If ten percent (10%) of the random ultrasonic tested indicate unacceptable defect, the remaining eighty percent (80%) of the welding shall be tested. Repair welding required shall be ultrasonic tested after the repairs are made.

CORRECTIONS

In lieu of the rejection of an entire piece or member containing welding which is unsatisfactory or which indicates inferior workmanship, corrective measures may be permitted by the Engineer whose specific approval shall be obtained for making each correction. Defective or unsound welds or base steel shall be corrected either by removing and replacing the entire weld, or as follows.

1. Excessive convexity or overlap shall be reduced by grinding.

2. Undercuts, lack of weld shall be repaired with necessary reinforcement of weld after removal of any foreign materials such as slag, dust, oil, etc.

3. Any defects such as slag inclusions, incomplete fusion, or inadequate joint penetration, shall be completely removed, cleaned and re-welded.

4. Cracks in welds or base steel, shall be removed to sound steel throughout their length and 5cm beyond each end of the crack, followed by welding. The extent of the crack, depth and length, shall be ascertained by the use of acid etching, magnetic particle inspection or other equally positive means.

   The removal of welded steel shall be done by chipping, grinding, oxygen cutting, oxygen gouging, or air carbon arc gouging and in such a manner that the remaining welded steel or base steel is not nicked or undercut. Defective portions of the welding shall be removed without substantial removal of the base steel.

INSTALLATION

1. Installation Program

   a. Prerequisite Condition

      Prior to executing steel fabrication and field installation, the Contractor shall prepare a comprehensive installation program including engineering supervision organization, fabrication procedures, field installation procedures, material application, machinery applications, inspection procedure, scope and standard of quality judgment, and submit to the Engineer for approval.

   b. Special Technical Engineering

      Special technical engineering different from contract specifications can be applied upon receiving approval of the Engineer.

2. Installation Requirement

   a. Setting of Anchor Bolt and Others

      a. 1. Anchor bolts shall be set in accurate position by using templates.

      a. 2. The setting method shall be proposed to the Engineer for his approval before setting starts.

a. 3. The threads of bolt shall be cured with an appropriate method against rust and/or any damage before tightening.

a. 4. Non-shrink mortar shall be placed under base plates, well cured to obtain the sufficient strength before bearing loads are applied to base plates.

b. Temporary Bracing

b. 1. Temporary bracing shall be installed as necessary to stay assemblies and assume loads against forces due to transport, erection operations or other work.

b. 2. Temporary bracing shall be maintained in place until permanent work is properly connected and other construction installed as necessary for support, bracing or staying of permanent work.

b. 3. Extent and quality of temporary bracing shall be as necessary against wind and other loads, including seismic loads not less than those for which the permanent structure is designed to resist.

c. Adequacy of Temporary Connections

During erection, temporary connection work shall be securely made by bolting and/or welding for all dead load, wind and erection stresses.

d. Alignment

No permanent bolting or welding shall be done until the alignment of all parts with respect to each other shall be true within the respective tolerances required.

e. Field Welding

e. 1. Any shop paint or surfaces adjacent to joints where field welding is to be executed shall be wire brushed to remove paint/primer.

e. 2. Field welding shall conform to the requirements specified herein, except as approved by the Engineer.

f. High Strength Bolts

Final tightening of high strength bolts shall be done by using manufacturer's power operated equipment without any overstress to the threads.

g. Correction of Errors

g. 1. Corrections of minor misfits by use of drift pins, and reaming, chipping or cutting will be permitted and shall be provided as part of erection work.

g. 2. Any errors to be corrected or adjusted, preventing proper assembly, shall be immediately reported to the Engineer, and such corrections or adjustments shall be made as necessary and approved by the Engineer.

g. 3. Cutting or alterations other than as approved will not be permitted.

h. Erection

h. 1. Erection and installation shall be as per approved shop drawings.

h. 2. Each structural unit shall be accurately aligned by the use of steel shims, or other approved methods so that no binding in any moving parts or distortion of any members occurs before it is finally fastened in place.

h. 3. Operations, procedures of erection and bracing shall not cause any damage to works previously placed nor make overstress to any of the building parts or components. Damage caused by such operations shall be repaired as directed by the Engineer at no extra cost to the Employer.

GALVANIZING

PREPARATION

All mild steel parts exposed to weather shall be hot-dipped galvanized after fabrication in accordance with the requirements of ASTM A 123 or ASTM A 153. Prior to galvanizing, the surfaces shall be cleaned of dirt, weld splatter, grease, slag, oil, paint or other deleterious matters. The steel surfaces shall be chemically de-scaled and cleaned with the same abrasive blast or other suitable method as approved by the Engineer.

COATING

The zinc coating shall consist of uniform layers of commercially pure zinc free from abrasions, cracks blisters, chemical spots or other imperfections, and shall adhere firmly to the surface of the steel. The weight of zinc coating per square meter of actual surface shall not be less than 550 grams. Any surface damaged subsequent to galvanizing shall be given two coats of approved zinc rich paints.

PAINTING

This work shall consist of the preparation of the metal surfaces, the application, protection and drying of the painted surfaces, and supplying of all tools, tackle, scaffolding, labor and materials necessary for the entire work. Painting shall be applied in the field or shop as approved by the Engineer.

Unless otherwise specified or approved, all painting work for structural steel shall comply with the requirements of this Section.

SHOP PAINTING

All structural steel shall be given a shop primer after fabrication and cleaning before delivery to the site.

All steel work shall be thoroughly dried and cleaned of all loose mill scale, rust and foreign matters by means of sand blasting or other suitable methods approved by the Engineer before

shop painting shall be applied. Each individual piece shall be painted prior to assembly. Portions where field welding or field contact with concrete is required shall not be painted.

Except for galvanized surfaces and items to be encased in concrete, clean ferrous metal surfaces shall be given one coat of Amerlock 400 Epoxy Primer at 100 Microns or approved equal. Additional coat shall be applied to surfaces that will be concealed or inaccessible for finish painting by Amerlock 400, Top Coat at 150 Microns with color or equivalent.

FIELD PAINTING

After erection, the Contractor shall thoroughly prepare and clean the entire surface of all structural steel from all dirt, grease, rust or other foreign matters. The entire surface of all members shall then be field painted.

MATERIALS

1. Structural Steel Work

   a. After surface preparation, steelwork shall be given one coat of approved prefabricating primer.

   b. Before final assembly of steelwork at the fabricator's shop, two shop coats of special red lead primer shall be applied to the surface of sections to be in permanent contact, meeting faces and all other concealed surfaces. After final assembly, but before delivery to the project site, the steelwork shall likewise be given two shop coats of special red lead primer.

2. Galvanized Steelwork

   All galvanized steelwork shall be treated with zinc chromate two-pack etch primer followed by one coat of non-etch zinc chromate primer.

3. Miscellaneous Metal Work

   Unless otherwise specified in other Sections of the Specifications or shown on the drawing, miscellaneous metal works such as ladders, structural steel ladder rungs, etc. shall be given two shop coats of epoxy primer and two coats of epoxy enamel.

CONSTRUCTION METHODS

1. Cleaning of Surfaces

   Surfaces of metal to be painted shall be thoroughly cleaned; removing rust, loose mill scale, dirt, oil or grease, and other foreign substances. Unless cleaning is to be done by sand blasting, all weld areas, before cleaning is started, shall be neutralized with a proper chemical, after which they shall be thoroughly rinsed with water.

   Three methods of cleaning are provided herein. The particular method to be used shall be as directed by the Engineer.

2. Hand Cleaning

   The removal of rust, scale, and dirt shall be done by the use of metal brushes, scrapers, chisels, hammers or other effective means. Oil and grease shall be removed by the use of gasoline or benzene.

Bristle or wood fiber brushes shall be used for removing loose dirt.

3. Sandblasting

All steel shall be cleaned by sandblasting. The sandblasting shall remove all loose mill scale and other substances. Special attention shall be given to cleaning of corners and re-entrant angles. Before painting, sand adhering to the steel in corners and elsewhere shall be removed. The cleaning shall be approved by the Engineer prior to any painting which shall be done as soon as possible before rust forms.

4. Flame Cleaning

All metal, except surface inside boxed members and other surfaces which shall be inaccessible to the flame cleaning operation after the member is assembled, shall be flame cleaned in accordance with the following operations.

a. Oil, grease, and similar adherent matter shall be removed by washing with a suitable solvent. Excess solvent shall be wiped from the work before processing with subsequent operations.

b. The surface to be painted shall be cleaned and dehydrated (free from occluded moisture) by the passage of oxyacetylene flames which have an oxygen to acetylene ratio of at least 1.0. The oxyacetylene flames shall be applied to the surfaces of the steel in such a manner and at such speed that the surfaces are dehydrated; dirt, rust loose scale in the form of blisters or scabs, and similar foreign matters are freed by the rapid, intense heating by the flames. The number arrangement and manipulation of the flames shall be such that all parts of the surfaces to be painted are adequately cleaned and dehydrated.

c. Promptly after the application of the flames, the surfaces of the steel shall be wire brushed, hand scraped wherever necessary, and then swept and dusted to remove all free materials and foreign particles.

d. Paint shall be applied promptly after the steel has been cleaned and while the temperature of the steel is still above that of the surrounding atmosphere.

5. Weather Conditions

a. Exterior Coatings

Coatings to surface shall not be applied during foggy or rainy weather, or under the following surface temperature conditions: below 4°C, or over 35°C, unless approved by the Engineer.

b. Interior Coatings

Coatings shall be applied when surfaces to be painted are dry and the following surface temperatures can be maintained: between 18 to 35°C during the application.

6. Application

a. Paint shall be factory tinted and mixed. All paint shall be field mixed before applying in order to keep the pigments in uniform suspension.

b. Field Painting

When the erection work is complete, including all bolting and straightening of bent metal, all adhering rust, scale, dirt, grease or other foreign materials shall be removed as specified above.

As soon as the Engineer has examined and approved each steel and metal works structures, all field bolts, all welds, and any surfaces from which the top or first coat of paint has become worn off, or has otherwise come defective shall be cleaned and thoroughly covered with one coat of paint.

Surfaces to be bolted and surfaces which shall be in contact with concrete, shall not be painted. Surfaces which shall be inaccessible after erection shall be painted with such field coats as are required. When the paint applied for retouching the shop coat has thoroughly dried, and the field cleaning has been satisfactorily completed, such field coats as are required shall be applied. In no case shall a succeeding coat be applied until the previous coat is dry throughout the full thickness of the paint film. All small cracks and cavities which were not sealed in a watertight manner by the first field coat shall be filled with a pasty mixture of red lead and linseed oil before the second coat is applied.

The following provision shall apply to the application of both coats. To secure a maximum coating on edges of plates or shapes, bolt heads and other parts subjected to special wear and attack, the edges shall first be striped with a longitudinal motion and the bolt heads with a rotary motion of the brush, followed immediately by the general painting of the whole surface, including the edges and bolt heads.

The application of the second field coat shall be deferred until adjoining concrete work has been placed and finished. If concreting operations have damaged the paint, the surface shall be re-cleaned and repainted.

c. General Manners

Painting shall be done in a neat and workmanlike manner. Paint may be applied with hand brushes or be spraying, except aluminum paint which preferably shall be applied by spraying. By either method the coating of paint applied shall be smoothly and uniformly spread so that no excess paint shall collect at any point. If the work done by spraying is not satisfactory to the Engineer hand brushing shall be

required.

d. Brushing

When brushes are used, the paint shall be so manipulated under the brush as to produce a smooth, uniform, even coating in close contact with the metal or with previously applied paint, and shall be worked into all corners and crevices.

e. Spraying

Power spraying equipment shall be used to apply the paint in a fine spray. Without the addition of any paint, the sprayed area shall be immediately followed by brushing, when necessary, to secure uniform coverage and to eliminate wrinkling, blistering and air holes.

f. Removal of Paint

If the painting is unsatisfactory to the Engineer the paint shall be removed and the metal thoroughly cleaned and repainted.

ITEM 09 : 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 Project-In-Charged.

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 Project-In-Charged 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 Project-In-Charged 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 Project-In-Charged.

    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 Project-In-Charged.

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, #310 or approved equal
Second & Third Coat	Quick Dry Enamel or approved equal
3. On Concrete Block Wall	
Masonry Neutralizer	Masonry Neutralizer #44 or approved equal
Three Coats Concrete Masonry Paint	Elastomeric Paint or approved equal
4. On Wood	
First Coat Exterior Wood Primer	Flatwall Enamel or approved equal
Second & Third Coat Exterior enamel	Quick Drying Enamel or approved equal
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 or approved equal
2. On Plaster	
First Coat	Masonry Neutralizer or approved equal
Three Coats	Elastomeric Paint or approved equal
3. On Wood	
First Coat Enamel undercoater	Flatwall Enamel or approved equal
Second & Third Coat Exterior enamel	Quick Drying Enamel or approved equal

4. Wood Stain Finish	
First Coat Second & Third Coats Fourth & Fifth Coats	Oil Wood Stain , Lacquer Sanding Sealer Clear Gloss Lacquer or approved equal
5. For Cabinetry	
First & Second Coat	Lacquer Primer Surfacer
Third Coat	Automotive Lacquer
6. For Doors	
First Coat	Flat Latex
Undercoat & Base Coat	Water based decorative paint system
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 Finish – one coat	Red Oxide Primer, or approved equal Quick Dry Enamel or approved equal
3. Black steel pipes	
Primer – one coat Finish – one coat	Red Oxide Primer, or approved equal Quick Dry Enamel or approved equal
4. Mechanical Items	
a. Ungalvanized ferrous metal Primer – one coat Finish – one coat	Red Oxide Primer, or approved equal Quick Dry Enamel or approved equal or approved equal
b. Galvanized ferrous metal Primer – one coat Finish – one coat	Red Oxide Primer, or approved equal Quick Dry Enamel or approved equal or approved equal
c. Submerged galvanized ferrous metal Primer – one coat	Red Oxide Primer, or approved equal
d. Buried miscellaneous ferrous surface valves, & flanged joints (excl. pipe) Primer – one coat	Red Oxide Primer, or approved equal

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 Project-In-Charged.

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 Project-In-Charged has approved such joinery and before it is fixed. For internal surfaces primer coats shall be carefully flatted.

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 cost.

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 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 Project-In-Charged. Paint spots, or stains upon adjacent surfaces shall be removed and the entire job left clean and acceptable to the Project-In-Charged.

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

1. No primer or paint shall be forced to be dried under conditions which will cause cracking, wrinkling, blistering, or 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 Project-In-Charged.

2. The Contractor shall correct such works or replace such materials found defective under these Specifications at his own expense.

ITEM 10 : SIGNAGES

SCOPE OF WORK

Furnish materials and perform labor to include miscellaneous works required for the installation of room identification for the toilets and port office.

SAMPLE AND SHOP DRAWINGS

The Contractor shall submit samples for approval by the Architect. Notify the Architect for any changes, clarifications and discrepancies.
For the room I.D. full size lettering layout and installation method shall be submitted to the Architect for approval before start of work.

MATERIAL REQUIREMENTS

1. PPA LOGO

    - Hot dipped built up letters 4.5 mm thick Metal sheet screwed at the back.
    - 12.5mm thk. Colored Acrylic Plastic Sheet for PPA Logo
    - 1mm thk. Acrylic Painted G.I. Metal Sheet Free Standing Lettering

2. ROOM MARKERS

    Black acrylic letters, 38mm (1-1/2") high on white acrylic background, 63mm (2-1/2") high, with clear acrylic cover. Lengths shall be as required by the full notation therein.

EXECUTION

WORKMANSHIP

Workmanship shall be executed in high quality comparable with artworks.

MOUNTING

For all mounted assemblies, appropriate mounting hardware and connectors which are concealed shall be sufficiently used.

Assemblies shall be mounted plumb, straight, level, and at prescribed heights.

INSTALLATION

Installation shall be done in a secure and permanent manner at prescribed heights and/or layout. The backwall shall not be mutilated. After the dowels are positioned, fill with expanding grout, or other approved fillers, and retouch, flashed to the backwall surface.

ITEM 11 : PROJECT BILLBOARD

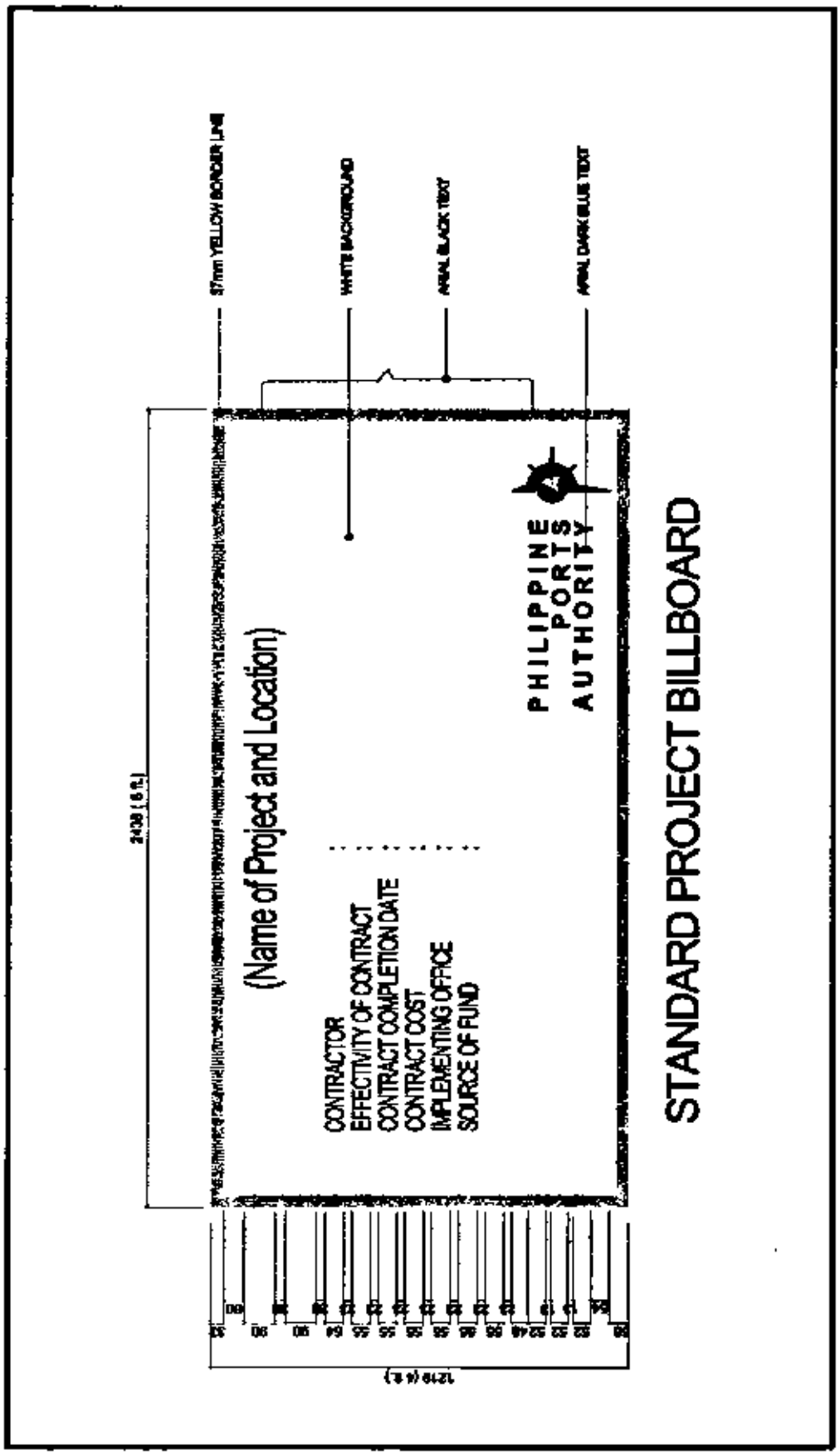
SPECIFICATION

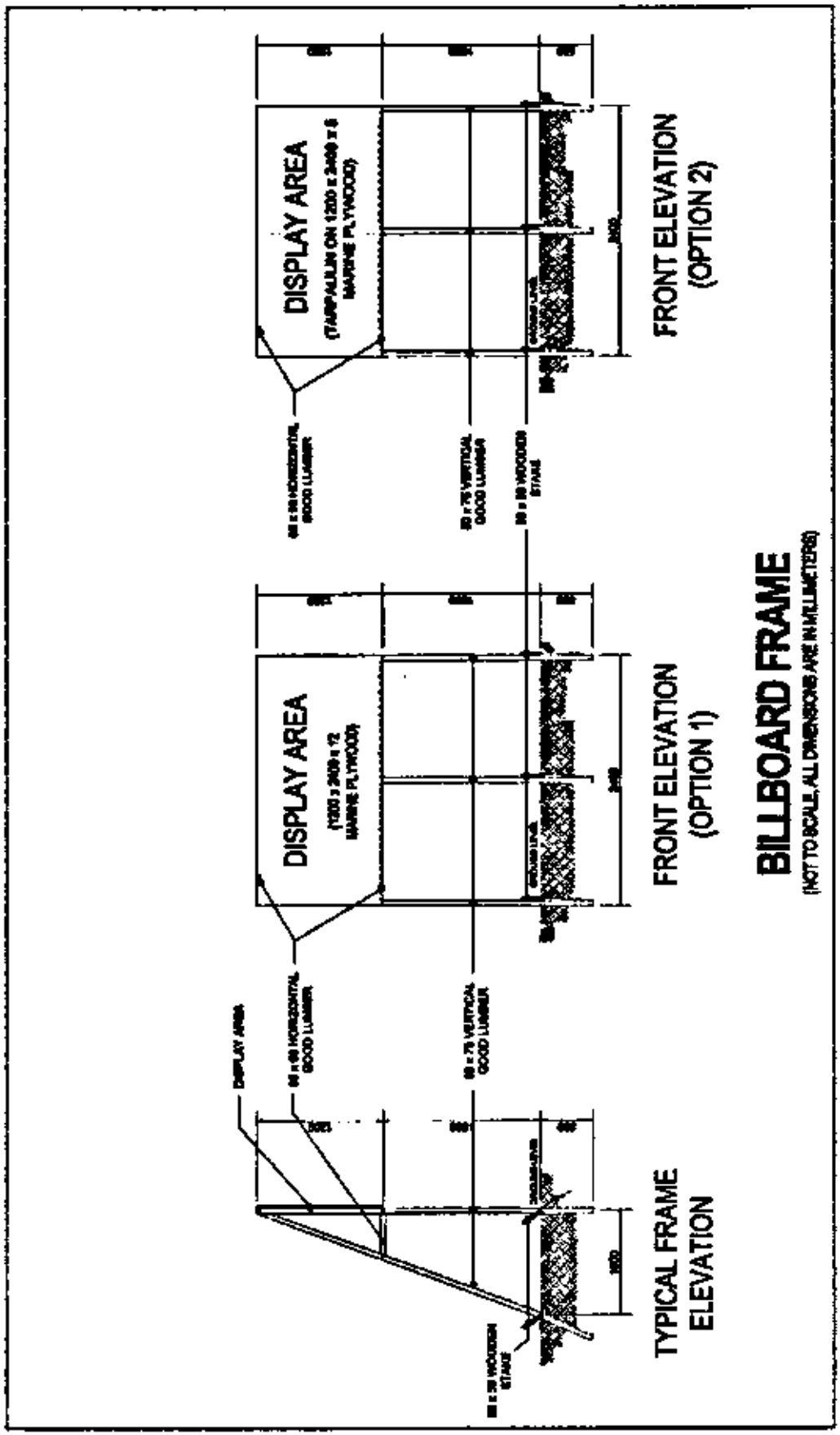
The Project Billboard shall be installed at location(s) designated by the Engineer.

The size and specifications of materials for the standard billboard shall be 4ft. x 8ft. (1,200mm x 2,400mm) using ½ inch (12mm) marine plywood or tarpaulin poster on 3/16 inch (5mm) marine plywood.

Project billboards shall not contain Name(s) and/or picture(s) of any personages.

See attached drawings for further details of the standard billboard.


STANDARD PROJECT BILLBOARD
PHILIPPINE PORTS AUTHORITY
(Name of Project and Location)
CONTRACTOR
EFFECTIVITY OF CONTRACT
CONTRACT COMPLETION DATE
CONTRACT COST
IMPLEMENTING OFFICE
SOURCE OF FUND
57mm YELLOW BORDER LINE
WHITE BACKGROUND
ARIAL BLACK TEXT
ARIAL DARK BLUE TEXT


BILLBOARD FRAME
(NOT TO SCALE, ALL DIMENSIONS ARE IN MILLIMETERS)
FRONT ELEVATION
(OPTION 1)
DISPLAY AREA
(1200 x 2400 x 12
MARINE PLYWOOD)
FRONT ELEVATION
(OPTION 2)
DISPLAY AREA
(TAMPALKAN ON 1200 x 2400 x 6
MARINE PLYWOOD)
TYPICAL FRAME
ELEVATION
DISPLAY AREA

ITEM 12 : REINFORCED CONCRETE

SCOPE OF WORK

All works falling under this Section shall include reinforced concrete for all kinds and parts of any reinforced concrete structure.

GENERAL PROVISIONS

1. Full cooperation shall be given to the other trades to install embedded items. Suitable templates or instructions will be provided for setting, items shall have been inspected, and tests for concrete or other materials or for mechanical operations shall have been completed and approved.

2. The following publications of the issues listed below, but referred to thereafter by basic designation only, form as an integral part of this Specification to the extent indicated by the reference thereto:

   a. American Concrete Institute (ACI) Standards:

ACI 117	Standard Specifications for Tolerances for Concrete Construction and Materials
ACI 121R	Quality Management System for Concrete Construction
ACI 201.2R	Guide to Durable Concrete
ACI 211.1	Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete
ACI 214R	Recommended Practice for Evaluation of Strength Test Results of Concrete
ACI 301	Specifications for Structural Concrete
ACI 304.2R	Placing Concrete by Pumping Methods
ACI 304R	Guide for Measuring, Mixing, Transporting, and Placing Concrete
ACI 305R	Hot Weather Concreting
ACI 306.1	Standard Specification for Cold Weather Concreting
ACI 308R	Guide to Curing Concrete
ACI 309R	Guide for Consolidation of Concrete
ACI 311.4R	Guide for Concrete Inspection
ACI 318M	Metric Building Code Requirements for Structural Concrete and Commentary
ACI 347	Guide to Formwork for Concrete
ACI SP-15	Field Reference Manual: Standard Specifications for Structural Concrete with Selected ACI and ASTM References

ACI SP-2 ACI Manual of Concrete Inspection

b. American Society for Testing and Materials (ASTM) Publications:

ASTM C 150 Standard Specification for Portland Cement

ASTM C 114 Standard Method for Chemical Analysis of Hydraulic Cement

ASTM C 185 Standard Method for Air Content of Hydraulic Cement

ASTM C 115 Standard Test Method for Fineness of Portland Cement by the Turbidimeter

ASTM C 204 Standard Test Method for Fineness of Hydraulic Cement by Air-Permeability Apparatus

ASTM C 151 Standard Test Method for Autoclave Expansion of Portland Cement

ASTM C 109 Standard Test Method for Compressive Strength of Hydraulic Cement Mortars

ASTM C 266 Standard Test Method for Time of Setting of Hydraulic-Cement Paste Gilmore Needles

ASTM C 191 Standard Test Method of Time Setting of Hydraulic Cement by Vicat Needle

ASTM C 33 Standard Specification for Concrete Aggregates

ASTM C 136 Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates

ASTM C 117 Standard Test Method for Materials Finer than 75 micron (No. 200) Sieve in Mineral Aggregates by Washing

ASTM C 29 Standard Test Method for Bulk Density (Unit Weight") and Voids in Aggregate

ASTM C 128 Standard Test Method for Density, Relative Density (Specific Gravity), and Absorption of Fine Aggregates

ASTM C 87 Standard Test Method for Effect of Organic Impurities in Fine Aggregate on Strength of Mortar

ASTM C 88 Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

ASTM C 142 Standard Test Method for Clay Lumps and Friable Particles in Aggregates

ASTM C 97 Standard Test Method for Absorption and Bulk Specific Gravity of Dimension Stone

ASTM C 127 Test Method for Specific Gravity and Absorption of Coarse Aggregate

ASTM C 535 Standard Test Method for Resistance to Degradation of Large-Size Aggregate by Abrasion and Impact in the Los Angeles Machine

ASTM C 88 Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

ASTM C 131 Test Method for Resistance to Degradation of Small-size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine

ASTM C 94 Standard Specification for Ready-Mixed Concrete

ASTM D 512 Chloride Ion in Water

ASTM D 516 Sulfate Ion in Water

ASTM A 615 Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement

ASTM A 370 Standard Test Methods and Definitions for Mechanical Testing of Steel Products

ASTM A 510 Standard Specification for General Requirements for Wire Rods and Coarse Round Wire, Carbon Steel

ASTM A 6 Standard Specification for General Requirements for Rolled Structural Steel Bars, Plates, Shapes, and Sheet Piling

ASTM C 31 Standard Practice for Making and Curing Concrete Test Specimens in the Field

ASTM C 39 Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens

ASTM C 172 Standard Practice for Sampling Freshly Mixed Concrete

ASTM C 192 Standard Practice for Making and Curing Concrete Test Specimens in the Laboratory

ASTM C 293 Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Center-Point Loading)

ASTM C 78 Standard Test Method for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)

ASTM C 42 Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete

ASTM C 174 Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores

ASTM C 143 Standard Test Method for Slump of Hydraulic-Cement Concrete

ASTM C 494 Standard Specification for Chemical Admixtures for Concrete

ASTM C 1017 Standard Specification for Chemical Admixtures for use in Producing Flowing Concrete

ASTM C 171 Standard Specification for Sheet Materials for Curing Concrete

ASTM C 309 Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete

ASTM 5329 Standard Test Methods for Sealants and Fillers, Hot Applied, For Joints and Cracks in Asphaltic and Portland Cement Concrete Pavements

ASTM D 5167 Standard Practice for Melting of Hot Applied Joint and Crack Sealant and Filler for Evaluation

ASTM A 706 Standard Specification for Low-Alloy Steel Deformed and Plain Bars for Concrete Reinforcement

ASTM A 966 Standard Test Method for Magnetic Particle Examination of Steel Forgings using Alternating Current

ASTM C 1064 Standard Test Method for Temperature of Freshly Mixed Hydraulic-Cement Concrete

ASTM C 1077 Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for use in Construction and Criteria for Laboratory Evaluation

ASTM C 1107 Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Non-shrink)

ASTM C 1116 Standard Specification for Fiber-Reinforced Concrete

ASTM C 1157 Standard Specification for Hydraulic Cement

ASTM C 138 Standard Test Method for Density ("Unit Weight"), Yield, and Air Content (Gravimetric) of Concrete

ASTM C 173 Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method

ASTM C 260 Standard Specification for Air-Entraining Admixtures for Concrete

ASTM C 295 Petrographic Examination of Aggregates for Concrete

ASTM C 33 Standard Specification for Concrete Aggregates

ASTM C 42 Standard Test Method for Obtaining and Test Drilled cores and Sawed Beams of Concrete

ASTM C 469 Static Modulus of Elasticity and Poisson's Ratio of Concrete in Compression

ASTM C 595 Standard Specification for Blended Hydraulic Cements

ASTM C1116 Standard Specification for Fiber-Reinforced Concrete and Shotcrete

ASTM C 1751 Preformed Expansion Joint Fillers for Concrete Paving and Structural

Construction.(Non-extruding and Resilient Bituminous Types).

ASTM D 1179 Fluoride Ion in Water

ASTM D 1190 Standard Specification for Concrete Joint Sealer, Hot-Applied Elastic Type

ASTM D 1751 Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types)

ASTM E 329 Standard Specification for Agencies Engaged in the Testing and/ or Inspection of Materials used in Construction

c. American Welding Society (AWS)

D 12 Welding Reinforcing Steel, Metal Inserts and Connections in Reinforced Concrete Construction.

d. Philippine National Standard (PNS)

PNS 49 Steel Bars for Concrete Reinforcement

e. DPWH Standard Specifications

e. All other standards hereinafter indicated.

f. The edition or the revised version of such codes and standards current at the date twenty eight (28) days prior to date of bid submission shall apply. During Contract execution, any changes in such codes and standards shall be applied after approval by the Owner.

SUBMITTALS

1. Test Reports and Certificates shall be furnished and approval received before delivery of certified or tested materials to the Project Sites.

a. Submit Test Reports for the following:

a.1 Concrete mixture proportions

Submit copies of test reports by independent test labs conforming to ASTM C 1077 showing that the mixture has been successfully tested to produce concrete with the properties specified and that mixture will be suitable for the job conditions. Test reports shall be submitted along with the concrete mixture proportions. Obtain approval before concrete placement. Fully describe the processes and methodology whereby mixture proportions were developed and tested and how proportions will be adjusted during progress of the work to achieve, as closely as possible, the designated levels of relevant properties.

a.2 Aggregates

Submit test results for aggregate quality in accordance with ASTM C 33. Where there is potential for alkali-silica reaction, provide results of tests conducted in accordance with ASTM C 227 or ASTM C 1260. Submit results of all tests during progress of the work in tabular and graphical form as noted above, describing the cumulative combined aggregate grading and the percent of the combined aggregate retained on each sieve.

a.3 Admixtures

Submit test results in accordance with ASTM C 494 and ASTM C 1017 for concrete admixtures, ASTM C 260 for air-entraining agent, and manufacturer's literature and test reports for corrosion inhibitor and anti-washout admixture. Submitted data shall be based upon tests performed within 6 months of submittal.

a.4 Cement

Submit test results in accordance with ASTM C 150 Portland cement. Submit current mil data.

a.5 Water

Submit test results in accordance with ASTM D 512 and ASTM D 516.

b. Submit Certificates for the following:

b.1 Curing concrete elements

Submit proposed materials and methods for curing concrete elements.

b.2 Form removal schedule

Submit proposed materials and methods for curing concrete elements.

b.3 Concrete placement and compaction

Submit technical literature for equipment and methods proposed for use in placing concrete. Include pumping or conveying equipment including type, size and material for pipe, valve characteristics, and the maximum length and height concrete will be pumped. No adjustments shall be made to the mixture design to facilitate pumping.

Submit technical literature for equipment and methods proposed for vibrating and compacting concrete. Submittal shall include technical literature describing the equipment including vibrator diameter, length, frequency, amplitude, centrifugal force, and manufacturer's description of the radius of influence under load. Where flat work is to be cast, provide similar information relative to the proposed compacting screed or other method to ensure dense placement.

b.4 Mixture designs

Provide a detailed report of materials and methods used, test results, and the

field test strength (fcr) for marine concrete required to meet durability requirements.

2. The Contractor shall submit shop drawings and erection drawings for formwork and scaffolding at least 14 days prior to commencing the work.

Each shop drawing and erection drawing shall bear the signature of a Contractor's qualified Engineer. Details of all proposed formwork to be prefabricated and formwork to produce special finishes shall be submitted to the Engineer for approval before any materials are ordered. If the Engineer so requires, samples of proposed formworks shall be constructed and concrete placed at the Contractor's expense so that the proposed methods and finished effect can be demonstrated.

The Contractor shall submit shop drawings showing reinforcing bar placing and bar lists for the Engineer's approval. Such shop drawings shall show also supplemental bars for forming, strengthening frames of bars of sufficient rigidity to withstand forces during placing concrete. If necessary, shaped steel may be added to improve rigidity of the frame of bar.

Such shop drawings shall clearly indicate bar sizes, spacing, location and quantities of reinforcement, mesh, chairs, spacers and other details to be as per ACI Manual of Standard Practice for Detailing Reinforced Concrete Structures.

Details shall be prepared for placement of reinforcement where special conditions occur, including most congested areas and connection between pre-cast concrete and concrete in-situ.

All shop drawings shall be reviewed by the Engineer within seven (7) days after receiving them. At least two (2) days prior to pouring concrete, the Contractor shall submit to the Engineer a pouring permit for his inspection and approval.

MATERIAL REQUIREMENTS

CEMENT

Unless otherwise specified in the Drawings, only one (1) brand of cement shall be used for any individual structure. In determining the approved mix, only Portland cement shall be used as the cementitious material.

1. Portland Cement: ASTM C 150

   Type I (for general use in construction)

ADMIXTURE (IF NECESSARY)

Unless otherwise required by field conditions, admixture may be used subject to the expressed approval of the Engineer. The cost of which shall already be included in the unit cost bid of the Contractor for the concrete.

1. Air Entraining Admixture shall conform to ASTM C 260.
2. Admixture other than air entraining agent shall conform to ASTM C 494.
3. Admixture containing chloride ions, or other Ions producing deleterious effect shall

not be used.

AGGREGATES

1. Crushed Coarse Aggregate

Conforming to ASTM C 33 and having nominal sizes passing 38.0 mm to 19.0 mm, 19.0 mm to 9.5 mm to No. 4 sieve. The material shall be well graded between the limits indicated and individually stockpiled. It shall be the Contractor's responsibility to blend the materials to meet the gradation requirements for various types of concrete as specified herein.

Nominal sizes for combined gradation shall be as follows:

ASTM Sieves	Nominal Size of Coarse Aggregates			
	% by Weight Passing			
	40mm	25mm	19mm	10mm
50.0mm (2")	100	-	-	-
38.0mm (1 1/2")	95 - 100	100	-	-
31.8mm (1 1/4")	-	90 - 100	100	-
25.0mm (1")	-	-	90 - 100	-
19.0mm (3/4")	35 - 70	25 - 90	-	100
16.0mm (5/8")	-	-	20 - 55	85 - 100
9.5mm (3/8")	10 - 30	0 - 10	0 - 10	0 - 20
No. 4	0 - 5			

2. Fine Aggregate

ASTM C 33 except for gradation which has been revised to meet local conditions unless otherwise required by the Engineer, grading of find aggregate shall be as follows:

ASTM Sieves	% by Weight Passing
9.5mm (3/8")	100
No.4	90 - 100
No. 8	80 - 100
No. 16	50 - 90
No. 30	25 - 60
No. 50	5 - 30
No. 100	0 - 10

a. Grading of fine aggregates shall be reasonably uniform and fineness modulus thereof shall not vary more than 0.2 from that of the representative sample in which mix proportions of concrete are based.

b. Due care shall be taken to prevent segregation.

WATER

The mixing water shall be clear and apparently clean. If it contains quantities or substances that discolor it or make it smell or taste unusual or objectionable, or cause suspicion, it shall not be used unless service records of concrete made with it (or other information) indicated that it is not injurious to the quality, shall be subject to the acceptance criteria as shown in Table 6.3 and Table 6.4 or as designated by the purchaser.

When wash water is permitted, the producer will provide satisfactory proof or data of non-detrimental effects if potentially reactive aggregates are to be used. Use of wash water will be discontinued if undesirable reactions with admixtures or aggregates occur.

Table 6.3 Acceptance Criteria for Questionable Water Supplies

Test	Limits
Compressive strength, min. % Control at 7 days	90
Time of Setting deviation from control	from 1:00 earlier to 1:30 later
Time of Setting (Gillmore Test) Initial Final Set	 No marked change No marked change
Appearance	Clear
Color	Colorless
Odor	Odorless
Total Solids	500 parts/million max.
PH value	4.5 to 8.5

Table 6.4 Chemical Limitation for Wash Water

	Limits
Chemical Requirements, Minimum Concentration Chloride as $C1^{(-1)}$ expressed as a mass percent of cement when added to the $C1^{(-1)}$ in the other components of the concrete mixtures shall not exceed the following levels:	
1. Prestressed Concrete 2. Conventionally reinforced concrete in a moist environment and exposed to chloride	0.06 percent 0.10 percent

3. Conventionally reinforced concrete in a moist environment but not exposed to chloride	0.15 percent
4. Above ground building construction where the concrete will stay dry	No limit for corrosion
Sulfate as SO_4, ppm[A]	3,000
Alkalies as (Na_2O + 0.658 K_2O), ppm	600
Total Solids, ppm	50,000

Wash water reused as mixing water in concrete may exceed the listed concentrations of sulfate if it can be shown that the concentration calculated in the total mixing water, including mixing water on the aggregate and other sources, does not exceed that stated limits.

Water will be tested in accordance with, and shall meet the suggested requirements of AASHTO T 26.

Water known to be of potable quality may be used without test.

CURING MATERIALS

1. Impervious Sheet Materials

   ASTM C 171 type, optional, except that polyethylene film, if used, shall be white opaque.

2. Burlap of commercial quality, non-staining type, consisting of 2 layers minimum.

3. Membrane Forming Curing Compound

   ASTM C 309; submit evidence that product conforms to specifications.

