractor shall establish and implement safety procedures for all relevant jobs, tasks, operations, and proper waste disposal for all assigned personnel.

1.14.6 The Contractor shall erect temporary barricades, install early warning and precautionary signs, and provide other safety devices that may be required to keep the job site safe and secured. Use roof sheet or plywood for temporary barricade with standard height and stable framing within the construction site as indicated in the plan: do not use "Blue Sack".

1.14.7 The Contractor shall maintain, at the project site, ample supplies of expendable materials for the safety and health of its personnel and other affected parties such as safety tape, first-aid kits, safety gloves, dust masks, etc., the cost of which shall be included in the contract price.

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

1.15 CLEARING, HAULING AND DISPOSAL WORKS

- 1.15.1 Clearing, hauling and disposal works shall include the removal and repair of all affected areas needed to complete the project.
- 1.15.2 The Contractor shall exercise all care to protect and maintain adjacent properties, trees, materials and such 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.
- 1.15.3 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.

1.16 PERMITS AND CLEARANCES

- 1.16.1 The Implementing Office shall be responsible for securing all necessary requirements in the application of permits and clearances related to the project.
- 1.16.2 The Contractor shall be responsible for the application of all permits and clearances related to the project, which shall include but not be limited to building permits, occupancy permits, excavation permits, locational clearances environmental compliance certificates, etc.
- 1.16.3 All the professional fees, processing fees, assessment fees, and other payments necessary to secure the permits and clearances required for the project shall be included in the submitted and approved bid by the Contractor.
- 1.16.4 The professionals who signed and sealed the building permit and construction drawings shall also sign and seal the occupancy permits and as-built drawings.
- 1.16.5 Should alterations be required during the construction phase, all modifications must be accurately incorporated into the As-Built Drawings/Plans. The Contractor shall submit these revised As-Built Drawings along with a certification, as mandated by the Office of the Building Official, for the issuance of the occupancy permit. If the alterations impact the structural integrity of the project, the Structural Engineer must provide a detailed design analysis and structural computations certifying the stability and soundness of the modified structure.
- 1.16.6 No additional professional fees shall be granted to the Contractor for any modifications made to the plan that are instructed by the designated design professional.

SECTION 2 - EARTHWORKS

2.1. SCOPE OF WORK

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

2.2. TOPSOIL STRIPPING AND STOCKPILING OF EXCAVATED MATERIALS

- 2.2.1. 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.
- 2.2.2. The stripped topsoil shall be stockpiled on site for the subsequent use as topsoil for the embankment.
- 2.2.3. Stockpile excavated material that is suitable for use as backfill until material is needed.
- 2.2.4. Stockpile all materials without intermixing. Place, grade, and shape stockpiles to drain surface water.
- 2.2.5. 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.
- 2.2.6. Confine material storage to within the Limits of Work and approved work areas. Do not obstruct roads or streets.
- 2.2.7. 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.

2.3. EXCAVATION

- 2.3.1. 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.
- 2.3.2. The Contractor shall remove all earth materials containing objectionable materials such as concrete rubble, rubbish, roots, etc., from the areas where the foundations shall be placed and replace with suitable material and compacted.
- 2.3.3. The Contractor shall furnish, place, and maintain such sheeting, shoring, bracing, and underpinning as necessary at locations necessary to support the sides of excavations and to prevent danger to persons or damage to pavements, facilities, utilities, or structures, and to prevent injurious caving or erosion or the loss of ground and to maintain pedestrian and vehicular traffic as directed and required.
- 2.3.4. The Contractor shall implement measures to prevent surface and ground water from entering excavations causing ponding on prepared subgrades, and from flooding the project site and surrounding areas.

2.4. SOIL AND WOOD TREATMENT

- 2.4.1. Treatment Application Report: After the application of termiticide is completed, submit a report to the Architect/Engineer of TSU and include the following:
 - 2.4.1.1. Date and time of application
 - 2.4.1.2. Termiticide brand name and manufacturer
 - 2.4.1.3. Quantity of undiluted termiticide used
 - 2.4.1.4. Dilutions, methods, volumes used, and rates of application
 - 2.4.1.5. Areas of application
 - 2.4.1.6. Water source for the application
 - 2.4.1.7. Moisture content of soil before application in case of soil treatment
- 2.4.2. Project Conditions
 - 2.4.2.1. 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.

- 2.4.2.2. Coordinate soil treatment application with excavating, filling, grading, and concreting operations. Treat soil under footings, grade beams, and ground supported slabs before construction.
- 2.4.2.3. Apply wood treatment after framing, sheathing, and exterior weather protection is completed but before electrical and mechanical systems are installed.
- 2.4.3. Quality Assurance
 - 2.4.3.1. 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.
- 2.4.4. Warranty
 - 2.4.4.1. 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.
- 2.4.5. Execution
 - 2.4.5.1. Examine substrates, areas, and conditions, with the applicator present, for compliance with requirements for moisture content of soil per termiticide label requirements, interfaces with earthwork, slab and foundation work, landscaping, utility installation, and other conditions affecting the performance of termite control.
 - 2.4.5.2. Proceed with the application only after unsatisfactory conditions have been corrected.
- 2.4.6. Preparation
 - 2.4.6.1. General: Comply with the most stringent requirements of authorities having the proper 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.
 - 2.4.6.2. 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.
 - 2.4.6.3. Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.
- 2.4.7. Applying Soil Treatment
 - 2.4.7.1. 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, for a continuous horizontal and vertical termiticidal barrier or treated zone

be established around and under building construction. Distribute treatment evenly.

