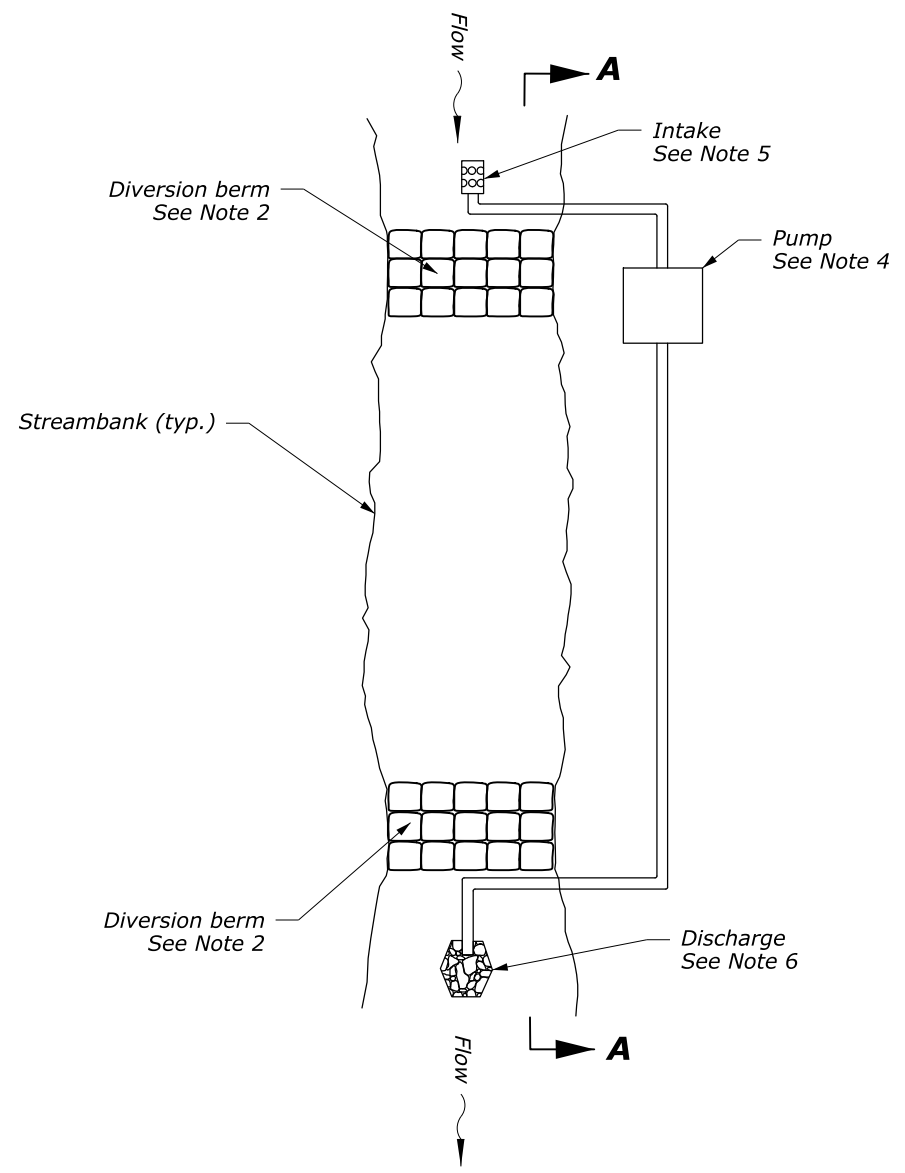


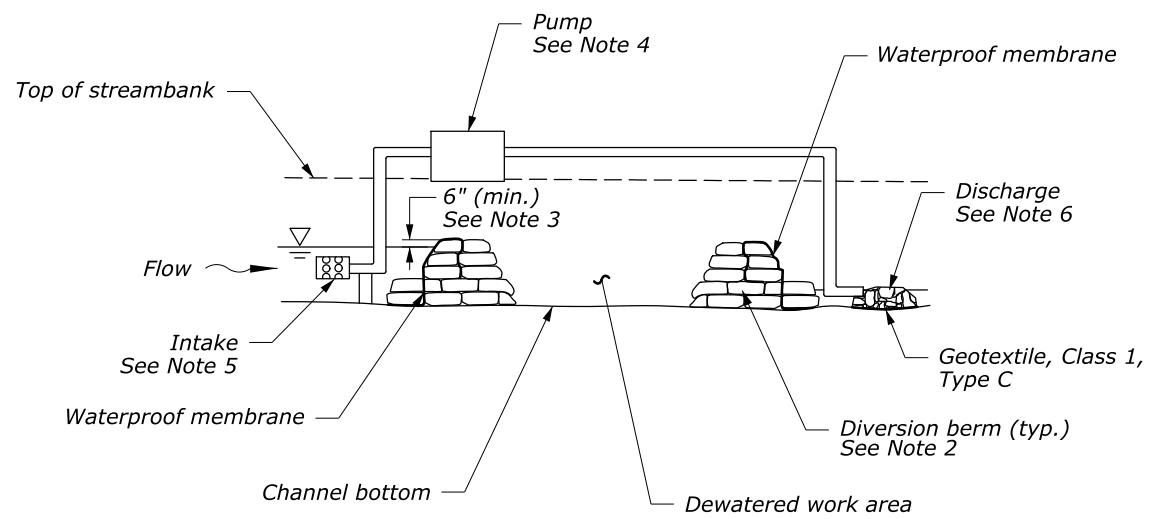
STATE	PROJECT	SHEET NUMBER

**NOTES:**

1. Construct temporary diversion according to Subsection 157.10. Obtain the CO's approval for use of alternate diversion methods.
2. Construct diversion berm according to Detail E157-08.
3. For diversions in place longer than one workday, ensure the height of the diversion berm is 1 foot higher than the 2-year storm.
4. Design dewatering system for expected flows. At a minimum, design the system for a 2-year, 24-hour event. Have spare pumps on site for replacement in the event of pump failure or higher than anticipated flow rates.
5. Suspend the inlet above the channel bottom to prevent sucking sediment into the hose. Place a mesh screen over the inlet to prevent injury to aquatic wildlife.
6. Stabilize the discharge point with native channel bottom stone, riprap, or sandbags to disperse energy and prevent erosion.
7. Direct water pumped from the work area into a filter bag (See Detail E157-10) or an approved sediment retention structure constructed at the downstream of the diversion berm. Do not discharge the pumped water from the work area directly to the stream.
8. Remove dewatering system and restore the area to pre-diversion conditions within 5 days after dewatering is no longer needed.



**PLAN VIEW**



**SECTION A-A**

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ADAPTED FROM:  
WEST VIRGINIA DEPARTMENT OF ENVIRONMENT PROTECTION  
EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES MANUAL,  
FIGURE 3.21-12

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION OFFICE OF FEDERAL LANDS HIGHWAY	
EFLHD DETAIL	
<b>TEMPORARY DIVERSION BERM BYPASS PUMPING</b>	
DETAIL APPROVED FOR USE APPROVED: NOVEMBER 2020	DETAIL E157-09



## **NOTES TO THE DESIGNER**

**November 25, 2020**

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### **General Information**

#### ***1. Appropriate Applications.***

- Bypass pumping (or Pump-around) is one of the methods used to dewater and isolate the work areas from the stream flow during in-stream construction activities.
