

finished surfaces shall be free from runs, chop, ridges, waves, laps and unnecessary brush marks. All coats shall be applied in such manner as to produce an even film of uniform thickness. Edges, corners, crevices, welds and rivets shall receive special attention to ensure that they receive an adequate thickness of paint.

All painting shall be done by thoroughly experienced workmen.

Safety regulations shall be adhered to at all times, including the wearing of respirators by persons engaged on assisting in spray painting. Adjacent areas and installation shall be protected by the use of cloths or other approved precautionary measures.

Plain enamel and varnish shall be applied carefully with good clean brushes or approved spraying equipment, except that the initial coat on any surface shall be applied with brush. Sufficient time shall be allowed between coats to assure thorough drying and each coat shall be in proper condition before receiving the next coat.

Sanding and dusting as required shall be performed between coats in varnishing work. Finish coat shall be smooth and free from runs, sags, and other defects. Exterior paint shall not be applied during rainy days.

All paint when applied shall provide a satisfactory film and smooth, even surface. Paint shall be thoroughly stirred and kept at a uniform consistency during application. Powdered metallic pigments added at the time of use shall be mixed by adding the powder in small increments to about one-third of the base paint or vehicle, with thorough mixing to obtain a smooth paste. The remainder of the base paint shall then be thoroughly stirred in.

Different brands of emulsion paints shall not be mixed prior to application of the materials.

Where necessary to suit conditions of surface temperature, weather and method of application, the package paint may be thinned immediately prior to application in accordance with the approved manufacturer's directions, but not in excess of 125 cc of suitable thinner per liter (one pint per gallon). Before using, the paint shall be mixed to a uniform consistency and shall be stirred frequently during application.

Paints other than water-thinned paints shall be applied

only to surfaces which are completely free of moisture as determined by sight or touch and only such combinations of humidity to be painted as will cause evaporation rather than condensation.

Surfaces which have been cleaned, pretreated and/or otherwise been prepared for painting shall be primed or painted with one coat of finish paint as soon as practicable after such preparation has been completed, but in any event prior to any deterioration of the prepared surfaces.

The first coat of paint on all exterior surfaces shall be applied by brush. Interior prime coats and all other subsequent coats on either exterior or interior surfaces may be applied by brush or spray. Whenever spraying is permitted all areas inaccessible to spray painting shall be coated by brushing or other suitable means. Brushes to be used for application of water-emulsions shall be soaked in water for a period of 2 hours prior to use.

All cloths and cotton waste which might constitute a fire hazard shall be placed in closed metal containers or destroyed at the end of each day.

Upon completion of the work, all staging, scaffolding, and containers shall be removed from the site or destroyed in a manner approved by the Engineer. Paint spots, or stains upon adjacent surfaces shall be removed and the entire job left clean and acceptable to the Engineer.

No smoking shall be permitted in the vicinity where painting is going on.

TOUCH-UP PAINTING

Touch-up painting shall be done with the same paint as used for the original coat. The resulting minimum dry film shall be the same as for the original coat.

Touch-up painting shall include cleaning and painting of field connections, welds and all damaged or defective paint and rusted areas.

During touch-up painting, only loose, cracked, brittle or non-adherent paint shall be removed during cleaning. All exposed edges shall be feathered. Touch-up painting shall be performed in a manner which will minimize damage to sound paint. Rust spots shall be thoroughly cleaned and edges of the existing paint shall be scraped back to sound material.

	<p>DRYING</p> <ol style="list-style-type: none"> 1. No primer or paint shall be forced to be dried under conditions which will cause cracking, wrinkling, blistering, formation of pores which would detrimentally affect the condition of the paint. 2. No drier shall be added to the paint unless specified in the approved manufacturer's instructions. 3. Painted surfaces shall be protected from dust, dirt, and the elements of the weather until dry to the fullest extent practicable. 4. After drying, any areas of paint damaged from any cause shall be removed, the surface again prepared and then touched-up with the same paint and to the same thickness as the undamaged areas as specified in sub-section 4.14.3.7 above. 	
	<p>HANDLING</p> <ol style="list-style-type: none"> 1. Precautions shall be taken to minimize damage to paint films resulting from stacking for drying. 2. Paint which is damaged in handling shall be scraped off and touched-up with the same paint and in the same thickness as was previously applied to the damaged area at Contractor's expense. 	
	<p>INSPECTION</p> <ol style="list-style-type: none"> 1. All works and materials supplied under this Specification shall be subject to inspection by the Engineer. 2. The Contractor shall correct such works or replace such materials found defective under these Specifications at his own expense. 	
	SUPPLY, RELOCATION AND INSTALL SPRINKLER HEAD	
	<p>GENERAL</p> <p>This item shall consist of furnishing, relocation and installation of sprinkler head including testing,</p>	

	<p>commissioning, provisions for new accessories and replacement of broken parts.</p> <p>The work shall be conducted in accordance to the specifications, codes and requirements of the following:</p> <ol style="list-style-type: none"> 1. Revised Fire Code of the Philippines 2. National Fire Protection Association (NFPA) 10,13,14 and 20 3. Ordinances of concerned city or municipality 	
	<p>MATERIAL TESTING</p> <p>All new materials shall be standard and good quality product of reputable manufacturer.</p> <p>All new materials and accessories to be incorporated in the project shall passed with the testing and commissioning under the supervision of the Engineer.</p> <p>Defective materials shall be replaced/corrected in accordance to the requirements of this specifications and the approved quality control program.</p>	
	<p>GUARANTEE</p> <p>The Contractor shall guarantee that the Fire Protection System is free from all defective workmanship and materials and will remain so for a period of one (1) year from date of acceptance of the work by the Owner or the Architect. Any defect, appearing within the aforesaid period shall be remedied or replaced by the Contractor at his own expense.</p>	
	<p>EXECUTION</p> <p>Workmanship</p> <p>The work throughout shall be executed in the best and most thorough manner to the satisfaction of the Architect and the Engineer, who will jointly interpret the meaning of the drawings and specifications and shall have the power to reject any work and materials, which in their judgment, are not in full accordance therewith.</p> <p>The Contractor shall assume unit responsibility and shall provide the services of a qualified Engineer to supervise the complete installation of equipment and systems and who shall be available for conducting the final tests.</p> <p>Preparation</p> <p>Examine all surfaces which are to support or receive parts</p>	

	<p>WARRANTY</p> <ul style="list-style-type: none"> • One (1) year warranty on manufacturer defects from the date of receipt of the Acceptance. • Winning bidder shall provide free labor and replacement of parts within the said warranty period. • Within the warranty period, the supplier shall within seventy two (72) hours from notice, replace or repair the defective goods or parts thereof at no cost to PPA. 	
	<p>Compliance with the Plan/Drawings and Bill of Quantities as provided in the TOR.</p>	
	<p>All other provisions in the Terms of Reference not stated herein.</p>	

	<p>place and subsequent construction. Notify General Contractor if any condition exists which will prevent the completion of the Work in this Section in a satisfactory manner. Application or installation of materials constitutes acceptance of the supporting and adjoining construction.</p> <p>Cleaning</p> <p>Swab-out line and/or flush out system with fresh water until they are clean and water runs clear at all outlets.</p> <p>Acceptance Test</p> <p>All tests required in the commission and testing works shall be passed under the supervision of qualified Engineer or Architect. All necessary documents required in the approved quality control program shall be submitted to PPA with issued warranty.</p>	
	<p>WARRANTY</p> <ul style="list-style-type: none"> • One (1) year warranty on manufacturer defects from the date of receipt of the Acceptance. • Winning bidder shall provide free labor and replacement of parts within the said warranty period. • Within the warranty period, the supplier shall within seventy two (72) hours from notice, replace or repair the defective goods or parts thereof at no cost to PPA. 	
	Compliance with the Plan/Drawings and Bill of Quantities as provided in the TOR.	
	All other provisions in the Terms of Reference not stated herein.	

TERMS OF REFERENCE

RENOVATION OF TOILETS

1. OBJECTIVES

The Philippine Ports Authority seeks to renovate the Head Office, particularly the Comfort Rooms, to keep up with the times, boost productivity and provide a conducive workplace for the employees. Since 2007, this is the first time that PPA will be undergoing office renovations.

2. SCOPE OF WORK

One (1) lot comprises the following components:

- A. Removal and Disposal Works
- B. Carpentry and Joinery Works
- C. Common Toilet Finishes
- D. Plumbing and Sanitary Works
- E. Electro-Mechanical Works
- F. Masonry Works
- G. Painting
- H. Supply, Relocation and Installation of Sprinkler Head

3. APPROVED BUDGET FOR THE CONTRACT

The Approved Budget for the Contract is **Eighteen Million Twenty-One Thousand Nine Hundred Thirty-Nine and 93/100 (P18,021,939.93) Pesos.**

4. PLANS/DRAWINGS, TECHNICAL SPECIFICATIONS & BILL OF QUANTITIES

- A. Removal and Disposal Works (*See Annex A*)
- B. Carpentry and Joinery Works (*See Annex B*)
- C. Common Toilet Finishes (*See Annex C*)
- D. Plumbing and Sanitary Works (*See Annex D*)
- E. Electro/Mechanical Works (*See Annex E*)
- F. Masonry Works (*See Annex F*)
- G. Painting (*See Annex G*)
- H. Supply, Relocation and Installation of Sprinkler Head (*See Annex H*)

5. DELIVERY

- Delivery to PPA Head Office must be within one hundred fifty (150) calendar days from the receipt of Notice to Proceed.

6. WARRANTY


- One (1) year warranty on manufacturer defects from the date of receipt of the Acceptance.
- Winning bidder shall provide free labor and replacement of parts within the said warranty period.
- Within the warranty period, the supplier shall within seventy two (72) hours from notice, replace or repair the defective goods or parts thereof at no cost to PPA.

7. PAYMENT

- 35% upon completion of the corresponding percentage of renovation works.
- 35% upon completion of another 35% of renovation works.
- 30% upon full completion of renovation works and delivery of fixtures. Certificate of Completion & Acceptance shall be provided by the procuring entity/end-user for purposes of payment.

8. OTHER REQUIREMENTS

Must have completed a single contract similar to the contract to be bid whose value must be at least equivalent to fifty percent (50%) of the ABC. For this purpose, a similar contract means contract for the Interior Renovation/Fit-out or Supply and Delivery of Furniture & Fixtures.


Eric E. Dimaculangan
Acting Manager
Administrative Services Department


Elvis R. Medalla
Acting Manager
Port Planning and Design Dept.

ITEM 01 REMOVAL AND DISPOSAL WORKS**Description**

The work includes the furnishing of all labor, materials and equipment required to carry out the demolition and removal works as required for the execution of the Contract.

The Contractor shall submit the proposed methodology or procedure of demolition work with detailed drawings and calculations if necessary, to the Project-In-Charged for approval, before the execution of the Works.

General Provisions

1. The Contractor shall be deemed to have satisfied himself of the site conditions, and to have included in his unit prices provision for all risks that may arise during or in connection with the work.
2. Materials coming from the demolition works, except general earth, shall remain the property of the Procuring Entity, the designated part of which shall be stored by the Contractor at places specified by the Project-In-Charged / Accepting authority. Receiving copy of Turn-Over Report shall be provided.

Execution

1. Prior to the commencement of demolition works, the alignments of the new construction works to existing structure shall be checked.
2. Materials coming from the demolition works shall be properly disposed by the Contractor.

SAFETY

During the course of survey and clearing, any obstacles which are recognized and seemed to be explosive or hazardous to workers shall be removed from the site by the proper Authority.

At the end of each day's work, the Contractor shall keep the workplace in safe condition and clean so that no part is in danger of falling or creating hazard to personnel or equipment.

ITEM 02 : CARPENTRY AND JOINERY WORKS**Scope of Work**

The work shall consist of furnishing all tools, labor, equipment and materials, unless otherwise specified to complete all carpentry and joinery works shown on the Drawings and specified herein.

General Requirements**a. Lumber Grades**

Lumber shall be of the best grade available, of the respective kinds required for the various parts of work; well seasoned, thoroughly dry and free from loose or unsound knots, sap, shakes or other imperfections impairing its strengths, durability and appearance. All exposed woodwork shall be smooth by dressed and sandpapered unless otherwise indicated or specified. Framing lumber shall be of the rough dimensions unless otherwise shown on the drawings.

b. Substitution of Lumber

Any lumber equally good for the purpose intended maybe substituted for the kind specified, subject to prior written approval of the Engineer. Provided, however, that in the substitution of the cheaper kind of lumber than that specified, a reduction in the contract price equal to the difference in the costs of the two kinds of lumber shall be made.

c. Delivery and Storage

The Contractor shall deliver lumber to the site in undamaged condition. Lumber shall be stacked in such a manner as to insure proper ventilation and drainage, and shall be supported at least 150 mm above-ground. Lumber shall be protected against dampness before and after delivery, and enough protection under cover in well ventilated enclosure, not exposed to extreme changes of temperature and humidity; and in a manner as to provide air-circulation around all surfaces of each pile to insure thorough air-seasoning. Lumber or millwork in buildings shall not be finished until concrete, masonry work and plaster are dry. Lumber shall be delivered at least thirty (30) days before use.

d. Grading of Plywood

Each sheet of plywood shall bear the mark identifying the plywood as to wood species, glue type and grade.

Materials**a. Lumber**

Lumber for various uses shall be one of the species listed for the purpose indicated unless otherwise specified in the drawing. For any use not specified, the lumber shall be the best commercial grade normally used for the purpose, subject to the approval of the Engineer.

All framings shall be done as far as possible with carefully fitted mortise and tenon joints.

All doors, or other opening where so indicated on plans, shall have frames and sills of the dimensions shown or as hereafter detailed, and all frames coming in contact with concrete shall be anchored by means of 20-d nails, spaced not more than 0.20m, apart, all around the

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Technical Specifications (Building Works)
(Carpentry and Joinery Works)

contract surfaces. All frames shall be rabbetted, molded and cut with saw and cut under for water drips.