- 2.4.7.2. 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.
- 2.4.7.3. 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.
- 2.4.7.4. 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.
- 2.4.7.5. Masonry: Treat voids.
- 2.4.7.6. Penetrations: At expansion joints, control joints, and areas where slabs will be penetrated.
- 2.4.7.7. Avoid disturbance of treated soil after application. Keep off treated areas until completely dry.
- 2.4.7.8. 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.
- 2.4.7.9. Post warning signs in areas of application.
- 2.4.7.10. 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.

2.5. EMBANKMENT

- 2.5.1. 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.
- 2.5.2. Rock and broken concrete from the demolition of old structures may be used on the lower layer of the embankment, only upon the approval of the TSU Architect/Engineer. The size of the rock or concrete shall not exceed the layer thickness requirements. The exposed reinforcing steel from concrete shall be cut and removed.
- 2.5.3. When rock and concrete fragments are used for the embankment, these should be spread uniformly, and the interstices shall be filled with fine material to produce a dense compact layer.
- 2.5.4. The compaction should begin at the outer embankment edges and gradually progress toward the center, rolling in a longitudinal direction so that the full width is uniformly compacted. In order to ensure proper compaction of the embankment slope, overfill by 150 to 300 mm and then trim the embankment to the specified shape.

- 2.5.5. Each layer shall be compacted to a minimum of 98% Standard Proctor density, ASTM D698 method except the last 300 mm up to the finished grade which shall be compacted to 100% Standard Proctor density, ASTM D698 method D.
- 2.5.6. The density of each completed layer shall be checked for each 500 square meters, or a fraction thereof. If test results show that the required density is not achieved, further compaction is necessary.
- 2.5.7. The water content of each layer, before being compacted, must be assessed. The material may require water to be added or be allowed to dry to bring the moisture content close to the optimum in order to make it possible to achieve the required dry density and hence degree of compaction.

SECTION 3 – STRUCTURAL WORKS

3.1 SCOPE OF WORK

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

3.2 CONCRETE WORKS

3.2.1 Materials

- 3.2.1.1 Concrete Aggregates – shall conform to “Specification for Aggregates” (ASTM G33 latest revision). The maximum size of the aggregates shall not be larger than one-fifth (1/5) of the narrowest dimension between the sides of the forms of the member for which the concrete is to be used and not larger than three-fourth (3/4) of the minimum clear spacing between individual reinforcing bars and in no case larger than two (2) inches in diameter.
- 3.2.1.2 Reinforcing steel bars shall conform to ASTM Designation A-615-68 specifications for the structural grade. The grade of reinforcing steel bars shall be as follows:

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

- 3.2.1.3 Sand and gravel should be well-graded and free from any deleterious materials. The fine aggregate shall be washed sand (vibro) and the size of course aggregates must be ¾” crushed gravel. Do not use river sand.
- 3.2.1.4 Cement and aggregates shall be stored in a manner as to prevent their deterioration or the intrusion of foreign matter. Materials of deteriorated quality or which have been damaged shall not be used for concrete. Cement whose quality is questionable shall be tested by standard mortar test to determine its suitability for use.

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

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

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

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

3.2.2 Execution

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

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

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

3.2.2.4. Maintain minimum concrete cover to traverse bars as follows:

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

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

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

3.2.2.7. Pouring of concrete for suspended slabs and beams must be done monolithically. Otherwise, request approval from the Engineer and apply a bonding agent if necessary.

3.2.3 Concrete Proportion and Consistency

3.2.3.1. Classes Of Concrete

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

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

3.2.4 Measurement

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

3.2.5 Mixing of Concrete

- 3.2.5.1. All concrete shall be machine mixed except in emergencies such as mixer breakdown during pouring operations where it shall be done by hand and shall stop at the first allowed construction joint. The time of mixing after all cement and aggregates are in the mixer drum shall not be less than one minute for a mixer having a capacity of one cubic yard or less; for a mixer of larger capacities, the minimum time shall be increased by 15 seconds for each additional cubic yard or fraction thereof or additional capacity. All mixing water shall be introduced into the drum and shall rotate at the peripheral speed of about 60.96 meters per minute throughout the mixing period. The entire contents of the mixer drum shall be discharged before recharging. The time elapsing between the introduction of the mixing water to the cement and aggregates and placing of the concrete in final position in forms shall not exceed 45 minutes. The re-tempering of concrete, i.e., mixing with additional cement, aggregate, or water shall not be permitted.

3.2.6 Conveying and Placing of Concrete

- 3.2.6.1. Water shall be removed from the excavation before concrete is deposited. Any continuous flow of water in the excavation shall be directed through side drains to a slump or be removed by other approved methods to avoid washing the freshly deposited concrete. Debris shall be removed from the space to be occupied by the concrete and forms shall be thoroughly wetted.
- 3.2.6.2. Concrete shall be conveyed from the mixer to forms as rapidly as practicable, by a method which shall prevent segregation or loss of ingredients. There shall be no free vertical drop or loss of ingredients. There shall be no free vertical drop greater than 1.5 meters. Approval of the TSU Engineer/Architect shall be obtained before starting any concrete pouring. Concrete shall be worked readily into the corners and angles of the forms and around all reinforcement and embedded items by depositing the concrete as close as possible to its final position in the forms and consolidating it with the aid of mechanical vibrating and consolidating it with the aid of mechanical vibrating equipment, supplemented by hand spading and tamping. In no case shall

vibrators be used to transport concrete inside the forms. Vibrating equipment shall be in the internal type and not be overdone to cause segregation of particles and disturbance of setting concrete but just enough to produce an even heterogeneous distribution of ingredients.

