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Campus Planning, Development and Maintenance Office
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PROJECT TITLE : UPGRADING OF SERVICE ENTRANCE
FOR THE ITC BUILDING
ITC Building
University of the Philippines Manila

SUBJECT : TECHNICAL SPECIFICATIONS AND SCOPE OF WORK

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 the 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 to comply with the drawings and specifications 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 work. 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 matters pertaining to the condition of the project. It will also serve as the data for contractor and the Project Inspector and shall be surrendered to the CPDMO at the end of the project.
5. Identification Cards 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 samples 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 meetings shall be conducted with CPDMO, contractor and End-user for proper project monitoring.
9. Existing conditions 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 restored 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 blueprints 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 hardcopies.
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 commence until submission has been reviewed and signed 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 a 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.

Division 2 – Site Construction

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 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 equipment, 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

- IMC 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

Hangers and Support

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

16080 Testing

Testing of system

- 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.

16120 Conductors and Cables

- Wires and cable for lights and power shall be type THHN/THW 600 volts insulation approved type building wire. No. 3.5 mm THHN shall be used from the panel board to the last outlet, and shall be the smallest wire that should be used, unless otherwise No. 8.0mm wires THNN and larger shall be stranded and be connected to the panel boards and equipment by solder less connectors sufficiently large to enclose all strands of the conductor and be securely fastened. They shall not get loose under vibration and normal strain. Wire splices shall be mechanically and electrically secured and soldered. Joints taps and splices in wires larger than No. 10 AWG shall be made with the use of solder less connectors. They shall be tapped with electrical tape to the thickness of the wire insulation.
- Wires and cables shall be continued from outlet, or outlet to pull boxes without splices. Conductors shall not be drawn in conduits until plaster is dry and the conduits are cleaned and free of moisture. Conductors of other systems shall not occupy the same conduit and boxes used for light and power.

Scope of Works

- Complete supply and installation of wires and cable shall be included in this scope of works.
- Tagging of all corresponding branch circuit as indicated on the respective panel boards directory using tagging machine.
- Provide Directory in all Electrical Panels
- Balancing of loads
- Wires must be color coded using the standard color coding

- Coring and chipping works shall be performed to give way for the homerun of the wires
- Splicing box shall be provided by the contractor (refer to detailed plans)
- 80mm dia. RSC conduit pipe shall be used at the service entrance
- Contractor to provide conduit spacer
- Contractor to provide machine bolt (see sheet E-4 for the location)
- Provide liquid tight connector for every set of service entrance feeder line
- Supply and installation of new wires for the existing load, DP-1 (refer to electrical plans)
- Testing and commissioning

16130 Raceway and Boxes

Boxes and Pull boxes

- All conduit boxes and fittings shall be standard manufactured by reputable electrical manufacturers. All conduit boxes not over 100 cubic inches in size, if constructed of sheet metal, the metal shall not be less than No.14 US gauge and shall be set flush with the surface of the structure in which they are installed and where conduit runs are concealed. Care shall be exercised to line up all outlet boxes, 4" octagon type and 1-½" depth. When more than two conduits enter the outlet box, the 2-1/8" depth type box shall be removed. All outlet boxes indicated to be used for lighting fixtures shall be provided with standard flat metal covers.
- Horizontal or vertical gang boxes shall be installed as indicated or when required. All conduit boxes, junction boxes, and blank outlet boxes shall be fitted with standard flat metal conduit box covers.

16410 Panel Boards, Enclosed switches and Circuit Breakers

Supply and Installation of New Main Circuit Breaker (Outdoor)

- Main Circuit Breaker (MCB) in NEMA 3R - Surface Mounted
Main:
1-1000AT, 3200AF, 3P, 230V, 65KAIC, MCCB
- MDP Main @ 1000AT, 3 pole, 65KAIC with 7 branch circuits @ 1-300AT 3 pole, 1-175AT 3 pole, 1-125AT 3 pole, bolt-on type with grounding bus and 4 Space, 3 pole.
- Enclosed Circuit Breaker 1-175AT, 3-pole, Nema 3R.
- Enclosed Circuit Breaker 1-80AT, 3-pole, 400V, Nema 3R.
- Dismantling of existing service entrance wires and other electrical components
- The enclosure shall be galvanized steel of code thickness, powdered coated enamel finish and shall be installed plumb and symmetrical with the surrounding devices.
- 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.

16271 Power Transformer

Supply and Installation of Transformer

- 40KVA, 230V – 400V with brought-out neutral, 3phase, 60hz, Dry Type Step-up Transformer, Copper Winding in NEMA 1.

NOTE

The foregoing list of item of works does not in any way 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 **one hundred twenty (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.

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