

## SECTION 2.04 COFFERDAM AND DEWATERING

**2.04.01--Description:** Work under this item shall consist of the design and construction of cofferdams as and where shown and specifically designated as such on the plans; necessary dewatering, adjustments, repair or reconstruction; and the removal of temporary cofferdams and related facilities.

### **2.04.03--Construction Methods:**

**1--Cofferdams :** Cofferdams shall be carried to adequate depths and heights, shall comply with Section 1.10, and shall be safe and watertight as necessary for the proper performance of the work which must be done inside them. Cofferdams shall be constructed so that the work can be safely carried to an elevation 600 mm lower than the elevation shown on the plans for the bottom of the structure footing, or, if a granular fill foundation is shown on the plans, to an elevation 600 mm lower than the bottom of the granular fill foundation. The interior dimensions of the cofferdams shall be sufficient for the unobstructed and satisfactory completion of all necessary substructure work, such as pile driving, form building, inspection and pumping. Cofferdams which become tilted or displaced prior to the completion of all work to be done within them, shall be righted, reset, or enlarged as may be necessary to provide the clearance for the unobstructed performance of all necessary work, and such corrections and adjustments of cofferdams shall be at the sole expense of the Contractor. Cofferdams shall be completely dewatered as required to complete the work entirely in the dry, except as specified below.

When conditions are encountered that render it impractical to dewater the cofferdam, the Engineer may require the placing of underwater concrete of such dimensions as will be necessary to allow the Contractor to complete the substructure in the dry. The placement of underwater concrete shall comply with 6.01.03-10.

Cofferdams must be constructed to protect uncured masonry and concrete against damage from a sudden rising of the water and prevent damage to structure foundations by erosion. No part of the cofferdam which extends into the substructure may be left in place without written permission from the Engineer.

At least 30 calendar days prior to the start of constructing or installing a cofferdam, the Contractor shall submit to the Engineer, for his information, detailed plans and computations of its proposal prepared by a professional Engineer licensed in the State. The furnishing of such plans and methods shall not serve to relieve the Contractor of its responsibility for the safety of the work and the successful completion of the Project. The Contractor's proposal must meet all requirements established in regulatory permits for the Project and must also conform to the requirements of Section 1.10.

**2--Dewatering:** Pumping from the interior of any cofferdam shall be done in such a manner as to preclude the possibility of water moving through uncured masonry or concrete. During the placement of concrete or masonry, and for at least 24 hours thereafter, any pumping shall be done from a suitable sump located outside the horizontal limits and below the elevation of the work being placed or as directed by the Engineer.

The pumped water must be discharged in accordance with the requirements of Section 1.10.

Pumping to dewater a cofferdam shall not start until any underwater concrete has sufficiently set to withstand the hydrostatic pressure created by pumping.

**3--Removal of Cofferdams :** Unless the Engineer directs otherwise, the Contractor shall remove all parts of the cofferdam after completion of the required work. This shall be done in such a way as not to disturb or otherwise damage any permanent construction.

Sheet piling used in constructing the cofferdam may be left in place with the approval of the Engineer, provided the piling is cut off at elevations approved in advance by the Engineer, and the cut off portions are removed from the site.

**2.04.04--Method of Measurement:** Work under this item will be measured for payment by the number of meters of cofferdam designated numerically on the plans.

**2.04.05--Basis of Payment:** Payment for this work will be made at the Contract unit price per meter for "Cofferdam and Dewatering," measured as described above, which price shall include all costs of design, materials, equipment, labor, work, and any related environmental controls used in dewatering operations, which are required for the construction of cofferdams shown in the plans; of any repair, correction, adjustment or reconstruction of such cofferdams required by the plans; removal of obstructions; pumping and dewatering; removal of such cofferdams and related environmental controls used in dewatering operations.

If the Engineer requires the Contractor to construct an additional cofferdam not shown on the plans, or to enlarge a cofferdam beyond the dimensions of same as designated on the plans, or if the Engineer accepts the Contractor's proposal to do so as being essential for the purposes of the Contract, the Department will revise the Contract to indicate those changes and to designate the revised dimensions of cofferdam deemed necessary by the Engineer. If the total number of meters of any given cofferdam as designated in the revised Contract is greater than the number of meters designated on the original Contract plans, the Department will pay the Contractor for the revised number of such meters at the Contract unit price, subject to the provisions of Articles 1.04.02 and 1.04.03.

To the extent that the Engineer allows the addition or enlargement of a cofferdam for the convenience or other benefit of the Contractor, but does not deem that addition or enlargement essential for the performance of the Contract work, the Department will make no additional payment for the cofferdam or portion of the cofferdam which the Engineer does not so deem essential. The Department shall not in any event pay the Contractor for fewer meters of a cofferdam than were designated on the original Contract plans unless the Department eliminates that cofferdam in its entirety from the Contract.

Even if, however, the Contractor's plan for an additional cofferdam or enlargement of a cofferdam deemed essential by the Engineer includes a previously-existing structure, in no case will a previously-existing natural or built structure, such as an abutment or an embankment, be measured for payment in calculating the revised number of meters of cofferdam on the Project.

Any common cofferdam wall required for staged construction will be measured for payment only once. In no case will a given length or portion of cofferdam be measured for payment purposes more than once.

Pay Item	Pay Unit
Cofferdam and Dewatering	m