

TEMPORARY CHECK DAMS

Produced by
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Maine Soil & Water Conservation Commission
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WHAT ARE THEY?

Small temporary dams constructed across a ditch or small channel. They reduce the velocity of concentrated stormwater flows and trap small amounts of sediment.

WHERE ARE THEY USED?

In small open channels which drain 10 acres or less. *They should not be used in a live stream.*

Some specific applications include:

- Temporary ditches or swales which, because of their short length of service, cannot receive a non-erodible lining but still need some protection to reduce erosion.
- Permanent ditches or swales which for some reason cannot receive a permanent nonerodible lining for an extended period of time.
- Either temporary or permanent ditches or swales which need protection during the establishment of grass linings.

PLANNING CONSIDERATIONS

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.

Care should be taken when removing stone check dams from grass-lined channels which will be mowed, to ensure that all stones are 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.

DESIGN INFORMATION

The maximum height of the check dam should be 2 feet. The center of the check dam must be at least 6 inches lower than the outer edges (see Fig. 1). The cross-sections of the dams should be as shown in Fig. 1 and Fig. 2 respectively for stone and logs. 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 (See Fig. 3).

STONE CHECK DAMS

Stone check dams should be constructed of 2 to 3-inch stone. The stone should be placed according to the configuration in Fig. 1. 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

Log check dams should be constructed of 4 to 6 inch logs salvaged from clearing operations on site, if possible. The logs should be embedded into the soil at least 18 inches. The 6-inch 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 DAM SPACING

2% slope	100 feet
3% slope	66 feet
4% slope	50 feet
5% slope	40 feet
8% slope	25 feet
10% slope	20 feet
12% slope	17 feet

SEDIMENT REMOVAL

While this practice is intended to be used primarily for sediment trapping, some sediment will accumulate behind the check dams. Sediment should be removed from behind the check dams when it has accumulated to one half of the original height of the dam.

REMOVAL

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.

MAINTENANCE

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.