SPECIE	USE
Yakal	All door jambs, headers and transom bars, wood plates and all other woodwork in contact with concrete or masonry and where indicated.
Apitong (pressure treated)	All truss members and rafters and where indicated; all wood framings and carpentry, except when in contact with concrete.
Tanguile (Kiln dried)	All exterior and interior mill work, siding, finish and trim, frame work and all other wood works not specifically mentioned; except when in contact with concrete.

b. Plywood

Plywood shall conform to Commercial Standard PSI and shall be of local manufacture.

Plywood to be varnished shall be tanguile or kalantas veneers (as indicated), ribbon grained, water resistant, Class B and of the thickness indicated.

Plywood to be painted shall be tanguile veneer ordinary rotary-cut, water resistant, Class C and of thickness indicated.

Plywood exposed to the outside elements or where indicated shall be waterproof or marine plywood and of the thickness indicated.

c. Fastenings

Fastenings shall be common nails, glue or specified, flat-head wood screws (F.H.W.S.), rough-head wood screws (R.H.W.S.), bolts or lag screws where specified or called for shall be used. Conceal fastenings as much as possible; where not possible, locate them in inconspicuous places, where nailing is permitted through woodwork smooth-finished face, conceal nail heads.

1. Nails

Shall be of the smooth shank, zinc coated, common wire nails of local manufacture, and of types and sizes best suited for the purpose.

2. Wood Screws

Shall be brass or cadmium plated of the best available commercial quality, and of types and sizes suited for the purpose.

PRESSURE TREATED LUMBER

a. Preservative Treatment

All lumber indicated to be pressure treated, shall contain any of the following net retention of solid preservative.

- a. Boliden Salts - 45.5 kg. dry chemical per cubic foot of wood

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- b. Wolman Salts - 0.31 kg. dry chemical per cubic foot of wood
- c. Tenalith Salts - 0.34 kg. dry chemical per cubic foot of wood

The Contractor shall submit an affidavit signed by an official of the preservative treatment company to the Engineer. This affidavit shall indicate the net retention of solid preservatives obtained and shall certify that pressure treated lumbers have a moisture content that does not exceed 17 percent upon shipment from the treatment plant.

Where it is necessary to cut or bore pressure-treated lumber on the job, two coats of prepared concentrated preservatives solution shall be applied to the end-cut or bored surfaces.

ROUGH CARPENTRY

All work shall be well fitted, accurately set, and rigidly secured in place. Anchors and bolts (with nuts and washers) straps and tie rods shall be provided as required.

a. Cutting and Fitting

Cutting and fitting to accommodate other work shall be done in the required manner, and cut or damaged work shall be patched and made good.

b. Framing and Structural

Framing and structural lumber shall be well-seasoned, straight, square-edge stacks, and free from loose or unsound knots, bark edges or other defects that will impair its strength.

c. Plates for Walls and Partitions

Plates for walls and partitions shall be of the same width as the studs and shall form continuous horizontal ties.

Structural members shall not be cut, bored or notched for the passage of pipes or conduits without prior approval of the Engineer. All members damaged by such cutting or boring shall be reinforced by means of specially formed and approved sheet metal or steel shapes or remove or replaced with new member as directed.

Anchors, connectors and fastenings not indicated or specified otherwise shall be of the size and types necessary to suit the conditions encountered. Size, type and spacing of nails, screws or bolts for installation of manufactured building materials shall be as recommended by the product manufacturer unless indicated or specified otherwise.

Rough hardware, exposed to weather or in contact with exterior walls or masonry or slabs shall be zinc-coated except as specified otherwise.

All lumber surfaces in contact with concrete or masonry shall be given a brush coat of bituminous paint before installation.

JOINERY WORK

All lumber used for the joinery work shall be of the kinds and grades specified and shall be of the contours, patterns and profiles indicated.

All joints shall be made, installed tight and securely fastened in a manner approved by the Engineer. Exterior joints shall be mitered and interior angles coped. Panels shall be fitted to allow for

ANNEX B

Technical Specifications (Building Works)
(Carpentry and Joinery Works)

shrinkage, avoid swelling, and insure that the work remain in place without warping, splitting and opening of joints.

Interior trims shall be approved standard stock moldings, except where special patterns or profiles are indicated.

Joints for cabinet work shall be glued in addition to nails or other fastening device required. Nailing shall be concealed where practicable. Where face nailing is used, nails shall be set for putty stopping.

All exposed surfaces shall be machined or hand sanded finished to an even smooth surface. No hammer marks or other unsightly marks shall be allowed on any wood panel or veneer.

ITEM 03: PPA COMMON TOILET FINISHES**General**

General Requirements contain provisions and requirements essential to these Specifications; and apply to this section, whether or not referred to herein.

Scope of Work

The work covered by this section consist of furnishing all labor, materials, equipment, tools and incidentals necessary to undertake, complete all finishing works and painting for the buildings as indicated on the drawings and as specified herein.

Wall, floor, ceiling and other finishing works shall include but are not limited to the following:

WALL**Expanded Polystyrene Panel (EPS)**

Expanded Polystyrene (EPS) is a lightweight cellular plastic material consisting of small hollow spherical balls. It is this closed cellular construction that gives EPS its remarkable characteristics.

EPS is produced in a wide range of densities providing a varying range of physical properties. These are matched to the various applications where the material is used to optimize its performance and strength.

Use 100 mm thick light weight non bearing composite wall, composed of calcium silicate cement board with a mixture of cement, expanded polystyrene (EPS) and sand bonded together using technical additives.

Execution

1. Check and setup the area

Repair uneven or unlevelled surfaces before cleaning the area

2. Wall Positioning

Use leveling device to prepare area for wall panel installation.

3. Prepare Adhesive

Prepare the cement adhesive and lay it on the foundation

4. Sizing and Cutting the Panels

Cut to size using a circular saw according to specifications

5. Installing the Panels

- Install panel in upright position
- Apply cement adhesive in between panels
- Use a crowbar to move wall panel to the desired position
- Use rubber or wood wedge to temporarily align wall panel
- Secure panels by driving 8mm diameter x 250mm rebar at 45° into panels and slab to hold in place. Use same method for joining panels together

6. Grouting

- Apply grout to panel joints
- Spray PU foam between panel and structural joint

7. Clean Up

Remove excess grout using scrapper before it dries

Finishes**1. Plain Cement Finish****a. Preparation of Surfaces**

All surfaces shall be cleaned and projections, dust, loose particles and other materials, which would prevent good bond, shall be removed.

Plaster shall not be applied directly to concrete and masonry surfaces coated with bituminous compounds and surfaces previously painted or plastered.

All surfaces shall be thoroughly wetted before plastering.

b. Trial Mix

A trial mix of at least three (3) different water-cement ratios for a proposed mix shall be prepared under full scale conditions and adequate workability. The proportions by weight of cement to the weight of sand shall not be less than one part of Portland cement to two parts of sand.

The proportion of cement-sand and water necessary to produce the cement plaster of the required consistency shall be subject to the approval of the Engineer. Such approval may be withdrawn at any time and a change in proportions may be required. Based on the approved mix proportions, the Contractor shall prepare a list showing the number of kilograms of the various materials to be used in the cement plaster finish mix.

No cement plaster finish shall be started without an approved trial mix by the Engineer.

c. Cement Finish Application

A brown coat with sufficient pressure shall be applied to fill the gaps, and to secure a good bond. Moistened for 48 hours, each coat of cement plaster shall be kept after application and allow to dry.

A finish coat shall be applied after the brown coat has set. The brown coat shall be moistened before application of the finish coat. Finish coat shall be floated to plumb, even planes and surfaces.

Final plaster finishes shall be rubber sponged.

d. Tolerance

The Contractor shall finish plaster work plumb, level, square and true within tolerance of 3mm in 3 meters, without cracks and other imperfections.

e. Patching and Cleaning

Upon completion of the building, and when directed, all loose, cracked, damaged or defective plastering shall be cut out and re-plastered in a satisfactory and approved manner.

- 1. WF-1 – Elastomeric paint for the EPS concrete wall surfaces**
Layout as shown in the plans and details.

PAINTING WORKS**a. Surface Preparation**

Allow new masonry to dry for 14 days (for exterior surfaces) to 28 days (for interior surfaces) under normal conditions before painting. Surface to be painted should be clean and dry, free from oil, grease, dirt, dust, contaminants, and all loose grit and mortar.

Without mesh:

1st Coat: Elastomeric Wall Covering Sealer

2nd and 3rd Coat: Elastomeric Wall Covering Basecoat

4th Coat: Elastomeric Wall Covering Topcoat

With mesh:

1st Coat: Elastomeric Wall Covering Sealer

2nd Coat: Elastomeric Wall Covering Basecoat
Reinforcing Membrane: Fiberglass Matting

3rd and 4th Coat: Elastomeric Wall Covering Basecoat

5th Coat: Elastomeric Wall Covering Topcoat

2. **WF -2** - 600mm X 300mm Glazed Wall tiles. (or approved Equivalent)

Layout as shown in the Elevation details.

Execution**Wall Tiles****a. Mortar Preparation**

All mortar setting beds shall be mixed by volume in the proportion of 1 part Portland cement and 3 parts dry sand and not more than 1/10 part hydrated lime.

Mortar materials shall be measured in approved containers, which will insure that the specified proportions of materials will be controlled and accurately maintained during the progress of the work. Measuring materials with shovels, "shovel count", will not be permitted. Unless specified otherwise, mortar shall be mixed in proportions by volume, in an approved mortar box.

The quantity of water shall be controlled accurately and uniformly. The aggregates shall be introduced and mixed in such manner that the materials will be distributed uniformly throughout the mass. A sufficient amount of water shall be added gradually and the mass further mixed until a mortar of the elasticity necessary for purpose intended is obtained. Mortar boxes, pans and wall surfaces shall be kept clean and free from debris or dried mortar. The mortar shall be used before the initial set of the cement has occurred. Re-tempering of mortar in which cement has started to set will not be allowed.

b. Application of Wall Tile

ANNEX C

Technical Specifications (Building Works)
(Finishes)

Interior masonry shall be clean, thoroughly dry, sound and sufficiently rough to provide strong mechanical bond. Surfaces shall be evenly damped immediately prior to the application of the scratch coat.

Scratch coat shall be applied to masonry, as backing for wall tile, not less than 24 hours or more than 48 hours before starting the tile setting. The scratch coat shall not be less than 6 mm from the face of the masonry. The scratch coat shall be applied with sufficient pressure to ensure a proper bond with the base for the setting bed. While the mortar is still plastic, the scratch coat shall be cut with a trowel at all internal vertical angles for the depth of the coat with the full height of the tile bed and shall be cross-scratched, in 25 mm centers for the extent of the tile bed.

Immediately before the application of mortar setting bed, the scratch coat shall be moistened thoroughly but not saturated. Temporary screeds shall be applied to the scratch coat with mortar to provide a true and plumb surface, the proper distance back from the finished wall line. The setting bed shall be applied, rodded and floated flush with the screeds over an area not greater than the area to be covered with the tile while the bed remains plastic. The thickness of the setting bed shall not exceed 15mm and the mortar shall not be re-tempered. The setting bed shall be cut with a trowel at all internal corners as specified for the scratch coat.

Mounted tiles shall be soaked in clean water a minimum of one hour before they are set. Absorptive mounted tiles shall be damped by placing sheets on a wetted cloth in a shallow pan before setting. A skim coat of neat Portland cement mortar, mixed with water to the consistency of a pasty, thick cream, shall be applied 0.8mm to 1.6mm thick to the mortar setting bed, or to the back of each tile as laid. The tiles shall then be pressed firmly on the setting bed and tamped until flush and in the plane of the other tiles. The tiles shall be applied before the mortar bed has taken its initial set.

Intersections and returns shall be formed accurately. Where cutting of tiles is necessary it shall be done at the internal angles of the walls or wainscots. Cutting and drilling tiles shall be done neatly without marring the surfaces. The cut edges of tiles against trim, built-in fixtures, and similar surfaces shall be ground and jointed carefully. The tiles shall fit closely with plumbing fixtures and around electric outlets, pipes and fittings, so that the plates or escutcheons will properly overlap the tiles. Wainscots shall be within one half of the heights indicated without cutting of the tiles.

ANNEX C

Technical Specifications (Building Works)
(Finishes)

Bases, caps, bull-nose corners, and all other trimmers moulded or shaped features, and accessories shall be backed thoroughly with mortar and set firmly into place. All lines shall be kept straight and true, and all finished surfaces brought to true and even planes, straight and plumb, and internal corners squared and external corners rounded.

Horizontal joints shall be maintained level and vertical joints plumb and in alignment. The completed work shall be free of broken, cracked, damaged or otherwise faulty tiles.

Joints shall be parallel and uniform in width, plumb, level and in alignment. End joints in broken-joint work shall be made as far as practicable, on the center line of adjoining tiles. Except in special arrangement and design, as indicated or specified, square tiles shall be set with straight joints, and oblong tiles shall be set with broken joints.

Joint widths shall be uniform and spaced to accommodate the tile in the given spaces with a minimum of cutting. Tiles shall be wetted, if they have become dry, before applying grout. Joints 3mm or less in width shall be grouted with a neat Portland cement grout of the consistency of thick cream. Other joints shall be pointed with mortar consisting of one part Portland cement and two parts pointing sand. The grout for walls and other vertical surfaces shall contain non-staining white Portland cement. Grout and pointing mortar shall be forced into joints by using trowel, brush or finger application.

