

**Republic of the Philippines**  
**Department of Science and Technology**  
**PHILIPPINE ATMOSPHERIC, GEOPHYSICAL AND**  
**ASTRONOMICAL SERVICES ADMINISTRATION**  
**( P A G A S A )**

SPECIFICATIONS FOR THE PROPOSED RENOVATION OF HYDRO METEOROLOGY DIVISIONS (HMD) OPERATION REPAIR ROOM AND STORAGE ROOM LOCATED AT 1<sup>ST</sup> FLR., WFFC BLDG., AGHAM RD., BRGY. PINYAHAN, QUEZON CITY

Project Title:

**PROPOSED Renovation of Hydrometeorology Division (HMD) Operation**

Location:

**1<sup>st</sup> floor Weather & Flood Forecasting Center Bldg., Agham Road, Brgy. Central, Quezon City, 1100**

**OUTLINE SPECIFICATIONS FOR GENERAL CONSTRUCTION:**

**I. INTENT AND APPLICATION OF THE PROVISIONS OF THIS SECTION**

A. The Scope of Work covered within these Specifications

B. This section is prepared in a concise manner, the intention of which is to save time and effort in locating important contents within these Specifications.

C. Execution of this Section shall be coordinated and harmonized to each corresponding elaborated section of these same specifications.

**D. In case discrepancies exist between this Section and its corresponding elaborated sections, notify the Procuring Entity immediately for clarification; their decision shall be final.**

E. The Contractor shall bear the responsibility of checking all the numbers and units as indicated in the Bill of Quantities. It is understood that the Contractor shall supply and install the required units in accordance with the Plans and the Specifications.

F. In their bid proposal, the bidders may propose materials or equipment or makes other than those specified in the BOQ and/or Specifications, provided they are of equivalent specifications and functionalities.

G. During project implementation, the winning bidder/contractor may propose substitution of materials or equipment or makes other than those specified in the Contract documents shall be subject to the approval of the Procuring Entity for the following reasons only:

1. That the materials or equipment proposed for substitution is equal or superior to the materials or equipment specified in construction efficiency and utility provided that any and all costs relative thereof shall be shouldered by the Contractor.

## II. GENERAL CONDITIONS OF PLANS AND SPECIFICATIONS

The execution of this Specification, Plans and other related Contract Documents shall be subjected to the rules and regulations as provided in the General Conditions of the Contract. **The Plans and specifications shall be interpreted by the Procuring Entity and or his/her representative.** The Contractor is enjoined to confer with the Procuring Entity on items for clarification before submitting his bid. No excuses shall be entertained for misinterpretation of the Plans and specifications after the award of contract. All work as deemed required by the Procuring Entity shall be carried out properly by the Contractor.

- A. The Contractor **shall consult the Procuring Entity on portion of the work not mentioned in the Specification and not illustrated on the Plans.** He shall not work without proper instruction or detailed plans approved by the Procuring Entity, otherwise he shall be responsible for the in acceptance of the work done without details. In such case, the Contractor shall make good the work at his own expense.
- B. No alteration or addition shall be allowed without the consent and proper documentation approved by the Procuring Entity, even such change is ordered by the Procuring Entity. The Contractor shall bring the case to the Procuring Entity. Request for approval of such changes, alteration, deviation of work shall not be done without the consent of the Procuring Entity. Changes may be presented to the Procuring Entity in the form of shop drawings.

TWO (2) SET of clean Plans and specification shall always be kept at the jobsite to be available to the Procuring Entity or their representative upon his request during the construction.

### DIVISION 1: SCOPE OF WORK

- A. The Contractor shall conduct thorough inspection of the existing job site conditions.
- B. The scope of work shall include all additions necessary in order to implement the whole set of approved Plans, Working Drawings and Specifications.
- C. The Contractor shall secure and do all the legwork necessary for all pertinent permits needed for the Procuring Entity to occupy and use the building,
- D. The Contractor shall construct All Architectural, Structural, Electrical, Sanitary/ Plumbing, Mechanical / in accordance with the Plans and Specifications. All items shown on the Plans but not mentioned in the Specifications shall be included. Discrepancies shall be verified with the Procuring Entity.
- E. The Contractor shall submit details and shop drawings, templates, and schedules required for the coordination of the work of the various trades. Drawings should include information on all working dimensions, arrangement and sectional views, connections and materials.

