PHILIPPINE GENERAL HOSPITAL
The National University Hospital
University of the Philippines Manila
OFFICE OF ENGINEERING AND TECHNICAL SERVICES
Taft Avenue, Manila

PHIC-Accredited Health Care Provider
ISO 9001:2008 Certified

Project Title : RE-ROOFING AND CIVIL WORKS OF THE CANCER INSTITUTE BUILDING
Location : Philippine General Hospital, Taft Avenue, Manila

Subject : SCOPE OF WORKS & SPECIFICATIONS

GENERAL REQUIREMENTS

1. GENERAL CONDITIONS

1.1 The Contractor shall furnish all the materials, labor, tools, equipment, and supervision for the completion of all the works of the Project as indicated on the plans, specifications and contract documents.

1.2 The Contractor shall visit and carefully examine the site and check all the possible interference and conditions affecting the works.

1.3 Extra care must be observed during dismantling works to avoid damage on the existing facilities such as Telephone and Internet Lines, Paging System Accessories, Medical Gas Lines, Sewer and Water Lines, etc. Any damaged thereof should be restored to its original status at the expense of the Contractor within two (2) weeks. Otherwise, construction activity will be stopped.

1.4 The Contractor shall engage under him, a registered Civil Engineer or Architect to supervise his work. The Project Engineer or Architect shall remain at all times in the construction sites, and shall report progress of the construction to the PGH Administration on a monthly basis.

1.5 The Plans and Specifications shall be interpreted only by a competent registered Engineer. The Contractor is enjoined to confer with the Project Engineer of OETS on drawing/items he failed to understand before submitting his bid. No excuses shall be entertained for misinterpretation on the Plans and Specifications after the award of the Contract. All work as deemed provided by the OETS shall be carried out properly by the Contractor.

1.6 The Plans and Specifications are complimentary to each other, whatever is not mentioned in one but mentioned on the other shall be considered as if mentioned on both and shall be carried out properly by the Contractor.

1.7 Any inconsistency or discrepancy between the Plans and Specifications shall be brought immediately to the attention of the OETS Project Engineer/s who shall decide the correct version of the two.

1.8 No addition or alteration that will result in a change order from the contract shall be allowed without the approval of the PGH Administration. The Contractor shall bring the case to the OETS Project Engineer/s.

1.9 One set of the Plans, Specifications and Log Book shall always be kept at the jobsite to be available to the Project Inspector or his representative upon his request during the construction period.

1.10 Prior to the installation of any item or material the Contractor shall submit sample with complete specifications to OETS for evaluation. In case of testing, the Contractor shall notify the OETS and End-user at least one week in advance of making the required tests so that the arrangements can be made for their presence to witness the tests. The necessary materials, labor, devices and all others required to conduct such tests at no additional cost the Owner.

1.11 The Contractor is solely responsible for the safety, protection, and security of his personnel, the works, equipment, installations and the like. The Contractor shall adopt or apply the protective measures in accordance with the standards set by the Safety Organizations and the Department of Labor Standards.

1.12 The Contract Period of this project is **ONE HUNDRED TWENTY (120) CALENDAR DAYS**.

2. SITE WORKS

2.1 Demolition and Dismantling

The procedures proposed for the accomplishment of salvage and demolition or removal works shall be submitted for approval. The procedures shall provide for safe conduct of the work, removal and disposition of materials specified to be salvaged, protection of property which is to remain undisturbed, coordination with other work in progress and timely disconnection of utility services.

2.2 Extent of demolition/ removal

a. Total dismantling of roofing, fascia board, and downspout.
b. Total Dismantling of ceiling at Ceiling Eaves, Ground Floor Main Lobby and Toilets
c. Dismantling of door and jamb at Toilets.
d. Chipping of wall and floor tiles in the Toilets and Washing Area.
e. Removal of broken glass on the windows

2.3 Disposition of dismantled materials

a. Regular disposal of debris must be done to avoid accumulation. Cleanliness must be observed and maintained always. Dismantled materials that could still be recycled will be turn-over to OETS while the others will be for the disposal of the Contractor with the proper clearance of all concerned.

3. CONCRETE AND REINFORCEMENT

3.1 Scope of Works

- Construction of Septic Tank
- Construction of Wash Counter at Male and Female Toilets

1. All work shall be done in accordance with the minimum requirements of the American Concrete Institute Building Code for Reinforced Concrete ACI 318-83 except as modified herein.

