

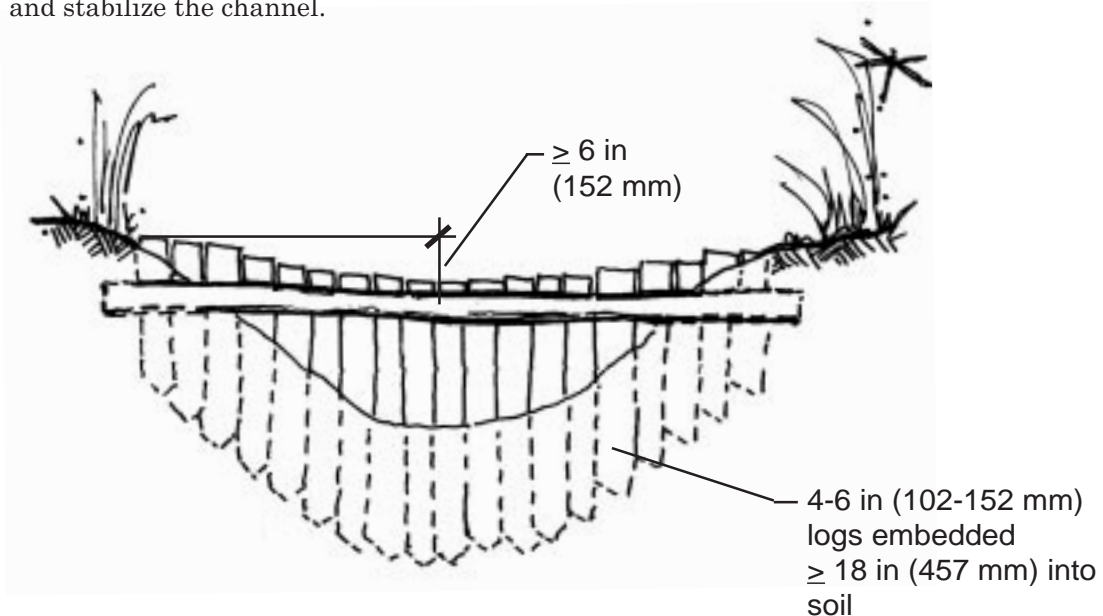
PRIMARY USE: Reduce erosion.
ADDITIONAL USES: Pollutant removal.

CHECK DAM

What is it? A check dam is a small, temporary or permanent dam constructed across a drainage ditch, swale, or channel to lower the speed of concentrated flows for a certain design range of storm events.

Purpose

Reduced runoff speed reduces erosion and gullying in the channel and allows sediments and other pollutants to settle out. They are inexpensive and easy to install. They may be permanent if designed properly and can be used where it is not possible to otherwise divert flow and stabilize the channel.



**Log Check Dam
Section View**

Limitations

Check dams should be used only in small open channels that drain 10 acres or less. The dams should not be placed in streams. The maximum height of the check dam should be 2 ft (0.6 m). The center of the check dam must be at least 6 in (152 mm) lower than the outer edges. They may kill grass linings in channels if water stays high or sediment load is great.

Materials

A check dam can be built from logs, stone, or pea gravel-filled sandbags.

Installation

Check dams can be constructed of either stone, or logs. Log check dams are more economical from the standpoint of material costs, since logs can usually be salvaged from clearing operations. However, log check dams require more time and hand labor to install. Stone for check dams, on the other hand, must generally be purchased. However, this cost is offset somewhat by the ease of installation. If stone check dams are used in grass-lined channels which will be mowed, care should be taken to remove all the stone from the dam when the dam is removed. This should include any stone which has washed downstream. Since log check dams are embedded in the soil, their removal will result in more disturbance of the soil than will removal of stone check dams. Consequently, extra care should be taken to stabilize the area when log dams are used in permanent ditches or swales.

Source: Storm Water Management for Industrial Activities (EPA doc); NRCS Planning and Design Manual, NRCS.

CHECK DAM

Additional Considerations:

The maximum spacing between the dams should be such that the toe of the upstream dam is at the same elevation as the top of the downstream dam.

