



Calamba Water District

Lakeview Subdivision, Halang, Calamba, Laguna
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PROJECT TITLE : **RENOVATION PUMP HOUSE, GENSET ROOM/CONTROL ROOMS**
LOCATION : **BPS, BGRY. BUCAL, CALAMBA CITY**

I. SCOPE OF WORKS AND SPECIFICATIONS

FOR THE SUPPLY OF LABOR , MATERIALS AND SUPERVISION FOR THE ABOVE PROJECT TITLE

A. ROOF STRUCTURE

- 1 The work consist all materials, equipment, tools, labor and other facilities and satisfactory performance of all works necessary to complete all roofing and tinnery works as shown in the drawing and as specified herein.
- 2 The materials supplied by the contractor on this items shall conform to with the US Standards or with any other international standards of equal value
- 3 Flashing and gutters shall be riveted that will ensure the watertight workmanship
- 4 All Structural steel both angles and steel plates shall have an ultimate strength of $F_y=33000$ psi.
- 5 All welding shall be by the shielded arc method and shall conform to the "AWS Code for Arc and gas Welding in Building Construction" . Qualification of welders shall be in accordance with the " Specifications for Standard Qualification Procedure" of the AWS.

A.1 MATERIALS SPECIFICATIONS

1 CONTROL ROOM

- a. Roof : Gage # 24 Coloroof Pre-painted Long Span
- b. Girder : 1.2mm thk x 50mm x 150 mm GI C-Purlin
- c. Rafter : 1.2mm thk x 50mm x 100 mm GI C-Purlin
- d. Purlin : 1.2mm thk x 50mm x 75 mm GI C-Purlin
- e. Flashing : Gage # 24 Coloroof Pre-painted flashing
- f. Down Spout : 3 in. \emptyset PVC
- g. Roofing Screw : 2 1/2 in. Brass tek screw with self sealing neoprene washer
- h. Aluminum blind rivet for flashing

1 GENSET ROOM

- a. Roof : Gage # 24 Coloroof Pre-painted Long Span
- b. Girder : 6mm thk x 50mm x 50 mm MS Angle Bar
- c. Rafter : 6mm thk x 50mm x 50 mm MS Angle Bar
- d. Purlin : 6mm thk x 50mm x 50 mm MS Angle Bar
- e. Flashing : Gage # 24 Coloroof Pre-painted flashing
- f. Pipe Column : 3 in \emptyset BI Pipe, Sch. 40
- g. Base Plate : 1/2 in Thk. MS Plate
- h. Masonry Anchor : 16 mm \emptyset Dynabolt Masonry Anchor
- i. Roofing Screw : 2 1/2 in. Brass tek screw with self sealing neoprene washer
- j. Aluminum blind rivet for flashing/gutter

B. MASONRY

B.1 ADDITIONAL COLUMNS AND CHB WALLS

- 1 Preparation of Equipment : All the equipment for mixing and transporting concrete shall be clean. Debris shall be removed from spaces to be occupied by concrete. Forms shall be properly coated. Masonry filler units that will be in contact with concrete shall be well drenched. Reinforcement shall be thoroughly clean or deleterious coatings. All laticence and other unsound material shall be removed before additional concrete is placed against hardened concrete.
- 2 Mixing, Placing, and Curing of Concrete : All concrete shall be mixed until there is uniform distribution of materials and shall be discharged completely before mixer is recharged. Curing shall be maintained above 10°C and moist condition for at least first 7 days after placement.
- 3 Formworks Design and Removal : Forms shall result in the final structure that conforms to shapes, lines, and dimension of members as required by the design drawings and specifications. It should be tight to prevent to prevent leakage of mortar; also it shall be properly braced and tied together to maintain position and shape. Form shall be removed in such manner as not to impair safety and serviceability of the structure. All concrete shall have sufficient strength not to damaged thereby.
- 4 General procedures : Placed CHB, steel reinforcements, concrete, ties and all others appurtenances as shown and as required to provide a complete and workable installation. Where steel reinforcement spacing details as shown, the reinforcement bars shall conform thereto and shall be placed as indicated; provided, that the reinforcement bars shall complete and adequate regardless of whether or not these reinforcement bars are specifically shown.
- 5 Laying of CHB Wall/Louver Blocks: CHB inside surfaces shall be filled with grout/mortar and shall encase fully the reinforcing steel. The minimum thickness for wall shall be 150mm. The reinforcement shall be limited to maximum spacing of 800mm on center. The minimum diameter shall be 10mm. Horizontal reinforcement shall be provided at the top/bottom of wall opening .
- 6 Column Fabrication : Shoring and scaffolding shall be undertaken properly and adequately so as to support or brace masonry units during construction and throughout the period of hardening its grout. Grouting shall be done in layers that will assure proper filling of all voids and keyed properly to prevent slippage of bond. The number of vertical reinforcement shall not be less than four(2), nor shall the diameter less than 16mm. Lateral ties as shown enclosed all longitudinal bars. Lateral ties shall be placed not less than 38mm and not more than 125mm from the surface of column. Maximum tie spacing shall be 200mm.
- 7 Reinforcement : At time concrete is placed steel reinforcement shall be free from coating that would destroy or reduce bond. Steel reinforcement shall be cut to its desired length as specified on the plan.
- 8 Testing : Testing of masonry materials shall be done by applicable government bodies or their authorized agencies, according to testing procedures and other relevant requirements needed for such tests. In absence of the above, testing shall be bed one in accordance with ASTM C 140-70, Method of Test for Concrete Masonry Units.