2. Form Works

Provide adequately braced forms that will produce correctly aligned concrete, able to meet the specific weights and side pressure of newly placed concrete.

3. Steel Reinforcement

Steel bars shall be new and free from dust, oil, grease, defects or kinks.

Steel bars shall conform to the latest edition of ASTM Designation A615 Specification for Deformed Billet Steel bars for Concrete Reinforcement Minimum Yield Strength shall be 230Mpa for 12mm dia. bards and smaller and 275MPA for 16mm dia. and larger.

4. Cast-in- Place Concrete

All strength of concrete shall be at least 21MPa.

Cement . Use only one brand all throughout. Portland cement shall conform to the Standard Specifications for Portland Cement, ASTM C-150, TYPE I.

Coarse Aggregates. Use well graded, clean hard particles gravel or crushed rock conforming to the ASTM C-33.

Fine Aggregates. Use washed, white sand.

Water. Use water that is clean and free from injurious amounts of oils, acids, alkali and other deleterious substances.

4. MASONRY

4.1 Scope of Works

a. Construction of Septic Tank and Catch Basin
b. CHB Partitions at Public Toilets

1. Materials for Mortar

Sand shall conform to ASTM 35-67
Portland Cement shall conform to ASTM C-150, TYPE I
Water shall be clean and free from deleterious substances.

Designed Mix: 1:2

2. Unit Masonry

Concrete Hollow Block units shall be 100/150mm x 200mm x 400mm/150mm x 200mm x 400mm of standard manufacture, machine vibrated with even edges.

Mortar, 1 part Portland cement to two parts sand.

Reinforcement/Ties shall be structural grade bars conforming to ASTM specifications A15 of size as shown in the plans.

5. ROOFING WORKS

5.1 Scope of Works

a. Furnish materials and equipment and perform labor required to complete fittings and installation of Galvanized Metal Roofing with Heat Insulation, Flashing, Ridge, Gutter Fascia Board and fixing hardware and other materials to make the roof watertight and leak proof.

b. Install screen on the gutter.

5.2 Materials

a. Panels shall be Gauge #24 (0.60mm), Pre-painted, long span metal roofing.
Roof components:
- Base Metal : Cold rolled steel
-Tensile Strength : 550Mpa (880,000 psi), 275 Mpa (40,000 psi) per JISG 3302 and ASTM 446, Commercial quality.
-Temper : Available in full hard and annealed.
- Nominal Width : 1.070m
- Effective Width : 0.995m

- Substrate : Zinc-aluminum coated complying with ISO-14788
- Paint Coating : Zinc Phosphate, and oil free polyester paints. Oven baked to achieve full curing of organic coating to meet PNS 201; 1990 and JISG 3312 requirements.
- Standard Coating : Top Coat 15 - 18 Microns
  Primer Coat 5 - 7 Microns
  Service Coat 5 - 7 Microns

b. Bended Accessories

- Ridge cap shall be gauge 24 (0.60mm), pre-painted, pre-bended, metal sheet.
- Valley gutter/inside gutter shall be gauge 24 (0.60mm) pre-painted, pre-bended, metal sheet.
- Outside Gutter shall be Ga.24 (0.60mm) pre-painted, pre-bended metal sheet.
- End wall flashing shall be Ga.24 (0.60mm) pre-painted, metal sheet..

c. Other Roof Accessories

- Fascia board shall be 25mm thick x 350mm width, "Hardi-Senepa" or S4S, KD lumber
- Downspout shall be 4" diameter in size, PVC, S1000.
- Gutter screen shall be Expanded Aluminum with Aluminum strip frame.

5.3 Installation

a. In accordance with manufacturer's approved installation instructions, and approved drawings, except as specified otherwise. Install panels in full and firm contact with each other at side and end lap.

b. Where panels are cut in field or where factory-applied coating is damaged and necessary repairs have been made with material of the same type and color as finish coating.

c. Remove defective materials.

5.4 Heat Insulation

The heat insulation material shall be a light weight, pliable insulation, consist of one (1) compact layers of first grade high density polyethylene (HDPE) air bubble pockets sandwiched between one side of high reflective pure aluminum. The insulation shall have a Reflectivity of 97% and R-Value: 9.2.

