***SPECIAL PROVISION AND STANDARD SPECIFICATION***

***GUIDANCE DOCUMENT FOR DESIGNERS***

**SECTION 2.04 - COFFERDAM AND DEWATERING**

 **COFFERDAM MATERIAL LEFT IN PLACE**

**ITEM #0204151A – HANDLING WATER**

**ITEM #0204401A – HANDLING WATER (SITE NO. 1)**

**ITEM #020440XA – HANDLING WATER (SITE NO. X)**

The purpose of this document is to

* guide designers in the use of the specifications for “Cofferdam and Dewatering” and “Handling Water;”
* give examples of plan schematics for these items;
* define the pay items to be used in the Contract.

The designer should take note of the following:

* “Section 2.04 – Cofferdam and Dewatering, Cofferdam Material Left in Place.” The term to be used in conjunction with this Section shall be “cofferdam” which should not be confused with a “water-handling-cofferdam.”
* A new owned special provision for “Handling Water” for one or more sites should be used when appropriate. Modifications to adjust the specification language due to unusual conditions should be discussed with the special provision owner (Andrew Piraneo 860-594-2937 or at Andrew.Piraneo@ct.gov).
	+ The term “cofferdam” by itself should not be used in conjunction with a water handling system. The appropriate term is “water-handling-cofferdam.”
	+ Previously used terms such as water diversion, water diversion structure, etc. shall no longer be used in context with “Handling Water” items on the Contract plans or permits.
	+ Environmental Compliance will continue to administer Item #0204213A Handling Contaminated Groundwater requirements as part of project designs.
* When preparing the Project schedule, any permit conditions for in-water work/time of year restrictions associated with the installation and/or removal of the cofferdam or the water-handling- cofferdam may apply.

Each item is distinct depending on the water being redirected or confined and the type of construction being carried out. The designer shall use the following information to identify which item of work to propose in the Contract plans and Permits:

**“Cofferdam and Dewatering”** is paid under Section 2.04 by the linear foot (l.f.).

Cofferdam and Dewatering shall consist of a fully enclosed temporary structure that supports excavations and allows for construction in the dry at the bottom of the excavation. The Designer should work with the geotechnical engineer when determining the need for and limits of a cofferdam.

The following should be considered:

* The material used for a cofferdam may consist of sheet pile material or any other material the Contractor elects to use to allow dewatering of the excavation and for the work to be completed in the dry.
* Dewatering is included in this item.
* In some cases, portions of a cofferdam may also function as a part of the “Water Handling plan” due to its proximity to surface water, but since its main purpose is support and dewatering for excavation, it is still paid for under the item “Cofferdam and Dewatering.”

**“Cofferdam Material Left in Place”** is paid under Section 2.04 by the linear foot (l.f.)

 During the design phase, the Geotechnical Engineer may determine that the cofferdam or portions of the cofferdam should not be removed. In this case, payment will be made by the linear foot of material-left-in-place and cut x feet below grade.

 Considerations for whether the cofferdam material should be left-in-place are:

* If pulling the cofferdam material would result in vibration induced settlement of the structure;
* If concrete for the finished structure is poured directly against the cofferdam material;
* If there is a tremie pour.

 In addition, if sheet piling cannot be removed within a permitted area, the engineer will need pre-approval from the regulatory agencies and there should be a callout on the plans indicating the portion(s) of cofferdam(s) to remain as “Cofferdam Material Left-in-Place.”

**“Handling Water**” is paid as lump sum (l.s.).

 This type of temporary water handling system is used to redirect overland/surface water beyond, through or around the limits of construction to allow work to be done in the dry and has no effect on groundwater. All parts of the temporary system are to be removed after the work is completed.

 The following should be considered:

* The “Handling Water” item may include any combination of water-handling-cofferdams, bypass pipes, bypass hoses, bypass pumps, to complete the work.
* Water-handling-cofferdams should never be used to support an excavation. Portions of cofferdam or TERS may be part of a water handling plan, but shall not be included for payment under the item “Handling Water.”
* Water-handling-cofferdams should be placed far enough away from excavation activities to prevent undermining.

When selecting a water handling system, designers should be guided by the options shown in the “Handling Water Typical Schematics” found on the Office of Environmental Planning’s Environmental Resource Compliance webpage: [Environmental Planning, Permitting & Compliance (ct.gov)](https://portal.ct.gov/DOT/PP_Envir/Documents/Environmental-Planning-Permitting-Compliance). The schematics can be used within permit plans. Detailed water handling plans are developed for the Contract plans.

The Owned Special Provisions webpage with this Handling Water Guidance Document and Special Provision can be located at this link: <https://www.ct.gov/dot/cwp/view.asp?a=3886&q=457352>.

 Additional considerations:

Width of water-handling-cofferdam and associated impact areas shall be considered when depicting a water handling design option.

* Fisheries’ concerns.
* Temporary hydraulic data should always be included in the notes for these items. A sample table to use within the Project plans is included in the “Handling Water Typical Schematics”