JOINTING MATERIALS

1. Sealant

   Sealant shall be multi-component, polyurethane base compound, gray in color, self-leveling for horizontal joints, 2 part polythremdyne, terpolymer compound, gray in color; non-sag for vertical joints.

   Sealant shall be compatible with materials in contact and to perform satisfactorily under salt water and traffic conditions, and be capable of making joint watertight and allow movement 25% of the width of joint in any direction.

   Sealant shall be guaranteed against leakage, cracking, crumbling, melting, shrinkage, running, loss of adhesion for a period of five years from the date of acceptance of work.

2. Joint backing shall be expanded extruded polyethylene, low density, oval in shape to fit the joints as indicated on the drawings and to be compatible with sealant.

3. Where required, primer shall be compatible with joint materials and installed in accordance with manufacturer's instructions.

4. Joint filler shall conform to ASTM D1751 (AASHTO M213) non-extruding, resilient bituminous type. Filler shall be furnished for each joint in single piece for depth and width

required for joint, unless otherwise authorized by the Engineer. When more than one piece is authorized for a joint, abutting ends shall be fastened and hold securely to shape by stapling or other positive fastening.

EPOXY BONDING COMPOUND

ASTM C 881. Provide Type I for bonding hardened concrete to hardened concrete; Type II for bonding freshly mixed concrete to hardened concrete; and Type III as a binder in epoxy mortar or concrete, or for use in bonding skid-resistant materials to hardened concrete. Provide Class B if placement temperature is between 4 and 16°C; or Class C if placement temperature is above 16°C.

REINFORCEMENT

Steel reinforcement, other than Steel for Pre-stressing, used in Reinforced Concrete, shall conform to ASTM and PNS as follows:

ASTM Designation A615 - Deformed Billet Steel Bars for Concrete Reinforcement. Minimum yield strength of 276 MPa (40,000 psi).

PNS 49 - Steel Bars for Concrete Reinforcement

TIE WIRE

Tie wire shall be plain, cold drawn annealed steel wire 1.6 mm diameter.

SAMPLES AND TESTING

1. Cement

Sampled either at the mill or at the site of work and tested by an independent commercial or government testing laboratory duly accredited by the Bureau of Research and Standards (BRS) of the DPWH, Department of Science and Technology (DOST) or the Department of Trade and Industry (DTI) at no additional cost to PPA. Certified copies of laboratory test reports shall be furnished for each lot of cement and shall include all test data, results, and certificates that the sampling and testing procedures are in conformance with the Specifications. No cement shall be used until notice has been given by the Engineer that the test results are satisfactory. Cement that has been stored, other than in bins at the mills, for more than 3 months after delivery to the Site shall be re-tested before use. Cement delivered at the Site and later found after test to be unsuitable shall not be incorporated into the permanent works.

2. Aggregates: Tested as prescribed in ASTM C 33

At least 28 days prior to commencing the work, the Contractor shall inform the Engineer of the proposed source of aggregates and provide access for sampling.

Gradation tests will be made on each sample without delay. All other aggregates tests required by these Specifications shall be made on the initial source samples, and shall be repeated whenever there is a change of source. The tests shall include an analysis of each grade of material and an analysis of the combined material representing the aggregate part of the mix.

3. Reinforcement

Certified copies of mill certificates shall accompany deliveries of steel bar reinforcement. If requested by the Engineer additional testing of the materials shall be made at the Contractor's expense.

4. Concrete Tests

For test purposes, provide 1 set of three (3) concrete cylinder samples taken from each day's pouring and to represent not more than 75 cu.m. of concrete class or fraction thereof of concrete placed. Samples shall be secured in conformance with ASTM C 172. Tests specimens shall be made, cured, and packed for shipment in accordance with ASTM C 31. Cylinders will be tested by and at the expense of the Contractor in accordance with ASTM C 39. Test specimens will be evaluated separately by the Engineer, for meeting strength level requirements for each with concrete quality of ACI 318. When samples fail to conform to the requirements for strengths, the Engineer shall have the right to order a change in the proportions of the concrete mix for the remaining portions of the work at no additional cost to the Authority.

5. Test of Hardened Concrete in or Removed from the Structure

When the results of the strength tests of the concrete specimens indicates the concrete as placed does not meet the Specification requirements or where there are other evidences that the quality of concrete is below the specification requirement in the opinion of the Engineer, tests on cores of in-place concrete shall be made in conformance with ASTM C 42.

Core specimens shall be obtained by the Contractor and shall be tested. Any deficiency shall be corrected or if the Contractor elects, he may submit a proposal for approval before the load test is made. If the proposal is approved, the load test shall be made by the Contractor and the test results evaluated by the Engineer in conformance with Chapter 20 of ACI 318. The cost of the load tests shall be borne by the Contractor. If any concrete shows evidence of failure during the load test, or fails the load test as evaluated, the deficiency be corrected in a manner approved by the Engineer at no additional cost to the Authority.

6. Chemical Admixtures/Additives

The admixtures/additives if approved shall conformed to ASTM C 494 and ASTM C 1017. The testing shall be conducted with cement and aggregate proposed for the Project. The admixtures/additives shall be tested and those that have been in storage at the Project Site for longer than six (6) months shall not be used until proven by retest to be satisfactory.

Samples of any admixtures/additives proposed by the Contractor shall be submitted for testing at least 56 days in advance of use, which shall require approval of the Engineer. Testing of admixtures/additives proposed by the Contractor including test mixing and cylinder test shall be at the Contractor's expense.

7. Jointing Materials and Curing Compound Samples

At least 28 days prior to commencing the work, the Contractor shall submit to the Engineer for his approval samples of the following materials proposed for use together with manufacturer's certificate.

a. 10 kg of joint sealant

b. 1m length of joint filler
c. 5 li. of curing compound
d. 1m length of joint backing

The Engineer shall deliver to the Contractor his assessment on the materials within seven (7) days after receiving them.

EXECUTION

DELIVERY, STORAGE AND HANDLING OF MATERIALS

1. Cement

Do not deliver concrete until vapor barrier, forms, reinforcement, embedded items, and chamfer strips are in place and ready for concrete placement. ACI 301 and ASTM A 934 for job site storage of materials. Protect materials from contaminants such as grease, oil, and dirt. Ensure materials can be accurately identified after bundles are broken and tags removed.

Immediately upon receipt at the Site, the cement shall be stored separately in a dry weathertight, properly ventilated structures with adequate provisions for prevention of absorption of moisture. Storage accommodations for concrete materials shall be subject to approval and shall afford easy access for inspection and identification of each shipment in accordance with test reports.

Cement shall be delivered to the Site in bulk or in sound and properly sealed bags and while being loaded or unloaded and during transit to the concrete mixers whether conveyed in vehicles or in mechanical means, cement shall be protected from whether by effective coverings. Efficient screens shall be supplied and erected during heavy winds.

If the cement is delivered in bulk, the Contractor shall provide, at his own cost, approved silos of adequate size and numbers to store sufficient cement to ensure continuity of work and the cement shall be placed in these silos immediately after it has been delivered to the Site. Approved precautions shall be taken into consideration during unloading to ensure that the resulting dust does not constitute a nuisance.

If the cement is delivered in bags, the Contractor shall provide, at his own cost, perfectly waterproofed and well ventilated sheds having a floor of wood or concrete raised at least 0.5m above the ground. The sheds shall be large enough to store sufficient cement to ensure continuity of the work and each consignment shall be stacked separately therein to permit easy access for inspection, testing and approval. Upon delivery, the cement shall at once be placed in these sheds and shall be used in the order in which it has been delivered.

Cement bags should not be stacked more than 13 bags high. All cement shall be used within two months of the date of manufacture. If delivery conditions render this impossible, the Engineer may permit cement to be used up to three (3) month after manufacturing, subject to such conditions including addition of extra cement as he shall stipulate.

2. Aggregate

All fine and coarse aggregate for concrete shall be stored on close fitting, steel or concrete stages design with drainage slopes or in bins of substantial construction in such a manner as to prevent segregation of sizes and to avoid the inclusion of dirt and other foreign materials in the concrete. All such bins shall be emptied and cleaned at intervals of every

six (6) months or as required by the Engineer. Each size of aggregate shall be stored separately unless otherwise approved by the Engineer.

Stockpiles of coarse aggregate shall be built in horizontal layers not exceeding 1.2 m in depth to minimize segregation.

FORMWORK

1. Forms

Designed, constructed, and maintained so as to insure that after removal of forms the finished concrete members will have true surfaces free of offset, waviness or bulges and will conform accurately to the indicated shapes, dimensions, lines, elevations and positions. Form surfaces that will be in contact with concrete shall be thoroughly cleaned before each use.

2. Design

Studs and wales shall be spaced to prevent deflection of form material. Forms and joints shall be sufficiently tight to prevent leakage of grout and cement paste during placing of concrete. Juncture of formwork panels shall occur at vertical control joints, and construction joints. Forms placed on successive units for continuous surfaces shall be fitted in accurate alignment to assure smooth completed surfaces free from irregularities and signs of discontinuity. Temporary opening shall be arranged to wall and where otherwise required to facilitate cleaning and inspection. Forms shall be readily removable without impact, shock, or damage to the concrete.

3. Form Ties

Factory fabricated, adjustable to permit tightening of the forms, removable or snap-off metal of design that will not allow form deflection and will not spall concrete upon removal. Bolts and rods that are to be completely withdrawn shall be coated with a non-staining bond breaker. Ties shall be of the type which provide watertight concrete.

4. Chamfering

External corners that will be exposed shall be chamfered, beveled, or rounded by mouldings placed in the forms or as indicated in the drawings.

5. Coatings

Forms for exposed surfaces shall be coated with form oil or form-release agent before reinforcement is placed. The coating shall be a commercial formulation of satisfactory and proven performance that will not bond with, stain, or adversely affect concrete surfaces, and shall not impair subsequent treatment of concrete surfaces depending upon bond or adhesion nor impede the wetting of surfaces to be cured with water or curing compounds. The coating shall be used as recommended in the manufacturer's printed or written instructions. Forms for unexposed surfaces may be wet with water in lieu of coating immediately before placing of concrete. Surplus coating on form surfaces and coating on reinforcement steel and construction joints shall be removed before placing concrete.

6. Removal of Forms shall be done in a manner as to prevent injury to the concrete and to insure

complete safety of the structure after the following conditions have been met. Where the structure as a whole is supported on shores, forms for beam and girder sides, and similar vertical structural members may be removed before expiration of curing period. Care shall be taken to avoid spalling the concrete surface or damaging concrete edges. Wood forms shall be completely removed.

Minimum stripping and striking time shall be as follows unless otherwise approved by the Engineer.

Vertical sides of beams, walls, and columns, lift not 12 hours exceeding 1.2 m

Vertical sides of beams and walls, lift exceeding 1.2 m 36 hours Softlifts of main slabs and beams (props left under) 5 days

Removal of props from beams and mains slabs and other work 10 days

7. Control Test

If the Contractor proposes to remove forms earlier than the period stated above, he shall be required to submit the results of control tests showing evidence that concrete has attained sufficient strength to permit removal of supporting forms. Cylinders required for control tests shall be provided in addition to those otherwise required by this Specification. Test specimens shall be removed from molds at the end of 24 hours and stored in the structure as near the points as practicable, the same protection from the elements during curing as is given to those portions of the structure which they represent, and shall not be removed from the structure for transmittal to the laboratory prior to expiration of three fourths of the proposed period before removal of forms. Cylinders will be tested by and at the expense of the Contractor. Supporting forms or shoring shall not be removed until control test specimens have attained strength of at least 160 kg/sq cm. The newly unsupported portions of the structure shall not be subjected to heavy construction or material loading.

REINFORCEMENT

1. Reinforcement

Fabricated to shapes and dimensions shown and shall be placed where indicated. Reinforcement shall be free of loose or flaky rust and mill scale, or coating, and any other substance that would reduce or destroy the bond. Reinforcing steel reduced in section shall not be used. After any substantial delay in the work, previously placed reinforcing steel for future bonding shall be inspected and cleaned. Reinforcing steel shall not be bent or straightened in a manner injurious to the steel or concrete. Bars with kinks or bends not shown in the drawings shall not be placed. The use of heat to bend or straighten reinforcing steel shall not be permitted. Bars shall be moved as necessary to avoid interference with other reinforcing steel, conduits, or embedded items. If bars are moved more than one bar diameter, the resulting arrangement of bars including additional bars necessary to meet structural requirements shall be approved before concrete is placed. In slabs, beams and girders, reinforcing steel shall not be spliced at points of maximum stress unless otherwise indicated. Unless otherwise shown in the drawings, laps or splices shall be 40 times the reinforcing bar diameter.

2. The nominal dimensions and unit weights of bars shall be in accordance with the following table:

Nominal Diameter (mm)	Nominal Perimeter (mm)	Nominal Sectional Area (sq. mm)	Unit Weight (kg/m)
10	31.4	78.54	0.616
12	37.7	113.10	0.888
16	50.3	201.10	1.579
20	62.8	314.20	2.466
25	78.5	490.90	3.854
28	88.0	615.70	4.833
32	100.5	804.20	6.313
36	113.1	1,017.60	7.991
40	125.7	1,256.60	9.864
50	157.1	1,963.50	15.413

3. Welding of reinforcing bars shall only be permitted where shown; all welding shown shall be performed in accordance with AWS D 12.1.

4. Exposed reinforcement bars, dowels and plates intended for bonding with future extensions shall be protected from corrosion.

5. Supports shall be provided in conformance with ACI 315 and ACI 318, unless otherwise indicated or specified.

6. Concrete Protection for Reinforcement

   a. The minimum concrete cover of reinforcement shall be as shown below unless otherwise indicated in the drawings.

   b. Tolerance for Concrete Cover of Reinforcing Steel other than Tendons.

   Minimum Cover

   7.5cm or more (marine structures and concrete cast against and permanently exposed to earth)

DESIGN STRENGTH OF CONCRETE

Concrete for structural parts or members such as beams, slabs, curtain wall, pile caps and fender/mooring blocks shall develop a minimum 28-day compressive cylinder strength of 27.5 MPa (4,000 psi) as indicated in the drawings. While for pre-stressed concrete piles a compressive strength of 35 MPa (5,000psi).

TRIAL BATCH FOR CONCRETE

Thirty (30) calendar days before the start of concreting works, the Contractor shall submit design mixes and the corresponding test result made on sample thereof. Sampling and testing shall be in accordance with the ASTM Standard procedures for sampling and testing for the particular design

strength(s) required.

The particulars of the mix such as the slump and the proportionate weights of cement, saturated surface dry aggregates and water used shall be stated.

The design mix for concrete to be used shall be submitted together with at least three (3) standard cylinder samples for approval at least one (1) month prior to the start of each concreting schedule. Such samples shall be prepared in the presence of the Engineer.

Standard laboratory strength tests for the 7, 14 and 28 days periods shall be taken to all concrete samples in addition to routine field tests, at cost to the Contractor. Only design mixes represented by test proving the required strength for 7, 14 and 28 days tests shall be allowed.

The cost of sampling, handling and transporting samples from jobsite to the laboratory and the cost of subsequent tests made until the desired mix is attained shall be for the account of the Contractor.

Slump Test shall be made in conformance with ASTM C143, and unless otherwise specified by the Engineer, slump shall be within the following limits:

Structural Element	Slump for Vibrated Concrete	
	Minimum	Maximum
Pavement Concrete	25mm	50mm
Pre-cast Concrete	50mm	70mm
Lean Concrete	100mm	200mm
Sacked Concrete	25mm	50mm
All other Concrete	50mm	90mm

Sampling : Provide suitable facilities and labor for obtaining representative samples of concrete for the Contractor's quality control and the Engineer's quality assurance testing. All necessary platforms, tools and equipment for obtaining samples shall be furnished by the Contractor.

MIXING CONCRETE

1. GENERAL

a. Concrete shall be thoroughly mixed in a mixer of an approved size and type that will insure a uniform distribution of the materials throughout the mass.

b. All concrete shall be mixed in mechanically operated mixers. Mixing plant and equipment for transporting and placing concrete shall be arranged with an ample auxiliary installation to provide a minimum supply of concrete in case of breakdown of machinery or in case the normal supply of concrete is disrupted. The auxiliary supply of concrete shall be sufficient to complete the casting of a section up to a construction joint that will meet the approval of the Engineer.

c. Equipment having components made of aluminum or magnesium alloys, which would be in contact with plastic concrete during mixing, transporting or pumping of Portland cement concrete, shall not be used.

d. Concrete mixers shall be equipped with adequate water storage and a device for accurately measuring and automatically controlling the amount of water used.

e. Materials shall be measured by weighing. The apparatus provided for weighing the aggregates and cement shall be suitably designed and constructed for this purpose. The accuracy of all weighing devices except that for water shall be such that successive quantities can be measured to within one percent of the desired amounts. The water measuring device shall be accurate to plus or minus 0.5 percent. All measuring devices shall be subject to the approval of the Engineer. Scales and measuring devices shall be tested at the expense of the Contractor as frequently as the Engineer may deem necessary to insure their accuracy.

f. Weighing equipment shall be insulated against vibration or movement of other operating equipment in the plant. When the entire plant is running, the scale reading at cut-off shall not vary from the weight designated by the Engineer by more than one percent for cement, 1-½ percent for any size of aggregate, or one percent for the total aggregate in any batch.

g. Manual mixing of concrete shall not be permitted unless approved by the Engineer.

2. MIXING CONCRETE AT SITE

a. Concrete mixers may be of the revolving drum or the revolving blade type and the mixing drum or blades shall be operated uniformly at the mixing speed recommended by the manufacturer.

The pick-up and throw-over blades of mixers shall be restored or replaced when any part or section is worn 20 mm or more below the original height of the manufacturer's design. Mixers and agitators which have an accumulation of hard concrete or mortar shall not be used.

b. When bulk cement is used and the volume of the batch is 0.5 m^3 or more, the scale and weigh hopper for Portland cement shall be separate and distinct from the aggregate hopper or hoppers.

The discharge mechanism of the bulk cement weigh hopper shall be interlocked against opening before the full amount of cement is in the hopper. The discharging mechanism shall be interlocked against opening when the amount of cement in the hopper is underweight by more than one percent or overweight by more than 3 percent of the amount specified.

c. When the aggregates contain more water than the quantity necessary to produce a saturated surface dry condition, representative samples shall be taken and the moisture content determined for each kind of aggregate.

d. The batch shall be so charged into the mixer that some water enter in advance of cement and aggregates. All water shall be in the drum by the end of the first quarter of the specified mixing time.

e. Cement shall be batched and charged into the mixer by such means that it will not result in loss of cement due to the effect of wind, or in accumulation of cement on surfaces of conveyors or hoppers, or in other conditions which reduce or vary the required quantity of cement in the concrete mixture.

f. Where required, synthetic fibrous reinforcement shall be added directly to the concrete mixer after placing the sufficient amount of mixing water, cement and aggregates.

g. The entire contents of a batch mixer shall be removed from the drum before materials for a succeeding batch are place therein. The materials composing a batch except water shall be deposited simultaneously into the mixer.

h. All concrete shall be mixed for a period of not less that 3 minutes after all materials, including water, are in the mixer. During the period of mixing, the mixer shall operate at the speed for which it has been designed.

i. Mixers shall be operated with an automatic timing device that can be locked by the Engineer. The time device and discharge mechanism shall be so interlocked that during normal operation no part of the batch will be discharged until the specified mixing time has elapsed.

j. The first batch of concrete materials placed in the mixer shall contain a sufficient excess of cement, sand, and water to coat the inside of the drum without reducing the required mortar content of the mix. When mixing is to cease for a period of one hour or more, the mixer shall be thoroughly cleaned.

k. In case of rubble concrete, proper mixture and placing of concrete and stones/rocks shall be in accordance to the approved plan. Methodology of work shall be approved by the Engineer.

3. MIXING CONCRETE IN TRUCKS

a. Truck mixers, unless otherwise authorized by the Engineer, shall be of the revolving drum type, watertight, and so constructed that the concrete can be mixed to insure a uniform distribution of materials throughout the mass. All solid materials for the concrete shall be accurately measured and charged into the drum at the proportioning plant. Except as subsequently provided, the truck mixer shall be equipped with a device by which the quantity of water added can be readily verified. The mixing water may be added directly to the batch, in which case a tank is not required. Truck mixers may be required to be provided with a means by which the mixing time can be readily verified by the Engineer.

b. The maximum size of batch in truck mixers shall not exceed the minimum rated capacity of the mixer as stated by the manufacture and stamped in metal on the mixer. Truck mixing shall, unless otherwise directed, be continued for not less than 100 revolutions after all ingredients, including water, are in the drum. The mixing speed shall not be less than 4 rpm, nor more than 6 rpm.

c. Mixing shall begin within 30 minutes after the cement has been added either to the water or aggregate, but when cement is charged into a mixer drum containing water or surface-wet aggregate and when the temperature is above 32 °C, this limit shall be reduced to 15 minutes. The limitation in time between the introduction of the cement to the aggregate and the beginning of the mixing may be waived when, in the judgment of the Engineer, the aggregate is sufficiently free from moisture, so that there will be no harmful effects on the cement.

d. When a truck mixer is used for transportation, the mixing time in stationary mixer may be reduced to 30 seconds and the mixing completed in a truck mixer. The mixing time in truck mixer shall be as specified for truck mixing.

JOINTS

1. No reinforcement, corner protection angles or other fixed metal items shall be run continuously through joints containing expansion-joint filler, through crack-control joints in slabs on grade and vertical surfaces.

2. Preformed Expansion Joint Filler

a. Joints with Joint Sealant

At expansion joints in concrete slabs to be exposed, and at other joints indicated to receive joint sealant, preformed expansion-joint filler strips shall be installed at the proper level below the elevation with a slightly tapered, dressed-and-oiled wood strip temporarily secured to the top thereof to form a groove. When surface dry, the groove shall be cleaned of foreign matter, loose particles, and concrete protrusions, then filled flush approximately with joint sealant so as to be slightly concave after drying.

b. Finish of concrete at joints

Edges of exposed concrete slabs along expansion joints shall be neatly finished with a slightly rounded edging tool.

c. Construction Joints

Unless otherwise specified herein, all construction joints shall be subject to approval of the Engineer. Concrete shall be placed continuously so that the unit will be monolithic in construction. Fresh concrete may be placed against adjoining units, provided the set concrete is sufficiently hard not to be injured thereby. Joints not indicated shall be made and located in a manner not to impair strength and appearance of the structure. Placement of concrete shall be at such rate that the surface of concrete not carried to joint levels will not have attained initial set before additional concrete is placed thereon. Lifts shall terminate at such levels as are indicated or as to conform to structural requirements as directed. If horizontal construction joints are required, a strip of 25mm square-edged lumber, beveled to facilitate removal shall be tacked to the inside of the forms at the construction joint. Concrete shall be placed to a point 25mm above the underside of the strip. The strip shall be removed one hour after the concrete has been placed. Any irregularities in the joint line shall be leveled off with a wood float, and all laitance removed. Prior to placing additional concrete, horizontal construction joints shall be prepared.

Construction Joint which is not indicated in the Drawings shall be located as to least affect the strength of the structure. Such locations will be pointed out by the Engineer.

PREPARATION FOR PLACING

Hardened concrete, debris and foreign materials shall be removed from the interior of forms and from inner surfaces of mixing and conveying equipment. Reinforcement shall be secured in

position, and shall be inspected, and approved before placing concrete. Runways shall be provided for wheeled concrete-handling equipment. Such equipment shall not be wheeled over reinforcement nor shall runways be supported on reinforcement.

Notice of any concreting operations shall be served to the Engineer at least three (3) days ahead of each schedule.

PLACING CONCRETE

1. Handling Concrete

Concrete shall be handled from mixers and transported to place for final deposit in a continuous manner, as rapidly as practicable, and without segregation or loss of ingredients until the approved unit of work is completed. Placing will not be permitted when the sun, heat, wind or limitations of facilities furnished by the Contractor prevent proper finishing and curing of the concrete. Concrete shall be placed in the forms, as close as possible in final position, in uniform approximately horizontal layers not over 40cm deep. Forms splashed with concrete and reinforcement splashed with concrete or form coating shall be cleaned in advance of placing subsequent lifts. Concrete shall not be allowed to drop freely more than 1.5m in unexposed work nor more than 1.0 m in exposed work; where greater drops are required, tremie or other approved means shall be employed.

2. Time Interval between Mixing and Placing

Concrete mixed in stationary mixers and transported by non-agitating equipment shall be placed in the forms within 30 minutes from the time ingredients are charged into the mixing drum. Concrete transported in truck mixers or truck agitators shall be delivered to the site of work, discharged in the forms within 45 minutes from the time ingredients are discharged into the mixing drum. Concrete shall be placed in the forms within 15 minutes after discharged from the mixer at the jobsite.

3. Hot Weather Requirements

The temperature of concrete during the period of mixing while in transport and/or during placing shall not be permitted to rise above 36 °C. Any batch of concrete which had reached a temperature greater than 36 °C at any time in the aforesaid period shall not be placed but shall be rejected, and shall not thereafter be used in any part of the permanent works.

a. Control Procedures

Provide water cooler facilities and procedures to control or reduce the temperature of cement, aggregates and mixing handling equipment to such temperature that, at all times during mixing, transporting, handling and placing, the temperature of the concrete shall not be greater than 36 °C.

b. Cold Joints and Shrinkage

Where cold joints tend to form or where surfaces set and dry too rapidly or plastic shrinkage cracks tend to appear, concrete shall be kept moist by fog sprays, or other approved means, applied shortly after placement, and before finishing.

c. Supplementary Precautions

When the aforementioned precautions are not sufficient to satisfy the

requirements herein above, they shall be supplemented by restricting work during evening or night. Procedure shall conform to American Concrete Institute Standard ACI 305.

4. Conveying Concrete by Chute, Conveyor or Pump

Concrete may be conveyed by chute, conveyor, or pump if approved in writing. In requesting approval, the Contractor shall submit his entire plan of operation from the time of discharge of concrete from the mixer to final placement in the forms, and the steps to be taken to prevent the formation of cold joints in case the transporting of concrete by chute, conveyor or pump is disrupted. Conveyors and pumps shall be capable of expeditiously placing concrete at the rate most advantageous to good workmanship. Approval will not be given for chutes or conveyors requiring changes in the concrete materials or design mix for efficient operation.

a. Chutes and Conveyors

Chutes shall be of steel or steel lined wood, rounded in cross section rigid in construction, and protected from overflow. Conveyors shall be designed and operated and chute sections shall be set, to assure a uniform flow of concrete from mixer to final place of deposit without segregation of ingredients, loss of mortar, or change in slump. The discharged portion of each chute or conveyor shall be provided with a device to prevent segregation. The chute and conveyor shall be thoroughly cleaned before and after each run. Waste material and flushing water shall be discharged outside the forms.

b. Pumps shall be operated and maintained so that a continuous stream of concrete is delivered into the forms without air pockets, segregation or changes in slump. When pumping is completed, concrete remaining in the pipeline shall be ejected and wasted without contamination of concrete already placed. After each operation, equipment shall be thoroughly cleaned and the flushing water shall be splashed outside the forms.

5. Wall and Abutments

No load shall be placed upon finished walls, foundations or abutments until authorized by the Engineer. Minimum time before loading shall be 7 days.

6. Concrete Placing on Wharf

When placing concrete on wharf decks, the Contractor shall:

Ensure that rate of placing is sufficient to complete proposed placing, finishing and curing operations within the scheduled time; that experienced finishing machine operators and concrete finishers are provided to finish the deck; that curing equipment and finishing tools and equipment are at the site of work and in satisfactory condition for use.
Immediately prior to placing, the Contractor shall place scaffolding and wedges and make necessary adjustments. Care shall be taken to ensure that settlement and deflection due to added weight of concrete will be minimal. The Contractor shall provide suitable means to readily permit measurement of settlement deflection as it occurs.

Should any event occur which, in opinion of the Engineer, would prevent the

concrete conforming to specified requirements, the Contractor shall discontinue placing of concrete until corrective measures are provided satisfactory to the Engineer. If satisfactory measures are not provided prior to initial set of concrete in affected areas, the Contractor shall discontinue placing concrete and install a bulkhead at a location determined by the Engineer. Concrete in place beyond bulkheads shall be removed. The Contractor shall limit the size of casting to that which can be finished before beginning of initial set.

COMPACTION

1. Immediately after placing, each layer of concrete shall be completed by internal concrete vibrators supplemented by hand-spading, rodding, and tamping. Tapping or other external vibration of forms will not be permitted unless specifically approved by the Engineer. Vibrators shall not be used to transport concrete inside the forms. Internal vibrators submerged in concrete shall maintain a speed of not less than 7,000 impulses per minute. The vibrating equipment shall at all times be adequate in number of units and power to properly consolidate all concrete.

2. Spare units shall be on hand as necessary to insure such adequacy. The duration of vibrating equipment shall be limited to the time necessary to produce satisfactory consolidation without causing objectionable segregation. The vibrator shall not be inserted into the lower courses that have begun to set. Vibrator shall be applied vertically at uniformly spaced points not further apart than the visible effectiveness of the machine.

EPOXY BONDING COMPOUND

Before depositing new concrete on or against concrete that has set, the surfaces of the set concrete shall be thoroughly cleaned so as to expose the coarse aggregate and be free of laitance, coatings, foreign matter and loose particles. Forms shall be re-tightened. The cleaned surfaces shall be moistened, but shall be without free water when concrete is placed. ASTM C 881. Provide Type I for bonding hardened concrete to hardened concrete; Type II for bonding freshly mixed concrete to hardened concrete; and Type III as a binder in epoxy mortar or concrete, or for use in bonding skid-resistant materials to hardened concrete. Provide Class B if placement temperature is between 4 to 16 °C; or Class C if placement temperature is above 16°C.

FINISHES OF CONCRETE

Within 12 hours after the forms are removed, surface defects shall be remedied as specified herein. The Temperature of the concrete, ambient air and mortar during remedial work including curing shall be above 10 °C. Fine and loose material shall be removed. Honeycomb, aggregate pockets, voids over 13mm in diameter, and holes left by the rods or bolts shall be cut out to solid concrete, reamed, thoroughly wetted, brush-coated with neat cement grout, and filled with mortar. Mortar shall be a stiff mix of one part Portland cement to not more than 2 parts fine aggregate passing the No. 16 mesh sieve, with a minimum amount of water. The color of the mortar shall match the adjoining concrete color. Mortar shall be thoroughly compacted in place. Holes passing entirely through walls shall be completely filled from the inside face by forcing mortar through the outside face. Holes which do not pass entirely through wall shall be packed full. Patchwork shall be finished flush and in the same plane as adjacent surfaces. Exposed patchwork shall be finished to match adjoining surfaces in texture and color. Patchwork shall be damp-cured for 72 hours. Dusting of finish surfaces with dry material or adding water to concrete surfaces will not be permitted.

CONCRETE FINISHING DETAILS

1. Concrete Paving

After concrete is placed and consolidated, slabs shall be screeded or struck off. No further finish is required.

2. Smooth Finish

Required only where specified; screed concrete and float to required level with no coarse aggregate visible. After surface moisture has disappeared and laitance has been removed, the surface shall be finished by float and steel trowel. Smooth finish shall consist of thoroughly wetting and then brush coating the surfaces with cement to not more than 2 parts fine aggregate passing the no. 30 mesh sieve and mixed with water to the consistency of thick paint.

3. Broom Finish

Required for paving; the concrete shall be screeded and floated to required finish level with no coarse aggregate visible. After the surface moisture has disappeared and laitance has been removed, surface shall be float-finished to an even, smooth finish. The floated surfaces shall be broomed with a fiber bristle brush in a direction transverse to the direction of the main traffic.

SECTION VII

DRAWINGS
(APPROVED PLANS)

SECTION VII

DRAWINGS AND APPROVED PLANS

(SEE ISSUED APPROVED PLANS)

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53 of 94 - PTB 2 Second Floor Sanitary Layout

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84 of 94 - Guest and Security Building – Isometric Layout

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86 of 94 - Storm Drainage Layout- Isometric View

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88 of 94 - Guest and Security Building- Lighting Layout

89 of 94 - Guest and Security Building- Switch Layout

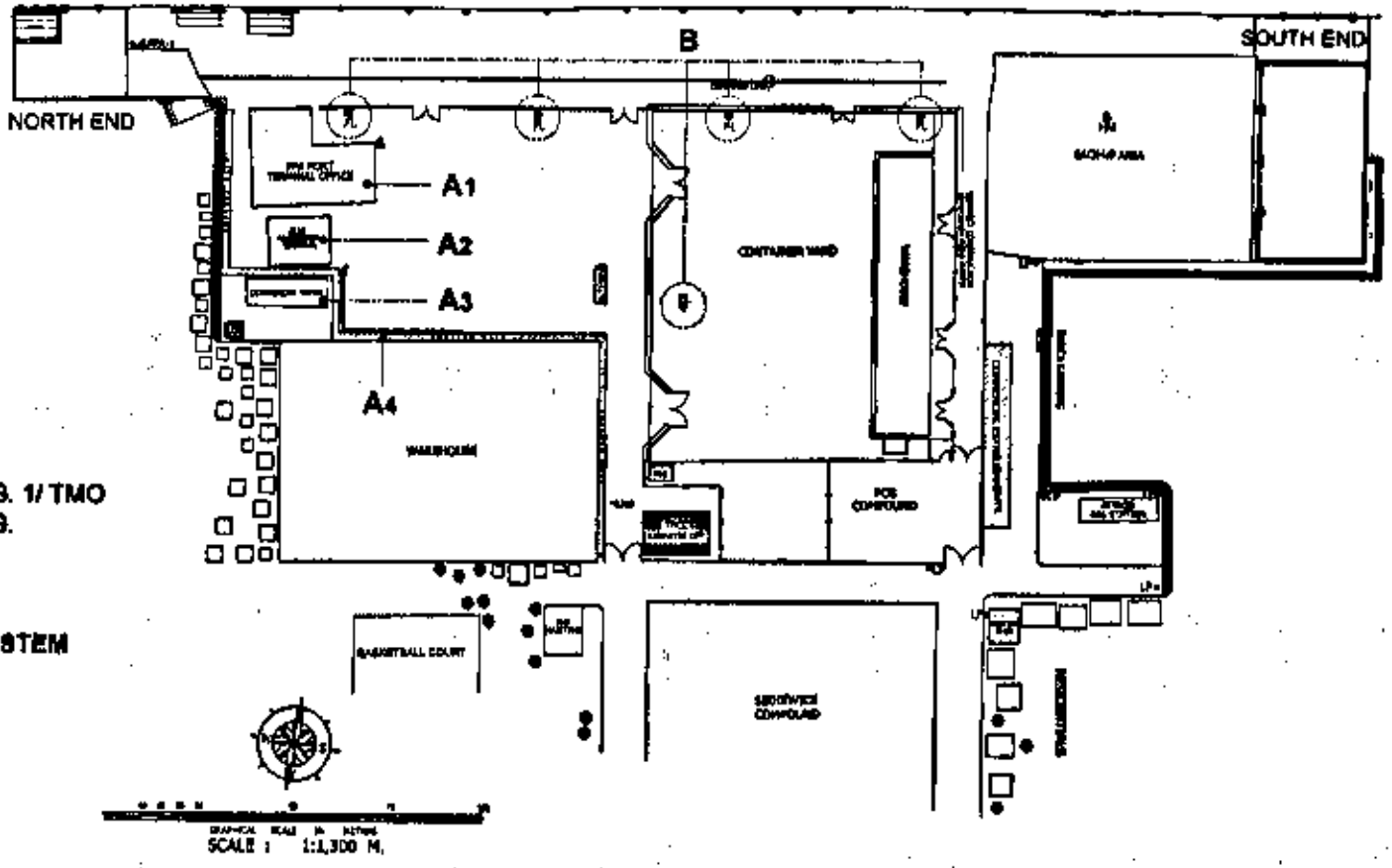
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91 of 94 - Covered Walkway, Vicinity Map

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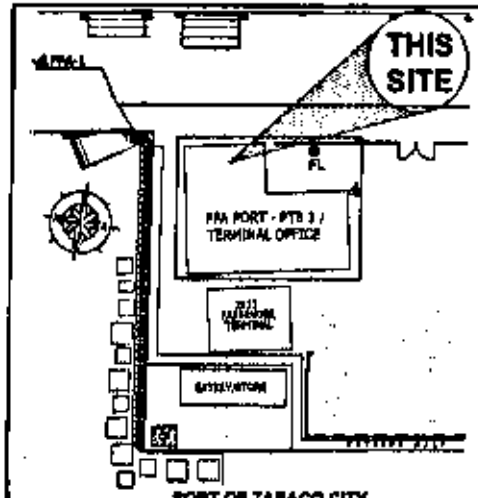
A. REPAIR OF PPA BUILDINGS

(A1) PASSENGER TERMINAL BLDG. 1/ TMO
(A2) PASSENGER TERMINAL BLDG.
(A3) COMMERCIAL SPACE
(A4) COVERED WALKWAY

B. REPAIR OF PORT LIGHTING SYSTEM
FL - FLOOD LIGHTS

1 PORT OF TABACO CITY
SITE DEVELOPMENT PLAN
SCALE 1:1300mts

PHILIPPINE PORTS AUTHORITY PORT MANAGEMENT OFFICE OF BICOL	PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING PORT OF TABACO CITY, ALBAY			SHEET NO. 1 of 14
	PREPARED BY: AGAPITO LLOYD E. TALAY, USD ARCHITECT II	CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG SUPERVISING ENGINEER A	RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS ACTING DIVISION MANAGER A, ISD	APPROVED: MA. MAGNOLIA SINSUAT-REQUEJO PORT MANAGER	JUNE 24, 2024

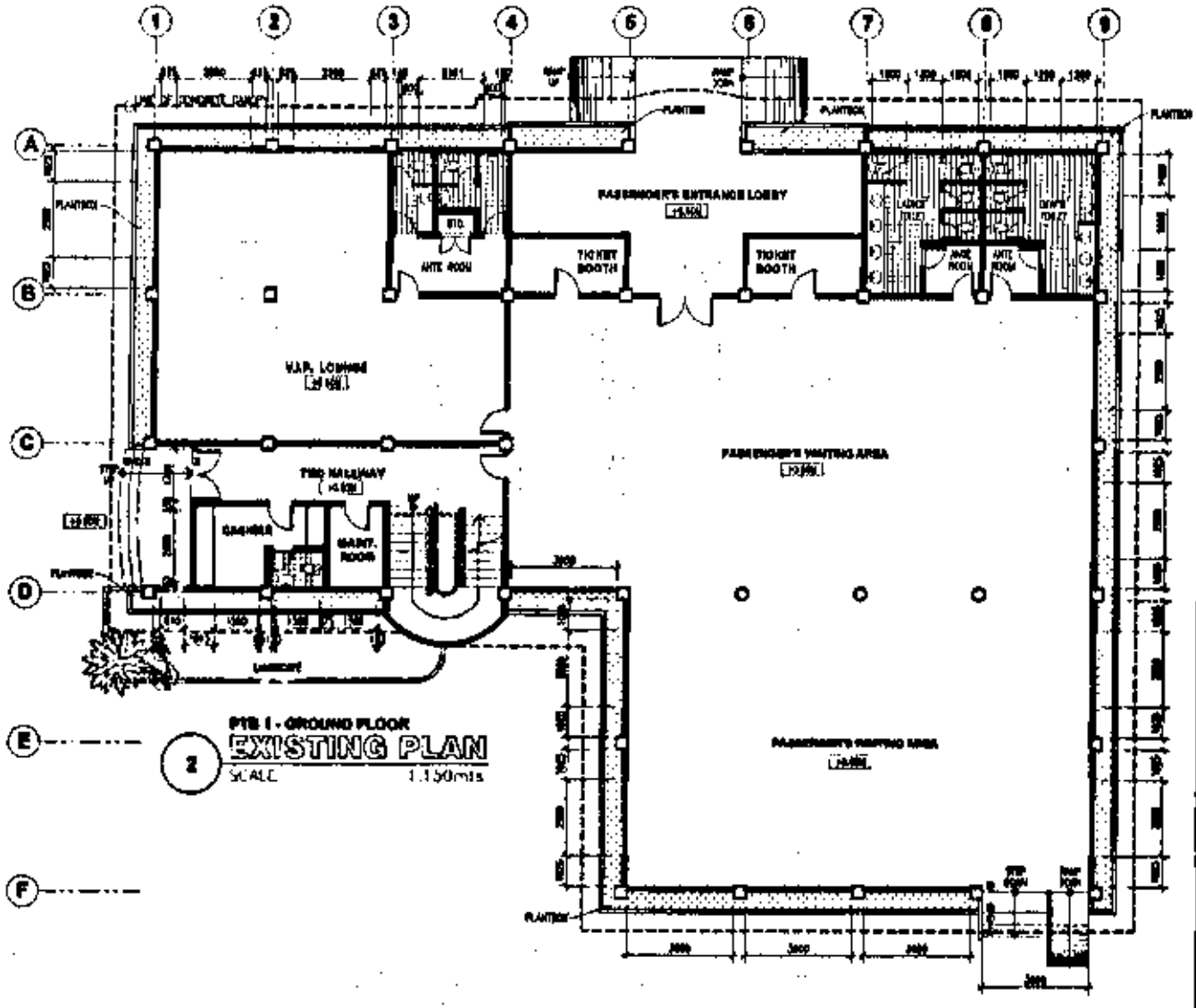


PORT OF TABACO CITY

1 VICINITY MAP

SCALE NTS

SCOPE OF WORK - PTB 1	
DESCRIPTION	AMOUNT/UNIT
REPAIR OF CEILING	250m²
REMOVAL OF ALL ELECTRICAL UNIT AND REPLACEMENT OF ALL ELECTRICAL DEVICES - LIGHTING/POWER OUTLETS AND CIRCUIT BREAKERS	SEE DETAILS
REPLACEMENT OF DOORS AND WINDOWS	SEE DETAILS
PROVISION FOR CONCRETE AND GRANITE	14 UNITS - SEE DETAILS
PROVISION FOR GLASS WITH STEEL FRAMING	SEE DETAILS
REPLACEMENT OF MODULAR CUBICLE PARTITIONS & PARTITIONS	SEE DETAILS
REPLACEMENT OF PARTITIONS TOILETS: MEN'S CLOSET URINAL ACCESSORIES	9 UNITS 5 UNITS SEE DETAILS
INSTALLATION OF LEGAL PARTITIONS	9 UNITS
REMOVING OF SEPTIC TANKS AND PLUMBING LINES	
REPAINTING OF INTERIOR AND EXTERIOR WALLS AND SURFACES	
RELOCATION OF DOOR EXIT AND ACCESS, INSTALLATION OF HANDRAIL	SEE DETAILS
EXTENSION AND CONSTRUCTION OF NEW PLANTBOX AND PROTECTIVE RAILING	
DEMOLITION OF CONCRETE WALLS AND FLOORS	SEE DETAILS
INSTALLATION OF R/R PIPE LOOP	SEE DETAILS
REPLACEMENT OF FLOOR TILES	SEE DETAILS