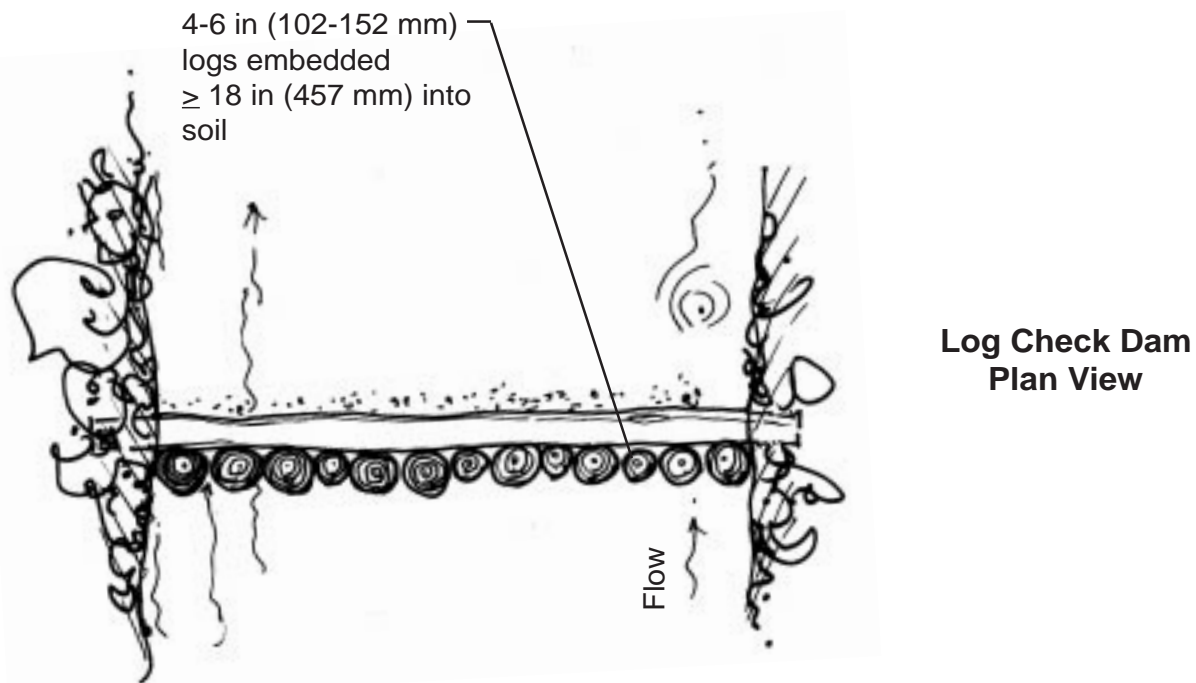
Stone check dams should be constructed of FDOT Aggregate No. 1 [2-3 in (51-76 mm)] stone. Hand or mechanical placement will be necessary to achieve complete coverage of the ditch or swale and to insure that the center of the dam is lower than the edges.

Log check dams should be constructed of 4-6 in (102-152 mm) logs salvaged from clearing operations on site, if possible. The logs should be embedded into the soil at least 18 in (457 mm). The 6 in (152 mm) lower height required at the center can be achieved either by careful placement of the logs or by cutting the logs after they are in place. Logs and/or brush should be placed on the downstream side of the dam to prevent scour during high flows.

Check dams must be removed when their useful life has been completed. In temporary ditches and swales, check dams should be removed and the ditch filled in when it is no longer needed. In permanent structures, check dams should be removed when a permanent lining can be installed. In the case of grass-lined ditches, check dams should be removed when the grass has matured sufficiently to protect the ditch or swale. The area beneath the check dams should be seeded and mulched or sodded (depending upon velocity) immediately after they are removed.

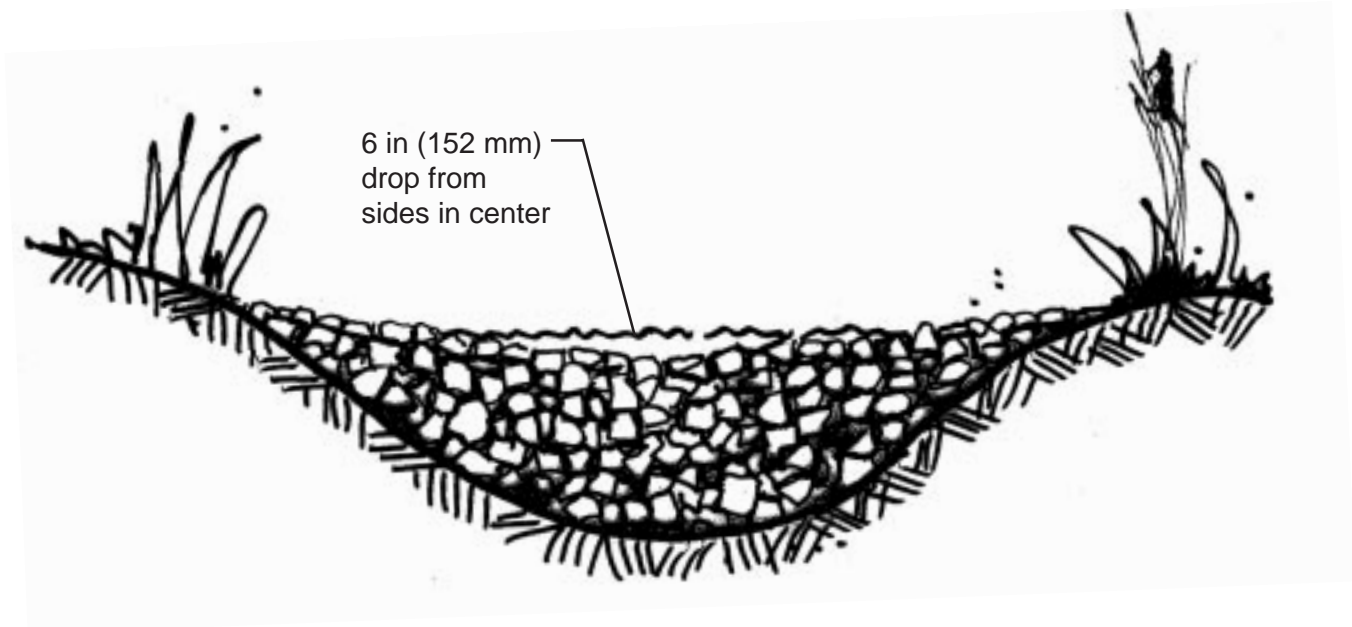
Check dams should be checked for sediment accumulation after each significant rainfall. Sediment should be removed when it reaches one-half of the original height or before.