Before the grout or mortar sets, the joints of cushion edge tiles shall be struck or tooled to the depth of cushion, filling all skips or gaps, and the joints of square edge tiles shall be filled completely flush with their surface. Dark cement shall not show through grouted white joints. Care shall be taken to avoid scratching glazed finishes. All mortar or grout shall be removed before it has set or hardened.

c. Cleaning and Curing

All completed tile work shall be thoroughly sponged and washed diagonally across joints, and finally polished with clean, dry cloth. Acid cleaning of unglazed tile, when necessary, shall not be done within ten days after setting tile. All metal shall be covered with an approved grease and the tile shall be wetted with clean water, before tile is cleaned with 10% muriatic acid solution. After acid cleaning, the

tile shall be flushed with clean water, and the grease coating on metal shall be removed. Acid cleaners shall not be used on glazed tile.

d. **Protection**

Tiled walls outside corners (external angles) shall be protected with board corner strips in areas used as passage ways by workmen. Extreme care should be taken not to disturb walled tiled until mortar has fully set.

FLOORS

Supply and installation of the following floor finishes. Details and locations are shown in the plan.

1. FF1 - 600mm X 600mm Unglazed Floor Tiles

Location is shown in the plan.

2. FF2 - 300mm X 300mm Floor Tiles

Location is shown in the plan.

- a. Floor tiles shall be color varies and as shown on the drawings or to be designated by the Architect.
- b. Portland Cement, sand, water and adhesive shall conform with the requirements.
- c. Floor tiles shall be delivered in the manufacturer's original unbroken packages or containers that are labeled plainly with the manufacturer's name and brand. Containers shall be grade scaled. Materials shall be stored in dry weathertight enclosures, and shall be handled in a manner that will prevent the inclusion of foreign materials and damage by water or dampness.

Execution

Floor Tiles

a. **Mortar Preparation**

Mortar mix proportion and preparation shall be in accordance with the requirements.

b. **Surface Preparation**

Surfaces to receive the tiles shall be clean, free of dust, dirt, oil, grease, and other deleterious substances. Floor tile operations in spaces receiving wall tile shall not be started until wall tile installation has been completed. Before tile is applied with a dryset mortar bed, the structural floor shall be tested for levelness or uniformity of slope by flooding it with water. Areas where the water ponds shall be filled and leveled with mortar and shall be retested before the setting bed is applied.

c. Placing of Setting Beds and Floor Tile

Mortar setting beds shall have a minimum thickness of 20mm for floors. The structural concrete slab shall be soaked thoroughly with clean fresh water on the day before the setting bed is to be applied. Immediately preceding the application of the setting bed, the structural slab shall again be wetted thoroughly, but no free water shall be permitted to remain on the surface.

A skim coat of neat Portland cement mortar shall then be applied not more than 4mm thick. The mortar shall be spread until its surface is true and even and thoroughly compacted, either level or sloped uniformly for drainage, as the case requires. A setting bed, as large as can be covered with tile before the mortar has reached its initial set, shall be placed on one operation; but in the event that more setting mortar has been placed than can be covered, the unfinished portion shall be removed and cut back to a clean beveled edge.

All mounted tiles shall be soaked in clean water a minimum of one hour before they are set. Absorptive mounted tile shall be dampened by placing sheets on a wetted cloth in a shallow pan before setting. No free water shall remain on the tiles at the time of setting. Before the initial set has taken place in the setting bed, a skim coat of neat Portland cement mortar, 0.7mm to 1.6mm thick, shall be trowelled or brushed over the setting bed and/or the back of the tile, or a thin layer of Portland cement, 0.79mm to 2mm thick, may be hand-dusted uniformly over the setting bed and worked lightly with a trowel or brush until thoroughly damp.

The tiles shall then be pressed firmly upon the setting bed, and beaten into the mortar until true and even with the plane of the finished floor line. Beating and leveling shall be completed within one hour after placing tiles or sheets. Borders and defined lines shall be laid before the field or body of the floor. Where floor drains are provided, the floors shall be sloped to drain properly to the drains. Intersections and returns shall be formed accurately.

Cutting of tile, where necessary, shall be done along the outer edges of the

ANNEX C

Technical Specifications (Building Works)
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floor. As far as practicable, no tiles of less than half size shall be used. Cutting and drilling of tiles shall be done neatly without marring the tile surfaces. The cut edges of tile against trim, bases, thresholds, pipes, built-in fixtures, and similar surfaces shall be ground and jointed carefully. Tile shall fit closely and neatly at all plumbing fixtures and around electrical outlets, pipes and fittings so that cover plates or escutcheons will overlap the tiles properly. Tiles shall be secured firmly in place and loose tiles or tiles sounding hollow shall be removed and replaced. All lines shall be kept straight, parallel, and true, and all finished surfaces brought to true and even planes. The inner edges of borders shall be kept straight and, where practicable, shall form right angles at all returns. The paper and glue shall be removed from mounted tile, without using excess water, within one hour after installing the tiles.

Joints shall be parallel and uniform in width, plumb, level and in alignment. End joints in broken-joint work shall be made as far as practicable, on the center lines of adjoining tiles. Except in special arrangement and design, as indicated or specified, square tiles shall be set with straight joints, and oblong tiles shall be set with broken joints.

Joint widths shall be uniform and spaced to accommodate the tile in the given spaces with a minimum of cutting. Tiles shall be wetted, if they have become dry, before applying grout. Joints 3.2 mm or less in width shall be grouted with a neat Portland cement grout of the consistency of thick cream. Other joints shall be pointed with mortar consisting of one part Portland cement and two parts pointing sand.

The grout or mortar for joints on floors shall be white Portland cement or as specified by the Engineer. Grout pointing mortar shall be forced into joints by using trowel, brush or finger application. Before the grout or mortar sets, the joints of cushion edge tile shall be struck or tooled to the depth of the cushion, filling all skips or gaps, and the joints of square edged tiles shall be filled completely flush with their surface. Dark cement shall not be seen through grouted white joints.

All surplus mortar or grout shall be removed before it has set or hardened.

d. Cleaning and Curing

Floors shall be covered with waterproofed paper with all joints lapped at least 96 mm and allowed to damp cure for at least 72 hours before foot traffic is permitted thereon.

All completed tile work shall be thoroughly sponged and washed diagonally

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across joints, and finally polished with clean, dry cloth. Acid cleaning of unglazed tile, when necessary, shall not be done within ten days after setting the tile. All metal shall be covered with approved grease and the tile shall be wetted with clean water, before tile is cleaned with 10% muriatic acid solution. After acid cleaning, the tile shall be flushed with clean water, and the grease coating on metal shall be removed.

Finished tile floors shall be covered with clean building paper before foot traffic is permitted on them. Board walkways shall be placed on floors that are to be continuously used as passage ways by workmen. Thresholds shall be covered with boards. Tiles vertical outside corners (external angles) shall be protected with board corners strips in areas used as passage by workmen.

COUNTERTOPS

1. Plain Cement Finish
 - a. Sand shall be clean and hard material. Sand shall be free from deleterious substances and conforming with the requirements of ASTM C 33.
 - b. Cement shall be Portland cement conforming with the requirements of ASTM Designation C 150.
 - c. Water shall be clean and potable.
 - d. Bonding compound shall conform to ASTM C 631.
 - e. Hydrate lime shall conform to ASTM C 206.
 - f. Synthetic fibrous reinforcement shall conform to BS 5139 or ASTM C 1116.

COUNTER TOPS

- a. Beige quartz slabs for toilet countertops, fascia and splashboard. Dimensions as shown on the drawings.
- b. Shall be sound material with uniform and favorable working qualities and with very limited natural faults.
- c. Color, veining and quality shall be approved by Architect.
- d. Veining shall run vertically on all vertical surfaces and direction of veining shall continue in same directions over horizontal surfaces except as directed by the Architect.
- e. Sealer
 - e. 1. Shall be a commercial penetrating type free from harmful alkali or acid content specially prepared for marble work
 - e. 2. Shall have a Ph factor between 7 and 9
 - e. 3. Shall not discolor
 - e. 4. Shall produce a slip resistant surface
 - e. 5. Shall have a flash point not less than 35 °C

- f. Cleaning fluid
 - f. 1. Shall be commercial neutral liquid type especially prepared for marble work
 - f. 2. Shall have a Ph factor between 7 and 9
 - f. 3. Shall be free from crystallizing salts or water soluble alkaline salts
 - f. 4. Shall be biodegradable and phosphate free

CEILING

CF-1 - 12mm thick moisture resistance Gypsum Board on 0.40mm thick galvanized steel ceiling suspension system at 400mm O.C. (furring) carrying channel and 600mm O.C.B.W. suspension rod (C4).

- Flat latex paint finish
Location shown in the plan.

- Underside of RC Slab with Elastomeric paint finish
Location shown in the plan.

SUBMITTAL

1. Shop drawings for all finishing and painting works for the building shall be submitted in advance to allow twenty eight days for review and approval. Shop drawings shall indicate materials and details of finishing works. The Contractor shall be responsible for all errors of detailing and fabrication, and for the correct finishing work items shown on the shop drawings.
2. The Contractor, before placing order for the finishing materials shall submit to the Project -In- Charged for approval representative samples of finishing materials. No placing of orders for material for finishing works shall be made without his approval.
3. Samples of all walls finishes, measuring not less than 1000mm x 1000mm shall be submitted to the Project-In-Charged for approval as to its finish texture and workmanship.

GRABRAIL

Grab rail shall be manufactured from gauge 18 tubular stainless steel 50mmØ and provided with safety grip finish.

Details are shown in the plan.

DOORS

D-1 - Metal Flush Door with lever lockset (W 900mm x H 2100mm)

D-2 - Metal Flush Door with lever lockset (W 800mm x H 2100mm)

PHENOLIC BOARD TOILET PARTITION SYSTEM

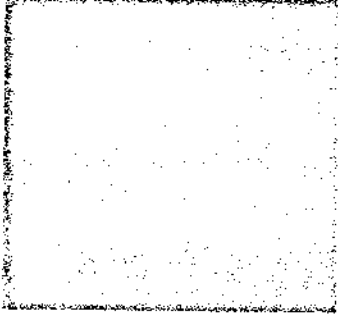
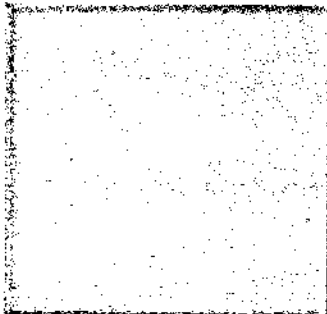
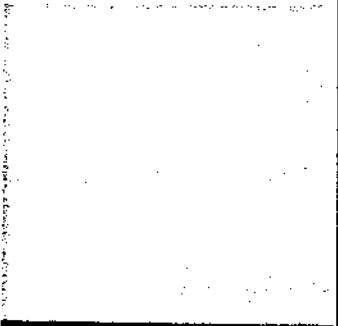
Phenolic Compact Board also known as solid phenolic, is a paper fiber-based solid surface material that is warmer to the touch than typical acrylic or polyester materials.


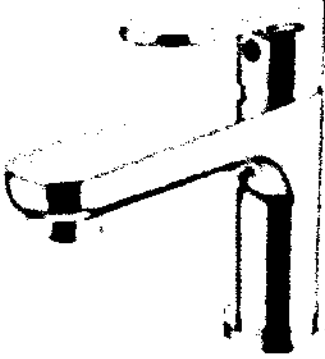
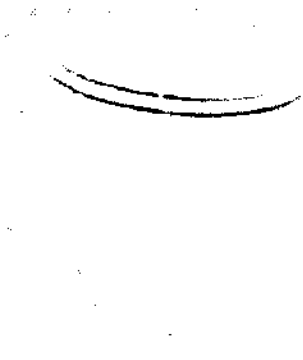
Phenolic anti-bacterial water proof toilet partition 20 mm thick including stainless hinges, locks, bottom support, door knobs and coat hooks.

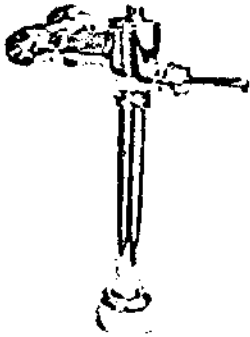


OUTLINE SPECIFICATIONS

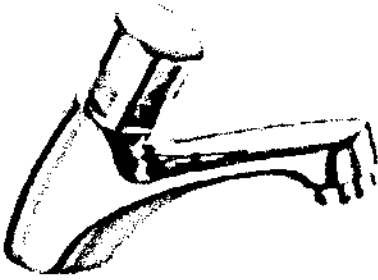
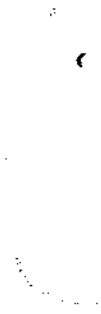
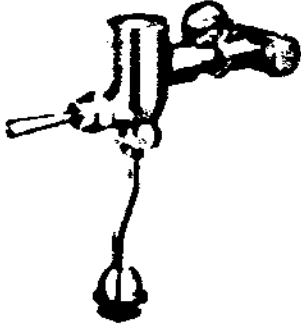
PROJECT : RENOVATION OF COMMON TOILETS
LOCATION : PPA BLDG., PORT AREA, MANILA




ARCHITECTURAL FINISHES

<p>FF-1</p>  <p>FLOOR TILE</p>	<p>Description:</p>	<p>600 x 600 GMR81 Regal Light Grey Matte Porcelain Tile for Common Toilets & PWD</p>
<p>WF-1</p>  <p>WALL TILE</p>	<p>Description:</p>	<p>300 x 600 GMR81 Regal Light Grey Polished Porcelain Tile for Common Toilets & PWD</p>
<p>CF-1</p> 	<p>Description:</p>	<p>12mm thk regular gypsum board, paint finish</p>

 <p>Undercounter Lavatory</p>	<p>Description:</p> <p>Model No.</p>	<p>Undercounter Lavatory for Common Toilets</p> <p>0440 - 600mm Undercounter Basin</p>
 <p>Lavatory Faucet</p>	<p>Description:</p> <p>Model No.</p>	<p>Lavatory Faucet for Common Toilets</p> <p>TJ55 - Arc Single Hole Mono Faucet</p>
 <p>Water Closet</p>	<p>Description:</p> <p>Model No.</p>	<p>Water Closet for Common Toilets & PWD</p> <p>HR-380460-01 Handrail (D38)</p>

