



REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF FINANCE  
**BUREAU OF CUSTOMS**

*A modernized and credible customs administration that upholds good governance and is among the world's best*

## TERMS OF REFERENCE

*(As of 23 November 2023)*

### 1. Name of Project: (as applicable)

**Design and Major Renovation of BOC Building, Port of Clark**

### 2. Requirements

#### I. INTRODUCTION

This Terms of Reference shall form part of the Contract for the Design and Major Renovation of BOC Building, Port of Clark, where its current situation can no longer meet the standards set for the Bureau of Customs (BOC) over dilapidation due to time together with wear and tear and improper use and with the increase in the number of port users, hence, the need for the repair and renovation of existing facility is needed at the Bureau to meet its demand as well as to protect the safety of the employees.

#### II. BACKGROUND AND OBJECTIVE

The BOC Administration intends therefore to contract out the project with local Contractors to undertake the Design and Major Renovation of BOC Building, Port of Clark. This Terms of Reference (TOR) describes the nature and scope of the services undertaking to be provided by the Contractor to BOC.

In the purpose thereof to conduct the actual Design and Major Renovation of BOC Building, Port of Clark conforming to the Department of Public Works and Highways (DPWH) Standards and Green Building Design Principles where possible.

#### III. PROJECT DESCRIPTION

The proposed Design and Major Renovation of BOC Building, Port of Clark will generally have an occupancy use and basic description as approved by the BOC Commissioner. The project site will be located at **Clark Freeport, Malabacat, Pampanga**.

#### IV. PROJECT SITE

##### 1. Preliminary Survey and Mapping of Existing Site Conditions

The Contractor shall conduct the preliminary survey, mapping of existing Site conditions and meeting with owner/occupants on the proposed renovation methodology of the project.

##### 2. Preliminary Investigations

The contractor shall conduct detailed and comprehensive investigations; and measurements required to produce and develop an as-built plan which will be the basis of the proposed renovation works.

##### 3. Existing Structure

The contractor shall conduct a comprehensive assessment of the existing structure primarily investigating its current occupancy type and its architectural and structural characteristics and recommends to the owner a possible structural integrity investigation of the existing building.

#### 4. Existing Utility Locations

The project site and its surrounding existing utility location specifically water source, electrical power, and communication networking shall be identified and then evaluated so as to properly included in the engineering planning of the project.

### V. PROJECT DEFINITION

#### 1. General Requirements

The Owner/Procuring Entity does not guarantee that the preliminary data provided are fully correct, up to date, and applicable to the project. The Contractor shall be solely responsible for the accuracy and applicability of all data that it will use in building methodology proposals and services. It shall also be responsible for the integrity of the detailed engineering design and the performance of the structure irrespective of the approval of the Owner/Procuring Entity. It shall also be solely responsible for the design and liable for the structural defects and/or failures of the completed project.

The Contractor shall conceptualize a high-performance office space that will enhance energy and environmental performance, increase space productivity, greater flexibility, safe, healthy, comfortable, durable, aesthetically pleasing, and technologically advanced office environment.

The required space and related occupancy as well as suggested minimum areas are shown in the attached drawings.

#### 2. General Concept

##### 2.1 Architectural Design and Interior Design Concept

Sustainability and environmentally low-impact design shall be integrated with the selection of building materials and renovation methodology. The concept of *Green Architecture* is significantly recommended to address the effects of climate change and global warming as these two have vastly affected society's living conditions penetrated the world. This concept mainly advocates sustainable energy sources, the conservation of energy, and the reuse and safe application of building materials. The site selection for the project shall take into consideration its potential impact on the environment. The architectural design shall take into consideration and put a premium on the relationship between the user and its space environment design that studies the psychology of man in relation to his habitat shall be integrated with the planning and designing of the project.

The design shall consider the utilization of natural lighting and highly efficient materials thereby reducing energy costs. The roof design shall help improve stormwater management as it delay run-off into the storm drainage system.

##### 2.1.1. Codes and Standards

The architecture works shall be in accordance with the following Laws, Codes and Standards.

##### 1. Laws and Codes:

- National Building of the Philippines and its Latest and Amended Implementing Rules and Regulations (IRR)
- Republic Act (RA) No. 9266 or Architect Law and its Latest Amended IRR
- RA No. 4226 or General Building Licensing Act and its Latest and Amended IRR
- Batas Pambansang (BP) Bilang 344 or Accessibility Law and its Latest and Amended IRR
- RA No. 9514 Fire Code of the Philippines
- Existing Local Codes and Ordinances

- And other Laws that applies to the projects

## **2. Standards**

- Bureau of Product Standards (BPS)

### **2.1.2. General Drawing Guidelines**

#### **2.1.2.1 General**

- Licensed software in drafting is required. Drawings shall be submitted both in printed and electronic copies.
- Keep the same orientation in all plans. The north orientation shall be indicated in all architectural floor plans. The orientation of the architectural plans shall be consistent with all engineering plans.
- Existing buildings and new works shall be clearly indicated and labeled in the plans.
- Detailed plans shall have a scale not smaller than 1:50 meters.
- Spot detailed plans, elevations, and sections shall have a scale not smaller than 1:10 meters.
- Avoid notes such as 'see architectural detail' or 'see structural'.
- Always repair with a call out to the specific detail drawing and sheet number.

#### **2.1.2.2 Floor Plans**

- All plans shall be 1:1 meters. The same scale shall be used for the rest of the architectural, structural, sanitary, plumbing, electrical and mechanical plans, except for its trade's site plan, detailed plans, and spot details.
- Elevation callouts shall be indicated on the floor plan and shall be consistent with the elevation drawing.
- Section line callouts on the floor plans shall be dated consistent with the section drawing.
- Floor plans shall be indicated with boxed room callout numbers, including the callout for floor finishes and wall finishes.
- Floor elevations shall be indicated in the floor plans. These shall be in reference to the natural grade line or the established finished floor lines of the adjoining existing buildings.
- The location of mechanical equipment, e.g. air conditioning, shall be indicated in the floor plans. This shall be consistent with the mechanical electrical plans.
- Door callouts shall be circles with the proper numbering, e.g. D-01
- Window callouts shall be hexagons with the proper numbering, e.g. W-01

#### **2.1.2.3 Elevations and Sections**

- Finish floor lines and top of truss lines shall be consistent in all the elevation, sections and structural plans and details. Detailed material callouts shall be provided for all sections and elevations.

#### **2.1.2.4 Reflected Ceiling Plans**

- Reflected ceiling plans shall be indicated with boxed room callout numbers, including the callout for ceiling finishes and lighting fixtures.
- Ceiling height relative and in reference to the finish floor line shall be indicated in the reflected ceiling plans in each room with boxed dimensions. This is to ensure that the ceiling heights in all rooms are established whether or not reflected in the sections.
- The description and the location of the fixtures, e.g. lighting, smoke detectors, air condition vents, and exhaust fans, in the reflected ceiling plans shall be consistent with the electrical and mechanical plans.

#### **2.1.2.5 Roof Plans**

- The location of all downspouts shall be indicated in the roof deck plans. Detailed specifications and technical drawings must be provided for and indicated in all drawings.

#### **2.1.2.6 Doors and Windows**

- Door and window schedules shall be indicated in the type of door or window, the number of sets, the location/s of the door or window, the materials and accessories included and other special specifications, e.g. color of finish.

#### **2.1.2.7 Details**

- Provide a minimum of one (1) bay section of a scale not smaller than 1:50 meters for each major building preferably cut along the area with special construction design.
- Provide spot detail plans, elevations, and sections of a scale not smaller than 1:50 meters for all areas needing the pattern, e.g. lobby, corridor, entrance walk, showing the position and pattern of tiles.
- Center line location of plumbing fixtures shall be indicated in detailed plans with lines of reference and its corresponding dimensions. This is to indicate the exact locations of the plumbing/ sanitary roughing-ins.

### **2.1.3. Building Architectural Works**

#### **Floor Plans**

- The structural, sanitary, plumbing, electrical and mechanical designs are required to refer to the architectural plan and specifications in case of discrepancies. If an engineering design will have any possible conflict or interference with the structural design, the latter may be adjusted provided that the aesthetic value is not compromised.
- The architectural and engineering plans shall be consistent all throughout in terms of dimensions and locations of columns, beams, walls, roof lines, conduits, ducts, pipes, and fixtures, among others. Column and beam grid lines shall also be consistent in all the architectural and engineering plans.
- Verify and coordinate floor plans with the mechanical, electrical and sanitary design with regard to the requirements for mechanical rooms, electrical rooms, pipes chase, and other engineering requirements.
- Toilets shall be in accordance with the standards of the DPWH.

#### **2.1.3.1. Walls**

- Exterior walls shall be the existing concrete and windows to match to the existing window frame and to maintain the original looks of the building.
- Toilet wall tiles shall be in accordance with the standards of the DPWH.
- Layout and work on wall and floor tiles must be aligned, plumb, level, and square.
- All edges, corners and intersections of toilet tiles, including the topmost tile not reaching the ceiling shall be provided with Polyvinyl Chloride (PVC) tile trims.
- The color and design shall be approved first before installation.

#### **2.1.3.2. Floors**

- If floor tiles in two adjacent rooms with different materials, colors or designs meet at the door opening, the cut shall be located in the middle of the door thickness when in a closed position. Provide details in the floor pattern design.
- The floor at the openings of the toilet for persons with disabilities shall be sloping. Indicate in the plans and sections.
- The size of the toilet floor tiles shall be in accordance with the standards of the DPWH.

- The size of the kitchen/pantry non-skid floor tiles shall be 600mm x 600mm. Indicate the tile pattern.
- The size of the floor tiles of the offices shall be 600mm. x 600mm. or the bigger depending on the proportion to the size of the room.
- The size of the floor tiles of the lobby and corridor shall not be less than 600 mm x 600 mm. The tile size of 600 mm x 600 mm is recommended for bigger areas. Indicate the tile pattern.
- The layout and work on wall and floor tiles must be aligned, plumb, level, and square.
- All edges, corners, and intersections of toilet tiles shall be provided with PVC trims.
- Tile color and design shall be approved first before installation.

#### **2.1.3.3. Ceiling Works**

- All floors to ceiling shall have a minimum height of 2.4 meters for offices.
- Ceiling height for areas with special aesthetic treatment, e.g. lobby, major conference room, auditorium, executive office, shall be proportional to the area or room or as required by the designer. However, this shall not be lower than 3.0 meters. Provide details.
- If acoustic boards on aluminum T- runners would be used for the ceiling, the layout should be in the center and avoid cut pieces. If the remaining perimeter of the ceiling is less than 600mm. wide, it shall be complementary designed with fiber cement boards on light gauge metal furring. Likewise with acoustic boards on big areas, e.g. offices shall be designed in a way to break the redundancy. Provide details.
- Soffit of exterior beams and slabs shall have drip molds to prevent damage due to water sipping into the eaves or ceiling. Section details shall be required to show drip mold.

#### **2.1.3.4. Doors and Windows**

- Major rooms that require security shall have sturdy doors, wood panels, and metal.
- Minor rooms that do not require security shall at least have wood flush doors.
- Toilets and other wet areas shall have flush-type doors with 2.5mm thick medium-density fiber board with PVC film cover.
- Heavy-use doors, e.g. kitchen, exit doors should be provided with stainless steel kick or push plates and door closers.
- Fire escape doors should be provided with panic hardware and door closers, and shall conform to the requirements of the Fire Code of the Philippines.
- Aluminum frames of glass doors shall be powder-coated.
- Door finish and color shall be approved first before application.
- Windowsills shall be slightly sloped outwards to prevent damage to windows and paint due to water slippage. Section details shall be required to show this slope.
- All doors of high-occupancy rooms shall swing outwards and as required by the Fire Code of the Philippines.
- Door jambs without molding/casing installed on concrete walls shall have construction grooves all around. Provide details.
- All doors and windows shall have reinforced concrete lintel beams. Provide details.

#### **2.1.3.5. Ramps and Corridors**

- Ramps for persons with disabilities shall have a slope not higher than 1:12. Handrails and clearances shall conform to the requirements of BP 344.

#### **2.1.3.6. Fixtures and Accessories**

- Electrical light switches shall be located by the knob side of the door.
- Fixtures and accessories shall conform to the requirements of BP 344.

#### **2.1.3.7. Roofing Works**

- Should be water-tight and can withstand at least 240kph of wind pressure.
- Parapets, designed as roof protection from winds, must be reassessed to satisfy the preceding parameters. Provide details.
- The slope of the roof, if required, shall not be less than 30 degrees.
- All trusses shall be replaced by steel trusses.
- The concept of roofing design will be outside the gutter of the building based on the approved design.

#### **2.1.3.8. Painting**

- Painted ceilings shall be in flat latex finish, while cornices and moldings shall be in gloss enamel finish.
- The painted interior wall shall be at least in semi-gloss latex finish for ordinary rooms, e.g. offices, unless specified to a higher type of paint.
- The painted exterior wall shall be at least in moisture-resistant/ water-repellant solvent-based finish, texture or smooth, unless otherwise specified.
- Paint color and shade shall be approved first before application.

