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PROJECT TITLE : SUPPLY AND INSTALLATION OF AIR-CONDITIONING UNITS
Joaquin Gonzales Compound
University of the Philippines Manila

SUBJECT : SCOPE OF WORK AND TECHNICAL SPECIFICATIONS

DIVISION 1 - GENERAL

01000 General Requirements

1. The Contractor shall furnish all materials, equipment, tools, apparatus, appliances, accessories, transportation, labor and supervision required for the complete construction of the subject project, as shown on the drawings and called for in these specifications, ready for use.
2. All Contractors submitting proposal for this project shall first examine the site. All proposals shall take into consideration all such conditions that may affect the work under this contract. The specifications and plans shall form part as one. Anything mentioned on plans and not mentioned on the scope of work and specifications and vice versa shall be properly consulted to the CPDMO Project Architect/Engineer for clarification. Any work or materials not in accordance with the drawings or specifications shall be replaced with new at the Contractor's expense.
3. The Contractor shall coordinate his work with all parties to ensure proper phasing or comply with the approved schedule of works. The Contractor shall engage under him, a registered Engineer or Architect to supervise his work. He shall remain at all times in the construction site.
4. A logbook shall be available at the site. It shall contain the daily activities in the site, including but not limited to weather condition, delivery, manpower and other matter pertaining to the condition of the project. It will also serve as data for Contractor and the Project Inspector and shall be surrendered to the CPDMO at the end of the project.
5. Identification Card of construction workers and engineer/representative shall be supplied by CPDMO with corresponding fees; it should be worn at all times while inside the building/campus premises. Those without IDs shall not be allowed to enter the premises for security purposes.
6. No alteration or additional work that will result in an additive or deductive cost change from the Contract shall be allowed without the approval of the chancellor.
7. The contractor shall submit at least three (3) options per item for approval. Complete specifications with product sample shall be submitted by the contractor to CPDMO and end-user for evaluation. Inspection of the Project Architect/Engineer in-charge shall be required prior to installation of any item/material on the construction.
8. Regular coordination meeting shall be conducted with CPDMO, Contractor and End-user for proper project monitoring.

9. Existing condition of the work site shall be documented by the contractor and photos shall be taken before commencement of work to ensure such status. Any damage on the areas due to the contractor's on-going work shall be refurbished at his expense.
10. The Contractor shall provide a complete copy of "As built plans" of the project/unit concerned which shall include all the civil, architectural, plumbing, electrical and other related layouts in 20" x 30" original sheets. It should be properly drawn indicating all the specifications, layouts, tables and necessary data. An initial layout should be submitted in a A3 sheet for checking and approval of Project Architect/Engineer. Final "As built plans" shall be submitted in 20" x 30" tracing sheets, 3 blue prints with signature of project engineer, and an electronic Autocad drawing file. A copy of the technical documents and warranties of the items shall also be submitted in soft and hard copies.
11. The Contractor shall promptly remove from the premises all rubbish, trash, debris, and all superfluous building materials weekly. After the completion of all works, restore all areas that were damaged as affected by the construction works and leave the site clean to the satisfaction of the Project Inspector or his representative and End-user.
12. All materials removed from the unit shall be properly documented prior to turn-over to the End-user for proper safe keeping. The turn-over document shall be attached to the contractor's final billing.

01300 Submittals

Shop Drawings, Product Data and Samples

- Submit to the CPDMO of shop drawings, product data and /or samples of all materials for review. Submit at least three (3) options per material for approval.
- The CPDMO's review shall be limited to quality and design intent. It shall be the Contractor's responsibility to verify quantities and sizes, and make corrections observed and noted by CPDMO on any returned submissions.
- No work requiring submissions or samples shall be commenced until submission has been reviewed by the End User and or CPDMO.
- Final Acceptance of colors and finishes will be made from samples applied on the job based on the signed and approved sample materials.
- All submittals shall be channeled from General Contractor to CPDMO, Planning and Development Department, and back to the General Contractor. This procedure applies to original submittals as well as required resubmittals. Each organization shall keep its required number of copies and/or make necessary copies. The Contractor will make all corrections noted on check sets, if necessary, and return for review as required by CPDMO.
- No submittal shall be received by the CPDMO without transmittal letter.
- Samples must have Manufacturer's Data Sheet/Specification and must come together with a transmittal sheet with a section for approval/disapproval and recommendation of CPDMO and/or END USER.

01500 Temporary Facilities

- Provide Temporary GI sheets or Board enclosures on all areas for building protection. Such coverings shall be adequate enough to cover all the building facilities throughout the span of the project.
- Charges for restoration or replacement of any damaged facility, equipment, material and the like shall be made on the contractor due to his negligence in providing suitable temporary covering.

- Provide the appropriate scaffoldings, board ups, safety nets and related items to ensure proper installation of all framing systems and protection of the area, at the expense of the contractor as its basic equipment.

