



Republic of the Philippines

DEPARTMENT OF SCIENCE AND TECHNOLOGY

Philippine Atmospheric, Geophysical and Astronomical Services
Administration (PAGASA)



Project Title: **Improvement/Rehabilitation of Baguio Radar Office
Building, Quarters, and Powerhouse**

Project Location: **Mt. Cabuyao, Poblacion, Tuba, Benguet**

SCOPE OF WORKS AND TECHNICAL SPECIFICATIONS

SCOPE OF WORKS

- Removal and Demolition of the following:
 - Wind Breaker in front of the Office Building
 - Floor Tiles
 - Bathroom Wall Tiles
 - Kitchen Tiles
 - Doors and Windows
 - Existing Roofing and Trusses
 - Existing Ceiling
 - Existing Drywall at Quarters
 - Existing Plumbing Fixture.
- Excavation works for Columns
- Reinforcement, Formworks and Falseworks, and Concreting of the following:
 - Columns
 - Beams
 - Suspended Slab
 - Concrete Gutter
- Waterproofing of Concrete Gutter and Suspended Slab.
- Fabrication and Erection of Roof Trusses.
- Installation of Roof Insulation.
- Installation of Pre-painted Roof Sheet and Roof Accessories.
- Installation of Ceiling (Fiber Cement Board, and Acoustic Ceiling)
- Fabrication and Installation of Cabinet Doors
- Replacement of Plumbing Fixtures.
- Replacement of Tiles.
- Repainting of Interior Walls.
- Plastering and Repainting of Exterior Walls.
- Replacement of Doors and Windows.
- Installation of PVC connected from the downspout to water tank.
- Construction of Pathwalk.
- Electrical Works
 - Connection or wire tracing of existing Electrical System.
 - Installation of Rigid Steel Conduit with service entrance cap to existing post
 - Installation main disconnecting switch in service entrance post.

"tracking the sky...helping the country"



- Electrical trenching for PVC pipe from service entrance post to gen. set room and sub-feeder lines.
- Manhole or hand hole.
- Installation of feeder line conductors.
- Installation of PVC layout for power outlets, switches, lighting, catv outlet, and LAN outlet.
- Installation of exhaust fans.
- Installation fire alarm system.
- Installation of panel boards.
- Installation of wiring devices.
- Installation of lighting fixtures and bulbs.
- Installation of water heaters.
- Termination of all wires to their corresponding home runs.
- Label all circuit breakers accordingly.
- Label all wiring devices to which circuit breaker they connected.
- Energize and testing of electrical system after all installation.

GENERAL REQUIREMENTS

- The Contractor shall provide all materials, equipment, tools, labor, and supervision required for the complete construction of the project.
- To ensure proper phasing or scheduling of work, the Contractor must coordinate all work with all parties.
- Contractor must provide end-user with complete specifications and a product sample for evaluation. Inspection of the Project-in-Charge shall be required prior to installation of any item/material on the construction.
- Existing conditions of the work site shall be documented by the contractor and photos shall be taken before commencement of work to ensure such status. Any damage on the areas due to the contractor's ongoing works shall be refurbished at his expense.
- The Contractor shall promptly remove from the premises all trash, debris, and such weekly and after the completion of all works. Restore all areas that were damaged as affected by the construction works and leave the site clean to the satisfaction of the Project Inspector or his representative and the End-user.
- All materials removed from the unit shall be properly documented prior to turn-over to the End-user for proper safekeeping.
- Provision of Temporary Facility for workers shall be coordinated with the Project-in-Charge in order to provide a proper location and establish rules and regulations as the site consists of equipment and is on the premises of a workplace.
- To protect the building, create a temporary enclosure in each location. All of the building facilities must be adequately covered by such covers throughout the duration of the project.

"tracking the sky...helping the country"



- To ensure proper installation of all framing systems and protection of the area, the Contractor should provide, at its own expense, the necessary scaffoldings, board-ups, safety nets, and similar items.
- Construction requirements of each pay item must be in accordance with the DPWH "Standard Specifications for Public Works Structures Volume II"
- The brand of all materials, equipment, or products to be used in the project shall be specified by the contractor in the proposed specifications and approved by the project monitoring engineer of the end-user prior to procurement and installation.

UTILITY SERVICES

- For the Utility Services/Consumption such as water and electric power, provision of electric and water meter shall be provided by the Contractor. All utility consumption shall be provided with meters to limit the usage of such during the construction period. Payments of the bill shall be at the expense of the Contractor.

SITE MONITORING

- Site Monitoring shall be a must for the Contractor for the effective implementation of the Project. Any discrepancies in plans and on the actual site shall be properly coordinated with the Project Monitoring Engineer for verification.
- Regular coordination meetings shall be done between the Contractor or its representative and the Project Monitoring Engineer.
- Progress Photographs shall be documented by the Contractor.
- A logbook shall be available at the site. It shall contain the daily activities on the site, including weather conditions, delivery, manpower, and other matter pertaining to the situation of the project. It will also serve as data for the Contractor and Project Monitoring Engineer.
- Existing conditions of the work site shall be documented by the contractor and photos shall be taken before the commencement of work to ensure such status. Any damage on the areas due to the contractor's ongoing works shall be refurbished at his expense.



Republic of the Philippines

DEPARTMENT OF SCIENCE AND TECHNOLOGY

Philippine Atmospheric, Geophysical and Astronomical Services
Administration (PAGASA)



TECHNICAL SPECIFICATIONS

Part B – Other General Requirements

Project Billboard / Safety Signage

- The Contractor shall install one (1 Project Information Signs at/or near the beginning and the end of the project or upon the discretion of the Engineer. The new billboard layout, dimensions are as follows:
 - Tarpaulin Dimensions: 1.22m x 2.44 m
 - Thickness of Marine Plywood: 5mm
 - Background: WhiteThe billboard shall consist the following data:
 - Name of Project
 - Location
 - Name of Contractor
 - Date Started
 - Contract Completion Date
 - Contract Cost
 - Implementing Office
 - Sources of Fund
- The Contractor shall install one (Safety Signage at/or near the beginning and the end of the project or upon the discretion of the Engineer. The new billboard layout, dimensions are as follows:
 - Dimensions: 0.4m x 0.60m (see attached sample photos)



"tracking the sky...helping the country"

Science Garden Compound, Senator Miriam P. Defensor-Santiago
Brgy. Central, Quezon City, Metro Manila, Philippines 1100

Trunk Line: (02) 284-0800
Website: <http://bagong.pagasa.dost.gov.ph>



Occupational Safety and Health Program

- This Item covers the implementation of the construction safety in all stages of project procurement, requirements, provisions, and instructions for the guidance of the Engineer.
- The Contractor shall furnish his workers with protective equipment for eyes, face, hands and feet, lifeline, safety belt/harness, protective shields and barriers whenever necessary by the reason of the hazardous work process or environment.
- For General Construction Work, the required basic PPEs for all workers shall be Safety Helmet, Safety Gloves, and Safety Shoes. Workers within the construction project site shall be required to wear the necessary PPE at all times. Moreover, all other persons who are either authorized or allowed to be at a construction site shall also wear appropriate PPEs.

