

# **CONSTRUCTION SPECIFICATION**

## **760. Temporary Stream Diversion**

### **1. Scope**

The work shall consist of the installation of a temporary stream diversion as needed to move stream flow through or around a project area to isolate construction activities from contact with stream flow and prevent impacts on water quality from the construction work, as well as properly treating and discharging sediment-laden water.

The scope of work shall include building and maintaining the temporary stream diversion (channel, pipe or bypass pump), flow barriers (dams), and temporary erosion and sediment controls, as well as removing all such temporary works after they have served their purposes and properly stabilizing the area. The scope of work shall also include dewatering activities for the construction area, as needed. The work shall be planned to minimize the length of time the temporary stream diversion will be used.

### **2. Excavation and Stabilization of the Temporary Stream Diversion Channel**

When specified, the Contractor shall excavate, stabilize, maintain, and operate the temporary stream diversion channel needed to carry the diverted stream flow. Excavated materials shall be stockpiled in areas as shown on the drawings, outside of the floodplain and outside of the drip line of trees, (see Practice Standard [TREE PROTECTION 990](#)) and protected and/or stabilized, as required.

Excavation of the diversion channel shall be performed with plugs at both ends of the diversion channel to avoid stream flow from entering the diversion channel prematurely. The plugs may be constructed of a combination of rip-rap, sandbags, sheet piling, or the existing undisturbed soil. The temporary stream diversion channel shall be properly stabilized per the plans and specifications.

The excavation and stabilization of the temporary stream diversion channel shall be a continuous process with the stabilization occurring immediately after the excavation of an area. When fabric is used for or as part of the lining of the temporary stream diversion channel, the fabric shall be wide enough to span from bank to bank so that any seams will be perpendicular to the diversion channel flow. When seams parallel to the flow direction are necessary, they shall be pre-sewn or field sewn following manufacturer's specifications. Sections of fabric shall be shingled with the upstream sections of fabric overlapping the downstream sections of fabric a minimum of 36 inches. The fabric shall be secured per the manufacturer's specifications. The fabric shall lay flat on the channel and be in direct contact with the soil without any void spaces. Sharp objects shall be removed to avoid puncturing the fabric. Prior to diverting stream flow, the Contractor shall ensure the fabric is properly secured at the upstream end of the temporary channel, as well as all along the channel.

Once the temporary stream diversion channel has been completely excavated and stabilized and ready to receive stream flow, the downstream plug shall be removed first, followed by removal of the upstream plug.

### **3. Diverting Stream Flows**

The Contractor shall build, maintain and operate all flow barriers (dams), such as cofferdams, (see Practice Standard [COFFERDAM 803](#)) and protective works needed to divert stream flows through or around the construction site and away from the construction work. Unless otherwise specified, the temporary stream diversion must discharge into the same natural drainage way. In no instance shall the diverted flow be discharged into a different watershed.

The flow barrier shall be made of non-erodible material, able to withstand the anticipated flows, and shall not contribute unnecessary pollution to the stream or surrounding area. The flow barrier may be constructed of a combination of rip-rap, sand bags, concrete barriers, sheet piling, or other appropriate materials.

The stream flow shall not be diverted until the temporary stream diversion has been properly stabilized.

When a temporary stream diversion channel is used and is ready to accept the stream flow, the flow barriers shall be installed within the stream. The upstream flow barrier shall be installed first followed by the downstream flow barrier. The discharge point at the downstream end of the temporary stream diversion shall be properly stabilized to avoid erosion. Similarly, the location of the upstream diversion shall be properly stabilized.

When a pipe is used for the temporary stream diversion, the upstream and downstream diversion points shall be properly stabilized first to avoid erosion. Then the pipe shall be installed and the flow barriers built, starting with the upstream flow barrier. The pipe shall be located to minimize potential erosion.

When a bypass pump diversion is used (see Practice Standard [DEWATERING 813](#)), the pump shall be placed on firm ground on top of a drip pan or other pollution prevention material to avoid contamination of the soil. The intake and outlet shall be placed in the appropriate location, as shown on the plan. The discharge location shall be properly stabilized prior to diverting any flow. The pump operation shall be monitored and augmented as needed.

The Contractor shall furnish, install, operate and maintain all sumps, (see Practice Standard [SUMP PIT 950](#)) pumps, casings, wellpoints and other equipment needed to perform the dewatering of the construction site in the diverted stream area as needed for proper execution of the construction work.

Unless otherwise specified, the Contractor shall furnish to the Contracting Officer, in writing, a plan for diverting stream flows and the removal of water from the work area before beginning the construction work for which the temporary stream diversion is required. Acceptance of this plan will not relieve the Contractor of responsibility for completing the work as specified.

#### **4. Erosion and Pollution Control**

The Contractor shall install erosion and sediment control devices, per the plans and specifications, prior to construction of the temporary stream diversion and installation of water diverting measures. The temporary stream diversion shall be installed during dry weather to minimize water quality impacts. Measures shall be taken to divert runoff from entering the temporary diversion channel and the project area. All erosion and sediment control devices shall be properly maintained and repaired

or replaced, as necessary.

Removal of water from the construction site shall be accomplished in accordance with Practice Standard [DEWATERING 813](#) and in such a manner that erosion and the transmission of sediment and other pollutants are minimized. To avoid contamination and compaction, equipment shall not enter the natural stream bed.

#### **5. Removal of Temporary Works**

After the temporary works have served their purposes, the Contractor shall remove them or level and grade them to the extent required to present a slightly appearance and to prevent any obstruction of the flow of water or any other interference with the operation of or access to the permanent works. The work site in the natural stream area shall be stabilized prior to the removal of the stream flow barriers. The downstream flow barrier shall be removed first and then the upstream flow barrier. Removal of the flow barriers shall be accomplished during dry weather. If a temporary diversion channel was used, the temporary channel shall be blocked once the stream flow has been restored to the natural channel, by first plugging the upstream end and then the downstream end. Any standing water shall be removed from the temporary stream diversion channel in accordance with Practice Standard [DEWATERING 813](#) and the temporary diversion channel shall then be filled and stabilized per the plans and specifications.

#### **6. Measurement and Payment**

Method 1 – Items of work listed in the bid schedule for temporary stream diversions will be paid for at the contract lump sum prices. Such payment will constitute full compensation for furnishing, installing, operating, maintaining and removal of the necessary diversions,

channels, drains, sumps, pumps and piping and for all labor, equipment, tools, materials, and all other items necessary and incidental to the completion of the work.

Method 2 – Items of work listed in the bid schedule for temporary stream diversion will be paid for at the contract lump sum prices. Such payment will constitute full compensation for furnishing, installing, operating, and maintaining the necessary diversions, channels, drains, sumps, pumps, and piping, and for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work, except that additional payment for pumping to remove water from the diverted stream areas and channel will be made as described in the following paragraph.

If pumping to dewater work sites in diverted stream areas and channels are listed as an item of work in the bid schedule, payment will be made at the contract unit price which shall be the price per 1,000 gallons shown in the bid schedule. Such payment will constitute full compensation for pumping only. Compensation for equipment and preparation and for other costs associated with pumping will be included in the lump sum payment for temporary stream diversion. Payment will be made only for pumping that is necessary to dewater work site areas. Pumping for other purposes will not be included for payment in this item.

All Methods – The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract but not listed in the bid schedule will be included in the payment for the item of work to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in Section 6 of this specification.

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