

ITEM 10553.20 M – WATERTIGHT ENCLOSURE WITH TREMIE SEAL PAN AND REMOVABLE COFFERDAM WALL SEGMENTS

DESCRIPTION

This work shall consist of designing, fabricating, furnishing and erecting Tremie Seal Pan and Removable Cofferdam Wall Segments to provide a watertight enclosure for construction of each bascule pier's raised footings. All work shall be done within the limits shown on the Contract Plans and shall include all materials, fabrication, transporting, driving of spud piles, lifting, positioning and supporting of tremie seal pan and removable cofferdam wall segments, connecting and sealing segments together, sealing the gap between piles and the bottom plate of the tremie seal pans and removal/disposal of cofferdam wall segments and spud piles. Contractor shall also design, furnish, and maintain dewatering equipment of adequate capacity.

SUBMITTALS

The Contractor shall design a Tremie Seal Pan and Removable Cofferdam Wall Segments conceptually similar to that shown on the plans, as well as any temporary piling. The design shall be performed and sealed by a Professional Engineer, licenced and registered to practice in New York State. All components submitted shall be capable of withstanding 100 yr flood elevation and velocity and shall be designed for the static water pressure plus ice pressures and tremie concrete weight as appropriate. A seal between piles and the bottom plate of the tremie seal pans shall be designed to prevent leakage of tremie concrete. After dewatering the system shall be adequate to support the tremie concrete plus the footing up to Elev. +1.63m. Stresses shall not exceed the allowable given in AASHTO Standard Specifications for Highway Bridges. All provisions of New York State Standard Specifications Section 564 pertaining to structural steel shall apply. All welding shall be done in accordance with the requirements of the New York State Steel Construction Manual. The Contractor shall indicate the water elevation above which the system should be flooded to avoid overloading. The Contractor's Engineer shall design the Tremie Seal Pan and Removable Cofferdam Wall Segments to conform to all Federal, State, County and Local Codes, Regulations and Permits.

The Contractor shall submit the design, including computations and method of installation, the details and arrangement for lifting, the equipment positioning for lifting, details of tremie pan/cofferdam wall support devices, to the Engineer for review by the Deputy Chief Engineer Structures (D.C.E.S.). The D.C.E.S. shall be allowed 20 working days for review. Permission to proceed must be received, prior to beginning of construction of any watertight enclosure. The furnishing of such information and receipt of permission to proceed shall not serve to relieve the Contractor of its responsibility for the safety of the workers, the need to meet permit conditions, and the successful completion of the work.

MATERIALS

Material shall meet the requirements of the following sections of the New York State Standard Specifications:

Steel Sheeting	552-2.01B
Steel Bearing Piles	720-04
Pile Shoes	720-05
Structural Steel	715-01
High Strength Bolts, Nuts and Washers	715-14

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Tie rods, nuts, washers and plates used for connecting the tremie seal pan and removable cofferdam wall segments shall meet the requirements of ASTM A572 M Gr.345, A563M, F463M and A709M Gr.345 respectively. Neoprene rubber used to provide watertight connections between system components shall meet ASTM D 2000-86E type BC.

The cost of the steel, connecting hardware, sealing materials and temporary supports shall be included under the Tremie Seal Pan and Removable Cofferdam Wall Segments item. Submarine cable penetrations shall be as shown on the Contract Plans.

CONSTRUCTION DETAILS

The watertight enclosure consisting of a tremie seal pan and removable cofferdam wall segments shall be constructed so as to keep the bascule pier raised footing construction area free from water and ice. Watertight enclosures, used in conjunction with a tremie pour, shall be designed and constructed to automatically flood by non-mechanical means such as over topping or flooding ports. The automatic flooding elevation shall be as indicated by a note in the plans.

The watertight enclosure, consisting of a tremie seal pan and removable cofferdam wall segments, shall be maintained in a dewatered condition during foundation construction. The placement of foundation concrete shall not be impeded by water standing or flowing within the watertight enclosure.

Dewatering equipment and any bracing shall be of adequate quality and capacity and shall be arranged as to permit their proper function with conjunction with the watertight enclosure. Dewatering equipment and any additional bracing shall be so located to permit construction of structure in accordance with the plans.

All damage caused by the failure of a watertight enclosure to perform its proper functions shall be the responsibility of the Contractor. It shall be also the Contractor's responsibility to protect all stream banks from erosion by reason of restriction of the channel caused by the erection of the watertight enclosure to limits greater than that shown on the plans for the Contractor's own convenience. In that situation all material that erodes from the banks during that time the watertight enclosure is in place shall be replaced by the Contractor at Contractor's own expense. The Engineer, in consultation with the regulatory permit agency(ies) representative(s), will be the sole determiner of the nature and extent of all damages and mitigation requirements. The Engineer shall approve all repair methods proposed by the Contractor prior to the Contractor beginning any remedial activities for which they are liable.

The Contractor shall establish and maintain a sediment removal area(s) to retain the discharge for a sufficient period of time in order to allow settlement of solids as approved by the Engineer.

METHOD OF MEASUREMENT

Measurement will be for each watertight enclosure consisted of tremie seal pan and removable cofferdam wall segments actually established where indicated on plans.

BASIS OF PAYMENT

The price bid for each watertight enclosure consisting of the tremie seal pan and removable cofferdam wall segments shall include the cost of furnishing all labor, materials, and equipment necessary to complete the work including pile driving equipment, bracing, spud piles, maintenance of a dewatered condition and final removal. No separate payment will be done for any additional temporary erosion control measures required to facilitate removal. In addition, all costs associated with the removal of any

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sediment deposited in the waterway due to the Contractor's operations shall be included. The cost of establishing, maintaining, stabilizing, backfilling and restoring the sediment removal area(s) shall also be included in the price bid. No separate payment will be made for any repairs of damage required due to the failure of a watertight enclosure to perform its proper function.

Progress payments will be made. Seventy-five percent of the bid price will be paid after installation of watertight enclosure consisted of tremie seal pan and removable cofferdam wall segments, construction of the sediment removal area(s) and initial dewatering. The remaining percentage will be paid upon satisfactory removal of cofferdam wall segments, bracing and temporary (spud) piles and restoration of the sediment removal area(s).