Mobilization / Demobilization

- This Item includes the mobilization process, relocation/transfer of existing office furniture and equipment to the designated temporary location.
- Demobilization process shall include clearing of the affected areas from all rubbish, debris, and all unnecessary building materials and restore all the areas that were damaged as affected by the works and leave the site clean to the satisfaction of the Project Monitoring Engineer and/or the End-user.

Part C– Earthworks

Item 801(6) – Removal and Demolition (including hauling of the debris and waste materials)

- This work includes demolition/dismantling of all existing structures stated below but shall be coordinated properly with the Project-in-Charge to ensure the effect and safety of such demolition/dismantling with the adjacent and connecting structure.
 - Wind Breaker at the front side of the Office.
 - Floor Tiles
 - Doors and Windows
 - Roofing sheet and Roof Trusses
 - Existing Ceiling
 - Existing Plumbing fixtures
- Restoration and rehabilitation shall be done according to the improvement of the structures.
- All waste materials shall be disposed of properly.



Item 803(1)a – Excavation Structure (Common Soil)

- This Item shall consist of the necessary excavation for the foundation of the building.
- This Item shall include the removal of all materials of whatever nature encountered including all obstructions of any nature that would interfere with the proper execution and completion of the work.
- The excavation for the following shall be in accordance to the dimensions given at the plan.
 - Column Footing at the Facade
 - Wall Footing at the Powerhouse

Item 804(1)a – Embankment from Structure Excavation (Common Soil)

- This Item shall consist of the construction of an embankment using suitable materials of various compositions and compacted in accordance with this Specification and in conformity with the lines, grades, and dimensions shown on the Plans or established by the Project Monitoring Engineer.
- Excavated materials will be used for backfill materials, all backfilling materials shall be free of debris, roots, or other similar materials.
 - Column Footing at the Facade
 - Wall Footing at the Powerhouse

Item 804(7) – Gravel Fill

- This Item shall consist of the construction of embankment using gravel and compacted in accordance with this Specification and in conformity with the lines, grades, and dimensions shown on the Plans or established by the Project Engineer.
- Gravel Bedding shall have the following thickness.
 - Column Footing: 100mm thick
 - Wall Footing: 75mm thick

Part D– Reinforced Concrete

Item 900(1)i– Structural Concrete, Class A, 28 days

- The work to which this refers includes all operations necessary for the supply and delivery of all materials, labor, equipment and all associated activities. This shall conform in the recommendations of the “National Structural Code of the Philippines”
- **Material Requirements**
 - Cement to be used shall be Type I conforming the ASTM C-150
 - Water shall be potable and free from acids, oils, and other organic materials.
- **Quality of Concrete**

“tracking the sky...helping the country”



- The quality of Concrete shall comply with the Item 900.2 of the DPWH Blue Book and with the specific requirements outlined in the various section of these specifications.
- Testing of samples from concrete pours shall be as required by Item 900.3.1 of the DPWH Blue Book
- Hardened concrete may also be rejected for anyone of the following conditions:
 - a. It is porous, segregated, or honeycombed.
 - b. The reinforcing steel it incorporates has been displaced.
 - c. The required surface finish has not been met.
 - d. The concrete can be shown to be otherwise defective.When the above situations arise, the Project –in-charge has the option to let the contractor to demolish the rejected portion.
- Concrete shall not be placed until all formworks, installation of reinforcement, embedded parts and the preparation of surfaces have been approved. Prior to concreting, the contractor shall submit a proposed pouring schedule for the various stages of the work. No concrete shall be poured prior to the approval.
- The method and manner of placing concrete shall be such as to avoid segregation of the concrete materials or displacement of the reinforcement.
- The following members shall be in 3000 psi;
 - Column
 - Beam
 - Canopy Beam
 - Column Footing
 - Wall Footing
 - Slab
 - Concrete Gutter
 - Perimeter pavement of the Building

Item 900(2) – Reinforcing Steel

- This item shall consist of furnishing, cutting, bending, fabricating, welding, and placing of steel reinforcement with or without an epoxy coating of the type, size, shape, and grade required in accordance with this Specification and in conformity with the requirements shown on the Plans.
- All steel bars to be used during construction should be in accordance with the guidelines of the National Structural Code of Buildings.
- The support and tolerance in placing of reinforcement shall comply with section 5.07 of the National Structural Code of Buildings.
- Lap Splicing and/or welding of reinforcement shall comply with section 5.07 of the National Structural Code of Buildings.
- Welding of reinforcement shall not be carried out unless shown on the drawings, specified, or otherwise approved by the Project Monitoring Engineer.



- All reinforcing bars shall be high tensile strength (Grade 60) except for the lateral ties, stirrups, and any reinforcing bars with 12mm \varnothing and below which shall be a structural grade (Grade 40).

Item 903(1) – Formworks and False work

- This Item covers the furnishing, fabrication, installation, erection, and removal of forms and falseworks, including scaffoldings.
- Scaffoldings, comprising the frame, platform, and clamps, are included in this pay item.
- The contractor shall be responsible for the design, erection, and adjustment of all formworks, falseworks, and scaffoldings in accordance with Section 5.06 of the National Structural Code for Buildings.
- All materials used in the construction and support of formwork shall be of timber, with alternative materials only allowed upon approval by the Project Monitoring Engineer.
- The contractor is responsible for ensuring that the forms are placed to the shape, lines, and dimensions indicated on the drawings, with sufficient strength to withstand the pressure from concrete placement and vibration. They must also ensure that the forms and scaffoldings are rigidly maintained and sufficiently tight to prevent excessive leakage of mortar.
- All debris, particularly chipping, shavings, and sawdust, must be removed from the interior of the forms before concrete placement. All form surfaces shall be cleaned and thoroughly wetted before pouring concrete.
- Before the placement of any concrete, the Project Monitoring Engineer shall inspect the formworks and scaffoldings, and may reject any materials or setups that do not conform to these specifications.
- The deflection of forms between joints and/or studs shall not exceed one five-hundredth ($1/500$) of the joints or stud spacing.
- The recommended minimum stripping time for horizontal slabs is twenty-four (24) hours after approval by the Project Monitoring Engineer.