#### **2.1.4. Specific Requirements**

Provide spot detail plans and sections of the following:

- a. Gutter, eaves and parapet;
- b. Ceiling-cove light, special connections and designs, moldings balances;
- c. Stairs-handrail, and baluster;
- d. Ramps-handrail design and floor pattern;
- e. Doors, windows and gates-grille works;
- f. Special Architectural treatment and Design, e.g. facade design;
- g. Specials Carpentry Works, e.g. partitions, cabinetry; and
- h. Other details as may be required.

#### **2.1.5. Summary of Materials**

- Materials to be used shall be fire-resistant, non-toxic, moisture-resistant and termite-resistant, e.g. fiber cement board, light-gauge steel frame, and PVC ceiling panels.
- Wet areas, e.g. toilets, and kitchens shall use non-skid/ non-slip vitrified Ceramic floor tiles.
- Heavy traffic areas, e.g. corridors, shall use heavy-duty seamless Granite floor tiles.
- Ramps and stairs shall use non-skid/ non-slip floor tiles, and materials as specified.
- Aluminum T-runners shall be powder coated.
- Metal rod hangers with adjustable clips, and not galvanized iron wires, shall be used to support and suspend the aluminum T-runners and light gauge metal furring.

## **2.2 Electrical Design Concept**

General lighting design shall be adequate for space functions. The use of LED lighting systems is recommended. Ornamental lighting design can be considered if it is necessary. Electrical wiring systems shall also consider provisions for future electrical expansions and developments.

## **2.2.1. Codes and Standards**

The electrical System Parameters shall be in accordance with the following Laws, Codes and Standards.

### **2.2.1.1. Codes**

- Philippine Electrical Code
- National Electrical Code
- Fire Code of the Philippines
- National Building Code of the Philippines and its New IRR
- Existing Local Codes and Ordinances

### **2.2.1.2. Standards**

- BPS
- Underwriters Laboratory (UL)
- National Fire Protection Association
- International Electrotechnical Commission (IEC)
- Illumination Engineering Society
- National Electrical Manufacturer's Association

## **2.2.2. Electrical Works**

Based on the existing building, the Electrical Works shall provide a complete Electrical layout of the following:

1. Panel Board Layout;
2. Electrical Metering Devices;
3. Service Conductors and Conduit Layout;
4. Grounding System; and
5. Emergency Standby Generators

## **2.2.3. Building Facilities Electrical System**

### **2.2.3.1. Lighting System**

Provide and install adequate normal branch circuits for the Lighting System to all areas using the standard Lighting Design Analysis. Utilize the standard illumination requirements per area of concern using the preferred particular type of luminaries.

### **2.2.3.2. Power System**

Provide and install adequate normal branch circuits for the Power System.

### **2.2.3.3. Standby / Emergency System**

Provide and install adequate equipment for life safety and critical emergency branch circuit for lighting and utilization equipment connected to the alternate power source.

### **2.2.3.4. Auxiliary System**

Provide and install the following Auxiliary System:

- a) Communication System;
  - Telephone System
  - Local Area Network System
  - Private Branch Exchange (PABX)
- b) Fire Alarm System; and
- c) Security System

#### **2.2.3.5. Lighting Protection System**

The building lighting protection system shall include roof-mounted air terminals grounding conductors, ground rods, conduits, clamps and auxiliary equipment as required for a complete and operational lighting protection system.

#### **2.2.4. Provide details of the following:**

1. Lighting Fixtures/ Luminaires;
2. Panel board and Circuit Breakers;
3. Switchgear and other Metering Devices;
4. Electrical and General Building Equipment;
5. Installation and Termination of Auxiliary and other Special Devices and Equipment;
6. Power and Telephone Hand holes (as may be required);
7. Pedestal and Service Entrance to Bldg.;
8. Grounding System Layout;
9. For primary metering only;
10. Transformer and Generator Mounting; and
11. Others as may be required.

#### **2.2.5. Summary of Materials**

##### **2.2.5.1. General Lighting Luminaires**

Fixture type shall be as indicated on the Lighting Layout Plan using LED lamps. Other Special Lighting requirements shall be approved by the implementing agency.

##### **2.2.5.2. Wiring Devices**

Wiring devices shall be non-automatic control devices, the contract is guaranteed by the pressure of the special spiral springs.

- Switches shall be of 15A, 250V or 300V except as otherwise noted and approved. Terminals shall be screw-type or quick connected type.
- General use receptacle shall be 15A, 240V grounding type unless otherwise indicated on the drawings.
- Special purpose receptacles shall be as called for on the drawings. Matching plugs shall be supplied.

##### **2.2.5.3. Panel Boards and Circuit Breakers**

The Panel board and Circuit Breakers shall be equipped the type as indicated in the panel board schedule and details.

- Provide molded-case circuit breakers of frame, trip rating and interrupting capacity as shown on the drawings. The circuit breakers shall be a quick make, quick break, and thermal-magnetic, trip-indicating, bolt-on type and shall have a common trip on all multiple breakers with internal mechanisms.
- All current-carrying parts of the panel board shall be plated. Provide solid neutral (S/N) assembly when required. The assembly shall be isolated from the enclosure.

##### **2.2.5.4. Electrical Conduit, Boxes and Fittings**

All conduits, boxes and fittings shall be standard rigid steel, zinc coated or galvanized.

- Rigid Steel Conduits
- Rigid Metal Conduits
- Intermediated Metal Conduits (IMC)
- Electrical Metal Conduits
- Unplasticized PVC (UPVC), if required, shall be scheduled 40.



#### **2.2.5.5. Conductors**

Wires and cables shall be of approved type and unless specified or indicated otherwise, all power and lighting conductors shall be insulated for 600 volts.

- The conductors used in the wiring system shall be of soft-annealed copper having a conductivity of not less than 98% of that of pure copper and insulated for 60° C Temperatures.
- All conduits of convenience outlets and wire ways for lighting branch circuit home runs shall be wired with a minimum of 3.5mm square in size.

#### **2.2.5.6. Structural Cabling & Telephone System**

- A minimum provision for an estimated 500 mixed PABX extension and direct telephone lines shall be required for tertiary general buildings.
- Final details of the system shall follow specific requirements, quantity and type of service.

#### **2.2.5.7. Fire Detection and Alarm System**

- The Fire Detection and Alarm System shall be of multiplex, microprocessor-controlled addressable or zonal conventional fire detection, alarm and communication system.
- The system shall consist of full integration of automatic fire detection, voice alarm communication and firefighters' telephone system.
- The system shall consist of a control station, mimic panel initiating and indicating devices, control modules and system wirings.
- Actuation of the protective signaling system shall occur by manual pull station, automatic smoke or heat detector, sprinkler flow switch and tamper switch.
- The system shall be able to monitor the status of flow switches and supervisory switches.

### **2.3. Mechanical Design Concept**

Fire protection and fire suppression systems shall be provided with wet and dry standpipes, fire hose cabinets, fire extinguishers, addressable type fire alarm system and sprinkler system, smoke detectors and fire exits, among others.

#### **2.3.1 Codes and Standards**

The Mechanical Design shall be in accordance with the following Codes and Standards:

##### **2.3.1.1. Codes:**

National Building Code of the Philippines and its New IRR

1. New Fire Code of the Philippines
2. Mechanical Engineering Code of the Philippines
3. Existing Local Government Code and Ordinances

##### **2.3.1.2. Standards:**

1. BPS
2. Philippine National Standards
3. UL and Factory Manual (FM)
4. IEC 1988
5. National Fire Protection Association (NFPA)

#### **2.3.2 Automatic Fire Sprinklers System**

The Automatic fire sprinklers system shall be composed of complete plans and Drawing of the Following:

1. Site Development Plan and Vicinity Map, indicating the location of the buildings, firewater reserve tank, firewater line, yard loop and private fire hydrant.
2. General Notes, legends and symbols including a Schematic Diagram of the Alarm Monitoring System.
3. Floor Layout and Isometric Layout of the Automatic Fire Sprinklers System indicating pipe size and the location of the pipes, valves, sprinkler head, riser nipples, fire hose cabinet, sprinkler main riser, drain pipes, cross mains, branch lines, inspectors text connection, hangers and sway braces.
4. Equipment Schedule, Detail drawing, fire pump and jockey pump layout.
5. Architectural, Structural, Electrical and Plumbing drawing of the Firewater tank and Pump house.
  - Automatic fire sprinklers shall be provided in all parts of the building.
  - Hazard Classification shall be Light Hazard Occupancy.
  - The area of Coverage shall be 146 square meters and water density shall be 4.071 lps/ sq.
  - Protection area per sprinkler head shall be 20 square meters at 2.2 meters minimum distance between sprinklers and 4.2 meters maximum spacing.
  - All floor control valves shall be equipped with a supervisory switch water flow detector and drain system.
  - Water supply shall be horizontal split case centrifugal fire pumps with diesel engine or AC motor and a vertical in-line jockey pump with controller.
  - Hydraulic calculation report shall be based on NPFA-13 format.

#### **2.3.4 Specific Requirements**

Provide details for the Elevated Water Tanks

#### **2.3.5 Summary of Materials**

##### **2.3.5.1 Automatic Fire Sprinkler System**

- a. Sprinkler head shall be UL Listed/ FM Approved, Pendant, upright or sidewall unit, 83 LPM flow capacity per head and temperature fusing at 57.5 C to 74 C.
- b. The alarm assembly shall be UL Listed / FM approved, constructed and installed that any flow of water from the sprinkler equal to or greater than that from the single automatic head shall result in audible and visual signal in the vicinity of the building.
- c. Alarm and supervision of the automatic water sprinkler shall include the monitoring water flow switch at each floor of the building, fire pump and the jockey pump running condition and power condition and power supplies, level of water in the reservoir and control valves.
- d. pipes shall be Black Iron schedule 40. Screw fittings shall be used for inside piping.

#### **2.4 Information and Communication Design Concept**

Data and voice system shall include Local Area Network (LAN) wiring, cabling and roughing-ins. All tables and cubicles shall have ready provision for data and voice systems. Telephone system design shall suit the BOC operations with easy and quick communication links between main and satellite offices. Provisions for LAN and telephone system expansion and development shall be considered.

## **2.5 Sanitary and Plumbing Design, Sewage Treatment Plan Concept**

Plumbing and sanitary systems shall use low-flow plumbing fixtures. Rooftop downspouts shall be directed to the rain catcher system. Such rain catcher system shall serve as a retention pond to delay surface run-off into the street drainage. It shall be designed to infiltrate the rainwater back into the ground while the excess are discharged to the storm drainage. A sewerage system shall be considered in the design.

Provisions for future plumbing and sanitary expansions and development shall be considered.

### **2.5.1. Codes and Standards**

The Sanitary/ Plumbing Design shall be in accordance with the following Codes and Standards:

#### **2.5.1.1. Codes:**

1. National Building Code of the Philippines (NBCP) and its Revised IRR
2. Fire Code of the Philippines
3. National Plumbing Code of the Philippines (NPCP)
4. Sanitation Code of the Philippines
5. Existing Local Codes and Ordinances

#### **2.5.1.2. Standards:**

1. BPS
2. Philippine National Standards for Drinking Water
3. UL
4. National Water Resources Board
5. National Plumbers Association of the Philippines
6. Philippine Society of Sanitary Engineers, Inc.

### **2.5.2. Building Facilities Sanitary/Plumbing System**

#### **2.5.2.1. Sewer Line and Vent System**

- Provide complete sewer line and vent system from all (domestic) plumbing fixtures and floor drains, laid by gravity flow/pumping from lift/transfer station leading to the sewage treatment plant.
- For Drainage Fixture Units; refer to Chapter 7 Table 7-2, NPCP.

#### **2.5.2.2. Waste water Line and Vent System**

- For all Wash Areas dealing and generating with oil/grease at the Dietary, provide separate Waste line and vent system solely tap to the proposed Grease Trap and then connect its effluent to the Sewage Treatment Plant.
- For Drainage Fixture Units; refer to Chapter 7 Table 7-2, NPCP.

#### **2.5.2.3. Water Line System**

- Provide complete cold water supply pipes to all plumbing fixtures including the replacement of the overhead tank located at the roof of OCOM building. From the main water source to cistern, the water shall be pumped to the elevated water tank and conveyed to the fixtures by gravity system and or distributed to fixtures by transfer pump with constant pressure through a Pneumatic Storage Tank to plumbing fixtures, whichever is feasible.

#### **2.5.2.4. Storm Drainage System**

- Complete storm drainage system shall be provided for all groups, canopies, concrete ledges and balconies including condensate drains laid for gravity flow connected to a leader/pipeline leading to the natural ground-level storm drainage network.