- F. **Final Cleaning As Pre-requisite To Final Acceptance:** Final cleaning shall be by the Contractor prior to the Procuring Entity's final inspection for certification of final acceptance. Final Cleaning shall be applied on each surface or unit of work and shall be of condition expected for a first class building cleaning and maintenance program.
- G. The Contractor shall be responsible for the safety and safe working practices of its respective employees, servants and agents.

## **DIVISION 2: SITE WORK**

### **A. VISIT AND ACCEPT SITE, AS IS.** The following works shall be included:

1. **Site Clearing:** Protection and/or removal of existing structures with the approval from the Procuring Entity.
2. **Removal of improvements above and below grade** (if any) necessary to permit construction and other work as indicated. The Procuring Entity and Lessor must be consulted prior to any demolition. Coordination with PAGASA Authorities / Facilities Group & proper investigation is to be conducted to avoid damage on existing utilities. Rubbish shall be legally and properly disposed of. Other items for relocation / demolition will be discussed in the Pre-Bid Conference.

### **B. SITE SAFETY REQUIREMENTS:**

1. The Contractor shall, maintain a temporary board – up, security for the proper execution of site up-keeping. Such board-up shall be built where necessary and required by PAGASA for its full length except for such openings as may be necessary for the proper execution of the work, in such case, openings shall be provided with doors which shall be kept closed at all times except in actual use.

### **C. TEMPORARY SITE FACILITIES**

1. Temporary Provisions:
  1. The Contractor shall provide all temporary lighting, power, water supply and all necessary facilities sufficient enough for the simultaneous use of all possible fields of work to complete the project.
  2. The Contractor shall provide at necessary no. of units of Fire extinguishers.

### **D. STORAGE AND FILING OF MATERIALS**

1. **Delivery:** Contractor shall ensure that materials are properly turned over and delivered on site in good quality and condition. A time and delivery record shall be available.
2. **Storage:** Contractor's materials shall be arranged properly and accordingly in terms of sizes, quality, quantity, category and time of use.
3. All cement, lime and other materials affected by moisture shall be stored on platforms and protected from weather. Materials shall be stored as to insure

the preservation of their quality and fitness for their work. Stored materials shall be located so as to facilitate prompt inspection.

4. Should it be necessary at any time to move materials, sheds or storage platforms, the Contractor shall do so at his own expense.

### **DIVISION 3: DRY WALL**

#### **A. DRY-WALL CEMENT FIBER**

1. **Dry wall- Cement Fiber** 100mm thick for all interior walls unless otherwise indicated.  
Use of 6mm thick cement Fiber board both faces supported with metal studs and tracks with gauge 20 or 1mm thickness.

### **DIVISION 4: DOORS AND INTERIOR WINDOWS :**

Refer to Schedule of Doors and Windows

Note: The contractor shall exercise the utmost care in dismantling, transfer and installation of the glass doors/window. In case of any damage, the contractor shall replace the glass door without additional cost to the Procuring Entity.

#### **A. FINISHING HARDWARE**

The following Hardware Sets are furnished for whatever assistance it may afford the Contractor. The Contractor shall verify Plans and Specifications for hardware quality. Should any particular item be omitted, Contractor shall provide similar or equivalent item or hardware same as required.

All door hardware must be ANSI A156.2 approved.

1. **Locksets** shall be Heavy duty lever type handles, HAFELE, Bonco or Hope Brand with locked keys and profile cylinders.

- a. All locks shall have three (3) keys with the lock number stamped for identification. Verify number of duplicates.
- b. Schedule: Use extra heavy duty industrial / commercial series of door hardware.

All other necessary hardware such as latch bolts, catch locks, door chain fasteners, door stops, wall stops and holders, push plates, handles, etc. shall be of type, size and design suitable for the purpose.

#### **C. GLASS AND GLAZING**

1. Schedule: The contractor shall **submit glass sample** with performance data and certifications from the manufacturer.

