

ITEM #0703030A – PLACEMENT OF CHANNEL BOULDER

Description:

Work under this item shall consist of furnishing and placing individual boulders/rounded stone within an existing or proposed channel bed which may consist of rounded stone riprap, riprap or natural streambed material to improve/create aquatic habitat diversity through the proposed site. Furnishing and placement of individual boulders/rounded stone may also be required along streambanks to support slope stabilization efforts. This work shall be done in accordance with the dimension and details shown on the plans/permit, at locations indicated on the plans/permit or as directed by personnel from the Office of Environmental Planning (OEP), an OEP approved representative, and/or a representative of the Department of Energy and Environmental Protection (DEEP).

Materials:

The individual boulder shall be of a size similar to boulders either within or proximate to the proposed site. The boulders shall be generally angular, but shall not have sharp corners or edges as a result of cutting or crushing operations. The boulders should be recessed 6 to 12 inches below the streambed/riverbed elevation.

Rounded stones may be permitted given the size is equal to the individual boulder. Stones consisting of sandstone, shale, or other rock material prone to disintegration will not be permitted.

Boulder/Rounded Stone shall consist of sound, durable rock, resistant to the action of air and water. Either field stone or rough, unhewn quarry stone may be used. The boulder/rounded stone shall be similar in mineral composition and color to the adjacent existing or proposed channel bed.

Boulder/Rounded Stone with visible cracks or spalling will not be permitted. Rock excavated from ledge (bedrock) formations, or broken from larger boulders, will not be accepted. Broken concrete will not be accepted.

Material the Contractor proposes to use must be inspected and approved by the OEP prior to the excavation of material on-site or hauling of the material from an off-site source. A minimum notice of 2 weeks must be given to the OEP for inspection and approval.

Construction Methods:

Prior to installation, the Engineer shall ensure that the areas for the boulder/rounded stone placement are to be clear of construction material, equipment, cofferdams, and/or water-handling devices, unless specifically required to be left in place during the installation as indicated in the contract plans or permit.

Notify the OEP at least 2 weeks prior to initiating the placement of boulder/rounded stone. Any and all coordination with the DEEP will be done through the OEP. The Contractor shall react accordingly to this requirement by giving the Engineer sufficient time to fulfill the Engineer's obligation. Placement of the boulder/rounded stone should proceed during periods of low flow whenever possible to ensure proper placement and as directed by the OEP or an OEP approved representative. No work shall be performed without a DEEP representative on site, unless specifically requested otherwise.

The placement of the boulder/rounded stone shall be in accordance with the locations indicated on the plans/permit. The final location may deviate from plans/permit at the discretion of OEP or an OEP approved representative.

If in the opinion of an OEP, DEEP or an approved OEP representative a particular boulder or rounded stone is too large or small for the hydraulic opening or may affect habitat conditions at any location in the work area, the Contractor shall furnish and place alternative boulder/rounded stone as directed.

Equipment: When placing and maneuvering boulder/rounded stones within the channel bed or embedding boulder/rounded stones into the streambank, the Contractor shall use an excavator with an articulated bucket (with thumb). Any other equipment proposed to be used shall be reviewed and approved in advance by OEP or an OEP approved representative.

All disturbed areas as a result of the placement of boulder/rounded stones shall be permanently stabilized using approved sediment and erosion control measures.

Method of Measurement:

This work will be measured for payment for each boulder/rounded stone installed and accepted at the locations called for on the plans or as directed by OEP or an OEP approved representative, within the limits of the proposed work.

Basis of Payment: This work will be paid for at the contract unit price each for "Placement of Channel Boulder", completed and accepted. This price shall include all materials, equipment, tools and labor incidental to the installation of each boulder/rounded stone. Channel diversion and dewatering shall be paid under item "Handling Water". Excavation of the channel bed will be paid under the item "Structure Excavation – Earth (Excluding Cofferdam and Dewatering)".

<u>Pay Item</u>	<u>Pay Unit</u>
Placement of Channel Boulder	EA