6. FINISHING AND CARPENTRY WORKS

6.1 Scope of Works

a. Retiling of Toilets at Ground Floor and Second Floor
b. Replacement of missing Wooden Railing at the Hallway
c. Replacement of Ceiling at Eaves, Toilets and Ground Floor Main Entrance Lobby.

d. Painting of New Ceiling, Doors and Door Jamb.
e. Fabrication of Hanging Cabinet at Wash Area
f. Retiling of flooring at Wash Area.
g. Installation of finishes at Toilets Counter and Wash Area Counter
h. Fabrication of Tray Counter going to Wash Area

6.2. Floor, Wall and Counter

a. Use 300mm x 300mm, homogeneous, ceramic tiles at Toilets and Wash Area
b. CDS Granite Tile at Wash Area Counter, and Toilets Counter.
b. Use tile adhesive with superior bonding quality for the installation of ceramic tiles.
c. Grout shall be of premium quality and resistant to molds.

Grouting. After tile has sufficiently set, force a maximum of grout into joints by trowel, brush or finger application.

Cleaning. Sponge and wash tile thoroughly with clear water after the grout has stiffened. Then clean by rubbing with damp cloths or sponges and polish clean with dry cloth.

6.3 Ceiling

a. Ceiling shall be 6mm thick Cement Board, "Hardiflex". Framing shall consist of light steel channel, double furring, 19mm x 50mm x 0.40mm in thickness, suspended plumb from slab. Framing spacing shall be 0.40m x 0.50m on center both ways. Hangers spacing shall be 1.00m on center anchored to the structural slab.

b. Installation

- Hangers shall be anchored to the structural slab with proper anchorage materials.
-No hangers shall be anchored on the piping or ducting.

6.4 Painting

All painting works shall be done with the use of First Class or Class "A" quality paints. Before any painting is done all surfaces shall be cleaned, smoothed and freed from dust, dirt, grease, mortar, rust and other foreign substances where paint shall be spread evenly and carefully.

Touch up knots, pitch streaks and sappy spots where finish calls for interior /exterior paint. Fill carefully all cracks, nail holes and other defects with putty.

Do not paint while surface is damp.

Prepare sample panels of selected color on 300mm x 300mm plywood panels for approval of the Engineer/End-User.

If surfaces are not fully covered or cannot be satisfactory finished in the number of coats specified, apply subsequent coats to attain the desired evenness of paint finish.

Schedule of Painting Works

a.	Concrete wall surface	- Gloss Latex Paint in three (3) coats.
b.	Ceiling	- Flat Wall Enamel Paint in three (3) coats
c.	All metal doors, door jambs, mouldings, counters, shelves and cabinets	- Quick Drying Enamel in three (3) coats.
d.	Metal Surface	- Primer paint, first coat - QDE Paint in two (2) for first and final coat
e.	Door and Door Jamb	- QDE/Varnish Finish

6.5 Miscellaneous Finishing Works

a. Tray Counter shall be laminate finish with aluminum trim/edging.
b. Toilet Partition and Urinal Partition
   Use Phenolic Board, 12mm thick. Door shall be complete with hardware.
c. Application of Membrane Waterproofing at Second Floor Toilets and Wash Area.

   Application: All surfaces to be waterproof must be thoroughly cleaned of dirt, dust and all loose materials. Laitance should be removed by wire brushing and any unsound materials should be cut out and the surface made good.

   Materials: Use Bituminous Torch-Membrane Applied Waterproofing, 1.5mm thick. Apply membrane waterproofing as per recommendation by the manufacturer.

7. DOORS AND WINDOWS

Scope of Works

Furnish materials and equipment and perform labor required to complete the doors and windows.

7.1 Doors and Door Jambs

a. Toilets main entrance door and jamb shall be panel, "Tanguile or Lawaan".
b. Door Jamb shall be kiln-dried, S4S, "Tanguile or Lawaan".

7.2 Door Hardware and Finishes

a. Door Lockset shall be Cylindrical Type, 3-keyed, stainless steel, hairline finish.

b. Door Hinges. Each panel of hinged door shall hung on Three (3), 3-1/3" x 3-1/3", Stainless Steel Flag Hinge for doors 1.80m or less in height and Four (4), 3-1/2" x 3-1/2" Stainless Steel Flag Hinge for doors 2.10m in height or more.
c. Door Closer shall be Automatic, Hydraulic Type, heavy duty.
d. Head Bolt and Foot Bolt for every double door, 5" length.
e. Door Stopper - Magnetic type.
f. Deadbolt shall be double cylinder, stainless steel, hairline finish, heavy duty.