- 3.2.6.3. Dumping concrete into cars or buggies with a free fall or more than three (3) feet shall not be permitted. Hardened or partially hardened splashes or accumulations of concrete on forms or reinforcement shall be removed before the work proceeds. In case the rate of pouring is such as to allow splashes or accumulations to harden, concrete shall be placed with a flexible spout attached to a suitable hopper. Spouts and hoppers are provided to always maintain the surface of the concrete as nearly level as possible.
- 3.2.6.4. Construction Joints – If possible, concreting shall be done continuously until the section is complete. When a stoppage of concrete operations occurs construction joints shall be placed either horizontally or vertically as indicated by the TSU Engineer/Architect and provided with shear keys or dowels to develop a bond. Construction joints shall be as per plan or shall be approved as directed by the TSU Engineer.
- 3.2.6.5. Pouring of concrete for foundations shall be done after the TSU Engineer/Architect has verified the actual soil conditions at the site and approved the start of concreting. No footing shall rest on fill.

3.2.7 Curing

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

3.2.8 Repair of Concrete

- 3.2.8.1. Imperfections
 - 3.2.8.1.1. Repairs shall be completed within 24 hours after removal of forms.
 - 3.2.8.1.2. Voids that appear upon the removal of forms shall be drenched with water and immediately filled with materials of the same composition as that used on the surface and smooth with a wood spatula or float.
- 3.2.8.2. Where present, large bulges and abrupt irregularities that protrude, shall be removed by brushing, hammering, and grinding.
- 3.2.8.3. All materials, procedures, and operations used in the repair of concrete shall be approved by the TSU Engineer/Architect.
- 3.2.8.4. The cost of all material, labor, and equipment used in the repair shall be borne by the Contractor.

3.2.9 Concrete Slab on Fill

- 3.2.9.1. Concrete slabs on fill shall be laid on a prepared foundation consisting of a subgrade and granular fill with a thickness equal to the thickness of the overlaying slab except as indicated otherwise. Sub-grade shall be rolled, rammed, or tamped layer by layer to a thoroughly compacted foundation. The granular fill shall consist of sound gravel, well graded and of a size that will pass a 1-1/2 inch diameter ring

and will be retained on a No.4 screen. Gravel fill shall be without any organic material and debris and shall be compacted to provide an unyielding base. Concrete slab on fills on general storage area and platform shall not be less than 6" thick and all other areas will not be less than 4" thick.

3.2.10 Cement Finish for Concrete Surfaces

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

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

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

3.2.10.2. Concrete Floors and Slabs

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

3.2.11 Inspection

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

3.2.12 Test of Concrete

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

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

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

3.2.13 Failure of Test Samples

- 3.2.13.1. In the case of failure of Test Cylinders to meet the specified strength, the Contractor may at his expense, obtain concrete core samples from the poured, concrete and the compressive strength of the same to be taken by a competent testing authority to determine the conclusive strength and integrity for the concrete poured. Coring shall be done in a manner which shall make possible satisfactory replacement of cored samples. To determine the adequacy of the affected parts, the TSU Engineer shall have the option to order load tests on parts of the structure where concrete strength tests are below 80% of the strength specified.
- 3.2.13.2. 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.
- 3.2.13.3. Should the tests fail to give the required strength, the Engineer TSU shall have the right to order a change in the proportions or the procedure or curing of the concrete for the rest of the structure.

3.3. STEEL AND TINSMITHRY WORKS

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

- 3.3.1.1. All structural beams, structural columns, steel shapes, and plates shall conform to ASTM-A36 (248 MPa) at least commercial type.
- 3.3.1.2. All structural bolts shall conform to ASTM-A307 (Ft=96.60 MPa, Fv=69.00 MPa) at least commercial type.
- 3.3.1.3. Use an approved 10 mm thick MS plate for Roof Truss seat.
- 3.3.1.4. Use an approved Web Type Steel Deck 1.50mm Thk.
- 3.3.1.5. Welding electrodes shall be E60XX.

3.3.2. Fabrication and Erection

- 3.3.2.1. Field fabrication shall be kept to a minimum and shop fabrication shall be employed to the greatest extent possible with members shop fabricated as long as practicable with a minimum requirement for field connections. Welding, shearing, gas cutting, chipping, and all other works involved in the fabrication of structural steel shall be done with accuracy and of the highest quality of workmanship within the allowable tolerance prescribed in the AISC Specifications.
- 3.3.2.2. The steel members shall be shop fabricated and shall be done only by a qualified welder.
- 3.3.2.3. If for any reason, the TSU Engineer/Architect believes that a defect exists in any weld, it shall be the Contractor's responsibility to repair the questioned weld to the satisfaction of the Engineer/Architect.
- 3.3.2.4. All steel works after complete erection shall be field painted with the type specified in the section of the painting of this specification. Painting shall not be done on any steel surface that is not thoroughly clean and dry.
- 3.3.2.5. The steel structures shall be erected plumb and true line and grade. Bracing and support should be provided as necessary to accommodate all loads the structure may encounter. These bracings must remain in place for as long as needed to ensure safety.