### 2.5.3. Specific Requirements

- Provide details of the following:
  1. Grease Trap (for Dietary and Pantry)
  2. Elevated Water Tanks

### 2.5.4. Summary of Materials

- Sewer and Vent pipes; UPVC extra
  1. Series 1000 (Conforming to ISO 4435/ ASTM D2729 including Trims and Fittings)
- Storm Drainage pipes Downspouts, Unplasticized Polyvinyl Chloride
  1. UPVC extra series 1000 (Conforming to ISO 3633, ISO 4435, ASTM D2729 including Trims and Fittings, BPS Certified)
  2. D2729 including Trims and Fittings, BPS Certified
- Drainage pipes, 250mm diameter and below, Non-Reinforced Concrete Pipe, 300 diameters and above, Reinforced Concrete pipe
- Drainage Manholes; Street Inlet, Curb Inlet, Traffic Type Reinforced Concrete Area, Street Inlet, Curb Inlet, Traffic Type Reinforced Concrete Area Darin/Catch Basin Reinforced Load Bearing CHB
- Sewage manholes; Traffic type Reinforced Concrete with standard Cat Iron Cover, sealed Type.
- Wastewater Pipeline; wash areas/dietary (same as sewer & vent) Laboratory HDPE pipes & Fitting PNIG.
- Cleanouts; HQ stainless Steel/ brass with counter sunk plug/ screw locks (BPS certified)
- Floor Drains / Deck Drains, HQ Stainless Steel/ Brass (BPS Certified)
- Gutter Drains; Dome Type Brass/ Stainless steel (BPS Certified)
- Cold Waterline pipes; for buildings, Polypropylene Pn16/ Pn20 Fusion weld pipes including Trims and Fittings (BPS Certified)
- Trench Grating; Galvanized/ Stainless Steel Iron grates
- Plumbing Fixtures including Trims and Fittings and accessories; (BPS Certified)

## 2.6 Minimum Requirements for Construction Safety and Health

No Contractor or subcontractor shall require any employee to work in surroundings or under working conditions that are unsanitary, hazardous, or dangerous to his health or safety. In order to meet this general requirement, the Contractor must:

- 2.6.1. Initiate and maintain programs (written) to comply with this general requirement.
- 2.6.2. Provide frequent and regular inspections of the job sites by competent persons.
  - Competent person means one who is capable of identifying: existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to prompt corrective measures to eliminate them.
- 2.6.3. Prohibit the use of any machinery, tool material, or equipment that is not in compliance with applicable requirements
- 2.6.4. Permit only those employees adequately trained to operate machinery or equipment.
- 2.6.5. Provide training for all employees in
  - Recognition and avoidance of unsafe conditions
  - Workplace safety and health requirements
  - Applicable hazards, safe handling, and personal protective equipment necessary for handling poisons, caustics, flammables, and other harmful substances relevant to their job duties
  - Specific hazards and procedures for entering confined spaces if applicable
- 2.6.6. Provide training for all employees in
- 2.6.7. Provide provisions for medical care and first aid.

- 2.6.8. Develop an effective fire protection and prevention plan.
- 2.6.9. Ensure appropriate housekeeping measures including walkways and removal of combustible scrap and debris.
- 2.6.10. Require the wearing of appropriate personal protective equipment such as hard hats, safety glasses, steel toe shoes, or other appropriate protective equipment in all operations where there is exposure to hazardous conditions.
- 2.6.11. Develop an emergency action plan covering designated actions employers and employees must take to ensure employee's safety from fire and other emergency.
  - The plan must be in writing for employers with greater than 10 employees.
  - All employees must be trained upon initial assignment on the parts of the plan the employee needs to know in the event of an emergency.
- 2.6.12. Provide access to hand washing facilities, toilets, and an adequate supply of drinking water.
- 2.6.13. Provide safety and health signage that are clearly visible to construction workers and public
- 2.6.14. Conduct regular safety meetings.

## VI. GENERAL CODE AND STANDARDS

The design and specifications shall conform to, but shall not be limited to the following standards set by this:

- (i) NBCP, latest edition;
- (ii) National Structural Code of the Philippines (NSCP), latest edition;
- (iii) Fire Code of the Philippines (Presidential Decree No. (PD) 1185);
- (iv) Uniform Building Code;
- (v) Accessibility Law (BP 344);
- (vi) Philippine Electrical Code (RA No. 184);
- (vii) Philippine Mechanical Code;
- (viii) Revised National Plumbing Code of the Philippines (RA No. 1378);
- (ix) Code on Sanitation of the Philippines (PD No. 856);
- (x) Ecological Solid Waste Management Act (RA No. 9003); and
- (xi) Applicable Local Regulations and Ordinances

With respect to the actual construction, applicable rules and regulations prescribed by the following agencies and/or embodied in the following shall be observed:

- (i) DPWH;
- (ii) Department of Health;
- (iii) National Pollution Control Commission;
- (iv) Department of Environment and Natural Resources;
- (v) Bureau of Fire Protection; and
- (vi) Applicable Building Laws in the City of Manila

## VII. ANNEXES

### A. SCOPE OF WORK

The Contractor is required to perform the following scope of work:

#### 1. Review of Existing Information

Review the basic design parameters, space distribution matrix, affected facilities and detailed scope of work.

The Contractor shall ensure that it will procure from the owner significant project information such as environmental conditions, environmental surveys & investigation reports. The information

provided by the owner for the contractor may not be as detailed as complete and as desired hence, therefore that it's contractor's responsibility to secure any information that may be lacking. These are readily available from the owner, such shall be used to define project design criteria and shall serve as a basis for any revised established detailed project cost estimates.

## **2. Architectural Works**

The Contractor is enjoined to have thorough understanding of the activities and services conducted on the BOC, Port of Clark Building. The architectural layout of the building is aligned to the development of the institution and its environs. The architectural features to be installed shall address the needs of the institution and its clientele. The design shall be responsive to the flow of people in and out of the structure and activity within and proximate to the project site and to the nearby buildings.

The building façade shall be a combination of drywall painted panels, glass walls, and CHB. Flooring finishes shall be a combination of homogeneous tiles, ceramic tiles and carpet tiles except in the area that requires special flooring finish. Drop Ceiling shall be a combination of acoustic board and gypsum board.

The architectural design shall address all the requirements and other requirements elsewhere in these specifications and shall be compliant to the National Building Code of the Philippines and all other relevant codes and standards.

All furnishings required in the scope of work shall be to the satisfaction and approval by the Owner.

## **3. Mechanical Works**

The Contractor shall design all mechanical works in conformity to the Philippine Mechanical Code, Fire Code of the Philippines and other relevant codes, laws and ordinances.

The scope of work of the Contractor consists of performing all operations involved in the detailed design, supply, installation, balancing and testing of fire protection and suppression systems, all in compliance to the Philippine Mechanical Code, Fire Code of the Philippines and other relevant codes, laws, ordinances and regulations and to the satisfaction of the Owner.

## **4. Electrical and IT Works**

The Contractor shall design for the electrical and power supply system of the building in accordance with the Philippine Electrical Code, Philippine Mechanical Code, Fire Code of the Philippines, International Life Safety Code (NFPA 101), National Electrical Code (NFPA 70), National Building Code of the Philippines and other relevant codes, laws and ordinances.

The Contractor shall supply and install complete lighting system including all lighting fixtures, conduits, fittings, wires and wiring devices as well as grounding system and lightning arrester. The use of energy efficient lights is mandatory. The Contractor shall likewise furnish and install complete power system including all feeders, branch, circuits, wires and wiring devices. The Contractor shall supply and furnish all materials brand new and of superior quality. All wires must be sized to accommodate peak loads and future installation of additional electric-powered equipment and machineries.

The Contractor shall likewise supply and install Local Area Network (LAN) wiring and structured cabling and other accessories suited for fiber optic connection for automatic link between main and satellite offices. All tables and cubicles shall have ready-provision for voice and data system. The Contractor shall coordinate with the BOC-ICT personnel and its voice and data service providers for the configuration of the communications system. The Contractor shall supply and furnish all materials brand new and of superior quality. All wiring and accessories must be properly sized and suited for the operation of BOC.

In general, electrical and IT works shall consist of the following:

1. Electrical layout plan showing the system of wiring, source, distribution, riser diagrams, panel boxes, and switches, and all other pertinent material as required by approving agencies.
2. Power house/mechanical room with transformer pad shall be strategically located and designed as part of the site development.  
Electrical wirings and accessories shall be:
  - i. Service Entrance – All wirings shall be Thermoplastic High Heat-Resistant (THHN), IMC conduit, UL listed or approved equal.
  - ii. Interior Wiring – All wirings shall be THHN, 3.5mm<sup>2</sup> minimum size in PVC, sch. 40 conduit.
  - iii. Devices – All switches and receptacles shall be flush mounted type, 15 amperes, grounding type for convenience outlet.
  - iv. Lighting Fixtures – Use power-saving type fixtures or LED lighting fixtures.
  - v. Circuit Breaker – Bolt-on type
  - vi. Panel Board – Ga. 16 Galvanized Iron (GI) sheet powder-coated finish.
3. Fire Detection and Alarm System
  - i. Every room and office shall be provided with smoke detector with 6.5-meter radius coverage or as specified in the Fire Code of the Philippines.
  - ii. Every exit door and stairs shall be provided with Manual Pull Station and Bell/Siren.
  - iii. Fire Alarm Control Panel for the building shall be located at the ground floor near the receiving or information area.
4. Telephone
  - i. Service Entrance Provision – Shall be provided by the local utility provider.
  - ii. Location of Service Entrance – Shall coordinate up to the Main Distribution Frame (MDF) of the building.
  - iii. Provide 1-50mm diameter PVC conduit spare for future expansion.
  - iv. MDF – Size shall be size up to 30% spare provision for future expansion, use Ga. 16 GI sheet in powder coated finish.
  - v. Telephone Terminal Connection – Shall be provided for every floor level.
  - vi. New telephone units shall be provided as required.
  - vii. Telephone system design shall suit the BOC operations with easy and quick communication links between main and satellite offices.
5. Data
  - i. Main Tapping Hub – Shall be provided inside the IT/EDP room or electrical room.
  - ii. LAN – Shall be provided including LAN wiring using fiber optic cabling and provisions for LAN expansion and development.
  - iii. Wide Area Network – Shall be provided for data linkages of Owner's remote offices with fiber optic cabling.
  - iv. Every room and office shall be provided with data point, size and type shall correspond to the need of every office.
6. Structured Cabling  
The Contractor shall supply and set up full cabling infrastructure to support data and voice points. The Owner reserves the right to revise the number of data and voice points required during the actual implementation. The Contractor is required to propose a solution to implement cabling system with the Structured Cabling System which include the following sub-systems:
  - Work Area Sub-System
  - Horizontal Sub-System
  - Backbone Sub-System

The Structured Cabling System shall comply with the American National Standard Institute (ANSI) Energy Information Administration (EIA)/Transimpedance Amplifier (TIA)-568-B.2-1 Class E performance requirements, including 'Component Compliance' and 'Channel Compliance'. Independent channel test reports must be produced for the system that is to be installed for both the channel and verification that the individual components are compliant.

International standards may be referenced where local standards do not provide adequate information for detailed administration schemes and support of Building Automation System cabling systems. These include but are not limited:

- ANSI/TIA/EIA-606-A – Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
- ANSI/TIA/EIA-568-B.2-1 – Commercial Building Telecommunications Cabling Standard
- ANSI/TIA/EIA-607 “Commercial Building Grounding / Bonding Requirements”.
- TIA-942 – Telecommunications Infrastructure Standard for Data Centers
- ANSI/NFPA 70 National Electrical Code, Canadian Standards Association C22.1
- ANSI/EIA/TIA 492AAAC (OM3)
- Building Industry Consulting Service International Telecommunications Distribution Methods Manuals
- SSCP5-2000 (Singapore)
- Any local mandatory regulations

#### **5. Plumbing and Sanitary Works**

The design of the water distribution system and facilities, sewer and waste disposal system and storm drainage system, among others, shall conform to the following codes and standards:

1. Revised National Plumbing Code of the Philippines
2. Uniform Plumbing Code
3. Sanitation Code of the Philippines
4. Uniform Building Code
5. American Society of Plumbing Engineers Handbook
6. American Society of Sanitary Engineers Handbook
7. American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Handbook

All design considerations/assumptions shall be based on technical and detailed analyses and design computations.

The Contractor shall supply and install complete plumbing and sanitary systems including fixtures, fittings, appurtenances and piping system, among others. The use of low-flow fixtures is hereby recommended. Complete installation shall mean not only the major equipment and apparatus conveyed in these specifications but all the incidental sundry components necessary for the complete execution of the works and for the proper operation of the installation, whether or not these supply components are not mentioned in detail in these specifications.

The Contractor shall supply and furnish all materials brand new and of superior quality. All fixtures must be sized according to use and its projected number of users.

The technical drawings and specifications shall clearly brand new and of superior quality. All fixtures must be sized according to use and its projected number of users.



## **5.1 Design criteria**

### **1. Sanitary Drainage and Sewerage**

- 1.1 Sanitary waste generated shall be drained by gravity to the existing sewer line at ground level.
- 1.2 Drainage and sewerage shall be underground and covered type system.
- 1.3 The drainage layout shall show all the required information such as direction of flow, manhole-to-manhole distances, and sizes of lines, invert elevation of manholes/catch basins/canals, location of outfalls, grits, grease traps, etc.
- 1.4 Sewerage system shall be provided and designed at appropriate size to manage sanitary wastes.
- 1.5 Sewer line shall be connected to the sewerage system before discharging to the nearest city drainage system.
- 1.6 Waste from kitchen sink shall be provided with grease trap under the sink.
- 1.7 All sewer and waste lines shall be de-clogged and leak tested.
- 1.8 All fixtures shall be individually vented.
- 1.9 Cleanouts shall not exceed 15m apart for straight horizontal run sewer line.
- 1.10 Provide a secured and isolated storage within the laboratory premises for toxic heavy metals that are due for disposal.