**DIVISION 4: FINISHES**

Refer to Architectural Plans for location. Verify plans for other finishes not specified or omitted herein. **Sample of all materials shall be submitted to the Procuring Entity for approval as to color and quality workmanship.**

**A. FLOOR FINISHES**

1. **Vinyl Tiles:** Supply and installation of 300 mm x 300 mm x 3mm Composite Vinyl Tiles; polished / unpolished / textured and colored: set on tile adhesive setting. **Submit Samples for approval for Procuring Entity's Approval**
2. **Carpet Tiles:** Supply and installation of 9 to 10 mm x 300 mm x 300 mm for Pantry area and T&B. Refer to Schedule of finishes. **Submit sample for Procuring Entity's approval.**

Notes:

The floor should have smooth and even surface and free from bump. Should there be any uneven surface re doing the work will be no additional cost should be imply to the procuring entity.

**B. WALL FINISHES**

1. **Dismantling & Works:** Removal of some parts of existing wall as affected by the new layout and finish.

**C. CEILING FINISHES**

2. **Dismantling & Cleaning Works:** Removal of some parts of existing ceiling as affected by the new ceiling layout and finish.
3. **Acoustic Mineral Ceiling Boards:** Installation of 15 mm x 600 mm x 600 mm, with 5-year warranty to withstand humidity conditions up to at least 90deg F/ 90% RH without visible sag; in white color. **Submit sample for Procuring Entity's approval.**

**D. PAINTING WORKS**

All materials shall be Environmental protection Agency (EPA) certified and approved.

**Painting Materials:**

1. Submit various painting materials specification data and sample to be used for Procuring Entity's approval.
2. All primers, thinners and putty, also waterproofing for internal and external application shall be the same brand as the specified material.
3. Painting materials including its application must be covered with minimum of five- (5) year guarantee to be rendered by the painting manufacturer.
4. Use **BOYSEN or DAVIES** only for all painted works.

**Application:**

1. All sample paint shall be submit on at least 300-mm x 300-mm plywood panel, color and shade as per approval by the Procuring Entity.
2. Application shall be as per paint Manufacturer's specification and recommendation.
3. Provide all drop cloth and other covering requisite for protection of floors, walls, aluminum, glass, finishes and other works.
4. All applications and methods used shall strictly follow the Manufacturer's Instructions and Specifications. All surfaces including masonry wall shall be thoroughly cleaned, puttied, sandpapered, rubbed and polished; masonry wall shall be treated with Neutralizer.

All exposed finish hardware, lighting fixtures and accessories, glass and the like shall be adequately protected so that these are not stained with paint and other painting materials prior to painting works. All other surfaces endangered by stains and paint marks should be taped and covered with craft paper. *Manufacturer: Boysen or Davies Paint*

**Painting Schedule:****1. Interior**

- a. **Interior Concrete or Masonry Painted** - Three (3) coats **water-based** masonry plain semi-gloss finish. Sample Shades for Procuring Entity's Approval.
- b. **Plain Semi-gloss in Acrylic water-based Epoxy paint** on interior walls, columns, on all other interior concrete surfaces. (3) coats

**Notes :**

- Skim coating and sanding should be done.
- The wall should have smooth and even surface and free from bump.
- Should there be any uneven surface re doing the work; will be no additional cost should be imply to the owner.

**DIVISION 5: ELECTRICAL SPECIFICATION****1.0 PROCEDURE****1.1 Workmanship**

The ELECTRICAL CONTRACTOR shall execute the work in the most thorough, prompt and workmanlike manner and in accordance with the plans and specifications. The installations shall be done thru standard methods and good engineering practices.

**1.2 Materials**

All materials to be installed shall be brand new except as otherwise noted on the plans or specifications. The materials shall be as specified. No substitution of materials is allowed. Should the ELECTRICAL CONTRACTOR find it necessary to use another type/brand of materials instead of the specified item, he shall first obtain approval from the PROCURING ENTITY prior to installation. Any substituted material installed without the approval of the PROCURING ENTITY shall be subject to replacement.