- 3.3.2.6. Connections shall be as shown in the drawings and shall develop the full capacity of the member.
- 3.3.2.7. Surfaces or joints prepared for welded or anchor bolt connection shall meet the cleanliness requirements for all joint surfaces and contact surfaces within friction-type joints as specified in Section 3, "Bolted Parts of the AISC Specifications".
- 3.3.2.8. Structural Bearing Pad with Bearing Pad Holder shall be placed in steel column to beam support to absorb the compressive forces of loading.
- 3.3.2.9. Holes shall be punched or drilled at right angles to the surface of the metals and shall be enlarged by burning. Holes shall be clean-out without rugged edges. Outside bursts resulting from drilling or roaming operations shall be removed with a tool that reaches 1/16" (1.588mm) level around the bolt holes.
- 3.3.2.10. Holes for the structural column and structural beam connections shall be fabricated off-site.

3.3.3. Inspection

- 3.3.3.1. Materials, equipment, and tools intended to be used for the work shall be inspected and approved by the TSU Architect/Engineer.
- 3.3.3.2. Each completed stage of the work shall be inspected and approved by the TSU Architect/Engineer before the next stage of the work can commence.
- 3.3.3.3. Before any Structural Steel Frame Fabrication is done by the Contractor, all materials intended to be used by the Contractor for the project shall be inspected for proper checking and approval of material thickness, quality, and sizes.
- 3.3.3.4. Final inspection by the Engineer/Architect of the TSU must be done before any delivery of the fabricated structural steel frames, members, and accessories. This inspection is made upon the advice of the Contractor.
- 3.3.3.5. Failure on the part of the Contractor to notify the TSU Engineer/Architect of the inspection of the materials intended to be used for the project before the start of any fabrication and final inspection of the fabricated structural steel frames, members, and accessories before any delivery is made will be at the risk of the Contractor for any subsequent rejection.

3.3.4. Marking

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

3.3.5. Shop Painting

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

3.3.6. Field Painting

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

SECTION 4 – ARCHITECTURAL WORKS

4.1 MASONRY AND PLASTERING WORKS

4.1.1 Scope

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

4.1.2 Masonry and Plastering

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

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

| Thickness | Horizontal Reinforcement | Vertical Reinforcement |
|-----------|--------------------------|------------------------|
| 100 mm | 10 mm Φ @ 600 mm O.C. | 10 mm Φ @ 600 mm O.C |
| 125 mm | 10 mm Φ @ 400 mm O.C. | 10 mm Φ @ 400 mm O.C |

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

4.1.3 Workmanship

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

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

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

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

4.2. FLOOR, WALL, AND FINISHING WORKS

4.2.1 General

4.2.1.1 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.

4.2.2 Preparation

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

4.2.3 Materials

4.2.3.1 Floor Finish

4.2.3.1.1 All finishes indicated below should be applied based on the schedule of finishes:

4.2.3.1.2 Smooth Cement Floor Finish: Approved quality.

4.2.3.1.3 600 mm x 600 mm Ceramic Terrazzo Floor Tiles: Approved brand and quality.

4.2.3.1.4 600 mm x 600 mm Non-Skid Porcelain Floor Tiles: Approved brand and quality.

4.2.3.1.5 Concrete Fine Broom Finished: Approved quality.

4.2.3.1.6 #12 Sieve Pebble Washout Finish: Approved quality.

4.2.3.1.7 Waterproofing for roof deck, corridor & 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.

4.2.3.2 Wall Finish

4.2.3.2.1 Smooth Paint Finish

4.2.3.2.2 Smooth Paint Finish with 10mm groove

4.2.3.2.3 Smooth Cement Wall Finish

4.2.3.2.4 Rough Cement Finish with 10mm groove

4.2.3.2.5 Rough Cement Finish

4.2.3.2.6 2-inches thick plaster for concrete moldings

4.2.4 Tile Installation

Clean the existing flooring.

Lay tiles in straight square patterns and cover them from wall to wall. Where the manufacturer's instruction requires priming of concrete floors, work the primer well into the surface of the concrete with stiff brushes or a straight-edge steel trowel, using the minimum quantity, which will assure complete coverage. Allow the primer to dry thoroughly. Install the tile in such a manner that each tile is in contact with each adjacent tile and that the entire undersurface of each tile will be securely bonded.

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.

Apply adhesive following the manufacturer's recommendation. Secure cove base to walls with adhesive as specified for floor tiles. Approved brand and quality.

4.2.5 Cleaning

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.

4.2.6 Protection

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

4.2.7 Guarantee

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

4.3 PAINTING WORKS

4.3.1 Scope Of Work

4.3.1.1 The Contractor shall furnish all materials, labor, equipment, and services required to complete the entire painting works herein called for. Painting works shall include the repainting of walls, columns, beams, railings, window frames, etc. of the existing building as specified hereinafter and required thereto.

4.3.2 Material

4.3.2.1 The brand of painting materials to be used shall be approved by TSU.

4.3.2.2 All steel, including steel deck ceiling, must be painted with epoxy primer and a topcoat of black quick-dry enamel.