### **2. Storm Drainage System**

- 2.1 Storm drainage shall be designed for an average rainfall intensity of 12 inches per hour, 15-minute duration, based on a 10-year precipitation curve.
- 2.2 Minimum slope for pipes shall not be lesser than ½%.
- 2.3 Storm drainage shall be by gravity collection system.
- 2.4 Roofs, decks, ledges and areas exposed to weather shall be provided with the appropriate type of drains and be connected into the downspouts or leaders for disposal at the grade level into the rain catcher system.
- 2.5 Storm drainage system for floors above grade level shall be drained by gravity to the drainage line at ground level.
- 2.6 Drainage shall be provided for machine rooms, air handling unit (AHU) rooms, pump rooms, genset rooms, transformer pads, air-conditioned units and other utilities where needed.
- 2.7 All gutter/roof drains shall be provided with strainer.
- 2.8 Final disposal point shall be into the drainage line at ground level.

### **3. Cold Water Distribution System**

- 3.1 Metering – main water meter for the building.
- 3.2 Hose bib shall be provided for the machine rooms, genset rooms, pump rooms, parking areas, and other utility rooms that require water supply.
- 3.3 Group fixtures shall be provided with isolation valve (IV) per toilet area supplied. Irrigation supply stub-outs or hose bibs shall be provided on all planter's areas.
- 3.4 Water tank shall be clean, disinfected, and leak-tested.
- 3.5 Booster pump and pressure tank, if any, shall be provided to meet the required minimum pressure.
- 3.6 Pressure-reducing valve shall be provided on floors where pressure exceeds 80 psi.
- 3.7 Operating pressures of toilet/bathroom fixtures shall be considered.
- 3.8 Occupant water demand as per code requirement.

### **4. Water Supply and Distribution System**

- 4.1 The design shall be on the basis of the source and volume of water supply, water consumption, piping network, and conveyance in accordance with the applicable laws, rules and regulations governing health, safety and sanitation.

4.2 Water storage tank shall be designed to accommodate fire and domestic uses where the number and size shall be supported with design computations.

## 5.2 Materials Specification Guidelines

### 1. Sewer and Vent System

- 1.a Sewer Lines – Lateral pipes shall be PVC Pipes and Fittings, series 1000, locally manufactured.
- 1.b Kitchen Waste Lines – Hubless cast iron pipes and fittings, imported, locally available.
- 1.c Vent Lines – PVC Pipes and Fittings, series 1000, locally manufactured.
- 1.d Brand Vent – PVC Pipes and Fittings, series 1000, locally manufactured.

### 2. Storm Drainage System

- 2.a Roof Drains – Dome type strainer with C.I. body, locally manufactured.
- 2.b Floor Drains – Square type with C.I. body, locally manufactured.
- 2.c Downspouts – PVC Pipes and Fittings, series 1000, locally manufactured.
- 2.d Collectors – PVC Pipes and Fittings, series 1000, locally manufactured.

### 3. Water Distribution System

- 3.a Cold Water Lines – For risers and down-feeds: GI pipes and fittings, imported, locally available. For roughing-in of toilets: Polypropylene (PPr) pipes and fittings, imported, locally available.
- 3.b Fire Line – Shall be GI pipe, sch. 40, locally manufactured; fittings shall be malleable steel, imported, locally available.

### 4. Plumbing Fixtures

- 4.a Water Closet – flush valve or tank type, siphon jet, floor or wall outlets, floor mounted, locally available. Consider sensor type fixture.
- 4.b Lavatory – countertop or wall-hung or under-the-counter model, locally available. Consider sensor type fixture.
- 4.c Urinal – flush valve, locally available. Consider sensor type fixture.
- 4.d Kitchen sink – locally available.
- 4.e Utility sink – locally available.

At the end of the design stage, the Contractor is expected to come up with the design construction plans, at a suitable scale, as enumerated in these specifications.

All furnishings required in the scope of work shall be to the satisfaction and approval by the Owner.

## 6. Fire Protection and Suppression Systems

The fire prevention requirements, automatic fire sprinklers, fire hydrants and fire hoses shall be provided on locations as specified in the codes, standards and local building laws, as applicable. The work shall consider the design of fire hose cabinets, wet and dry standpipe system, provision of fire hose cabinets and wet and dry standpipe system, and design/layout of automatic fire sprinkler system. Fire suppression systems shall be the **addressable type**.

### 6.1 Codes and Standards

- a. ASHRAE Handbook
- b. NFPA 101 – Life Safety Code
- c. NFPA 10 – Portable Fire Extinguishers
- d. NFPA 14 – Standard for the Installation of Standpipe and Hose System

## 6.2 Design Criteria

- a. Portable Fire Extinguishers – shall be strategically located and shall conform to NFPA 10 with maximum travel distance equal to 75 ft.
- b. For the hydraulic analysis, hose allowance shall be 2-50GPM.
- c. Drain line for the system shall be provided with individual remotest test connections for each zone served.
- d. Special extinguishing system shall be provided on areas where expensive/or electronic equipment are stored.
- e. Generator room to be provided with portable fire extinguishers.
- f. Electrical room to be provided with portable fire extinguishers, CO2 or FE-36 type.
- g. Fire Hose and Wet & Dry Stand Pipe
  - i. The fire hose cabinet shall be installed for the purpose of extinguishing of fire in its incipient stage. Standpipe system shall be meeting Class II requirement.
  - ii. The fire hose cabinet shall be located at prominent and accessible position of each floor and the place shall be near exits in corridor.
  - iii. The number of fire hose cabinet in each section of the building is within 30 ft (9.20 m) of a nozzle attached to not more than 100 ft (30.50 L/min)
  - iv. The hose cabinets shall be made of sheet steel and consist of hose valve, discharge nozzle and hose for easy handling. The table of "HYDRANT" shall be affixed to the front of cabinets.
  - v. Each discharge nozzle shall discharge water at more than 50GPM (189.40 L/min.).
  - vi. Hose length shall be 1-1/2"Ø x 100 ft. (40mmØ x 30m) hose.
  - vii. The pump shall start automatically.
  - viii. The wet and dry stand pipe shall be located in non-combustible fire-rated stair enclosures.
  - ix. The capacity of fire hose valve in dry standpipe system shall be more than 100GPM (379 L/min) and the discharge pressure shall not be less than 65 psi.
- h. The portable and mobile-type fire extinguishers of required number and type shall be installed.
- i. The portable ABC powder-type fire extinguishers shall be installed at the other areas (mechanical rooms, storage rooms).
- j. For flammable liquid, use Aqueous Film Foam System (AFFF) to prevent pre-ignition. Maximum travel distance is 75 ft.
- k. Use 1230 fire protection fluid fire suppression system for server room/data center.

## 6.3 Material Specification Guideline

1. Fire Hose Cabinet
  - 1.a Cabinet – Gauge #18, Malleable Iron Steel, locally manufactured.
  - 1.b Hose – Imported, UL-listed, rubber-lined gasketed hose.
  - 1.c Fog Nozzle – Imported, UL listed, combination fog/nozzle stream.
  - 1.d Rack Pin – Locally manufactured.
2. Portable Fire Extinguisher – UL listed/FM approved, conforming to NFPA 10.
3. Signs – Locally manufactured, samples for approval.

## 6.4 Pump and Motor System

The Contractor shall design, supply and install fire suppression pumping and motor system that can accommodate the minimum requirements in the operation of the system. All fire pumps, jockey pumps, motor, sprinkler heads, alarm assembly and alarm supervision systems shall be UL-listed and FM-approved.

At the end of the design stage, the Contractor is expected to come up with the design construction plans, as enumerated in these specifications.

All furnishings required in the scope of work shall be to the satisfaction and approval by the Owner.

## **7. Permits**

The Contractor shall process and secure all the necessary permits as required by authorities for the preparation, execution and upon completion of the contract. The Contractor shall coordinate with other government/private agencies and pay all fees incidental to the acquisition of the required permits.

Such documents include repair/renovation permits but not necessarily limited to the following documents:

1. Demolition Permit
2. Occupational Safety and Health Program
3. Building Permit
4. Electrical Permit
5. Mechanical Permit (Plumbing/Sanitary)
6. Fire Clearance Certificate
7. Occupancy Permit

Owner-furnished documents that will form part of the requirements in securing such permits have been consolidated and will be endorsed to the Contractor.

## **8. Renovation Works**

Proposed spaces for construction/renovation shall comply with all the regulations and specifications herein set forth governing quality, characteristics and properties of materials, methods of design and construction, type of occupancy and classification. All other matters relative to the design and construction of the building and other structures not provided for in these specifications shall conform to the provisions of the Fire Code of the Philippines and National Structural Code of the Philippines, as adopted and promulgated by the Board of Civil Engineering pursuant to RA No. 544, as amended, otherwise known as the "Civil Engineering Law".

The Contractor shall perform the construction activities, but not limited to, the following:

### **i. Mobilization/Demobilization**

The Contractor shall mobilize and bring out into work, all personnel, plant and equipment, in accordance with his approved renovation program, equipment moving and utilization schedule and manpower schedule, from its regular place of business to the site to undertake the contract.

Mobilization shall include the obtaining and transporting to the site of equipment, materials, tools, personnel, construction plant and all necessary items for the execution and completion of the work and shall also include the setting up and the verification of all equipment, instruments and all other plant until it is rendered operable. It shall also include sufficient supply of spare parts for the construction plant. Breakdowns are to be repaired on-site by the most expeditious, method possible at no cost to the Owner. In the event repairs are beyond the personnel or tools at the site to effect repairs in a reasonable time, such that the construction plant has to be removed from the site, then a replacement of machine or plant or equipment of a similar capacity shall be provided by the contractor at no additional mobilization costs to the Owner nor extension of completion of works.

**ii. Demolition and Relocation of Affected Structures**

Demolition and dismantling works shall include the complete removal of materials and debris of existing roofing and its framing and accessories from project site premises and other items affected by the demolition.

**iii. Site Clearing & Proper Waste Disposal**

General clearing operations include removal of demolished materials and objectionable matter, protection of existing structures/facilities left functional, and clearing to allow for new retrofitting. Provide barricades, coverings, or other types of protection necessary to prevent damage to existing structures/facilities not indicated to be removed.

The work includes cleaning up of debris resulting from site clearing operations continuously with the progress of the work. Remove debris from the site in such a manner as to prevent spillage. Keep area adjacent to site clean and free from dirt and debris at all times. Remove all waste material from site.

Dispose of materials, waste including toxic materials, trash and debris in a safe, acceptable manner in accordance with applicable laws and ordinances. Burying and burning of trash and debris at the site will not be permitted. Remove trash and debris from the site at frequent intervals so its presence will not delay the progress of the work or cause hazardous conditions to workers and the public.

Removed materials and debris that can be reused or recycled shall be disposed of properly to a site designated by the Owner. However, waste and trash that could no longer be reused or recycled shall be removed from the BOC property and disposed of in a legal manner to a site preferred by the Contractor and agreed by the Owner. Location of the former's disposal site and length of haul shall be for the Contractor's responsibility.

**iv. Other General Requirements**

The Contractor shall carry out and complete all items of work within the scope of work in accordance with the approved plans and specifications.

**1. Contractor's Temporary Facilities**

The Contractor shall provide and maintain field offices including all the necessary utilities such as electricity, water, drainage, security, safety requirements and other temporary works necessary for the successful completion of the work. The cost for all the utilities shall be borne by the Contractor.

The Contractor's temporary facilities shall have sufficient area that will accommodate the offices for the Contractor and Owner's representative, storage area, complete with toilet fixtures and interior finishes. Plans and details shall be approved by the Project Manager prior to installation and/or construction.

The Contractor's temporary facilities shall include a stockpile area for bulky construction materials such as pre-cast panels, wire mesh, etc. The ground area shall be appropriately maintained, improved and leveled to provide mobility and easy access for identification and inspection of materials.

The facilities shall conform to the best standard for the required types and shall include office equipment, apparatus, pieces of furniture and other tools necessary for the prosecution of the work.

The Contractor shall provide all necessary safety tools, identifications, uniforms and equipment for the workers and his staff in accordance with the Safety Standard. The Contractor shall provide construction safety barricades along the perimeter of and/or within the project site. The type and material of these barricades shall be subject to the approval of the Project Manager.

The Contractor's temporary facilities shall be dismantled and removed from the site after completion of the contract.

**2. Engineering Support Services**

The Contractor shall submit additional detailed plans and analyses as required, which are necessary for the faithful completion of the works.

**3. Progress Reports**

The Contractor shall prepare a daily accomplishment report, supported with progress photographs and S-curves to monitor actual progress status report and to be used as basis for progress billing.

**4. Certification**

The contractor shall submit a Certificate of Satisfactory Performance issued by the BOC (for contracts entered into with the Bureau) or from any other office/agency.

**9. Testing & Commissioning**

This work includes the testing and commissioning of all mechanical, electrical, IT, plumbing/sanitary and other related works for the completion of the project that has been installed to provide the Owner a high level of assurance that all equipment are installed in a prescribed manner.

