MAP CODE
CKDM

CHECK DAM

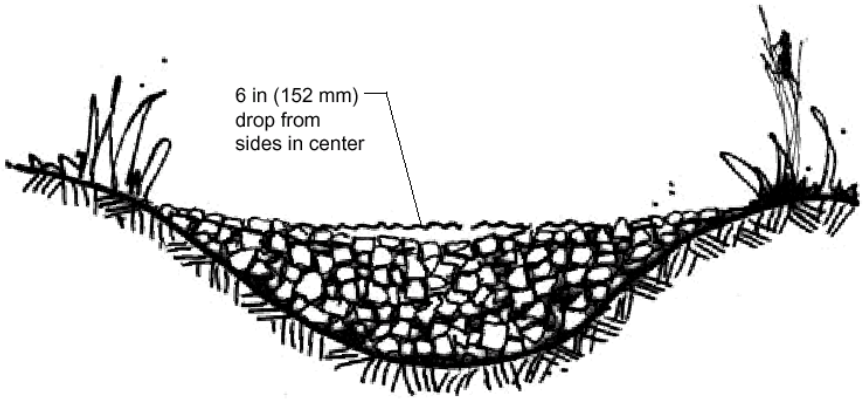
USE Erosion
Stormwater
Pollution

What

- A small temporary dam within a ditch, drainage, swale or channel.
- Made of rocks, straw, logs, lumber or interlocking pre-cast concrete blocks.

Purpose

- To reduce the gradient of a ditch, slowing the water, lowering its ability to cause erosion, and allowing sediment to settle out.



Rock Check Dam
Section View

Where

YES: Ditches, channels, swales, constructed waterways, or conveyance structures.

NO: Natural watercourses, any watercourses containing fish (whose passage might be blocked).

Materials, Equipment & Costs

Rocks, (pea gravel up to 4 inches), sand bags, gabions (wire baskets of rocks), straw bales, logs, lumber, rubber tubes inflated with water or interlocking pre-cast concrete blocks.

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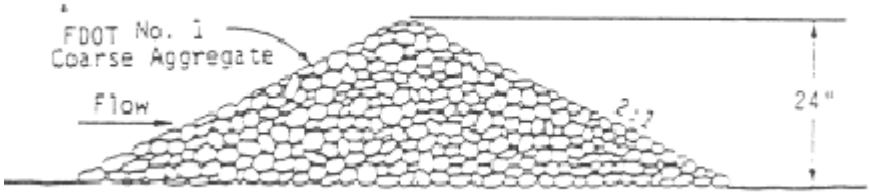
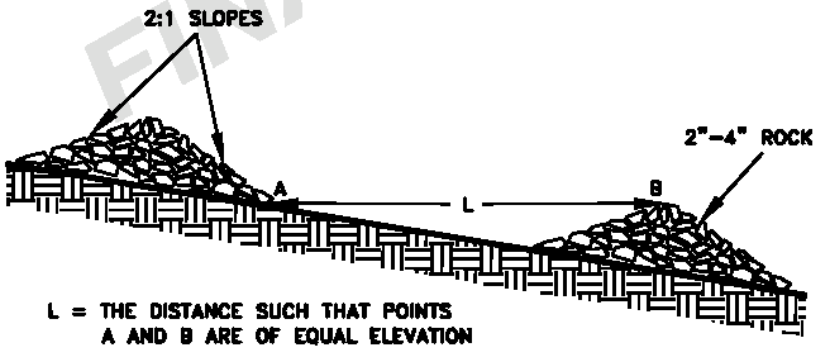
Plans & Specs

- Maximum height should be about 0.6 metres, with a 0.25 metre notch or "V" in the centre to control the flow.
- If using granular material, the check dam should have a triangular cross section, with slopes of 2 horizontal to 1 vertical or less.
- Use non-erodible material (gravel, cobble, etc.) wherever water is concentrated (high velocity) or drops or flows rapidly over the structure.