PTB 1 - GROUND FLOOR

2 EXISTING PLAN

SCALE 1:150mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 2 / 94

PREPARED BY: AGAPITO LEONEL L. TALAY, ME
ARCHITECT II

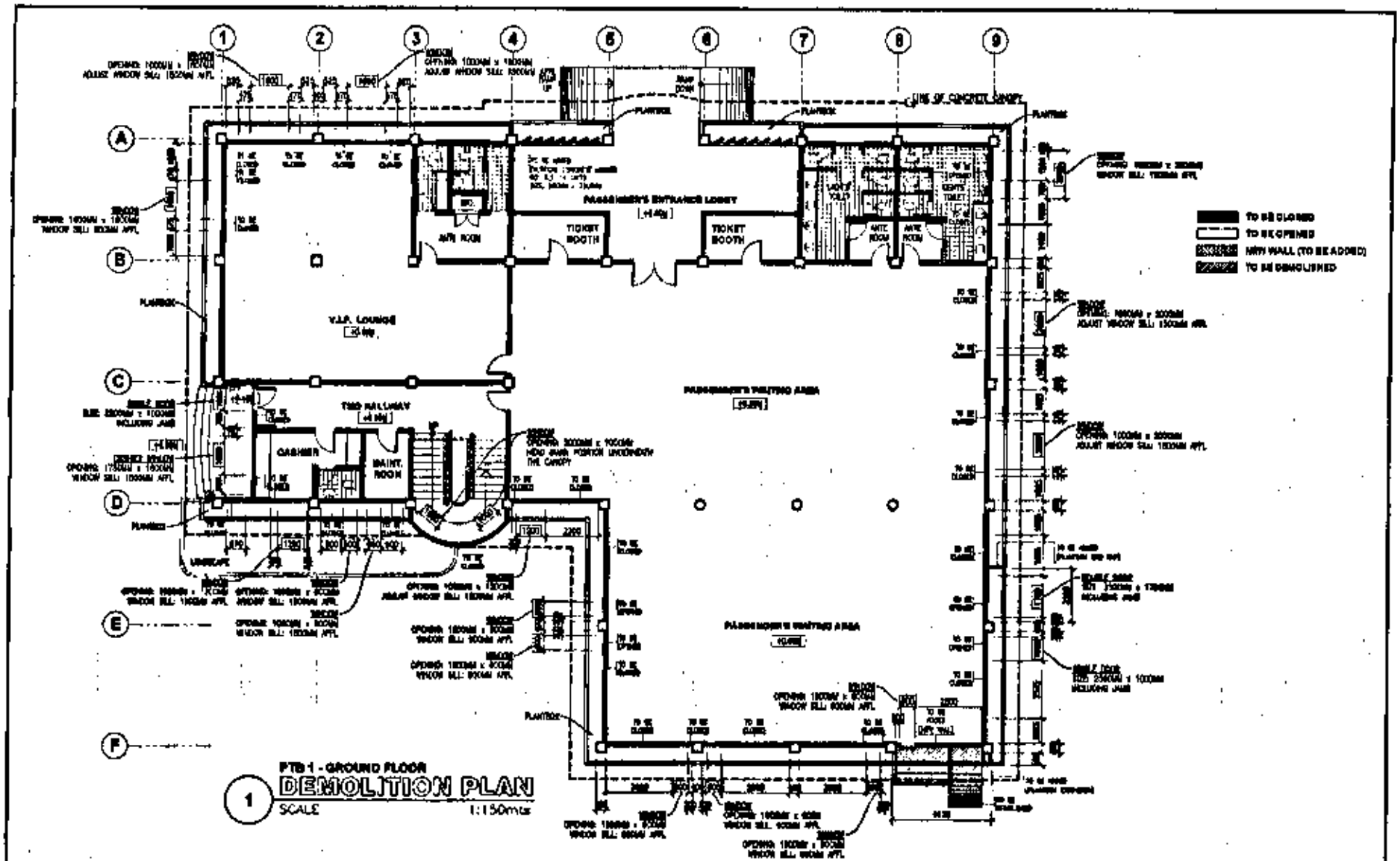
CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG
SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS
ACTING DIVISION MANAGER A, ESD

APPROVED: MA. MAGNOLIA SIMSON-REQUEJO
PORT MANAGER

PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE OF TABACO

JUNE 30, 2024



PTB 1 - GROUND FLOOR

1 DEMOLITION PLAN

SCALE 1:150mtrs

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 3 / 94

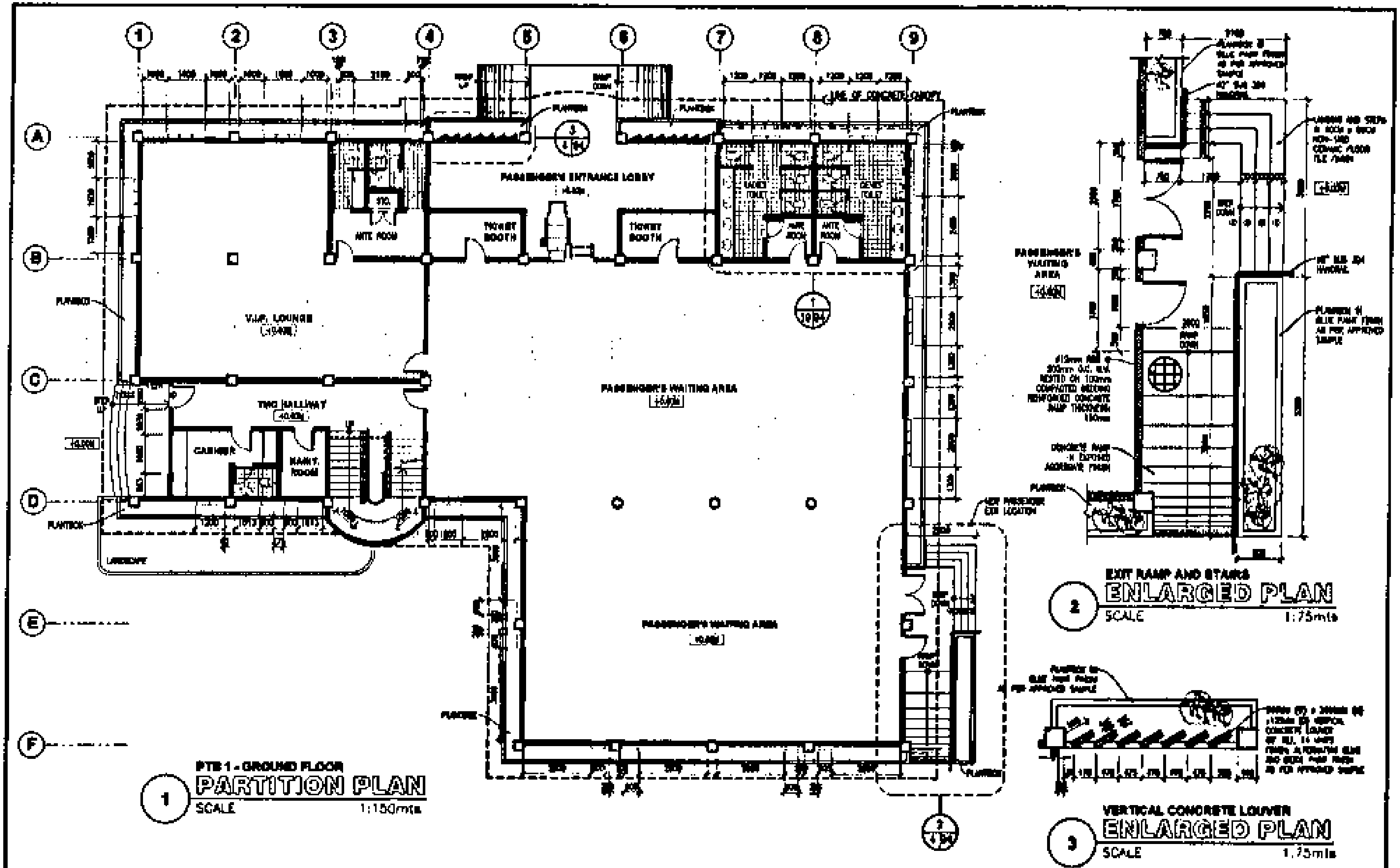
PREPARED BY: AGAPITO LLOYD C. TALAY, ugp
PROJECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG
SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS
ACTING DISTRICT MANAGER A, ESD

APPROVED: MA. MAGNOLIA SIMSON-REQUEJO
PORT MANAGER

JUNE 24, 2004

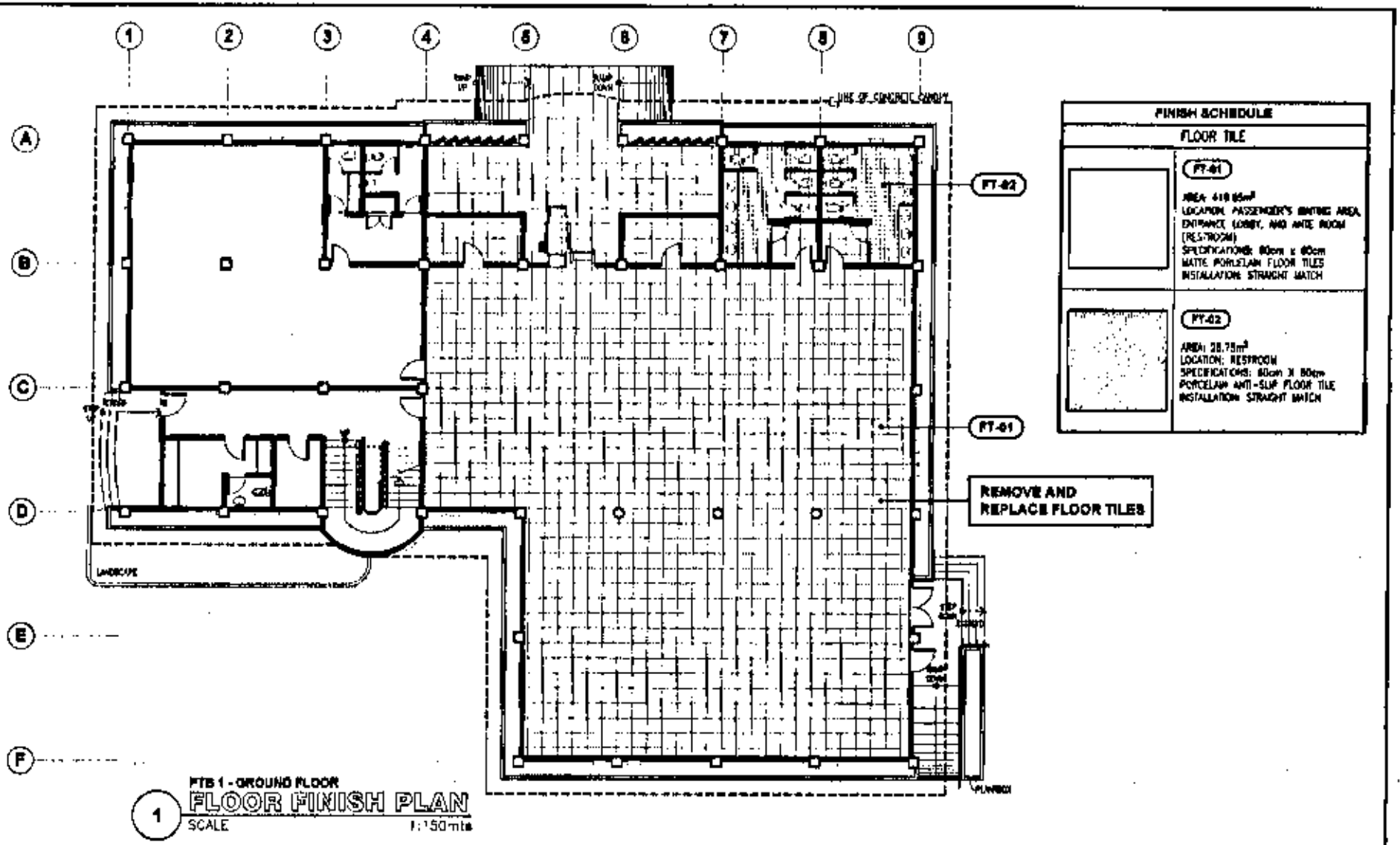


PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING

PORT OF TABACO CITY, ALBAY

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED	SHEET NO.
AGAPITO LLOYD A. TALAY, uap — ARCHITECT II	CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A	JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, ESD	MA. MAGNOLIA SINSON-REQUEJO — PORT MANAGER	4 / 94

PHILIPPINE PORTS AUTHORITY — PORT MANAGEMENT OFFICE OF BICOL



FINISH SCHEDULE

FLOOR TILE

FT-01

AREA: 618.85m²
LOCATION: PASSENGER'S WAITING AREA, ENTRANCE LOBBY, AND ANTE ROOM (RESTROOM)
SPECIFICATIONS: 60cm x 60cm MATTE PORCELAIN FLOOR TILES
INSTALLATION: STRAIGHT MATCH

FT-02

AREA: 28.75m²
LOCATION: RESTROOM
SPECIFICATIONS: 60cm X 60cm PORCELAIN ANTI-SLIP FLOOR TILE
INSTALLATION: STRAIGHT MATCH

PTB 1 - GROUND FLOOR

1 FLOOR FINISH PLAN

SCALE 1:150mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 5 of 14

PORT MANAGEMENT OFFICE OF BICOL

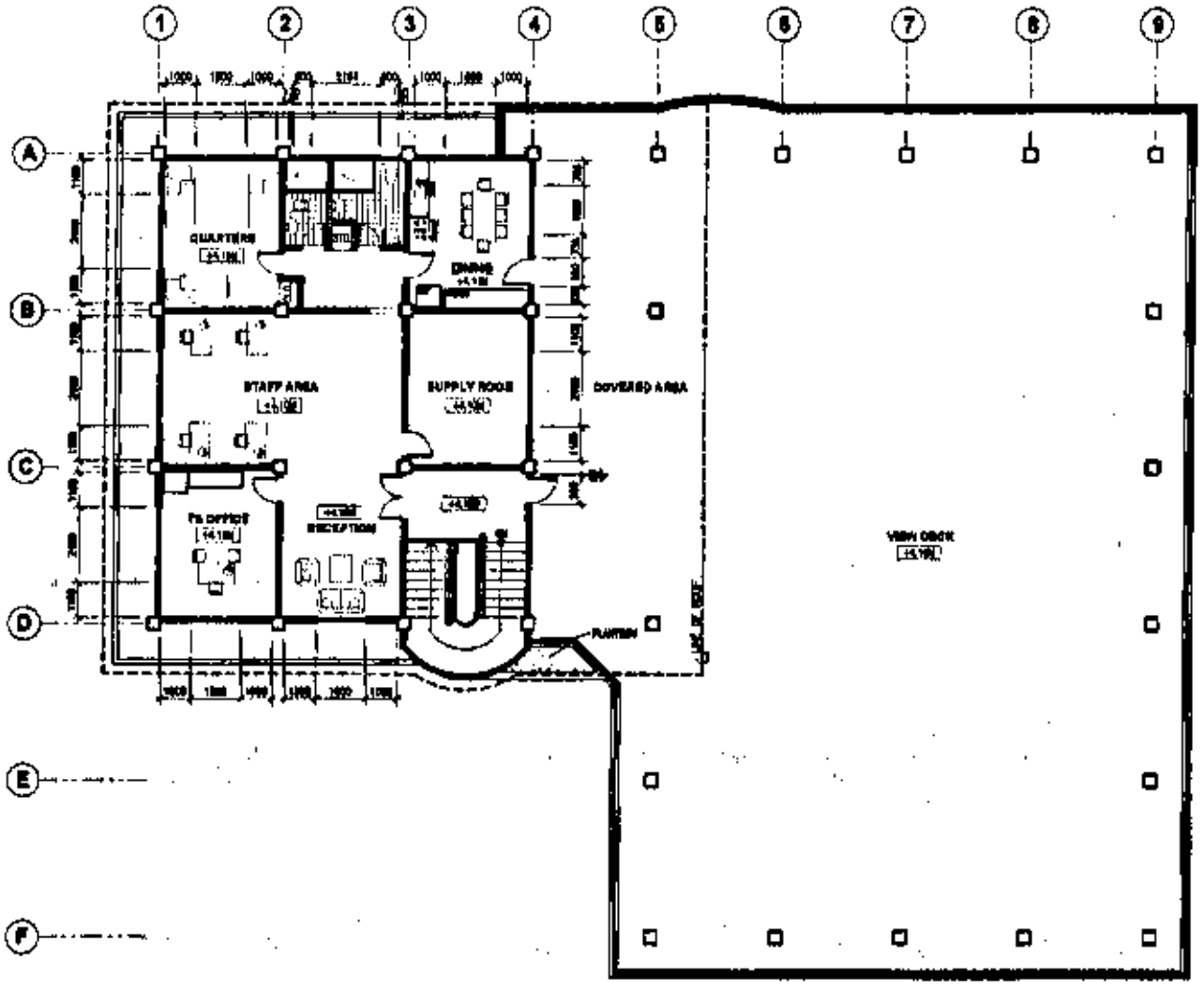
PREPARED BY: AGAPITO LLOYD L. TALAY, uap
ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG
SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS
ACTING DIVISION MANAGER A, ESD

APPROVED: MA. MAGNOLIA SINSON-PEQUEJO
PORT MANAGER

JUNE 26, 2024



PTB 1 - SECOND FLOOR

1 **EXISTING PLAN**

SCALE 1:150mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TAWIAN CITY, ALBAY

SHEET NO. 4 / 94

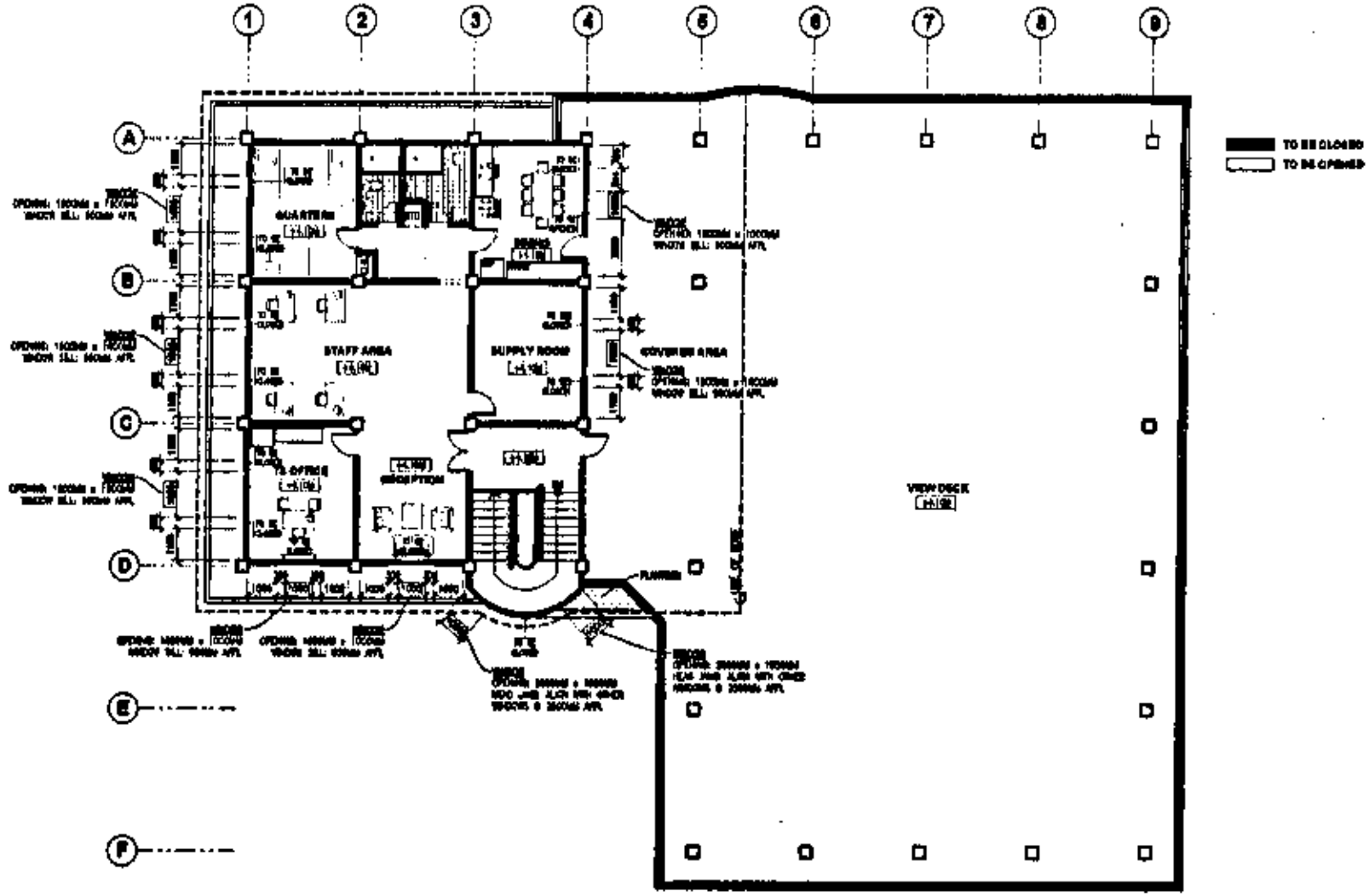
PREPARED BY: AGAPITO LLOYD L. TALAY, ugp — ARCHITECT I

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAO — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, OIC

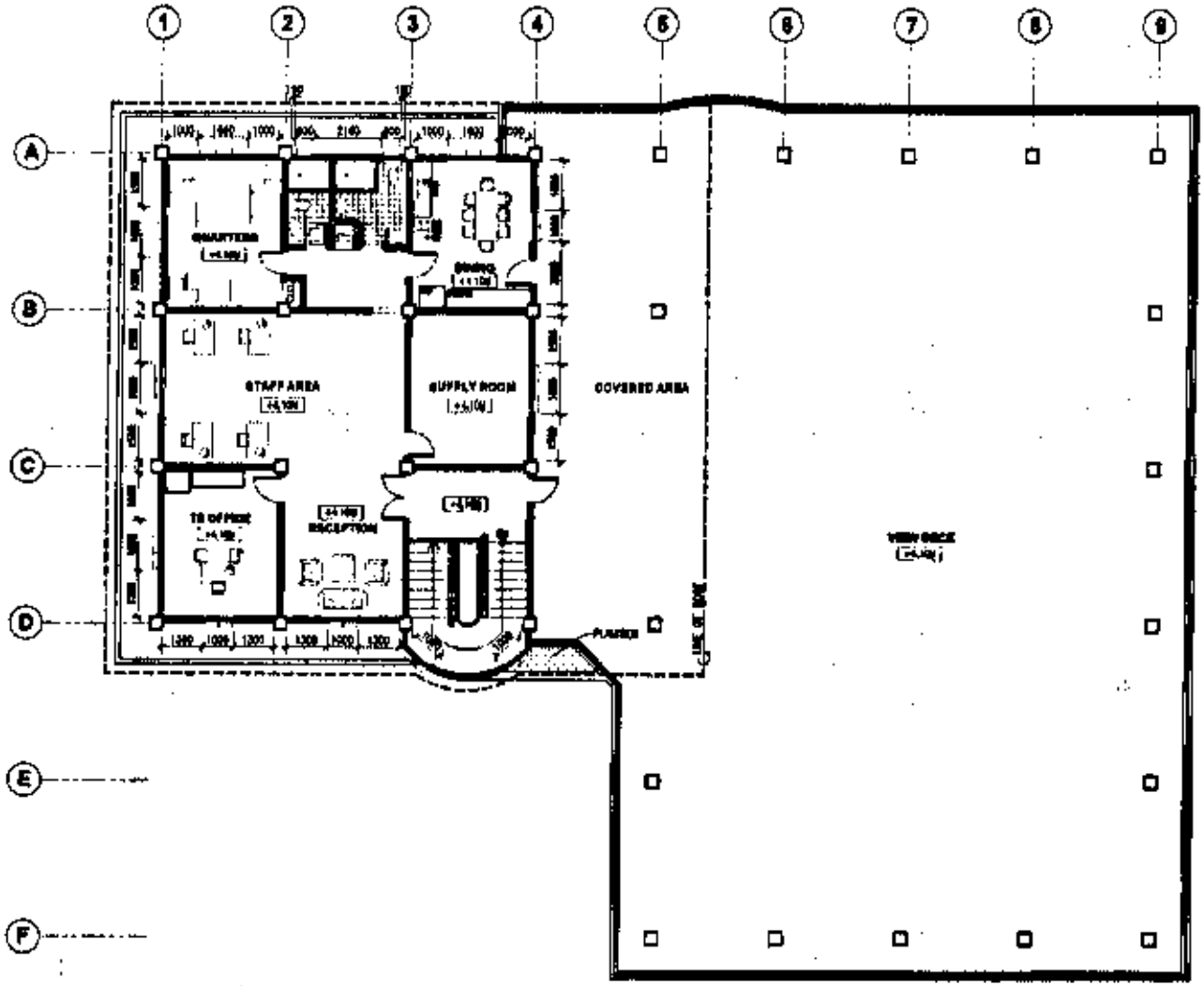
APPROVED: MA. MAGNOLIA SINSUAT REQUEJO — PORT MANAGER

ANE 84, RDN



1 PTB 1 - SECOND FLOOR
DEMOLITION PLAN
SCALE 1:150mtrs

PHILIPPINE PORTS AUTHORITY PORT MANAGEMENT OFFICE OF ILOILO	PROJECT TITLE IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING PORT OF ILOILO CITY, ILOILO			SHEET NO. 7 14
	PREPARED BY AGAPITO LLOYD U. TALAY, ESP PROJECT II	CHECKED/REVIEWED BY CHRISTOPHER M. CADAG SUPERVISING ENGINEER A	RECOMMENDING APPROVAL JOHN S. DE LOS SANTOS ACTING BRANCH MANAGER A, CED	APPROVED MA. MAGNOLIA SINSUAT-BOQUEJO PORT MANAGER
				JUNE 14, 2024



PTB 1 - SECOND FLOOR

1 **PARTITION PLAN**

SCALE 1:150mls

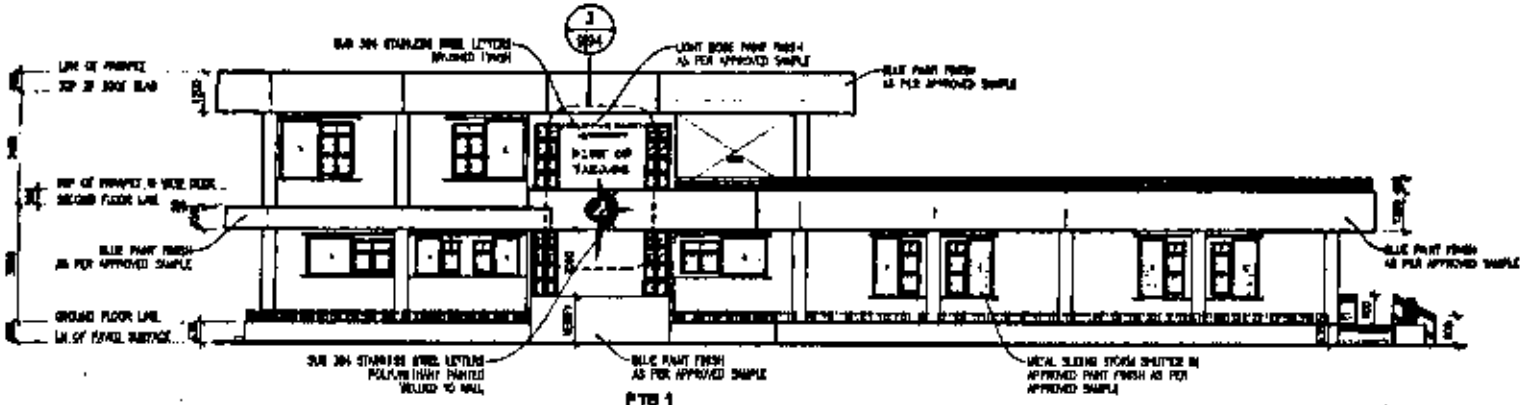
PORT MANAGEMENT OFFICE OF BICOL

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF PILAR CAP. ALBAY

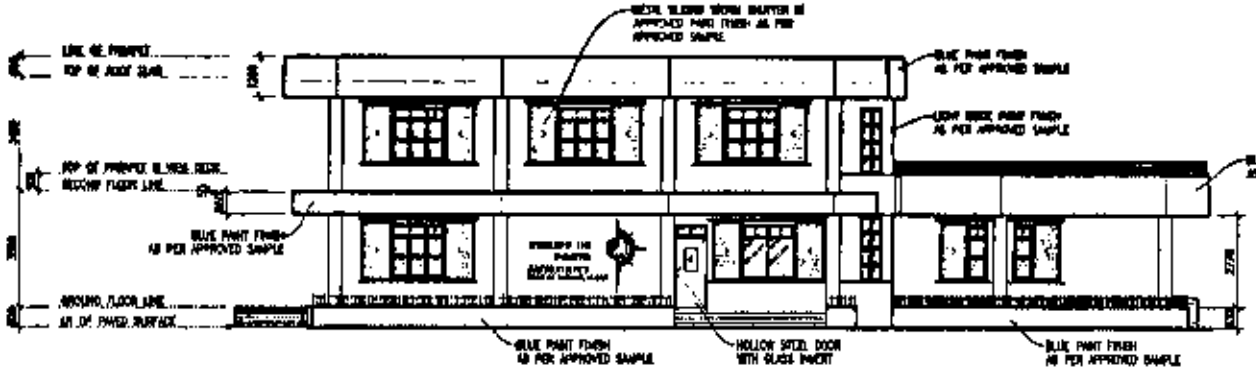
SHEET NO. 8 / 94

PREPARED BY	CHECKED/REVISED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LORVO L. TALAY, UBP	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-REQUEJO
ARCHITECT II	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, ESD	PORT MANAGER

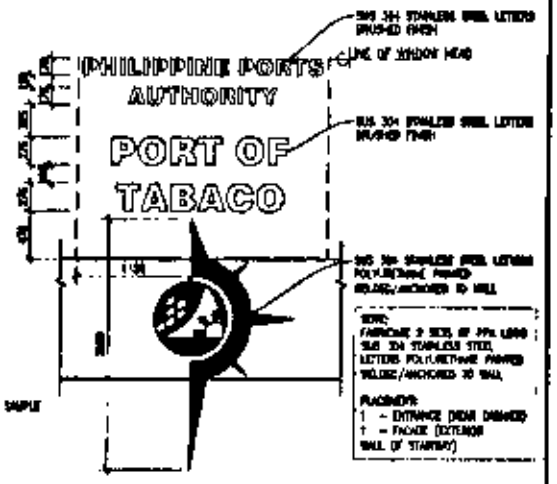
JUNE 24, 2024



PTB 1
1 FRONT ELEVATION
SCALE 1:150mts



PTB 1
2 LEFT SIDE ELEVATION
SCALE 1:150mts



STAINLESS STEEL LETTERS
3 DETAILED ELEVATION
SCALE 1:50mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB I & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, QUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 9/94

PREPARED BY: AGAPITO L. TALAY, uap — ARCHITECT II

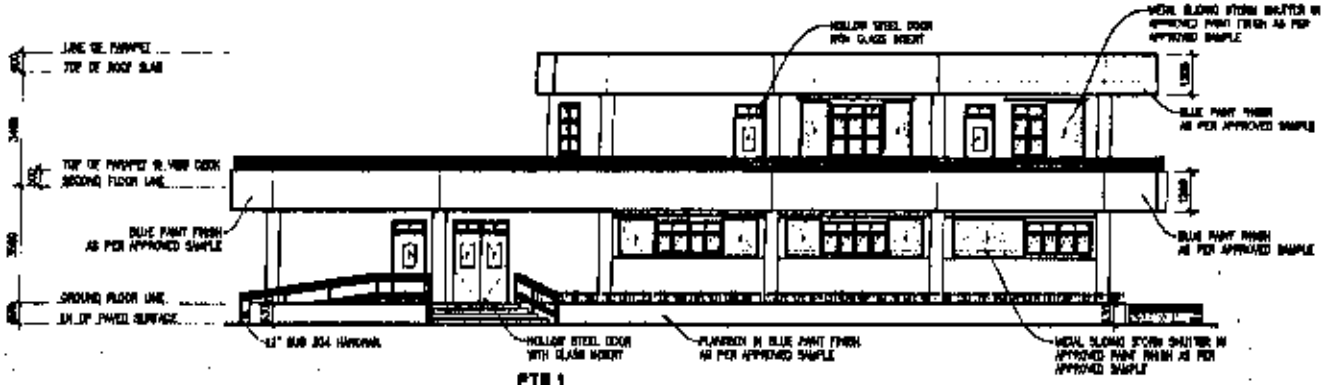
CHECKED/REVIEWED BY: CHRISTOPHER M. CACAO — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, ESD

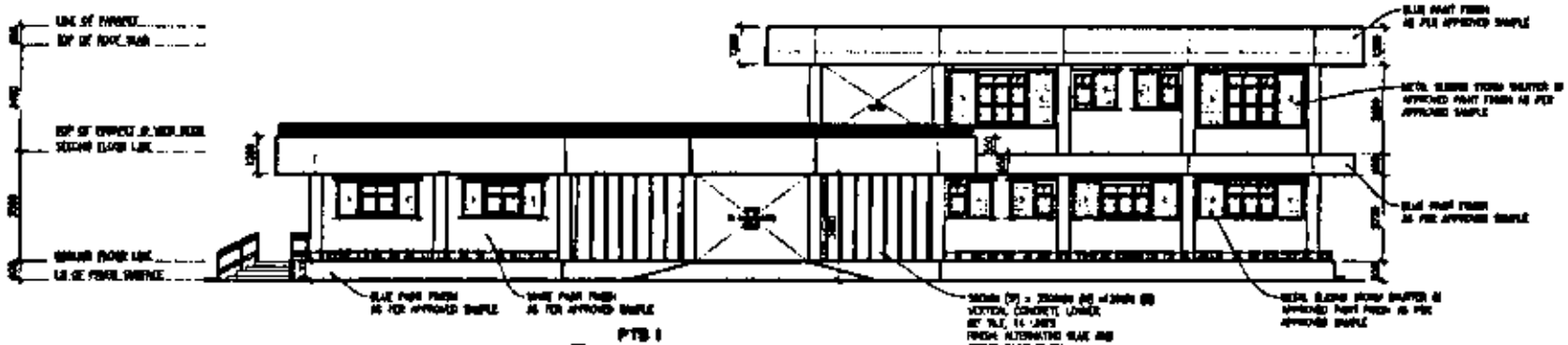
APPROVED: MA. MAGNOLIA SINSON-REQUEJO — PORT MANAGER

PORT MANAGEMENT OFFICE OF TABACO

JUNE 24, 2014



PTB 1
1 RIGHT SIDE ELEVATION
SCALE 1:150mts



PTB 1
2 REAR ELEVATION
SCALE 1:150mts

PHILIPPINE PORTS AUTHORITY

PORT MANAGEMENT OFFICE OF BACOLOD

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 10 / 14

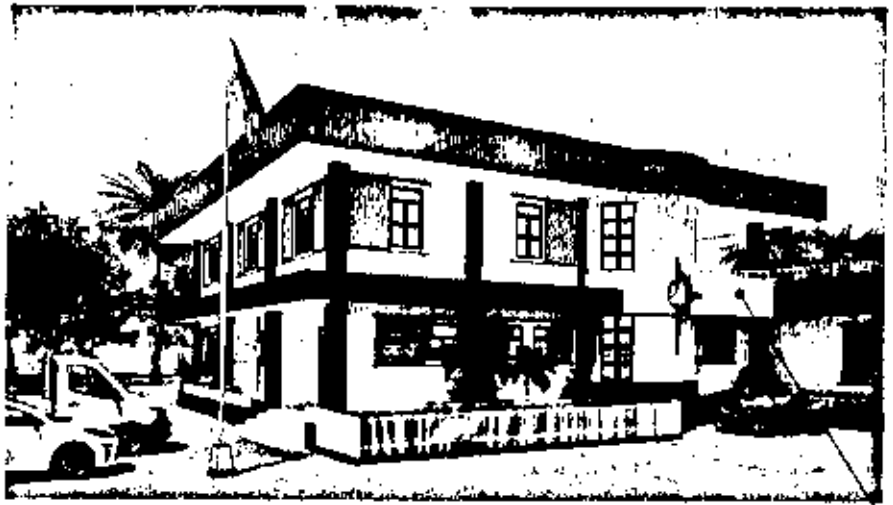
PREPARED BY: AGAPITO LLOYD L. TALAY, Uap — ARCHITECT II

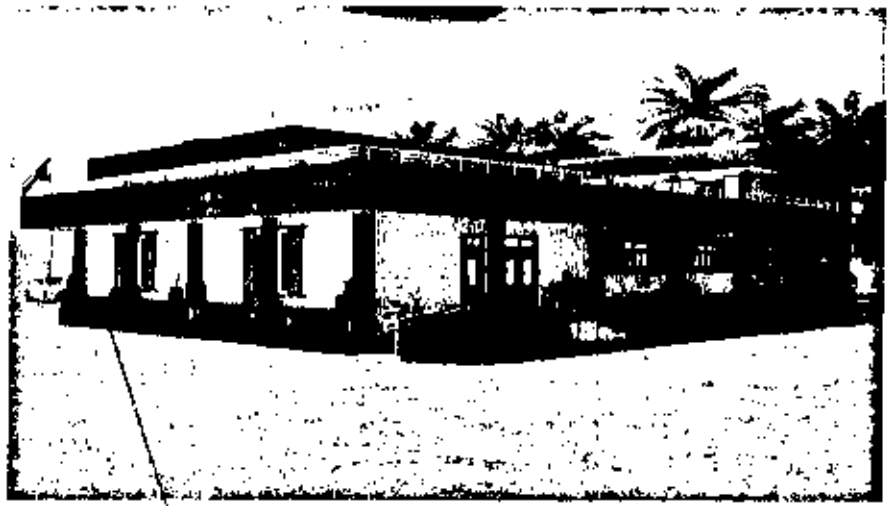
CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