Commissioning also includes installation observation, spot testing, verification and functional performance testing and providing performance and operating information to the Owner. Problems observed shall be addressed immediately by the Contractor.

**VIII. DESIGN AND RENOVATION SCHEDULE**

The project shall be carried out within the duration herein specified.

1. Design Phase: Detailed Architectural and Engineering Design and other related matters for the complete delivery of the project - **95 Calendar Days**
2. Renovation Phase: **120 Calendar Days**
3. Post Renovation Phase: **10 Calendar Days**

**IX. MINIMUM REQUIREMENTS FOR A CONSTRUCTION SAFETY AND HEALTH PROGRAM**

Every construction project shall have a suitable Construction Safety and Health Program, which must be in accordance with these rules, and other orders and issuances issued by the Department of Labor and Employment.

**X. STAFF REQUIREMENT**

The Contractor shall provide adequate and qualified staff to perform the services required herein. The general qualifications for the key personnel are as follows:

DESIGN KEY PERSONNEL			
	Required Professional	Minimum Qualification	Responsibility
1.	Project In-Charge	<ul style="list-style-type: none"> <li>• Must be a licensed Civil Engineer or Architect with ample experience in the direction and administration of activities pertinent to the planning and design of infrastructure projects.</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for all the aspects of the project.</li> <li>• Responsible for the conduct of planning and finalization of project requirements, detailed engineering design and pre construction activities including</li> </ul>

		<ul style="list-style-type: none"> <li>• At least five (5) years' experience</li> </ul>	finalization of the Contractor's scope of work.
2.	Structural Engineer	<ul style="list-style-type: none"> <li>• Must be duly licensed Civil Engineer with ample experience in structural design; has substantial knowledge in earthquake design of building structures and shall preferably be knowledgeable in the application of rapid construction technologies.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the conduct of structural design and evaluation of the structural elements of the building during the detailed engineering stage.</li> </ul>
3a.	Design Architect (Architect-of-Record)	<ul style="list-style-type: none"> <li>• Must be duly licensed and an active member of Integrated and Accredited Professional Organization of Architects (IAPOA) with ample experience in the architectural design of residential, academic or institutional facilities and corporate buildings and site planning.</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the conduct of architectural designs and details of the project components and other aesthetic aspects during the detailed engineering stage.</li> </ul>
3b.	Interior Designer	<ul style="list-style-type: none"> <li>• Must be duly licensed with good outstanding record in interior design practice with ample experience in interior design works.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the conduct of interior design and details of the project components and other aesthetic aspects.</li> </ul>
4.	Professional Electrical Engineer	<ul style="list-style-type: none"> <li>• Must be duly licensed with ample experience in building electrical design, lighting, power distribution, switches and panels and preferably knowledgeable in efficient lighting technologies and energy management; has substantial knowledge in electronics systems design as well as smoke detection and fire alarm systems in buildings.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the conduct of all electrical design and details during detailed engineering stage.</li> </ul>
5.	Professional Mechanical Engineer	<ul style="list-style-type: none"> <li>• Must be duly licensed with ample experience in mechanical design and installation of fire protection and suppression systems.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the conduct of all mechanical design and details during detailed engineering stage.</li> </ul>

6.	Sanitary Engineer / Registered Master Plumber	<ul style="list-style-type: none"> <li>• Must be duly licensed with ample experience in the design of building water supply and distribution systems, plumbing and sanitary systems including waste water management and treatment, and preferably knowledgeable in and emergent, alternative effluent collection and treatment systems.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the conduct of all plumbing and sanitary design and details of the building during detailed engineering stage.</li> </ul>
7.	Electronics / Communications Engineer	<ul style="list-style-type: none"> <li>• Must be duly licensed with ample experience in building electronics and communications design, and preferably knowledgeable in efficient technologies; has substantial knowledge in electronics systems design in buildings.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the conduct of all electronics and communications design and details during detailed engineering stage.</li> <li>• Responsible for the design and layout of data and communication facilities during the detailed engineering stage.</li> </ul>
8.	Cost/Quantity/ Specifications Engineer	<ul style="list-style-type: none"> <li>• Must be duly licensed Civil Engineer with ample experience in the preparation of technical specifications and detailed analysis of all applicable unit prices.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the preparation of detailed cost estimation for items of work, materials specifications and updating of the detailed bill of quantities based on detailed engineering plans.</li> </ul>
<b>REPAIR/RENOVATION KEY PERSONNEL</b>			
1.	Project-In-Charge	<ul style="list-style-type: none"> <li>• Must be a licensed Civil Engineer or Architect with ample experience in similar and comparable projects; must have a proven record of managerial capability through directing, managing and supervising of major civil engineering works of buildings and facilities similar in nature and complexity</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for all aspects of the project implementation.</li> <li>• Responsible for the mobilization, construction management and supervision of phases of work.</li> <li>• Responsible for organizing and directing the work of his staff in carrying activities required to ensure that the specified works are built in full conformity with approved contract documents and that payments to Contractor represent actual in-placed accomplishment.</li> </ul>
2.	Supervising Architect (Architecture In-Charge of Construction)	<ul style="list-style-type: none"> <li>• Must be duly licensed and an active member of IAPOA with ample experience in similar and comparable projects and shall preferably be knowledgeable in</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the supervision of the architectural works during construction phase.</li> </ul>



		<p>the application of rapid construction technologies.</p> <ul style="list-style-type: none"> <li>• Five (5) years' experience</li> </ul>	
3.	Structural Engineer	<ul style="list-style-type: none"> <li>• Must be duly licensed Civil Engineer with ample experience in structural design; has substantial knowledge in earthquake design of building structures and shall preferably be knowledgeable in the application of rapid construction technologies.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the supervision of the structural works during the construction.</li> </ul>
4.	Registered Electrical Engineer	<ul style="list-style-type: none"> <li>• Must be duly licensed with ample experience in building electrical design, lighting, power distribution, switches and panels and preferably knowledgeable in efficient lighting technologies and energy management; has substantial knowledge in electronics systems design, smoke detection and fire alarm systems in buildings.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the supervision of all electrical works.</li> <li>• Responsible for the supervision of the electronics and communication works.</li> </ul>
5.	Registered Mechanical Engineer	<ul style="list-style-type: none"> <li>• Must be duly licensed with ample experience in mechanical design and installation of fire protection system.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the supervision of the mechanical works.</li> </ul>
6.	Sanitary Engineer / Registered Master Plumber	<ul style="list-style-type: none"> <li>• Must be duly licensed with ample experience in the design of building water supply and distribution systems, plumbing and sanitary systems including waste water management and treatment, and preferably knowledgeable in and emergent, alternative effluent collection and treatment systems.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the supervision of all plumbing and sanitary works during construction.</li> </ul>
7.	Cost/Quantity/ Specifications Engineer	<ul style="list-style-type: none"> <li>• Must be duly licensed Civil Engineer with ample experience in the preparation of technical specifications and detailed analysis of all applicable unit prices.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for the qualification of the actual construction progress and related variation order;</li> <li>• Responsible in quantity surveys and cost estimation for items of work for buildings and facilities of similar nature.</li> </ul>

8.	Materials Engineer	<ul style="list-style-type: none"> <li>• Must be duly licensed Civil Engineer with Level 1 or 2 DPWH Accreditation for Materials Engineer and with ample experience in supervising materials investigations and quality control; must have a duly recognized experience in similar and comparable projects.</li> <li>• Five (5) years' experience</li> </ul>	<ul style="list-style-type: none"> <li>• Responsible for organizing and supervising the sampling and testing of materials proposed for use in the project components, so as to ensure adequate quality control of the works being constructed.</li> </ul>
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**XI. SUBMITTALS, STAGES AND DELIVERY**

**A. STAGE 1 – DESIGN PHASE (Architectural)**

Delivery 40 Calendar Days		Architectural Design	Form	Efficiency
<b>Activity</b>	<b>Duration</b>	1. Site Development Plan  2. Floor Plans  3. 3D Rendered Perspective <ul style="list-style-type: none"> <li>• Exterior Perspective (4 views)</li> <li>• Interior Perspective (6 views)</li> </ul>	Colored Print A3 size paper	Complete Set of Detailed Architectural Plans, duly signed and sealed by the Designer and drawn in suitable scale, for Owner's review & approval.
Initial Submittals To begin immediately after the issuance of NTP	10 CD			
Review and approval of initial Architectural Design	10 CD			
Final Submittals To begin immediately after the approval of initial Architectural Design	15 CD	Complete Architectural and Interior Design Plans for application of Building Permit <ol style="list-style-type: none"> <li>1. Site Development Plan</li> <li>2. Vicinity Map</li> <li>3. 3D Rendered Perspective (Interior, Exterior and every offices)</li> <li>4. Floor Plans</li> <li>5. Elevation Plan (Front, Rear, Left and Right)</li> <li>6. Sections</li> <li>7. Detailed Plan/ Blow-up Plan</li> <li>8. Doors and Windows Schedule</li> </ol>	24" x 36" Blue Print	Complete Sets of the Plans, duly signed and sealed by the Designer, for Owner's approval.
Review and approval of final Architectural Design	5 CD			

		9. Reflected Ceiling Plan 10. Schedule of finishes for Floors, Walls and Ceiling All of the above considering the Owner comments/ revisions to be checked and approved immediately		
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<b>B. STAGE 2 –DESIGN PHASE (ENGINEERING DESIGN)</b>				
<b>Delivery</b> 55 Calendar Days		<b>Engineering Design</b>	<b>Sheet Size</b>	<b>Efficiency</b>
<b>Initial Submittals</b> To begin immediately upon approval of Complete Architectural Design	20 CD	Complete Engineering Design Plans for application of Building Permit 1. Structural Plans 2. Electrical Plans 3. Mechanical Plans/Fire Protection Plan 4. Plumbing and Sanitary Plans 5. Electronics and Communication Plans 6. Network Cabling 7. Utilities / Ancillaries Plans  All of the above considering the Owner's comments/ revisions to be checked and approved immediately	A3 size paper	<b>Complete Set of Detailed Engineering Plans</b> , duly signed and sealed by the Designer and drawn in suitable scale, for Owner's review & approval.
<b>Review and approval of initial Engineering Design</b>	10 CD			
<b>Final Submittals</b> To begin immediately after the approval of initial Engineering Design	15 CD		24" x 36" Blue Print	<b>Complete Sets of the Plans</b> , duly signed and sealed by the Designer, for Owner's approval.
<b>Review and approval of Final Engineering Design</b>	10 CD			

**A. Detailed Report Submittals**

The Contractor shall submit five (5) copies of signed and sealed reports and documents together with the Detailed Design Construction Plans as follows:

- i. **Quantity Calculations**  
Complete quantity and cost calculations for every item of construction work specified in the Bill of Quantities. In particular, the quantities and cost of each work item according to area of application shall be calculated and a bill of quantities shall be prepared.
- ii. **Design Report**  
Summarizing the basis for the design presented and including all design calculations properly indexed.
- iii. **Consolidated copy of All Specific References**

**B. Permits**

The Contractor shall submit to the Owner original copy of all permits and clearances/certificates issued by regulatory body. Photocopies may be retained by the Contractor for use in the field. Prior to any construction work, the Contractor shall submit all construction permits but not necessarily limited to the following documents:

- (1) Demolition Permit
- (2) Building Permit
- (3) Electrical Permit
- (4) Certificate of Final Electrical Inspection
- (5) Mechanical Permit
- (6) Fire Clearance Certificate
- (7) Occupational Safety and Health Program

Upon completion of the project, the Contractor shall submit:

- (1) Occupancy Permit
- (2) Other permits/clearances as may be required.

**C. Post Renovation Phase**

**Initial Submittals**

Within 10 calendar days upon completion of the project, the Contractor shall submit **One (1) Complete Set of As-Built Plans** (printed in blueprinted paper) duly signed and sealed by the Contractor, drawn in 24" x 36" drawing sheets, subject for review by the owner. Such review by the Owner is limited only as to completeness and correctness of the details of the plans submitted.

**Final Submittals**

When the preliminary submittal is in accordance to the as-built structure, upon notification by the Project Manager, the Contractor shall submit another set of the same plans and other documentation, subject for approval by the Owner, in the following form:

- (1) 1 – complete set of As-Built Plans (in tracing paper/reproducible copy)
- (2) 1 – complete set of As-Built Plans (blue print copy)
- (3) 1 – set of Electronic File of the As-Built Plans (CADD editable file)
- (4) 5 – Sets of Operation and Maintenance Manual, in book form and printed in 8" x 11" size paper, of all equipment and machineries installed, incorporating the technical literature as designed and as actually installed. The O&M information shall be system specific, concise, to the point and tailored specifically to the facility.
- (5) 1 – set original & 4 – sets duplicate copies of Warranty Certificates of all equipment supplied and installed.
- (6) 1 – set original & 4-sets duplicate copies of Occupancy Permit and other permit(s) or clearances as may be required.

When the reproducible copy (tracing paper) of the As-Built Plans has been approved, upon notification by the Project Manager, the Contractor shall reproduce the as-built plans in 5-complete sets (blue print copy) and submit the same to the Owner.