- Keep the top of the check dam about 0.3 metres below the top of the ditch or the ground elevation.
- If heavily sediment-laden flows are regularly expected, construct a sump immediately upstream of the check dam..
- Keystone the check dam materials up to 0.5 metres into the banks.
- Space the check dams so that the toe of the upstream check dam is the same elevation as the top of the downstream check dam (see figure).



- When using non-granular materials such as boards or straw bales, place rip rap below the outfall to prevent erosion.
- Temporary check dams should be removed when no longer useful; when permanent channel linings, such as grass, have been established,for example.

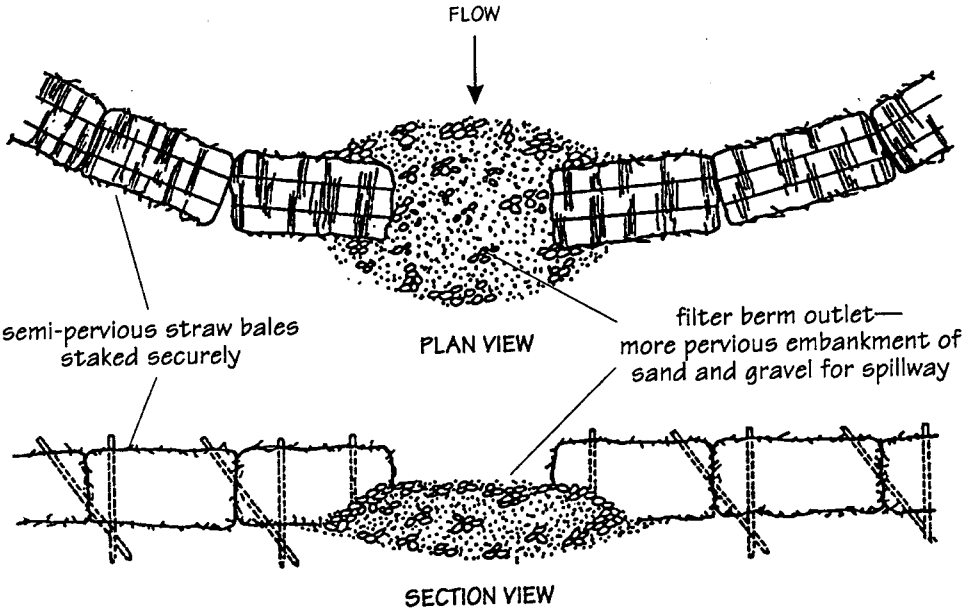
Options

Filter Fabric

Filter fabric can be used under a rock or sandbag check dam to help prevent sediment from flowing through the dam. The bottom of the fabric should be anchored in a trench.

Straw Bale Check Dam

Straw bales by themselves can be used in minor swales and ditches where the drainage area is less than 1 hectare, or where they will be pulled out in three months or less. The following diagram illustrates an effective use of straw bales in ordinary check dam installations.



Log Check Dam

Log check dams are composed of upright 4 to 6 inches (100-150 mm) boards or logs, embedded in the soil a minimum of one half metre. Log check dam may be composed of material salvaged from clearing operations.

Maintenance

- Expect deposition above the dam and erosion around the sides and bottom. Areas of deposition should be cleaned out or repaired as necessary, and rip rapped if required.
- The check dam should be inspected during and after large storms or extended periods of rain for erosion around top edges, scour and infilling.
- Remove the sediment when it reaches half of the sump or dam height.

Sources

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Norman, D.K., Wampler, P.J., Throop, A.H., Schnitzer, E.F. and Roloff, J.M. (1997): **Best Management Practices for Reclaiming Surface Mines in Washington and Oregon;** *Washington State Department of Natural Resources* Open File Report 96-2 and *Oregon Department of Geology and Mineral Industries* Open File Report O-96-2, page 2-18 to 2-19, URL <http://www.wa.gov/dnr/htdocs/ger/pdf/bmp.pdf > [PDF, 7.6 Mb], June 2001.

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