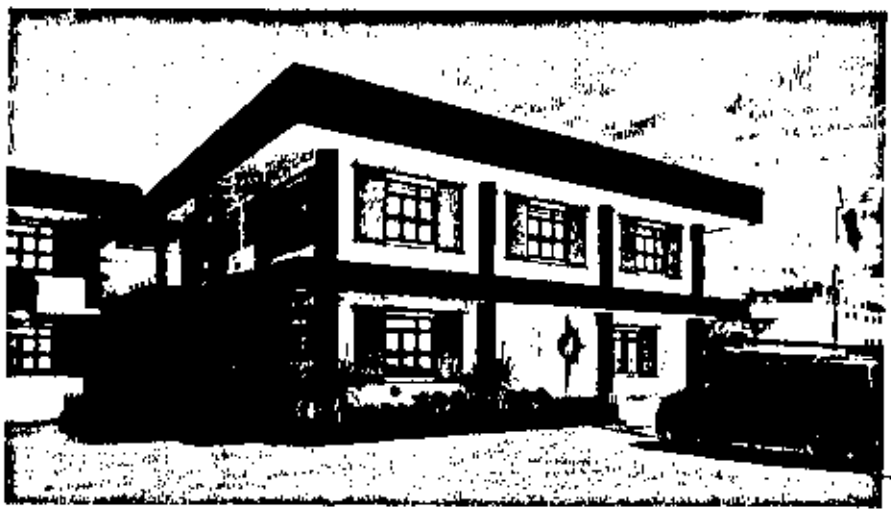
RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, SSD

APPROVED: MA. MAGNOLIA SIMSON-REQUEJO — PORT MANAGER

JUNE 21, 2024







SCHEDULE OF WALL PAINT FINISHES	
	COLOR: BLUE SHEEN: SEMI-GLOSS
	COLOR: GRIDGE SHEEN: SEMI-GLOSS
	COLOR: BEIGE SHEEN: SEMI-GLOSS
	COLOR: WHITE SHEEN: GLOSS

1 PTB 1 - EXTERIOR
PERSPECTIVE VIEWS
SCALE: NTS

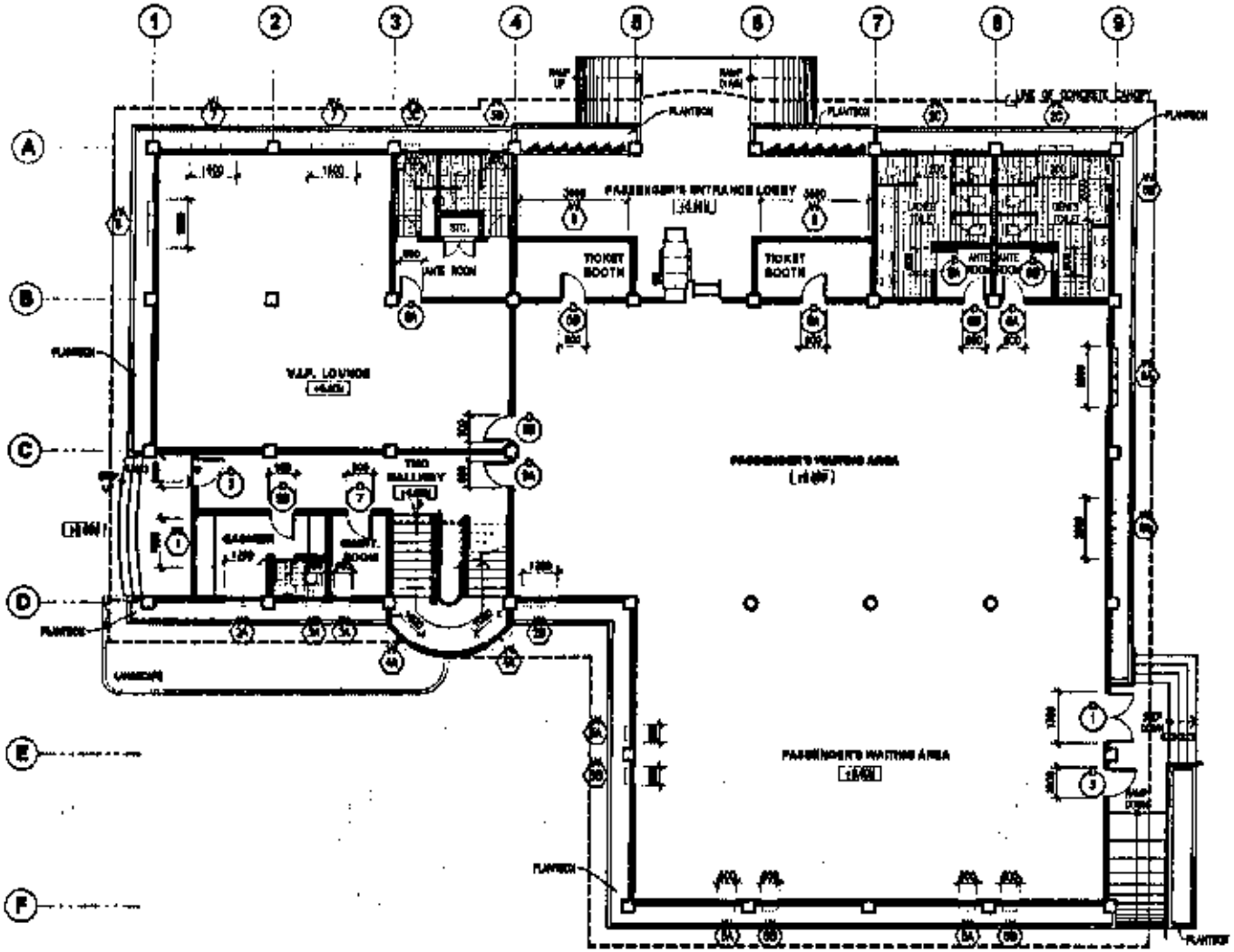
PORT MANAGEMENT OFFICE OF BICOL

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING

PREPARED BY: AGAPITO L. [illegible] TALAY, uap
CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG
RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS
APPROVED: MA. MAGNOLIA SINSON-[illegible]EQUEJO

SHEET NO. 11/94

JUNE 24, 2024



PTB 1 - GROUND FLOOR

1 **DOOR AND WINDOW LAYOUT**

SCALE 1:150mtg

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, QUEST AND SECURITY BUILDING

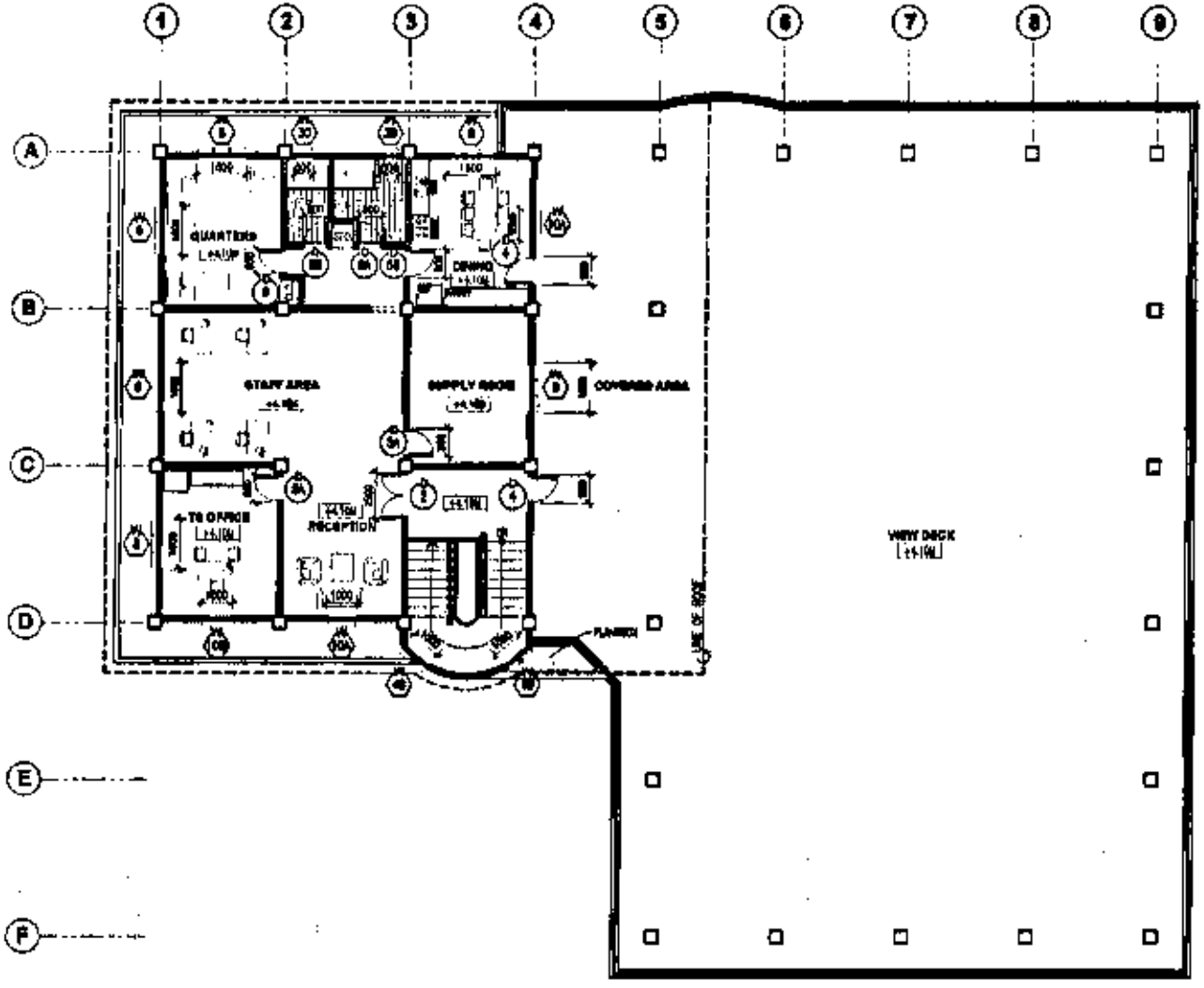
PREPARED BY: ADAPTO LLOYD E. TALAY, uap — ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING CHIEF ENGINEER A, CSD

APPROVED: MA. MAGNOLIA SINSON-DEQUEJO — PORT MANAGER

SHEET NO. 12/94

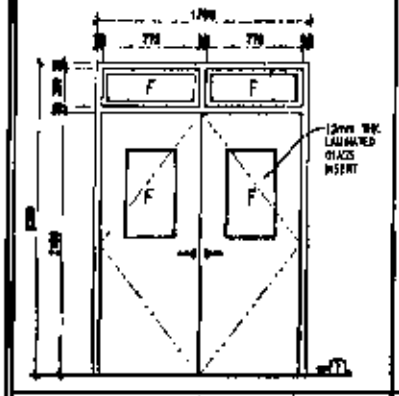


PTB 1 - SECOND FLOOR

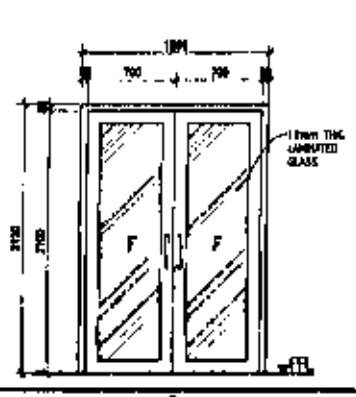
1 DOOR AND WINDOW LAYOUT

SCALE 1:150mts

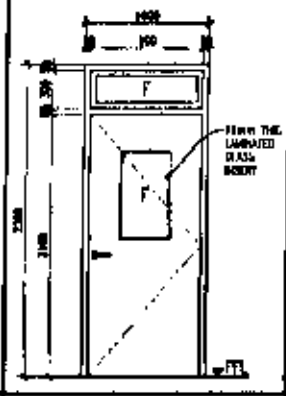
PHILIPPINE PORTS AUTHORITY PORT MANAGEMENT OFFICE OF BICOL	PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING PORT OF TABACO CITY, ALBAY			SHEET NO. 13 of 14
PREPARED BY: AGAPITO L. [illegible] C. TALAY, uap ARCHITECT I	CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG SUPERVISING ENGINEER A	RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS ACTING DIVISION MANAGER A, ENO	APPROVED: MA. MAGNOLIA SINSUAT-EQUEJO PORT MANAGER	JUNE 21, 2024



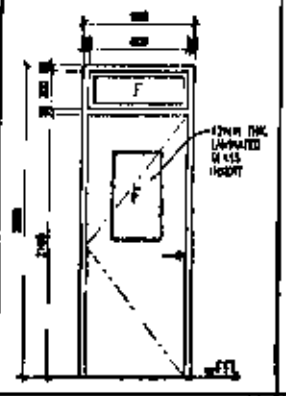
①
TYPE: HOLLOW STEEL DOOR W/ GLASS INSERT
MATERIAL: POWDER COATED STEEL W/ GLASS INSERT
JAMB: STEEL
LOCATION: PASSENGER'S WAITING AREA
REQUIRED: 1



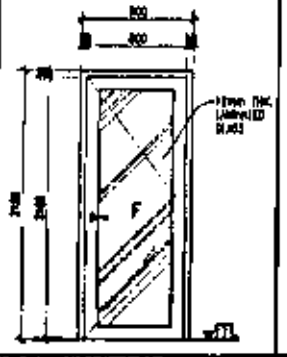
②
TYPE: UPVC GLASS DOOR
MATERIAL: UPVC W/ LAMINATED GLASS
JAMB: UPVC
LOCATION: RECEPTION @ 2ND FLOOR
REQUIRED: 4



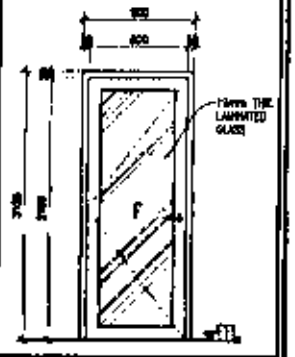
③
TYPE: HOLLOW STEEL DOOR W/ GLASS INSERT
MATERIAL: POWDER COATED STEEL W/ GLASS
JAMB: STEEL
LOCATION: PASSENGERS WAITING AREA AND TWO HALLWAY
REQUIRED: 2



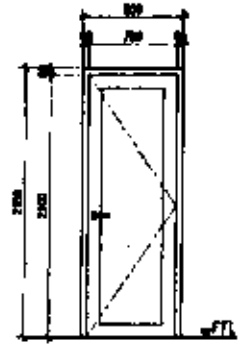
④
TYPE: HOLLOW STEEL DOOR W/ GLASS INSERT
MATERIAL: POWDER COATED STEEL W/ GLASS
JAMB: STEEL
LOCATION: DINING AREA AND VIEW DECK
REQUIRED: 2



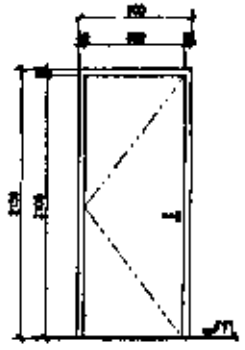
⑤A
TYPE: UPVC GLASS DOOR
MATERIAL: UPVC W/ LAMINATED GLASS
JAMB: UPVC
LOCATION: TWO HALLWAY, TICKET BOOTH, TB OFFICE, AND SUPPLY ROOM
REQUIRED: 4



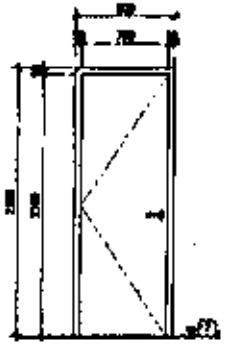
⑤B
TYPE: UPVC GLASS DOOR
MATERIAL: UPVC W/ LAMINATED GLASS
JAMB: UPVC
LOCATION: CASHIER, VIP LOUNGE, TICKET BOOTH, AND DINING ROOM
REQUIRED: 4



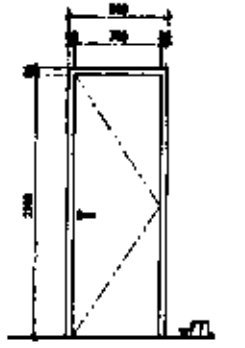
⑥
TYPE: PANEL DOOR W/ Main GROOVE
MATERIAL: HARDWOOD
JAMB: HARDWOOD
LOCATION: QUARTERS @ 2ROOMS FLOOR
REQUIRED: 1



⑦
TYPE: WOOD PLASTIC COMPOSITE DOOR (WPC) - PLAIN
MATERIAL: WOOD PLASTIC COMPOSITE
JAMB: WOOD PLASTIC COMPOSITE
LOCATION: MAINTENANCE ROOM
REQUIRED: 1



⑧A
TYPE: WOOD PLASTIC COMPOSITE DOOR (WPC)
MATERIAL: WOOD PLASTIC COMPOSITE
JAMB: WOOD PLASTIC COMPOSITE
LOCATION: RESTROOMS
REQUIRED: 4



⑧B
TYPE: WOOD PLASTIC COMPOSITE DOOR (WPC)
MATERIAL: WOOD PLASTIC COMPOSITE
JAMB: WOOD PLASTIC COMPOSITE
LOCATION: RESTROOMS
REQUIRED: 3

GENERAL NOTE:
ALL DOORS SHOULD
BE INSTALLED WITH 316 STAINLESS
STEEL MARINE GRADE HARDWARE.
DOOR HANDLES SHOULD BE LEVER-TYPE,
EXCEPT FOR FULL-GLASS DOUBLE DOORS

1 DOOR SCHEDULE
SCALE 1:40mts

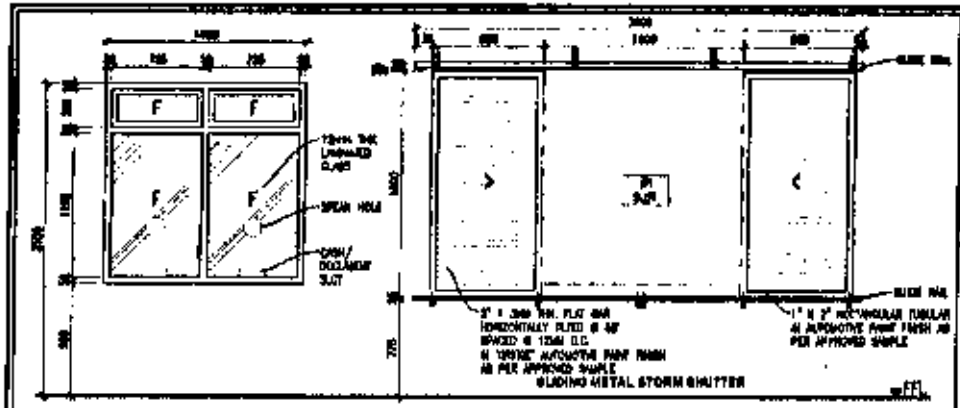
PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE OF IMOD

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF IMOD CITY, ILOILO

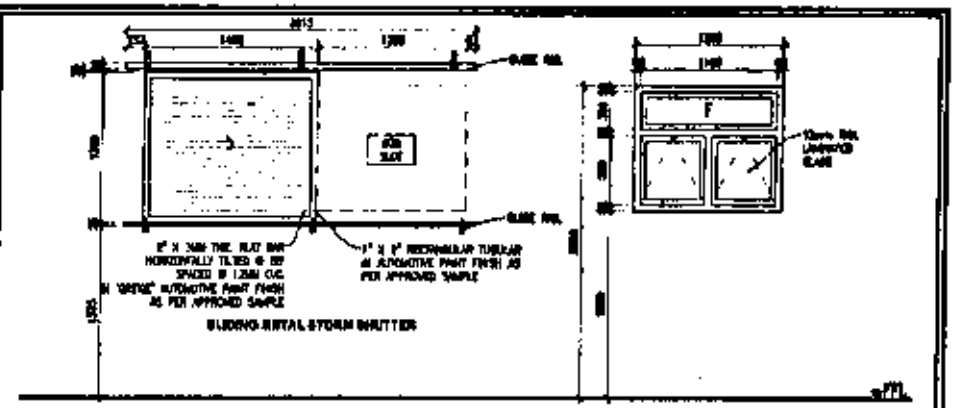
SHEET NO. 14/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO L. TAYAG II, uap	CHRISTOPHER P. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SIMSON-PEQUEJO
PROJECT IT	SUPERVISING ENGINEER A	ACTING STATION MANAGER A, CTO	PORT MANAGER

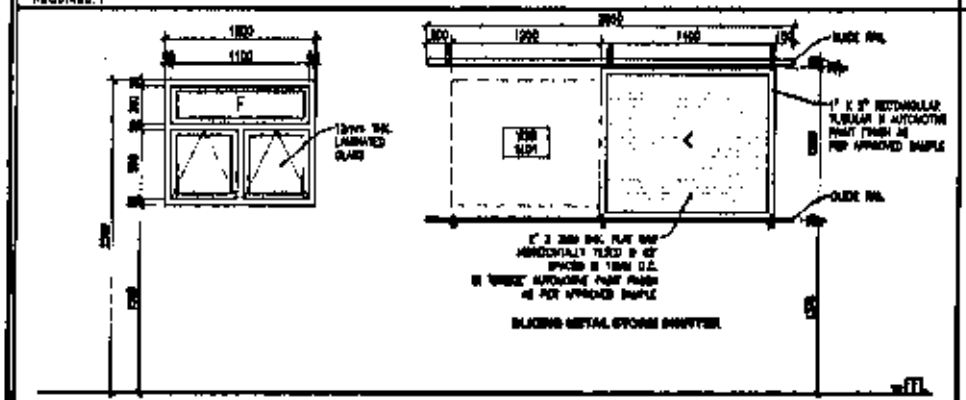
JUNE 24, 2024



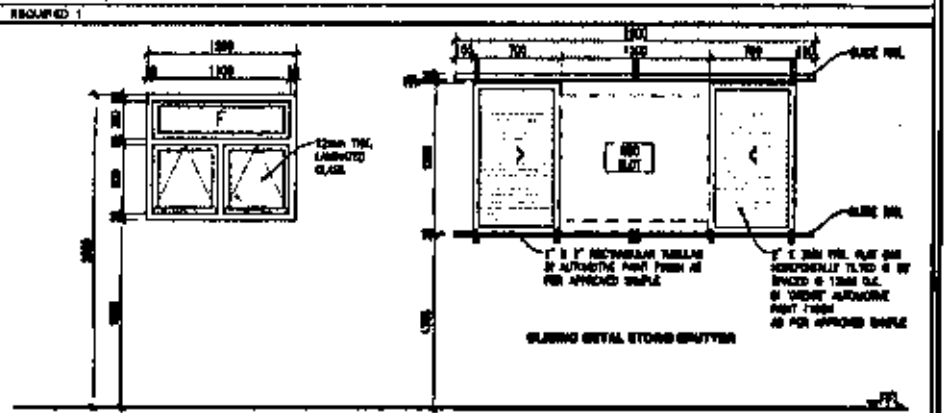
TYPE: CASHIER WINDOW/W TRANSOM	
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE	
JAMB: UPVC	
LOCATION: CASHIER	
REQUIRED: 1	



	TYPE: AWNING W/ TRANSOM WINDOW
	MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE
	JAMB: UPVC
	LOCATION: CASHIER
	REQUIRED: 1



TYPE: AWNING W/ TRANSOM WINDOW	
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE	
JAMB: UPVC	
LOCATION: PASSENGER'S WAITING AREA	
REQUIRED: 1	



	TYPE: AWNING W/ TRANSOM WINDOW
	MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE
	JAMB: UPVC
	LOCATION: LADIES AND GENTS' TOILET
	REQUIRED: 2

1 WINDOW SCHEDULE

SCALE 1:40mts

PHILIPPINE PORTS AUTHORITY

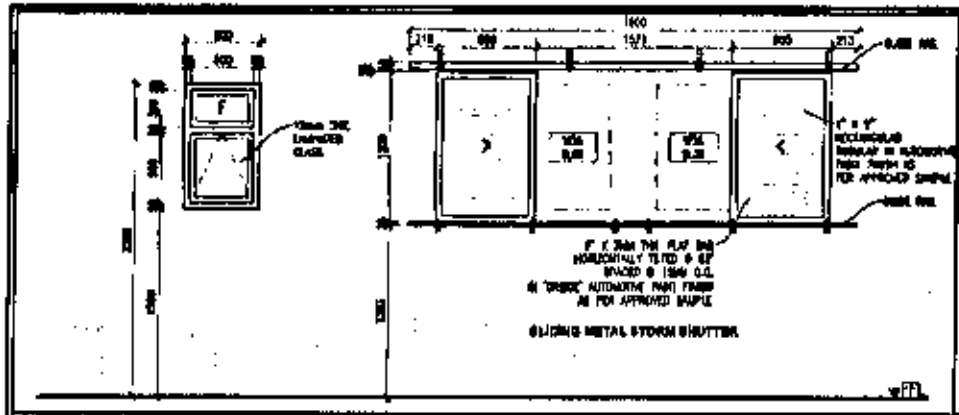
PORT MANAGEMENT OFFICE OF SIQUIJOR
MAGSAYSAY DRIVE
SAN JUAN, CITY, SIQ.

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB I & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF LARENA CITY, SIQUIJOR

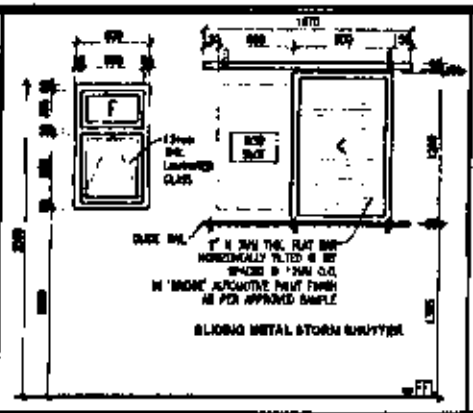
SHEET NO. 18/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO L. TALAY, ugp	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-ROQUEJO
ARCHITECT I	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, ESD	PORT MANAGER

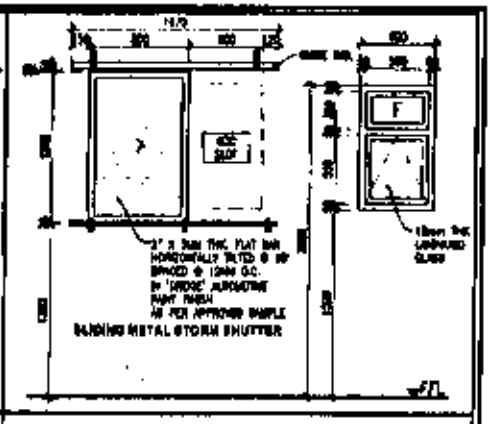
JUNE 24, 2016



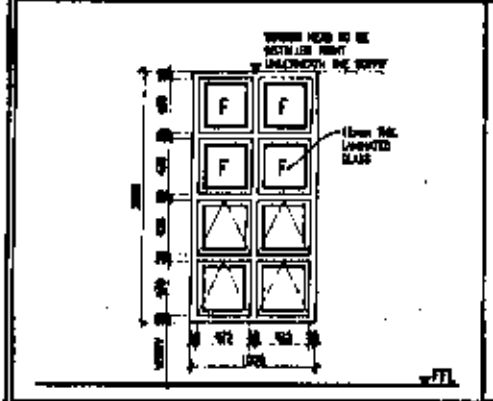
TYPE: AWNING W/ TRANSOM WINDOW
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB: uPVC
LOCATION: MAINTENANCE ROOM AND CASHIER'S TOILET
REQUIRED: 1



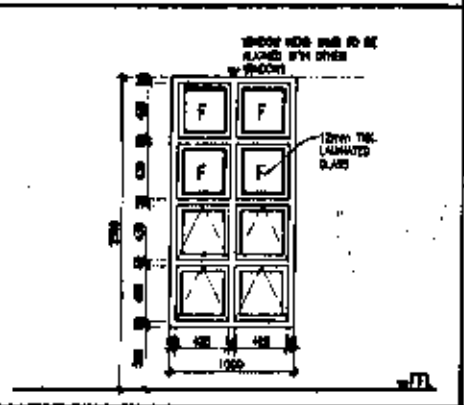
TYPE: AWNING W/ TRANSOM WINDOW
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB: uPVC
LOCATION: VIP TOILET AND TOILET @ 2ND FLOOR
REQUIRED: 2



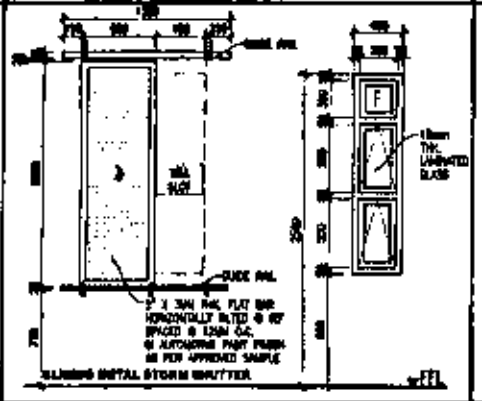
TYPE: AWNING W/ TRANSOM WINDOW
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB: uPVC
LOCATION: VIP POWDER ROOM AND TOILET @ 2ND FLOOR
REQUIRED: 3



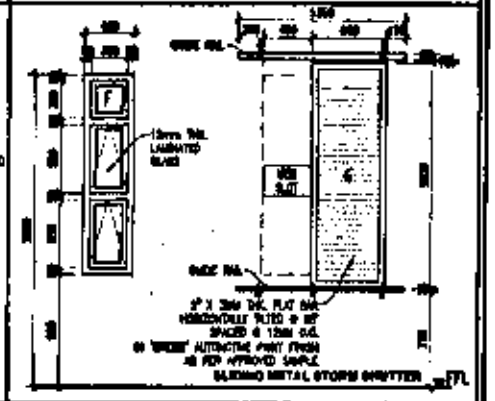
TYPE: AWNING & FIXED WINDOW
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB: uPVC
LOCATION: STAIRWELL
REQUIRED: 2



TYPE: AWNING & FIXED WINDOW
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB: uPVC
LOCATION: STAIRWELL
REQUIRED: 3



TYPE: AWNING W/ TRANSOM WINDOW
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB: uPVC
LOCATION: PASSENGER'S WAITING AREA
REQUIRED: 1



TYPE: AWNING W/ TRANSOM WINDOW
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB: uPVC
LOCATION: PASSENGER'S WAITING AREA
REQUIRED: 6

1 WINDOW SCHEDULE

SCALE 1:40mtrs

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF IMAGO CITY, ALBAY

SHEET NO. 16/94

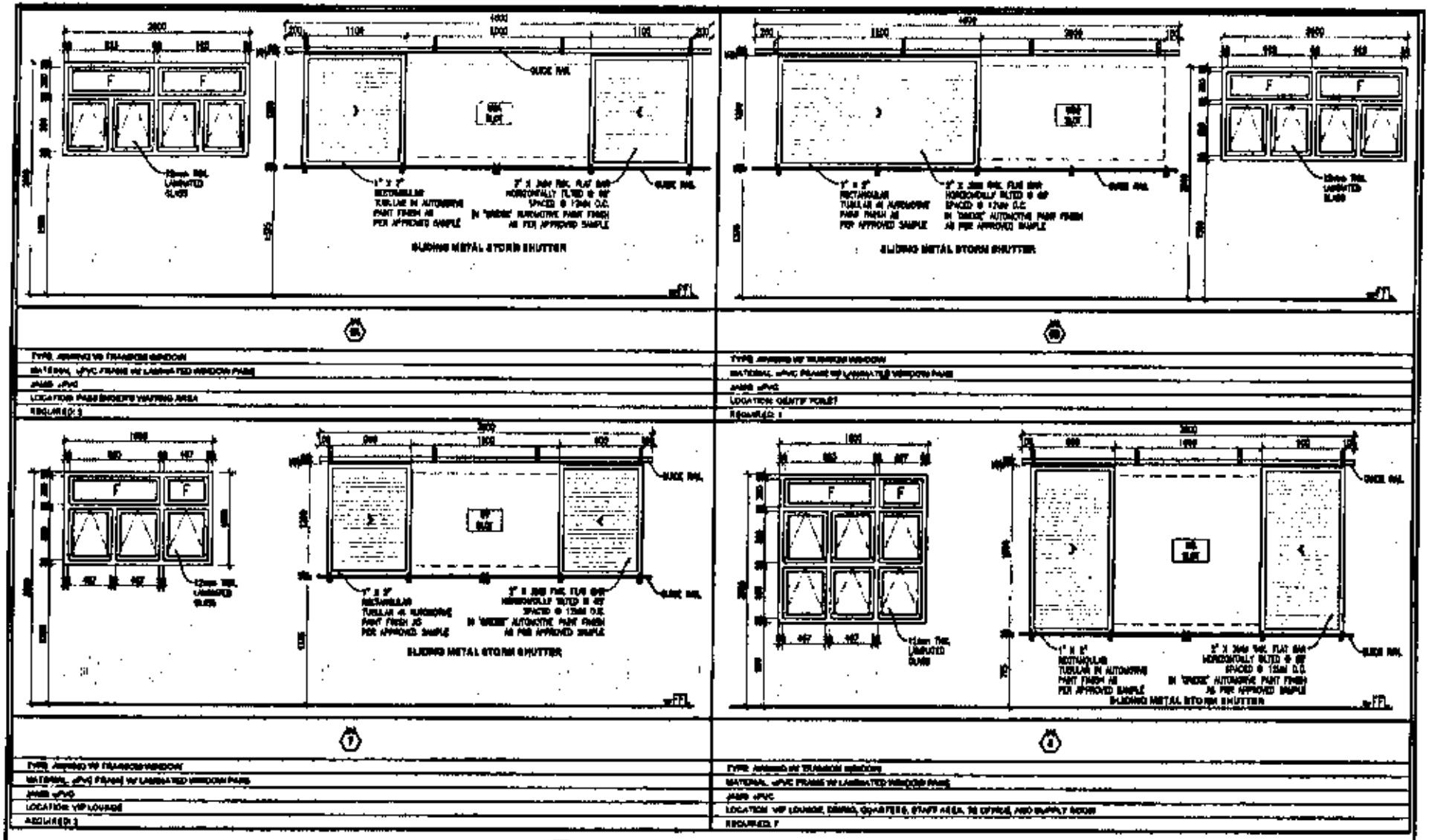
PREPARED BY: AGAPITO LLOYD L. TALAY, ubp — ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, ESD

APPROVED: MA. MAGNOLIA SINSON-ROQUEJO — PORT MANAGER

JUNE 24, 2024



WINDOW SCHEDULE

1 SCALE 1:40mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 17/94

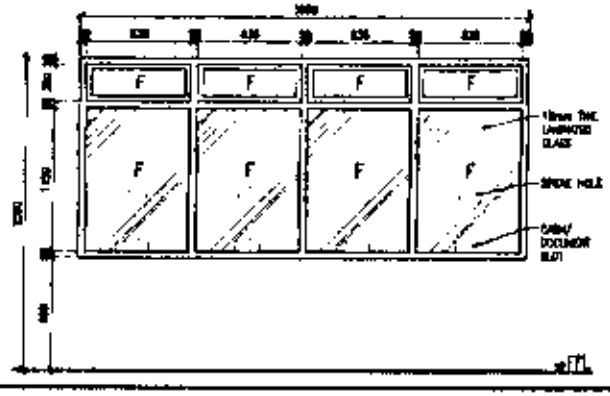
PREPARED BY: AGAPITO LLOYD L. TALAY, ugp — ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

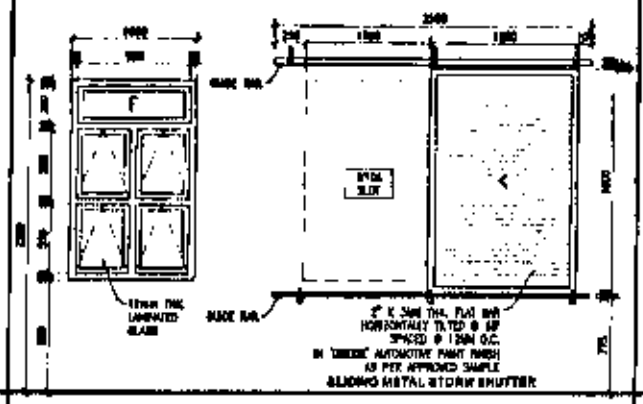
RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, CSD

APPROVED: MA. MAGNOLIA SINSON-NIEVEJO — PORT MANAGER

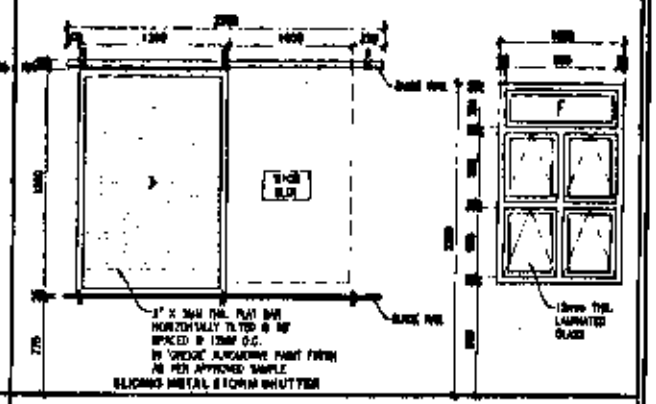
JUNE 24, 2024



①	
TYPE: CASHIER WINDOW W/ TRANSOM	
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE	
JAMB: UPVC	
LOCATION: TICKET BOOTH	
REQUIRED: 2	



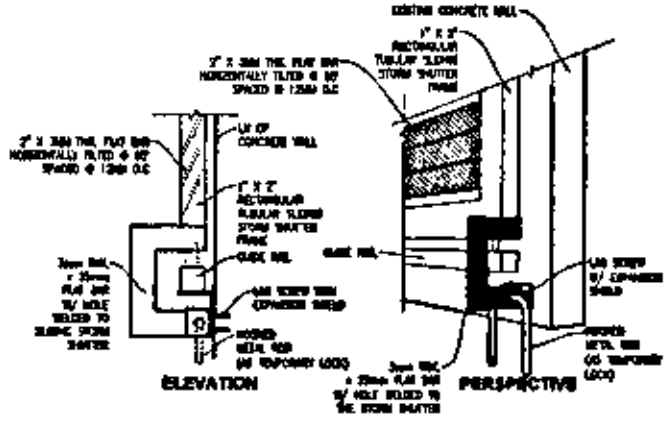
⑩A	
TYPE: AWNING W/ TRANSOM WINDOW	
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE	
JAMB: uPVC	
LOCATION: RECEPTION AND DINING	
REQUIRED: 3	



⑩	
TYPE: AWNING W/ TRANSOM WINDOW	
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE	
JAMB: uPVC	
LOCATION: TB OFFICE	
REQUIRED: 1	

1 WINDOW SCHEDULE
SCALE 1:40mts

GENERAL NOTE:
ALL SLIDING METAL STORM SHUTTERS SHOULD BE INSTALLED WITH TEMPORARY LOCK ON BOTH ENDS TO PREVENT THE MECHANISM FROM SLIDING OFF WHEN SHUT.