 <p>Toilet Flush Valve</p>	<p>Description:</p> <p>Model No.</p>	<p>Toilet Flush Valve</p> <p>5110 - Lever Type</p>
 <p>Hand Bidet Spray</p>	<p>Description:</p> <p>Model No.</p>	<p>Bidet Spray for Common Toilets & PWD</p> <p>BS2-002</p>
 <p>Wall Hung Lavatory</p>	<p>Description:</p> <p>Model No.</p>	<p>Wall-Hung Lavatory for PWD</p> <p>0948 - New Codie Square 430mm Wall Hung Basin</p>

 <p data-bbox="331 607 550 640">Lavatory Faucet</p>	<p data-bbox="655 230 815 264">Description:</p> <p data-bbox="655 331 783 365">Model No.</p>	<p data-bbox="847 230 1198 365">Lavatory Faucet for PWD 2400 - Self-Closing Mono Faucet</p>
 <p data-bbox="323 1025 539 1093">New Contour Top Inlet Urinal</p>	<p data-bbox="655 719 815 752">Description:</p> <p data-bbox="655 786 783 819">Model No.</p>	<p data-bbox="847 719 1054 752">Top Inlet Urinal</p> <p data-bbox="847 786 975 819">6737.322</p>
 <p data-bbox="304 1547 550 1581">Urinal Flush Valve</p>	<p data-bbox="655 1167 815 1200">Description:</p> <p data-bbox="655 1267 783 1301">Model No.</p>	<p data-bbox="847 1167 1086 1200">Urinal Flush Valve</p> <p data-bbox="847 1234 1158 1301">9803.0P0 - Urinal Flush Valve, Lever Type</p>

 <p>Floor Drain</p>	<p>Description:</p>	<p>Brass Clean Out, 100mmx100mm</p>
 <p>Clean Out</p>	<p>Description:</p>	<p>Brass Clean Out, 100mm dia.</p>
 <p>Countertop</p>	<p>Description:</p>	<p>Beige Quartz</p>

Item Code: D3100-CM
 Item Description: Imigy LED UFO round slim recess mounted downlight
 Technical Specifications:

Electrical specifications:
 input 240V
 power 6W
 current 80mA

Mechanical Specifications:
 Thermal conductive plastic coated aluminum housing
 V-0 flame rating
 Ø x H 115mm x 31mm

Lamp
 lumen 350 / 390 / 380
 CCT 3000K / 4000K / 6000K



DL-1 - PINLIGHT	Description:	100mm. dia. pinlight
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ITEM 04 : PLUMBING AND SANITARY WORKS**SCOPE OF WORK**

The work covered for this section shall consist of furnishing all labor, tools, equipment, materials and incidentals necessary for the complete installation, testing and operation of the plumbing and sanitary system within the buildings and premises in accordance with these Specifications and as shown on the drawings or as directed by the Engineer. The septic tank and their effluent and discharge pipelines shall be part of other section of these specifications.

MATERIAL REQUIREMENTS**SUBMITTAL**

1. The Contractor shall submit his work method statement with necessary shop drawings to the Engineer for approval twenty eight (28) days before the start of the works.

Shop drawings shall be dated and shall contain the name of the project and location of the subject item in the shop drawing which is to be installed.

The Engineer will review and approve or return for correction all shop drawings with reasonable promptness. The Contractor shall make any corrections required and file with the Engineer three (3) corrected copies of the shop drawings.

2. The drawings shall indicate the general arrangement of all pipings, however, where actual conditions necessitate re-arrangement in opinion of the Contractor and/or the Engineer, the Contractor shall prepare and submit to the Engineer for approval, twenty eight (28) days before placing the order for materials, shop drawings of the proposed re-arrangement. Because of the small scale of the drawings, shop drawings to indicate all offsets, fittings and accessories shall be prepared. The Contractor shall carefully examine the drawings and shall carefully investigate actual structural and finish conditions affecting all his work.
3. The Contractor shall be responsible for the proper fitting of materials, equipment and accessories without substantial alteration and at no cost to the Employer.
4. The Contractor shall be responsible for the proper coordination of the work and shall provide all necessary clearance where necessary.

STANDARDS

Use of materials shall further be governed by other requirement imposed on other sections of these Specifications. Materials shall be subject to tests necessary to ascertain their fitness if the Engineer so requires. All works shall comply with the pertinent provisions of the Plumbing Code of the concerned city or town, the Code on Sanitation of the Philippines, and/or the National Plumbing Code of the Philippines.

MATERIALS

1. Identification of Materials

Each length of pipe, fittings, traps, fixtures and devices used in the plumbing work shall have cast, stamped or indelibly marked on it, the approved manufacturer's trademark or name, the weight, type and class of product when so required by the standards mentioned above.

2. Alternative Materials

Use of any material not specified in this Specification may be allowed provided such alternate has been approved by the Engineer and provided further that a test, if required, shall be done by an approved agency in accordance with generally accepted standards.

3. Soil, Waste, Drain, Vent Pipes and Fittings

Soil, waste and vent pipes shall be unplasticized Polyvinyl Chloride (uPVC) pipes. Diameter shall be as indicated on the Drawings. It shall conform to ASTM D 1784 or ASTM D 2729.

Drainage pipes shall be reinforced concrete pipes (RCP), diameter shall be as indicated on the Drawings.

4. Jointing Material

The joint material for uPVC pipes shall be PVC solvent cement as recommended by the approved pipe manufacturer.

5. Water Supply Pipes

Water supply pipes shall be polypropylene random-80 (PPR-80) pipes PN 20 conforming to DIN Standards DIN 1988/DIN 8078, German made. Jointing shall be fusion welded.

6. Cleanouts, Plugs and Tee

Cleanouts shall be of the same material as the pipe to be fitted. Cleanouts installed in connection with uPVC hubs and spigot pipes shall consist of a long sweep quarter bend of $\frac{1}{4}$ as shown on the drawings.

7. Pipe Sleeves

Pipe sleeves shall be installed and properly secured in place at all points where pipes passes through masonry or concrete. Pipe sleeves shall be uPVC pipe, Schedule 40.

8. Downspout

All downspout shall be unplasticized polyvinyl chloride (uPVC) pipe class DWV conforming to ASTM D2729 or ASTM D1784 for sanitary pipes, Series 1000.

9. Splash Block

Provide splash blocks at the outlet of downspout emptying at grade which shall be made of pre-cast concrete, with smooth finished counter sunk dishes sloped to drain away from the building. Dimensions as shown on the Drawings.

10. Roof Strainers

The Contractor shall provide fittings and install 100mm G.I. mesh wire strainers where shown or indicated on the drawings and/or where the Engineer directs. Each strainer shall fit the size of the corresponding downspout which is to be installed.

11. Shower, Floor and Urinal Drain

Shower and floor drains shall be made of stainless steel non-tilting grate, perforated or slotted. Urinal drains shall be cast iron dome type drain.

12. Pipe hangers, Inserts and Support

- a. Pipe hangers shall be wrought iron, malleable iron pipe hangers spaced not over 1.5meters apart for uPVC pipes and 3.0meters apart for iron pipes. Chain straps, perforated bars or wire hangers will not be permitted.

Hangers shall have short turnbuckles or other approved means of adjustment. Turnbuckles may be omitted on hangers where space does not permit their use. Trapeze hangers may be used in lieu of separate hangers for pipes running parallel to each other and close together.

- b. Inserts shall be of cast iron or cast steel and shall be of a type to receive a machine bolt head or nut after installation.

- c. Wrought iron clamps or collars shall be used to support vertical runs of pipes.

13. Unions

Union pipe 50mmØ and smaller shall be malleable iron. Union on water piping 63mmØ and larger shall be flanged pattern and shall be of galvanized (zinc coated) cast iron. Gaskets for flange unions shall be of best quality fiber plastic or leather.

14. Valves

Valves shall be cast bronze or brass body. Chrome plated finish for all fixture taps and faucets and natural finish for all others, like hose bibbs, gate valves and which are not tapped directly to a plumbing fixture. Concrete valve boxes shall be installed where required and will be of sufficient size for operating the valve.

15. Fixtures

- a. Water Closets

All water closets for toilets as shown on the drawings shall be FLUSH TYPE, white with complete lever pipe flush valves, fittings and mounting accessories.

- b. Lavatories

- b. 1. Lavatory (Wall Hung)

Shall be vitreous china, wall hung lavatory with rear overflow holes, fitting ledge suitable for single faucet holes on centers complete with faucet, standard fittings, trap and lavatory brackets and other accessories.

- b. 2. Lavatory (Countertop Lavatory)

Shall be vitreous china, oval or round shaped countertop lavatory with front overflow hole, complete with faucet, supply valve and fittings with P-trap. Fitting ledge suitable for single hole on center.

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c. Urinals

- c. 1. Urinals for all comfort buildings shall be built-in urinal trough as shown on the drawings.**
- c. 2. Urinals shall be vitreous china, wall-hung washout urinal, flushing rim, integral trap, 19mm top and shall be provided with water saving flush system.**
- c.3. Urinals shall have lever-type flush valve mechanism.**

d. Slop Sinks

Slop sink shall be constructed using CHB wall, tiled finish.

Hose bibb shall be of brass finish.

e. Faucet for lavatory

Faucet for lavatory shall be in chrome-finish.

f. Bath and shower fitting

Bath and shower fitting shall be chrome-finish.

g. Grab Bar

Grab bar shall be tubular stainless steel, 50mmØ or as specified in the drawings.

h. Bidet Spray Combination

Installed in every cubicle near on the water closet, colored white or its equivalent

16. Concrete, Reinforcing Steel, Pipe and Steel Plate

Materials for wash pits, catch basins and manholes shall conform to the requirements as follows:

- a. Concrete materials shall conform with the requirements in "Concrete Works" and shall be Class C concrete with a 28-day minimum compressive strength of 21 MPa (3,000 psi).**
- b. Reinforcing steel shall be as shown on the drawings and shall conform with the requirements of reinforcing steel bars in "Concrete Works."**
- c. Pipes shall be as shown on the drawings and shall comply with the relevant item of the particular pipe.**
- d. Steel plates shall be as shown on the Drawings and shall comply with Section "Steel and Metal Works".**

17. Non-reinforced Concrete Pipe

Non-reinforced concrete pipe shall be as shown on the Drawings and shall conform with the requirements of non-reinforced concrete pipes AIC latest edition. Concrete shall be with a 28-day minimum compressive strength of 20.7 MPa.

18. Valve for Drinking Fountain

Valve where drinking fountain will be connected shall be polished brass pipe and shall have red enameled handle.

EXECUTION

All installation works shall be in conformity with the National Plumbing Code of the Philippines (NPCP).

EXCAVATION, TRENCHES AND BACKFILLING

1. Trenches for all underground pipelines shall be excavated to the required depth. The bottom of trenches shall be tamped hard and graded to secure the required fill. Bell holes shall be excavated so that pipes will rest on solid ground for their entire length.

Rocks where encountered, shall be excavated to a depth of 150mm below the bottom of the pipe and before the pipe is laid, the space between the bottom of the pipe and the rock shall be filled with sand. Sewer and water pipes shall be laid in separate trenches.

2. After pipelines have been tested, inspected and approved by the Engineer and prior to backfilling, all forms shall be removed and the excavation shall be cleaned of all trash and debris.

Materials for backfilling shall consist of acceptable excavated soil, borrow of sand, gravel or other materials approved by the Engineer and shall be free from trash, lumber or other debris. Backfilling shall be placed in horizontal layers not exceeding 150 mm in thickness and properly moistened to approximate optimum requirements. Each layer shall be compacted by hand or machine tamper or by other suitable equipment to a density that will prevent excessive settlement or shrinkage.

Backfilling shall be brought to a suitable elevation above grade to provide for anticipated settlement and shrinkage thereof.

Water pipes shall have a sand cushion 150mm below and above the pipes.

INSTALLATION OF SOIL, WASTE DRAINS OR VENT PIPES

1. Horizontal Drainage Pipe and Vent Piping

Horizontal waste pipes 75mmØ and smaller shall have a minimum grade of 6.5mm per 0.30m and for 100mmØ and larger, 3.2mm per 0.30m. All main vertical soil and waste stacks shall be extended full size above the roof line as vents, except where otherwise specifically shown.

Where practicable, two (2) or more vent pipes shall be connected together and extended as one pipe through the roof. Vent pipes in roof spaces shall be run as close as possible to the underside of roof with horizontal piping pitched to stacks using fittings as required without forming traps in pipes.

Vertical pipe vents may be connected to a vent line carrying other fixtures. The connection shall be at least 1.20m above the floor on which the fixtures are located to prevent the use of vent lines as waste. Horizontal waste lines receiving the discharge from two (2) or more fixtures shall be provided with vents, unless separate venting of fixtures is noted.

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2. Fittings

All changes in pipe sizes on soil waste lines shall be made with reducing fittings or recessed reducers. All changes in direction shall be made by the appropriate use of forty five (45) degree wyes. Long sweep quarter bends or elbows may be used in soil and waste lines where the change in direction of flow is from the horizontal to the vertical and on the discharge from water closets.

Where it becomes necessary to use short radius fittings in any location, the approval of the Engineer shall be obtained before they are installed.

3. Joints

a. PVC Soil Pipe

All joints in uPVC soils, waste and vent pipe shall be accomplished by the use of PVC solvent cement.

b. All joints for uPVC shall be accomplished by applying the manufacturer's recommended solvent before connection to the pipe.

4. Cleanouts

Cleanouts at the bottom of each soil stack, waste stack and where else indicated shall be the same size as the pipe.

Cleanouts on floors shall be by uPVC plug adapter fit into the hub and fitted with uPVC screw plugged flush with the floor.

Cleanout shall be provided at every change in direction greater than 45 degrees.

5. Flashings

All pipes passing through the roof shall be provided with lead flashings. All flashings shall be built to 40 lbs. bituminous felts and shall extend up to the pipe and down-over to top of pipe at least 150mm and along the roof not less than 300mm and shall lap over flashing to make a weatherproof joint.