Part C– Finishing and Other Civil Works

Item 1000(1)– Soil Poisoning

- **Scope of Works**

This item involves the provision of all materials, equipment, and labor necessary for the treatment of the soil for termite control. The work shall be done in accordance with applicable plans, specifications, and relevant environmental regulations to ensure long-term protection against subterranean termites. All soil poisoning operations must be performed prior to the construction of the foundation and as specified in the project drawings.



- **Material Requirement**

- **Termiticide**

- Use an approved chemical termiticide with residual effect, suitable for soil application
 - The concentration of the termiticide solution should follow the manufacturer's recommendations

- **Application Equipment**

- Pressure sprayers or injection tools specifically designed for soil treatment

- **Application Area**

- Entire foundation footprint including perimeter, trenches, and backfill areas
 - Ensure uniform coverage, particularly in areas prone to moisture accumulation.

Item 1001– Storm Drainage and Sewerage System

- This Item shall consist of furnishing all materials, equipment, and labor for the complete installation of the storm drainage system which includes all pipings, gutters, canals, catch basins, junction boxes, handholes, manholes, and other appurtenant structures, and sewerage system which include all sanitary sewer, piping, septic vault/tank where no public sewer exists, from the building to the point of discharge.

- **Material Requirements - Downspout**

- 3"Ø Polyvinyl conduit (PVC) pipe and fittings shall be used.
 - Orange PVC Pipes and Fittings conforming to pertinent ASTM and ISO.
 - 3 " Ø Bend Elbow
 - 3" Ø PVC Roof Gutter Strainer
 - Stainless Steel 304 Pipe Bracket Support

Item 1002– Plumbing

- This Item shall consist of furnishing all materials, tools, equipment, and fixtures required as shown on the Plans for the satisfactory performance of the entire plumbing system including installation in accordance with the latest edition of the Revised National Plumbing Code, Uniform Plumbing Code of the Philippines, National Building Code, and this Specification.

- **Material Requirements:**

- Round Front Tank Type Water Closet (PTG-14542)
 - Color: White
 - Size : 680 x 425 x 770mm
 - Series: Two Piece Watercloset

"tracking the sky...helping the country"



- Finish : Glossy
- Seat Cover : Soft Closing
- Liters per flush : 6 liters
- Flushing System : Siphonic Flush
- With seat and cover
- Tank with cover & fittings
- Pedestal –type Lavatory (PLK-1042)
 - Finish: Glossy
 - Size : 425 x 535 x 850mm
 - Complete with faucet, P-trap (w/plug) and accessories.
- Deck Mounted Floor Drain Plates
 - Size : 100mm \varnothing
 - Material: Stainless Steel 304
- Hand Bidet Set
 - Finish : Polished
 - Material: Stainless Steel 304
- Telephone-type Shower (Two Way Faucet with Hand shower)
 - Finish : Glossy
 - Material : Brass
- Facial Mirror
 - Size: 500mm \varnothing x 4mm thk.
- Kitchen Sink
 - Material: Stainless Steel 304
 - Complete Set with Stainless Steel Gooseneck Kitchen faucet, Strainer with tailpiece, P-trap with Cleanout.
- Replacement of plumbing fixtures will be in accordance with manufacturer specifications and design plans
- All joints and connections shall be properly sealed to prevent leaks.

Item 1003– Cold Waterline

- **Scope of Works**

The work under this item includes the provision of all necessary materials, tools, equipment, and labor to perform the replacement of the cold waterline system, ensuring compliance with the relevant drawings, specifications, and details. The work will be completed in accordance with the approved design and in conjunction with the replacement of plumbing fixtures.

"tracking the sky...helping the country"



- **Material Requirements**

- **Cold Waterline Piping**

- Use uPVC Pipes, Schedule 40
 - Pipe Size: 3/4" Ø
 - All fittings shall be solvent-welded type compatible with uPVC pipes
 - Pipe supports and brackets must be corrosion-resistant and spaced per code requirements

Item 1003– Carpentry and Joinery

- The work under this Item shall consist of furnishing all required materials, fabricated woodwork, tools, equipment, and labor and performing all operations necessary for the satisfactory completion of all carpentry and joinery works in accordance with the Plans and this Specifications.

Item 1003(1)a1 – Metal Framed Ceiling

- The work covered by this item shall consist of furnishing all ceiling finishes, equipped with fixing accessories in accordance with Plan and as herein specified.
- **Material Requirements**
 - Ceiling, 4.5mm, Metal Frame, Fiber Cement Board
 - on metal furring, puttied, sanded, and ready to receive primer coating.
 - Surface preparation for 4.50mm thk. Fiber Cement Board Ceiling
 - Painting of new ceiling.
 - Carrying Channel and Metal Furring shall not be located greater than 200mm from the wall.
 - Refer to the provided plan for the framing details of the Ceiling.

Item 1030 – Acoustical ceiling

- The work covered by this item shall consist of furnishing all ceiling finishes, equipped with fixing accessories in accordance with Plan and as herein specified.
- **Material Requirements**
 - 600mm x 600mm Acoustical ceiling
 - Laying of frame in accordance to the framing shown on the drawing.
 - Use 3/8" thk. 600mm x 600mm PVC Laminated Gypsum Ceiling Tiles (Lemon Skin)
- **Construction Requirements**
 - Provide all necessary preparation of ceiling.
 - Provide all the necessary accessories and framing for proper installation.
 - Ensure adequate hanger and support to all utilities on the area.
 - Restore all affected areas.

Item 1003(2)b1 – Metal Frame Double Wall

"tracking the sky...helping the country"



- **Scope of Works**

The work to be done under this item consists of furnishing all required materials, tools, equipment, and labor and performing all operations necessary for the satisfactory completion of all carpentry and joinery works in strict accord with applicable drawings, details and these specifications.

- **Material Requirements**

- **Double Wall Interior Partition**
 - Use 6mm thk Fiber Cement Board
 - Studs 2" x 4" x 0.5mm thk
 - Track 2" x 4" x 0.5mm thk.