Regular inspections should be made to insure that the center of the dam is lower than the edges. Erosion caused by high flows around the edges of the dam should be corrected immediately.

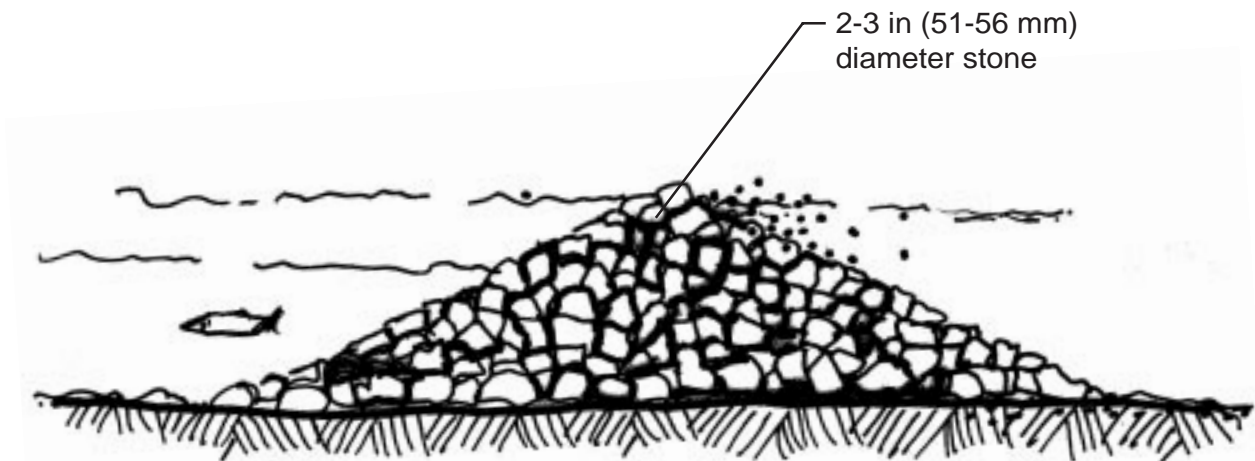


CHECK DAM

Additional Drawings:



