August 1, 2024

BIDS AND AWARDS COMMITTEE

BID BULLETIN NO. 5-2024

Name of Project(s):

- Energization of Electrical System (Overhead System) at Sagay National High School (CPB-INFRA-03-2024)

This Supplemental/Bid Bulletin is being issued to amend/change some provisions in the Bid Documents for the **Energization of Electrical System (Overhead System) at Sagay National High School (CPB-INFRA-03-2024)** issued and posted on July 23, 2024 and to clarify the issues and questions raised during the Pre-Bid Conference held on July 29, 2024 through in-person meeting and videoconferencing via Microsoft Teams. This Bid Bulletin will form an integral part of the bidding documents:

Additional terms and conditions as requirements for the project are as follows:

I. **Bidder must submit Current and Valid PCAB License and registration for "Specialty-Electrical Works" with at least "Small B" (size range)**

II. **Technical Specifications**

- **To add the following as part of the technical specifications**

1.0 NATURE OF THE PROJECT

The aim of this project is to provide upgrading of the electrical system of Sagay National High School by installing a power transformer permanently and serve the school with a stable inflow of power at an appropriate voltage level that would protect the school's electrical equipment, electronic devices, prevent fire, and others from high current present in the school electrical circuit due to low voltage received from the distribution utility company.

The rating of the power transformer to be installed is three units of 100kVA (Existing). The electrical phase system is three phase three wire system set-up. The voltage output shall be 230 Volts AC, 60 hz.

The mounting method of the power transformer is pad mounted type with the use of a primary steel pole (35ft) as a minimum requirement of the distribution utility company. The secondary feeder line shall be an overhead system supported by a secondary steel pole up to the last point of the feeder line.

2.0 GENERAL CONDITIONS

2.1 General

The general condition and provision of the Electrical Works contract do not conflict with these Specifications and the drawings form part of and/or included in this section of these Specifications.

2.2 Site Visit

The Contractor is advised to visit the site and satisfy himself as to local conditions and facilities, especially the vegetation condition of the school as may affect his work. He will be deemed to have done this before preparing his proposal and no subsequent claim on the grounds on inadequate or inaccurate will be entertained.

2.3 Standard of Materials

D. All materials shall be new and shall conform to the Technical Specifications. All materials shall be standard products of reputable manufacturers with the best track record available in the market.

E. All materials shall be subject to the approval of the Project Engineer. This approval shall not relieve the Contractor of the responsibility of inspecting such materials for defects of nonconformance with the Specifications.

F. The apparent silence of the Specification and Drawing as to any detail, or apparent omission from them of a detail decision concerning any material shall be regarded to mean that only material of first-class quality shall be used.

2.4 Removal of Defective or Unauthorized Work

D. Any defective work, whether the result of poor workmanship, defective materials, damage through carelessness, or any other cause, found to exist prior to acceptance of, or final payment for the work shall be removed immediately and replaced by work and material which shall conform to these Specifications, or shall be otherwise remedied in an acceptable manner. This clause shall have full effect and full knowledge of the Project Engineer.

E. All materials not conforming to the requirements of the Technical Specification shall be considered defective.

F. No defective materials, the defect of which has been subsequently corrected shall be used unless has been given by the Project Engineer.

2.5 Conformity With Plans and Allowable Deviation

The specifications and drawings indicate the general layout of the system and the contractor shall be responsible for the installation of the system without substantial alteration of modifications. Whenever field conditions or exigencies of construction make departure from these specifications and drawings necessary, details of such departure and reason thereof shall be submitted without delay to the Project Engineer and no departure shall be made without the approval of the Project Engineer.

2.6 Inspections and Test

The Project Engineer shall be allowed access to all parts of the works at all times and shall be furnished such information and assistance by the contractor as may be required to make a complete detailed inspection. Materials and installation shall be subject to such tests as are deemed necessary by the Project Engineer to properly ascertain their fitness both during installation and after installation is completed. The cost of such a test shall be burdened by the contractor.

2.7 Injury to Person or Damage to Property

The contractor shall be responsible for all injury to the person and damage to property caused by the work or by workmen and shall be liable for any claim against the owner on account of such injury and or damage. The contractor shall likewise take necessary precautions to protect the property of the owner against rain/bad weather conditions and against theft, where exposure to such inclement weather or theft is due to the performance of his work. The contractor shall be responsible for any such damage or loss.

2.8 Safety and Personal Protective Equipment

The contractor and its workers shall properly wear mandatory PPE at all times in the project site supervised by the contractor's DOLE-certified safety officer. The contractor safety officer shall ensure that all necessary safety precautions and practices are applied, and making sure that all potential hazards at the site are addressed properly in order to prevent unwanted accidents that will result in damage to property, injury, and death.

2.9 Temporary Facilities

The contractor shall make all necessary arrangements and pay for the provisions of the necessary electrical supply required for the work and shall clear away all temporary installations before it upon completion of the work.

2.10 Leaving the Site

The contractor shall not withdraw from the site until the whole electrical system is completed in operating condition and ready for use by the owner.

2.11 Suspension or Delay

The contractor shall not suspend or fail to make proper progress with the work without justifiable cause. The owner, in the event of delay or suspension of work still persisting after a written complaint, shall have the right to take over the work and all materials on the site and make arrangements as necessary to have the work completed by others.

2.12 Dues, Fees, and Other Charges

The contractor shall, at his own expense, pay the necessary payments, costs, and charges required by the distribution utility, especially during the connection application period.