6. Traps

Each fixture and piece of equipment requiring connections to the drainage system, except fixtures with continuous waste shall be equipped with a trap. Traps shall be specified to be supplied with the fixtures. Each trap shall be placed as near to the fixtures as possible. Traps installed on threaded pipes shall be recessed drainage pattern.

7. Pipe Sleeves, Hangers and Supports

Pipe sleeves shall be installed and properly secured in place at all points where pipes pass through masonry or concrete except unframed floors on earth.

Pipes shall not be permitted to pass through footings or beams unless noted on the drawings.

Pipe sleeves in floors shall extend not less than 25mm and not more than 50mm above the finished floor. After installation of the pipe, the space around the pipe shall be packed with plastic material and made watertight. Flashing shields for sleeves passing through waterproofing membrane shall be thoroughly mopped into the membrane. The space between the pipe and sleeves shall be made watertight by inserting approved sealing and caulking

materials.

INSTALLATION OF WATER PIPES, FITTINGS AND CONNECTIONS

1. Gate Valves and Outlets

Gate valves shall be installed close to the point of connection to the existing service line outside the building. The piping shall be extended to all fixture outlets and equipment from the gate valves. Outlets where indicated shall be capped or plugged and left ready for future connections.

2. Mains, Branches and Runouts

All runs of piping shall be installed as shown on the drawings. The piping shall be cut accurately to measurements, and installed at the building site by the Contractor and shall be worked into place without springing or forcing. Care shall be taken not to weaken the structural portions of the buildings.

All pipes above ground shall be run parallel with the lines of the building unless otherwise shown on the drawings. Branch pipes from service lines may be taken off on top of mains, bottom of mains or side of mains, using such cross over fittings as may be required by structural or installation conditions.

All service pipes, valves and fittings shall be kept at sufficient distance from the other work to permit finished covering not less than 6.5mm from such other work and not less than 13mm between finished covering on different services. No water piping shall be buried in floors unless specifically indicated on the drawings or approved. Changes in pipe sizes shall be made with reducing fittings.

The use of long screws and bushings is prohibited.

3. Joints

Joints and connections in the plumbing system shall be gas-tight and watertight for the pressures required by test.

After cutting and before threading all pipes shall be reamed and shall have burrs removed. All screwed joints shall be applied with an approved graphite compound or TEFLON tape to facilitate connections. Threads shall be full cut and not more than three threads on the pipe shall remain exposed.

Caulking of threaded joints or top to prevent leaks shall not be permitted.

Unions shall be provided where required for disconnection. Threaded swing bolts shall be used for branch connections to risers and mains.

4. Unions

Where required unions shall not be concealed in walls, ceilings or partitions.

5. Tests

The following tests shall be conducted by the Contractor at his expense under the supervision of the Engineer.

a. Tests for Drainage and Venting System

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The entire drainage and venting system shall have necessary openings plugged to permit the entire system to be filled with water to the level of the highest vent stack above the roof. The system shall hold the water for 30 minutes with a drop not greater than 100mm.

b. Sterilization

The entire water supply piping system shall be sterilized with a solution containing not less than fifty (50) parts per million of available chlorine, either liquid chlorine or a solution of sodium hypochlorite. The sterilizing solution shall remain in the system for a period of not less than 8 hours during which time all valves and faucets shall be opened and closed several times. After sterilization, the solution shall be flushed from the system with clean water until the residual chloride content is not more than 0.2 parts per million.

c. Pressure Test for Water Lines

1. After the pipe have been installed, the joints completed and with joints exposed for examination, all newly installed pipe or any valve section, thereof, shall be subjected to hydrostatic pressure one and one half (1½) the designed working pressure of the system or as specified by the Engineer.
2. The duration of each pressure test shall be at least 20 minutes unless otherwise specified by the Engineer.
3. Each section of pipeline shall be slowly filled with water and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. During the filling of the pipe and before applying the test pressure, all air shall be expelled from the pipeline. To accomplish this, tap shall be made if necessary, at the highest point of the pipe under test and after completion of the test, the taps shall be tightly plugged unless otherwise specified. During the test, all exposed pipes, fittings, valves, joint and couplings will be carefully examined. If found to be cracked or defective, they shall be removed and replaced by the Contractor with sound materials at his expense. The test shall then be repeated until satisfactory results are obtained.

d. Leakage Test for Water Lines

1. Leakage test shall be conducted after satisfactory completion of the pressure test and shall consist of an examination of all exposed joints for leakage as well as an overall leakage test of the completed pipeline.
2. The pressure to be maintained during the test shall be the designed working pressure of the system.
3. Leakage test shall be made only after a minimum of 24 hours after the pipe to be tested has been filled with water.
4. The duration of each leakage test shall be two hours unless otherwise specified by the Engineer.
5. Each section of pipeline shall be slowly filled with water and the specified

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test pressure, measured at the point of lowest elevation shall be applied by means of a positive displacement type pump and reservoir connected to the pipe in a manner satisfactory to the Engineer.

6. Before starting the leakage test, all air shall be expelled from the pipe. All exposed pipes, fittings, valves and joints shall be examined for leakage during the test.
7. Allowable leakage rate per 100 joints per inch of Pipe Diameter at Pressure Stipulated.

PRESSURE		LEAKAGE RATE	
psi	kg/cm ²	liters/hr.	liters/2 hrs.
50	3.50	1.45	2.90
75	5.30	1.75	3.50
100	7.00	2.05	4.10
125	8.80	2.30	4.60
150	10.50	2.50	5.00
200	14.00	2.90	5.80

e. Defective Work

1. If the inspection or test shows any defect, such defective work or material shall be replaced and the test shall be repeated until satisfactory to the Engineer.
2. All repairs to piping shall be made with new materials at the expense of the Contractor.
3. No caulking of screwed joints or holes will be accepted.

ASSEMBLY, INSTALLATION AND CONNECTION OF FIXTURES

Fixtures shall be supported and fastened in a satisfactory manner. Where secured to concrete or masonry work walls, fixtures and equipment shall be fastened with brass bolts or machine screws in lead-sleeve type anchorage units or with brass expansion bolts. Expansion bolts shall enter 7.5 cm into solid concrete or masonry works and shall be fitted with loose tubing or sleeves of proper length to bring expansion sleeves into the solid concrete masonry walls.

Where wood screws are used, screws shall go into solid pieces set between studs. Where through-bolts are used, bolts shall be provided with plates or washers at back set, so that they will be concealed by plaster. Bolts and nuts shall be hexagonal and exposed nuts, cap nuts, and screw heads shall be provided with chromium plated brass washers.

PROTECTION OF FIXTURES

Pipe openings shall be closed with caps or plugs during installation. Fixtures shall be tightly covered and protected against dirt, water and chemical injury. At the completion of all works, all fixtures shall be thoroughly cleaned and delivered in a condition satisfactory to the Engineer.

FIXTURES AND FASTENING

All fixtures shall be supported and fastened in a satisfactory manner as follows:

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1. Where secured to concrete or concrete hollow block walls, they shall be fastened with one quarter inch brass bolts with twenty threads to the inch and of sufficient length to extend at least 7.5 cm into solid concrete or hollow block work, fitted with loose tubing or sleeve insert and shall be securely anchored and installed flush with the finished wall and shall be completely concealed when the fixtures are installed.
2. Where through-bolts are used, they shall be provided with plates or washers back set so that heads, nuts and washers will be concealed by plaster. Bolts and nuts shall be hexagonal. Exposed bolts, nuts, capnuts and screw heads shall be provided with chromium plated brass washers.

GUARANTEE

Upon completion and before final acceptance of the equipment installation, the Contractor shall furnish the Engineer a written guarantee stating that all equipment installed under this Section free from defects. The guarantee shall be for a period of one (1) year from the date of final acceptance of the work. Any part of the equipment that becomes defective during the term of the guarantee shall be replaced, renewed and/or made good by the Contractor, at his own expense and in a manner satisfactory to the Engineer.

Guarantees made by the approved manufacturers or suppliers beyond one year, shall be transferred to PPA without any expense on his part.

CLEANING UP

Upon completion of the work, all parts of the installation shall be thoroughly cleaned of grease, metal cuttings and sludge which may have accumulated during the testing operation.

PLUMBING, FIXTURES AND TOILET ACCESSORIES INSTALLATION

All installation works shall be as shown on the drawings and shall conform to the applicable standards set forth by the Philippine National Plumbing Code. All fixtures shall be fastened and/or supported in accordance with the given requirements.

ITEM 05 : ELECTRO/MECHANICAL WORKS**Scope of Work**

- a) The work to be done shall consist of supply, deliver and install electro / mechanical materials completed in accordance with all the details of the electrical and mechanical plans as shown on the drawing. It includes materials, labor, tools and equipment and all incidental works as found necessary.
- b) Refer to electro / mechanical plans for location and extent of work involved.

General Requirement

- a) All works shall be done in accordance with the requirements of the publications and agencies having jurisdiction, as well as the requirements of the approved standards.
 - 1. National Fire Protection Association - (NFPA)
 - 2. National Electrical Manufacturer Association - (NEMA)
 - 3. Underwriter Laboratories, Inc. - (UL)
 - 4. Philippine Electrical Code Part 1 (2017) - (PEC)
Philippine National Standard - (PNS)
 - 5. Federation Specification:
Circuit Breaker, Molded Case, Branch
Circuit and Service
 - 6. American National Standard Institute - (ANSI)
 - 7. American Society for Testing and Materials - (ASTM)
 - 8. Illuminating Engineering Society - (IES)
 - 9. Light Emitting Diode - (LED)
- b) The electrical power shall be connected to the nearest existing supply of PPA electrical room. The Contractor shall coordinate the exact route of wires and cables to the assigned Engineer. The required supply of 230 volt, three (3Ø) phase, 3 wire + grounding, 60 hertz, A.C.
- c) The Contractor shall employ a licensed Registered Electrical Engineer or Master electrician to perform or supervise the conduct of continuous inspection of all electrical work.
- d) The Contractor shall first obtain approval from the Authority before procurement, or delivery of electrical materials to the site.
- e) The materials and equipment to be furnished shall be standard products of reputable manufacturer engaged in the reproduction of such materials and equipment.
- f) All permits and electrical fees required for this work shall be obtained at the expense of the Contractor. The Contractor shall furnish the Engineer-in-Charge, the final

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(Electrical General Requirements)

Certificates of Inspections and approval from the authorities after the completion of work. The Contractor shall prepare all as-built plans and all other paper works as required by the enforcing authorities.

Material Requirement

- a) All electro /mechanical works, and equipment under by this Contract shall be furnished and installed by the Contractor.
- b) All materials and equipment to be supplied shall be as shown in the drawings and shall be in accordance with the requirements of these specifications which shall apply to manufacturing, testing and supply of same materials and equipment.
- c) All electro / mechanical materials whether specifically described or not shall be of the best grade and all workmanship shall be of first class in every aspect.
- d) All electro /mechanical equipment and materials supplied shall be suitable in every aspect for operation in a hot tropical climate near the sea and suitable for operation at ambient temperature up to 40° C.
- e) Any materials and equipment found not meeting the requirements of relevant standards, or of these specifications shall be rejected by the Engineer.
- f) All electro / mechanical materials used in this Contract shall meet the requirements described in the electrical plans, or otherwise approved by the Engineer and shall comply with the approved standard.

WIRING METHOD

- a) Wiring in IMC conduits, shall be employed. Detailed installation requirements recommended by the latest edition of the Philippine Electrical Code (PEC).
- b) Conduits shall be continuous from outlet to outlet to panel junction or full boxes and shall enter and be secured to all boxes from point of service to all outlet terminals.
- c) Branch circuits shall be installed as shown in the plans.
- d) Outlet shall be located approximately as shown in the plans and shall be properly positioned where located in the panel work or other special interior finish.
- e) The duplex convenience outlet and other several outlets, special purpose outlet, etc., shall be installed as shown in the plans.
- f) The switches shall be of the flush /tumbler type. It shall be installed as shown in the plans. Switches denotes the no. of gang.
- g) Wires and cables, the material to be furnished and installed shall be of copper wire Heat Resistant Thermoplastic Type "THHN". All conductors shall be rated 600 volts insulation and shall be standard for all sizes.
- h) Lighting fixtures and accessories shall be installed as illustrated in the plans.
- i) Panel board, shall be of the ratings and configurations as shown in the drawings.

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- j) Air conditioning system, Ceiling Cassette type ac unit with inverter has a 4-way air distribution with auto sweep, it can cool an adjacent room using of the 4 way air flow outlets. The fresh air intake device and additional outlet grill can condition the air in an adjoining room using one of its 4 ways airflow side. Ceiling cassette air condition shall furnish and installed including accessories as shown in the drawings.
- k) Kitchen exhaust fan / auxiliary fan shall be installed as shown in the plans
- l) The auxiliary system like, telephone, smoke detector etc., shall be installed as shown in the plans.

Execution

- a) The Contractor shall furnish and install electro /mechanical works as shown in the drawings. A licensed Registered Electrical Engineer or Master Electrician is required to implement the installation of the electrical system.
- b) Electrical installation shall conform to the requirements of Philippine Electrical Code (PEC) and the other approved standards.
- c) The contractor shall install all electrical works with the supervision of the qualified Registered Electrical Engineer (REE) or Master Electrician. All electro/mechanical works installation/ applications regardless of capacity and voltage whether new, addition or revision shall be accompanied by electrical plans signed and sealed by a duly licensed Professional Electrical Engineer (PEE).

WORKMANSHIP

The work throughout shall be executed in the best and most thorough manner under the direction of and at the satisfaction of the Registered Electrical Engineer or Master Electrician, who will interpret the intent meaning of the drawings and specification and shall have the power to reject any work and materials which in his judgement, are not in full accordance therewith.

TESTING OPERATIONS

When the electro / mechanical installation is completed, the Contractor shall test the installed electrical materials and equipment in the presence of Registered Electrical Engineer or Master Electrician. The system shall be free from any defects, shorts or grounds. The Contractor at no extra cost shall furnish all necessary instruments and personnel required for the testing to the Authority.