4.3.2.3 Interior walls must be painted with off-white semi-gloss latex paint.

4.3.2.4 All paint materials shall be delivered to the job site in their original containers. with labels and seals unbroken.

4.3.2.5 Except for ready-mixed materials in original containers, all mixing shall be done at the job site. No materials are to be reduced or changed except as specified by the manufacturer of the said materials. The use of white zinc (lithopone) is prohibited.

4.3.3 Colors

4.3.3.1 All colors of paints and varnishes shall be in accordance with the color scheme approved by TSU.

4.3.3.2 Submit samples of the proposed colors for approval. Only colors that have been approved may be used.

4.3.3.3 No painting shall commence until color schemes have been approved by the Engineer/Architect.

4.3.4 Surface Examination and Preparation

4.3.4.1 Before commencement of the work, the Contractor shall examine the surfaces to be applied with paints so as not to compromise the quality and appearance of a painting of finishing work.

4.3.4.2 No painting shall be done under conditions that may compromise the quality or appearance of the paint or finish.

4.3.4.3 All surfaces to be painted must be cleaned and in proper condition before application.

4.3.4.4 Voids, cracks, and all other kinds of defects shall be repaired with proper patching materials and finished flush with the surrounding surfaces.

4.3.5 Surface Conditioning

4.3.5.1 Apply topcoat on existing concrete and masonry surfaces.

4.3.5.2 Patch and seal hairline cracks and uneven areas with approved putty or patching compound. After correcting all defects, apply the finish coats as specified in the Plan, following the approved color scheme.

4.3.5.3 Metals shall be clean, dry, and free from mill scale and rust. Remove all grease and oil from surfaces. Wash unprimed galvanized metal with the etching solution and allow it to dry.

4.3.5.4 Metal surfaces shall be primed with epoxy primer.

4.3.6 Application

4.3.6.1 Paints, when applied by brush, shall be non-fluid; and thick enough to lay down an adequate film of wet paint. Brush marks must be smoothed out after the application of paint.

4.3.6.2 Paints intended for roller application must be similar to those used for brushing paint. The paint should not be sticky when thinned.

4.3.7 Workmanship

4.3.7.1 Experienced and skilled craftsmen shall perform all work to ensure finished work of first-class quality, appearance, and durability.

4.3.7.2 All paints and other coatings shall be mixed and applied strictly following the manufacturer's printed instructions.

4.3.8 Mixing And Thinning

4.3.8.1 At the time of application, paint shall show no sign of deterioration. Paint shall be thoroughly stirred, strained, and kept at a uniform consistency during application.

4.3.8.2 When thinning is necessary, this may be done immediately before application following the manufacturer's directions, but not more than 1 pint of suitable thinner per gallon of paint.

4.3.8.3 Kerosene shall not be used as paint thinner. Paints from the different manufacturers shall not be mixed.

4.3.9 Storage

4.3.9.1 All materials to be used for this item shall be stored in a single place designated by TSU. This storage area must always be kept neat and clean.

4.3.9.2 Take necessary precautions to prevent fire hazards by removing oily rags, waste, and other flammable materials at the end of each workday.

4.3.10 Cleaning

4.3.10.1 All clothes and cotton waste that pose a fire hazard must be placed in metal containers or destroyed at the end of each workday.

4.3.10.2 Upon completion of the work, remove all staging and paint containers, and dispose of them appropriately.

4.3.10.3 Remove any paint drips, oil, or stains from adjacent surfaces. Ensure the entire area is left clean and acceptable to the supervising Architect/Engineer.

4.4 DOORS AND WINDOWS

4.4.1 Scope Of Work

4.4.1.1 The Contractor shall furnish all materials, labor, equipment, tools, and services necessary to complete all specified work as shown in the drawings. See the architect's approved shop drawings and details showing fabrications. Protect glass from breakage before and after installation.

4.4.1.2 Provide all necessary hardware to complete the work. All hardware must be approved by TSU.

4.4.2 Materials

4.4.2.1 Doors

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

4.4.2.1.2 Stainless steel heavy duty single cylinder deadbolt.



4.4.2.1.3 Grade-1 32mmØ x 300mm D-Type stainless steel round door handle.



- 4.4.2.1.4 300mm x 100mm x 1.5mm thick round heavy-duty stainless-steel pull handle with plate.



- 4.4.2.1.5 500mm x 100mm x 1.5mm thick S304 stainless H-type door handle.



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



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

4.4.2.2 Windows

- 4.4.2.2.1 All windows shall be aluminum frame with 6.0 mm and 10.0mm thk. Reflective tempered bronze glass.

- 4.4.2.2.2 All glass partitions shall be aluminum frame with 6.0mm and 10.0mm thk. Clear Tempered glass with frosted decals.

4.4.2.3 Glass And Glazing

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

4.4.3 Shop Finish

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

4.4.4 Dimensions

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

4.4.4.2 Execution

4.4.4.2.1 Glasses must be accurately cut to fit and have uniform bearing across the entire width of the pane. Apply a thin layer of putty to the rebate, set the glass, and press it until an even bed is achieved. Remove any excess putty from each side, ensuring it is flush with the edge of the rebate.

4.4.4.2.2 Any glass breakage occurring during execution or due to faulty installation must be replaced by the Contractor at no additional cost.