2.13 Load Counting

If required by the distribution utility, or any approving authorities, the contractor shall conduct load counting of the school electrical system by preparing an electrical schedule of loads signed and sealed by a Professional Electrical Engineer (If necessary) or approved by the Project Engineer. The expenses and payments for PEE shall be shouldered by the contractor.

2.14 Liaison Officer

The contractor shall provide a liaison officer. The liaison officer shall do processing of all the necessary documents required by the distribution utility, or any approving authorities, especially during the electrical connection application.

2.15 Tools and Measuring Devices

The contractor shall produce measuring devices and tools and make them ready when needed especially in checking of electrical voltage quality and current load density at the last phase of the project.

The minimum tools and measuring devices required are a clamp-ammeter, multimeter, screwdrivers, pliers, compression device, and electrician knife. And it shall be of reliable brand or type.

2.16 Clearing of Obstruction

The contractor shall conduct pruning of tree branches and other vegetation that obstruct or have the potential to disrupt the continuous operation of the electrical system, especially the feeder line.

2.16 Drop-wire Transfer

All the secondary feeder lines, after energizing the power transformer, are now ready to be utilized.

The contractor shall transfer all existing classrooms/school buildings drop-wire to the nearest secondary steel pole and clamp it using the appropriate size of compression connector and cover/wrap it with electrical tape, or, with rubber tape.

2.17 As-built Drawings

At the end of the project, the contractor shall provide an as-built plan, drawn with an accurate and detailed layout based on the actual finished electrical installations.

As-built plans shall consist of all steel poles erected (primary and secondary) with accurate distances, feeder route layout, detailed drawing of transformer and metering installation and its location in the site, building drop-wire detail, and others.

The as-built plan shall be approved and accepted by the Project Engineer, or, if necessary signed and sealed by a Professional Electrical Engineer.

3.0 TECHNICAL SPECIFICATION

3.1 Primary Extension

As per distribution utility company policy, the primary line conductor to be used is the power cable, size **30mm² copper**, insulated with **XLPE**, and can handle **15kV of voltage**. With the complete application of termination kit at both ends.

The installation of the primary extension is the sole responsibility of the distribution utility engineering, and the contractor shall only pay the necessary labor cost and primary line payout.

3.2 Distribution Poles

There are two lengths of steel poles to be used in this project, **35-ft** and **30-ft**. The 35-ft will be used as the primary pole. The 30-ft will be used in supporting the secondary feeder line route.

The 35-ft steel shall be located nearest to the distribution utility primary pole.

Steel poles placed in a corner or used to change the feeder line route shall be supported by a guy wire to prevent it from leaning.

3.3 Distribution Transformer, Accessories, and Assembly

In this project, the power transformer that will be used is an **amorphous** type, cu winding distribution transformer. The rating capacity of the power transformer is 50kVA which can produce and can be mounted on the pole or pad.

Accessories and assemblies such as fuse cut-out, and lightning arrester, shall be installed and the transformer will be grounded.

As per the distribution utility company policy, the installation of the power transformer and its accessories and assembly shall be the sole responsibility of the distribution utility engineering.

3.4 Grounding Assembly

Every pole shall be grounded using a grounding rod and wire. The grounding wire shall connect the feeder line neutral wire and the steel pole body, enter the steel pole going down, and connect to the grounding rod visible outside the base of the pole. The metal frame of the kwh-meter and main breaker box shall be grounded also.

3.5 Service Assembly

Existing drop-wire in every school building or classroom shall be transferred and connected to the nearest secondary feeder line pole using a compression connector.

The **3-250mm² THHN/THWN-2** wire shall be used to connect electricity coming from the power transformer to the secondary feeder line and it is protected with a Molded Case Circuit Breaker.

3.6 Secondary Assembly

Accessories of the secondary assembly shall be installed properly. See the attached drawing for reference.

3.7 Guy and Anchor Assembly

Anchor shall be expanding, 8-way, with rod anchor single eye. **Guy wire shall be 3/8", 7 strands**, high strength.
Every pole used in the corner, or used to change the feeder route shall be supported with guy wire and anchor to prevent it from leaning or slanting. The primary pole, if necessary, guying shall be doubled to make it more stable and stronger.

3.8 Wires and Wiring Devices

The wire to be used is **acsr**, the wire size is **4/0 AWG** for main feeder.

The acsr wire for main feeder shall be 3 phase 3 wire system. And for the service drop wire can be 3 phase 3 wire or single phase 2 wire.

The copper wire shall be laid overhead and shall be tightly locked to reduce excessive sagging of wires.

3.9 Panel Board and Circuit Protections

In order to protect the power transformer and the feeder line, a circuit breaker shall be installed.

The circuit breaker shall be **mccb** type and enclosed in a **NEMA 3R Enclosure All Bolt-on**. The main rating of the mccb shall be **300 amps**, and it is in **3-pole** and for branches **160 amps 3-pole**. The terminal of the mccb shall be suited to the wire that will be terminated. Termination of wires shall be not loose and so much tight or as per the mccb's manufacturer-recommended termination torque.

3.10 Metering System

Kwh-meter shall be Meter, **KWH, 3 Phase, Class 200, 3W, 240V, 30A, Form 12S, Electronic, Complete with TOU & Load Profiling and enclosed in meter box.** Meter box frame shall be grounded. With Current Transformer

Metering installation shall be the sole responsibility of the distribution utility engineering as per the distribution utility company policy.

Noted by:

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