

8. River, Stream and Water Body Protection: Protect all streams or water bodies passing through or on the project. Use filter fabric or bale filter dikes to line the water edges. Divert project sediment flow by using dike and slope protection. A combination of the above or other control features can be used.

The Contractor shall construct the above features concurrent with the grubbing operations.

a) Stream Relocation: Fully stabilize the new stream channel prior to diverting flow into the new channel.

b) Stream and River Crossing: Provide a means for construction equipment to cross water courses without causing erosion of streambanks or deposits in the channel. Plan and locate crossings well in advance of needing them. Disturbance to water bodies shall be kept to a minimum. Crossings shall be kept to a minimum and as narrow as practical. Crossings shall be made in shallow areas rather than deep pools where possible. Clearing, grubbing and excavation of streambanks, bed and approach sections shall be kept to a minimum.

The provisions for conveyance shall anticipate high flows and shall not impede the movement of aquatic life.

If culverts are used, the following minimums shall apply: Place culverts on the existing stream bed to avoid a drop in waterfall at the downstream end of the pipe. Culvert diameter shall be at least three times the depth of normal stream flow at the point of the crossing. The minimum size culvert to be used shall be 18 inches [0.5m]. There shall be sufficient number of culverts to completely cross the channel from stream bank to stream bank with no more than 12 inches [0.3m] between each culvert.

All fill and surface material placed in the channel, around the culverts or on the surface of the crossing shall be clean non toxic dump rock fill Type B, C, or D. Extend placed rock up slope from original stream bank to catch and remove erodible material from equipment.

Aggregate used does not need to be removed. Care should be taken to avoid any impoundment or restriction to fish passage. All pipes must be removed upon project completion.

The stream crossing work will not be measured and paid for directly but shall be considered as a subsidiary obligation of the Contractor, with costs included in the contract bid prices for the items to which they apply.

When the normal water elevation is shown on the plan, the Contractor shall construct crossings to accommodate a water elevation at least one foot (0.3m) above the stated normal water elevation. Fording in accordance with 107.21 is not allowed.

**877.04 Maintenance.** Temporary erosion control features shall be properly maintained.

The Contractor shall maintain these items with the concurrence of the Engineer. When the Contractor properly places the erosion control items in the contract in accordance with the contract documents, then the Department will pay for the additional cost to maintain or replace these items of work by the unit bid prices, agreed unit prices or by 109.04. Silt removed from erosion control features shall be disposed of in accordance with 203.05.

The Engineer or appointed inspector will check the temporary and permanent erosion control features every 7 days or within 24 hours of any rainfall of more than ½-inch (10 mm).

(A) Temporary Perimeter, Ditch Checks, Inlet Protection Filter Fabric Fence, Dikes and Bale Filter Dikes. Trapped sediment shall be removed and cleaned when it reaches half the height of the lowest section. The Contractor shall make the appropriate corrections when the above fail or become non functional. The Contractor shall maintain the items until the up slope permanent grass coverage is 70 percent or better. The Contractor shall remove the items when the up slope permanent grass coverage is 70 percent or better.

(B) Temporary and Permanent Seed: The seed bed shall be thoroughly watered in accordance with the requirements of Item 659. The quantity of water will be measured and paid for as Item 659 water. Seeded areas shall be maintained until 70 percent or better cover is established. Temporary seeded areas shall be mowed and paid for in accordance with Item 659.

(C) Sediment Dams and Basins: Deposited sediment shall be removed when the initial volume has been reduced one-half. The Contractor shall make the appropriate corrections when these items fail or non functional. The Contractor shall remove the dams and basins when the permanent seed and mulch is placed on the entire project.

**877.05 Performance.** The Contractor shall install additional erosion control features, make adjustments to meet the field conditions, anticipated future work or corrections based on the weekly storm water inspections with the concurrence of the Engineer. The type and quantity will be paid by the unit bid prices, agreed unit prices or by 109.04.

In the event that the Contractor or its agents refuse or fail to adhere to the requirements of the 404 Permit, the 401 Water Quality Certification and/or the NPDES Storm Water Permit and as a result an assessment or fine is made or levied against the Ohio Department of Transportation, the Contractor shall reimburse the Department within ten (10) calendar days of the assessment or fine or the Department may withhold the amount of the fine from the Contractor's next pay estimate and deliver that sum to the permitting agencies issuing the assessment or fine.

These fines are not to be construed as a penalty but are liquidated damages to recover costs assessed against the Department due to the Contractor's refusal or failure to comply with the permit requirements.