4.5 ROOFING WORKS

4.5.1 Scope of Work

4.5.1.1 The Contractor shall furnish all materials, labor, equipment, tools, and services necessary to complete all specified work as shown in the drawings.

4.5.1.2 Provide all necessary hardware to complete the work. All hardware must be approved by TSU.

4.5.2 Materials

4.5.2.1 Roof sheets shall be approved 0.50 mm thick Pre-painted Long Span Rib-type. Approved type and quality.

4.5.2.2 Gutter and flashing shall be approved 0.50 mm thick Pre-painted Plain Sheet. Approved type and quality.

4.5.2.3 Use approved PE Foam Double Sided Insulation with 10 mm thick with 12.5 mm welded wire #21. Approved type and quality.

4.5.2.4 All metallic fasteners and fixing accessories shall be corrosion proof and non-metallic fasteners shall be of neoprene.

4.5.3 Workmanship

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

4.5.3.2 Flashings and gutters shall be lap at least 20 cm over the roofing sheets.

4.5.3.3 The intersection of all roofs with vertical walls shall be flashed not less than 20 cm high and all connections shall be made watertight.

4.5.3.4 PE Foam Insulation must be placed between the roof sheets and purlins with welded wire mesh #21 support underneath.

4.5.4 Fabrication and Installation

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

4.5.4.2 Gutter and flashing shall be lapped at least 20 cm over the roofing sheets. The ridge rolls shall be riveted.

- 4.5.4.3 The intersection of all roofs with vertical walls shall be flashed not less than 20 cm high and all connections shall be made watertight.

SECTION 5 – ELECTRICAL WORKS

6.1 SCOPE OF WORK

- 6.1.1 The Contractor shall provide all materials and equipment and perform all the work necessary for the complete execution of the electrical work specified herein; except as otherwise excluded, and which without excluding the generality of the foregoing, shall include but not be limited to the following principal items of work. All work shall be in accordance with the governing codes and regulations and with the specifications, except when the same shall conflict with such codes, etc. in which case the latter shall then govern.
- 6.1.2 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 includes, but is not limited to, the following items.
- 6.1.2.1 Provide an electrical rough-ins for Service Entrance, Lighting, Power outlet, Air conditioning, and FDAS.
- 6.1.2.2 Optional items of work.
- 6.1.2.3 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.

6.2 GENERAL

6.2.1 Codes, Regulations, and Ordinances

- 6.2.1.1 The electrical item under this contract is to be installed according to the requirements of the latest Philippines Electrical Code, the rules and regulations of the Authority concerned and the requirements of the Power Company. Nothing contained in these specifications or shown on the drawings shall be construed as to conflict with the National and Local Ordinances or Laws governing the installation of electrical work, and all laws and ordinances are hereby made part of these specifications. The Contractor is required to meet the requirements thereof.

6.2.2 Plans and Drawings

- 6.2.2.1 The Contract Drawings, which constitute an integral part of this contract, shall serve as workings drawings. They indicate the general layout of the electrical rough ins layout.
- 6.2.2.2 The Contractor shall check architectural, structural, and plumbing plans to avoid possible installation conflicts. Should drastically changes from original plans be necessary to resolve such conflicts, the Contractor shall notify the Engineer/Architect and shall secure from him written approval and agreement concerning necessary changes and adjustments before altered installation work is started.

6.2.3 Minor Modifications

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

6.2.4 Guarantees

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

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

5.2.5 Samples and Drawings

5.2.5.1 The Contractor shall submit to the Engineer/Architect for approval samples of conduits and fittings as may be required by the Engineer/Architect.

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

6.3 INSTALLATION REQUIREMENTS

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

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

6.3.3 Cutting and Fitting

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

6.3.4 Inserts, Anchor, Etc.

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

6.4 MATERIALS

6.4.2.1 Conduits shall be embedded in the flooring slab and PVC Rigid Conduit Schedule 40 used for the rough-in installation to ensure durability and compliance with standards.

6.4.2.2 The openings of the conduits must be properly sealed with plastic or other suitable covers to prevent the ingress of foreign objects, and it is essential to ensure that the seals are securely installed.

- 6.4.2.3 Conduits shall extend a minimum of 1 meter above the floor slab unless specified, each provided with a G.I. wire, and all openings around the conduit shall be properly sealed.
- 6.4.2.4 Install G.I. wire within the conduits to facilitate and support the efficient installation of wiring in the future. This ensures proper organization and readiness for upcoming electrical work.
- 6.4.2.5 For service entrance feeder line, it shall be in a concrete encasement and buried 0.6m from NGL, refer to the plan for more information about the detail.
- 6.4.2.6 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.
- 6.4.2.7 Provide concrete sleeves in the electrical rooms on the 2nd and 3rd floors to accommodate vertical risers. Refer to the project drawings for exact locations and additional details.
- 6.4.2.8 Auxiliary Gutters shall be made from gauge 16 galvanized iron steel with hinges and powder painted finish.

6.5 CONSUMABLE HARDWARE / FITTINGS & CONDUIT HANGERS

- 6.8.1 PVC Cement, G.I. wires, brackets, electrical tape, tox screw, and other small value materials needed to execute layouts and termination of electrical works shall be considered as consumable hardware.
- 6.8.2 Junction box, pullbox, Utility box, adaptor, locknut, coupling, unistrat channel, unistrat strap, full thread round rod, expansion/anchor bolt, bolts, nuts, washer, etc. and other small value materials needed to execute layouts and termination of electrical works shall be considered as Fittings and Conduit Hangers.

