

Constructed Ditch FACTSHEET

CULVERT INSTALLATION In Constructed Ditches

This factsheet provides information on installing new culverts or replacing old culverts on constructed ditches only.

Where a clear span structure is not possible, agencies may consider proposals to install culvert crossings. Concerns regarding the culvert location, length, size and installation method may need to be addressed. Consideration is generally based on ensuring fish passage and avoiding impacts to fish habitat.

The replacement of a culvert may or may not require notification and approval from agencies. Table 1 describes the notification or approval requirements for various situations when work is done in the timing window for constructed ditches.

Maintenance works to instream structures that are licensed under the *Water Act* may be done without contact to the Ministry of Water, Land and Air Protection (WLAP) or Fisheries and Oceans Canada (DFO). Maintenance works must be done in a manner that does not impact fish or fish habitat.

Table 1 NOTIFICATION REQUIREMENTS FOR CONSTRUCTED DITCHES			
Description	No Agency Contact	Ditch Maintenance Form	DFO Authorization
Replacement of an access road culvert with a culvert of less than 12 m.	X		
Replacement of an access road culvert with a culvert greater than 12 m.		X	
New culvert installation that will not impact native trees and shrubs.		X	

See *Agency Contacts*, Factsheet No. 19 in this series.

Conditions Specified for Culvert Replacement or Extension on a Constructed Ditch

For culvert replacement or extension DFO must be notified of the work with a Ditch Maintenance Form (DMF). See *Agency Contacts*, Factsheet No. 19 in this series for a DMF. DFO may notify proponents of additional requirements after reviewing the DMF.

- Culvert headwalls should be constructed of wood, pre-cast concrete or galvanized metals. **Cast-in-place or concrete bag headwalls are not recommended due to the potential for release of concrete leachate, which can kill fish.**
- Replacement culverts should be oversized, installed approximately 30 cm below the stream bottom invert and backfilled with native materials or clean gravels.
- Minor deepening (up to 30 cm) of the constructed ditch may be undertaken within 5 meters upstream or downstream of a culvert only in locations where the culvert is set below the ditch invert elevation. The culvert should not be perched above the invert of the ditch.
- All works must be undertaken during the Timing Window for your area. Refer to Factsheet No. 4 *Fishery Timing Windows for Maintenance Work in Constructed Ditches*.
- All works must be conducted during dry weather and low water conditions.

- Works must be conducted in isolation of flowing water. Refer to Factsheet No. 8 *Sediment Control*.
- If the constructed ditch has fish present, a fish salvage must be undertaken. Fish collection permits are required from DFO. Refer to Factsheet No. 17 *Fish Salvage*.
- Work must be undertaken in a manner as to prevent the release of sediment, sediment-laden water or any other deleterious (harmful) substance to the watercourse. Refer to Factsheet No. 8 *Sediment Control*.
- Disturbance to riparian vegetation along the banks of the constructed ditch may only occur in or about the site of impact. All disturbed areas must be re-graded and stabilized by seeding or re-vegetating the riparian vegetation upon completion. This helps to prevent surface erosion and/or sedimentation of the constructed ditch. Refer to Factsheet No. 11 *Bank Re-vegetation for Agricultural Land*.
- Re-release of water into the channel and/or culvert should be done gradually. Removal of sediment control devices should be undertaken once the sediments have settled out of the water and the water has cleared.
- Machinery is to work from the top of bank and not from within the ditch.
- All excavated material and debris must be removed from the site or placed in a stable area above the high water mark of the ditch and protected from surface erosion by seeding or planting.
- Any material such as riprap, placed within the average high water mark of the ditch must be free of silt, overburden, debris or other substances deleterious to aquatic life. Rock used as riprap must be durable, angular in shape and suitably graded and sized to resist movement by stream flow. Refer to Factsheet No. 12 *Rock Revetment for Constructed Ditches*.
- An outlet pool with tailwater control should be provided at the culvert exit.

Concrete

If any concrete, cast-in-place concrete, or grouting works are to be undertaken, a high potential exists for concrete and/or concrete leachate to enter a watercourse. Concrete, concrete leachate, grout and other uncured concrete substances (e.g. concrete bags for headwall construction) are deleterious and highly toxic to fish and other aquatic organisms.

To perform any concrete-related works all water must be completely isolated prior to the commencement of any instream works. In addition, measures must be taken to prevent the incidence of concrete from entering a watercourse, ravine or storm sewer system for a minimum of 72 hours after the works have been completed. This is to ensure that the concrete has fully cured.

Where concrete works are proposed a Ditch Maintenance Form must be completed and sent to DFO.

Contact Information

Agency Contacts, Factsheet No. 19 in this series contains a list of local agency contacts and other organizations that may be able to provide some assistance.

DFO Authorization is required for the installation of culverts on channelized and natural streams.