SLIDING METAL STORM SHUTTER (TYPICAL)

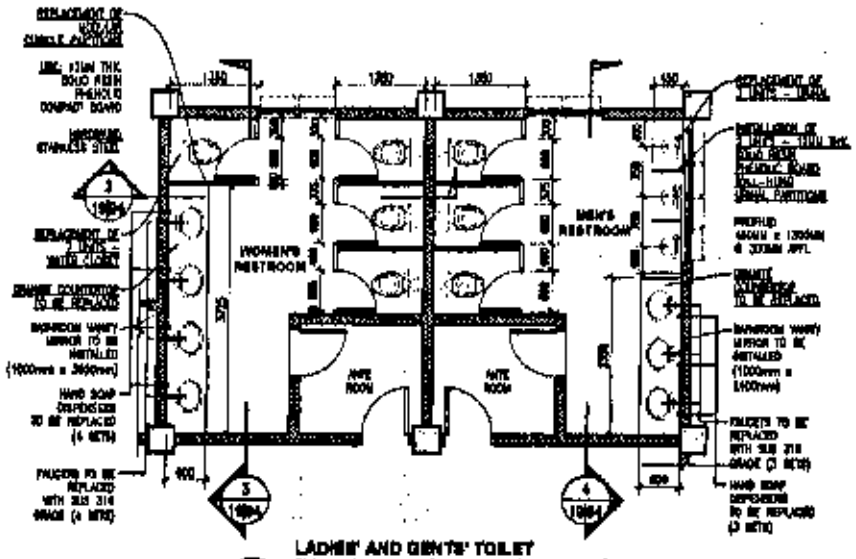
2 LOCK DETAIL
SCALE 1:5mts

PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE OF BACOLOD

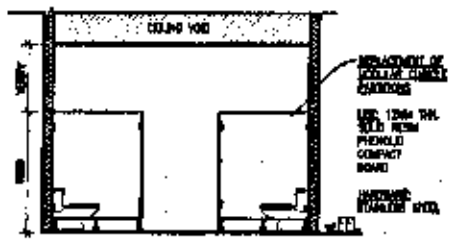
PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LOYOLA TALAY, Uap	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-NEQUEJO
ARCHITECT II	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, ESD	PORT MANAGER

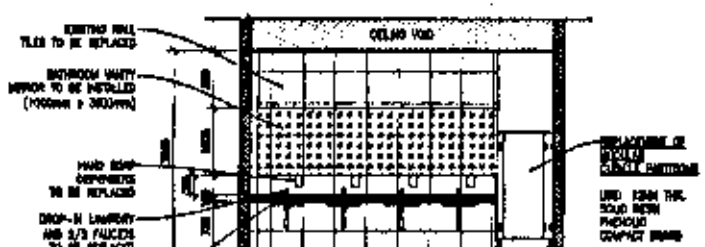
SHEET NO. 18/94
JUNE 24, 2014



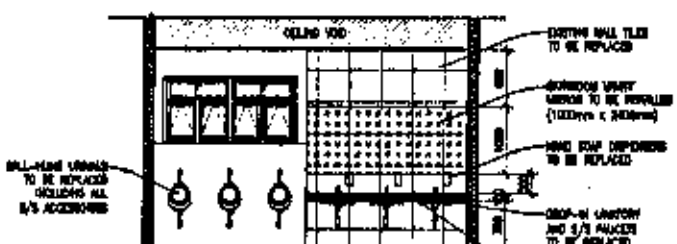
LADIES' AND GENTS' TOILET
ENLARGED PLAN
1 SCALE 1:75mts



MODULAR CUBICLE PARTITION
SECTION
2 SCALE 1:75mts



WOMEN'S RESTROOM
SECTION
3 SCALE 1:75mts



MEN'S RESTROOM
SECTION
4 SCALE 1:75mts

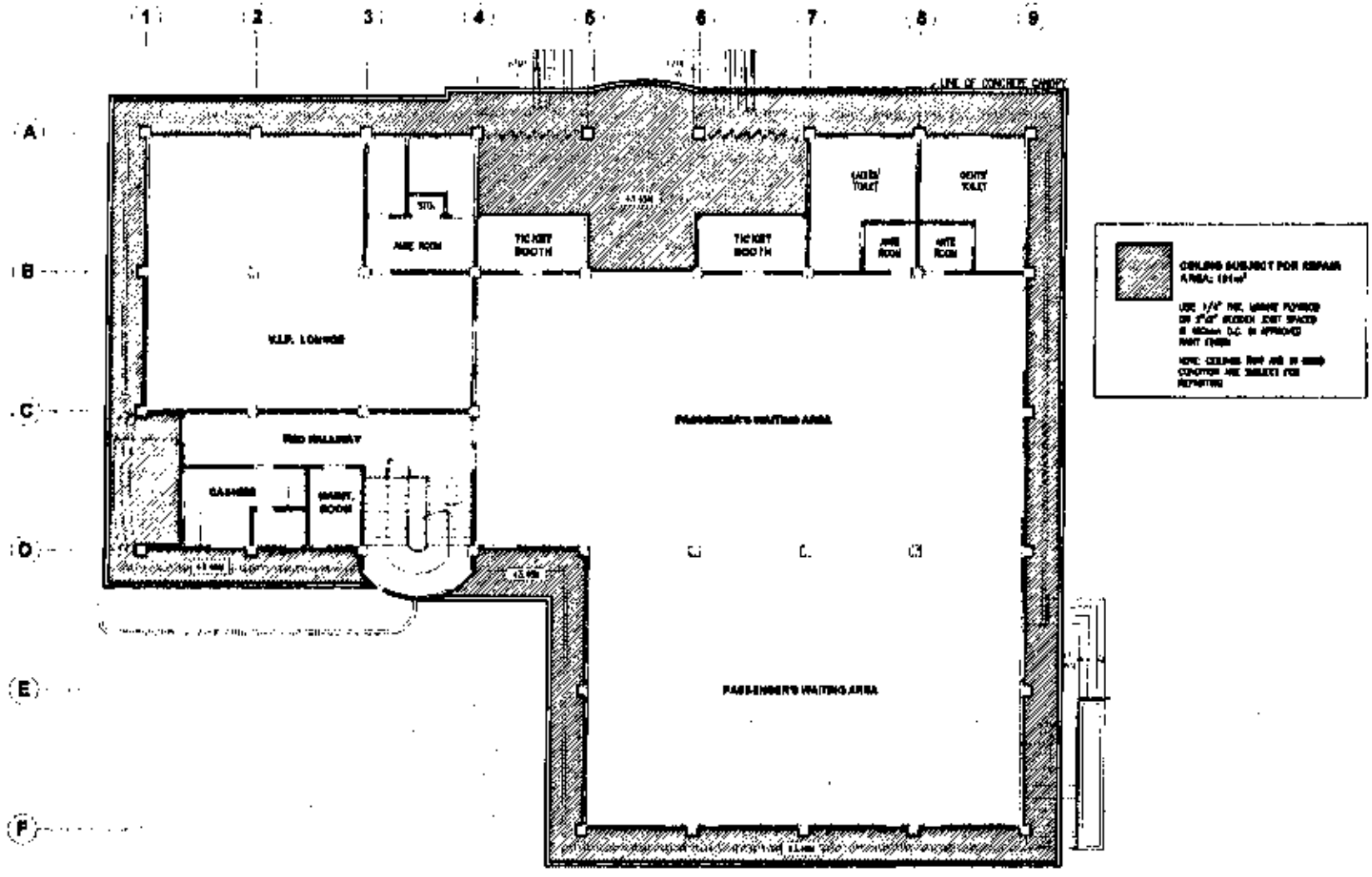
PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE OF ABRA
MUNICIPAL SEAPORT COMPLEX
BGRY. LIBTONG CITY, ABRA

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB I & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF BANGUED CITY, ABRA

SHEET NO. 19/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LLOYD L. TALAY, ubp	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-REQUEJO
ARCHITECT II	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, ESD	PORT MANAGER

JUNE 24, 2024



PTB 1 - GROUND FLOOR

1 **REFLECTED CEILING PLAN**

SCALE 1:150mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
Port of Tabaco City, Albay

SHEET NO. 20/94

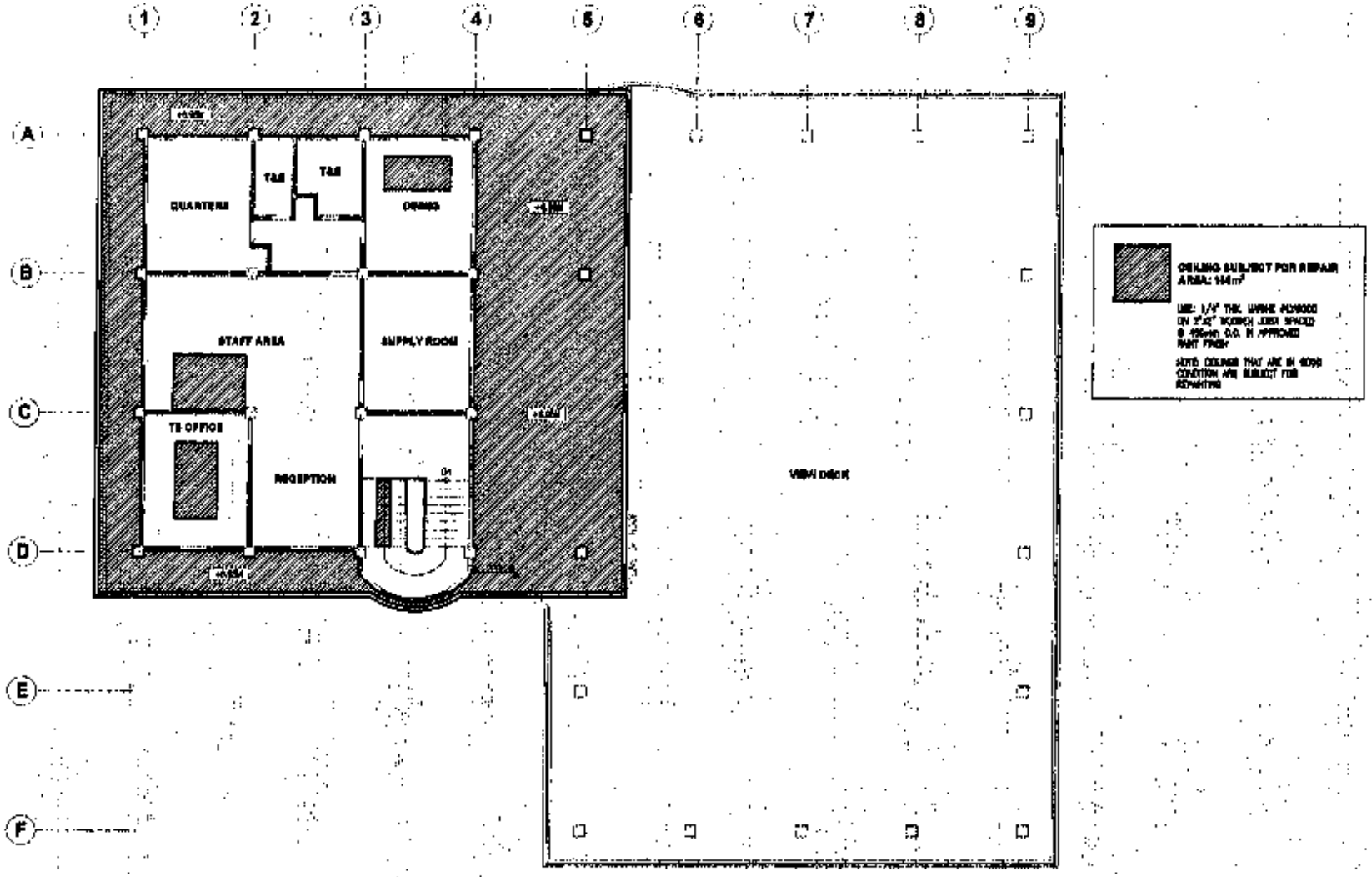
PREPARED BY: AGAPITO LEONEL C. TALAY, uap — ARCHITECT I

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAO — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, CSD

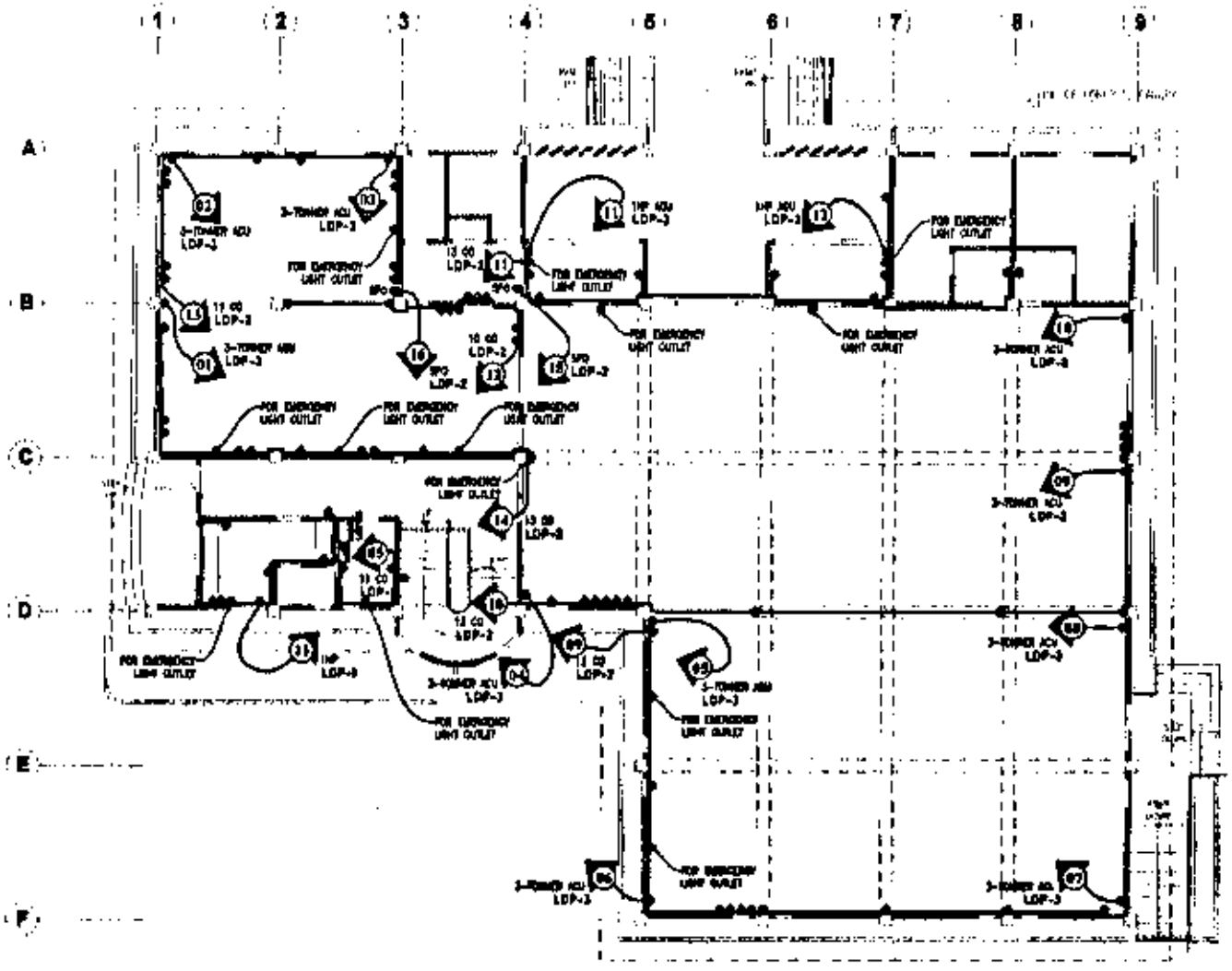
APPROVED: MA. MAGNOLIA SINSUAT-ROQUERO — PORT MANAGER

JUNE 24, 2024



1 PTB 1 - SECOND FLOOR
REFLECTED CEILING PLAN
SCALE 1:150mts

PHILIPPINE PORTS AUTHORITY PORT MANAGER'S OFFICE OF SIGOL REGIONAL GOVERNMENT CENTER, PARK, LIBAON CITY 4502	PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING PORT OF DARAGA DPV, ALBAY			SHEET NO. 21/94
	PREPARED BY: AGAPITO LLOYD L. TALAY, uap ARCHITECT II	CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG SUPERVISING ENGINEER A	RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS ACTING DIVISION MANAGER A, CSD	APPROVED: MA. MAGNOLIA SINSON-NIEQUEJO PORT MANAGER	JUNE 24, 2024



PTB 1 - GROUND FLOOR

1 **POWER LAYOUT**

SCALE 1:150mm

LEGEND (NOT DRAWN TO SCALE)	
SYMBOL	DESCRIPTION
	CIRCUIT NUMERAL
	CIRCUIT BREAKER
	LOAD PANEL
	MAIN DISTRIBUTION PANEL
WIRING	
	POWER LINE
	LIGHTING LINE
	SWITCH LINE
LIGHTING	
	TYPE: Ø27 – 15W LED LAMP W/ 4" WHITE RECESSED CASING AND GLASS COVER LIGHT COLOR: COOL WHITE QUANTITY: 66
	TYPE: 9WH–15W T5 LED TUBE LIGHT (600mm LENGTH) W/ METAL SHEET HOUSING AND MIRROR REFLECTORS LIGHT COLOR: COOL WHITE/ DAYLIGHT QUANTITY: 28 – T5 LED LIGHT
	TYPE: 40W LED SURFACE MOUNTED PANEL LAMP (300mm x 1200mm) LIGHT COLOR: COOL WHITE QUANTITY: 88
	TYPE: 9WH–HEAD LED EMERGENCY LIGHT LIGHT COLOR: COOL WHITE QUANTITY: 22
OUTLETS	
	DUPLEX CONVENIENCE OUTLET
	SPECIAL OUTLET
	AIR-CONDITIONING UNIT
SWITCHES	
	ONE GANG SWITCH
	TWO GANG SWITCH
	THREE GANG SWITCH
	THREE-WAY SWITCH
CEILING	
	CEILING AIR VENT

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING

PORT OF SUBIC CITY, ZAMBALES

SHEET NO. 22 / 94

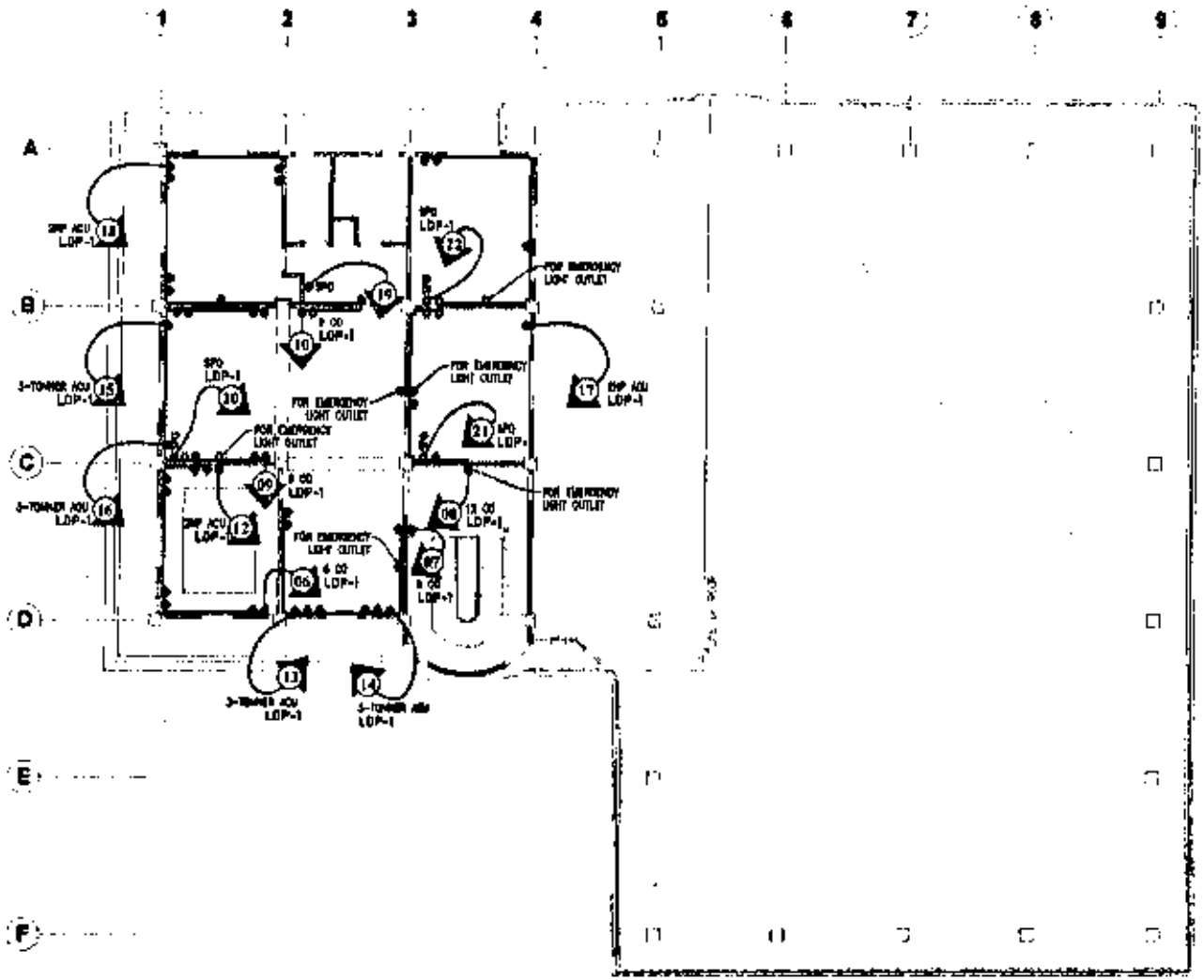
PREPARED BY: AGAPITO LLOYD L. TALAY, uap — PROJECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, EIB

APPROVED: MA. MAGNOLIA SIMSON-MANUEJO — PORT MANAGER

JUNE 24, 2024



PTB 1 - SECOND FLOOR

1 **POWER LAYOUT**

SCALE 1:150mtrs

LEGEND (NOT DRAWN TO SCALE)	
SYMBOL	DESCRIPTION
	CIRCUIT HOMERUN
	CIRCUIT BREAKER
	LOAD PANEL
	MAIN DISTRIBUTION PANEL
WIRING	
	POWER LINE
	LIGHTING LINE
	SWITCH LINE
LIGHTING	
	TYPE: 037 - 18W LED LAMP W/ 8" WHITE RECESSED CASING AND GLASS COVER LIGHT COLOR: COOL WHITE QUANTITY: 88
	TYPE: TWIN-15W T8 LED TUBE LIGHT (600mm LENGTH) W/ METAL SHEET HOUSING AND MIRROR REFLECTORS LIGHT COLOR: COOL WHITE/ DAYLIGHT QUANTITY: 28 - T8 LED LIGHT
	TYPE: 48W LED SURFACE MOUNTED PANEL LAMP (300mm x 1200mm) LIGHT COLOR: COOL WHITE QUANTITY: 88
	TYPE: TWIN-HEAD LED EMERGENCY LIGHT LIGHT COLOR: COOL WHITE QUANTITY: 22
OUTLETS	
	DUPLEX CONVENIENCE OUTLET
	SPECIAL OUTLET
	AIR-CONDITIONING UNIT
SWITCHES	
	ONE GANG SWITCH
	TWO GANG SWITCH
	THREE GANG SWITCH
	THREE-WAY SWITCH
1300 AFF.	HEIGHT OF ALL SWITCHES
CEILING	
	CEILING AIR VENT

PHILIPPINE PORTS AUTHORITY

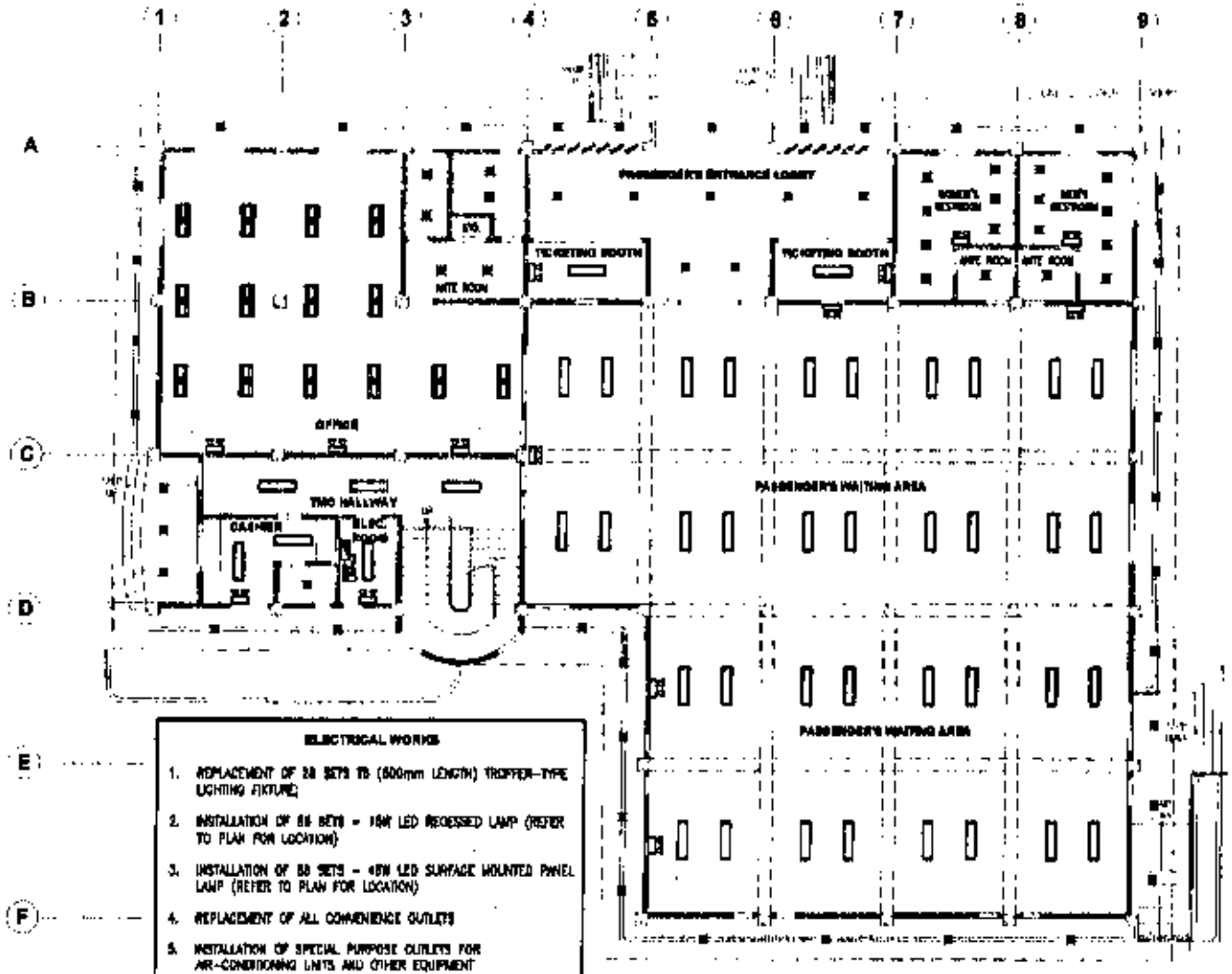
PORT MANAGEMENT OFFICE OF SIBUL, REGIONAL OPERATIONS GROUP, PORTS LUZON, PPA, MBO

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 23/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LLOYD L. TALAY, ugp	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-REQUEJO
ARCHITECT II	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, SSD	PORT MANAGER

JUNE 21, 2024



ELECTRICAL WORKS

1. REPLACEMENT OF 28 SETS T8 (600mm LENGTH) TROFFER-TYPE LIGHTING FIXTURE;
2. INSTALLATION OF 86 SETS - 18W LED RECESSED LAMP (REFER TO PLAN FOR LOCATION)
3. INSTALLATION OF 88 SETS - 48W LED SURFACE MOUNTED PANEL LAMP (REFER TO PLAN FOR LOCATION)
4. REPLACEMENT OF ALL CONVENIENCE OUTLETS
5. INSTALLATION OF SPECIAL PURPOSE OUTLETS FOR AIR-CONDITIONING UNITS AND OTHER EQUIPMENT
6. REMOVAL AND REWIRING OF ALL POWER AND LIGHTING ELECTRICAL LINES AT PTB 1
7. INSTALLATION OF PANEL BOARDS

1 PTB 1 - GROUND FLOOR
LIGHTING LAYOUT
SCALE 1:150mts

LEGEND
(NOT DRAWN TO SCALE)

SYMBOL	DESCRIPTION
	CIRCUIT NUMERUN
	CIRCUIT BREAKER
	LOAD PANEL
	MAIN DISTRIBUTION PANEL
	WIRING
	POWER LINE
	LIGHTING LINE
	SWITCH LINE
	LIGHTING
	TYPE: E27 - 18W LED LAMP W/ 6" WHITE RECESSED CASING AND GLASS COVER LIGHT COLOR: COOL WHITE QUANTITY: 86
	TYPE: TWIN-15W T8 LED TUBE LIGHT (600mm LENGTH) W/ METAL SHEET HOUSING AND MIRROR REFLECTORS LIGHT COLOR: COOL WHITE/ DAYLIGHT QUANTITY: 28 - T8 LED LIGHT
	TYPE: 48W LED SURFACE MOUNTED PANEL LAMP (300mm x 1200mm) LIGHT COLOR: COOL WHITE QUANTITY: 88
	TYPE: TWIN-HEAD LED EMERGENCY LIGHT LIGHT COLOR: COOL WHITE QUANTITY: 22
	OUTLETS
	DUPLEX CONVENIENCE OUTLET
$\ominus_{SPL}$	SPECIAL OUTLET
	AIR-CONDITIONING UNIT
	SWITCHES
$\bullet S$	ONE GANG SWITCH
$\bullet S_2$	TWO GANG SWITCH
$\bullet S_3$	THREE GANG SWITCH
$\bullet S_{3W}(a)$	THREE-WAY SWITCH
1300 AFFL	HEIGHT OF ALL SWITCHES
	CEILING
	CEILING AIR VENT

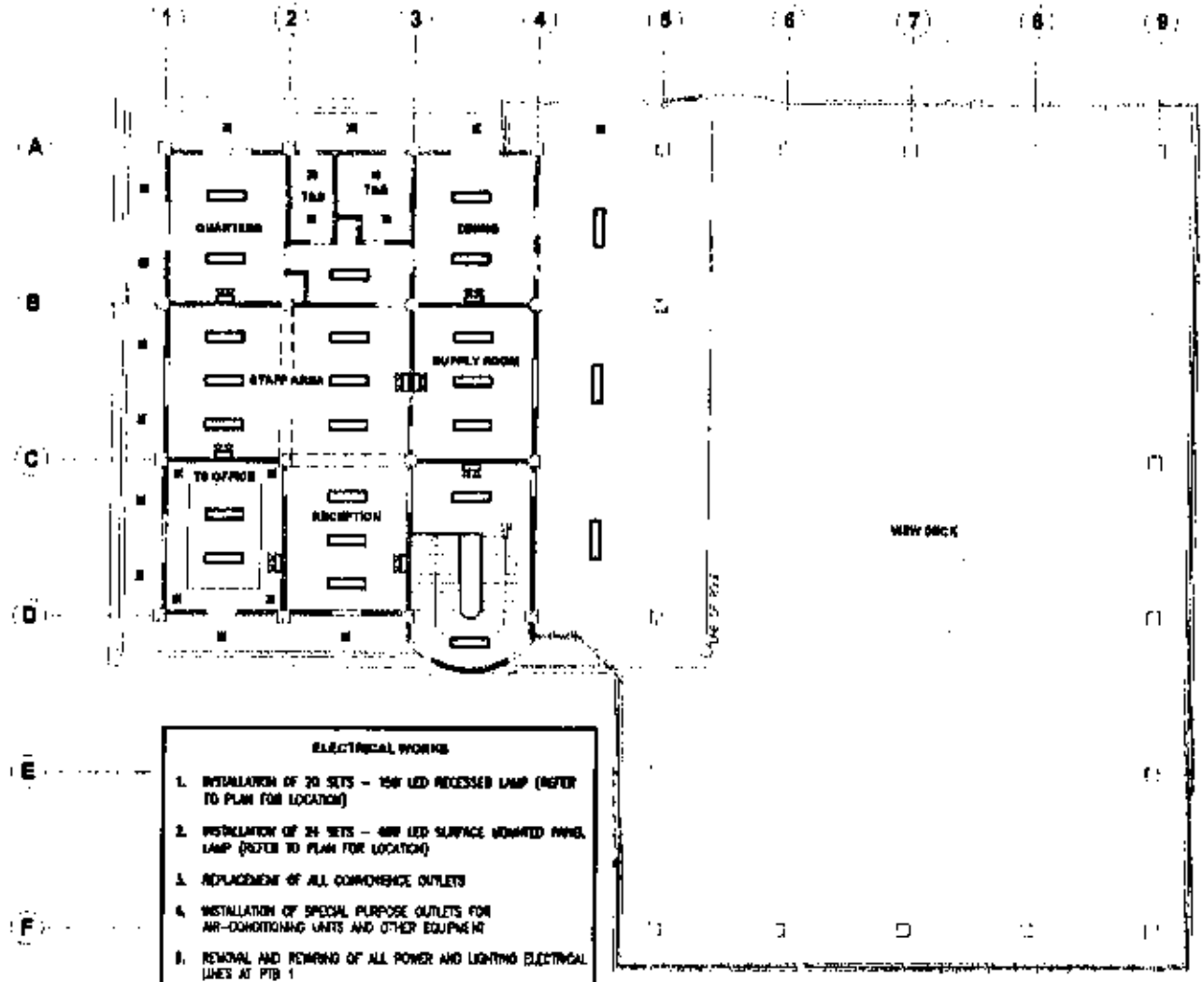
PHILIPPINE Ports Authority
PORT MANAGEMENT OFFICE OF BOHOL

PROJECT TITLE
IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TAGBILARAN CITY, BOHOL

SHEET NO. 24/14

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LLOYD L. TALAY, uap	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-NEQUEJO
ARCHITECT I	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, ESD	PORT MANAGER

JUNE 24, 2021



ELECTRICAL WORKS

1. INSTALLATION OF 20 SETS – 15W LED RECESSED LAMP (REFER TO PLAN FOR LOCATION)
2. INSTALLATION OF 24 SETS – 40W LED SURFACE MOUNTED PANEL LAMP (REFER TO PLAN FOR LOCATION)
3. REPLACEMENT OF ALL CONVENIENCE OUTLETS
4. INSTALLATION OF SPECIAL PURPOSE OUTLETS FOR AIR-CONDITIONING UNITS AND OTHER EQUIPMENT
5. REMOVAL AND REWIRING OF ALL POWER AND LIGHTING ELECTRICAL LINES AT PTB 1
6. INSTALLATION OF PANEL BOARDS

1 PTB 1 - SECOND FLOOR
LIGHTING LAYOUT
SCALE 1:150mts

LEGEND
(NOT DRAWN TO SCALE)

SYMBOL	DESCRIPTION
	CIRCUIT NOMENCLATURE
	CIRCUIT BREAKER
	LOAD PANEL
MDP	MAIN DISTRIBUTION PANEL
	WIRING
	POWER LINE
	LIGHTING LINE
	SWITCH LINE
	LIGHTING
	TYPE: E27 – 15W LED LAMP W/ 6" WHITE RECESSED CASING AND GLASS COVER LIGHT COLOR: COOL WHITE QUANTITY: 86
	TYPE: TWIN-15W T8 LED TUBE LIGHT (600mm LENGTH) W/ METAL SHEET HOUSING AND MIRROR REFLECTORS LIGHT COLOR: COOL WHITE/ DAYLIGHT QUANTITY: 28 – T8 LED LIGHT
	TYPE: 40W LED SURFACE MOUNTED PANEL LAMP (300mm x 1200mm) LIGHT COLOR: COOL WHITE QUANTITY: 88
	TYPE: TWIN-HEAD LED EMERGENCY LIGHT LIGHT COLOR: COOL WHITE QUANTITY: 22
	OUTLETS
	DUPLEX CONVENIENCE OUTLET
	SPECIAL OUTLET
	AIR-CONDITIONING UNIT
	SWITCHES
$S	ONE GANG SWITCH
S_2	TWO GANG SWITCH
S_3	THREE GANG SWITCH
$S_{3W(e)}$	THREE-WAY SWITCH
1300 AFFL	HEIGHT OF ALL SWITCHES
	CEILING
	CEILING AIR VENT

PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE OF BANCA-BANCA, CAMPING GROUND, TUBAO, MUNICIPALITY OF TUBAO

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 25/94

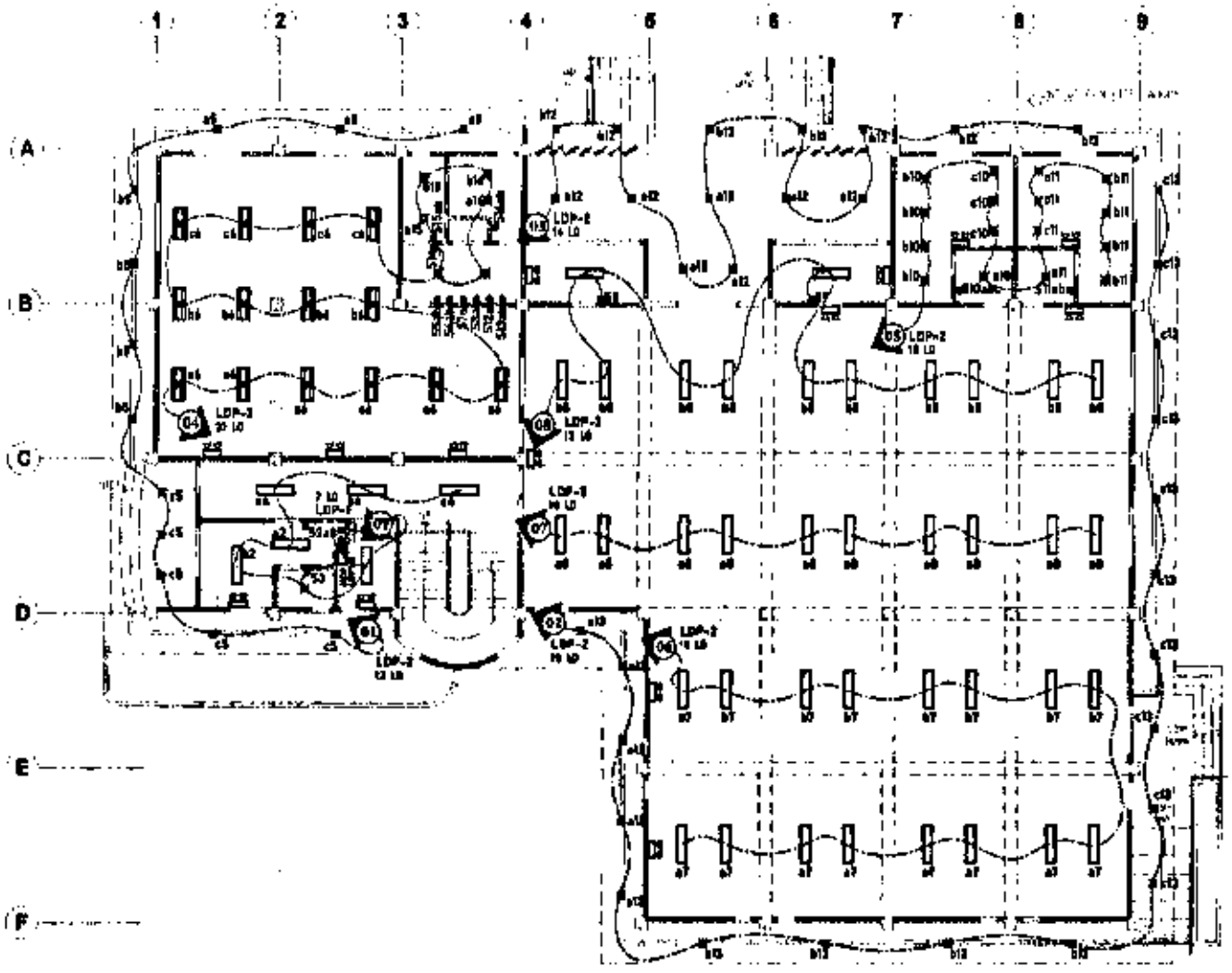
PREPARED BY: AGAPITO LLOYD L. TALAY, uap
ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG
SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS
ACTING DIVISION MANAGER A, ESD

APPROVED: MA. MAGNOLIA SINSON-MIRANDEJO
PORT MANAGER

JUNE 24, 2024



PTB 1 - GROUND FLOOR

1 SWITCH LAYOUT

SCALE 1:150mtrs

LEGEND (NOT DRAWN TO SCALE)	
SYMBOL	DESCRIPTION
P1	CIRCUIT NOMENCLATURE
	CIRCUIT BREAKER
	LOAD PANEL
	MAIN DISTRIBUTION PANEL
WIRING	
	POWER LINE
	LIGHTING LINE
	SWITCH LINE
LIGHTING	
	TYPE: ICI7 – 10W LED LAMP W/ 8" WHITE RECESSED CASING AND GLASS COVER LIGHT COLOR: COOL WHITE QUANTITY: 86
	TYPE: TWIN–18W T8 LED TUBE LIGHT (600mm LENGTH) W/ METAL SHEET HOUSING AND MIRROR REFLECTORS LIGHT COLOR: COOL WHITE/ DAYLIGHT QUANTITY: 28 – T8 LED LIGHT
	TYPE: 40W LED SURFACE MOUNTED PANEL LAMP (300mm x 1200mm) LIGHT COLOR: COOL WHITE QUANTITY: 68
	TYPE: TWIN–HEAD LED EMERGENCY LIGHT LIGHT COLOR: COOL WHITE QUANTITY: 22
OUTLETS	
	DUPLEX CONVENIENCE OUTLET
	SPECIAL OUTLET
	AIR–CONDITIONING UNIT
SWITCHES	
$S	ONE GANG SWITCH
S_2	TWO GANG SWITCH
S_3	THREE GANG SWITCH
$S_{3W}(a)$	THREE–WAY SWITCH
1300 AFFL	HEIGHT OF ALL SWITCHES
CEILING	
	CEILING AIR VENT