## **XII. EQUIPMENT REQUIREMENTS**

The following are the minimum requirement units to be included in the list of contractor's equipment units, which are owned, leased, and/or under purchase agreements:

1. Truck
2. Welding Machine
3. Power Tools (Jack Hammer, Electric Drill, Angle Grinder, etc.)
4. Steel Scaffoldings

The list of contractor's equipment units shall be supported by a certificate of commitment that all are present and committed to the project if awarded the contract.

## **XIII. PAYMENT TERMS**

### **Advance Payments**

- a. The maximum amount of the advance payment shall be fifteen percent (15%) of the total contract price. The said amount shall be released to the contractor not later than fifteen (15) calendar days from the receipt by the Procuring Entity of the contractor's request. The said period shall be exclusive of the time necessitated by and as a result of external factors such as pre-audit of the request for advance payment.

### **Progress Payment**

- a. Progress payments shall be based on the updated detailed bill of quantities based from the detailed cost estimates prepared and submitted by the contractor during the Design Phase which is part of his submittals. Updating shall be limited only to minor items or sub-items not initially considered by the contractor, but in no way shall the updated changes the bid amount for each particular pay item.
- b. The bill of quantities as submitted by the contractor during bidding process shall serve only for that purpose and shall not in no way become the basis for payment.
- c. The Contractor must submit statement of work accomplished (SWA) and corresponding request for progress payment within thirty percent (30%), fifty percent (50%) and seventy-five percent (75%) of actual work accomplished and upon final completion.
- d. Materials delivered on site but not completed put in place shall not be included for payment. Mechanical and electrical equipment and electronics devices completely put in place but does not satisfactorily pass the performance testing shall not be included for payment.
- e. Progress payment shall deduct for fifteen percent (15%) advance payment.
- f. Progress payment shall deduct for ten percent (10%) retention money.

### **Final Payment**

- a. The contractor may request for final payment upon one hundred percent (100%) of work completion of the work.
- b. Final payment shall deduct for fifteen percent (15%) advance payment.
- c. Final payment shall deduct for ten percent (10%) retention money.

**Other requirements to be submitted by the Bidder during bid opening (as applicable)**

1. Site Inspection : Certificate of Site Inspection
2. Required Licenses or Certification : Business registration, Mayors Permit, PCAB, PHILGEPS
3. Delivery Period : 225 Calendar Days

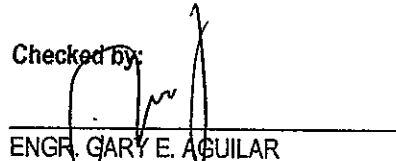
**FOR INFRA PROJECTS, following maybe required as applicable:**

- a) PCAB License (as applicable to the projects) :Category B
- b) Bill of Quantities/Materials (as applicable) :DUPA
- c) Company Profile
- d) Company Organizational Structure


Prepared by:

  
GENBERT S. GUSAGO  
Technical Assistant  
General Services Division

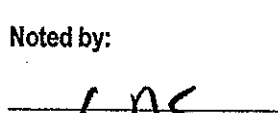
Checked by:

  
ENGR. GARY E. AGUILAR  
Administrative Officer II  
Technical Member, TIAC, BOC

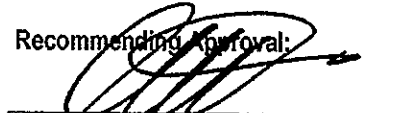
Reviewed by:

  
ENGR. CECIL G. FABIAN  
Administrative Officer IV  
Technical Member, TIAC, BOC

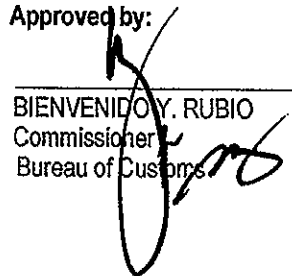
Noted by:

  
ISAGA M.D. GALSIM  
Chief  
General Services Division

Recommending Approval:

  
ATTY. ERASTUS SANDINO B. AUSTRIA  
District Collector  
Port of Clark

Approved by:

  
BIENVENIDO Y. RUBIO  
Commissioner  
Bureau of Customs

**BUREAU OF CUSTOMS  
GENERAL SERVICES DIVISION  
BUILDING AND MAINTENANCE SECTION  
OCOM Bldg., Port Area, Manila**

**BILL OF QUANTITIES  
SUMMARY OF PROPOSED WORKS**


Sheet No.: 1 of 2  
Date Prepared: 9/22/2023

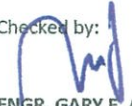
Project Title: Design and Major Renovation of BOC Building, Port of Clark	No. of Piers :	No. of Abuts :
	Limits :	
Location: Clark Freeport, Mabalacat, Pampanga	Exceptions :	
Appropriate Act :	No. of Length :	
Amount Allotment:	Road bed Width :	
Section :	Pavement of Width :	
Appropriation :	Bridge width :	
Character of Terrain :	Desirable starting date :	
Duration: 120 Calendar Days		


TYPE OF WORK TO BE DONE FOR ALLOTMENT	% OF TOTAL	NUMBER	EQUIPMENT TO BE USED NAME
Mobilization/Demobilization	5.46%		
Demolition Works	1.95%		
Carpentry Works	25.25%		
Floor and Tiling Works	18.03%		
Electrical Works	4.47%		
Plumbing Works	2.11%		
Painting Works	10.38%		
Glass Works	13.39%		
Concrete and Masonry Works	0.97%		
Roofing Works	6.07%		
Others	11.94%		
<b>TOTAL</b>	<b>100.00%</b>		


**DETAILED ESTIMATES OF PROPOSED WORKS**


SPEC'S ITEM NR	DESCRIPTION	UNIT	UNIT PRICE	QTY	AMOUNT
A	Mobilization/Demobilization	lot	700,000.00	1.00	700,000.00
B	Demolition Works	lot	250,000.00	1.00	250,000.00
C	Carpentry Works	lot	3,238,988.50	1.00	3,238,988.50
D	Floor and Tiling Works	lot	2,312,600.00	1.00	2,312,600.00
E	Electrical Works	lot	572,850.50	1.00	572,850.50
F	Plumbing Works	lot	271,150.00	1.00	271,150.00
G	Painting Works	lot	1,331,500.00	1.00	1,331,500.00
H	Glass Works	lot	1,717,311.84	1.00	1,717,311.84
I	Concrete and Masonry Works	lot	123,922.50	1.00	123,922.50
J	Roofing Works	lot	778,482.64	1.00	778,482.64
K	Others	lot	1,531,500.00	1.00	1,531,500.00
<b>TOTAL DIRECT COST</b>					<b>12,828,305.98</b>


Prepared by:  
  
**GENBERT S. GUSAGO**  
Technical Assistant  
General Services Division

Checked by:  
  
**ENGR. GARY E. AGUILAR**  
Administrative Officer II  
General Services Division

Reviewed by:  
  
**ENGR. CECL G. FABIAN**  
Administrative Officer IV  
General Services Division

Noted by:  
  
**ISAGANI D. SALSIM**  
Chief Administrative Officer  
General Services Division

Recommending approval:  
  
**ATTY. ERASTUS SANDINO B. AUSTRIA**  
District Collector  
Port of Clark

Approved by:  
  
**BIENVENIDO Y. RUBIO**  
Commissioner  
Bureau of Customs

<b>Direct Cost</b>	
Material Cost	8,863,390.35
Labor Cost	3,264,915.63
Mobilization/Demobilization	700,000.00
<b>Total Direct Cost</b>	<b>12,828,305.98</b>
<b>Indirect Cost</b>	
Overhead, Contingencies and Miscellaneous (OCM) (15% of DC)	1,924,245.90
Contractors Profit (10% of DC)	1,282,830.60
<b>Total Indirect Cost</b>	<b>3,207,076.50</b>
<b>Tax (5% of DC + IC)</b>	<b>801,769.12</b>
<b>TOTAL PROJECT COST</b>	<b>16,837,151.60</b>

<b>TOTAL AREA OF THE PROJECT</b>	<b>885.00 sq.m.</b>
<b>COST PER SQ.M.</b>	<b>Php 19,025.03 / sq.m.</b>

**BUREAU OF CUSTOMS**  
**GENERAL SERVICES DIVISION**  
**BUILDING AND MAINTENANCE SECTION**  
 OCOM Bldg., Port Area, Manila

**BILL OF QUANTITIES**

**Project Title: Design and Major Renovation of BOC Building, Port of Clark**

**Location: Clark Freeport, Mabalacat, Pampanga**

**Duration: 120 Calendar Days**

**Date Prepared: 9/22/2023**

DESCRIPTION	QTY		MATERIAL COST		LABOR COST	TOTAL
	# Units	UM	P/Unit	Total		
<b>A. Mobilization/Demobilization</b>						
Temporary Facilities	1.00	lot	700,000.00	700,000.00	-	700,000.00
Electric and Water Bill						
Site Clearing and Disposal of Debris						
Materials Delivery						
Safety Equipment						
Board up/enclosure						
Building Permit						
Occupancy Permit						
Professional Fees						
			sub-total=	700,000.00	-	700,000.00
<b>B. Demolition Works</b>						
	1.00	lot	250,000.00	250,000.00	-	250,000.00
			sub-total=	250,000.00	-	250,000.00
<b>C. Carpentry Works</b>						
<b>Ceiling (943 sq.m):</b>						
Gypsum board (12 mm)	350.00	sht/s	750.00	262,500.00	131,250.00	393,750.00
Metal Furring ( 5m length )	1,075.00	lgth	150.00	161,250.00	80,625.00	241,875.00
Carrying Channel ( 5m length )	350.00	lgth	130.00	45,500.00	22,750.00	68,250.00
Blind Rivet	13,300.00	pcs	3.00	39,900.00	19,950.00	59,850.00
Metal Screw	3,780.00	pcs	3.00	11,340.00	5,670.00	17,010.00
Wall Angle – 3m Length	230.00	lgth	125.00	28,750.00	14,375.00	43,125.00
<b>PVC Ceiling Panel:</b>						
PVC Ceiling Panel (4.5in x 12 ft)	340.00	pcs	490.00	166,600.00	83,300.00	249,900.00
Metal Screw	560.00	pcs	3.00	1,680.00	840.00	2,520.00
<b>PVC Fluted Wall Panel:</b>						
PVC Fluted Wall Panel (6x.15 m)	260.00	pcs	820.00	213,200.00	106,600.00	319,800.00
Metal Screw	480.00	pcs	3.00	1,440.00	720.00	2,160.00
<b>Drywall Partition "Low wall" (215 sq.m.):</b>						
4' x 8' – Plywood / Fiber Cement Board (6 mm)	220.00	sht/s	850.00	187,000.00	93,500.00	280,500.00
3m Length – Metal Studs	260.00	pcs	425.00	110,500.00	55,250.00	165,750.00
Rivets	2,820.00	pcs	3.00	8,460.00	4,230.00	12,690.00
Metal Screw	1,350.00	pcs	3.00	4,050.00	2,025.00	6,075.00
<b>Fabricated Office Tables:</b>	65.00	pcs	6,500.00	422,500.00	211,250.00	633,750.00
<b>Fabricated Cabinets:</b>	50.00	pcs	8,500.00	425,000.00	212,500.00	637,500.00
Miscellaneous	1.00	lot	104,483.50	104,483.50	-	104,483.50
			sub-total=	2,194,153.50	1,044,835.00	3,238,988.50
<b>D. Floor and Tiling Works</b>						
60cm x 60cm floor tiles( 885 sq.m.)	2500.00	pcs	350.00	875,000.00	437,500.00	1,312,500.00
50cm x 50cm Floor Carpet Tiles for Collector's Office and Conference room (65 sq.m.)	270.00	pcs	370.00	99,900.00	49,950.00	149,850.00
60cm x 60cm floor tiles for Collector's toilet (5.5 sq.m.)	18.00	pcs	350.00	6,300.00	3,150.00	9,450.00
60cm x 60cm wall tiles "full height" for Collector's toilet (27 sq.m.)	85.00	pcs	350.00	29,750.00	14,875.00	44,625.00
60cm x 60cm floor tiles for Porch/Entrance (60 sq.m.)	175.00	pcs	350.00	61,250.00	30,625.00	91,875.00
60cm x 60cm floor tiles for ESS and X-Ray Office (225 sq.m.)	635.00	pcs	350.00	222,250.00	111,125.00	333,375.00
Portland Cement (977.5 sq.m.)	290.00	bags	290.00	84,100.00	42,050.00	126,150.00
Tile adhesive (25 kg)	140.00	bags	430.00	60,200.00	30,100.00	90,300.00
Tile grout	110.00	bags	75.00	8,250.00	4,125.00	12,375.00