GUARANTEE

Upon completion and before final acceptance of the work, the Contractor shall furnish the Engineer a written guarantee stating that all works executed are free from defects on materials and workmanship. The guarantee shall be for a period of one year from the date of the final acceptance. Any work that becomes defective during the said period shall be corrected / replaced by the Contractor at his own expense in a manner satisfactory to the Authority.

AS-BUILT DRAWINGS

Upon completion and before final acceptance of work, the Contractor shall prepare, at his own expense, submit to the Engineer as-built drawings incorporating all approved changes, omissions and/or addition to the contract drawings, six (6) printed copies of as-built drawings together with their reproducible originals at no extra cost to the Authority.

ITEM 06 : MASONRY WORKS

GENERAL

General Requirements contain provisions and requirements essential to these Specifications and apply to this Section, whether or not referred to herein.

SCOPE OF WORK

This Section includes the furnishing of all labor and materials to complete the work as shown on the drawings and specified herein. The works shall include but not necessarily be limited to the following:

1. Supply and installation of concrete hollow block (CHB) walls with reinforcement
2. Plastering
3. Installing temporary works like scaffolding, platforms, steps, etc.

GENERAL PROVISIONS

The following publications of the issues below but referred to thereafter by basic designation only form a part of these specifications to the extent indicated by the reference thereto:

American Society for Testing and Materials (ASTM) Publications:

- A 615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- A 33 Concrete Aggregates
- C 129 Specification for Non-Load Bearing Concrete Masonry Units C
- 144 Specification for Aggregate for Masonry Mortar
- C 270 Mortar for Unit Masonry

MATERIAL REQUIREMENTS

Materials shall conform to the respective specifications and other requirements specified below

CONCRETE HOLLOW BLOCKS (CHB)

CHB shall be of standard manufacture, machine vibrated with fine and even texture and well-defined edges and conforming with the requirements of ASTM C 129. Unless otherwise specified on the Drawings, It shall have a minimum compressive strength of 4.14 MPa (600 psi). CHB shall be non-load bearing uniform and essentially smooth as normally achieves by standard molding methods and shall be free from any cracks, flaws or other defects.

BEDDING MORTAR

Mortar shall be composed of 1 part of Portland cement, 3 parts of sand and ½ part of lime. It shall have a compressive strength of [14 MPa (2,000 psi)] at 28 days and shall comply with property specifications for type N mortar set forth in ASTM Specification C 270 and as modified herein, proportioned and tested in an approved laboratory at the expense of the Contractor. When tested for water retention, the mortar shall have a flow after suction, of 75 percent or more when mixed to

an initial flow of 125 to 140 percent. When tested for compressive strength, mortar shall be mixed to a flow of 100 to 115 percent. Aggregate for mortar shall conform to ASTM C 144.

PLASTER

Plaster shall comply with the same specification as those for bedding mortar and will include the use of synthetic fibrous reinforcement of type and dosage recommended by the manufacturer.

REINFORCING STEEL BARS AND RODS

Minimum yield strength of reinforcement shall conform with the specifications in Section of Reinforced Concrete.

SAMPLES AND TESTING

1. The following shall be submitted for approval and in addition, representative samples shall be taken periodically from on-the-site stockpiles as required for testing or checking during the progress of the work.

Anchors and ties : Two of each type proposed for use

Concrete Hollow Blocks : Shapes, sizes and kinds in sufficient numbers to show full range of quality and texture.

2. Sampling and testing, unless otherwise specified, shall be performed by an approved independent commercial testing laboratory at the expense of the Contractor. Certified copies of laboratory test reports, including all test data, shall be submitted at least 10 days before delivery of the units or mortar materials represented by the tests to the project site.
3. Mortar shall be laboratory-proportioned and tested. Certified copies of approved laboratory-established proportions shall be submitted with the required test reports and test data. Approved laboratory-established proportions shall not be changed and materials with different physical or chemical characteristics shall not be used in mortar for the work unless additional evidence is furnished that the mortar meets the specified requirements.

EXECUTION

1. GENERAL

No unit having a film of water on its surface shall be laid. Masonry shall be laid plumb, true to line, with level courses accurately spaced. Bond pattern shall be kept plumb throughout. Corners and reveals shall be plumb and true. Vertical joints shall be shoved tight. Each unit shall be adjusted to final position while mortar is still soft and plastic. Any unit that is disturbed after mortar has stiffened shall be removed and relaid with fresh mortar. Courses shall be so spaced that backing masonry will level off, flush with the face work at all joints where ties occur. Chases and rake-out joints shall be kept free from mortar or other debris.

2. Anchorage to concrete. Anchorage to abutting columns shall be provided only where indicated. Details shall be as indicated including anchorage to underside of beams and slabs.
3. Cutting and fitting, including that required to accommodate the work of others shall be done by masonry mechanics. Wherever possible, full units of the proper size shall be used in lieu of cut units. Cut edges shall be clean, true and sharp. Openings shall be carefully cut, formed or otherwise neatly made for recessed items and for electrical, plumbing, or other mechanical installations so that wall plates, cover plates, or escutcheons required by the

installation will completely conceal the openings and will have bottoms in alignment with lower edge of masonry joints. Webs of hollow masonry units shall be cut to the minimum required for the installation. Reinforced masonry lintels shall be provided as indicated above openings over 300mm wide, for pipes, ducts and cable trays, unless steel sleeves are used.

4. Embedded Items

Spaces around built-in items shall be filled with mortar. Openings around flush-mounted electrical outlet boxes in wet locations shall be pointed flush with mortar including flush joints above the boxes. Anchors, ties, accessories, flashing, pipe sleeves and other items required to be built-in shall be built-in as the masonry work progresses. Anchors, ties, and joint reinforcement shall be fully embedded in mortar.

- 5. Unfinished work shall be stepped back for jointing with new work. Toothing may be resorted to only when specifically approved. Before laying new work, loose mortar shall be removed and the exposed joint shall be thoroughly cleaned.**

6. Protection

Surfaces of masonry not being worked on shall be properly protected at all times. At the end of each workday period and when rain is imminent, the top of exposed masonry shall be covered with a strong non-staining waterproof membrane well secured in place and in a manner that will prevent moisture. Adequate provisions shall be made during construction to prevent damages by wind.

7. Mortar

Materials shall be accurately measured in laboratory-established proportions and mixed with as much water as may be necessary to produce the wettest workable consistency possible. Mortar shall be placed in final position within one hour after mixing. Mortar not used or that has started to set within this time interval shall be discarded.

8. Jointing

Joints in exposed-to-view except control joints, joints to be pointed or caulked or sealed, and openings around flush-mounted electrical outlet boxes in wet locations shall be tooled slightly concave with the mortar thoroughly compacted and pressed against the edges of the units. Tooling shall be done when the mortar has been thumbprint hard. The tooled joint shall be finished to uniformly straight and true lines and surfaces, smooth and free of tool marks.

9. Placing Reinforcing Steel

Prior to placing grout, all reinforcement shall be cleaned of loose, flaky rust, scale, grease, mortar, grout or other coating which might destroy or reduce its bond with grout. Details of reinforcement shall be as indicated in the drawings. Reinforcing shall not be bent or straightened in a manner injurious to the steel. Bars with kinks or bends not shown on the drawings shall not be used. Placement of reinforcement shall be inspected and approved prior to placing grout. One piece vertical bars extending from floor to floor or roof above shall be provided. Vertical bars shall be spliced only where indicated.

a. Positioning Bars

Vertical bars shall be positioned accurately at the centerline of the wall. A minimum

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clearance between the bars and masonry units of 12mm and between parallel bars of one diameter of the reinforcement shall be maintained. Vertical reinforcing shall be held in place using metal supports, centering clips, spacers, ties or caging devices located near the ends of each bar and at intermediate intervals of not more than 192 diameters of the reinforcement.

b. Splices

Splices shall be located only as indicated. Splices shall be staggered in adjacent bars at least 600mm. Bars shall be lapped a minimum of 40 diameters of the reinforcement.

PAINTING AND CLEANING

Mortar daubs or splashing, before setting or hardening, shall be completely removed from masonry unit surfaces that will be exposed or painted. Before completion of the work, all defects in joints or masonry to be exposed or painted shall be raked out as necessary, filled with mortar, and tooled to match existing joints. Masonry surfaces shall not be cleaned, other than removing excess surface mortar until mortar in joints has hardened. Masonry hardened surfaces shall be left clean, free of mortar daubs, dirt, stain and discoloration, including scum from cleaning operations and with tight mortar joints throughout. Metal tools and metal brushes shall not be used for cleaning.

ITEM 07: PAINTING**GENERAL**

General Requirements contain provisions and requirements essential to these Specifications; and apply to this section, whether or not referred to herein.

SCOPE OF WORK

This Section covers the surface preparation, coating materials and application of coatings systems required for the Works.

The work shall consist of furnishing of all labor, materials, equipment and other incidentals necessary for the supply of painting materials and the complete painting of surfaces as shown on the drawings in accordance with this Specification and as directed by the Engineer.

The term paint as hereinafter used includes emulsion paints, varnishes, oils, pigments, thinner and dryers.

All exposed metal surfaces, except metal surfaces embedded in concrete, shall be painted unless otherwise specified.

STANDARD

The following publications listed below, but referred to thereafter by basic designation only, forms a part of these Specifications to the extent indicated by the reference thereto:

Steel Structures Painting Council (SSPC) U.S. Specification JIS K 5628 Red-lead Zinc Chromate Anti-Corrosive Paint.

SUBMITTAL

1. The Contractor shall submit work method statements with lists of materials to the Engineer for approval twenty eight days before the starting of works. This statement shall include following items:
 - a. Type of paint and manufacturer
 - b. Manufacturer's specifications
 - c. Storage and delivery of materials
 - d. Surface preparation
 - e. Finish painting and drying
 - f. Touch-up painting, if any
 - g. Equipment
2. The Contractor, before placing order for the painting materials, shall submit to the Engineer for approval samples of materials. No placing of orders for material shall be made without his approval.

STORAGE AND DELIVERY

1. The Contractor shall deliver all material to the site in the original labeled sealed cans and containers, with labels intact and seal unbroken.
 - a. Seals shall remain unbroken until after inspection and acceptance of material by the Engineer.

- b. The Contractor shall deliver materials in ample quantities sufficiently in advance of the need to avoid any delay or interruptions in the works.
- 2. Paint in thinner shall be stored in accordance with the approved manufacturer's instructions.
 - a. All regulations required for storage of paint shall be observed and all necessary safety signs required by governing codes shall be posted.
 - b. Any damage caused by failure to exercise proper precautions in paint storage shall be repaired.

MATERIAL REQUIREMENTS**PAINT**

Paints for the protective coating system shall be the product of a manufacturer approved by the Engineer.

Paints for exterior finish must be with tile like durability and elegance, fast drying, solvent based acrylic, highly suitable for coastal or polluted areas with excellent anti-fungus properties and alkali resistance.

100% Acrylic, water based, quick-drying, easy to clean-up and environmentally friendly, resist dirt, stains, alkali, water, humidity, algae, mold and mildew growth and highly durable paint for interior finish.

An all-purpose synthetic quick dry paint for all types of wood and metal surfaces. It has high gloss, good color retention and outstanding durability.

For pipes, valves and equipment, galvanized and ungalvanized ferrous metal, use a 100% acrylic gloss paint, has excellent resistance to ultraviolet rays and resists chalking, cracking and color fading, dries fast and environmentally friendly.

SCHEDULE OF PAINTING

Architectural Items	
a. Exterior Finishes	
1. On Concrete Walls	
Three Coats, Concrete Masonry Paint	Elastomeric Paint or approved equal
2. Unprimed Ferrous Metal	
First Coat	Red Oxide Primer, or approved equal
Second & Third Coat	Quick Dry Enamel
3. On Concrete Block Wall	
Masonry Neutralizer	Masonry Neutralizer

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Three Coats Concrete Masonry Paint	Elastomeric Paint
4. On Wood	
First Coat Exterior Wood Primer	Flatwall Enamel
Second & Third Coat Exterior enamel	Quick Drying Enamel
b. Interior Finishes Location of the various finishes are listed in the Finish Schedule on the drawings or else will be confirmed by PPA	
1. On primer and coated metal two coats of interior semi-gloss enamel or as indicated in the Schedule finish	Red Oxide Primer Quick Dry Enamel
2. On Plaster	
First Coat	Masonry Neutralizer
Three Coats	Elastomeric Paint
3. On Wood	
First Coat Enamel undercoater	Flatwall Enamel
Second & Third Coat Exterior enamel	Quick Drying Enamel
4. Wood Stain Finish	
First Coat Second & Third Coats Fourth & Fifth Coats	Oil Wood Stain , Lacquer Sanding Sealer Clear Gloss Lacquer
c. Non – Architectural Items (Piping, valves, equipment, etc.)	
1. Piping, valves, equipment etc. in rooms are to be painted	
2. Galvanized pipes and ducts	
Primer – one coat	Red Oxide Primer, Quick Dry Enamel
Finish – one coat	
3. Black steel pipes	
Primer – one coat	Red Oxide Primer, Quick Dry Enamel
Finish – one coat	
4. Mechanical Items	
a. Ungalvanized ferrous metal Primer – one coat	Red Oxide Primer, Quick Dry Enamel
Finish – one coat	
b. Galvanized ferrous metal Primer – one coat	Red Oxide Primer,

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Finish – one coat	Quick Dry Enamel
c. Submerged galvanized ferrous metal Primer – one coat	Red Oxide Primer,
d. Buried miscellaneous ferrous surface valves, & flanged joints (excl. pipe) Primer – one coat	Red Oxide Primer,

EXECUTION

SURFACE PREPARATION OF STEEL

1. Steel surfaces shall be cleaned as follows:
 - a. All round welds, burrs and sharp surface projections shall be ground smooth and all weld splatter shall be removed prior to blast cleaning.
 - b. Sand abrasives, if used, shall be clean, and free from salt and extraneous matter. The sand shall pass through a 2.0mm test sieve, and be substantially retained on a 0.18mm test sieve, with at least 25 percent retained on a 0.355mm test sieve.
 - c. Metallic abrasive, if used, shall be sharp, hard and free from dust, and shall pass through a 1.8 mm test sieve.
 - d. Blast cleaning operations shall not be conducted on surfaces that will be wet after blasting and before coating, or when the surfaces are less than 10°C above degree points, or when the relative humidity of the air is greater than 95 percent.
 - e. Any oil, grease, soil, dust or other foreign matter deposited on the cleaned surfaces shall be removed prior to painting. In the event that rusting occurs after completion of the surface preparation, the surfaces shall be cleaned again in accordance with the specified method.
 - f. Particular care shall be taken to prevent the contamination of other corrosive chemicals before the application of the paint. Such contamination shall be removed from the cleaned surface by flash blasting and the paint applied immediately.
 - g. Care shall be taken to prevent contamination of cleaned and painted surfaces by cleaning operations in an adjacent area.
 - h. Surfaces not to be painted shall be suitably protected from the effects of cleaning and painting operations.