Item 1003(4) – Kitchen Cabinet Doors

- **Material Requirements**

- 18 mm Melamine on Marine Plywood (Wood grain finish)
- Soft Close Hydraulic Full Overlay Hinge
- Soft Close Hydraulic Half Overlay Hinge
- 160mm Stainless Solid Pull Handle

Item 1003(15)a – Moulding

- **Scope of Works**

This item includes the provision of all materials, tools, equipment, and labor required for the installation of baseboards and crown moulding. The work shall be performed in strict accordance with the approved architectural plans, details, and specifications, ensuring precise measurements, clean cuts, and professional finishing to enhance interior aesthetics.

- **Material Requirements**

- **Baseboard**
 - Material: Medium Density Fiberboard (MDF)
 - Dimensions: 4" height x 1/2" thickness (or as per plan)
 - Finish: Primer-coated or pre-finished, ready for painting or staining
 - Fasteners: Finishing nails or adhesive, as applicable
- **Crown Moulding**
 - Material: Medium Density Fiberboard (MDF)
 - Dimensions: 5" width x 3/4" thickness (or as per plan)
 - Finish: Primer-coated or pre-finished, ready for painting or staining
 - Fasteners: Appropriate finishing nails, glue or clips based on material used

"tracking the sky...helping the country"



- **Installation**

- Mitre and cope joints at corners to ensure seamless connections
- Ensure all surfaces are sanded, gaps filled with caulk or wood filler, and finished with paint or stain as specified.

- The work covered by this item shall consist of providing crown moulding and baseboard moulding at the following areas:

- CMO's Office (Crown Moulding and Baseboard)
- Hallway (Crown Moulding and Baseboard)
- Office Area (Baseboard)
- Pantry Area (Crown Moulding and Baseboard)
- Quarter 1 (Crown Moulding and Baseboard)
- Quarter 2 (Crown Moulding and Baseboard)
- Bedrooms (Crown Moulding and Baseboard)

- Design and color of baseboard and crown moulding shall be subjected for approval of the Project-in-Charge and End-user.

Item 1004– Finishing Hardware

- This Item shall consist of furnishing and installing all building hardware required to: (1) ensure rigidity on joint/connections of different parts of the structure; and (2) equip in a satisfactory operating condition parts of the structure such as doors, windows, cabinets, lockers, drawers and other similar operating parts in accordance with the Plans and this Specification.

- **Material Requirements**

- **Lever-type Door Lockset**

- Material: Brass
- Universal 4-way latch
- Fits standard doors
- 2 3/8 in and 2 3/4 in backsets
- Exterior keyed locking entry door
- 3 keys
- Meets ANSI Grade 3 Standards

- **Stainless Steel Ball Bearing Hinges**

- Size: 2" x 4" x 3mm
- Material: Stainless Steel 304
- Loose Pin
- Knuckles with 4 ball bearings
- Suitable for DIN left and right hand
- Suitable for Wooden Flash Door
- Comes with stainless screws



- **Door Knob for PVC Doors**
 - With PVC Door Pad
 - Materials: Satin Stainless Steel
 - Keying: Schlage C Keyway, Locks are keyed 5-pin
 - Door Range: 1 3/8in to 1 3/4in standard
 - Backset : Universal Latch Standard, fits either 2 3/8in or 2 3/4 in backsets.
- **Hinge for PVC Doors**
 - Sets of Flag hinge for PVC Doors

Item 1005 – Steel Windows

- **Scope of Works**

This item shall consist of furnishing and installing steel windows (awning and swing type) fully equipped with fixing accessories and locking devices in accordance with the Plans.

- **Materials Requirements**

- **Steel Window Casement – Swing-Type**
 - Frame: Fabricated from galvanized steel sections, 1.5mm thick
 - Casement: Swing-type panels with a minimum thickness of 1.2mm steel, powder-coated finish
 - Glass: Clear tempered glass, 6mm thick
 - Hinges: Heavy-duty stainless steel hinges
 - Locking Mechanism: Lever lock or multi-point locking system
 - Weatherstripping: Install to ensure airtight sealing
- **Steel Window Casement – Awning-Type**
 - Frame: Galvanized steel sections, 1.5mm thick, powder-coated
 - Casement: Awning-type with 1.2mm steel frame, powder-coated finish
 - Glass: Frosted tempered glass, 6mm thick
 - Hinges: Stainless steel friction hinges for smooth opening and closing
 - Operating Mechanism: Manual crank handle or push bar system
 - Weatherstripping: Integrated to provide waterproof and airtight sealing

Item 1010 – Wooden Doors

"tracking the sky...helping the country"



- **Scope of Works**

This item covers the supply of all necessary materials, equipment, tools, and labor for the fabrication, delivery, and installation of wooden doors. The work includes fitting the doors, attaching hardware, and ensuring proper operation, in strict accordance with approved plans, specifications, and details. All doors shall be installed with proper care to achieve a smooth finish and ensure durability and security.

- **Materials Requirements**

- **Wooden Doors**

- Material: Solid Wooden Door (Tanguile), kiln-dried
- Thickness: Minimum 45mm (1.75 inches) or as per approved design
- Finish: Sanded, ready for staining or painting as specified in the plans
- Style: Panel door with specified design Weatherstripping: Install as required for exterior doors

- **Door Frames and Jambs**

- Material: Solid wood
- Finish: Prepared for paint or stain
- Size: To accommodate door thickness, with precise fitting for hinges and locks (as specified below)

- **Hardware**

- Hinges: Heavy-duty stainless steel ball bearing hinges, corrosion-resistant (minimum 3 hinges per door)
- Lockset: lever-type handle or knob, with deadbolt for exterior doors
- Thresholds: For exterior doors, aluminum or wood, with seal for waterproofing

- **Installation**

- Ensure proper alignment, plumb and level, with even spacing for smooth operation
- Attach all hardware, ensuring secure and precise fitting for long-lasting use
- Sand and prepare all door surfaces, filling gaps or imperfections with wood filler
- Finish doors with stain or paint, ensuring a smooth and durable coating as specified in the design plans.

- D-1: 1.20m x 2.10m Two door Solid Wood Panel with 2" x 6" Door Jamb (Tanguile)
- D-2 : 0.90m x 2.10m Solid Wooden Panel Door with 2" x 6" Door Jamb (Tanguile)
- D-3 : 0.80m x 2.10m Solid Wooden Panel Door with 2" x 4" Door Jamb (Tanguile)
- Refer to the plan for the location.

"tracking the sky...helping the country"



Item 1043 –PVC Doors and Frames

- **Scope of Works**

This item includes the provision of all necessary materials, tools, equipment, and labor required for the supply and installation of PVC (Polyvinyl Chloride) doors. The work shall be completed in accordance with the approved plans, specifications, and details, ensuring that the doors are properly aligned, functional, and aesthetically suitable for both interior and exterior use.