PHILIPPINE PORTS AUTHORITY

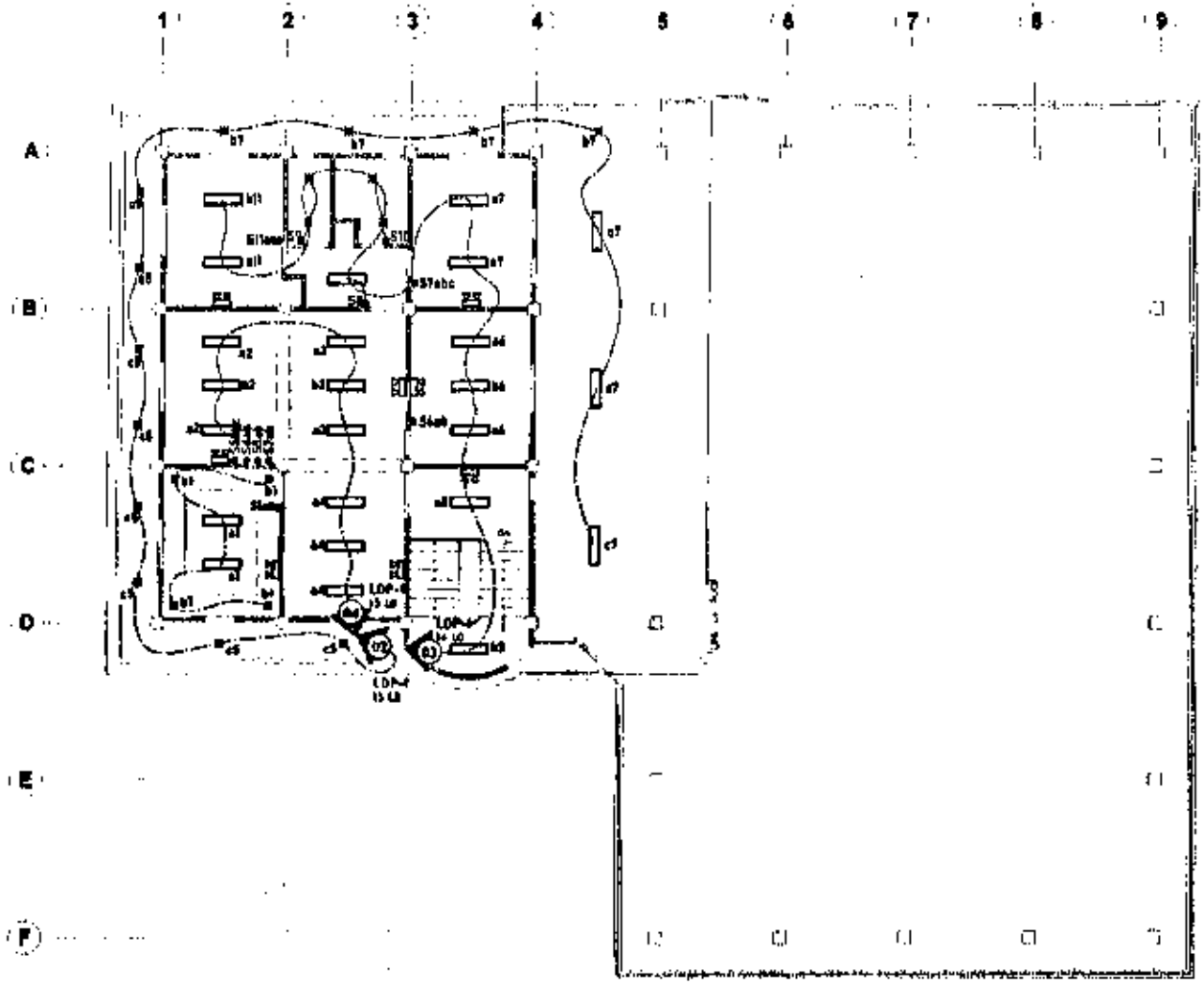
PORT MANAGEMENT OFFICE OF BICOL
REGIONAL OPERATIONS GROUP
PANSIL URBAN, CITY, BICOL

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 26/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LLOYD L. TALAY, Uap	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-RIQUEJO
ARCHITECT II	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, ESD	PORT MANAGER

JUNE 21, 2024



PTB 1 - SECOND FLOOR

1 **SWITCH LAYOUT**

SCALE 1:150mtrs

LEGEND (NOT DRAWN TO SCALE)	
SYMBOL	DESCRIPTION
01	CIRCUIT NUMERAL
	CIRCUIT BREAKER
LP	LOAD PANEL
MDP	MAIN DISTRIBUTION PANEL
WIRING	
	POWER LINE
	LIGHTING LINE
	SWITCH LINE
LIGHTING	
	TYPE: E27 - 18W LED LAMP W/ 6" WHITE RECESSED CASING AND GLASS COVER LIGHT COLOR: COOL WHITE QUANTITY: 86
	TYPE: T8W-15W T8 LED TUBE LIGHT (600mm LENGTH) W/ METAL SHEET HOUSING AND MIRROR REFLECTORS LIGHT COLOR: COOL WHITE/ DAYLIGHT QUANTITY: 28 - 15 LED LIGHT
	TYPE: 40W LED SURFACE MOUNTED PANEL LAMP (300mm x 1200mm) LIGHT COLOR: COOL WHITE QUANTITY: 48
	TYPE: T8W-HEAD LED EMERGENCY LIGHT LIGHT COLOR: COOL WHITE QUANTITY: 22
OUTLETS	
	DUPLEX CONVENIENCE OUTLET
SPO	SPECIAL OUTLET
AC	AIR-CONDITIONING UNIT
SWITCHES	
S	ONE GANG SWITCH
S_2	TWO GANG SWITCH
S_3	THREE GANG SWITCH
$S_{3W}(a)$	THREE-WAY SWITCH
1300 AFL	HEIGHT OF ALL SWITCHES
CEILING	
	CEILING AIR VENT

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF DAVAO CITY, ALMY

SHEET NO. 27/94

PREPARED BY: AGAPITO LLOYD C. TALAY, uap
ARCHITECT B

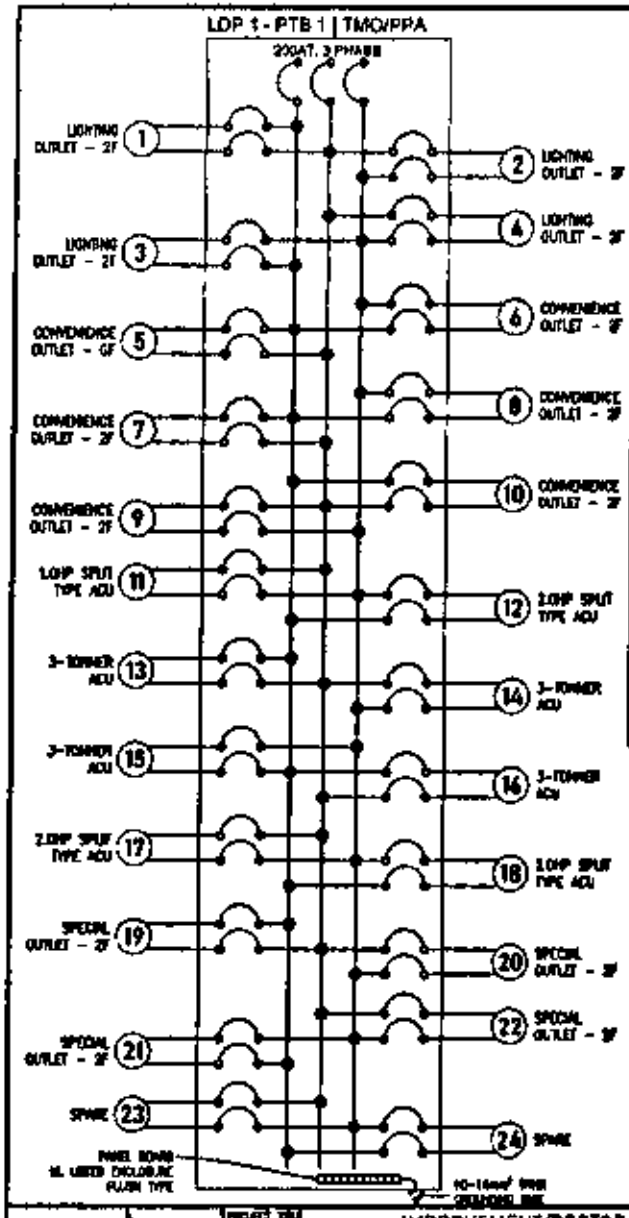
CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG
SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS
ACTING DIVISION MANAGER A, ESD

APPROVED: MA. MAGNOLIA SINSUAT-REGIEJO
PORT MANAGER

PORT MANAGEMENT OFFICE OF DAVAO

JUNE 30, 2024



SCHEDULE OF LOADS

LOAD DISTRIBUTION PANEL 1 - PPA

CKT NO.	C.B RATING VOLTS	AT	AF	POLE	CONNECTED LOADS LG	GO	EPO	SL	OTHERS	DESCRIPTION OF LOADS	VA	AMPS AB	AC	EA	FEEDER WIRE	FEEDER SIZE (mm²)	FEEDER TYPE	RACEWAY SIZE (mm)	RACEWAY CONDUIT
1	230	20	30	2	7					LIGHTING OUTLET - GROUND FLOOR	1380	6.48			2	3.5	THHN	20	uPVC
2	230	20	30	2	15					LIGHTING OUTLET - SECOND FLOOR	2700		11.74		2	3.5	THHN	20	uPVC
3	230	20	30	2	14					LIGHTING OUTLET - SECOND FLOOR	2520			10.96	2	3.5	THHN	20	uPVC
4	230	20	30	2	15					LIGHTING OUTLET - SECOND FLOOR	2700		11.74		2	3.5	THHN	20	uPVC
5	230	20	30	2		10		1		CONVENIENCE OUTLET - GROUND FLOOR	1980	8.61			2	3.5	THHN	20	uPVC
6	230	20	30	2		8				CONVENIENCE OUTLET - SECOND FLOOR	1440			6.26	2	3.5	THHN	20	uPVC
7	230	20	30	2		9		1		CONVENIENCE OUTLET - SECOND FLOOR	1620	7.04			2	3.5	THHN	20	uPVC
8	230	20	30	2		8		1		CONVENIENCE OUTLET - SECOND FLOOR	2160			9.39	2	3.5	THHN	20	uPVC
9	230	20	30	2		9		1		CONVENIENCE OUTLET - SECOND FLOOR	1620		7.04		2	3.5	THHN	20	uPVC
10	230	20	30	2		9				CONVENIENCE OUTLET - SECOND FLOOR	1620	7.04			2	3.5	THHN	20	uPVC
11	230	20	30	2			1			2.0 HP SPLIT-TYPE ACU - GROUND FLOOR	1380		6.00		2	3.5	THHN	20	uPVC
12	230	20	30	2			1			2.0 HP SPLIT-TYPE ACU - SECOND FLOOR	2300			9.57	2	3.5	THHN	20	uPVC
13	230	40	50	2			1			3-TONNER STANDING-TYPE ACU - SECOND FLOOR	4600	20.00			2	5.5	THHN	20	uPVC
14	230	40	50	2			1			3-TONNER STANDING-TYPE ACU - SECOND FLOOR	4600		20.00		2	5.5	THHN	20	uPVC
15	230	40	50	2			1			3-TONNER STANDING-TYPE ACU - SECOND FLOOR	4600			20.00	2	5.5	THHN	20	uPVC
16	230	40	50	2			1			3-TONNER STANDING-TYPE ACU - SECOND FLOOR	4600	20.00			2	5.5	THHN	20	uPVC
17	230	30	50	2			1			2.0 HP SPLIT-TYPE ACU - SECOND FLOOR	2300		9.57		2	5.5	THHN	20	uPVC
18	230	30	50	2			1			2.0 HP SPLIT-TYPE ACU - SECOND FLOOR	2300			9.57	2	5.5	THHN	20	uPVC
19	230	20	30	2			1			SPECIAL OUTLET - SECOND FLOOR	1620	6.83			2	5.5	THHN	20	uPVC
20	230	20	30	2			1			SPECIAL OUTLET - SECOND FLOOR	1620		6.83		2	5.5	THHN	20	uPVC
21	230	20	30	2			1			SPECIAL OUTLET - SECOND FLOOR	1620			6.83	2	5.5	THHN	20	uPVC
22	230	20	30	2			1			SPECIAL OUTLET - SECOND FLOOR	1620	6.83			2	5.5	THHN	20	uPVC
23	230	20	30	2					1	SPARE	1380		6.00		2	5.5	THHN	20	uPVC
24	230	20	30	2					1	SPARE	1380			6.00	2	5.5	THHN	20	uPVC
TOTAL	230	200	250	1	51	80	10	6	8	MAIN	69000	83.00	70.30	70.00	3	60 - 38.00	THHN	50	uPVC

COMPUTATION OF CONNECTED LOADS

COMPUTATION

I = 143.00 AMPERE + 9.04 AMPERE
I = 152.73 AMPERE

SUB-FEEDER CONDUCTOR:

USE:
3C-80mm² THHN COPPER STRANDED WIRE IN 63mm PVC 14 uPVC CONDUIT PIPE
1C-14mm² THHN GROUNDING WIRE

SUB-PROTECTION DEVICE:

USE:
200AT, 250AF, 3-POLE, 230 VOLTS
10 KAIC (MIN.) BOLT-ON TYPE MCCB

PROJECT TITLE

IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF SUBIC SBFZ, ALBAY

SHEET NO. 28 / 94

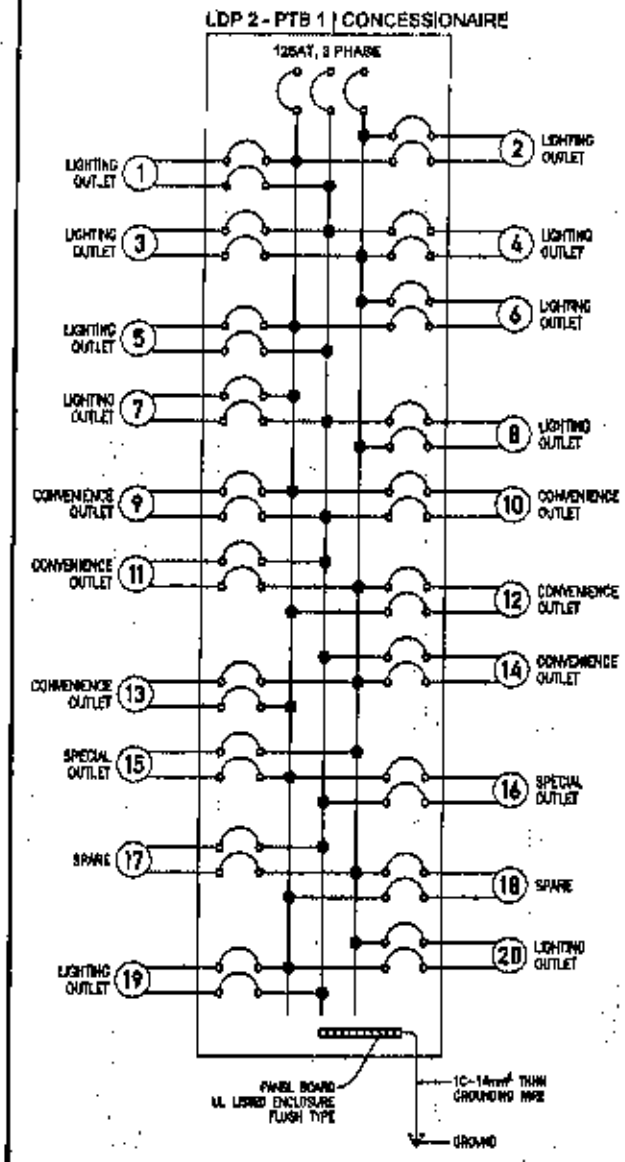
PREPARED BY: ADAPITO LLOYD L. TALAY, uap — ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING SENIOR MANAGER A, ESD

APPROVED: MA. MAGNOLIA SINSON-REQUEJO — PORT MANAGER

PORT MANAGEMENT OFFICE OF SUBIC SBFZ, ALBAY



SCHEDULE OF LOADS

LOAD DISTRIBUTION PANEL 2 - CONCESSIONAIRE

CKT NO.	G.B. RATING				DESCRIPTION OF LOADS	CONNECTED LOADS					VA	AMPS			FEEDER			RACEWAY	
	VOLTS	AT	AF	POLE		LO	CO	SPO	SL	OTHERS		AB	BO	CA	WIRE	SIZE (mm²)	TYPE	SIZE (mm)	CONDUIT
1	230	20	60	2	LIGHTING OUTLET	12					2160	9.39			2	5.5	THHN	25	uPVC
2	230	20	60	2	LIGHTING OUTLET	19					3420			14.87	2	5.5	THHN	25	uPVC
3	230	20	60	2	LIGHTING OUTLET	14					2520		10.96		2	5.5	THHN	25	uPVC
4	230	20	60	2	LIGHTING OUTLET	20					3600		15.65		2	5.5	THHN	25	uPVC
5	230	20	60	2	LIGHTING OUTLET	19					2660	12.82			2	5.5	THHN	25	uPVC
6	230	20	60	2	LIGHTING OUTLET	18					2660			12.82	2	5.5	THHN	25	uPVC
7	230	20	60	2	LIGHTING OUTLET	10					1800	7.83			2	3.5	THHN	20	uPVC
8	230	20	60	2	LIGHTING OUTLET	12					2160		9.39		2	3.5	THHN	20	uPVC
9	230	20	60	2	CONVENIENCE OUTLET		10		2		2160	9.39			2	3.5	THHN	20	uPVC
10	230	20	60	2	CONVENIENCE OUTLET		13				2340	10.17			2	3.5	THHN	20	uPVC
11	230	20	60	2	CONVENIENCE OUTLET		9		4		2340		10.17		2	3.5	THHN	20	uPVC
12	230	20	60	2	CONVENIENCE OUTLET		10				1800			7.83	2	3.5	THHN	20	uPVC
13	230	20	60	2	CONVENIENCE OUTLET		10		1		1980			8.61	2	3.5	THHN	20	uPVC
14	230	20	60	2	CONVENIENCE OUTLET		10		3		2340		10.17		2	3.5	THHN	20	uPVC
15	230	20	60	2	SPECIAL OUTLET			1			1800			7.83	2	3.5	THHN	20	uPVC
16	230	20	60	2	SPECIAL OUTLET			1			1800	7.83			2	3.5	THHN	20	uPVC
17	230	20	60	2	SPARE					1	1800		7.83		2	3.5	THHN	20	uPVC
18	230	20	60	2	SPARE					1	1800			7.83	2	3.5	THHN	20	uPVC
19	230	20	60	2	SPARE					1	1800	7.83			2	3.5	THHN	20	uPVC
20	230	20	60	2	SPARE					1	1800			7.83	2	3.5	THHN	20	uPVC
TOTAL	230	125	100	3	MAIN	119	63	3	10	4	43200	62.39	63.87	63.39	3	38-14.00	THHN	40	uPVC

COMPUTATION OF CONNECTED LOADS

COMPUTATION

I_T = 1.732 X 63.39 AMPERES
I_T = 109.79 AMPERES

SUB-FEEDER CONDUCTOR:

USE:
3C-38mm² THHN COPPER STRANDED WIRE IN 40mm PHS 14 uPVC CONDUIT PIPE
1C-14mm² THHN GROUNDING WIRE

SUB-PROTECTION DEVICE:

USE:
125AT, 150AF, 3-POLE, 230 VOLTS
18 KAIC (MIN.) BOLT-ON TYPE MCCB

PHILIPPINE PORTS AUTHORITY

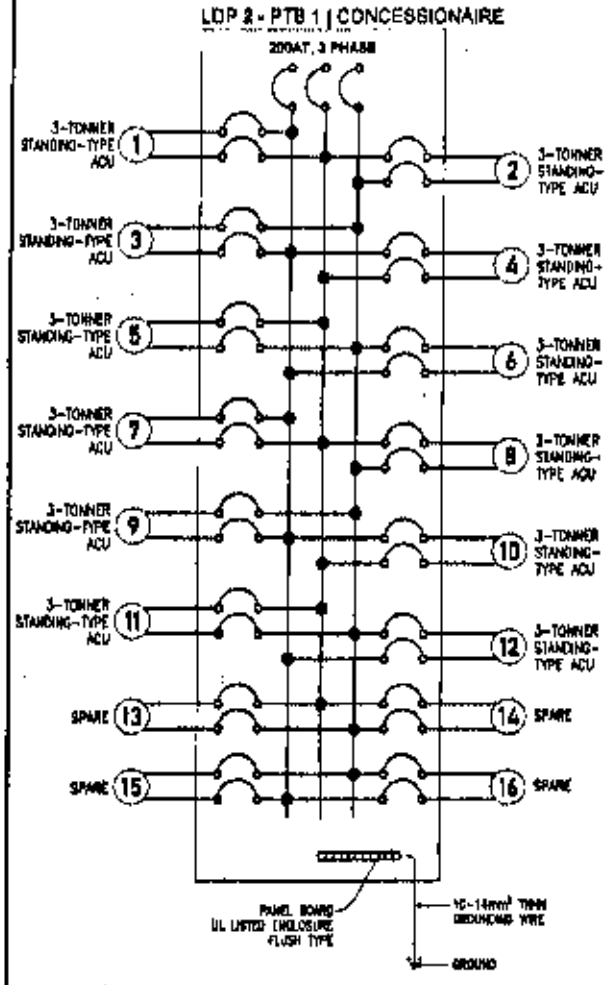
PORT MANAGEMENT OFFICE OF BICOL
MANUEL JOSEPHSON COMPLEX
PANIC VENUE CITY 4500

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 29/94

PREPARED BY: AGAPITO LLOYD L. TALAY, uap — ARCHITECT II
CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A
RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, ESD
APPROVED: MA. MAGNOLIA SINSON-REQUEJO — PORT MANAGER

JUNE 25, 2024



SCHEDULE OF LOADS

LOAD DISTRIBUTION PANEL 2 - CONCESSIONAIRE

CKT NO.	C.B. RATING				CONNECTED LOAD						VA	AMPS			FEEDER			RACEWAY	
	VOLTS	AT	AF	POLE	LC	CC	8PC	SL	OTHERS	DESCRIPTION OF LOADS		AB	BC	CA	WIRE	SIZE (mm²)	TYPE	SIZE (mm)	CONDUIT
1	230	40	65	3			1			3-TONNER STANDING-TYPE ACU	4600	20.87			2	5.5	THHN	25	uPVC
2	230	40	65	3			1			3-TONNER STANDING-TYPE ACU	4600		20.87		2	5.5	THHN	25	uPVC
3	230	40	65	3			1			3-TONNER STANDING-TYPE ACU	4600			20.87	2	5.5	THHN	25	uPVC
4	230	40	65	3			1			3-TONNER STANDING-TYPE ACU	4600	20.87			2	5.5	THHN	25	uPVC
5	230	40	65	3			1			3-TONNER STANDING-TYPE ACU	4600		20.87		2	5.5	THHN	25	uPVC
6	230	40	65	3			1			3-TONNER STANDING-TYPE ACU	4600			20.87	2	5.5	THHN	25	uPVC
7	230	40	65	3			1			3-TONNER STANDING-TYPE ACU	4600	20.87			2	5.5	THHN	25	uPVC
8	230	40	65	3			1			3-TONNER STANDING-TYPE ACU	4600		20.87		2	5.5	THHN	25	uPVC
9	230	40	65	3			1			3-TONNER STANDING-TYPE ACU	4600			20.87	2	5.5	THHN	25	uPVC
10	230	40	65	3			1			3-TONNER STANDING-TYPE ACU	4600	20.87			2	5.5	THHN	25	uPVC
11	230	30	60	2			1			1.0 HP SPLIT-TYPE ACU	1200		6.30		2	5.5	THHN	25	uPVC
12	230	30	60	2			1			1.0 HP SPLIT-TYPE ACU	1200			6.30	2	5.5	THHN	25	uPVC
13	230	20	60	2					1	SPARE	1800		6.52		2	3.5	THHN	25	uPVC
14	230	20	60	2					1	SPARE	1800			6.52	2	3.5	THHN	25	uPVC
15	230	20	60	2					1	SPARE	1800		6.52		2	3.5	THHN	25	uPVC
16	230	20	60	2					1	SPARE	1800			6.52	2	3.5	THHN	25	uPVC
TOTAL	230	200	300	3	0	0	15	0	4	MAIN	34400	83.48	84.87	86.87	3	80-14.00	THHN	65	uPVC

COMPUTATION OF CONNECTED LOADS

COMPUTATION

I_T = 144.58 AMPERES + 9.04 AMPERES
I_T = 153.58 AMPERES

SUB-FEEDER CONDUCTOR:

USE:
3C-80mm² THHN COPPER STRANDED WIRE IN 65mm PHS 14 uPVC CONDUIT PIPE
1C-14mm² THHN GROUNDING WIRE

SUB-PROTECTION DEVICE:

USE:
200AT, 250AF, 3-POLE, 230 VOLTS
18 KAIC (MIN.) BOLT-ON TYPE MCCB

PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE OF TABACO
MUNICIPAL COMPOUND, BRGY. MAGALLANES
TABACO CITY, ALBAY

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 30/94

PREPARED BY: AGAPITO LLOYD L. TALAY, uap
ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG
SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS
ACTING DIVISION MANAGER A, EBD

APPROVED: MA. MAGNOLIA SINSON-REQUEJO
PORT MANAGER

JUNE 21, 2024

COMPUTATION OF CONNECTED LOADS

TOTAL LOADS:

LIGHTING LOADS	=	37,800VA
SMALL APPLIANCE LOADS	=	16,560VA
TOTAL	=	54,360VA
FIRST 20,000VA OR LESS @ 50% D.F.	=	10,000VA
REMAINDER 44,360VA OR LESS @ 40% D.F.	=	17,744VA
TOTAL	=	27,744VA

OTHER LOADS:

3-PHASE STANDARD-TYPE ACU (15 UNITS)	=	75,000VA
1.0 HP (2 UNITS)	=	2,400VA
WATER PUMP	=	1,500VA
SPECIAL OUTLET (2 UNITS)	=	3,000VA
SPARE (12 UNITS)	=	20,000VA
TOTAL	=	101,700VA

COMPUTATION:

I = 329.95 AMPERES

I_R = 329.95A x 1.25

I_R = 412.44 AMPERES

MAIN FEEDER CONDUCTOR:

USE:
2C/PHASE-175mm² THHN COPPER STRANDED WIRE IN ø80mm PHS 14 uPVC CONDUIT PIPE
1C-38mm² THHN GROUNDING WIRE

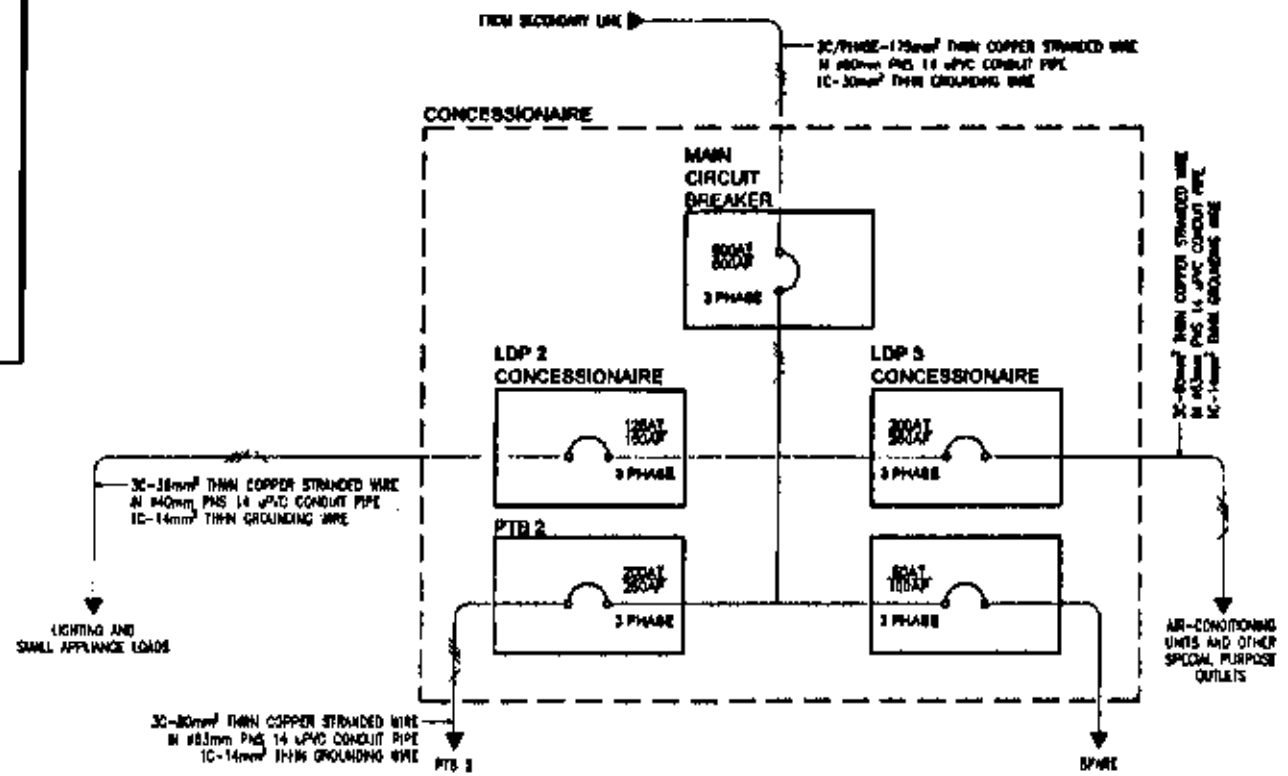
MAIN PROTECTION DEVICE:

USE:
600AT, 600AF, 3-POLE, 230 VOLTS
18 kAIC (MIN.) BOLT-ON TYPE MCCB

SCHEDULE OF LOADS

MAIN DISTRIBUTION PANEL - CONCESSIONAIRE

CKT NO.	C.B. RATING				CONNECTED LOAD						VA	3P	FEEDER			RACEWAY	
	VOLTS	AT	AF	POLE	LO	CO	SPO	EL	OTHERS	DESCRIPTION OF LOADS			WIRE	SIZE (mm²)	TYPE	SIZE (mm²)	CONDUIT
1	230	125	150	3	110	62	2	10	4	LDP 2 - CONCESSIONAIRE (LIGHT LOADS)	43200	108.79	3	50 - 14.0	THWN	40	uPVC
2	230	200	250	3			12		4	LDP 3 - CONCESSIONAIRE (ACU AND SPO)	69408	163.66	3	60- 14.00	THWN	60	uPVC
3	230	300	350	3	81	11	8	6	6	PTB 2	88260	198.34	3	80- 14.00	THWN	80	uPVC
4	230	50	100	3						SPARE							
TOTAL	230	600	600	3	240	75	22	16	10	MAIN	180660	432.81	3	170 - 30	THWN	80	uPVC



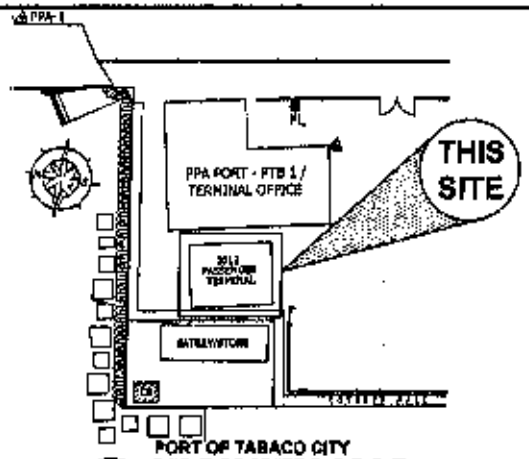
PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE OF BACOLOD, REGIONAL DEVELOPMENT OFFICE, PORTS LUZON, BTY. 6100

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 31/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LLOYD M. TALAY, uap	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-REQUEJO
ARCHITECT II	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, ESD	PORT MANAGER

JUNE 24, 2024

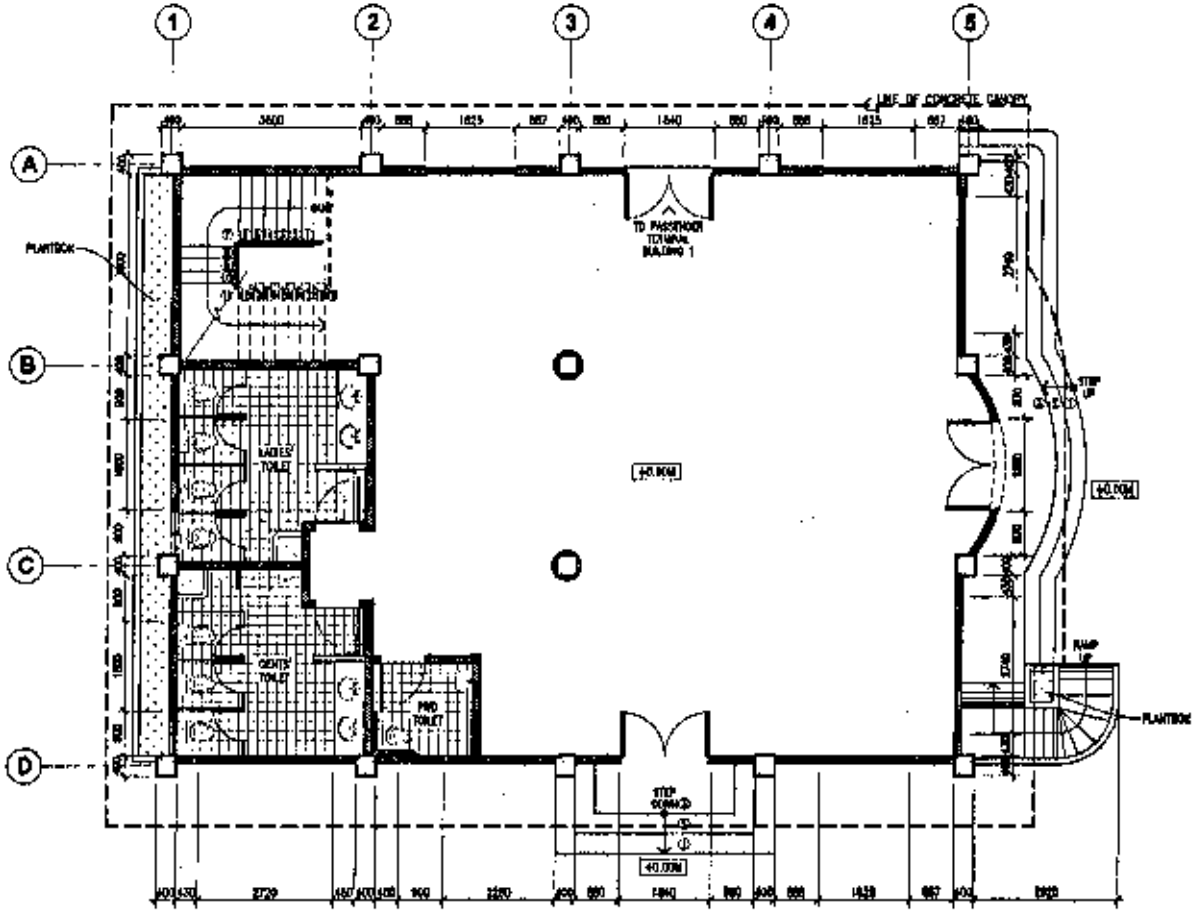


PORT OF TABACO CITY

1 VICINITY MAP

SCALE NTS

SCOPE OF WORK - PTB1	
DESCRIPTION	ASSESSMENT
REPLACEMENT OF DOORS AND WINDOWS	SEE DETAILS
REPLACEMENT OF FLOOR TILES	SEE DETAILS
PROVISION FOR METAL ROLLING STEEL SHUTTERS	SEE DETAILS
REPAIR OF ROOFING	SEE DETAILS
REPLACEMENT OF CEILING - INTERIOR AND EAVES	28 m²
REWIRING OF ALL ELECTRICAL WIRES AND REPLACEMENT OF ALL ELECTRICAL DEVICES - LIGHTING/POWER OUTLETS AND CIRCUIT BREAKERS	SEE DETAILS
REPLACEMENT OF MODULAR TOILET PARTITIONS @ RESTROOMS	SEE DETAILS
REPLACEMENT OF RESTROOM FIXTURES: WATER CLOSET BIDET SPRAY DROP-IN LAVATORY URINAL ACCESSORIES	10 UNITS 10 UNITS 8 UNITS 6 UNITS SEE DETAILS
INSTALLATION OF URINAL PARTITIONS	6 UNITS
REPAINTING OF INTERIOR AND EXTERIOR WALLS AND SURFACES	
RELOCATION OF DOOR EXIT AND ACCESS, INSTALLATION OF HANDRAIL	SEE DETAILS
EXTENSION AND CONSTRUCTION OF NEW PLANTBOX AND PROTECTIVE RAILING	SEE DETAILS
CONCRETE CANOPY EXTENSION ADJACENT TO PTB 1	AREA = 162.00m²
DEMOLITION OF CONCRETE WALLS AND FLOORS	SEE DETAILS



PTB 2 - GROUND FLOOR

2 EXISTING PLAN

SCALE 1:100mts

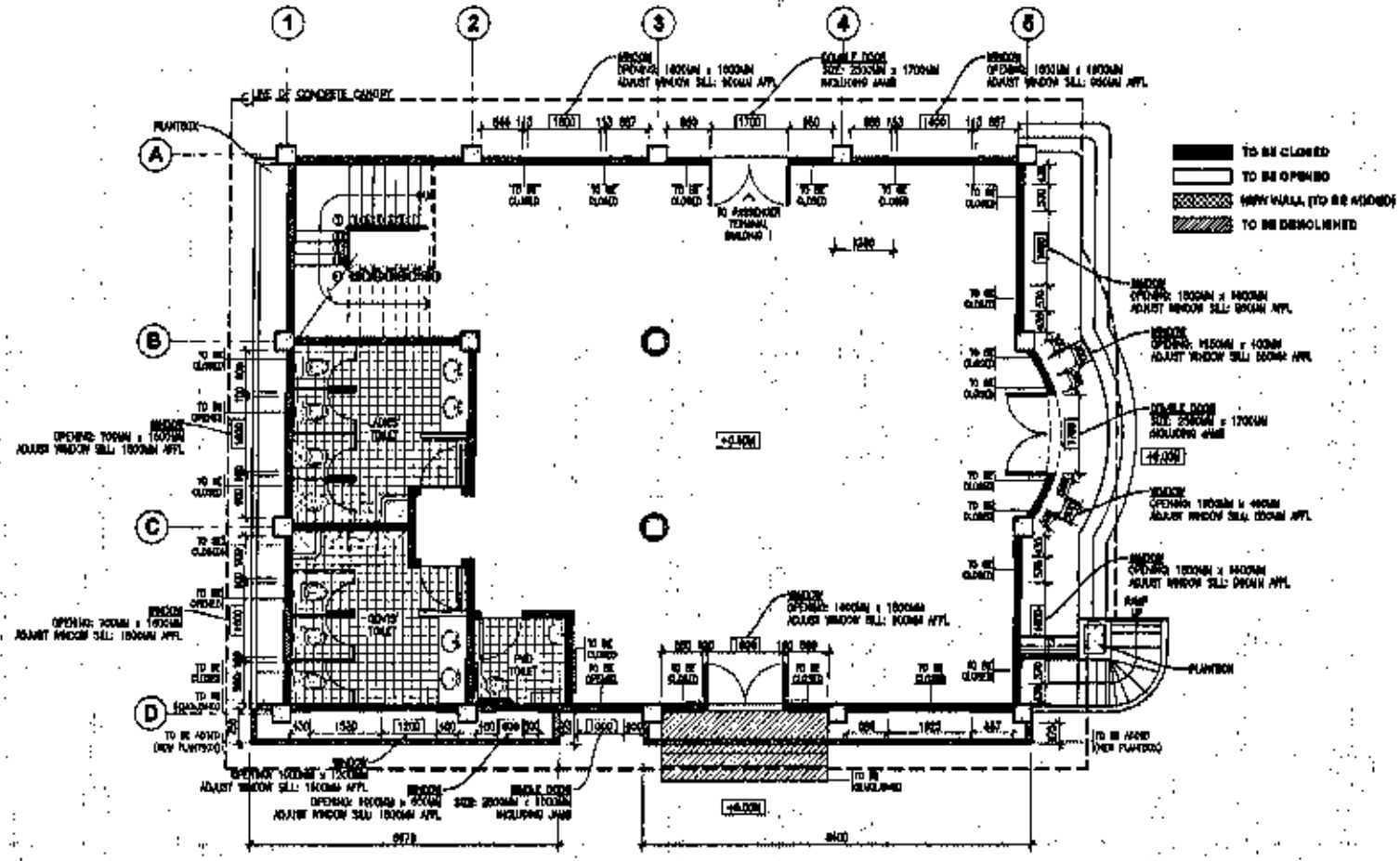
PORT MANAGEMENT OFFICE OF BICOL

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 32/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LLOYD L. TALAY, Ump	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-LEQUEJO
ARCHITECT II	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, PSD	PORT MANAGER