7.3 Windows Glass, and Glazing

a. Replace broken glass
b. Sealant/caulking of the existing steel framed windows

b. Glass and Glazing
d.1. Glass shall be 6mm thick Clear Glass.
d.2. Putty – metal sash putty
d.3. Sealant – one component
d.4. Preformed Sealant such as gasket compression type, synthetic polymer-base and sealant resilient.

7.4 Installation

c. All doors and windows shall operate freely and all hardware shall be properly adjusted and functioning.
d. Install hardware to fill details shown on the drawings and as per manufacture's specifications. Supply all necessary templates and instructions required.
e. Install all exterior doors and windows opening to render them watertight.
f. Use stops in sizes permitting a good grip on the glass.
g. Install glass only in the openings that are rigid, plumb, and square.

8. PLUMBING WORKS

Scope of Works

a. Dismantling of Plumbing Fixture at Ground Floor and Second Floor Toilets.
b. Repiping of sewer and water lines to be tapped to the nearest tapping point.
c. Construction of Septic Tank.
d. Supply and installation of Plumbing Fixture and accessories, complete of fittings.

General

The project drawing shown in the general requirements as to sizes, arrangement, extent of piping, and location of the equipment. Unless otherwise indicated or specified herein, all work shall be accomplished in accordance with the National Plumbing Code.

Standard Products

Materials and equipment furnished under this specification shall be standard products of manufacturer regularly engaged in the provision.

9.1 Materials

a. All pipes shall be installed as indicated on plans; any relocation required proper execution of other trades should be with prior approval of the Engineer.
b. Proposed sanitary utilities shall conform to the actual location depth and invert elevations of all existing pipes and structures as verified by the Contractor.
c. All slopes for horizontal drainage shall maintain 1% unless otherwise specified.
d. Sizes of water supply pipes to fixtures shall be in accordance with the manufacturer's instructions.
e. The Contractor shall verify all existing pipes at site and coordinate the works of the sewer line, effluent disposal point, and water service connecting point.
f. All pipes sizes are in millimeters and dimensions are in meters unless otherwise specified.
g. Cold Water Line
Use Schedule 60 G.I. Pipe, "SUPER" brand.
g. Sewer and Storm Drainage Line
Use PVC pipe, S1000.
h. Vent Pipes
50mm dia. to 100mmm dia., series 1000.
i. Gate Valves
Conforming to ASTM 80-120, "KITZ" or "Supreme" or equivalent.
j. Water Closet
Tank Type, 6.0 lpf/1.6gpf, standard size, Color: White with heavy duty Tank
k. Urinal shall be of standard size, Color: White.
l. Floor Drain
Use 100mm x 100mm Stainless Steel.
m. Wall Faucet
Plain bibb, brass/chrome finish.

9. ELECTRICAL WORKS

Scope of Works

a. Supply and installation of New Lighting Fixture including necessary conduits, switches and wirings to be tapped to the existing/appropriate power supply.
b. Tracing and verification of affected lighting fixtures electrical circuit before dismantling.
c. Repainting and repair of all suspended lighting fixtures at Ground Floor including the wall-mounted lighting fixtures and lamp post prior to the replacement of LED Bulb.
d. All materials to be used herein specifically the lighting fixtures must have prior approval to the OETS.
e. The contractor is advised to coordinate with the concerned electrical engineer problems that may occur with this electrical installation.
f. Testing and commissioning of all newly installed lighting fixtures.

Materials

Lighting Fixture	- 18W, 220V, LED Tube, 120cm length in reflecta-louver housing - 11W, 220V, LED Bulb in reflectorized housing
Wires	- THHN, Insulated, Stranded
Exhaust Fan	- Ducted Ceiling Type and Wall Mounted Type, 12" x 12"
Exhaust Fan Ducting	- 6" dia. PVC Pipe.
Switch	- "National" brand or approved equal.
Conduits	- PVC complete with fitting..
Utility Box	- PVC, deep type.
Junction box	- PVC, deep type with knock-out cover.

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