ITEM 599.04 10 M - BASCULE COUNTERWEIGHT CONCRETE FILL
ITEM 599.05 10 M - BASCULE COUNTERWEIGHT LEAD FILL

DESCRIPTION

Bascule Counterweight Concrete Fill

Under the item "Bascule Counterweight Concrete Fill", the work shall include the concrete fill cast in the counterweight boxes as shown on the Contract Plans and as required by Item 10599.1110 M – Bascule Span Balance. This shall include furnishing, transporting, mixing, and placing the concrete. This item shall also include the furnishing and placing of reinforcing bars in the counterweight as shown on the Contract Plans. The cost of any formwork required for the performance of the work of this item shall be included this item.

Bascule Counterweight Lead Fill

Under the item "Bascule Counterweight Lead Fill", the work shall include the fabrication and furnishing of lead filler in the counterweight for the purposes of balancing the bridge as shown on the Contract Plans and as required by Item 10599.1110 M – Bascule Span Balance.

MATERIALS

Concrete and Reinforcing Bars

For the counterweight concrete fill, the materials used shall comply with the requirements of Section 501 of the Standard Specifications and shall meet the requirements of AASHTO 1988 Standard Specifications for Movable Highway Bridges for counterweight concrete. The concrete for the counterweights shall not be air-entrained. Concrete fill shall have a minimum 28 day compressive strength of 21 MPa.

Reinforcement in the counterweight shall be epoxy coated deformed steel reinforcing bars and shall conform to the requirements of 709-01 and 709-04 of the Standard Specifications.

Lead

All counterweight lead fill shall conform to the requirements of ASTM B-29. Lead density shall be 11,370 kilograms per cubic meter (710 pounds per cubic foot).

CONSTRUCTION DETAILS

Concrete Fill Unit Weight

The Contractor shall determine the density of his proposed mix for the counterweight concrete fill prior to submitting balance calculations for review as required under the Item 10599.1110 M – Bascule Span Balance. To determine the density of the mix proposed by the Contractor, the Contractor shall cast and cure three test cubes of counterweight concrete fill and have them accurately weighed. The test blocks shall be the same mix and from the same plant as the proposed counterweight concrete fill. The volume of each test cube shall not be less than 0.1 cubic meters, and the average unit weight shall be measured after curing for 28 days. The actual average unit weight determined from these test cubes shall be used in the Contractor's balance calculations. Two additional test blocks, identical in dimension to the three prior test cubes, shall be made during each counterweight pour to serve as a check on the unit weight of the actual concrete placed.

Concrete Fill Placement

Counterweight concrete shall be placed in lifts not to exceed 1.25 meters per lift. At least 24 hours shall elapse between pours of adjacent lifts. If the Contractor requires additional access or vent holes in the counterweight box, he shall submit drawings detailing their location and box reinforcement for approval prior to the fabrication of the counterweight box steel.

Lead Fill Placement

Quantity and location of lead placement shall be based on the Contractor's balance calculations in accordance with Item 10599.1110 M – Bascule Span Balance. The Contractor's proposed quantity, location and method of placement shall be submitted to the Engineer for review.

METHOD OF MEASUREMENT

The Item "Bascule Counterweight Concrete Fill" shall be measured for payment by the number of cubic meters of concrete actually placed in the counterweights.

The Item "Bascule Counterweight Lead Fill" shall be measured for payment by the number of kilograms of lead actually placed in the counterweights.

BASIS OF PAYMENT

The unit price bid per cubic meter for the item "Bascule Counterweight Concrete Fill" shall include the cost of all labor, materials, and equipment, including but not limited to forms and form removal and reinforcement necessary to complete the work. The volume of embedded material within the counterweight boxes, including lead fill material, shall be deducted when computing the total cubic meters of concrete required to be placed.

Test cubes that are cast for density determination shall not be measured for payment.

The unit price bid per kilogram for the item "Bascule Counterweight Lead Fill" shall include the cost of all labor, materials, and equipment necessary to complete the work. No payment shall be made for lead fill furnished as a result of the Contractor's preliminary balance calculations but not used for span balancing performed in accordance with Item 10599.1110 – Bascule Span Balance.