



Republic of the Philippines  
Department of Agriculture  
Regional Field Office No.1  
City of San Fernando, La Union

## **SPECIFICATIONS and SCOPE OF WORK**

**PROJECT NAME: REHABILITATION OF BUGNAY DIVERSION DAM**

**LOCATION: Brgy. Bugnay, Candon City, Ilocos Sur**

**BRIEF DRESCRIPTION:** Demolition of Existing structure and construction of ogee dam.

The contractor/implementer of the project shall verify all dimensions and conditions of the site and shall notify the DA Project Engineer for any discrepancies between actual conditions and information shown in the drawing before proceeding with the work.

The structural drawings and specifications represent the general framework of the structure. They do not indicate methods of construction, unless so stated, the contractor/implementer shall provide all necessary measures to protect the structure, the contractor/ implementer's obligation to notify the DA Project Engineer of any conditions that may endanger the stability or cause distress in the structure during phases of construction.

This set of specifications shall govern the methods of construction and kinds of materials to be used for the proposed Project shown on the accompanying plans and detailed drawings.

All parts of the construction shall be finished with first class workmanship to the fullest talent and meaning of plans and the specifications, and to the fullest satisfaction of the Department of Agriculture through its Project Engineer. Any defective material or poor workmanship should be replaced or improved by the Contractor without additional cost to the Owner.

### **I. MOBILIZATION AND DEMOBILIZATION OF EQUIPMENT**

The Contractor shall mobilize and move into the Project Site the required construction equipment needed for the successful completion of the Contract.

#### **MINIMUM EQUIPMENT REQUIREMENT FOR SWIP**

2 Backhoes (0.75 cu.m.)	2 One Bagger Mixers
2 Bar Benders	2 Bar Cutters
1-Unit Welding Machine	1 Dump Truck
1 Hand Tools	1 Bulldozer D65A-8

### **II. PROVISION OF SAFETY AND HEALTH (PPE, OHS STAFF AND SIGNAGES)**

The Contractor shall ensure that every person working on or visiting the site, as well as the public in general, shall be made aware of the dangers/hazards likely to arise from site activities, including the precautionary measures to be taken to avoid or minimize those risk associated to those dangers/hazards.

### **III. CONSTRUCTION OF TEMPORARY FACILITIES**

The Contractor shall furnish all materials, labor, equipment, tools and install such temporary works as are necessary for the successful completion of the Contract Work. The Contractor shall negotiate the site for his construction camp, office and work areas.

### **IV. ACCESS ROAD**

The work under this shall consist of surface preparation and quarrying of materials including stockpiling, loading, hauling, dumping, spreading, and compaction of road surfacing materials into access road and service roads.

### **V. CLEARING/GRUBBING**

The work under this scope shall include clearing, grubbing and stripping of all vegetation, trees, stumps, roots, brush, rubbish and all objectionable or undesirable matters within the entire damsite, construction camp site borrow areas, road surfacing materials sources, stockpile areas and elsewhere as may be directed by the Project Engineer; all in accordance with Drawings and this Specifications or as directed by the Project Engineer.

### **VI. DAM**

#### **A. Excavation AND DEMOLITION OF EXISTING STRUCTURE**

The work under this shall include clearing removal, hauling and disposal of all excavated materials tamping and trimming of foundation bed required for the construction of canal foundation.

Foundations shall be excavated according to the outline of the footings and floors of structure as shown on the Drawings or as directed by the DA Project Engineer

#### **B. Structural Backfill**

All horizontal and sloped earth surfaces shown in the drawings or specified by the DA Project Engineer, upon which backfill material is to be placed shall consist of undisturbed or well compacted material and shall be clean, damp, free from water and free from organic matter.

#### **C. RUBBLE MASONRY (CLASS A MIXTURE)**

This item shall consist of boulders with a minimum of 0.20 m in diameter of which is placed on to protect the canal

#### **D. Reinforcing Steel Bars**

All reinforcing steel bars required for the works as detailed in the Construction Drawings or as directed by the Project Engineer



## **E. Form Works**

Forms shall be used to confine the concrete during vibration and to shape it to the required lines. Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete, and shall be maintained rigidly in position. The strength and rigidity of the forms shall be such that formed surfaces will conform to specification requirements relating to the surface irregularities and tolerances for concrete construction. Forms shall be tight to prevent loss of mortar from concrete.

