



Crossing Innovation – Concrete Arch

[FIN - An information sharing network for Maine forest landowners, fisheries agencies and NGO's](#)

Foresters and contractors working in the field often come up with innovative solutions to stream crossing problems. FIN "Crossing Innovation" information sheets highlight some of these creative solutions. Landowners should evaluate the merits of these designs for their own particular use. FIN does not in anyway guarantee the performance of these crossings.

Description

In fall 2012, Plum Creek became aware of the availability of a new concrete arch stream crossing structure developed by Dirigo Timberlands of North Anson, Maine. While upgrading a 14 mile stretch of main haul road near Greenville, the opportunity arose to test this new and innovative product.

The concrete arch appears well suited for level, small stream applications. The structure should have a long life expectancy. The buried structure does not have the decking maintenance issues of a small wooden bridge, or the issues of long metal culverts such as eventual rusting and potential frost heaving damage. Standard road maintenance grading can occur along the road.

The open bottom of the concrete arch is a great benefit to stream connectivity, allowing fish passage when the stream conditions permit. We will continue to experiment with this structure type at future crossing upgrades and monitor the existing installations, sharing results at future FIN meetings. Don't hesitate to contact Plum Creek with questions or to arrange a visit to view a site.



Specifications

The concrete arch is three-sided with an open bottom. It is roughly 7 ft wide by 4 ft high with an opening of 15 square feet (~5ft by 3ft). This opening dimension makes it slightly larger than a 36 inch diameter standard culvert. The arch currently comes in 8 ft sections.

Installation

The installation was straightforward. Two sections were used and abutted together using an excavator. It was set onto a compacted gravel base and after being overlaid with fabric, gravel was compacted around the structure. A cement "lip" on one end serves the purpose of being an anchor point for your rock or other header material.

For more information Contact:

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The Fisheries Improvement Network is a cooperative effort of the Maine Sustainable Forestry Initiative, Maine Forest Service, Maine Department of Inland Fisheries and Wildlife, Maine Department of Marine Resources and the US Fish and Wildlife Service