B.2 ADDITIONAL WALL FINISHES

- 1 Surfaces to receive plaster shall be clean and free from defects. Corners and interior angles shall be square which arises slightly rounded. Thickness of plaster, base to the finished plaster surfaces, shall not be less than 20 mm.
- 2 All portland cement plaster shall be mixed one(1) part portland cement and three parts sand

B.3. FLOORING AND EQUIPMENT FOUNDATION

- 1 Removal of tiles of Control Room in preparation for the application of epoxy coating.
- 2 Repair of existing pump house flooring.
- 3 Construction of additional concrete flooring beside genset room

B.4. MATERIALS SPECIFICATIONS

- 1 Size of concrete hollow block shall be 125mm x 200 mm x 400mm. No deforms and dried as deliver.

C. ELECTRICAL WORKS

- 1 Replacement of existing lighting system on Pump House area (indoor only)
 - a Contractor to provide 7 pcs. LED Bulb
 - b In-house bulb replacement

- 1 Material Specifications
50 Watts, 4500 lumens, Cool daylight

D. PAINTING AND COATINGS

G.1. GENERAL

The work included in this Clause consists of the furnishing of all labor, materials, apparatus, scaffolding, and all appurtenant work in connection with painting and coating in accordance with these Specifications. The Engineer shall approve any subcontractor for painting and coating.

G.2. SCOPE

The following surfaces are to be painted, except where otherwise specified or shown:

- 1 Concrete
 - a. Inside and outside surfaces of Control Room, Genset Room and Pumphouse concrete wall/columns
 - b. Ceiling of Control Room
- 2 All structural and miscellaneous steel
 - a. Piping System
 - b. Structural steel support, Trusses, Girders, etc...
 - c. Pump and Genset base frame
 - d. Railing, Wireways, Steeldoor/gate and Gutter
 - e. Genset Muffler
 - f. Existing Roofing
- 4 Flooring, Canal and Equipment Foundation
 - a. Genset/Control Rooms
 - b. Pump house including discharge pipe support

G.3. APPLICATION OF PAINT

- a. General

All painting and finishing shall be performed by skilled craftsmen. Each coat of paint shall be applied at proper consistency, evenly, and free of laps, sags, and runs and cut sharply to required lines. Except as otherwise specified or required, paint shall be applied only under dry and dust-free conditions that will insure properly finished surfaces, free of defects and blemishes. Paint shall not be applied when temperature is likely to be above 320C (900F). Sufficient time shall be allowed between coats to insure proper drying. All primer and intermediate coats shall be unscarred and completely integral at time of application of each succeeding coat. The Engineer shall be notified when each coat has been applied and is ready for inspection. Until each coat is inspected and approved by Engineer, no succeeding coats shall be applied.

- b. Methods of Application

AS per paint manufacturer's specifications

G.4. Materials

- 1 Concrete : Quick Drying Enamel
- 2 Structural and Misc. Steel : Quick Drying Enamel
- 3 Flooring, Foundation : 100 % Polyamine-cured heavy duty epoxy floor coating
- 4 Genset Muffler : High Heat Aluminum Paint
- 5 Structural steel(new) : Red Oxide Primer/Quick Drying Enamel

II. REFERENCE DRAWINGS

- A 1 - Floor Plan
- A 2 - Front/Rear Elevation
- A 3 - Left/Side Elevation
- S 1 - Roof Plan
- S 2 - Roof Framing Plan/Detail of Trusses

III. ACCEPTANCE

- 1. No crevices and stain on concrete flooring, perimeter fence and concrete wall.
- 2. No ponding of water on concrete flooring
- 3. Proper Waste/Debris Disposal

IV. OTHERS

- 1. Contractor should submit all the necessary documents such as Construction Methodology and Detailed Daily Schedule of Activities, etc... during Kick off Meeting
- 2. Construction Safety and Good Housekeeping must be observed at all Times.
- 3. Contractor should include product catalogue of materials in their proposal for evaluation purposes.

NOTES :

Reference - LWUA TECHNICAL STANDARDS and CWD EXISTING STANDARDS.

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