

Technical Specifications

Project Name: **Construction and Installation of Steel Gates, Guardhouse, Car Barrier and Concrete Barrier Separator at Isla Puting Bato/ICX Roadway, North Harbor, Tondo, Manila**

I. GENERAL CONDITION

The Work generally consist of furnishing of all labor, materials and equipment required to carry out and complete the Construction and Installation of Steel Gates, Guardhouse, Car Barrier and Concrete Barrier Separator at Isla Puting Bato/ICX Roadway, North Harbor, Tondo, Manila, in accordance with the contract drawings and in conformity with these specifications.

PLANS AND SPECIFICATIONS

All drawings, whether in small scale or detailed, are intended to correspond with specifications to form part thereof and the contract documents. Where figures are given, they are to be followed in preference to measurement by scale. Anything shown on the drawings but not indicated in the specifications or vice-versa or anything not expressly set forth in either, but which is reasonably implied, shall be furnish and installed as though specifically shown and mentioned in both, without extra cost to PPA.

II. PROJECT SIGNBOARD

The Contractor shall prior to start of physical activities, install two project billboards consisting of the Project Name and Location, Contractor, Contract Cost, Date Started, Contract Completion Date, Implementing Office, and Source of Fund. The Contractor shall coordinate with the PPA Project Engineer in fixing the location of said billboards including its contents, make and dimensions. The dimension and/or area of each billboard shall, however, not be less than 1.22m x 2.44m (2.88 sq.m.) or tarpaulin posted on 1/4-inch marine plywood.

III. SCOPE OF WORKS

1.0 General Expenses

1.01 Mobilization, Demobilization and Cleaning Up

The Contractor shall mobilize and put into work all personnel, plant, and equipment required to undertake the works. The minimum equipment required to be mobilized at site are the following:

Equipment Description	Quantity
Air compressor, 250 cfm	- 1 unit
Jack hammer	- 1 unit
Concrete Cutter, 12" 5 Hp	- 1 unit
Concrete mixer, 1 Bagger	- 1 unit

Concrete vibrator, 3.5 Hp	-	1 unit
Forklift (1.36T)	-	1 unit
Oxy/Acetylene cutting outfit	-	1 unit
Rebar Bender	-	1 unit
Rebar Cutter	-	1 unit
Welding machine (400 amp.), Engine Driven	-	1 unit
Cargo Truck, 5 Tons	-	1 unit

1.02 Environmental Safety and Health Programs

The Contractor shall provide environmental safety and health programs in the execution of the project for duration of the contract project by providing protective equipment to workers, installation safety devices/warning signages and maintaining first aid system at the project site. The minimum number protective equipment and safety devices are as follows:

Personnel Protective Equipment:

Hard Hats	-	10 pcs.
Gloves (rubberized)	-	10 pcs.
Goggles (clear)	-	2 pcs.
Aprons	-	2 pcs.
Safety Shoes	-	8 pcs.

Safety devices:

Barricades	-	1 lot
Warning signs	-	1 lot
Fire extinguishers (10kg.)	-	1 unit

<i>Medical and first aid system:</i>	-	1 lot
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The Contractor shall also employ a Safety Engineer to implement the project construction safety and health programs in the execution of the project.

1.03 Provision for Temporary Facility/Worker's Bunkhouse

The Contractor shall provide/maintain temporary facility/bunkhouse at the project site for the safety and protection of the workers, construction materials and equipment.

2.0 Construction and Installation of Steel Gates, Guardhouse and Car Barrier

The work shall include the furnishing of all labor, materials, equipment and other incidentals necessary to complete the construction and installation of steel gates, guardhouse and car barrier in accordance with the sizes, distances and design shown on the approved Drawings and as directed by the PPA Engineer.

Foundation excavation for the steel gate post shall be at below grade as indicated in the plan.

Concrete post foundation, pavement restoration and concrete slab on grade shall be 3,000 psi concrete.

Steel reinforcement shall be of Grade 40 and the sizes shall be as indicated in the plans/drawings.

Cyclone wire shall be of Ga. 10 and hole size is as indicated in the plan.

Steel gate pipe post, cross braces, steel gate pipe framing materials shall be Schedule 40 G.I. pipe as indicated in the plan.

The Contractor shall submit to the PPA Engineer the shop drawing (as required) of the fabrication and installation of steel gates to be installed for his review and approval.

All welding works shall be done by experienced/qualified welders. The welding machine to be used shall be capable of providing the required current to each welding point without appreciable fluctuations.

Surfaces to be welded shall be free from loose scale, slug, rust, grease, paint and other foreign material except that mill scale which withstands vigorous wire brushing may remain. Joint surfaces shall be free from fins and tears. Preparation of edges by gas cutting shall, wherever practicable, be done by mechanically guided torch.