JUNE 24, 2024



PTB 2 - GROUND FLOOR

1 **DEMOLITION PLAN**

SCALE 1:100mts

PHILIPPINE PORTS AUTHORITY

PORT MANAGEMENT OFFICE OF SIOCON
SIOCON, ZAMBOANGA DEL NORTE
PORT MANAGER CITY 7018

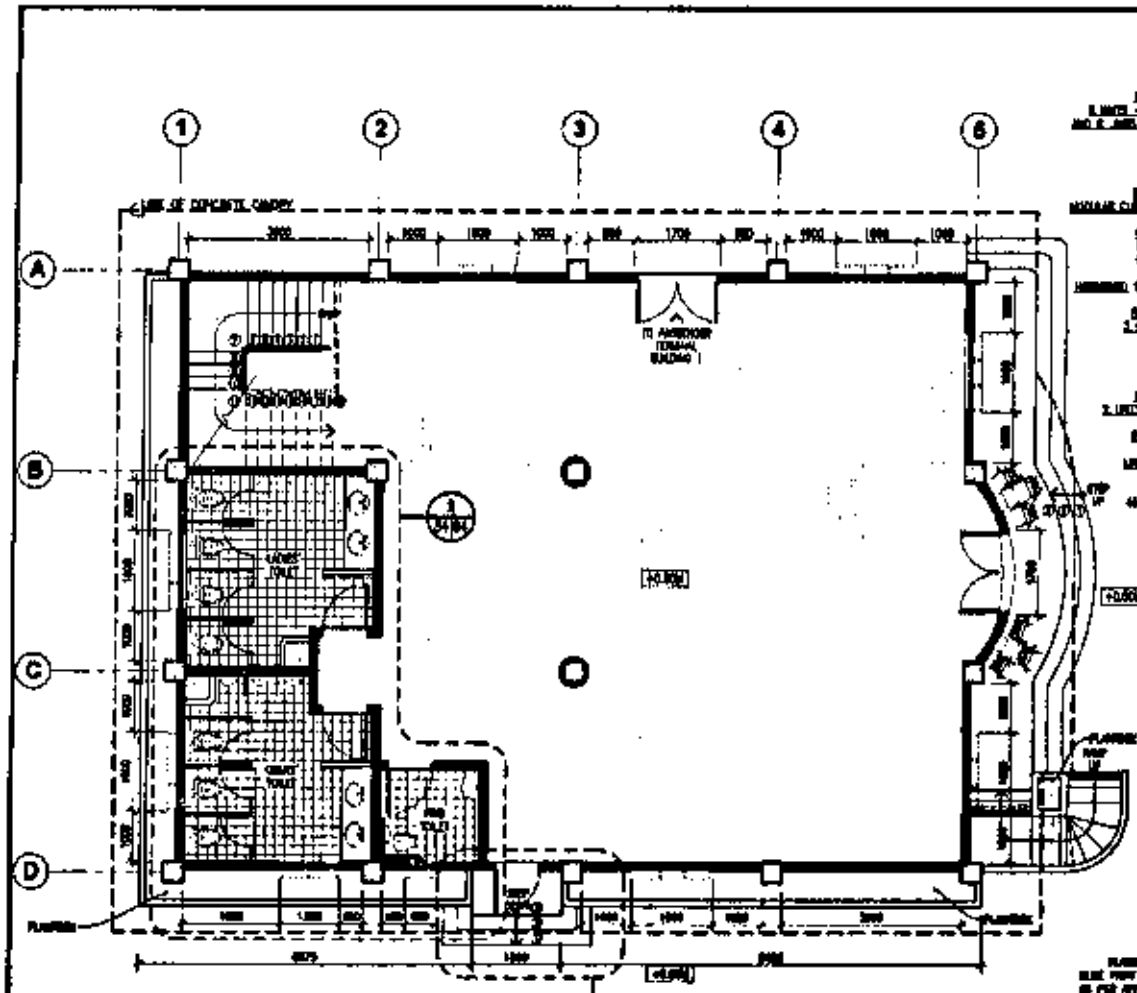
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IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

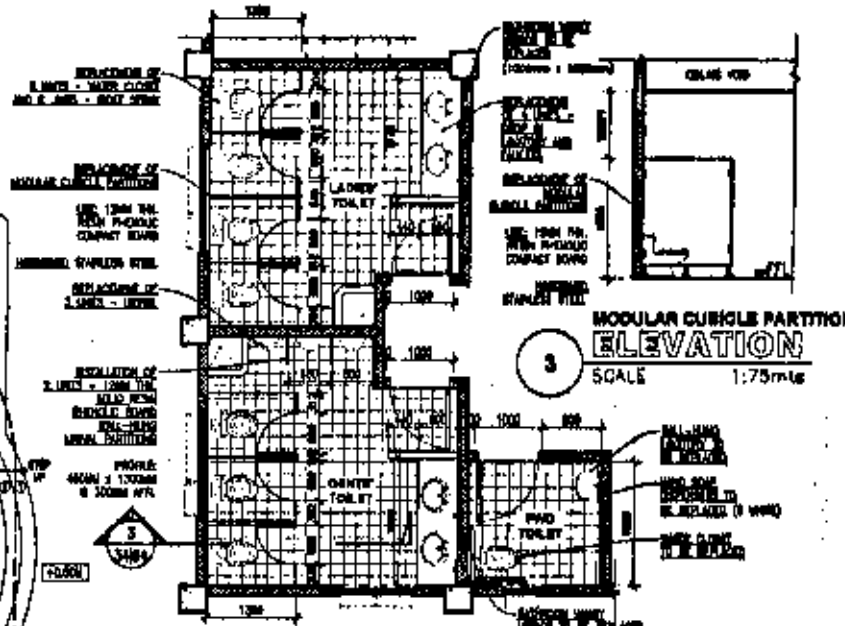
SHEET NO. 33/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LLOYD L. TALAY, uap	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SIMSON-REQUEJO
ARCHITECT II	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, ESD	PORT MANAGER

JUNE 24, 2021

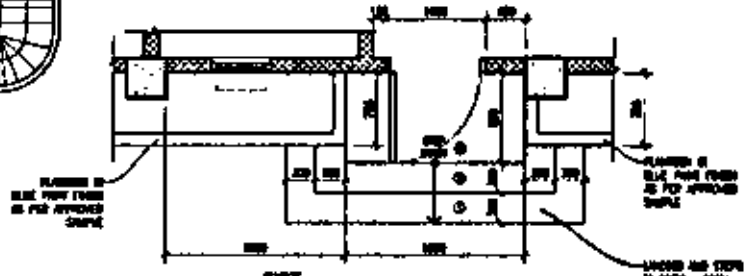


PTB 2 - GROUND FLOOR
1 PARTITION PLAN
SCALE 1:100mts



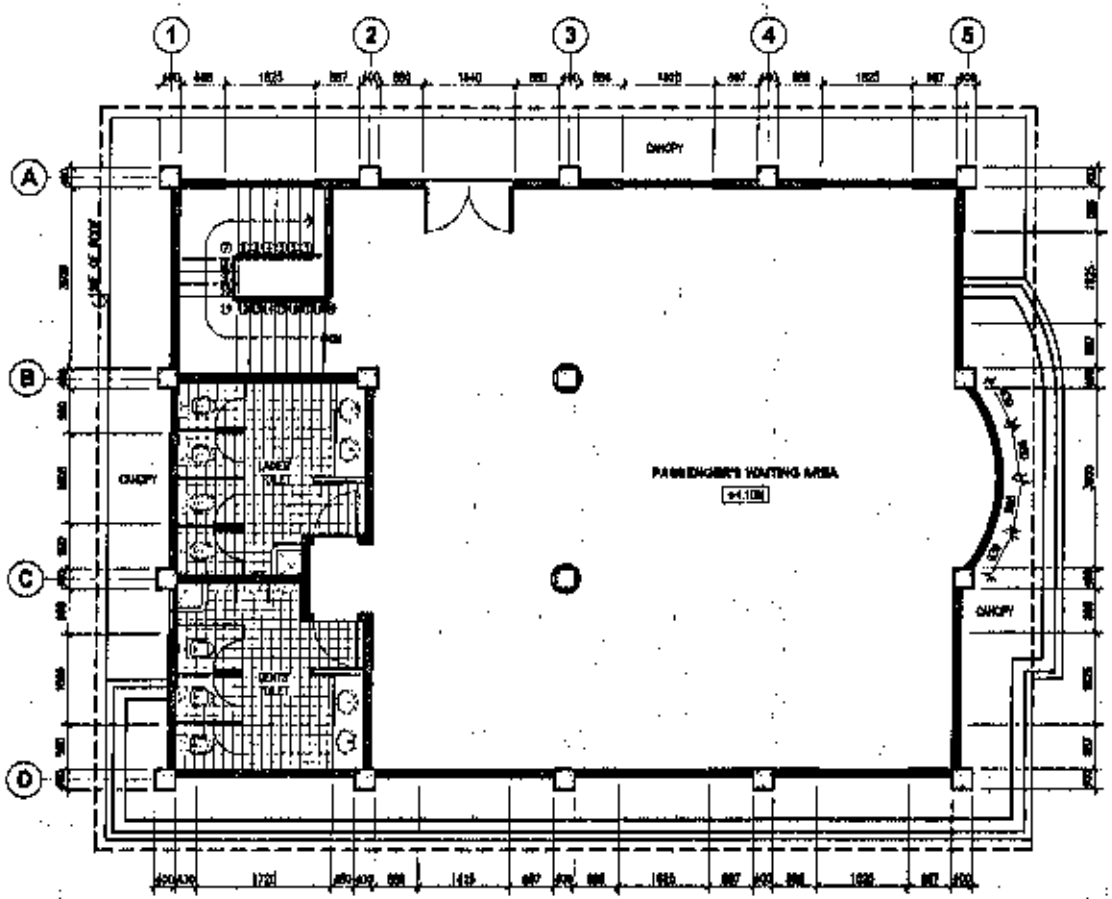
TOILET
2 ENLARGED PLAN
SCALE 1:75mts

MODULAR CUBICLE PARTITION
3 ELEVATION
SCALE 1:75mts



EXIT
4 ENLARGED PLAN
SCALE 1:50mts

PHILIPPINE PORTS AUTHORITY PORT MANAGEMENT OFFICE OF [illegible]	PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING PORT OF TABACO CITY, ALBAY			SHEET NO. 34 / 94
	PREPARED BY: AGAPITO LLOYD L. TALAY, UAP ARCHITECT I	CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG SUPERVISING ENGINEER A	RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS ACTING DIVISION MANAGER A, ESD	APPROVED: MA. MAGNOLIA SINSON-REQUEJO PORT MANAGER	JUNE 24, 2024



PTB 2 - SECOND FLOOR

1 EXISTING PLAN

SCALE 1:100mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 35 / 94

PREPARED BY: AGAPITO LLOYD E. TALAY, uep
ARCHITECT II

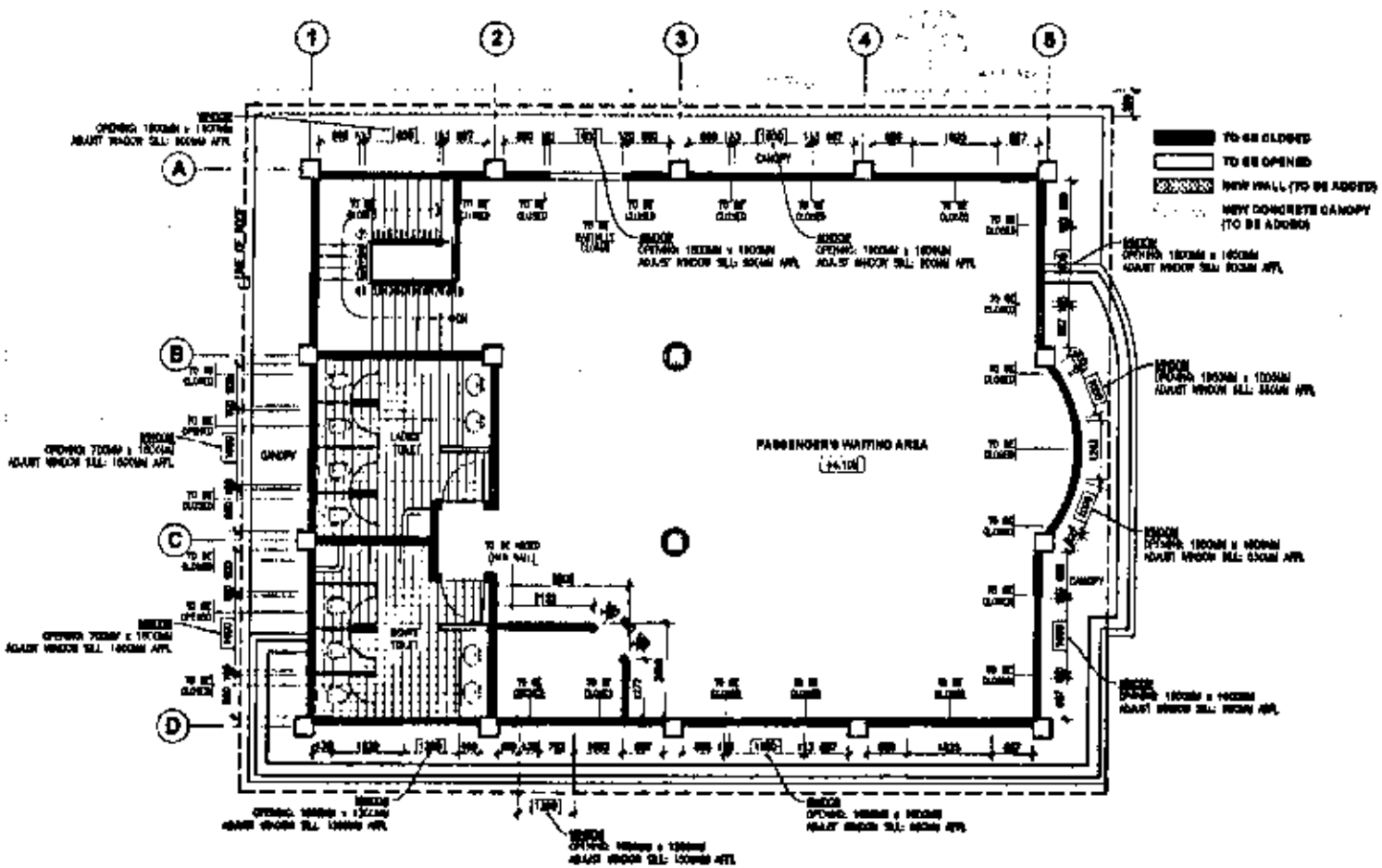
CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG
SUPERVISING ENGINEER II

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS
ACTING DIVISION MANAGER II, OSD

APPROVED: MA. MAGNOLIA SINSON-REDEJO
PORT MANAGER

JUNE 24, 2024

PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE OF BIGOL



PTB 2 - SECOND FLOOR

1 **DEMOLITION PLAN**

SCALE 1:100mm

PHILIPPINE PORTS AUTHORITY

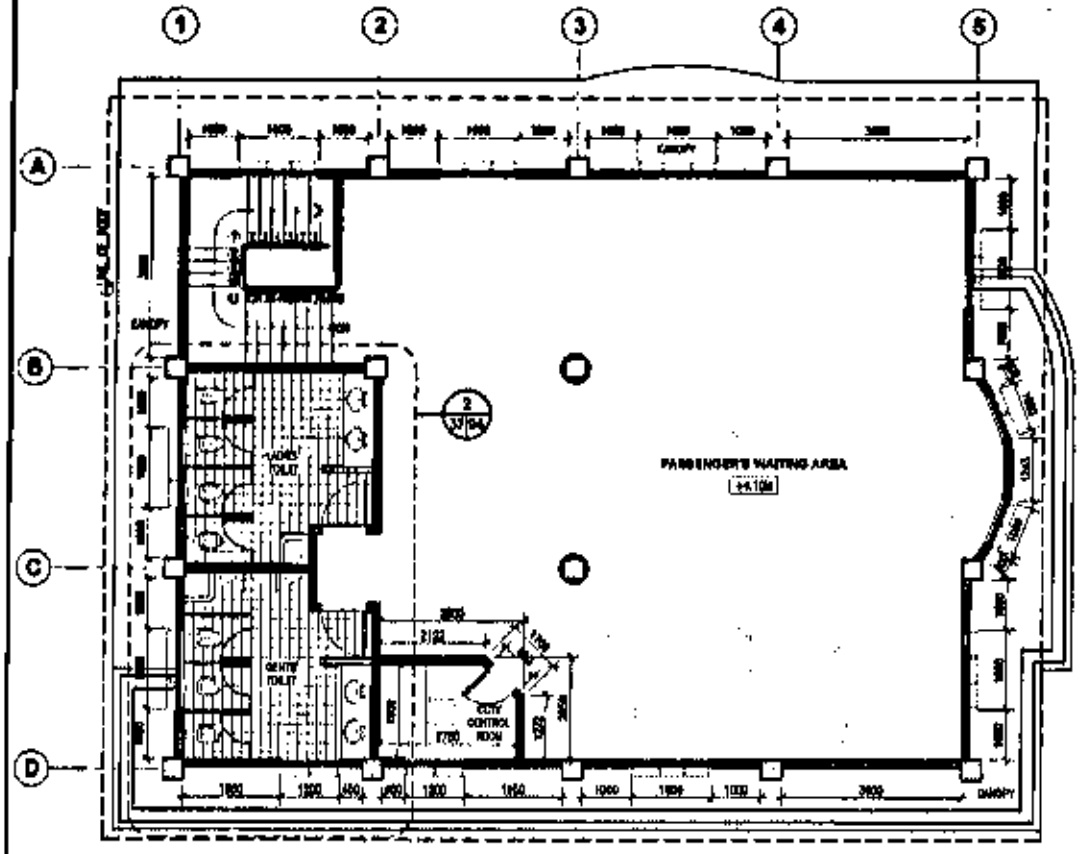
PORT MANAGEMENT OFFICE OF IMUS, PROVINCIAL GOVERNMENT COMPOUND, PARIAN, IMUS CITY 4103

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF IMUS CITY, ILOILO

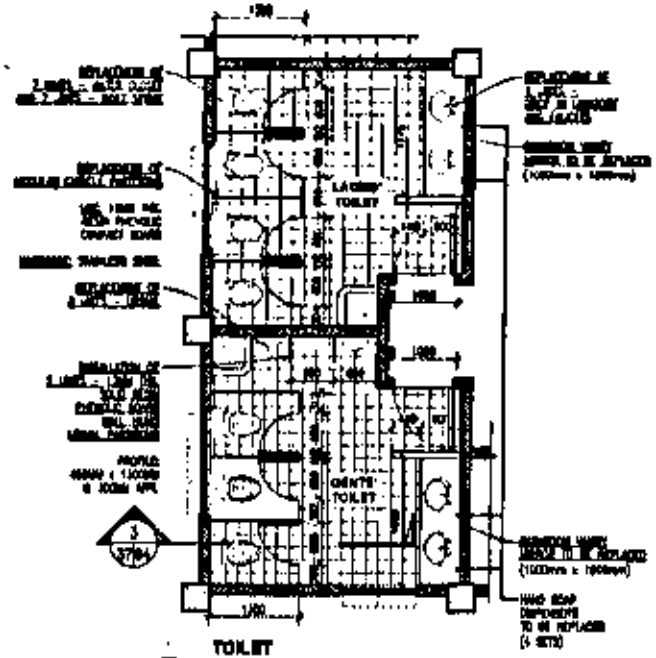
SHEET NO. 36/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LEONEL L. TALAY, uap	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-REQUEJO
ARCHITECT I	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, ESD	PORT MANAGER

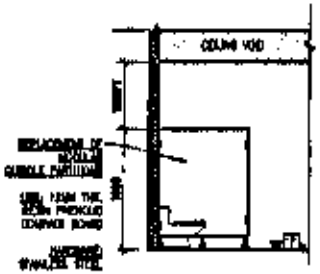
JUNE 11, 2014



PTB 2 - SECOND FLOOR
1 PARTITION PLAN
SCALE 1:100mts



TOILET
2 ENLARGED PLAN
SCALE 1:75mts



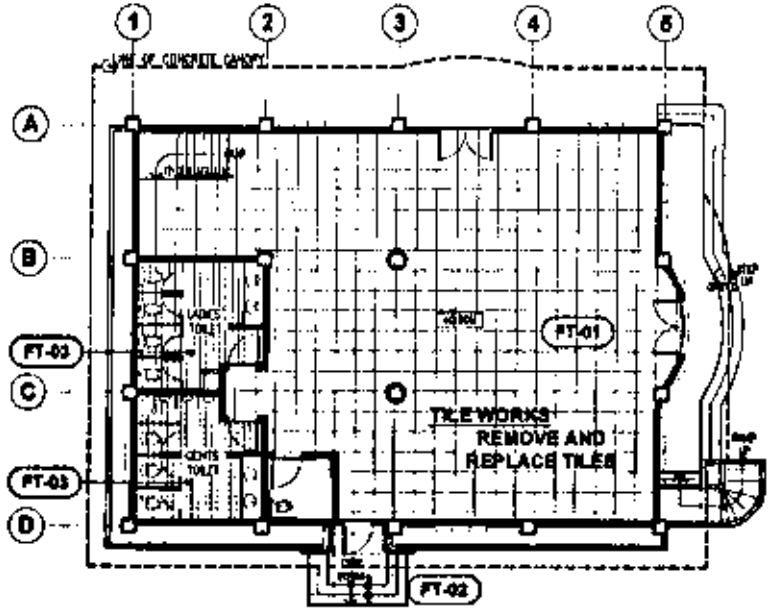
MODULAR CUBICLE PARTITION
3 ELEVATION
SCALE 1:75mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF DAVAO CITY, PHILS.

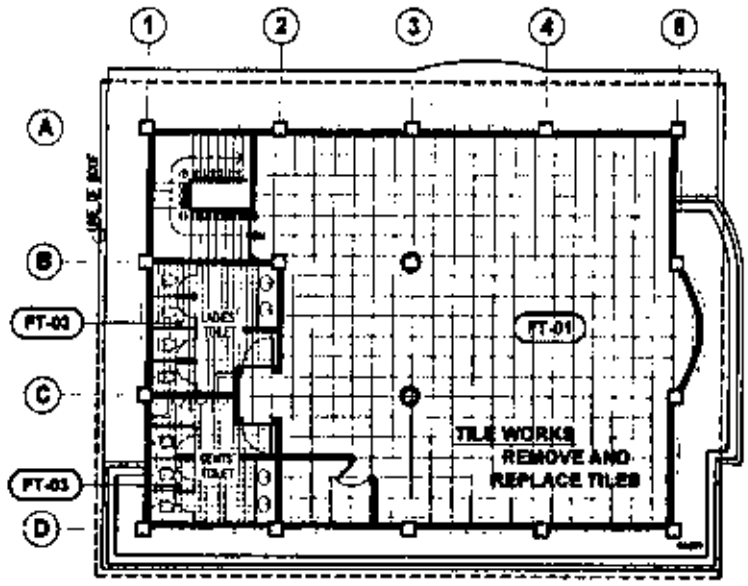
SHEET NO. 37/94

PREPARED BY: AGAPITO L. TALAY, uap — ARCHITECT II
CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A
RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, CSD
APPROVED: MA. MAGNOLIA SIMSON-REQUEJO — PORT MANAGER

JUNE 24, 2004



PTB 2 - GROUND FLOOR
1 FLOOR FINISH PLAN
SCALE 1:150mtrs



PTB 2 - SECOND FLOOR
2 FLOOR FINISH PLAN
SCALE 1:150mtrs

FINISH SCHEDULE

FLOOR TILE

FT-01 AREA: 289.20m² LOCATION: PASSENGER'S WAITING AREA AND ENTRANCE LOBBY @ GF AND 2F SPECIFICATIONS: 60cm x 60cm MATTE PORCELAIN FLOOR TILES INSTALLATION: STRAIGHT MATCH	FT-02 AREA: 9.60m² LOCATION: ENTRANCE @ GF SPECIFICATIONS: 60cm X 60cm MATTE PORCELAIN FLOOR TILE INSTALLATION: STRAIGHT MATCH	FT-03 AREA: 53.20m² LOCATION: RESTROOM SPECIFICATIONS: 60cm X 60cm PORCELAIN ANTI-SLIP FLOOR TILE INSTALLATION: STRAIGHT MATCH

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

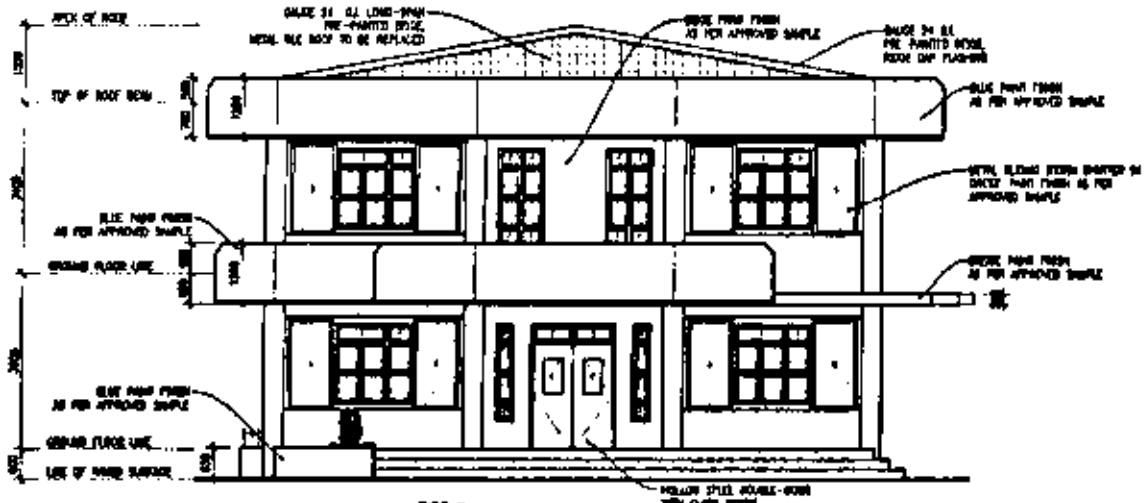
SHEET NO. 38 / 94

PREPARED BY: AGAPITO L. TALAY, uap — ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, ESD

APPROVED: MA. MAGNOLIA SINSON-REGUEJO — PORT MANAGER



PTB 2

1 FRONT ELEVATION

SCALE 1:100mts



PTB 2

2 LEFT SIDE ELEVATION

SCALE 1:100mts

PHILIPPINE PORTS AUTHORITY

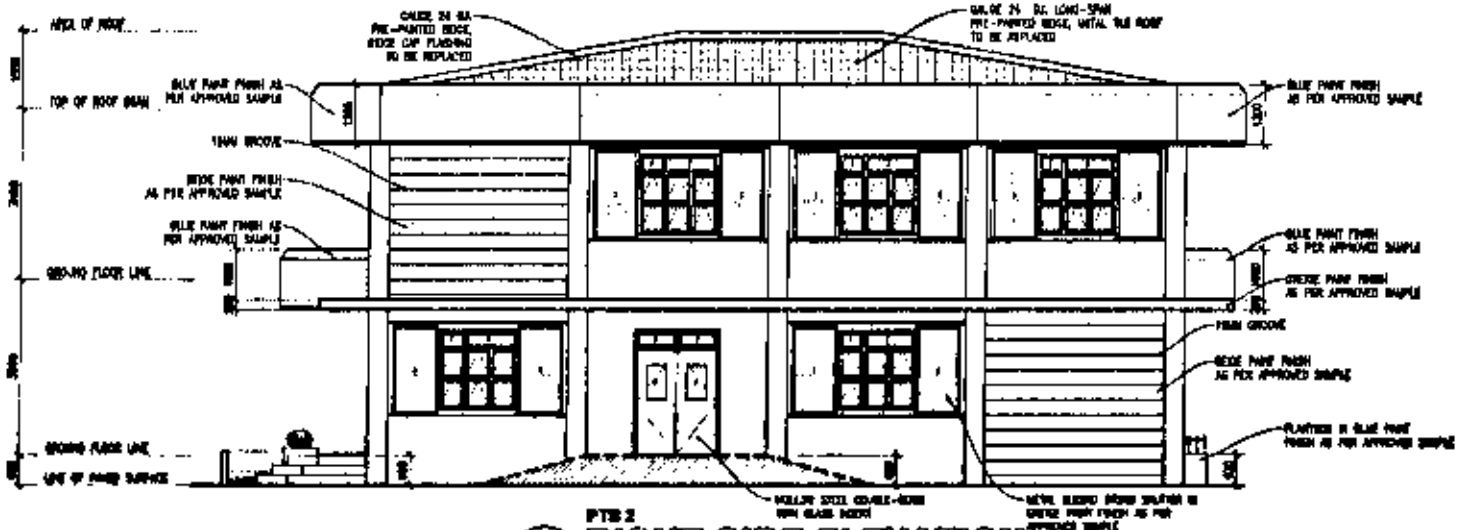
PORT MANAGEMENT OFFICE OF BICOL

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 39/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO L. TALAY, Ung	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-REVEJO
ARCHITECT II	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, CSD	PORT MANAGER

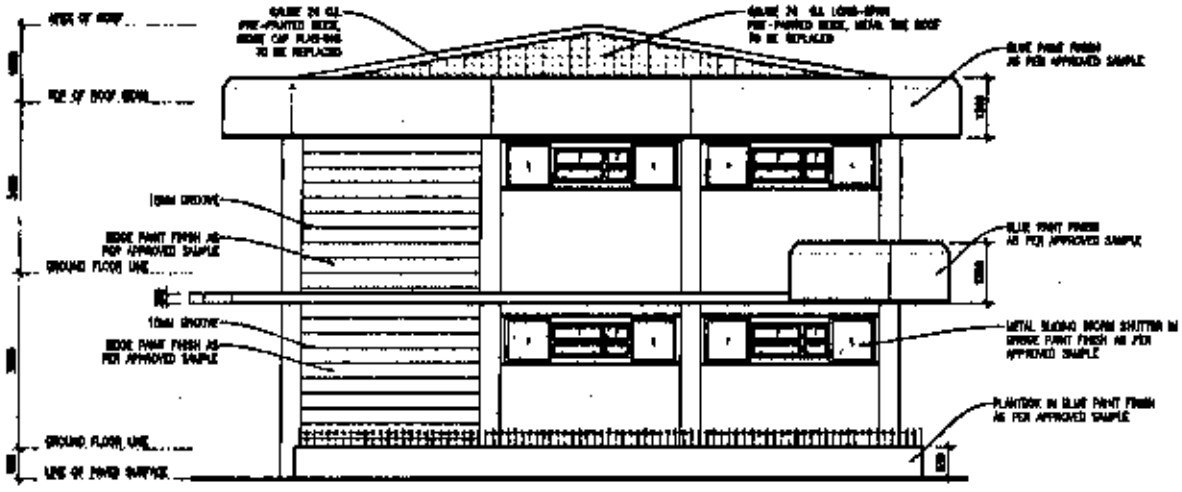
APR 21, 2024



PTB 2

1 **RIGHT SIDE ELEVATION**

SCALE 1:100mts



PTB 2

2 **REAR ELEVATION**

SCALE 1:100mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING

PORT OF [illegible] CITY, [illegible]

SHEET NO. 40 / 94

PREPARED BY: AGAPITO LLOYD L. TALAY, uap — ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAO — SUPERVISING ENGINEER I

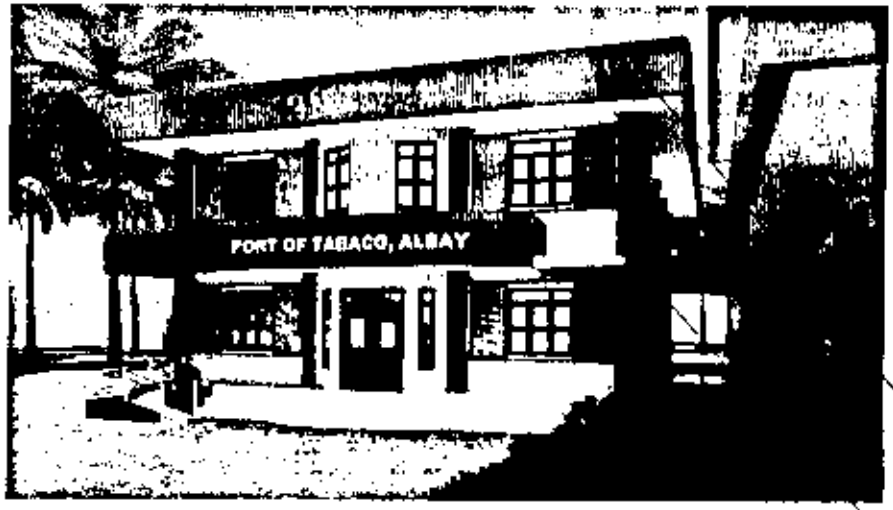
RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER I, CSD

APPROVED: MA. MAGNOLIA SINSON-[illegible]JO — PORT MANAGER

PORT MANAGEMENT OFFICE OF [illegible]

[illegible], [illegible] CITY [illegible]

JUNE 21, [illegible]







1 PTB 2 - EXTERIOR PERSPECTIVE VIEWS
SCALE NTS

SCHEDULE OF WALL PAINT FINISHES

	COLOR: BLUE SHEEN: SEMI-GLOSS
	COLOR: GREIGE SHEEN: SEMI-GLOSS
	COLOR: BEIGE SHEEN: SEMI-GLOSS
	COLOR: WHITE SHEEN: GLOSS

PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE OF BICOL

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 41 / 94

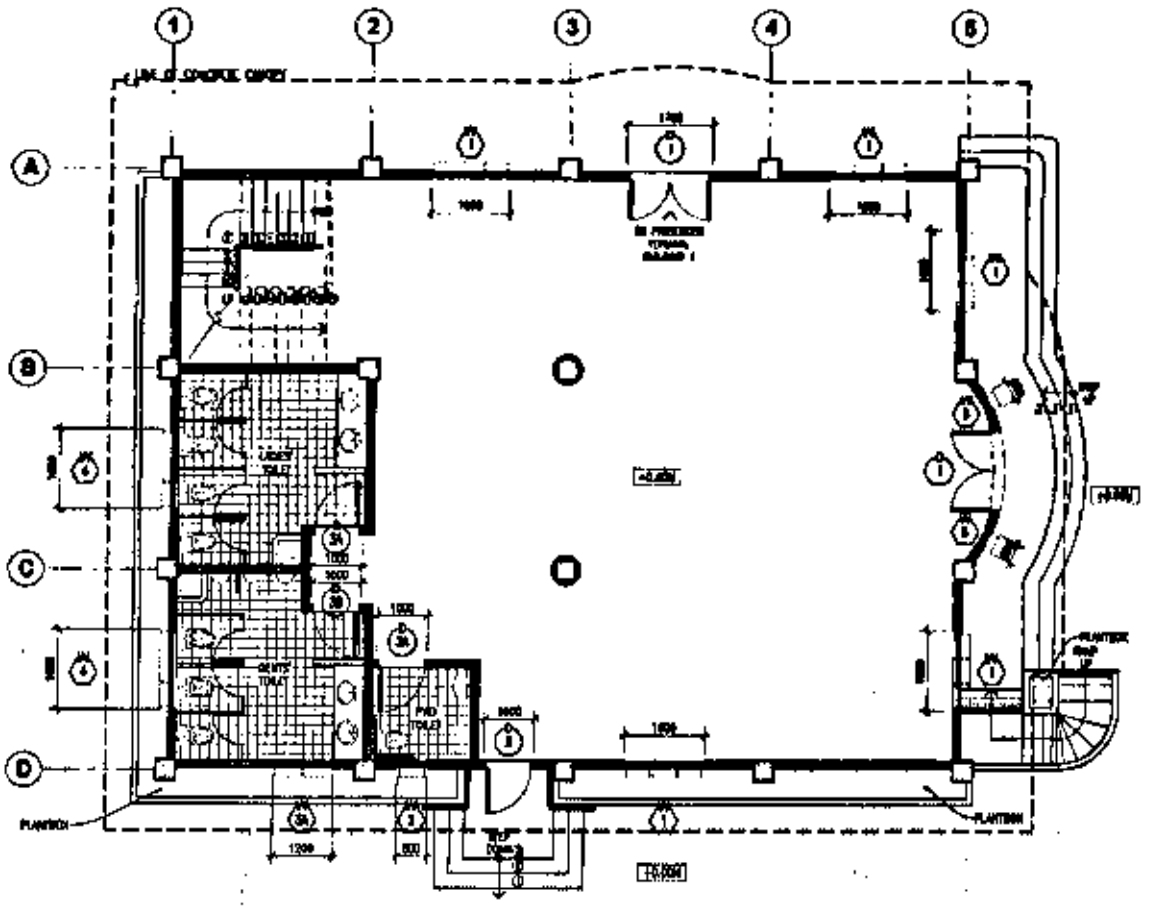
PREPARED BY: AGAPITO LLOYD L. TALAY, ubp — ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, ESD

APPROVED: MA. MAGNOLIA SINSON-REGUEJO — PORT MANAGER

JUNE 24, 2024

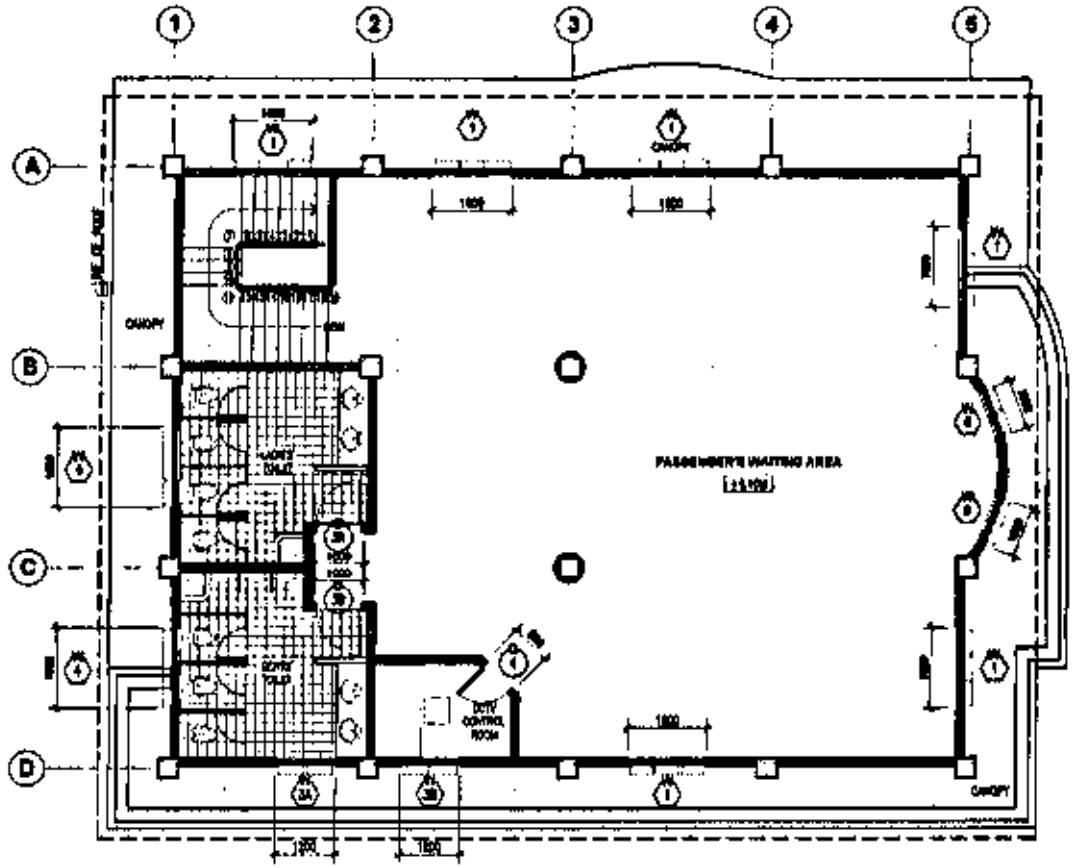


PTB 2 - GROUND FLOOR

1 **DOOR AND WINDOW LAYOUT**

SCALE 1:100mtrs

PHILIPPINE PORTS AUTHORITY PORT MANAGEMENT OFFICE OF ILOILO	PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING PORT OF TABUCO CITY, ILAW			SHEET NO. 42 / 94
PREPARED BY: AGAPITO LLOYD N. TALAY, uap ARCHITECT II	CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG SUPERVISING ENGINEER A	RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS ACTING DIVISION MANAGER A, OSD	APPROVED: MA. MAGNOLIA SINSON-REGUEJO PORT MANAGER	JUNE 24, 2024

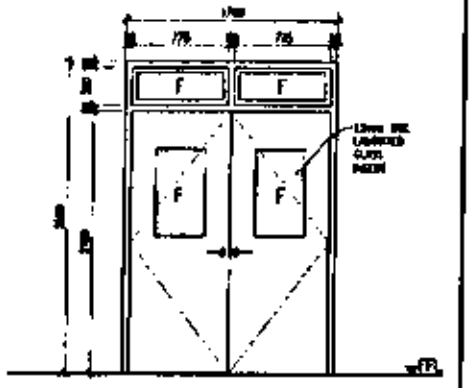


PTB 2 - SECOND FLOOR

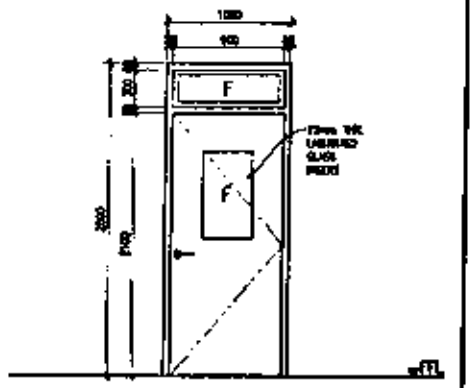
1 **DOOR AND WINDOW LAYOUT**

SCALE 1:100mls

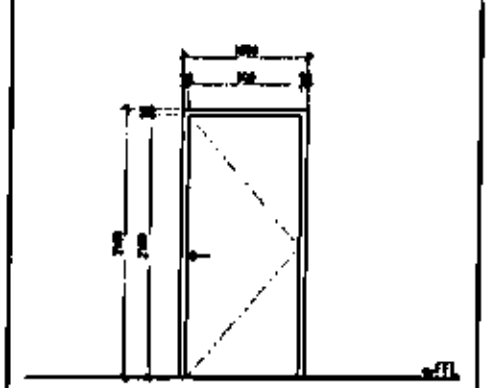
PHILIPPINE PORTS AUTHORITY PORT MANAGEMENT OFFICE OF BISCOL	PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING PORT OF TABACO CITY, ALBAY			SHEET NO. 43/94
	PREPARED BY: AGAPITO LLOYD L. TALAY, UAP ARCHITECT II	CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG SUPERVISING ENGINEER A	RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS ACTING DIVISION MANAGER A, ESD	APPROVED: MA. MAGNOLIA SINSON-REQUEJO PORT MANAGER	JUNE 24, 2024



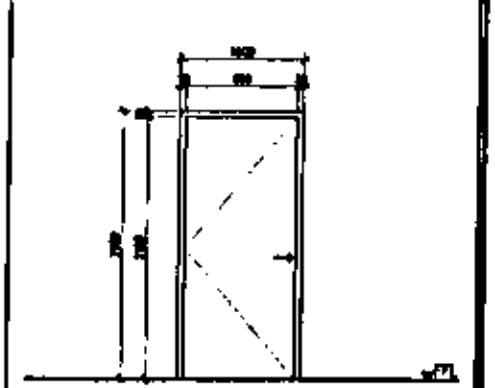
①
TYPE: HOLLOW STEEL DOOR W/ GLASS INSERT
MATERIAL: POWDER COATED STEEL W/ LAMINATED GLASS INSERT
JAMB: STEEL
LOCATION: PASSENGER'S WAITING AREA
REQUIRED: 2



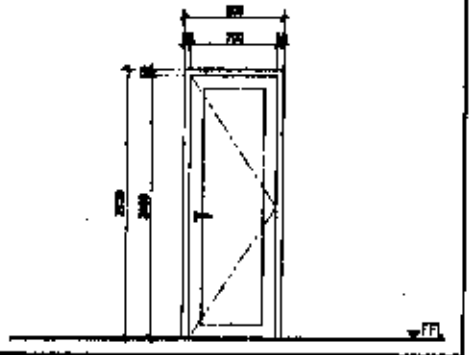
②
TYPE: HOLLOW STEEL DOOR W/ GLASS INSERT
MATERIAL: POWDER COATED STEEL W/ LAMINATED GLASS INSERT
JAMB: STEEL
LOCATION: PASSENGER'S EXIT
REQUIRED: 1



③A
TYPE: PLAIN WOOD PLASTIC COMPOSITE DOOR (WPC)
MATERIAL: WOOD PLASTIC COMPOSITE
JAMB: WOOD PLASTIC COMPOSITE
LOCATION: LADIES' TOILET AND PWD TOILET
REQUIRED: 3



③B
TYPE: PLAIN WOOD PLASTIC COMPOSITE DOOR (WPC)
MATERIAL: WOOD PLASTIC COMPOSITE
JAMB: WOOD PLASTIC COMPOSITE
LOCATION: GENTS' TOILET
REQUIRED: 2



④
TYPE: PANEL DOOR W/ 10mm GROOVE
MATERIAL: HARDWOOD
JAMB: HARDWOOD
LOCATION: CCTV CONTROL ROOM
REQUIRED: 1

GENERAL NOTE:
ALL DOORS SHOULD
BE INSTALLED WITH 316 STAINLESS
STEEL MARINE GRADE HARDWARE.
DOOR HANDLES SHOULD BE LEVER-TYPE.