### 1.3 Coordination

It is the sole responsibility of the ELECTRICAL CONTRACTOR to conduct coordination of his activities with the following:

- 3.3.1 Other trades and suppliers
- 3.3.2 Procuring Entity/Engineer
- 3.3.3 PAGASA

### 1.4 Deviation From The Plans

No deviation from the plans is to be made unless given notice or approval by the PROCURING ENTITY.

### 1.5 Record Drawings and „As-Built” plan.

The ELECTRICAL CONTRACTOR is required to keep an active record of the actual installation during the progress of the job. This shall be the reference in the preparation of the „As-Built” plans which shall include all pertinent information, complete in all aspect of the actual installation, and all new information not originally shown in the contract drawings. The „As-Built” plans shall be prepared by the ELECTRICAL CONTRACTOR at his expense and shall be submitted to the Procuring Entity for approval upon the completion of the work. The approval of the „As-Built” drawings shall be a **pre-requisite for the final acceptance of the electrical works**.

Submit two (2) copies of the “As-Built” drawings signed and dry sealed by the ELECTRICAL CONTRACTOR’S shall be submitted to the PROCURING ENTITY.

### 1.6 Samples & Shop Drawings

1.6.1 30 days prior to the installation or fabrication of materials the ELECTRICAL CONTRACTOR shall submit to Procuring Entity the following for approval.

- a. Shop drawings of panel boards showing arrangements of circuit breakers, bus bar sizes, lugs, etc. Indicate all dimensions.
- b. Shop drawings or samples required as noted in the drawings.
- c. Samples and catalogs of materials intended to be installed.

1.6.2 The ELECTRICAL CONTRACTOR shall also submit to the Procuring Entity without delay shop drawings and other submittals which may be required by Procuring Entity during the progress of construction.

1.6.3 The above requirements shall be submitted to the Procuring Entity at the earliest possible time to give allowance for checking and verification. These shall be complete in all aspects.

1.6.4 Submit two (2) sets of each shop drawings.

### 1.7 Electric Power

The ELECTRICAL CONTRACTOR shall be responsible for his own electric power needed for the execution of the job.

## 1.8 TEST

Conduit tests on all electrical conductors installed in the presence of the PROCURING ENTITY's representative.

- check for grounds
- insulation resistance test
- continuity test for all outlets
- voltage level test
- phase relationship
- check circuit connections at panel boards, all single phase circuit shall be connected to phase as shown in the load schedule.

## 1.9 Submit Reports On Tests

All reports must be formal, typewritten and properly identified.

1.10 All defects found during the test shall be repaired immediately by the ELECTRICAL CONTRACTOR.

1.11 All tools, equipment and instruments needed to conduct tests shall be on the account of the CONTRACTOR.

## 2.0 METHODS & MATERIALS

### 2.1 Conduits

#### 2.1.1 Polyvinyl Chloride Conduit (PVC)

- a. Standard trade sizes, schedule 40
- b. Coupling & fittings - standard couplings for joints by solvent weld process.
- a. Use for power & lighting.

#### 2.1.2 Installation of Conduits

- a. Installation is in accordance with PEC and of good engineering practice.
- b. Use standard trade sizes locknut and bushing at each end terminating in boxes/panel boards. Ensure electrically continuous conduit system.
- c. Provide independent conduits supports using hangers, supports or fastenings spaced in accordance with good engineering practice and PEC.
- d. Use adjustable trapeze hangers for horizontal parallel runs.
- e. Conduits bends shall not be more than the equivalent of three (3) 90 degree bends between pulling points.
- f. Conduit threads cut on job shall have same effective lengths, thread dimensions, and taper as factory threads.
- g. Cut ends of conduit square with hand or power saw and ream to remove burrs and sharp edges. Do not use wheel cutter.
- h. Clamps shall be galvanized malleable iron one-hole straps, beam clamps or other approved device with necessary bolts and expansion shields.

- i. Trapeze hangers shall be used for parallel runs of conduits. Install conduit clamps at end of each run and at each elbow. Paint hangers one prime coat of red lead or zinc chromate, and one finish coat of an approved color. Hangers are not detailed but must be adequate to support combined weight of conduit, conductors and hangers. Submit shop drawings for approval.
- j. All underground conduits installed shall be provided with concrete encasement at least 8cm. thick outer face of conduit.