DESCRIPTION	QTY		MATERIAL COST		LABOR COST	TOTAL
	# Units	UM	P/Unit	Total		
Sand	30.00	cu.m.	1,500.00	45,000.00	22,500.00	67,500.00
Consumables	1.00	lot	74,600.00	74,600.00	-	74,600.00
			sub-total=	1,566,600.00	746,000.00	2,312,600.00
<b>E. Electrical Works</b>						
<b>Conduits, Boxes and Fittings</b>						
15mmØ x 3.00 m Polyvinyl Chloride (PVC) Pipe	220.00	pcs	105.00	23,100.00	11,550.00	34,650.00
15mmØ 90° PVC Elbow (Long bend)	65.00	pcs	15.00	975.00	487.50	1,462.50
15mmØ PVC Adapter w/ Locknut and Bushing	120.00	sets	18.00	2,160.00	1,080.00	3,240.00
Junction Box w/ Cover (PVC)	290.00	pcs	45.00	13,050.00	6,525.00	19,575.00
Utility Box (PVC)	185.00	pcs	35.00	6,475.00	3,237.50	9,712.50
<b>Wiring and Wiring Devices</b>						
2.0 mm² Electric Wire THHN Stranded	12.00	boxes	2,800.00	33,600.00	16,800.00	50,400.00
3.5 mm² Electric Wire THHN Stranded	8.00	boxes	3,900.00	31,200.00	15,600.00	46,800.00
1-Gang Switch, 16A, 250V	25.00	pcs	150.00	3,750.00	1,875.00	5,625.00
2-Gang Switch, 16A, 250V	15.00	pcs	180.00	2,700.00	1,350.00	4,050.00
LED Square Panel Light 12W (Recessed Type)	290.00	pcs	600.00	174,000.00	87,000.00	261,000.00
LED Strip Light	1.00	lot	8,000.00	8,000.00	-	8,000.00
Duplex Convenience Outlet 16A, 250V.	150.00	pcs	250.00	37,500.00	18,750.00	56,250.00
Duplex Convenience Outlet 16A, 250V. Weatherproof t	15.00	pcs	280.00	4,200.00	2,100.00	6,300.00
Exhaust Fan 10" Ceiling Mounted w/ Flexible pipe/Duct	10.00	sets	2,500.00	25,000.00	12,500.00	37,500.00
Data swith and data cabinet	1.00	lot	10,000.00	10,000.00	-	10,000.00
Miscellaneous and Consumables	1.00	lot	18,285.50	18,285.50	-	18,285.50
			sub-total=	393,995.50	178,855.00	572,850.50
<b>F. Plumbing Works</b>						
<b>Fixtures:</b>						
Water Closet with Lavatory Sets	1.00	set	35,000.00	35,000.00	17,500.00	52,500.00
Urinal	1.00	set	18,000.00	18,000.00	9,000.00	27,000.00
Pipes and fittings/Roughing-ins	1.00	lot	180,000.00	180,000.00	-	180,000.00
Consumables	1.00	lot	11,650.00	11,650.00	-	11,650.00
			sub-total=	244,650.00	26,500.00	271,150.00
<b>G. Painting Works</b>						
Flat Latex	150.00	gals	750.00	112,500.00	45,000.00	157,500.00
Semi-Gloss Latex (double coat)	300.00	gals	750.00	225,000.00	90,000.00	315,000.00
Tinting paint	50.00	ltr.	140.00	7,000.00	2,800.00	9,800.00
Skim coat (25 kg)	160.00	bags	560.00	89,600.00	35,840.00	125,440.00
Paint Thinner	130.00	gals	580.00	75,400.00	30,160.00	105,560.00
Paint Brush	1.00	lot	20,000.00	20,000.00	-	20,000.00
Paint Roller	1.00	lot	15,000.00	15,000.00	-	15,000.00
Drop cloths	1.00	lot	7,500.00	7,500.00	-	7,500.00
Paint tray	1.00	lot	12,000.00	12,000.00	-	12,000.00
Sandpaper	1.00	lot	10,000.00	10,000.00	-	10,000.00
Perimeter Fence:	1.00	lot	500,000.00	500,000.00	-	500,000.00
Consumables	1.00	lot	53,700.00	53,700.00	-	53,700.00
			sub-total=	1,127,700.00	203,800.00	1,331,500.00
<b>H. Glass Works</b>						
Supply and Installation of 4.40m x 3.2m Fix Tempered Glass w/ Door (Deputy Collector for Admin)	1.00	set	94,336.00	94,336.00	47,168.00	141,504.00
Supply and Installation of 2.45m x 3.2m Fix Tempered Glass w/ Door (MISTG)	1.00	set	52,528.00	52,528.00	26,264.00	78,792.00
Supply and Installation of 4.45m x 3.2m Fix Tempered Glass w/ Door (Deputy Collector for Operations)	1.00	set	95,408.00	95,408.00	47,704.00	143,112.00
Supply and Installation of 3.5m x 3.2m Fix Tempered Glass w/ Door (Collection Division)	1.00	set	75,040.00	75,040.00	37,520.00	112,560.00
Supply and Installation of 5.15m x 3.2m Fix Tempered Glass w/ Door (Deputy Collector for Assessment)	1.00	set	110,416.00	110,416.00	55,208.00	165,624.00
Supply and Installation of 5.87m x 3.2m Fix Tempered Glass w/ Door (Main Storage / File Room)	1.00	set	125,852.80	125,852.80	62,926.40	188,779.20
Supply and Installation of 5.45m x 3.2m Fix Tempered Glass w/ Door (District Collector's Office)	1.00	set	116,848.00	116,848.00	58,424.00	175,272.00

DESCRIPTION	QTY		MATERIAL COST		LABOR COST	TOTAL
	# Units	UM	P/Unit	Total		
Supply and Installation of 11.25m x 3.2m Fix Tempered Glass w/ Door (District Collector's Staff Work Area)	1.00	set	241,200.00	241,200.00	120,600.00	361,800.00
Supply and Installation of 6.27m x 3.2m Fix Tempered Glass w/ Door (Customer Care Center)	1.00	set	134,428.80	134,428.80	67,214.40	201,643.20
Supply and Installation of 4.4m x 3.2m Fix Tempered Glass w/ Door (Main Entrance)	1.00	set	94,336.00	94,336.00	47,168.00	141,504.00
Door Accessories and Consumables	1.00	lot	6,721.44	6,721.44	-	6,721.44
			<b>sub-total=</b>	<b>1,147,115.04</b>	<b>570,196.80</b>	<b>1,717,311.84</b>
<b>I. Concrete and Masonry Works</b>						
Portland Cement						
4" Concrete Hollow Block	350.00	pcs	15.00	5,250.00	2,625.00	7,875.00
Portland Cement	150.00	bags	290.00	43,500.00	21,750.00	65,250.00
Sand	8.00	cu.m	1,500.00	12,000.00	6,000.00	18,000.00
6m Length – 10mm Deformed Reinforcing Bars	40.00	pcs	170.00	6,800.00	3,400.00	10,200.00
GI Tie Wire #16	5.00	kgs	80.00	400.00	200.00	600.00
<b>Cement Plaster Finish – 2 faces:</b>						
Portland Cement	30.00	bags	280.00	8,400.00	4,200.00	12,600.00
Fine Sand	3.00	cu.m	1,200.00	3,600.00	1,800.00	5,400.00
Miscellaneous and Consumables	1.00	lot	3,997.50	3,997.50	-	3,997.50
			<b>sub-total=</b>	<b>83,947.50</b>	<b>39,975.00</b>	<b>123,922.50</b>
<b>J. Roofing Works</b>						
Pre-painted Metal Roofing Sheet GA 24 (660 sq.m.)	660.00	sqm	672.00	443,520.00	177,408.00	620,928.00
Tek Screw / J-Bolt w/ Washers	6,600.00	pcs	3.50	23,100.00	9,240.00	32,340.00
Pre-painted metal gutter (Gauge 24 (0.7mm) x 2.44 m)	35.00	l.m	371.00	12,985.00	5,194.00	18,179.00
Blind Rivet	10,560.00	pcs	2.00	21,120.00	8,448.00	29,568.00
<b>Downspout:</b>						
PVC Pipes (89.0 mm D)	20.00	pcs	569.10	11,382.08	4,552.83	15,934.91
Roof Drain w/ Strainer	30.00	pcs	300.00	9,000.00	3,600.00	12,600.00
PVC 87.deg. (6mm bend x 101mm)	60.00	pcs	87.55	5,253.00	2,101.20	7,354.20
PVC Coupling (101mm D)	50.00	pcs	75.79	3,789.50	1,515.80	5,305.30
Solvent	15.00	can	449.00	6,735.00	2,694.00	9,429.00
Miscellaneous	1.00	lot	26,844.23	26,844.23	-	26,844.23
			<b>sub-total=</b>	<b>563,728.81</b>	<b>214,753.83</b>	<b>778,482.64</b>
<b>K. Others</b>						
BOC Seal Brass finish (900 mm dia.)	4.00	pcs	120,000.00	480,000.00	240,000.00	720,000.00
Siphoning	1.00	lot	50,000.00	50,000.00	-	50,000.00
Drainage System	1.00	lot	300,000.00	300,000.00	-	300,000.00
Landscaping	1.00	lot	400,000.00	400,000.00	-	400,000.00
Consumables	1.00	lot	61,500.00	61,500.00	-	61,500.00
			<b>sub-total=</b>	<b>1,291,500.00</b>	<b>240,000.00</b>	<b>1,531,500.00</b>

Prepared by:

  
**GENBERT S. GUSAGO**  
 Technical Assistant  
 General Services Division

Checked by:

  
**ENGR. GARY E. AGUILAR**  
 Administrative Officer II  
 General Services Division

Reviewed by:

  
**ENGR. CECIL G. FABIAN**  
 Administrative Officer IV  
 General Services Division


Noted by:

  
**ISAGANI D. GALSIM**  
 Chief Administrative Officer  
 General Services Division

Recommending approval:

  
**ATTY. ERASTUS SANDINO B. AUSTRIA**  
 District Collector  
 Port of Clark

Approved by:

  
**BIENVENIDO Y. RUBIO**  
 Commissioner  
 Bureau of Customs

<b>Direct Cost</b>	
Material Cost	8,863,390.35
Labor Cost	3,264,915.63
Mobilization/Demobilization	700,000.00
<b>Total Direct Cost</b>	<b>12,828,305.98</b>
<b>Indirect Cost</b>	
Overhead, Contingencies and Miscellaneous (OCM) (15% of DC)	1,924,245.90
Contractors Profit (10% of DC)	1,282,830.60
<b>Total Indirect Cost</b>	<b>3,207,076.50</b>
<b>Tax (5% of DC + IC)</b>	<b>801,769.12</b>
<b>TOTAL PROJECT COST</b>	<b>16,837,151.60</b>

<b>TOTAL AREA OF THE PROJECT</b>	885.00 sq.m.
<b>COST PER SQ.M.</b>	Php 19,025.03 / sq.m.



**QUEZON ACHIEVERS  
CONSTRUCTION CORPORATION**

**BILL OF QUANTITIES**

<b>NAME / LOCATION OF PROJECT:</b>		<b>PROJECT DESCRIPTION :</b>		
Design and Renovation of BOC Building, Port of Clark Clark Freeport, Mabalacat, Pampanga		Design and Renovation		
<b>EQUIPMENTS TO BE USED:</b>		<b>NO. OF WORKING DAYS</b>	<b>AREA</b>	
		120 Calendar Days		
ITEM NO.	DESCRIPTION	UNIT	% of Work	AMOUNT
	<b>I. DIRECT COST</b>			
A.	Mobilization/Demobilization & General Requirements	L.S.	3.63%	510,000.00
B.	Demolition Works	L.S.	1.43%	201,000.00
C.	Carpentry Works	L.S.	24.22%	3,406,262.00
D.	Floor and Tiling Works	L.S.	15.55%	2,186,702.50
E.	Electrical Works	L.S.	6.04%	850,005.00
F.	Plumbing Works	L.S.	3.94%	553,750.00
G.	Painting Works	L.S.	8.81%	1,238,965.00
H.	Glass Works	L.S.	9.61%	1,352,000.00
I.	Concrete and Masonry Works	L.S.	1.04%	145,696.45
J.	Others	L.S.	1.92%	270,000.00
	<b>SUB-TOTAL</b>			<b>10,714,380.95</b>
	<b>II. INDIRECT COST</b>			
	Overhead Contingency & Miscellaneous OCM (15%)		11.43%	1,607,157.14
	Contractors Profit (10% of DC)		7.62%	1,071,438.10
	<b>SUB-TOTAL</b>			<b>2,678,595.24</b>
	Tax (5% of DC + IC)		4.76%	669,648.81
<b>TOTAL PROJECT COST:</b>			<b>100.00%</b>	<b>14,062,625.00</b>

Prepared by:

*(Signature)*  
**NUMERIANO T. BANAL**

Authorized Managing Officer

Quezon Achievers Construction Corporation



**QUEZON ACHIEVERS  
CONSTRUCTION CORPORATION**

**Bill of Quantities  
Detailed Cost Estimate**

PROJECT: Design and Renovation of BOC Building, Port of Clark  
LOCATION: Clark Freeport, Mabalacat, Pampanga