The prefabricated guardhouse materials shall be made by INDIGO.

The Manual Car Barrier materials shall be by INFINITY.

All painting works shall be done under conditions which shall not jeopardize the appearance or quality of the painting in any way. The Engineer shall have the right to reject all material such as high solid modified epoxy paint and polyurethane finish paint or work that is unsatisfactory and require the replacement of either or both at the expense of the Contractor.

The Contractor shall endeavor to protect the work of others during the time repainting work is in progress. The Contractor shall be responsible for any and all damage to any other work in the course of his painting job. Protective coverings shall be used to protect floors, fixtures and equipment while painting; care shall be exercised to prevent paint being spattered onto surfaces which are not painted.

Painting Workmanship

All painting work shall be first class and in accordance with the best standard and practices of the trade.

The Contractor shall carefully examine all surfaces to be painted and before beginning any of his work shall make sure that the work of other trades has been installed in a workman like condition ready to receive paint. Metal surfaces shall be clean, dry, and free from mill scale, rust, grease, oil or any other substance which could affect the quality of the painting.

Paint shall be applied at proper consistency and each coat shall be brushed evenly free of brush marks, sags, and runs. Care shall be exercised to avoid lapping of paint on glass or hardware. Paint shall be sharply applied to require lines. Finish paint surfaces shall be free from defects or blemishes. Surfaces from which such paint cannot be removed satisfactorily shall be painted or repainted as required to produce a finish satisfactorily to the Engineer.

Succeeding paint coatings shall be applied only when the previous coat is hard and dry.

All painting materials shall be used in strict accordance with manufacturers' directions, spread or flowed on smoothly with proper film thickness and without runs, sags, skips or other defects.

Preparation of Paint

Paint containers shall be delivered to the job site in manufacturer's unopened containers and shall be opened only required for use. Paint shall be mixed only in the designated room or space in the presence of the Engineer or his representative. Paint shall be thoroughly stirred or agitated to uniformly smooth consistency suitable for proper application. Unless otherwise specified or approved, no materials shall be reduced, changed, or use except in accordance with manufacturer's label or tag on container. In all cases, paint shall be prepared and handled in a manner to prevent deterioration and inclusion of foreign matter.

Preparation of Surfaces for Painting

All surfaces shall be free from dirt, dust, oil grease, efflorescence, loose cement, chalk and other deleterious matter shall be removed, and surface roughened when necessary to insure good paint adhesion. The method of surface preparation shall be left to the discretion of the Contractor, but results obtained shall be satisfactory to the Engineer.

All holes, cracks and depression shall be neatly filled with patching plaster, mixed and applied to match existing plaster. Patches shall be sanded flush and smooth and properly sealed before applying prime coat. For metal, dirt, weld splatter, rust, scale and other contaminants shall be removed by scraping, wire brushing and sanding as required. Oil and grease shall be removed with mineral spirits or appropriate solvent.

3.0 Installation of Concrete Barrier Separator

The work shall include the furnishing of all labor, materials, equipment and other incidentals necessary to complete the supply, fabrication, delivery, installation and painting as indicated on the drawings and/or as directed by the PPA Engineer.

Materials to be used:

Steel reinforcement shall be of Grade 40 and the sizes is as indicated in the plans/drawings.

Concrete shall be 3,000 psi.

All painting works shall be done under conditions which shall not jeopardize the appearance or quality of the painting in any way. Painting workmanship, preparation of paint and preparation of surfaces for painting shall adhere in accordance with best standard and practices for the trade as cited above.

IV. MEASUREMENT FOR PAYMENT

In accordance with Section II Scope of Works of this Technical Specifications, the pertinent items of work described therein and to be executed by the contractor shall be measured and paid for according to the following terms:]

- All scope of works, activities shall be paid in accordance with the unit price for said item of works done/completed indicated in the Bill of Quantities (BOQ), plan and certified by the PPA Engineer.

V. As-Built Drawings and Photographs

- 1.0 Photographs taken before, during and after completion of the project shall be submitted as part of the documentary requirements for the progress billing.
- 2.0 At the completion of the Project, the Contractor shall prepare four (4) sets of "As-built" Drawings which shall be submitted to the PPA, PMO-NCR North as part of the documentary requirements for the formers final billing. The as-built drawings shall indicate therein all the original items of work, changes, deviations and additional work items (if any), undertaken by the contractor to complete the project. The as-built drawings shall bear the title block prescribed by the PPA and shall be signed by the contractor's authorized representative prior to submission to PPA, PMO-NCR North.