

## **ITEM 615.9506 10 M – ALUMINUM FISHWAY INSTALLATION**

### **DESCRIPTION**

This work shall consist of designing and installing a pre-fabricated, aluminum fishway of the type, size, configuration and components at the location shown on the Plans. This work includes all dewatering, concrete, reinforcement, and hardware necessary to complete the pre-fabricated aluminum fishway installation. The pre-fabricated aluminum fishway structure will be furnished by others.

### **MATERIALS**

#### **A. GENERAL**

Unless an exception is noted, the materials for this work shall meet the requirements of the NYSDOT Standard Specifications.

Structural Concrete	555-2
Cofferdams and Waterway Diversion Structures	553-2
Drilling and Grouting	586-2
Epoxy Coated Bar Reinforcement	709-04
Structural Steel	715-01
Stainless Steel Connecting Products	715-16
Galvanized Coatings and Repair Methods	719-01

#### **B. HARDWARE**

All steel hardware except as noted below, including but not limited to bolts, nuts, washers, anchors and screws, shall conform to ASTM Designation A307, Grade "A", and shall be hot-dipped galvanized steel in the manufacturing process. Galvanizing bath shall be free of ferrous impurities. Galvanizing shall be in accordance with Subsection 719-01 Type II.

Any necessary hardware required by the plans to be in contact with the aluminum fishway structure shall be made of stainless steel and in conformance with 715-16 of the Standard Specifications.

### **CONSTRUCTION DETAILS**

#### **A. GENERAL**

The work involves assembling and installing the necessary components of the fishway and support structures as shown on the plans. The State will supply the fishway structure consisting of three (3) aluminum "Alaskan Steep-Pass" segments; one (1) aluminum entrance pool; one (1) aluminum turn pool; one (1) aluminum exit pool; aluminum connector plates; and aluminum splash guards within 30 days upon written notice by the Contractor. It will be necessary for the contractor to transport the structure components to the project site from a nearby storage location specified on the plans.

## **ITEM 615.9506 10 M – ALUMINUM FISHWAY INSTALLATION**

Generally based on the work shown on the contract plans, the Contractor shall provide complete design details for the installation of the assembled fishway structure, including all connections, support bracket, concrete pedestals and a proposed sequence of construction activities. Six copies of the design detail shop drawings and two copies of design calculations shall be provided to the Engineer at least 45 working days prior to fabrication. The shop drawings shall be subject to the approval of the Engineer. All drawings and design calculations shall be stamped by a New York State Professional Engineer.

### **B. DEWATERING**

The Contractor shall dewater the work area as necessary to construct the fish ladder shown on the Plans and as approved by the Engineer. The size of dewatering/cofferdam structures necessary to install the fishway shall be minimized to the smallest area possible and shall meet the requirements of all approved permits.

Upon installation of the necessary dewatering components, the construction of the fishway shall generally be as follows below. Once site work begins, the work shall be completed in the sequence submitted by the Contractor with the minimum necessary gap between construction activities.

### **C. CONCRETE PEDESTAL CONSTRUCTION**

The Contractor shall construct and install the reinforced concrete pedestals as generally detailed on the drawings as follows.

#### **1) Base Preparation**

The existing concrete channel floor shall be dewatered, cleaned of any sediment or other debris, and otherwise made suitable for casting the proposed concrete pedestals. The pedestals shall be connected to the concrete channel floor by steel dowels as shown on the contract plans or as approved by the Engineer on the required shop drawings.

#### **2) Casting the Pedestals**

The pedestals shall be cast only after the approval of base preparation. Cast in place anchor bolts shall be formed in as detailed on the approved shop drawings to provide fastening for the aluminum fishway. The pedestal surfaces shall be smooth. After casting, the pedestals shall be cured in accordance with NYSDOT Standard Specifications.

### **D. INSTALLATION OF THE SUPPORT BRACKET**

## **ITEM 615.9506 10 M – ALUMINUM FISHWAY INSTALLATION**

The Contractor shall design, fabricate and install a support bracket to be attached to the east wingwall of the spillway as shown in the contract plans. This bracket shall be designed to support the weight of the constructed fish ladder including the live load of water in the structure. The support bracket shall be bolted to the wingwall with galvanized bolts and as specified in Section 586-3 and 701-07 of the Standard Specifications.

### **E. INSTALLATION OF THE ALUMINUM FISHWAY**

The fishway structure comprises the following major components: three (3) aluminum “Alaskan Steep-Pass” segments; one (1) aluminum entrance pool; one (1) aluminum turn pool; one (1) aluminum exit pool; aluminum connector plates; aluminum splash guards and a galvanized steel support bracket.

Neoprene rubber gaskets shall be placed between aluminum surfaces that contact all dissimilar surfaces (*i.e.*, steel, concrete). All connections shall be tightened to the specifications of the fishway manufacturer.

After construction of the concrete pedestals and support arm structure, the aluminum fish ladder components shall be installed.

### **METHOD OF MEASUREMENT**

Payment of the Aluminum Fishway Installation item will be made on a lump sum basis.

### **BASIS OF PAYMENT**

The lump sum price bid shall include the cost of all design, labor and materials including dewatering, concrete, reinforcement, hardware, and equipment necessary to complete the work in accordance with the Contract Plans, Specifications and as directed by the Engineer.