SURFACE PREPARATION OF WOOD

1. Wood surfaces shall be sanded to a fresh surface. Surface mould where present, shall be removed by washing, rubbing down and burning off as necessary. Resinous exudation and large knots shall be removed and replaced with filler or other materials approved by the Engineer.
2. Parts of timber to be enclosed in walls shall always be primed unless already impregnated. Priming shall be brushed on and a minimum of two coats applied to end grain. When the priming paint is hard, all cracks, holds, open joints, etc. shall be made good with hard stopping and rubbed down with fine abrasive paper. Priming of joinery shall be applied only

on site after the Engineer has approved such joinery and before it is fixed. For internal surfaces primer coats shall be carefully flattened.

SURFACE PREPARATION OF CONCRETE AND PLASTER

Concrete and cement plaster surfaces to be painted shall be prepared by removing efflorescence, dust, dirt, grease, oil, asphalt, tar, excessive mortar and mortar dropping and by roughening to remove glaze. A zinc sulfate solution shall be applied before prime coat.

SURFACE PREPARATION FOR FIBER CEMENT SURFACES

Shall be dry and clean prior to application of the specified first-coat material. Oil, grease, or rust stains shall be carefully removed by the use of suitable solvent. Wire brushing will not be permitted. After the first coat has become dry and prior to application of finish coats, touch-up coats shall be applied to suction spots.

ALUMINUM FRAMES FOR DOORS AND WINDOWS

All metal surfaces shall undergo pre-treatment process which includes: desmutting, water-rinsing, degreasing/etching, water rinsing, zinc phosphating, water rinsing and acid rinsing.

Powder coating application, shall be factory applied and shall be done in one operation using an electro-static powder gun. The materials to be coated should be well connected to earth. Coating thickness should be kept to a minimum of 60 microns for exposed areas. On details which are to be treated mechanically after coating (drilling, sawing, etc.), the coating film must not exceed 100 microns.

The powder coating shall be oven cured in the range of 20 minutes at 220° C (metal temperature measured on the area with greatest metal thickness). The temperature variation in the oven should not exceed +/- 10° C.

Handling

Coated items should be cooled to no less than 40° Centigrade before handling. Precautions should be taken to avoid damages on the finished coating during stacking, storing and transportation.

Storage and Delivery

Inspect materials delivered to the site for damage. Unload and store with minimum handling. Provide storage space in dry location with adequate ventilation, free from dust or water and easily accessible for inspection and handling. Store materials neatly on the floor, properly stacked on non-absorptive strips or wood platforms. Protect finished surfaces during shipping and handling using manufacturer's standard method.

WOOD REPAIR

Badly decayed areas shall be removed and repaired. Areas and pieces decayed beyond repair shall be replaced with new pieces that match originals in all respects. Moderately decayed areas, weathered, or gouged wood shall be patched with approved patching compounds, and shall be sanded smooth. The source or cause of wood decay shall be identified and corrected prior to application of patching materials. Wet wood shall be completely dried to a moisture content

not exceeding 12 percent, as measured by a moisture meter, to its full depth before patching, unless otherwise authorized. Wood that is to be patched shall be clean of dust, grease, and loose paint.

1. Epoxy Wood Repair

Epoxy wood repair materials shall be applied in accordance with manufacturer's written instructions. Health and safety instructions shall be followed in accordance with the manufacturer's instructions. Clean mixing equipment shall be used to avoid contamination. Mix and proportions shall be as directed by the manufacturer. Batches shall be only large enough to complete the specific job intended. Patching materials shall be completely cured before painting or reinstallation of patched pieces.

2. Epoxy Consolidant and Epoxy Paste

Epoxy liquid wood consolidant shall be used:

1. To penetrate and impregnate deteriorated wood sections in order to reinforce wood fibers that have become softened or absorbent.
2. As a primer for areas that are to receive epoxy paste filler. Epoxy paste shall be used to fill areas where portions of wood are missing such as holes, cracks, gaps, gouges, and other voids.

MIXING AND THINNING

Mixing and thinning of paint shall be done in accordance with the approved manufacturer's printed instructions. The pot life of each paint as stated by the manufacturer shall not be exceeded.

WEATHER CONDITION

The paint shall not be applied when the relative humidity is above 85 percent. The paint shall not be applied in rain, wind, fog, dust or mist.

APPLICATION

Workmanship shall be first class in every respect. All work shall be done in a workmanship manner so that the finished surfaces shall be free from runs, chop, ridges, waves, laps and unnecessary brush marks. All coats shall be applied in such manner as to produce an even film of uniform thickness. Edges, corners, crevices, welds and rivets shall receive special attention to ensure that they receive an adequate thickness of paint.

All painting shall be done by thoroughly experienced workmen.

Safety regulations shall be adhered to at all times, including the wearing of respirators by persons engaged on assisting in spray painting. Adjacent areas and installation shall be protected by the use of cloths or other approved precautionary measures.

Plain enamel and varnish shall be applied carefully with good clean brushes or approved spraying equipment, except that the initial coat on any surface shall be applied with brush. Sufficient time shall be allowed between coats to assure thorough drying and each coat shall be in proper condition before receiving the next coat.

Sanding and dusting as required shall be performed between coats in varnishing work. Finish

ANNEX G

Technical Specifications (Building Works)
(Painting)

coat shall be smooth and free from runs, sags, and other defects. Exterior paint shall not be applied during rainy days.

All paint when applied shall provide a satisfactory film and smooth, even surface. Paint shall be thoroughly stirred and kept at a uniform consistency during application. Powdered metallic pigments added at the time of use shall be mixed by adding the powder in small increments to about one-third of the base paint or vehicle, with thorough mixing to obtain a smooth paste. The remainder of the base paint shall then be thoroughly stirred in.

Different brands of emulsion paints shall not be mixed prior to application of the materials.

Where necessary to suit conditions of surface temperature, weather and method of application, the package paint may be thinned immediately prior to application in accordance with the approved manufacturer's directions, but not in excess of 125 cc of suitable thinner per liter (one pint per gallon). Before using, the paint shall be mixed to a uniform consistency and shall be stirred frequently during application.

Paints other than water-thinned paints shall be applied only to surfaces which are completely free of moisture as determined by sight or touch and only such combinations of humidity to be painted as will cause evaporation rather than condensation.

Surfaces which have been cleaned, pretreated and/or otherwise been prepared for painting shall be primed or painted with one coat of finish paint as soon as practicable after such preparation has been completed, but in any event prior to any deterioration of the prepared surfaces.

The first coat of paint on all exterior surfaces shall be applied by brush. Interior prime coats and all other subsequent coats on either exterior or interior surfaces may be applied by brush or spray. Whenever spraying is permitted all areas inaccessible to spray painting shall be coated by brushing or other suitable means. Brushes to be used for application of water-emulsions shall be soaked in water for a period of 2 hours prior to use.

All cloths and cotton waste which might constitute a fire hazard shall be placed in closed metal containers or destroyed at the end of each day.

Upon completion of the work, all staging, scaffolding, and containers shall be removed from the site or destroyed in a manner approved by the Engineer. Paint spots, or stains upon adjacent surfaces shall be removed and the entire job left clean and acceptable to the Engineer.

No smoking shall be permitted in the vicinity where painting is going on.

TOUCH-UP PAINTING

Touch-up painting shall be done with the same paint as used for the original coat. The resulting minimum dry film shall be the same as for the original coat.

Touch-up painting shall include cleaning and painting of field connections, welds and all damaged or defective paint and rusted areas.

During touch-up painting, only loose, cracked, brittle or non-adherent paint shall be removed during cleaning. All exposed edges shall be feathered. Touch-up painting shall be performed in a manner which will minimize damage to sound paint. Rust spots shall be thoroughly cleaned and edges of the existing paint shall be scraped back to sound material.

DRYING

ANNEX G

Technical Specifications (Building Works)
(Painting)

1. No primer or paint shall be forced to be dried under conditions which will cause cracking, wrinkling, blistering, formation of pores which would detrimentally affect the condition of the paint.
2. No drier shall be added to the paint unless specified in the approved manufacturer's instructions.
3. Painted surfaces shall be protected from dust, dirt, and the elements of the weather until dry to the fullest extent practicable.
4. After drying, any areas of paint damaged from any cause shall be removed, the surface again prepared and then touched-up with the same paint and to the same thickness as the undamaged areas as specified in sub-section 4.14.3.7 above.

HANDLING

1. Precautions shall be taken to minimize damage to paint films resulting from stacking for drying.
2. Paint which is damaged in handling shall be scraped off and touched-up with the same paint and in the same thickness as was previously applied to the damaged area at Contractor's expense.

INSPECTION

1. All works and materials supplied under this Specification shall be subject to inspection by the Engineer.
2. The Contractor shall correct such works or replace such materials found defective under these Specifications at his own expense.

ITEM 08 : Supply, Relocation and Install Sprinkler Head

GENERAL

This Item shall consist of furnishing, relocation and installation of sprinkler head including testing, commissioning, provisions for new accessories and replacement of broken parts.

The works shall be conducted in accordance to the specifications, codes and requirements of the following:

1. Revised Fire Code of the Philippines
2. National Fire Protection Association (NFPA) 10, 13, 14 and 20
3. Ordinances of concerned city or municipality

MATERIAL REQUIREMENTS

All new materials shall be standard and good quality product of reputable manufacturer.

All existing materials and accessories to be incorporated in the project shall passed with the testing and commissioning under the supervision of the Engineer.

Defective materials shall be replaced/corrected in accordance to the requirements of this specifications and the approved quality control program.

GUARANTEE

The Contractor shall guarantee that the Fire Protection system is free from all defective workmanship and materials and will remain so for a period of one (1) year from date of acceptance of the work by the Owner or the Architect. Any defect, appearing within the aforesaid period shall be remedied or replaced by the Contractor at his own expense.

EXECUTION

Workmanship

The work throughout shall be executed in the best and most thorough manner to the satisfaction of the Architect and the Engineer, who will jointly interpret the meaning of the drawings and specifications and shall have the power to reject any work and materials, which in their judgement, are not in full accordance therewith.

The Contractor shall assume unit responsibility and shall provide the services of a qualified Engineer to supervise the complete installation of equipment and systems and who shall be available for conducting the final acceptance tests.

Preparation

Examine all surfaces which are to support or receive parts place and subsequent construction. Notify General Contractor if any condition exists which will prevent the completion of the Work in this

ANNEX H

Technical Specifications
(Supply, Relocation and Install Sprinkler Head)

Section in a satisfactory manner. Application or installation of materials constitutes acceptance of the supporting and adjoining construction.

Cleaning

Swab-out lines and/or flush out system with fresh water until they are clean and water runs clear at all outlets.

Acceptance Test

All tests required in the commissioning and testing works shall be passed under the supervision of qualified Engineer or Architect. All necessary documents required in the approved quality control program shall be submitted to PPA with issued warranty.