- **Materials Requirements**

- **PVC Doors**

- Material: Rigid PVC with reinforced internal
 - Thickness: Minimum 40mm
 - Finish: Smooth, color is subject for approval
 - Type: Solid panel, single leaf

- **Door Frames and Jambs**

- Material: PVC, compatible with the door panel
 - Finish: Color-matched or contrasting as specified
 - Size: Fitted to match the door thickness, with pre-cut slots for hinges and locks

- **Hardware**

- Hinges: Corrosion-resistant stainless steel, minimum 3 hinges per door
 - Lockset: PVC-compatible lockset, knob handle
 - Accessories: PVC threshold and seals for exterior applications

- **Installation**

- Ensure door frames are securely installed, plumb and level, with sufficient anchoring to the wall
 - Attach hardware, ensuring proper fit and secure fastening to avoid door misalignment
 - Test doors for smooth opening and closing, with no resistance or gaps
 - All edges and joints should be properly sealed with appropriate sealants for exterior doors, to prevent water or air leaks.

- D-4: 0.70m x 2.10m PVC Doors

Item 1047, 1013 & 1014 – Roofing, Roofing Accessories, and Structural Roof Frame

- **Scope of Works**

This item shall consist of furnishing all materials, labor, tools, and equipment to complete fitting installation of roof and application of supplementary materials to make the roof watertight and leakproof.

- **Materials Requirements**

"tracking the sky...helping the country"



- Roof Panels; Gauge 24 (0.60mm) thk Rib-Type, Long Span
 - Roof Trusses: Top, Bottom, and Web member use 2" x 2" x 1/4" thk double angle bar
 - C-Purlins: use 2" x 4" x 1.2mm thk C-Purlin
 - Sagrods: 12mmØ
 - Insulation: 10mm thk x 1.00m x 50.00mm P.E Foam Insulation
 - Steel connections shall be full weld. Welding electrodes shall be E60 series
 - Provide all the necessary accessories for proper installation.
 - Ridge Roll: Pre-painted, Gauge 26
 - Flashing: Pre-painted, Gauge 26
 - Gutter: Pre-painted, Gauge 26
 - Verify plans for necessary details.
 - All structural steel frames shall be applied with Acrylic epoxy paint
 - All steel section shall be primed and painted two coat with final coating colors as to be specified by Project-in-Charge and End-user.
- Steel Connections shall be full weld. Welding electrodes shall be E60 series of ASTM Specifications A233.
 - Provide all necessary accessories for proper installation.
 - Verify plans for necessary details.
 - All structural steel frames shall be applied with Acrylic epoxy paint.
 - All Steel sections shall be primed and painted two coat with final coating colors as to be specified by Project Monitoring Engineer and End-user.

Item 1038 – Reflective Insulation

• Scope of Works

This item encompasses the supply and installation of reflective insulation made from polyethylene (P.E.) foam, 10 mm thick, double-sided. The work will be carried out in accordance with the approved plans, specifications, and relevant building codes. The installation aims to enhance energy efficiency by minimizing heat transfer and providing a barrier against moisture.

• Material Requirements

- **Reflective Insulation**
 - Material: Polyethylene (P.E.) foam, 10 mm thick, double-sided with reflective aluminum foil
 - Dimensions: As per project requirements (typically 1.2m x 2.4m sheets or specified dimensions)
 - Thermal Resistance: Minimum R-value as specified by the project (check local codes)
 - Moisture Barrier: Both sides should have reflective properties to provide thermal insulation and moisture resistance

Item 1016 – Waterproofing

"tracking the sky...helping the country"



- **Scope of Works**

This item includes the provision of all necessary materials, tools, equipment, and labor for the application of a cement-based waterproofing powder mix. The work shall be executed in strict accordance with the approved plans, specifications, and relevant standards, ensuring a durable waterproof barrier on reinforced concrete surfaces exposed to water.

- **Material Requirements**

- **Cement-Based Waterproofing Powder Mix**
 - Type: Heavy-duty, cement-based, aggregate type
 - Characteristics: Suitable for application on reinforced concrete surfaces; must provide excellent adhesion and long-lasting waterproofing capabilities
 - Application: Mixed according to manufacturer's specifications for proper consistency and effectiveness
 - Curing: Adequate curing period required after application to achieve optimal performance
- The following areas are subjected for waterproofing:
 - Concrete Gutter
 - Slab
 - Existing Concrete Water Tank

Item 1018(15)a – Ceramic Tiles

- **Scope of Works**

This item shall consist of furnishing all floor finishes, adhesive materials, labor, tools and equipment and the satisfactory performance in undertaking the proper installation of the Ceramic Tiles Flooring as shown on the plans and in accordance with these specifications.

- **Materials Requirements**

- Use **40cm x 40cm** Ceramic Glazed Floor Tiles for Office and Quarters
- Use **30cm x 30cm** Non-Skid Floor Tiles for T&B
- Use **30cm x 30cm** Ceramic Glazed Wall Tiles for T&B
- Use **40cm x 40cm** Ceramic Glazed Tiles for Kitchen Sink

Item 1021 – Cement Floor Finish

- This Item shall consist of furnishing all materials, labor, tools and equipment in undertaking cement floor finish in accordance with the Plans and this Specifications.
- Immediately after concrete has received a floated finish, give the concrete surface a coarse transverse scored texture by drawing a broom or burlap belt across the surface.

"tracking the sky...helping the country"



Item 1027 – Cement Plaster Finish

- This Item shall consist of furnishing all cement plaster materials, labor, tools, and equipment required in undertaking cement plaster finish in accordance with the Plans and these Specifications.
- **Materials Requirements:**
 - Mixture: Class B
 - Thickness: 20mm

Item 1032 – Painting Works

- **Scope of Works**
 - This item shall consist of furnishing all paints, varnishes and other products to be used including labor, equipment, and tools required as shown on the Plans and in accordance with these specifications.
 - Number of coats, where specified, is minimum. The contractor shall apply as many as required to meet specifications for a solid, uniform appearance. Where film thickness in mils is specified, spot checks will be made to determine compliance with the specified thickness.
 - Submit 2 samples of each and every color or finish (including all coats). Where the same color or finish is to be applied over different materials, samples of each shall be submitted.
 - All works fittings, furniture, etc., are to be suitably protected during the execution of the work. Splashes on floors, walls, etc. are to be removed during the progress of work and on the whole, left clean and perfect upon completion.
 - All defective or damaged work shall be restored to its initial condition.
 - All voids, cracks, nicks, etc., will be repaired with proper patching material and finished flush with surrounding surfaces.
 - Marred or damaged shop coats on metal shall be spot-primed with appropriate metal primer.
 - Upon completion of the project, the Contractor shall remove all paint spots from all finished work, remove all empty cans and leave the entire premises free from rubbish or other debris caused by his work. They shall remove their equipment from the premises. They shall clean off all glass free from paint spots and smears and shall present the work clean and free from all types of blemishes.
- **Painting Schedule:**
 - **Masonry Surfaces**
 - Exterior Surfaces**
 - Smooth finish (Flat, Semi-gloss). Treat with masonry neutralizer.