1 DOOR SCHEDULE
SCALE 1:40mtr

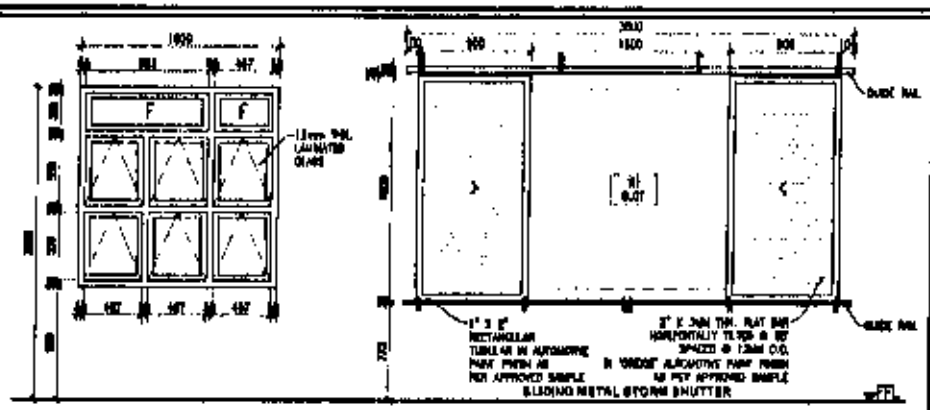
PHILIPPINE PORTS AUTHORITY
PORT MANAGEMENT OFFICE OF BICOL

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 44/94

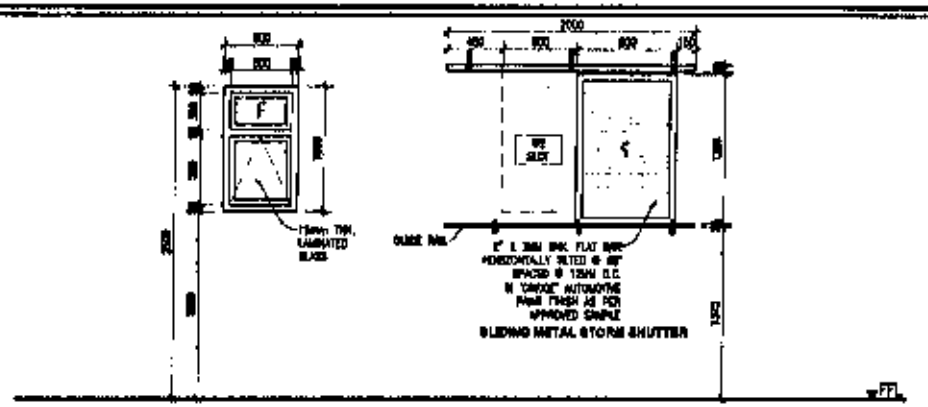
PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDED APPROVAL	APPROVED
ADAPITO LLOYD L. TALAY, uap	CHRISTOPHER M. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-REQUEJO
ARCHITECT I	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, OIC	PORT MANAGER

JUNE 24, 2024



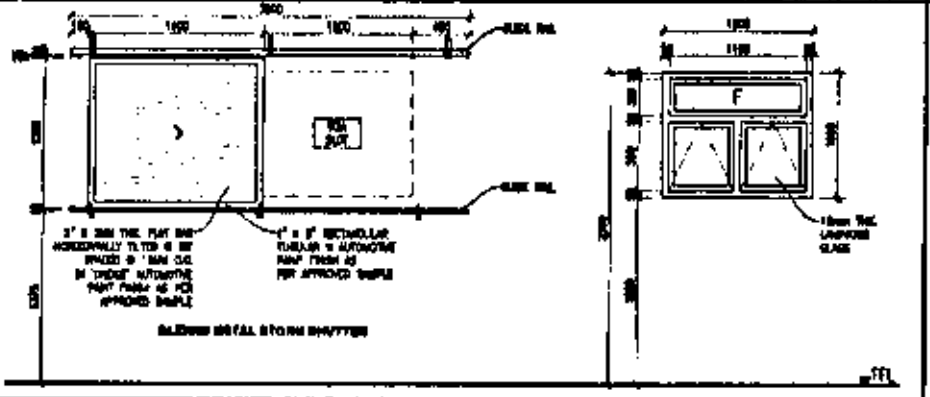
①

TYPE	AWNING W/ TRANSOM WINDOW
MATERIAL	uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB	uPVC
LOCATION	PASSENGER'S WAITING AREA
REQUIRED	11



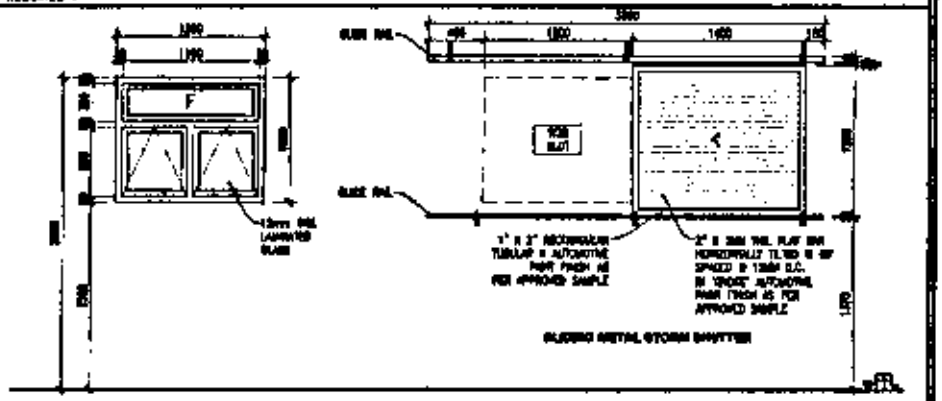
①

TYPE	AWNING W/ TRANSOM WINDOW
MATERIAL	uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB	uPVC
LOCATION	PAID TOILET
REQUIRED	1



①A

TYPE	AWNING W/ TRANSOM WINDOW
MATERIAL	uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB	uPVC
LOCATION	GENT'S TOILET
REQUIRED	2



①B

TYPE	AWNING W/ TRANSOM WINDOW
MATERIAL	uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB	uPVC
LOCATION	CCTV CONTROL ROOM
REQUIRED	1

① WINDOW SCHEDULE

SCALE 1:40mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING

PORT OF MATNOG (PIO), ALBAY

SHEET NO. 45/94

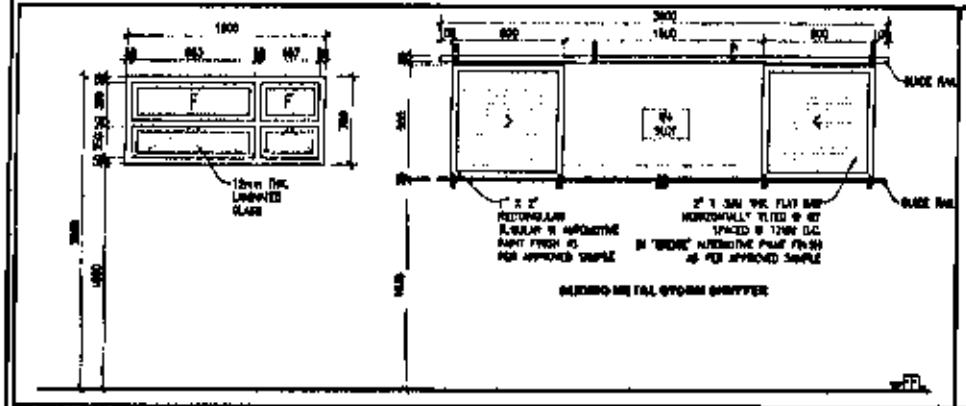
PREPARED BY: AGAPITO LOUIE L. TALAY, uap — PROJECT P

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING STATION MANAGER A, CID

APPROVED: MA. MAGNOLIA SINSON-REQUEJO — PORT MANAGER

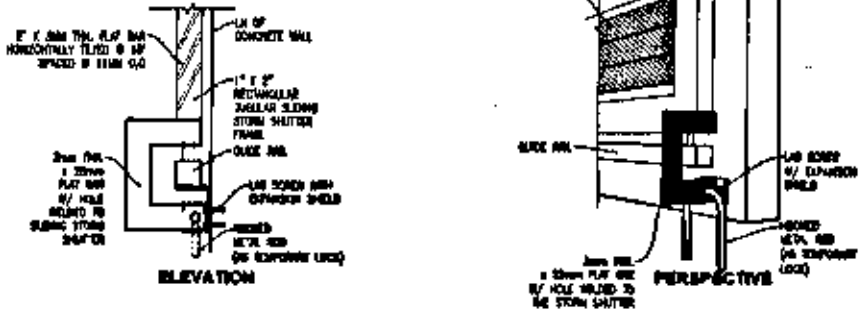
JUNE 24, 2024



TYPE: AWNING W/ TRANSOM WINDOW	TYPE: AWNING & FIXED WINDOW	TYPE: AWNING & FIXED WINDOW
MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE	MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE	MATERIAL: uPVC FRAME W/ LAMINATED WINDOW PANE
JAMB: uPVC	JAMB: uPVC	JAMB: uPVC
LOCATION: GENTS' AND LADIES' TOILET	LOCATION: ENTRANCE	LOCATION: PASSENGER'S WAITING AREA @ GROUND FLOOR
REQUIRED: 4	REQUIRED: 3	REQUIRED: 2

1 WINDOW SCHEDULE
SCALE 1:40mts

GENERAL NOTE
ALL SLIDING METAL STORM SHUTTERS SHOULD BE INSTALLED WITH TEMPORARY LOCK ON BOTH ENDS TO PREVENT THE MECHANISM FROM SLIDING OFF WHEN SHUT.



SLIDING METAL STORM SHUTTER (TYPICAL)

2 LOCK DETAIL
SCALE 1:5mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 46/94

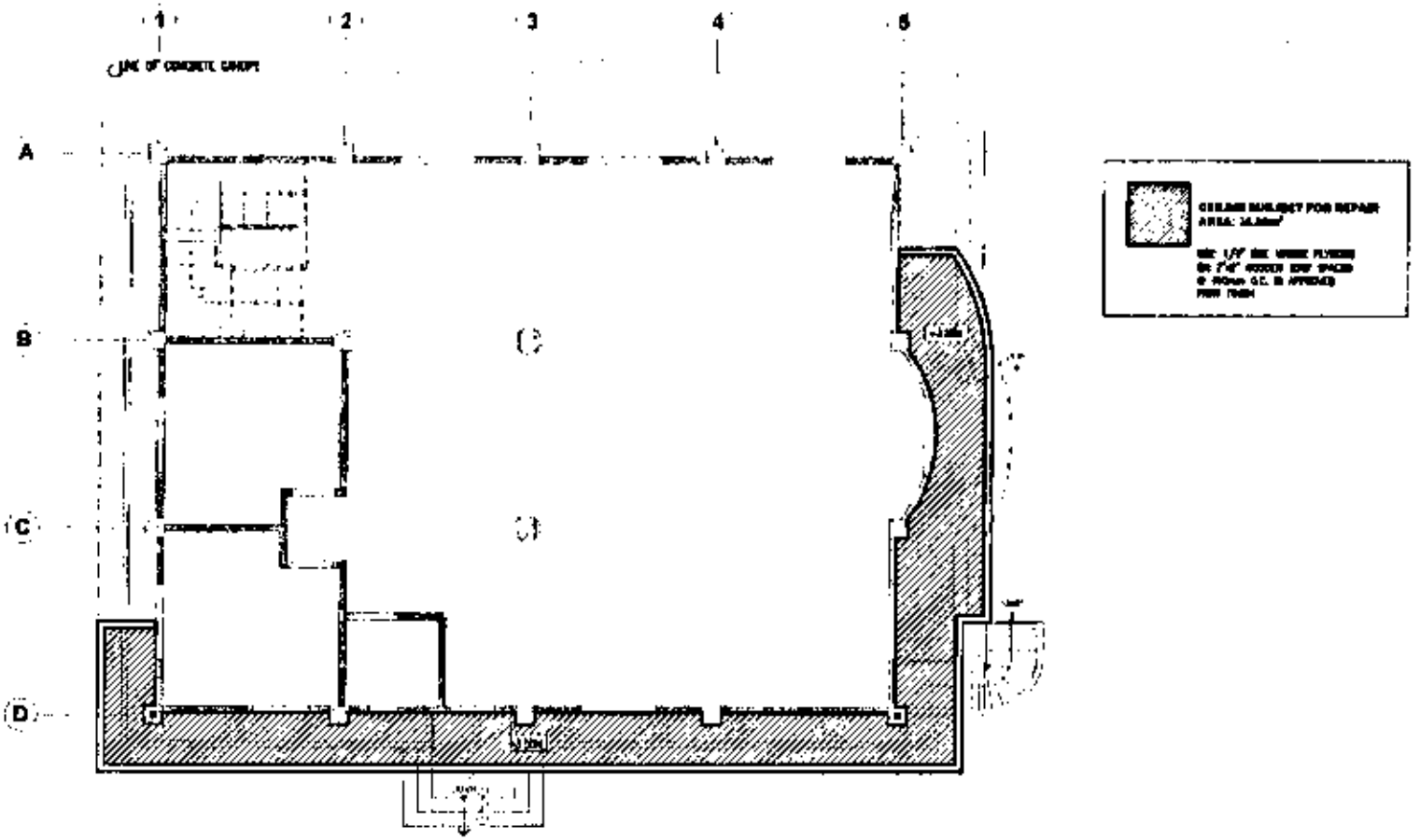
PREPARED BY: AGAPITO LEONOR E. TALAY, uap — ARCHITECT II

CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, CSD

APPROVED: MA. MAGNOLIA SINSON-NEQUEJO — PORT MANAGER

APR 24, 2024

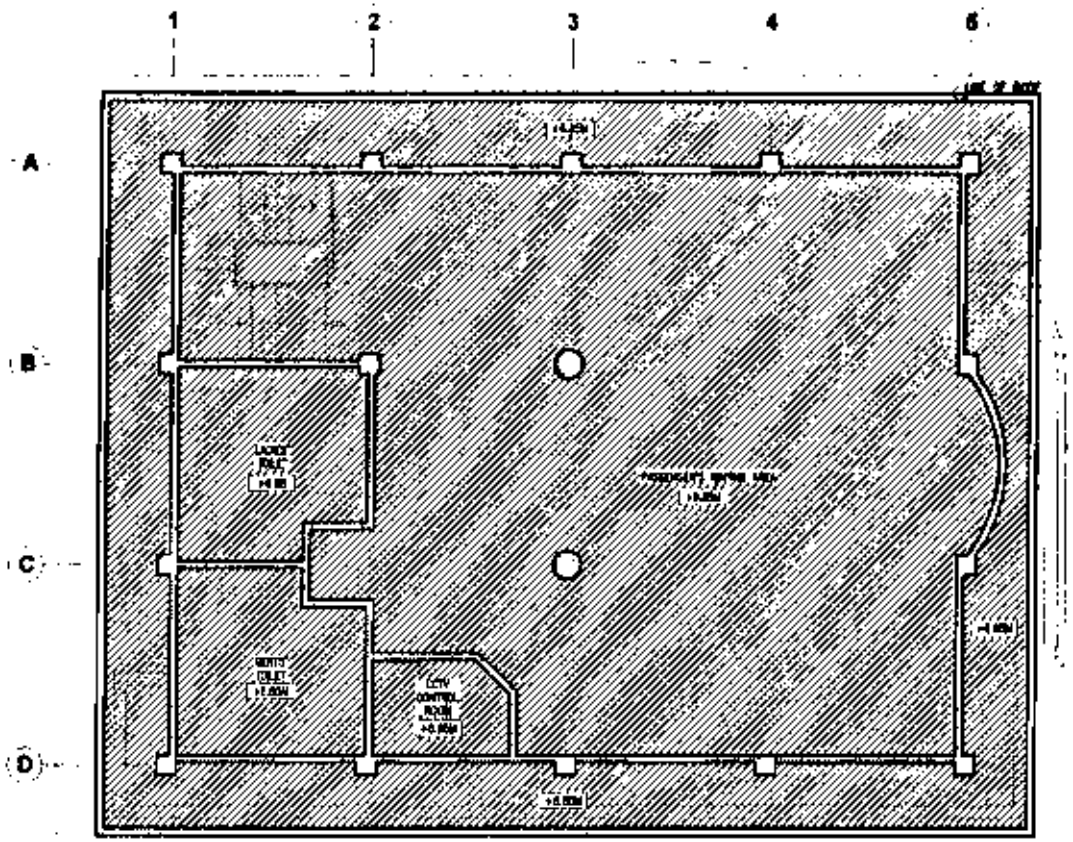


PTB 2 - GROUND FLOOR

1 **REFLECTED CEILING PLAN**

SCALE 1:100mm

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING, PORT OF TABACO CITY, ALBAY				SHEET NO. 47/94
PREPARED BY: AGAPITO LLOYD L. TALAY, uap, ARCHITECT II	CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG, SUPERVISING ENGINEER A	RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS, ACTING DIVISION MANAGER I, EBD	APPROVED: MA. MAGNOLIA SINSON-REQUEJO, PORT MANAGER	JUNE 24, 2014



CEILING SUBJECT FOR REPAIR
AREA: 36m²

MAT 1/2" THK. MARINE PLYWOOD ON 2"x3" WOODEN JOIST SPACED @ 400mm O.C. IN OPPOSED PAINT FINISH

1 PTB 2 - SECOND FLOOR
REFLECTED CEILING PLAN
SCALE 1:100mts

PHILIPPINE PORTS AUTHORITY

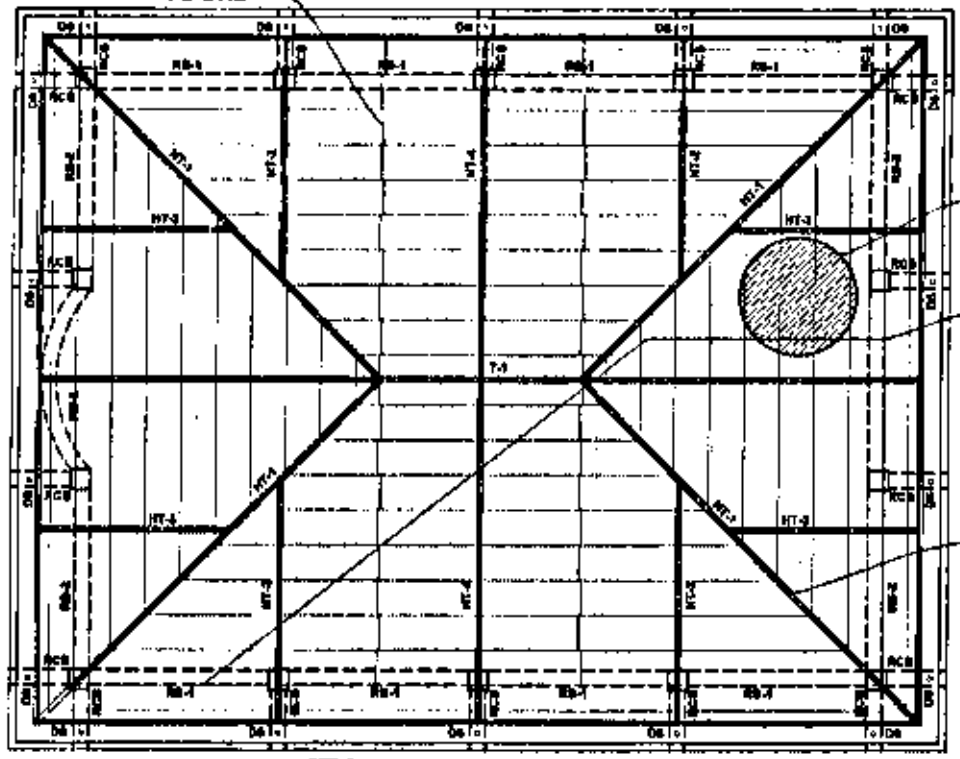
PORT MANAGEMENT OFFICE OF BACOLOD, PORTAL COMMERCIAL CENTER, BACOLOD CITY, 6100

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 48/94

PREPARED BY	CHECKED/REVIEWED BY	RECOMMENDING APPROVAL	APPROVED
AGAPITO LLOYD D. TALAY, uap	CHRISTOPHER P. CADAG	JOHN S. DE LOS SANTOS	MA. MAGNOLIA SINSON-REVILEJO
ARCHITECT II	SUPERVISING ENGINEER A	ACTING DIVISION MANAGER A, EBD	PORT MANAGER

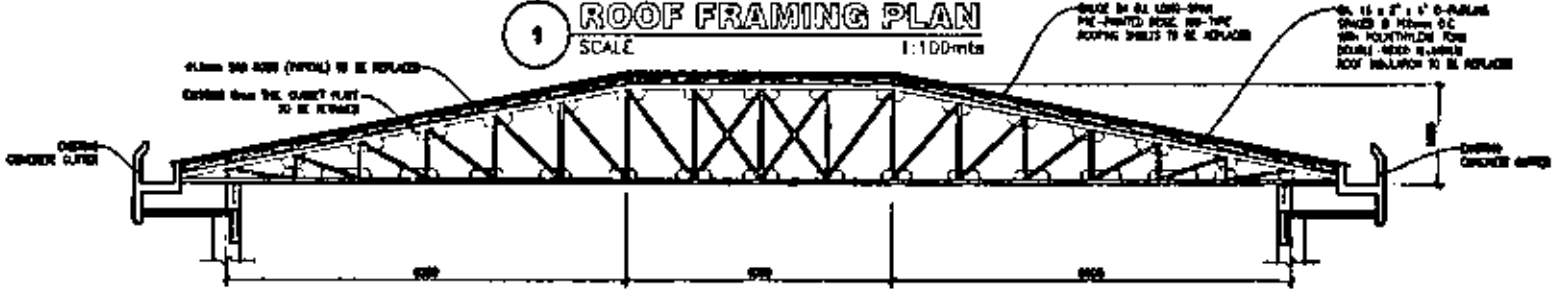
JUNE 24, 2024



PTB 2

1 ROOF FRAMING PLAN

SCALE 1:100mts

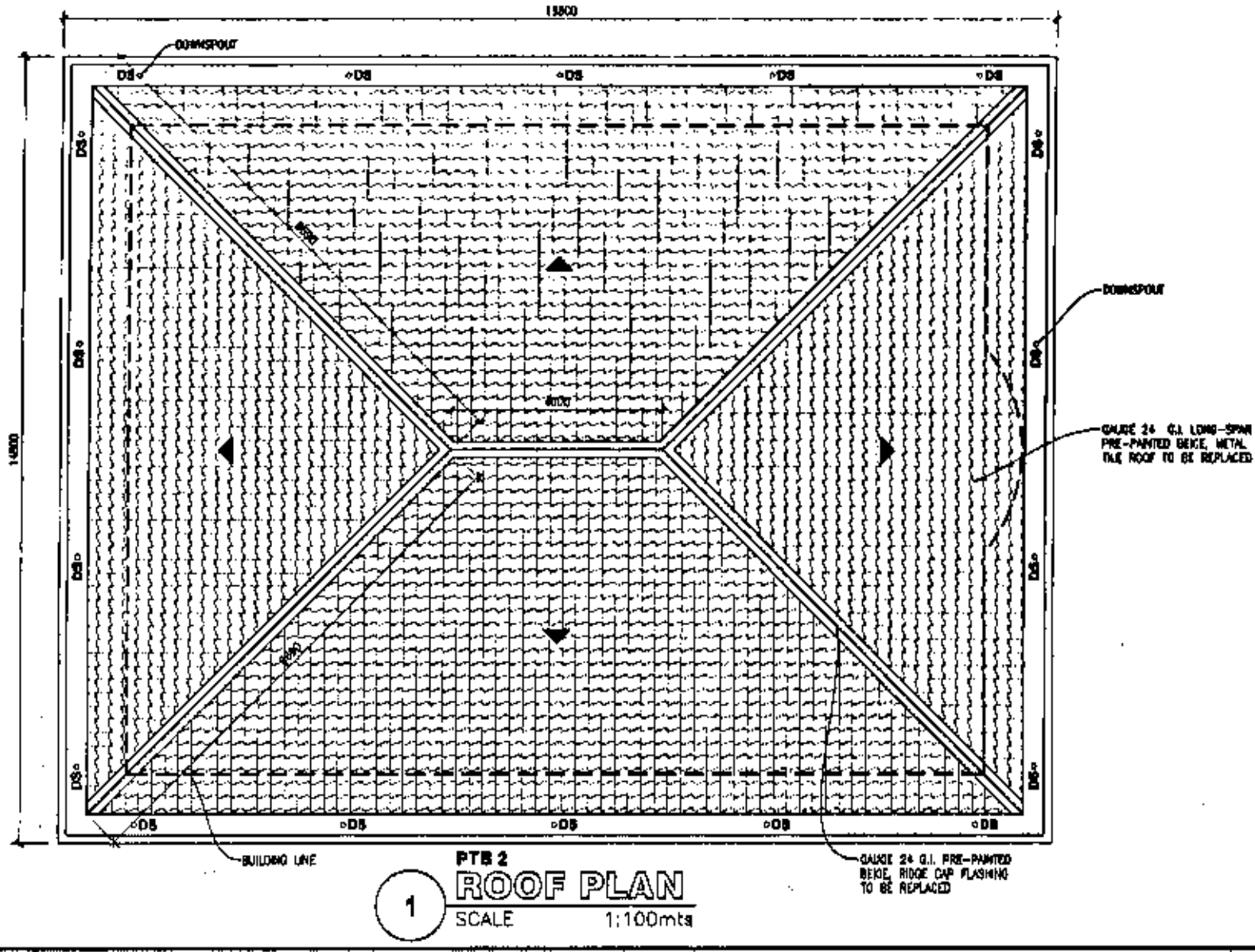


PTB 2

2 TRUSS 1 (T-1) EXISTING

SCALE 1:75mts

PHILIPPINE PORTS AUTHORITY PORT MANAGEMENT OFFICE OF SIOCON REGIONAL DEVELOPMENT CLUSTER BASES, LEGAZPI CITY 4500	PROJECT TITLE IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING PORT OF TABACO CITY, ALBAY			SHEET NO.
PREPARED BY AGAPITO LEONEL UTALAY, uap ARCHITECT II	CHECKED/REVIEWED BY CHRISTOPHER M. CADAG SUPERVISING ENGINEER A	RECOMMENDING APPROVAL JOHN S. DE LOS SANTOS ACTING DIVISION MANAGER A, ESD	APPROVED MA. MAGNOLIA SINSUAT-REQUEJO PORT MANAGER	49 94 JUNE 24, 2004



PTB 2

1 ROOF PLAN

SCALE 1:100mts

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF TABACO CITY, ALBAY

SHEET NO. 50/94

PREPARED BY: AGAPITO LLOYD L. TALAY, ubp — ARCHITECT II

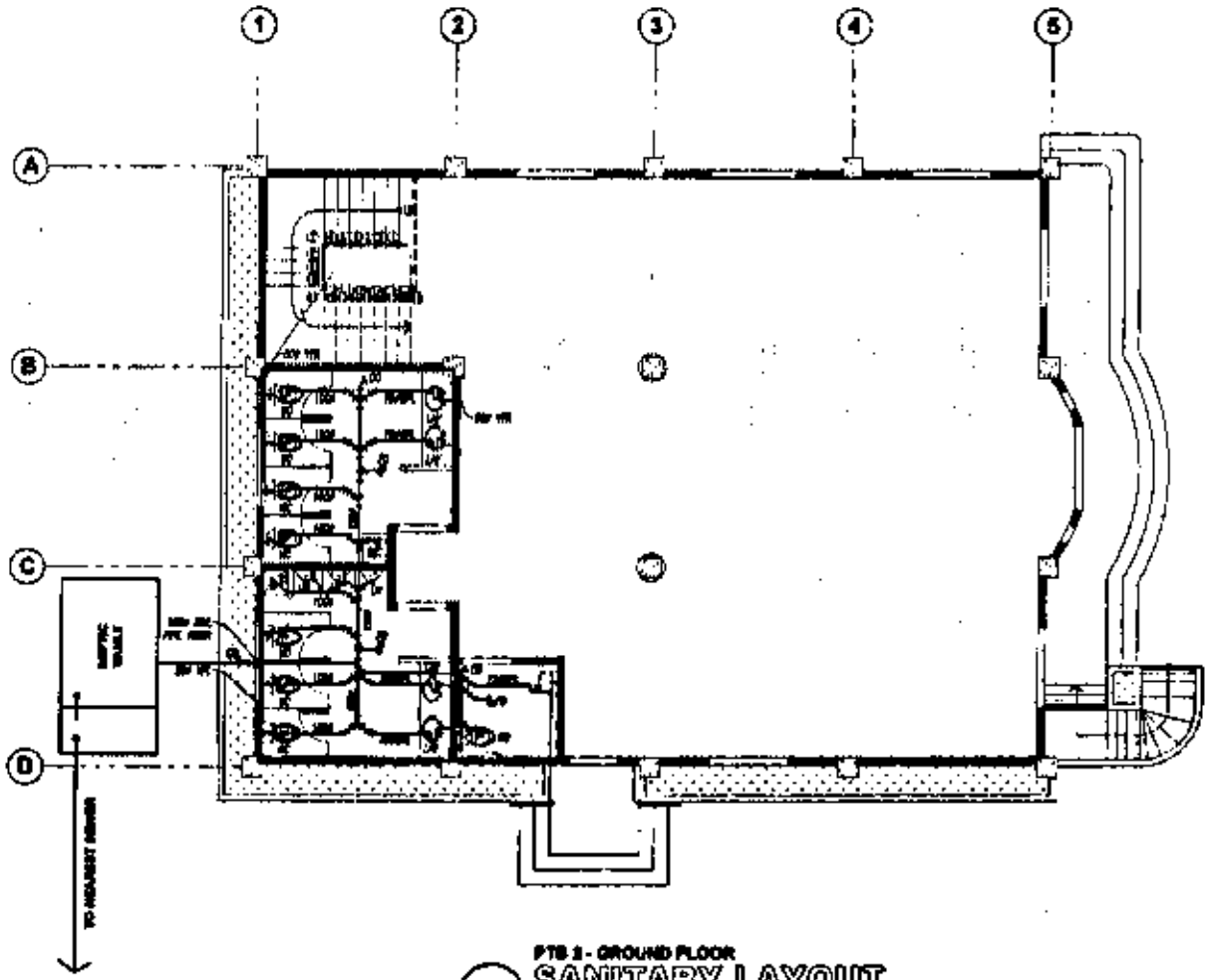
CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG — SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS — ACTING DIVISION MANAGER A, EDD

APPROVED: MA. MAGNOLIA SINSON-NEQUEJO — PORT MANAGER

PORT MANAGEMENT OFFICE OF BICOL

JUNE 21, 2024



PTB 2 - GROUND FLOOR

1 **SANITARY LAYOUT**

SCALE 1:100m/s

PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING
PORT OF DAVAO CITY, ALAW

SHEET NO. 51/94

PREPARED BY: AGAPITO LLOYD L. TALAY, ugp
ARCHITECT I

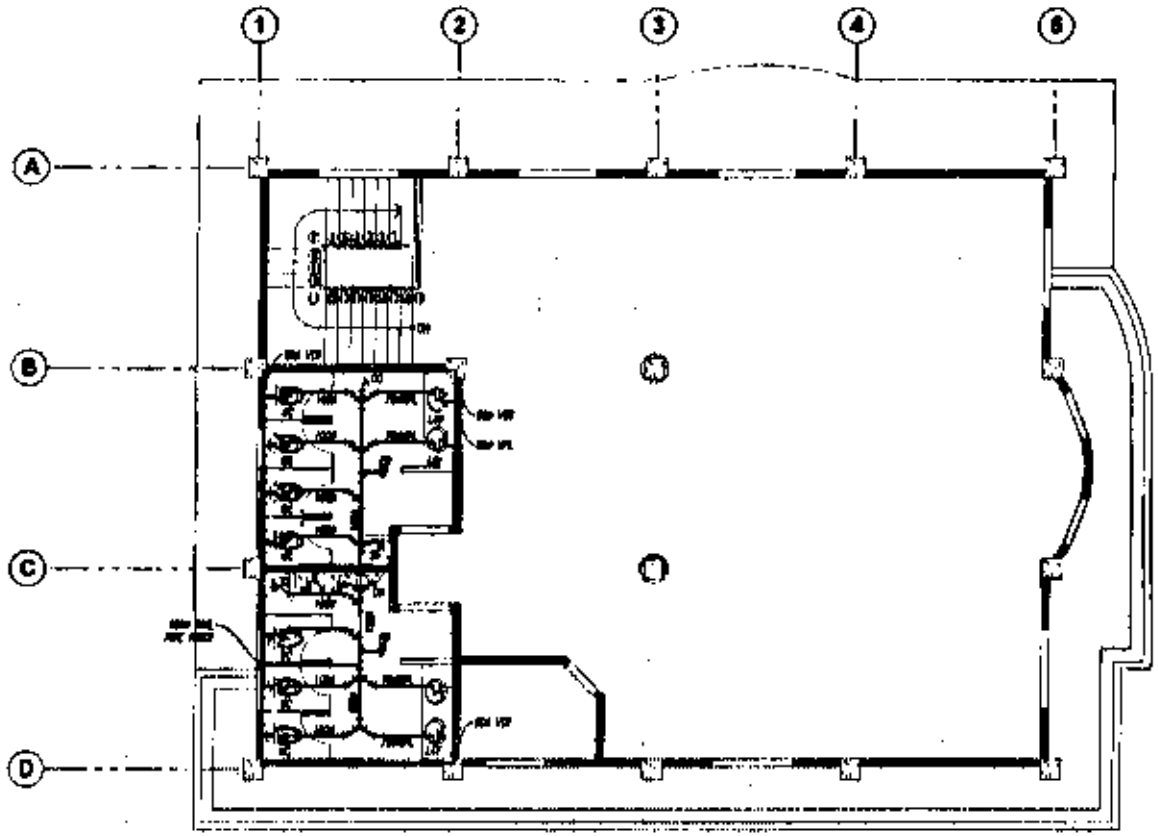
CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG
SUPERVISING ENGINEER A

RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS
ACTING DIVISION MANAGER A, ESD

APPROVED: MA. MAGNOLIA SINSON-REQUEJO
PORT MANAGER

PORT MANAGEMENT OFFICE OF DAVAO

JUNE 24, 2024



PTB 3 - SECOND FLOOR

2 SANITARY LAYOUT

SCALE 1:100mls

PHILIPPINE PORTS AUTHORITY PORT MANAGEMENT OFFICE OF BOHOL	PROJECT TITLE: IMPROVEMENT/RESTORATION OF TMO/PTB 1 & 2, PORT LIGHTING SYSTEM, COVERED WALKWAY, GUEST AND SECURITY BUILDING PORT OF TAGBILARAN CITY, BOHOL			SHEET NO. 82 94
	PREPARED BY: ADAPITO LEOPOLD L. TALAY, map ARCHITECT II	CHECKED/REVIEWED BY: CHRISTOPHER M. CADAG SUPERVISING ENGINEER A	RECOMMENDING APPROVAL: JOHN S. DE LOS SANTOS ACTING DIVISION MANAGER A, ESD	APPROVED: MA. MAGNOLIA SINSON-RELUEJO PORT MANAGER	JUNE 21, 2024