**Rock Check Dam
Section View**

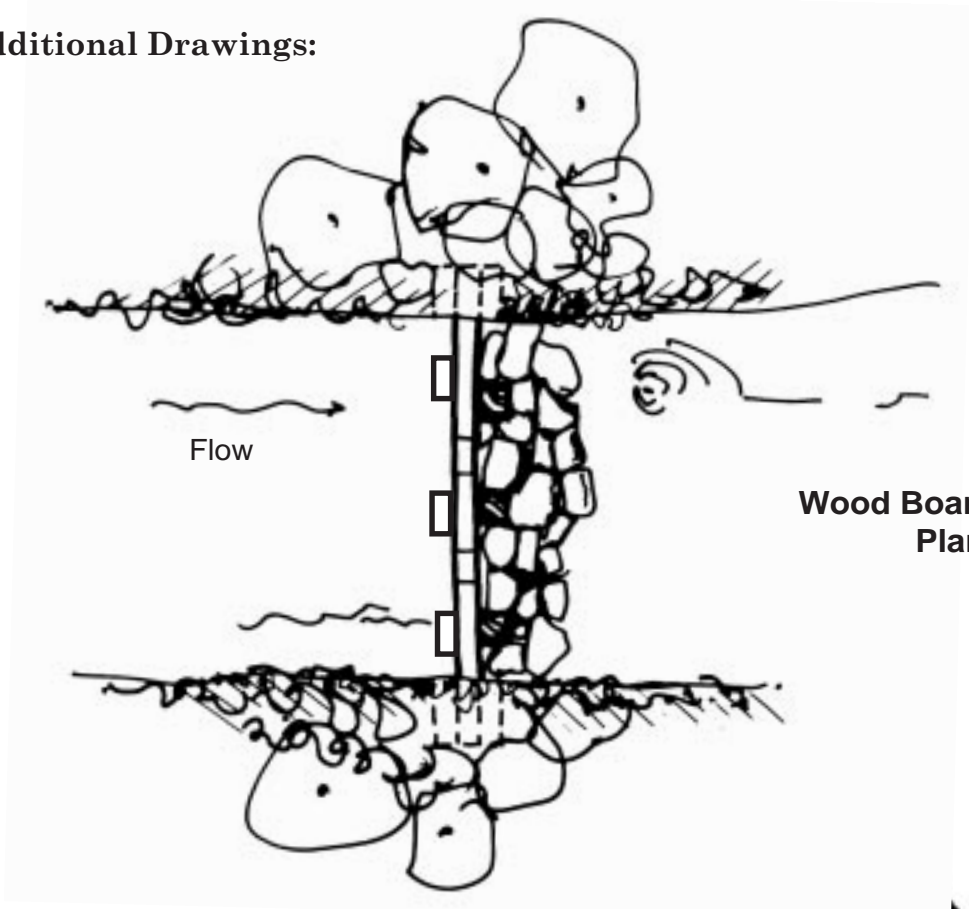


**Rock Check Dam
Section View**

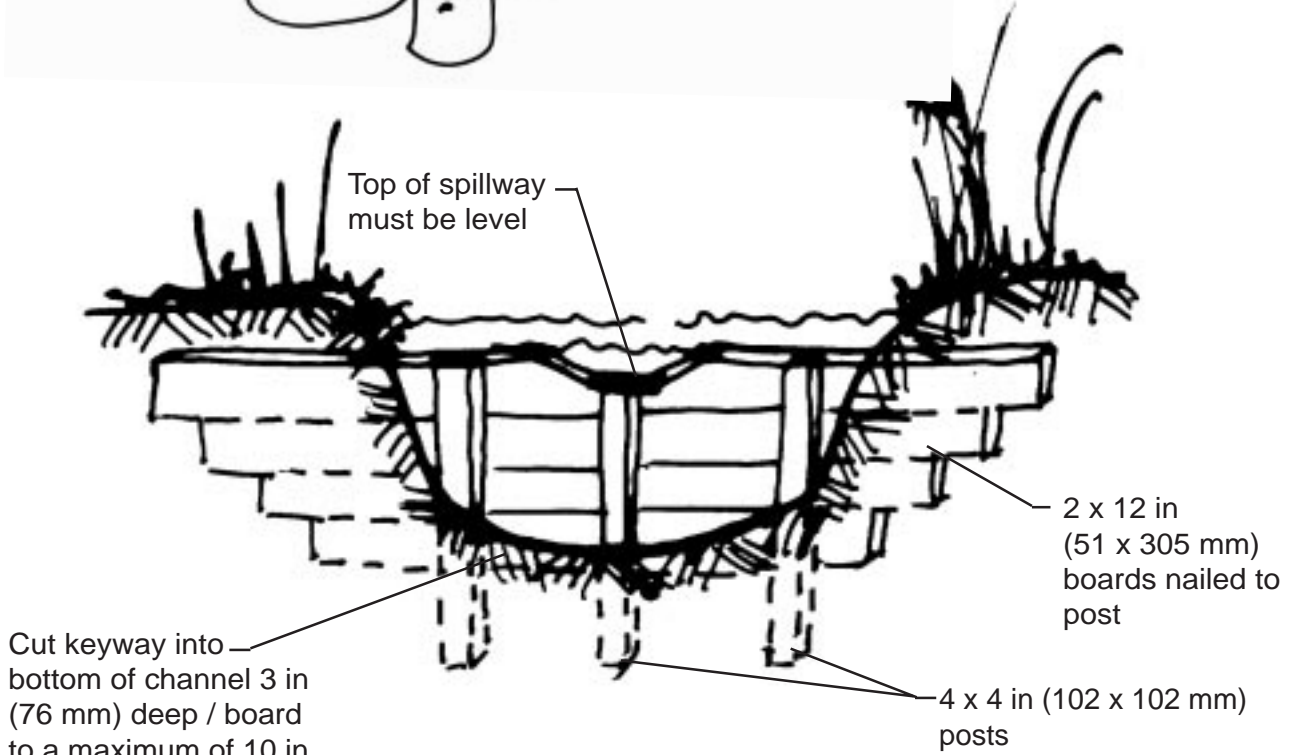
Source: Storm Water Management for Industrial Activities (EPA doc); NRCS Planning and Design Manual, NRCS.

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Additional Drawings:



Wood Board Check Dam
Plan View



Wood Board Check Dam
Section View