## **F. Concrete Works Class A**

This covers all the materials as cement, aggregates, water, admixtures and proportioning, mixing, transporting, placing, finishing, curing and protecting of concrete, including supplies, equipment, tools and all other incidentals necessary for concrete works. It shall be a concrete mixture.

# **VII. RETAINING WALL**

## **A. Excavation**

The work under this shall include clearing removal, hauling and disposal of all excavated materials tamping and trimming of foundation bed required for the construction of canal foundation.

Foundations shall be excavated according to the outline of the footings and floors of structure as shown on the Drawings or as directed by the DA Project Engineer

## **B. Structural Backfill**

All horizontal and sloped earth surfaces shown in the drawings or specified by the DA Project Engineer, upon which backfill material is to be placed shall consist of undisturbed or well compacted material and shall be clean, damp, free from water and free from organic matter.

## **C. Reinforcing Steel Bars**

All reinforcing steel bars required for the works as detailed in the Construction Drawings or as directed by the Project Engineer

## **D. Form Works**

Forms shall be used to confine the concrete during vibration and to shape it to the required lines. Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete, and shall be maintained rigidly in position. The strength and rigidity of the forms shall be such that formed surfaces will conform to specification requirements relating to the surface irregularities and tolerances for concrete construction. Forms shall be tight to prevent loss of mortar from concrete.

#### **E. Concrete Works Class "A"**

This covers all the materials as cement, aggregates, water, reinforcing steel bars, admixtures and proportioning, mixing, transporting, placing, finishing, curing and protecting of concrete, including supplies, equipment, tools and all other incidentals necessary for concrete works.

#### **F. Coarse Sand Filter**

The work under this Section shall include furnishing, excavation and hauling, placing on approved subgrade and compacting graded sand and gravel filters and drains in layers and to the thickness and dimensions indicated on the Drawings, including construction of weep holes where needed to provide outlet for filters all in accordance with these specifications or as directed by the DA Project Engineer.

### **VIII. CONSTRUCTION OF APRON, CHUTE BLOCKS, PIERS, ENDSILL, BAFFLE BOCKS & CUT OFF WALL**

#### **A. Excavation**

The work under this shall include clearing removal, hauling and disposal of all excavated materials tamping and trimming of foundation bed required for the construction of canal foundation.

Foundations shall be excavated according to the outline of the footings and floors of structure as shown on the Drawings or as directed by the DA Project Engineer

#### **B. Structural Backfill**

All horizontal and sloped earth surfaces shown in the drawings or specified by the DA Project Engineer, upon which backfill material is to be placed shall consist of undisturbed or well compacted material and shall be clean, damp, free from water and free from organic matter.

#### **C. Reinforcing Steel Bars**

All reinforcing steel bars required for the works as detailed in the Construction Drawings or as directed by the Project Engineer

#### **D. Form Works**

Forms shall be used to confine the concrete during vibration and to shape it to the required lines. Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete, and shall be maintained rigidly in position. The strength and rigidity of the forms shall be such that formed surfaces will conform to specification requirements relating to the surface irregularities and tolerances for concrete construction. Forms shall be tight to prevent loss of mortar from concrete.



#### **E. Concrete Works Class "A"**

This covers all the materials as cement, aggregates, water, reinforcing steel bars, admixtures and proportioning, mixing, transporting, placing, finishing, curing and protecting of concrete, including supplies, equipment, tools and all other incidentals necessary for concrete works.

### **IX. OUTLET WORKS**

#### **A. EXCAVATION**

The work under this shall include clearing removal, hauling and disposal of all excavated materials tamping and trimming of foundation bed required for the construction of outlet foundation.

Foundations shall be excavated according to the outline of the footings and floors of structure as shown on the Drawings or as directed by the DA Project Engineer

#### **B. STRUCTURAL BACKFILL**

All horizontal and sloped earth surfaces shown in the drawings or specified by the DA Project Engineer, upon which backfill material is to be placed shall consist of undisturbed or well compacted material and shall be clean, damp, free from water and free from organic matter.

