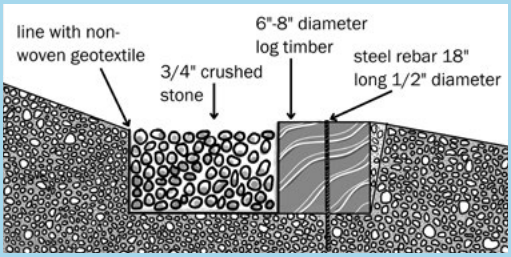
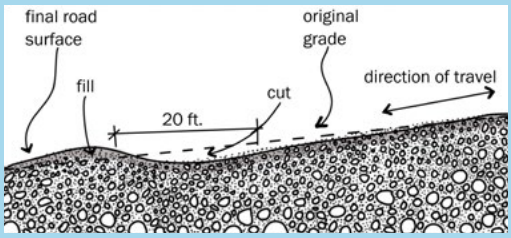
Maine Conservation Fact Sheets for Homeowners Series

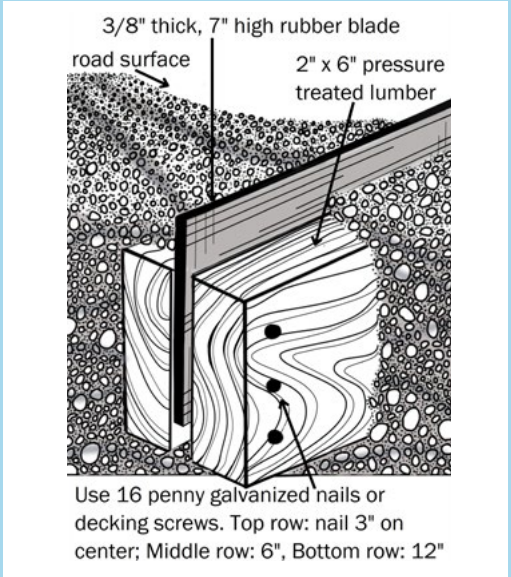
Runoff Diverters



Waterbars - these diverters work best on trails or pathways.



Broad-Based Dips - an easy way to divert water with minimal tools, but needs to be maintained regularly to remain effective.



Rubber Razors - if using on a plowed road, make sure rubber razor is well marked and plow driver lifts blade to avoid damage.

Scan Here for a video of Rubber Razor Installation

Purpose:

Used on slopes to intercept and divert water away from footpaths, trails, camp roads, and driveways into stable vegetated areas. Runoff Diverters include Rubber Razors, Open-Top (Box) Culverts, Waterbars, and Broad-Based Dips.

Installation:

If using on roads or driveways that are plowed in the winter, extra care should be taken to mark their location and notify the plow driver to avoid damage. Broad-based dips are the least likely to be damaged by plowing, but may require re-grading in the spring.

1. Select a location where the diverter outlet can drain to a stable, vegetated area. Install multiple diverters as needed and space closer together on steeper slopes as directed in Table 1.

2. All diverters start with digging an approximately 6” deep x 6-8” wide trench at a 30° angle across the whole road/path. The outlet of the trench should be stabilized with stone to break up water flow.

3. From here, choose the diverter you’d like to use and follow the specific directions below:

Waterbars: Use railroad ties, downed rot-resistant logs, or pressure treated cedar approx. 6-8” in diameter and the length of the trench. Install flush with the trench, then secure with 18” rebar pins 6” from each edge, pounded into place. Dig a 12” wide, 6” deep trench along the uphill edge of the waterbar and backfill with 1/2-3/4” diameter crushed stone. Grade as needed to form a smooth, flush surface.

Table 1. Diverter Spacing

% Grade	Spacing Between Diverters (feet)
2	250
5	135
10	80
15	60
20	45
30	35

Broad-based Dips: This is a simple cut and fill – the trench in this case should be a gradual depression followed by a small hump/speed bump on the downhill side of the trench formed by shaping the cut material into a berm. The distance between the top of the berm and the bottom of the depression should be 20’.

Rubber Razors: Sandwich rubber conveyor belt material (approx. 12” wide and 3/8” thick, and as long as the trench requires) between two 2x6 pieces of pressure treated lumber the same length as the rubber, so that the rubber material is sticking out about 7” above the lumber. Secure with galvanized nails or decking screws. Bury the razor in the trench and compact so that only about 3” of rubber material is sticking out above the ground.

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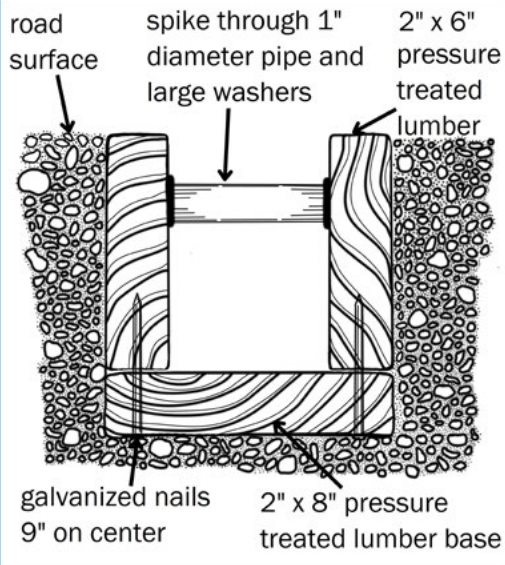

Open-Top Culvert - these structures can be cleaned out with a narrow garden hoe.

Open-Top (Box) Culverts: Open-top culverts are 3-sided wooden boxes placed below road level. They require two trench-lengths of 2x6 lumber for the sides of the box and one trench-length of 2x8 lumber for the bottom of the box. Attach the side pieces to the bottom with 3" galvanized nails. Use spikes, bolts, pipe, or 1" pieces of wood as spacers to maintain the width of the culvert and prevent it from collapsing. The width of the inside of the culvert should be about 3 ½". The structure should be buried in the trench so that it is completely flush with the road/path.

Materials:

Rubber razors are commonly made from used conveyor belts. Contact local rubber suppliers, your county Soil and Water Conservation District, or regional lake association for sources. All other materials can be sourced from hardware stores.

Maintenance:

Diverters should be checked periodically and after storm events to ensure that they are functioning properly, and repaired if necessary. Accumulated leaves and debris should be removed from diverters each spring and fall.

Scan here for more information

EPA

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Portland Water District

From Sebago Lake to Casco Bay