- The practice is applicable to all instream construction activities such as utility lines, bridge piers and abutments, retaining walls and/or bank stabilization, culverts, water intakes and pipe outfalls.
- Bypass pumping is typically part of the entire dewatering system designed by the Contractor including the size and type of pipe, elevation changes, pumps, berm, etc.

#### ***2. Limitations.***

- Under most circumstances, the bypass pumping technique will be sufficient to dewater the work area. However, a full stream diversion is required when the construction of an instream structure will take place across the entire channel width and the bypass pumping would not be sufficient to handle the anticipated stream flows.
- Timing and duration of construction are primary considerations for determining the design flow most appropriate for a diversion. Consult with Hydraulics for the design flow determination.

#### ***3. Layout Guidance.***

- Provide adequate sediment and erosion control on the approaches.
- Use a pump or pumps sufficiently large to pump the entire stream flow around the site. Direct water pumped from the work area into a filter bag or to an approved sediment retention structure located in the downstream.
- The inlet of the pump is to be suspended above the streambed in order to prevent sucking mud and sediment.
- The discharge point must be stabilized with rock to disperse the energy and prevent erosion.

#### ***3. Associated EFL Details as applicable.***

- Detail E157-02 for silt fence, or E157-04 for fiber roll.
- Detail E157-08 for in-stream diversion berms.
- Detail E157-10 for filter bags.

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### **Applicable SCRs**

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## **Typical Pay Item Used**

Typically, Bypass Pumping work will be incidental to the following pay items:

- 15701-0000 Soil Erosion Control [LPSM].
  - 15702-1000 Soil Erosion Control, TEMPORARY DIVERSION CHANNEL [LPSM].
  - 15702-6000 Soil Erosion Control, TEMPORARY STREAM DIVERSION [LPSM].
  - 20820-0000 Dewatering [LPSM]
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## **Updates**

- Created the Detail and Notes to Designers, 11/2020