"tracking the sky...helping the country"



New Painting:

1st coat: Acrylic solvent-based coating, Acrytex primer w/
acrylic solvent-based putty, Acrytex Cast.

2nd and 3rd Coat: Elastomeric Paint

Repainting:

Top coat: Apply two coats of Elastomeric on a properly prepared surface.

Interior Surfaces

- Smooth finish (Flat, Gloss). Treat with masonry neutralizer.

New Painting:

1st coat: Prime bare substrate with Flat latex (100% Acrylic Waterbased) w/ putty
minor surface imperfections with Joint Compound. Let dry for one (1) hour. Spot-
primed puttied portions.

2nd and 3rd Coat: Finish with two (2) coats of Latex Paint with low-odor water-
based coating. Let dry for one (1) hour in between coats.

Repainting:

Top coat: Apply two (2) coats of Latex paint with low-odor water-based coating.
Let dry for one (1) hour in between coats.

Ceiling and Drywall, Fiber Cement Board

- Smooth finish (Flat, Semi-gloss).

New Painting:

1st coat: Prime bare substrate with Flat latex (100% Acrylic Water-based) w/ putty
and mesh on the joint and minor surface imperfections with Joint Compound. Let
dry for one (1) hour. Spot-primed puttied portions.

2nd and 3rd Coat: Finish with two (2) coats of Latex Paint with low-odor water-
based coating. Let dry for one (1) hour in between coats.

Wood

- Smooth finish (Flat, Semi-gloss).

New Painting:

1st Coat: Prime the bare substrate with Flat Enamel, thinned using Paint Thinner
as needed for consistency.

Apply Glazing Putty to joints and minor surface imperfections for a smooth finish.
Allow the primer and putty to dry for one (1) hour.

Spot-prime the puttied portions with Flat Enamel.

2nd Coat: Finish with two (2) coats of Enamel Quick Dry Paint, adding Tinting Color
as necessary to achieved the desired shade (color and shade is subject for
approval)

Metal Surfaces

- Gloss Finish (Epoxy type) for Steel window frames.

1st Coat: Epoxy Primer



2nd Coat: Water-based Acrylic Epoxy paint (Black)

- **Materials Requirements**

For Color, gloss, and texture are subject for approval of Project-in-Charge and End-user.

Part F - ELECTRICAL

Conduits, Boxes and Fittings

- This item shall consist of furnishing and installation of the complete conduit work consisting of electrical conduits; conduit boxes; conduit fittings and other electrical materials in accordance with the Plans and this Specification.

Scope of Works

- All conduits, conduit boxes, conduit fittings, pull boxes and other electrical materials base on the Plans and Specification shall be installed **including furnishing**.
- All conduits and boxes shall be **embedded in concrete** unless otherwise specified on the plan.
- All Junction boxes shall install covers.
- Where a conduit enters a box, fitting, or other enclosure, a locknut and bushings shall be installed to protect the wire from abrasion unless the design of the box, fitting, or enclosure is such as to afford equivalent protection.
- Installation of pull-boxes above and below the panel boards.
- Installation of Rigid Steel Conduit in existing service entrance post.
- All conduits buried underground shall be at least 300mm depth and with electrical warning mesh tape.
- All lighting outlet shall have 1.5m flexible metal conduit connected to metal straight connector to metal cover.
- The contractor shall laid and buried 1 – 50mm dia. PVC from Service Entrance Post to Gen. Set room. Also to other feeder line, refer to plan.
- Rerouting of conduit layouts is permitted, provided it adheres to the approved plan.

"tracking the sky...helping the country"



- Conduits related to the radar and other equipment's that are not specified in the plan should remain unchanged unless improvements are feasible, in which case they should be implemented and to ensure a neat and tidy appearance.

Specifications

- Threadless couplings and connectors shall not be used in threaded conduit ends unless listed for the purpose.
- Exposed conduit in Service Entrance Post shall be Rigid Steel Conduit (RSC).
- RSC shall be made of steel with protective coatings, aluminium, red brass or stainless steel.
- Markings in each length of RSC shall be clearly and durably marked at least every 3000mm with the letters RSC. Each length shall be marked as required in Subsection 1.10.1.21 (A) of Article 1.10, Requirements for electrical installations of PEC, Part I.
- The standard length of RSC shall be 3000mm, including an attached coupling, and each end shall be threaded.
- RSC shall be having a minimum size of metric designator 16 (trade size $\frac{1}{2}$) and a maximum size of metric designator 103 (trade size 4).
- PVC Conduit shall be made of rigid (non-plasticized) polyvinyl chloride (PVC).
- PVC conduit and fittings shall be composed of suitable non-metallic material that is resistant to moisture and chemical atmosphere.
- Markings in each length of PVC conduit shall be clearly and durably marked at least every 3000mm as required in Subsection 1.10.1.21 (A) of Article 1.10, Requirements for Electrical Installations of PEC, Part I.
- The physical and mechanical properties of PVC conduit shall conform to the requirements of PNS 14:2005, Unplasticized Polyvinyl Chloride (uPVC) electrical conduit – Specification.
- PVC shall have a minimum size of metric designator 16 (trade size $\frac{1}{2}$) and a maximum size of metric designator 155 (trade size 6).
- Pull boxes shall be grey coated and shall have cover.

Wires, Cables and Wiring Devices

- This item shall consist of furnishing and installation of all wires and wiring devices consisting of electric wires and cables, wall switches, convenience



receptacles, heavy duty receptacles and other devices in accordance with the approved Plans and this Specification.