SECTION 6 – PLUMBING WORKS

6.1 SCOPE OF WORK

- 6.1.1 The Contractor shall furnish all materials, labor, tools, equipment, and services required for the partial installation of the plumbing system. This includes, but is not limited to:
 - 6.1.1.1 Installation of sanitary pipes, including soil, waste, and vent piping, up to stub-outs for connection to fixtures (to be installed in later phases).
 - 6.1.1.2 Installation of water supply piping up to stub-outs for fixtures.
 - 6.1.1.3 Installation of cleanouts, fittings, and pipe accessories necessary for a complete rough-in system.
 - 6.1.1.4 Construction of the Proposed Septic Tanks, including Waterproofing of Inside Perimeter Wall and Slab Surfaces of Digestive and Leaching Chambers (surface preparation, application of 5 coats of cementitious waterproofing). Approved brand and quality of admixture for waterproofing shall be used.
 - 6.1.1.5 Construction of the Proposed Oil Separator Tank, including Waterproofing of Inside Perimeter Wall and Slab Surfaces of Primary and Secondary Tank (surface preparation, application of 5 coats of cementitious waterproofing). Approved brand and quality of admixture for waterproofing shall be used.

- 6.1.1.6 Testing of rough-in piping for leakage prior to concealment or backfilling.
- 6.1.1.7 All additional work required to ensure the future complete operation of the new plumbing system (sanitary, water supply, and pump systems) for the project. All work must comply with applicable laws of the Republic of the Philippines and local codes and ordinances.
- 6.1.2 All plumbing work and pipe sizes must adhere to the National Plumbing Code of the Philippines and local requirements and ordinances.
- 6.1.3 The Contractor must review all architectural, structural, and electrical plans, along with this specification. The Contractor is responsible for investigating all potential interferences and existing site conditions affecting the installation and operation of the new plumbing system.
- 6.1.4 The drawings detail the pipes, valves, and appliances for the project. Any items not specifically mentioned but necessary for the complete system, in accordance with best plumbing practices and to the satisfaction of the Engineer/Architect, must also be furnished and installed.

6.2 SOIL, WASTE, DRAIN AND VENT PIPES

6.2.1 Installation

- 6.2.1.1 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.
- 6.2.1.2 Changes in pipe sizes for soil, waste, and drain lines must be made using reducing fittings or reducers. Changes in direction should use forty-five-degree (45°) wyes or long sweep bends, with sanitary tees permitted for vertical stacks. Short quarter bends or elbows may be used where the direction changes from horizontal to vertical, and on the discharge from the water closet.

6.2.2 Traps

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

6.2.3 Vent

- 6.2.3.1 Vents shall be taken from the crown of the fixtures, except for water closet traps, in which case, the branch line shall be vented below the trap and above all small waste line inlets, so connected as to prevent obstructions. Each vent pipe shall run separately above the fixtures into the adjacent soil pipes, not more than 1.50 meters. If more than this distance, the vent shall run independently through the roof.
- 6.2.3.2 A vent line shall, wherever practicable, be a direct extension of a soil or waste line.
- 6.2.3.3 Main vent risers at 4.5 meters or longer shall be connected at the foot with the main water or soil pipes below the lowest vent outlet with a forty-five-degree connection.

6.2.4 Pipes and fittings

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

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

6.2.4.3 Elevator Drainpipes – shall be Unplasticized Polyvinyl Chloride (PVC) Blue pipes.

6.2.5 Joints and Connections

6.2.5.1 All joints shall be air and watertight.

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

6.2.5.3 Dissimilar Pipes – Use adaptor fittings.

6.3 WATER DISTRIBUTION AND PUMP SYSTEM

6.3.1 Pipes and Fittings

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

6.3.2 Installation

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

6.3.2.2 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.

6.3.2.3 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.

6.3.2.4 Changes in sizes shall be made with reducing fittings

6.4 MISCELLANEOUS

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

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

6.5 DEFECTIVE WORK

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

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

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

6.6 PERFORMANCE TEST

6.6.1 All rough-in piping shall be tested for leakage and alignment before concealment, backfilling, or continuation of works. These tests must be conducted in the presence of the Project-in-charge.

SECTION 7 – MECHANICAL WORKS

7.1. STANDPIPE

7.1.1. Scope of Work

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

7.1.2. Material

7.1.2.1. Pipes and Fittings

7.1.2.1.1 Pipes shall be Schedule 40 Black Iron Pipe Seamless Plain Ends

7.1.2.1.2 Fittings shall be welded, threaded, or grooved-end type

7.1.2.1.3 Underground pipes and fittings shall be protected against corrosion.

7.1.2.2. Fire Hose Cabinet

7.1.2.2.1. Fire Hose Cabinet shall be UL/FM approved.

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

7.1.2.3. Fire Department Connection

7.1.2.3.1 Fire Department Connection shall be UL/FM approved.

7.1.2.3.2 Fire department connection shall be installed not less than 500mm and not more than 1200mm above finished floor level.

7.1.2.3.3 Fire department connection shall be Dual Snoot Flush Mounted, Brass type, quick-connect fitting, with protective coupling cap and suitable to couplings of the local fire brigade department..