#### **C. Reinforcing Steel Bars**

All reinforcing steel bars required for the works as detailed in the Construction Drawings or as directed by the Project Engineer

#### **D. CONCRETE WORKS "CLASS A"**

This covers all the materials as cement, aggregates, water, reinforcing steel bars, admixtures and proportioning, mixing, transporting, placing, finishing, curing and protecting of concrete, including supplies, equipment, tools and all other incidentals necessary for concrete works.

#### **E. STEEL ASSEMBLY WITH CONTROLLER**

The work under this shall include installation of the following:

- a. Steel Pipe with flanges and collar
- b. Gate Valve with Flanges
- c. Impact dissipator

#### **MATERIALS**

All materials shall be new, free from defects and shall be the best available for the purpose for which they are intended, considering strength, ductility, suitability for the intended service and best engineering practice.

#### Installation of Outlet Pipes

The irrigation outlet pipes with flanges with thickness as specified in the Drawing shall be installed as shown in the Drawing or as directed by the DA Project Engineer.

#### Installation of Gate Valve

All anchor bolts shall be set accurately to the grade and alignment designated on the Drawing or as directed.

All wood materials to be used for the vertical stoplogs of the intake structure shall be made of well-seasoned Yakal. Before installation, the stoplogs shall be pressure-treated with anti-termite asphalt-based compound. Before fabrication, the Contractor shall see to it that Yakal to be used shall be of the approved quality, free from large, loose and/or unsound knots, sap shakes or other imperfections which can impair the strength and durability of the stoplogs.

### **X. STONE MASONRY AND HANDLAID RIPRAP**

#### **A. STONE MASONRY (CLASS "A" MIXTURE)**

Stone Masonry shall consist of field stones. They are clean, sound, durable, resistant to the action of water, and must have diameters ranging from 15 cm. to 30 centimeters. Stones shall have the prior approval of the DA Project Engineer before their use. Concrete binder shall be Class "A" concrete with 37.5 mm maximum size of aggregate.

#### **B. GROUTED RIPRAP**

The work under this Section shall include furnishing and placing appropriate sizes of stones or spalls for riprap and grouting the riprap with cement mortar, in accordance with these Specifications and as directed by the DA/BSWM Project Engineer. The stones and spalls shall be obtained from quarry areas or stockpile areas designated by the DA Project Engineer and shall be placed at the road bank adjacent to the reservoir's normal water level limit. Specific areas to be protected with grouted riprap shall be determined by the DA Project Engineer first before the Contractor works on them.

### **XI. IRRIGATION WORKS**

#### **A. Excavation**

The work under this shall include clearing removal, hauling and disposal of all excavated materials tamping and trimming of foundation bed required for the construction of outlet foundation.

Foundations shall be excavated according to the outline of the footings and floors of structure as shown on the Drawings or as directed by the DA Project Engineer.

#### **B. Structural Backfill**

All horizontal and sloped earth surfaces shown in the drawings or specified by the DA Project Engineer, upon which backfill material is to be placed shall consist of undisturbed or well compacted material and shall be clean, damp, free from water and free from organic matter.

#### **C. Reinforcing Steel Bars**

All reinforcing steel bars required for the works as detailed in the Construction Drawings or as directed by the Project Engineer.



#### **D. Form Works**

Forms shall be used to confine the concrete during vibration and to shape it to the required lines. Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete, and shall be maintained rigidly in position. The strength and rigidity of the forms shall be such that formed surfaces will conform to specification requirements relating to the surface irregularities and tolerances for concrete construction. Forms shall be tight to prevent loss of mortar from concrete.

#### **E. Concrete Works Class "A"**

This covers all the materials as cement, aggregates, water, reinforcing steel bars, admixtures and proportioning, mixing, transporting, placing, finishing, curing and protecting of concrete, including supplies, equipment, tools and all other incidentals necessary for concrete works.

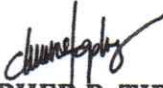
#### **XII. MARKER**

Marker shall be clearly identified with the project type. Component of marker shall show no greater deterioration in physical condition, color change or fade and shall be in accordance with the dimension and shapes specified in the plan.

The above specifications are intended for the Rehabilitation of Bugnay DD in Brgy. Bugnay, Candon City, Ilocos Sur.

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