Scope of Works

- Connection or wire tracing of existing Electrical System.
- Replacement of all wiring, cables and wiring devices as specified in the electrical plan.
- All wires and wiring devices specified in the plan shall be installed including furnishing.
- All branch circuits and main feeder shall have grounding wire from Panel Boards to electrical devices.
- The contractor shall have labelled all electrical devices such as convenience outlets and switches with corresponding branch circuit in the Panel Board for easy troubleshooting. Refer to schedule of loads.
- The contractor shall allot 150mm minimum extension of wire for switch boxes and convenience outlet boxes.
- The contractor shall allot minimum of 1500mm extension of wire for lighting fixture junction boxes inside a flexible conduit.
- All wires shall be terminated to wiring devices and to circuit breakers according to the plan.
- All wires going in panel board shall be neat and tidy.
- Installation of power source to Intermediate Distribution Panel (IDP).
- REDP feeder line replacement, rerouting of conduit & cables shall be permitted as long as the installer advises the designer prior to taking action.
- Wires, cables and wiring devices related to the radar and other equipment's that are not specified in the plan should remain unchanged unless improvements are feasible, in which case they should be implemented and to ensure a neat and tidy appearance.
- Testing all items mention above.

Specifications

- All wires shall be Thermoplastic High Heat-Resistant Nylon-Coated (THHN) copper wires rated 600V.
- All wires shall be stranded type and high end quality of copper.

"tracking the sky...helping the country"



- All branch circuits and main feeder shall have grounding wire from Panel Boards to electrical devices.
- The minimum diameter size of conductors shall be 2.0mm² for copper
- Switches shall have LED indicator.
- Receptacles shall be 3-pin socket (grounding type).
- All electrical devices shall be high quality that will last for long.
- Items to be used shall comply to DTI-BPS Mandatory Product Certification; Philippine Standard (PS) Quality and/or Safety Certification Mark Licensing and the Import Commodity Clearance (ICC) Certification.

Panel Boards and Other Overcurrent Protection Devices

- This Item shall consist of furnishing and installation of the distribution panel boards at the location shown on the approved Plans complete with circuit breakers, all accessories completely wired and ready for service.

Scope of Works

- Installation of ECB and panel boards shall be wall mounted. Refer to the plan.
- Main and branch circuit breakers for panel boards shall have the rating, capacity and number of poles as shown on the approved Plans.
- Panel boards, main and branch circuit breakers shall be labelled accordingly to the load schedule.
- The body of the metal panel boards shall be properly grounded.
- The contractor shall provide grounding terminal in each panel board.
- The contractor shall submit a proposal of preliminary Test and Inspection Plan.

Specifications

- Panel Boards shall be NEMA 1 enclosure and shall be grey coated unless otherwise specified in the plan.
- Main circuit breaker shall be 2-pole single phase and branch circuit breaker are 2-pole single phase according to the schedule of loads.
- Panel boards shall have busbar capacity more than the full-load current accordingly to the Plan.



Lighting Fixtures and Lamp

- This Item shall consist of furnishing all lighting fixtures, accessories and fixings necessary for installation as shown on the Plans and in accordance with this Specifications. A light fixture or luminaire is an electrical device to create artificial light that serves as a tool to direct light using reflective and shielding materials.

Scope of Works

- Installation of LED panels recessed type, surface type and suspended type shall be fit into ceiling, properly reinforced the mounting and properly grounded. Refer to the plan.
- Installation of downlight fixture, surface type, recessed type. Refer to the Plan.
- Installation of upside/down wall lamp. Refer to the plan.
- Installation LED Emergency light and exits sign at corresponding location. Refer to the Plan.
- Provide individual power outlet for emergency light.
- All lighting fixture body shall be properly grounded.
- Installation of LED bulbs in all lighting fixtures.
- Upon completion of installation of lighting fixtures and after circuitry has been energized, electrical energy shall be applied to demonstrate capability and compliance with requirements. When possible, malfunctioned units at the Project Site shall be rectified, then retested to demonstrate compliance; otherwise, defective items shall be removed and replaced with new units and another test shall be conducted.

Specifications

- LED panel light **60cm x 60cm recessed type** shall be 60Watts with LED driver and color temperature shall be 6000k.
- LED panel light **120cm x 30cm suspended type** shall be 60Watts with LED driver and color temperature shall be 6000k.
- Modern LED decorative center lighting, tri-color temperature and at least 600mm in diameter.
- 6" vertical downlight fixture surface type and recessed type shall be aluminium material, water proof and color black. The color temperature of bulbs shall be 3000k 9watts for outdoor and 6000k 9watts for indoor. Refer to the Plan for location.

"tracking the sky...helping the country"



- Cylindrical upside/down wall lamp shall be E27 or GU10 socket and with 3000k 6watts LED bulb and also the body/housing shall be HDPE plastic material.
- LED emergency light shall be 3.6V 900mAh Ni-CD battery with overcharge and discharge protection. Injection-moulded thermoplastic ABS housing. Adjustable Headlamps. 3000k color temperature.
- Exit sign shall have built-in back up battery, 220V, LED green light, hanging type, transparent shell, aluminum material, IP30.

Auxiliary System

- This Item shall consist of furnishing and installation of all materials, components and equipment to complete the requirements for Auxiliary System in accordance with the Plans and this Specification.

Scope of Works – CATV System

- Installation of wall plate CATV outlet (See specified plan).
- Installation of conduits for Co-axial cable shall be embedded in concrete. Refer to the Plan.
- Installation of Co-axial cable and termination of cables.
- Installation of outdoor CATV box.
- Labelling of CATV outlet is a must.
- At the completion of the installation works, the entire installation shall be subject to the test before final placing in service under the full responsibility of the Contractor. Unless otherwise specified, all test shall be carried out in conformity with the requirement of Philippine Electrical/Electronics Code or with this Specification.
- After each test, the contractor shall immediately submit copies of a test report to the Engineer.
- Testing certificates shall be provided by the speciality contractor prior to final turnover.

Network and Cabling System

- This Item shall consist of furnishing and installation of Network Cabling, equipment and associated components to form a complete coordinated system ready for operation in accordance with the Plans and Specifications.

"tracking the sky...helping the country"



Scope of Works

- Installation and layout of conduits for UTP cable shall be embedded in concrete.
- Installation of UTP cable in every data outlet/port is directly from Main Distribution Frame (MDF). Splicing is strictly prohibited.
- Installation of Data outlet/port with grid and plate.
- Managed switch, patch panel and Intermediate Distribution Frame (IDF) shall install by the contractor.
- Termination of UTP and STP cables in every port and to managed switched/patch panel shall be done by the contractor.
- Configuration of the network system shall be done by the contractor.
- Installation of WIFI access point shall be done also by the contractor.
- Provide pull boxes for MDF.
- The contractor will provide service entrance for MDF outside the building just under the ceiling.
- All cables and hardware shall be 100% tested for defects in installation and to verify cable performance under installed conditions. All conductors of each installed cable shall be verified useable by the Contractor prior to system acceptance.
- All UTP and fiber optic cable field testing shall be performed with an approved test device. 100% of cables installed shall be tested and shall all result to PASS remarks channel or permanent link.
- All field tester shall be factory calibrated each calendar year by the field test equipment manufacturer.