BILL OF QUANTITIES
PROPOSED RENOVATION OF TOILETS
PPA Corporate Bldg. South Harbor, Port Area, Manila



NO. (1)	DESCRIPTION OF WORK (2)	UNIT (3)	QTY. (4)	UNIT PRICE (Pesos) (5)	AMOUNT (Pesos) (4) x (5)
BILL NO. 1	GENERAL EXPENSES				
1.01	Mobilization, demobilization and cleaning	lot	1		
1.02	Provide Construction Safety and Health Program in the execution of the project including stringent Covid-19 protocols per Engineering circular No. 01-2020, and Construction Guidelines for Project Implementation during the period of Public Health Emergency, approved by PDCB and CIAP (as indicated in the Bid Documents)	mos.	5		
TOTAL FOR BILL NO. 1					

BILL OF QUANTITIES
PROPOSED RENOVATION OF TOILETS
PPA Corporate Bldg. South Harbor, Port Area, Manila



NO. (1)	DESCRIPTION OF WORK (2)	UNIT (3)	QTY. (4)	UNIT PRICE (Pesos) (5)	AMOUNT (Pesos) (4) x (5)
BILL NO. 2	REMOVAL, DISPOSAL & CORING WORKS				
2.01	Remove and dispose existing floor & wall tiles including surface preparation	sq.m.	804		
2.02	Remove existing ceiling including electrical materials, and other miscellaneous items	sq.m.	240		
2.03	Remove existing cubicle partition including doors, grab bars and other accessories	lot	1		
2.04	Remove existing water closet, urinal, and other plumbing fixtures including accessories	lot.	1		
2.05	Demolish and dispose existing CHB wall including reinforcement	sq.m.	88		
2.06	Remove existing counter top, stop sink, mirror and other accessories	lot	1		
2.07	Remove existing toilet doors and its accessories	lot	1		
2.08	Concrete coring works with scanning prior to the installation of pipes	lot	1		
<p><i>Note: All removed materials with value shall be turn-over to the Authority as directed and approved by the Engineer</i></p>					
TOTAL FOR BILL NO. 2					



BILL OF QUANTITIES
PROPOSED RENOVATION OF TOILETS
PPA Corporate Bldg. South Harbor, Port Area, Manila

NO. (1)	DESCRIPTION OF WORK (2)	UNIT (3)	QTY. (4)	UNIT PRICE (Pesos) (5)	AMOUNT (Pesos) (4) x (5)
BILL NO.	3 RENOVATION OF TOILETS				
3.01	✓ Supply, deliver and install pre-cast wall partition	lot.	1		
3.02	✓ Supply and place 13mm thick cement Plaster finish	sq.m.	125		
3.03	✓ Supply and apply elastomeric paint for concrete wall surfaces (2 coats)	sq.m.	129		
3.04	Supply and apply flat latex paint for gypsum board ceiling (2 coats)	sq.m.	213		
3.05	Supply and apply water proofing	sq.m.	311		
3.06	Supply and install 0.60m x 0.60m unglazed floor tiles	sq.m.	213		
3.07	Supply and install 0.30m x 0.30m floor tiles	sq.m.	10		
3.08	Supply and install 0.60m x 0.30m glazed tiles for wall & slop sink	sq.m.	657		
3.09	Supply and install quartz countertop and splash board	sq.m.	52		
3.10	Supply and install 12mm thk. moisture resistance gypsum board on 0.40mm thk galvanized steel ceiling suspension system including furring carrying channel, suspension rod and other accessories	sq.m.	213		

BILL OF QUANTITIES
PROPOSED RENOVATION OF TOILETS
PPA Corporate Bldg. South Harbor, Port Area, Manila



NO. (1)	DESCRIPTION OF WORK (2)	UNIT (3)	QTY. (4)	UNIT PRICE (Pesos) (5)	AMOUNT (Pesos) (4) x (5)
3.11	Supply, fabricate and install 50mm dia. Stainless steel grab bar, 12mm dia. Stainless Steel anchor bar and 38mm dia. Stainless Steel Flip-up bar including accessories	lot.	1		
3.12	Supply and install toilet doors	lot.	1		
3.13	Supply, fabricate and install Phenolic anti-bacterial water proof Toilet partition including stainless hinges, lock indicators, bottom support door knobs and coat hooks	lot.	1		
3.14	Supply and install toilet fixtures, mirrors, hand dryer and other accessories	lot.	1		
3.15	Supply and install water line pipes and fittings including accessories.	lot.	1		
3.16	Supply and install sewerage pipes and fittings including accessories.	lot.	1		
3.17	Supply and install new sprinkler head including relocation of existing units, testing, commissioning and other accessories	lot.	1		
3.18	Construct concrete substrate and zocalo wall including reinforcement	lot.	1		
3.19	Supply, deliver and install electrical materials and accessories	lot.	1		
TOTAL FOR BILL NO. 3					

Section VIII. Checklist of Technical and Financial Documents

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

- ☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages);
or
- ☐ (b) Registration certificate from Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives or its equivalent document;
and
- ☐ (c) Mayor's or Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas;
and
- ☐ (d) Tax clearance per E.O. No. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).

Technical Documents

- ☐ (f) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**
- ☐ (g) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No. 9184, within the relevant period as provided in the Bidding Documents; **and**
- ☐ (h) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission;
or
Original copy of Notarized Bid Securing Declaration; **and**
- ☐ (i) Conformity with the Technical Specifications, which may include production/delivery schedule, manpower requirements, and/or after-sales/parts, if applicable; **and**
- ☐ (j) Original duly signed Omnibus Sworn Statement (OSS);
and if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

- ☐ (k) The Supplier's audited financial statements, showing, among others, the Supplier's total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission; **and**

- ☐ (l) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC);
or
A committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation.

Class "B" Documents

- ☐ (m) If applicable, a duly signed joint venture agreement (JVA) in case the joint venture is already in existence;
or
duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

Other documentary requirements under RA No. 9184 (as applicable)

- ☐ (n) *[For foreign bidders claiming by reason of their country's extension of reciprocal rights to Filipinos]* Certification from the relevant government office of their country stating that Filipinos are allowed to participate in government procurement activities for the same item or product.
- ☐ (o) Certification from the DTI if the Bidder claims preference as a Domestic Bidder or Domestic Entity.

25 FINANCIAL COMPONENT ENVELOPE

- ☐ (a) Original of duly signed and accomplished Financial Bid Form; **and**
- ☐ (b) Original of duly signed and accomplished Price Schedule(s).

Bid Form for the Procurement of Goods
[shall be submitted with the Bid]

BID FORM

Date : _____
Project Identification No. : _____

To: [name and address of Procuring Entity]

Having examined the Philippine Bidding Documents (PBDs) including the Supplemental or Bid Bulletin Numbers [insert numbers], the receipt of which is hereby duly acknowledged, we, the undersigned, offer to [supply/deliver/perform] [description of the Goods] in conformity with the said PBDs for the sum of [total Bid amount in words and figures] or the total calculated bid price, as evaluated and corrected for computational errors, and other bid modifications in accordance with the Price Schedules attached herewith and made part of this Bid. The total bid price includes the cost of all taxes, such as, but not limited to: [specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties], which are itemized herein or in the Price Schedules,

If our Bid is accepted, we undertake:

- a. to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements of the Philippine Bidding Documents (PBDs);
- b. to provide a performance security in the form, amounts, and within the times prescribed in the PBDs;
- c. to abide by the Bid Validity Period specified in the PBDs and it shall remain binding upon us at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your Notice of Award, shall be binding upon us.

We understand that you are not bound to accept the Lowest Calculated Bid or any Bid you may receive.

We certify/confirm that we comply with the eligibility requirements pursuant to the PBDs.

The undersigned is authorized to submit the bid on behalf of [name of the bidder] as evidenced by the attached [state the written authority].

We acknowledge that failure to sign each and every page of this Bid Form, including the attached Schedule of Prices, shall be a ground for the rejection of our bid.

Name: _____
Legal capacity: _____

Signature: _____
Duly authorized to sign the Bid for and behalf of: _____
Date: _____

111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

Name of Bidder _____ Project ID No. _____ Page ____ of ____

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Price Schedule for Goods Offered from Within the Philippines
[shall be submitted with the Bid if bidder is offering goods from within the Philippines]

For Goods Offered from Within the Philippines

Name of Bidder _____ Project ID No. _____ Page ____ of ____

1	2	3	4	5	6	7	8	9	10
Item	Description	Country of origin	Quantity	Unit price EXW per item	Transportation and all other costs incidental to delivery, per item	Sales and other taxes payable if Contract is awarded, per item	Cost of Incidental Services, if applicable, per item	Total Price, per unit (col 5+6+7+8)	Total Price delivered Final Destination (col 9) x (col 4)

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Bid Securing Declaration Form
[shall be submitted with the Bid if bidder opts to provide this form of bid security]

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.

BID SECURING DECLARATION
Project Identification No.: [Insert number]

To: [Insert name and address of the Procuring Entity]

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.
2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f), of the IRR of RA No. 9184; without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:
 - a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
 - b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and
 - c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of [month]
[year] at [place of execution].

[Insert NAME OF BIDDER OR ITS
AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

[Jurat]
[Format shall be based on the latest Rules on Notarial Practice]

Contract Agreement Form for the Procurement of Goods (Revised)
[Not required to be submitted with the Bid, but it shall be submitted within ten (10) days after receiving the Notice of Award]

CONTRACT AGREEMENT

THIS AGREEMENT made the ____ day of _____ 20____ between [name of PROCURING ENTITY] of the Philippines (hereinafter called “the Entity”) of the one part and [name of Supplier] of [city and country of Supplier] (hereinafter called “the Supplier”) of the other part;

WHEREAS, the Entity invited Bids for certain goods and ancillary services, particularly [brief description of goods and services] and has accepted a Bid by the Supplier for the supply of those goods and services in the sum of [contract price in words and figures in specified currency] (hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents as required by the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184 shall be deemed to form and be read and construed as integral part of this Agreement, viz.:

- i. Philippine Bidding Documents (PBDs);
 - i. Schedule of Requirements;
 - ii. Technical Specifications;
 - iii. General and Special Conditions of Contract; and
 - iv. Supplemental or Bid Bulletins, if any
- ii. Winning bidder’s bid, including the Eligibility requirements, Technical and Financial Proposals, and all other documents or statements submitted;

Bid form, including all the documents/statements contained in the Bidder’s bidding envelopes, as annexes, and all other documents submitted (e.g., Bidder’s response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity’s bid evaluation;
- iii. Performance Security;
- iv. Notice of Award of Contract; and the Bidder’s conforme thereto; and
- v. Other contract documents that may be required by existing laws and/or the Procuring Entity concerned in the PBDs. Winning bidder agrees that additional contract documents or information prescribed by the GPPB that are subsequently required for submission after the contract execution, such

as the Notice to Proceed, Variation Orders, and Warranty Security, shall likewise form part of the Contract.

3. In consideration for the sum of [total contract price in words and figures] or such other sums as may be ascertained, [Named of the bidder] agrees to [state the object of the contract] in accordance with his/her/its Bid.
4. The [Name of the procuring entity] agrees to pay the above-mentioned sum in accordance with the terms of the Bidding.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of the Republic of the Philippines on the day and year first above written.

[Insert Name and Signature]

[Insert Name and Signature]

[Insert Signatory's Legal Capacity]

[Insert Signatory's Legal Capacity]

for:

for:

[Insert Procuring Entity]

[Insert Name of Supplier]

Acknowledgment

[Format shall be based on the latest Rules on Notarial Practice]

Omnibus Sworn Statement (Revised)
[shall be submitted with the Bid]

REPUBLIC OF THE PHILIPPINES)
CITY/MUNICIPALITY OF _____) S.S.

AFFIDAVIT

I, [Name of Affiant], of legal age, [Civil Status], [Nationality], and residing at [Address of Affiant], after having been duly sworn in accordance with law, do hereby depose and state that:

1. [Select one, delete the other:]

[If a sole proprietorship:] I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

[If a partnership, corporation, cooperative, or joint venture:] I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. [Select one, delete the other:]

[If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

[If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;
6. [Select one, delete the rest:]
- [If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;
- [If a partnership or cooperative:] None of the officers and members of [Name of Bidder] is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;
- [If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of [Name of Bidder] is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;
7. [Name of Bidder] complies with existing labor laws and standards; and
8. [Name of Bidder] is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:
- a. Carefully examining all of the Bidding Documents;
 - b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
 - c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
 - d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the [Name of the Project].
9. [Name of Bidder] did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.
10. In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to

deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.

IN WITNESS WHEREOF, I have hereunto set my hand this ___ day of ___, 20___ at _____, Philippines.

[Insert NAME OF BIDDER OR ITS
AUTHORIZED REPRESENTATIVE]

[Insert signatory's legal capacity]

Affiant

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice]

Performance Securing Declaration (Revised)
[if used as an alternative performance security but it is not required to be submitted with the
Bid, as it shall be submitted within ten (10) days after receiving the Notice of Award]

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.

PERFORMANCE SECURING DECLARATION

Invitation to Bid: [Insert Reference Number indicated in the Bidding Documents]

To: [Insert name and address of the Procuring Entity]

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, to guarantee the faithful performance by the supplier/distributor/manufacture/contractor/consultant of its obligations under the Contract, I/we shall submit a Performance Securing Declaration within a maximum period of ten (10) calendar days from the receipt of the Notice of Award prior to the signing of the Contract.
2. I/We accept that: I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of one (1) year for the first offense, or two (2) years for the second offense, upon receipt of your Blacklisting Order if I/We have violated my/our obligations under the Contract;
3. I/We understand that this Performance Securing Declaration shall cease to be valid upon:
 - a. issuance by the Procuring Entity of the Certificate of Final Acceptance, subject to the following conditions:
 - i. Procuring Entity has no claims filed against the contract awardee;
 - ii. It has no claims for labor and materials filed against the contractor; and
 - iii. Other terms of the contract; or
 - b. replacement by the winning bidder of the submitted PSD with a performance security in any of the prescribed forms under Section 39.2 of the 2016 revised IRR of RA No. 9184 as required by the end-user.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of
[month] [year] at [place of execution].

[Insert NAME OF BIDDER OR ITS
AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

[Jurat]
[Format shall be based on the latest Rules on Notarial Practice]

NET FINANCIAL CONTRACTING CAPACITY (NFCC) COMPUTATION

- A. The values of the bidder's current assets and current liabilities shall be based on the data submitted to the BIR, through its Electronic Filing and Payment System (EFPS).

		Year 20
1.	Total Assets	
2.	Current Assets	
3.	Total Liabilities	
4.	Current Liabilities	
5.	Net Worth (1-3)	
6.	Net Working Capital (2-4)	

- B. The Net Financial Contracting Capacity (NFCC) based on the above data is computed as follows:

NFCC = [(Current asset minus current liabilities) (15)] minus the value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started, coinciding with the contract to be bid

NFCC = Php _____

K = 15

Herewith attached are certified true copies of the income tax return and audited financial statement: stamped "RECEIVED" by the BIR or BIR authorized collecting agent for the immediately preceding year.

Submitted by:

Name of Supplier/Distributor/Manufacturer

Signature of Authorized Representative

STATEMENT OF THE BIDDER'S ONGOING GOVERNMENT AND PRIVATE CONTRACTS, INCLUDING CONTRACTS AWARDED BUT NOT YET STARTED

This is to certify that _____ has the following ongoing government and private contracts, including contracts awarded but not yet started:

[illegible]

***PROOF OF CONTRACT TO BE PRESENTED AT POST-QUALIFICATION.**

Name and Signature of Authorized Representative

Date

**STATEMENT OF THE BIDDER'S SINGLE LARGEST COMPLETED CONTRACT (SLCC)
SIMILAR TO THE CONTRACT TO BE BID**

This is to certify that _____ has completed the following:

[illegible]

***TO BE ATTACHED TO THE STATEMENT**

Name and Signature of Authorized Representative

Date _____