## 2.2 Wires

- a. Wires shall be annealed copper, 98% or better conductivity, insulated, single, except as noted in the drawings.
- b. 600 volt class type as indicated in the plans.
- c. Wires greater than no. 8 mm<sup>2</sup> shall be stranded.
- d. Minimum size shall be #3.5 TW for power circuits.
- e. Minimum size shall be #2.0 TW for lighting circuits.
- f. Telephone wires shall be no. 22 AWG jacketed type, 4 wires.
- g. Use standard methods in pulling wires.
- h. Splices of wires/cables shall be done inside junction boxes or auxiliary gutters using standard connectors. No wires shall be spliced inside conduits.
- i. All wires and cables shall be color coded as follows:
  - a. Connectors

Use solderless mechanical pressure - type lugs, copper

## 2.3 Insulation

All splices shall be properly insulated using 3M electrical tape. Application of insulation tape shall be equivalent to the insulation of the wire concerned. Use filler compound, "Scotch fillat sharp edges to provide smooth surface before taping.

## 2.4 Panel board & Circuit Breaker

2.4.1 NEMA type/enclosure unless noted, PEC rules and regulations, circuit breaker type shall be 230V, number of pole as required.

2.4.2 Panel boards shall contain a single brand of circuit breakers and as manufactured by "Schneider Electric", "Cutler Hammer" or "GE".

2.4.3 All circuit breakers used as main shall be "Bolt on" type molded case, thermal magnetic protective, quick make, quick break, trip free from handle, trip indicating, number and size as shown in the schedule. Internal common trip for 2 and 3 pole breakers.

2.4.4 Breaker minimum interrupting capacities shall be based on NEMA and UL test procedures.

a. 230 volt breakers - 10,000 rms. Symmetrical amperes at 240V A/C (minimum)

2.4.5 All circuit breakers used as branches rated at below 100 AT and specifically installed in lighting panel boards shall be be „bolt-on“.

2.4.6 Word "space" indicated in the schedule shall mean that complete bus, insulators, etc. shall be included ready to accept future circuit breaker of the same frame size as the largest branch circuit breaker.

## 2.4 Fixtures

2.4.1 All fixtures when installed shall be free of leaks, warps, dents and other irregularities.

2.4.2 The hanger, cable, supports, channel, frames and brackets of all kinds for safety and proper installation of lighting fixtures shall be furnished and installed by the contractor at his own expense.

2.4.3 All lighting fixtures, sample and catalogue shall be submitted for Procuring Entity review and approval prior to order. NO lighting fixture shall be installed without approval of Procuring Entity.

2.4.4 Fixtures shall be wired with approved fixture wire. Each fixture shall be wired to a single point with an adequate slack for proper connection. All lighting fixture shall be protected from damage during installation. Any broken lighting fixtures, gloves, receptacles, stems and the like, shall be replaced with new parts, at no cost to Procuring Entity.

- Specifications :
  - Pin Light OMNI LED 15W Downlight fixture: round. 5 – 6 inches
  - Panel Light OMNI LED 36W, 600x600mm
  - Emergency Light: OMNI LED Model AEL 390
  - Exhaust Fan : 300mm x300mm

## 2.5 Switches and Duplex 3- pin Convenience Outlet

2.5.1 Switches and three-pin outlet shall comply with NEMA Standards. The rating switches and single and three-phase outlet with one conductor shall be as specific herein. All switches and three-pin outlets shall be flushed-mounted, impact resistant and splash proof type.

### Switches

Switches for lighting fixture shall be on the toggle quite and flush mounted and fixed to the wall 1.30m above the finished floor level. The rating shall be 10A, 230 VAC single phase.

### Duplex 3-pin Convenience Outlet

All outlets shall be provided with separate earthing pins connected to the part in the feeder cable. Outlet for 10A and with rated voltage not exceeding 250 volts shall be according to the PEC for 2-pole thee-wire (indoor).

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