7.1.2.3.4 Provide an identification sign for each fire department connection.

7.1.2.3.5 Identification sign shall indicate “AUTO. SPRNK or STANDPIPE”.



7.1.3. Identification

7.1.3.1. Painting finish (type, quality, and color) to all fire protection pipework shall comply with the requirements of local code. Piping shall be painted with one (1) coat of epoxy primer and two (2) coats of epoxy enamel.

7.1.4. Testing

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

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

7.1.5. Warranty

7.1.5.1 All materials, equipment and installation shall be guaranteed for a period of one (1) year from the date of acceptance against failure of components resulting from normal use or factory defects. Any defective parts or equipment in the system during the term of guarantee shall be repaired or replaced by the contractor at his own expense.

7.2. CONDENSATE DRAINPIPE

7.2.1 Scope of Work

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

7.2.2 Material

7.2.2.1 Pipes and Fittings

7.2.2.1.1 Pipes shall be 25mm Ø PVC Blue Pipe.

7.2.2.1.2 Pipes shall be 100mm Ø PVC Pipe S1000.

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

Section VII. Drawings

Please refer to the PDF file named “Drawings” in the folder “**Construction of Center for Solar Technology and Innovation Building (Phase I)**” at the TSU website: <https://www.tsu.edu.ph/opportunities/bid-opportunities/2026-bid-opportunities/>

Section VIII. Bill of Quantities

1. General

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

2. Units

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

3. Rates

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

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

4. Bidder's Priced Bill of Quantities

2. The Bidder shall present the detailed breakdown of the **Bid Price** using the form **Bill of Quantities** in PDF format which should be downloaded from the File Folder "**Construction of Center for Solar Technology and Innovation Building (Phase I)**" with the file name "**Bill of Quantities**", from the TSU website: <https://www.tsu.edu.ph/opportunities/bid-opportunities/2026-bid-opportunities/>
- 4.1. The Bidder shall provide the following information or data in the spaces provided
 - 4.1.1. [*Bidder's Letterhead*],
 - 4.1.2. [*Date*],
 - 4.1.3. [*Signature*],
 - 4.1.4. [*Name of Authorized Signatory*], and
 - 4.1.5. [*Title/Position of Authorized Signatory*].
- 4.2. The contents of the following columns shall not be altered or removed: Column Heading (column number)
 - 4.2.1. **Item No. (1)**,
 - 4.2.2. **Work Description (2)**

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

4.2.4. **Unit (6)**.

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

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

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

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

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

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

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

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

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

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

5. Detailed Estimate

3. The specific costs (Material, Labor & Equipment, etc.) for the work items in the Priced BOQ shall be obtained from the detailed estimates using the form for **Detailed Unit Price Analysis**, in PDF format which should be downloaded from the File Folder “**Construction of Center for Solar Technology and Innovation Building (Phase I)**” with the file name “**DUPA**”, from the TSU website: <https://www.tsu.edu.ph/opportunities/bid-opportunities/2026-bid-opportunities/>

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

6. Bidder’s Responsibility

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

Section IX. Checklist of Technical and Financial Documents

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

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

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

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

Technical Documents

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

Financial Documents

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

Class “B” Documents

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

II. FINANCIAL COMPONENT ENVELOPE

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

Other documentary requirements under RA No. 9184

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

Section X. Bidding Forms

TABLE OF CONTENTS

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

[Bidder's Letterhead]

[Date]

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

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

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

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

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

[Signature]
[Name of Bidder]

BID SECURING DECLARATION

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

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

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

I/We, the undersigned, declare that:

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

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

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

[Jurat]

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

[Bidder's Letterhead]

[Date]

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

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

| LIST OF KEY PERSONNEL | | |
|-----------------------|--|-----------------------------|
| Name | Position | Duties and Responsibilities |
| | Civil Engineer/Architect <i>(Project In-charge)</i> | |
| | 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.

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

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

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

OMNIBUS SWORN STATEMENT

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

AFFIDAVIT

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]

[Insert signatory's legal capacity]

Affiant

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice] 59

[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. ⁶⁰

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

[Bidder's Letterhead]

[Date]

FINANCIAL BID FORM

Date : _____

Project Identification No. : _____

To: [name and address of Procuring Entity]

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

- a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project: [insert name of contract];
- b. We offer to execute the Works for this Contract in accordance with the PBDs;
- c. The total price of our Bid in words and figures, excluding any discounts offered below is: [insert information];
- d. The discounts offered and the methodology for their application are: [insert information];
- e. The total bid price includes the cost of all taxes, such as, but not limited to: [specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties], which are itemized herein and reflected in the detailed estimates,
- f. Our Bid shall be valid within the a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;
- g. If our Bid is accepted, we commit to obtain a Performance Security in the amount of [insert percentage amount] percent of the Contract Price for the due performance of the Contract, or a Performance Securing Declaration in lieu of the the allowable forms of Performance Security, subject to the terms and conditions of issued GPPB guidelines¹ for this purpose;
- h. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;
- i. We understand that this Bid, together with your written acceptance thereof⁶¹ included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and
- j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.
- k. We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for the [Name of Project] of the [Name of the Procuring Entity].
- l. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name: _____

Legal Capacity: _____

Signature: _____

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

Date: _____

¹ currently based on GPPB Resolution No. 09-2020