DESCRIPTION	QTY		MATERIAL COST		LABOR COST	TOTAL
	# Units	UM	P/Unit	Total		
<b>A. Mobilization/Demobilization &amp; General Requirements</b>						
Temporary Facilities	1	lot	50,000.00	50,000.00	-	50,000.00
Electric and Water Bill	1	lot	70,000.00	70,000.00	-	70,000.00
Site Clearing and Disposal of Debris	1	lot	65,000.00	65,000.00	-	65,000.00
Materials Delivery	1	lot	60,000.00	60,000.00	-	60,000.00
Safety Equipment	1	lot	60,000.00	60,000.00	-	60,000.00
Board up/enclosure	1	lot	50,000.00	50,000.00	-	50,000.00
Building Permit	1	lot	55,000.00	55,000.00	-	55,000.00
Occupancy Permit	1	lot	40,000.00	40,000.00	-	40,000.00
Professional Fees	1	lot	60,000.00	60,000.00	-	60,000.00
			<b>sub-total =</b>	<b>510,000.00</b>	<b>-</b>	<b>510,000.00</b>
<b>B. Demolition Works</b>						
	670	sq.m.	300.00	201,000.00	-	201,000.00
			<b>sub-total=</b>	<b>201,000.00</b>	<b>-</b>	<b>201,000.00</b>
<b>C. Carpentry Works</b>						
Gypsum board (12 mm)	350.00	sht/s	700.00	245,000.00	85,750.00	330,750.00
Metal Furring ( 5m length )	1,075.00	lgth	130.00	139,750.00	48,912.50	188,662.50
Carrying Channel ( 5m length )	350.00	lgth	125.00	43,750.00	15,312.50	59,062.50
Blind Rivet	13,300.00	pcs	3.00	39,900.00	13,965.00	53,865.00
Metal Screw	3,780.00	pcs	3.00	11,340.00	3,969.00	15,309.00
Wall Angle – 3m Length	230.00	lgth	125.00	28,750.00	10,062.50	38,812.50
<b>PVC Ceiling Panel:</b>						
PVC Ceiling Panel (4.5in x 12 ft)	340.00	pcs	400.00	136,000.00	47,600.00	183,600.00
Metal Screw	560.00	pcs	3.00	1,680.00	588.00	2,268.00
<b>PVC Fluted Wall Panel:</b>						
PVC Fluted Wall Panel (6x.15 m)	260.00	pcs	650.00	169,000.00	59,150.00	228,150.00
Metal Screw	480.00	pcs	3.00	1,440.00	504.00	1,944.00
<b>Drywall Partition "Low wall":</b>						
4' x 8' – Plywood / Fiber Cement Board (6 mm)	220.00	sht/s	950.00	209,000.00	73,150.00	282,150.00
3m Length – Metal Studs	260.00	pcs	550.00	143,000.00	50,050.00	193,050.00
Rivets	2,820.00	pcs	3.00	8,460.00	2,961.00	11,421.00
Metal Screw	1,350.00	pcs	3.00	4,050.00	1,417.50	5,467.50
<b>Fabricated Office Tables:</b>	65.00	pcs	12,000.00	780,000.00	273,000.00	1,053,000.00

	<b>Fabricated Cabinets:</b>	50.00	pcs	10,500.00	525,000.00	183,750.00	708,750.00
	Miscellaneous	1.00	lot	50,000.00	50,000.00	-	50,000.00
				<b>sub-total=</b>	<b>2,536,120.00</b>	<b>870,142.00</b>	<b>3,406,262.00</b>
<b>D.</b>	<b>Floor and Tiling Works</b>						
	60cm x 60cm floor tiles	2500.00	pcs	380.00	950,000.00	332,500.00	1,282,500.00
	50cm x 50cm Floor Carpet Tiles for Collector's Office and Conference room	370.00 299	pcs	450.00	166,500.00	58,275.00	224,775.00
	60cm x 60cm floor tiles for Collector's toilet	50.00	pcs	380.00	19,000.00	6,650.00	25,650.00
	60cm x 60cm wall tiles "full height" for Collector's toilet	120.00	pcs	380.00	45,600.00	15,960.00	61,560.00
	60cm x 60cm floor tiles for Porch/Entrance	275.00	pcs	380.00	104,500.00	36,575.00	141,075.00
	Portland Cement	400.00	bags	290.00	116,000.00	40,600.00	156,600.00
	Tile adhesive (25 kg)	190.00	bags	470.00	89,300.00	31,255.00	120,555.00
	Tile grout	150.00	bags	95.00	14,250.00	4,987.50	19,237.50
	Sand	50.00	cu.m.	1,700.00	85,000.00	29,750.00	114,750.00
	Consumables	1.00	lot	40,000.00	40,000.00	-	40,000.00
				<b>Sub-total=</b>	<b>1,630,150.00</b>	<b>556,552.50</b>	<b>2,186,702.50</b>
<b>E.</b>	<b>Electrical Works</b>						
	<b>Conduits, Boxes and Fittings</b>						
	15mmØ x 3.00 m Polyvinyl Chloride (PVC) Pipe	220.00	pcs	210.00	46,200.00	16,170.00	62,370.00
	15mmØ 90° PVC Elbow (Long bend)	65.00	pcs	25.00	1,625.00	568.75	2,193.75
	15mmØ PVC Adapter w/ Locknut and Bushing	120.00	sets	20.00	2,400.00	840.00	3,240.00
	Junction Box w/ Cover (PVC)	290.00	pcs	55.00	15,950.00	5,582.50	21,532.50
	Utility Box (PVC)	185.00	pcs	45.00	8,325.00	2,913.75	11,238.75
	<b>Wiring and Wiring Devices</b>						
	2.0 mm² Electric Wire THHN Stranded	12.00	boxes	3,600.00	43,200.00	15,120.00	58,320.00
	3.5 mm² Electric Wire THHN Stranded	8.00	boxes	4,700.00	37,600.00	13,160.00	50,760.00
	1-Gang Switch, 16A, 250V	25.00	pcs	250.00	6,250.00	2,187.50	8,437.50
	2-Gang Switch, 16A, 250V	15.00	pcs	300.00	4,500.00	1,575.00	6,075.00
	LED Square Panel Light 12W (Recessed Type)	290.00	pcs	850.00	246,500.00	86,275.00	332,775.00
	LED Strip Light	1.00	lot	30,000.00	30,000.00	-	30,000.00
	Duplex Convenience Outlet 16A, 250V.	150.00	pcs	290.00	43,500.00	15,225.00	58,725.00
	Duplex Convenience Outlet 16A, 250V. Weatherproof type	15.00	pcs	350.00	5,250.00	1,837.50	7,087.50
	Exhaust Fan 10" Ceiling Mounted w/ Flexible pipe/Ducting	10.00	sets	3,500.00	35,000.00	12,250.00	47,250.00
	Data switch and data cabinet	1.00	lot	100,000.00	100,000.00	-	100,000.00
	Miscellaneous and Consumables	1.00	lot	50,000.00	50,000.00	-	50,000.00
				<b>sub-total=</b>	<b>676,300.00</b>	<b>173,705.00</b>	<b>850,005.00</b>
<b>F.</b>	<b>Plumbing Works</b>						
	<b>Fixtures:</b>						
	Water Closet with Lavatory Sets (Collector's Comfort room)	1.00	set	45,000.00	45,000.00	15,750.00	60,750.00
	Water closet (Common C.R)	7.00	sets	15,000.00	105,000.00	36,750.00	141,750.00
	Urinal (Collector's Comfort room & Male C.R)	5.00	sets	15,000.00	75,000.00	26,250.00	101,250.00
	Pipes and fittings/Roughing-ins	1.00	lot	200,000.00	200,000.00	-	200,000.00
	Consumables	1.00	lot	50,000.00	50,000.00	-	50,000.00
				<b>sub-total=</b>	<b>475,000.00</b>	<b>78,750.00</b>	<b>553,750.00</b>
<b>G.</b>	<b>Painting Works</b>						
	Flat Latex	180.00	gals	750.00	135,000.00	47,250.00	182,250.00
	Semi-Gloss Latex (double coat)	330.00	gals	750.00	247,500.00	86,625.00	334,125.00

	Tinting paint	60.00	ltr.	140.00	8,400.00	2,940.00	11,340.00
	Skim coat (25 kg)	175.00	bags	560.00	98,000.00	34,300.00	132,300.00
	Paint Thinner	150.00	gals	580.00	87,000.00	30,450.00	117,450.00
	Paint Brush	1.00	lot	20,000.00	20,000.00	-	20,000.00
	Paint Roller	1.00	lot	15,000.00	15,000.00	-	15,000.00
	Drop cloths	1.00	lot	6,500.00	6,500.00	-	6,500.00
	Paint tray	1.00	lot	15,000.00	15,000.00	-	15,000.00
	Sandpaper	1.00	lot	10,000.00	10,000.00	-	10,000.00
	<b>Perimeter Fence &amp; Exterior Walls:</b>	1.00	lot	350,000.00	350,000.00	-	350,000.00
	<b>Consumables</b>	1.00	lot	45,000.00	45,000.00	-	45,000.00
				<b>sub-total=</b>	<b>1,037,400.00</b>	<b>201,565.00</b>	<b>1,238,965.00</b>
<b>H.</b>	<b>Glass Works</b>						
	Supply and Installation of 4.40m x 3.2m Fix Tempered Glass w/ Door (Deputy Collector for Admin)	1.00	set	90,000.00	90,000.00	18,000.00	108,000.00
	Supply and Installation of 2.45m x 3.2m Fix Tempered Glass w/ Door (MISTG)	1.00	set	50,000.00	50,000.00	10,000.00	60,000.00
	Supply and Installation of 4.45m x 3.2m Fix Tempered Glass w/ Door (Deputy Collector for Operations)	1.00	set	90,000.00	90,000.00	18,000.00	108,000.00
	Supply and Installation of 3.5m x 3.2m Fix Tempered Glass w/ Door (Collection Division)	1.00	set	70,000.00	70,000.00	14,000.00	84,000.00
	Supply and Installation of 5.15m x 3.2m Fix Tempered Glass w/ Door (Deputy Collector for Assessment)	1.00	set	100,000.00	100,000.00	20,000.00	120,000.00
	Supply and Installation of 5.87m x 3.2m Fix Tempered Glass w/ Door (Main Storage / File Room)	1.00	set	120,000.00	120,000.00	24,000.00	144,000.00
	Supply and Installation of 5.45m x 3.2m Fix Tempered Glass w/ Door (District Collector's Office)	1.00	set	115,000.00	115,000.00	23,000.00	138,000.00
	Supply and Installation of 11.25m x 3.2m Fix Tempered Glass w/ Door (District Collector's Staff Work Area)	1.00	set	230,000.00	230,000.00	46,000.00	276,000.00
	Supply and Installation of 6.27m x 3.2m Fix Tempered Glass w/ Door (Customer Care Center)	1.00	set	130,000.00	130,000.00	26,000.00	156,000.00
	Supply and Installation of 4.4m x 3.2m Fix Tempered Glass w/ Door (Main Entrance)	1.00	set	90,000.00	90,000.00	18,000.00	108,000.00
	Door Accessories and Consumables	1.00	lot	50,000.00	50,000.00	-	50,000.00
				<b>Sub-total=</b>	<b>1,135,000.00</b>	<b>217,000.00</b>	<b>1,352,000.00</b>
<b>I.</b>	<b>Concrete and Masonry Works</b>						
	4" Concrete Hollow Block	350.00	pcs	15.00	5,250.00	1,837.50	7,087.50
	Portland Cement	150.00	bags	290.00	43,500.00	15,225.00	58,725.00
	Sand	8.00	cu.m	1,500.00	12,000.00	4,200.00	16,200.00
	6m Length - 10mm Deformed Reinforcing Bars	40.00	pcs	170.00	6,800.00	2,380.00	9,180.00
	GI Tie Wire #16	5.00	kgs	80.00	400.00	140.00	540.00
	<b>Cement Plaster Finish - 2 faces:</b>						
	Portland Cement	30.00	bags	290.00	8,700.00	3,045.00	11,745.00
	Fine Sand	3.00	cu.m	1,350.00	4,050.00	1,417.50	5,467.50
	<b>Miscellaneous and Consumables</b>	1.00	lot	36,751.45	36,751.45	-	36,751.45

*Handwritten signature*


				<b>Sub-total=</b>	<b>117,451.45</b>	<b>28,245.00</b>	<b>145,696.45</b>
<b>J. Others</b>							
BOC Seal Brass finish (900 mm dia.)	4.00	pcs		50,000.00	200,000.00	10,000.00	210,000.00
Siphoning	1.00	lot		20,000.00	20,000.00	-	20,000.00
Consumables	1.00	lot		40,000.00	40,000.00	-	40,000.00
				<b>Sub-total=</b>	<b>260,000.00</b>	<b>10,000.00</b>	<b>270,000.00</b>

<b>Direct Cost</b>	
Material Cost	8,068,421.45
Labor Cost	2,135,959.50
Mobilization	510,000.00
<b>Total Direct Cost</b>	<b>10,714,380.95</b>
<b>Indirect Cost</b>	
Overhead, Contingencies	
Miscellaneous OCM (15% of DC)	1,607,157.14
Contractors Profit (10% of DC)	1,071,438.10
<b>Total Indirect Cost</b>	<b>2,678,595.24</b>
<b>Tax (5% of DC + IC)</b>	<b>669,648.81</b>
<b>TOTAL PROJECT COST</b>	<b>14,062,625.00</b>

Amount in Words:

*Fourteen Million Sixty Two Thousand Six Hundred Twenty-Five Pesos*

Prepared by:

  
**NUMERTANO T. BANAL**

AUTHORIZED MANAGING OFFICER  
Quezon Achievers Construction Corporation