Specifications – Network and Cabling System

- Conduit, boxes and fittings shall conform to the requirements of **Item 1100**.
- Cable and wiring devices shall conform to the requirements of **Item 1101**.
- UTP cable shall be CAT6.
- Data outlet shall be single port with grid and plate unless otherwise specified in the plan.
- WIFI access point shall be 300Mbps ceiling mounted.
- IDF shall be complete set (power outlets, brackets and other accessories, etc.).
- POE injector shall be 8 port for LAN and 8 port for POE.
- Manage Switch shall meet the specifications below:
 - **Power consumption:** Max Power (w/o PoE): 33W

"tracking the sky...helping the country"



- **Input Voltage:** 100-127 VAC / 200-240 VAC
- **External I/O Ports:** 24x ports 10/100/1000BASE-T ports 4x 1G SFP ports
- **Latency:** 1 Gbps: 1.5 μ Sec
- **Routing Capabilities:** Static
- **Switching Capacity:** 56 Gbps
- **Throughput:** 41.6 Mpps
- **Memory and Processor:** Dual Core ARM Cortex A9 @ 1016 Mhz 8 GB DDR3, maximum, depending on model 16 GB eMMC
- **PoE Capability:** non-PoE model
- **Warranty Standard Statement:** Limited Lifetime Warranty
- **Weight (imperial):** 5.78 lbs
- **Weight (metric):** 2.6 kg
- **Product Dimensions (imperial):** 1.73 x 17.4 x 7.92 in
- **Product Dimensions (metric):** 4.4 x 44.2 x 20.1 cm
- **Operating Temperature:** 32°F to 113°F (0°C to 45°C) up to 5000 ft (1.5 km) derate -1°C for every 1000 ft (305 m) from 5000 ft (1.5 km) to 10000 ft (3.0 km)

Grounding System

Description

This item shall consist of furnishing all grounding system materials, labor, tools, equipment and others in undertaking the proper installation works required in accordance with the Plans and this Specification.

Scope of Works

- Trenching and excavation shall be done by the contractor.
- Installation of ground rod and conductors shall be done by the contractor.
- The contractor shall bond the new grounding system to existing grounding system of the building.
- Grounding busbar terminal and ground rod copper clad shall be delivered and install by the contractor.
- Exothermic welding shall be done by the contractor.
- Sealing gum shall be use whenever it is needed.
- Terminal lugs shall be install by the contractor.

"tracking the sky...helping the country"



- Ground resistance test shall be done by the contractor and with PAGASA personnel for witness.

Specifications

- Copper clad ground rod shall be 3 meters in length and 16mm in diameter, and must be UL listed.
- Bare copper wire must be 30mm² in size.
- GET type exothermic mold 16/30 with handle clamp and flint igniter.
- Exothermic powder shall be #90 for GET connections.
-
- Minimum requirements for ground resistance shall be less than 1ohm.

Miscellaneous Electrical/Civil Works

- This item shall consist of construction of pedestal poles, manhole, concrete encasement, handhole, wire trench, furnishing and installation of cable tray, mounting bolts/ eye bolts, and spool insulator wire rack and shall conform to the alignment, grades, design, dimensions and details in accordance with Plans and Specifications.

Scope of Works

- Trench excavation from service entrance post to generator room and subfeeder lines. Refer to the plan.
- Make hand/man hole if possible for feeder lines.
- Installation of electrical warning mesh tape above the trenching.
- Installation of 3 spool insulator spool secondary rack base on the plan.

Specifications

- Handholes shall be in accordance with the applicable requirements of Item 900, Structural Concrete.
- Handhole shall be 500mm x 500mm x 600mm.
- Other materials to be used shall be in accordance with Section 3.14.2.16, Handhole Enclosures and Section 1.10.5, Manholes and Other Electric Enclosures Intended for Personnel Entry of the Philippine Electrical Code (PEC), Part 1.

"tracking the sky...helping the country"



- Trench excavation shall be minimum of 300mm in depth.
- Insulator post strut shall be rounded to ensure that the spool insulator will not be damaged while being strung. All components of secondary rack shall be hot-dip galvanized conforming to the requirements of ATSM A123, Zinc (hot-dip galvanized) coatings on iron and steel products.

Ventilating System

- This Item shall consist of furnishing and installation of ventilation systems, inclusive of necessary electrical connections, ductworks, grilles, and all other necessary accessories, ready for service in accordance with the Plans and this Specification.

Scope of Works

- Installation and layout of conduits for Exhaust Fans. Refer to the Plan.
- Installation of exhaust fan ceiling type. Refer to the Plan.

Specifications

- Exhaust fan shall be 220V, 12in x 12in dimension, color white, ceiling mounted.

Fire Alarm System

Description

This Item shall consist of furnishing, installation and connection of the fire alarm wiring and equipment to form a coordinated system ready for operation in accordance with the Plans and Specifications.

Scope of Works

- Installation of boxes, conduit and fittings shall be embedded in concrete except FACP.
- Installation of Smoke Detector, Heat Detector, Alarm Horn w/ Strobe Light, Fire Alarm Control Panel, Manual Pull Station Switch and fire alarm cable.
- The Contractor shall terminate the cables to the devices and FACP.



- Upon completion of installation of Fire Alarm System and after circuitry has been energized, triggering the devices shall be applied to demonstrate capability and compliance with requirements. When possible, malfunctioned units at the Project Site shall be rectified, then retested to demonstrate compliance; otherwise, defective items shall be removed and replaced with new units and another test shall be conducted.

Specifications

- All fire alarm devices mention above shall be compatible with each other.
- Alarm horn shall be modern with LED strobe light.
- Fire alarm cable shall 2C shielded type.
- Fire Alarm Control Panel shall be at least 6 zone, 220V main power supply, 27.2VDC internal power supply, 12V 12.8Ah li-on battery pack, end of line device and end of line resistance value (6.8k ohms, 5% tolerance, 0.25W color coded blue, grey, red, gold).
- Installation conduits, wires and boxes shall be in accordance with the requirements of Article 7.60 – Fire Alarm Systems of the Philippine Electrical Code.
- The inspection, testing and maintenance of fire alarm system shall comply with the requirements of Chapter 10 – Inspection, Testing and Maintenance of the National Fire Alarm Code (NFPA 72).