

- Ensure proper installation of the system, tap to the nearest water distribution area.
- Testing and commissioning shall be done in the presence of the engineer and owner or his representative.

B. Sanitary Lines / Sanitary sewerage

Material:

- Use PVC pipes and fittings for sanitary lines.
- Confer to project architect the brand and approved equivalent in conformity with the existing lines.
- Provide proper hanger and supports.
- Provide sample for approval.

Application:

- Make the necessary preparation works for the installation of sanitary system on the specified area.
- Ensure proper installation of the system, tap to the nearest sewer area.
- Testing and commissioning shall be done in the presence of the engineer and owner or his representative.

C. Plumbing Fixtures

Material:

- Tank type water closet and stainless sink.
- Confer to project architect the brand and approved equivalent.
- Provide sample for approval.

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 pipe is primarily required for this work . Conduit runs shall be well supported especially on ceiling and slab. 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 work shall be included. Coordination with CPDMO Project Inspector should be done for proper installation of all wiring systems.

Hangers and Support

- 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

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 his expense.

16090 Restoration and Repair

Restoration Works

- Restoration and repainting of damaged walls, windows, ceiling and exposed conduits shall be the Contractors liability.

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 THHN 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.

16130 Raceway and Boxes

Boxes and Pull boxes

- All conduit boxes and fittings shall be standard zinc-coated or sherardized steel 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.

16140 Wiring Devices

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, all duplex 3-wire grounding type with paneled slots receptacles minimum rating of 10 amperes at 250 volts.
- Suitable single pole and heavy-duty switches shall be installed where indicated on the plans, brand 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 type, duplex pop up type floor outlet stainless ; flush type telephone modular jade style, RJ-45 snap in jacks, key stone style with accessories, pin information data outlets, Face plate two gang, white or ivory with cover.

16580 Lighting Fixtures

Lighting Fixtures

The contractor shall re-use existing lighting fixture 1200mm x 300mm recessed fluorescent lamp fixtures, convert the existing 2 x 28 to 1 x 28 as deem necessary.,

6"Ø horizontal downlight with center frost glass cover, 18watts CFL daylight
110mm Downlight 6W LED installed at the hanging cabinet

Contractor shall furnish supply and install emergency light unit – Twin Head
Emergency Light 2- 1.5watts LED (22hrs)

Structured Cabling System

- Supply and installation of Category 6, 4 pairs, unshielded twisted pairs, polyethylene insulated hyper grade non-plenum LAN cable is the general requirements for this structured cabling system, submit sample for approval. The height of the data outlets is 90cm above finish floor line.
- Supply and installation of complete wiring devices, information data outlet 8 pin CAT6, RJ45 snap in jacks and other accessories ready for use.
- Data cabinet shall be provided by end user, however, termination and commissioning is included in this scope of work.
- Complete termination and testing of cables, tagging, labeling of each terminals for easy identification. Submission of test results shall be required.
- Telephone cable

Conduit Pipes and Accessories

- 20mmØ PVC pipes, PVC elbows, male threaded adaptor with locknut and bushing
- Boxes, 2" x 4", 4" x 4" deep type metal boxes gage 16
- Pull box with cover enamel coated finished with ½ and ¾ knock outs.
- Electrical tapes
- Pull wires, mica tubes and assorted screws

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, Proposed Renovation of Faculty room – Phase 1 at Department of Epidemiology, Ground floor, Paz Mendoza Building, College of Medicine.

GUARANTEE:

The Contractor shall guarantee all works under this contract to be free from any technical, mechanical and electrical 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** provided such failure is due to defects in the material or workmanship.

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 final turn-over and other related job.

REFERENCE NO. : **WD094NPG06172014**

PROJECT TITLE : **PROPOSED RENOVATION OF FACULTY ROOM (PHASE 1)**
Ground floor, department of epidemiology,
Paz Mendoza Building, College of Medicine
University of the Philippines Manila

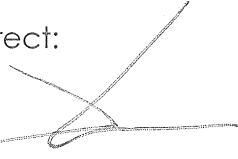
SUBJECT : **SCOPE OF WORKS AND SPECIFICATIONS**

Prepared by:


RENATO B. REMORQUE
Engineer I, Electrical


ARCH. LEONARD P. CORDERO
Administrative Officer V


Certified Correct:


ARCH. ALLEN R. BUENAVENTURA, MCM
Chief, CPDMO

Recommending Approval:


MARISSA M. ALEJANDRIA, M.D
Chair, Department of Epidemiology


AGNES D. MEJIA, M.D
Dean, College of Medicine


CHARLOTTE M. CHIONG, MD, PhD.
Vice Chancellor for Planning and
Development

Approved:


JOSE FLORENCIO F. LA PEÑA JR., MD.
Vice Chancellor for Administration

PROPOSED RENOVATION OF FACULTY ROOM (PHASE 1)
SCOPE OF WORKS AND SPECIFICATIONS

09 JUL 2014