DIVISION 2 – SITE CONSTRUCTION

02200 Site Preparation

Mobilization / Demobilization

- This work includes mobilization process, provision for warning signs, including barricades, temporary facilities, temporary fences, warning lights and similar safeguards shall be provided by the Contractor as they are required for protection of his manpower and others during the construction life of this project.
- Demobilization procedure shall include clearing of the affected areas from all rubbish, trash, debris, and all superfluous building materials and restore all areas that were damaged as affected by the works and leave the site clean to the satisfaction of the Project Inspector or his representative and End-user.

02230 Site Clearing

- Clear the area from all obstructions or as affected by the construction works, except those structures indicated on the drawings or designated by the Project Architect/Engineer to be left standing. It shall be properly protected from incidental damage due to construction works by the erection of suitable barriers upon approval of the Project Architect/Engineer.

02290 Site Monitoring

- Site monitoring shall be a must to the contractor for the effective implementation of the project. Any discrepancies on plans and actual site conditions shall be properly coordinated with the Project Architect/Engineer concerned for verification.
- Regular coordination meeting shall be done between the contractor or its representative and the Project Architect/Engineer concerned at CPDMO.

02500 Utility Services

- Provision of electric and water meter shall be included in the quotation to be charged to the contractor's overhead. All utility consumption shall be provided with meters to limit the usage of such during working period. Payments of bills shall be made thru the Cashiers Office after the renovation period presenting the statement of account issued by Accounting upon recommendation of the Chief of CPDMO.

Division 5 – Metal and Steel

Section 05500 Metal Fabrication

Scope of Work

- This item shall consist of fabrication/installation of additional roof truss/framing & new purlins, new roof sheets and metal stair access & railings including labor, tools, equipment, and the satisfactory performance in undertaking the proper installation of the system as shown on the Plans and in accordance with this Specifications.

Material Requirements

6mm thick 50mm x 50mm x 6m Angle bar

Submittals

- Shop Drawings: Submit shop and erection drawings clearly showing each piece required for fabrication and erection. Drawings shall include material grade, camber, holes and other pertinent data, indicate welds by standard AWS symbols showing size, length, and type of each weld.
- Coordination drawings and templates: Provide anchor setting drawings clearly showing location of all anchor bolts and embedded plates to be anchored in concrete and masonry construction. Provide templates for anchor bolts.

Quality Assurance

Welding

- Performed by certified welders in compliance with Welder's Qualification Test Certificate, AWS D1.1 and or ASME IX.
- Welders shall be duly qualified (test passed in the preceding 12 months) in the position in which they are to weld and the qualifications and specifications for workmanship shall comply with the AWS requirements "AWS Structural Welding Code – Steel"

Delivery and Storage

- Exercise Care during unloading, storage and erection to avoid damage, dumping on the ground is not permitted.
- Support material stored at the site completely free of the ground, and cover to avoid damage from the elements.

Materials

- General: Materials shall be new, of uniform quality, suitable and without defects affecting the strength or service of the structure.
- Structural Steel, Pipes, Tubes and bolts: in accordance with General Structural Notes on drawings.

Execution

Examination:

- Verify anchor bolt locations, grouting, and elevation of base and setting plates and other material set by other trades before commencing work.

Erection:

- Erect work to the proper lines and levels, plumb and true, and in correct relation to other work and maintain this condition to completion.

Connections:

- **Machine Bolting:**
 - Fair-up holes with pins to align holes before bolting.
 - Ream unfair holes to obtain alignment or drill new holes.
 - Enlargement of holes with drift pins or burning of new holes is not permitted.
 - Draw bolt up tight after members are aligned and leveled, and set or deformed threads to prevent loosening.

- **Welding:**
 - Weld by shielding arc method as per AWS standard code for arc and gas welding in building construction.
 - Submit certification that welders have passed Welder's qualification test.
 - Certification must be dated no earlier than 3 months prior to beginning of project.
 - Close joints exposed to weathering with continuous 1/8" weather welds.
 - Grind smooth exposed welds, but grinding shall not reduce weld strength or required cross section.
 - Connect members temporarily and align completely before making permanent connections.
 - Temporary connections shall consist of bolts on no less than 1/3 of the holes and in no case less than 3 bolts in any single connections.
 - Surfaces in contact shall be thoroughly clean when assembled.
 - Provide necessary temporary bracing and guying to align the structure properly for permanent connections, and to safely resist erection dead load and wind stress.
 - Take particular care to have the work plumb and level (maximum tolerance 1-500 for interior members, 0- 1000 for exterior members) before making permanent connections
 - Remove bracing and guys only after permanent alignment and assembly and structure area capable of completely sustaining design and temporary construction loads.

Cleaning

- During the course of the work and on completion of the work, remove excess materials equipment and debris and dispose of away from premises in a legal manner.

Division 15 – Mechanical

Section 15700-Heating, Ventilating and Air Conditioning Equipment

- Supply and installation of brand new 1.0 TR, 1.5TR, 2.0TR, & 2.5TR super inverter & 2.5TR Super inverter Ceiling cassette including other works needed like coring, restoration and waterproofing/and application of sealant to the cored area with fire retardant sealant.

Division 16 - Electrical

Workmanship and Materials

- All works shall be done in accordance with the requirements of the latest edition of the Philippine Electrical Code and National Safety Code. Nothing contained in these specifications or shown on the plan shall conflict with the requirements of these Codes, any discrepancies should be consulted to the Project Inspector / Electrical Engineer.
- All materials and equipment to be used and installed hereunder shall be of the approved type bearing the stamp or approval of the proper authorities concerned. Locally made or constructed materials shall first be approved before installation.
- All works shall be done in workmanlike manner and should present a neat and mechanical appearance when completed.

Plans

- The accompanying drawings shall indicate the general arrangement of the equipments, outlets and other works. When it is necessary to deviate from the arrangement indicated on plans in order to meet the structural conditions, such deviation shall be made at the expense of the Contractor and upon approval from the Project Inspector / Electrical Engineer.

- The outlets and circuit breakers shown on the plan are diagrammatic and approximately correct as to location. Minor changes shall be made through the Contractor at his own expense. The exact location of all outlets and switches shall be determined by the Project Inspector/Electrical Engineer and the same shall be located accordingly. The Contractor shall be responsible for the accurate location of all outlets with respect to doors, partitions, water pipes, cabinets and other facilities.

16050 Basic Electrical Materials and Methods

Conduit System

- PVC Conduit pipes is primarily required for this work. Conduit runs shall be well supported especially on ceiling and slab, concrete encased on soil. All conduits placed on walls and partition shall be embedded, exposed layout will not be allowed. Conduit ends shall be provided with an end bell or adapter with locknut and bushing. Conduit shall enter knockouts squarely. Locknuts and bushing shall be used at termination of conduits in outlets, pull or junction boxes, panels and cabinets. Locknuts shall be screwed tight. Bends and offsets shall be avoided if possible, but when necessary it shall be made with an approved Field bend or pipe / conduit bending machine. The use of pipe tee or vice bending conduits will not be permitted.

Restrictions

- Supply and installation of all material not shown in the drawing nor mentioned in this specification but necessary for the completion of the construction works shall be included. Coordination with CPDMO and Project Inspector should be done for proper installation of all wiring systems.

16070 Hangers and Supports

- All electrical pipes and accessories shall be using appropriate hangers and support follow existing features. Exposed layout on walls and partition inside offices shall not be allowed. Chipping works required.

16080 Testing

- Complete testing of the system involved in operation and provision of all system apparatus for making test and guarantee for a period of one (1) year after acceptance of the project and shall agree to repair and make good at no additional cost to the end user.

16140 Wiring Devices

- All wiring devices to be used hereunder shall be new and of approved type. All wall switches shall be top-action quiet-matic type, wide series, bases to be fire-resistant and non-absorptive material. When more than one switches is indicated in the same location, they shall be mounted in gang under a common plate.
- Convenience outlet shall be duplex-type, universal & flush-type with fire-resistant non-absorptive bases, minimum rating of 16 amperes at 250 volts wide series.
- Suitable single pole and heavy-duty switches shall be installed where indicated on the plans. Sample of wiring devices shall be presented for approval. Minor relocations and re-circuiting shall be the liability of the Contractor.
- Following features shall be followed: one gang, one way switch, 2 gang, one way switch, 3 gang, one way switch, one gang three way switch, two gang three way switch, three gang three way switch, duplex flush type convenience outlet universal grounding type.

16410 Panel Boards, Enclosed switches and Circuit Breakers

- 30AT, 2 pole, 40AT, 2 pole, & 50AT, 2 pole NEMA 1, bolt-on type
- 30AT, 2 pole, 40AT, 2 pole, & 50AT, 2 pole NEMA 3R, Enclosure

- The enclosure shall be galvanized steel of code thickness, powdered coated enamel finish and shall be installed plumb and symmetrical with the surrounding devices.
- 20mmØ, 32mmØ PVC conduit pipe with fittings and complete accessories
- 2" x 4", 4" x 4" PVC utility and junction boxes Pull box with cover enamel coated finished with ½ and ¾ knock outs.
- Electrical tapes, rubber tapes, pull wires, mica tubes and assorted screws.

NOTE

The foregoing list of items of works does not in anyway limit the responsibility of the Contractor to perform all other works necessary for the completion of the project.


GUARANTEE


The Contractor shall guarantee all works under this contract to be free from any technical, material, workmanship and/or factory defects and shall replace and repair to the satisfaction of the Project Architect / Engineer and/or to the Chief of CPDMO on any part or portion of the work which may fail within a period of one (1) year after the final acceptance of the system.

COMPLETION PERIOD

The Contractor is given Sixty (60) calendar days to execute the renovation works including the installation all system requirements. The Contractor shall coordinate to the CPDMO Inspector and End-users for the schedule of testing of systems and other related job.

Prepared by:


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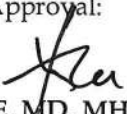

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