



# Dike

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## **NOTE**

*After a fire many trees are weakened from burning around the base of the trunk. The trees can fall over or blow down without warning. Shallow rooted trees can also fall. Therefore be extremely alert when around burned trees.*

## **What is a dike?**

A dike is an earthen berm or barrier constructed to protect property from flooding.

## **When is a dike used?**

A dike is used when increased storm runoff or debris flow from burned areas are likely to cause flooding or other damage to high value properties, such as a home site or business, and there are adequate space and soil available to construct an earthen barrier. A Dike may be used in combination with a Runoff Diversion and other practices to accomplish this purpose. Dikes must be constructed from fine grained soils that limit seepage through the dike and remain stable when saturated during flooding. When a sufficient quantity of suitable soil is not available on site some other type of flood barrier should be considered. A poorly designed dike can create a false sense of security or contribute to increased erosion and flooding at other locations. Therefore dikes should be planned and designed with the assistance of an experienced engineer.

## **How is a dike designed?**

***Location:*** Dikes are located so they can intercept flood water and direct it safely past the area being protected without causing other damage. The dike must utilize existing topographic features or completely encircle the area being protected, as necessary to prevent flood water from going around its ends.

***Height:*** The top of the dike is set to prevent overtopping from a storm frequency consistent with the hazard involved, but not less than a 25-year frequency, 24-hour duration storm. Dikes protecting major structures, homes, school buildings and high capacity roads shall have enough height to prevent overtopping from a 100-year frequency 24-hour duration storm. The constructed height will include the flood depth plus 20 percent freeboard, and a settlement allowance equal to 10% of design fill height or 0.2 feet, whichever is greater.

***Cross Section:*** The dike cross section will be trapezoidal, and shall accommodate the equipment to be used for constructing it. (see Figure 1) The dike must have stable side slopes, generally not be steeper than 3:1. The dike top width, base width and core trench dimensions are selected based on the design height, as shown in Table 1.

***Erosion Protection:*** The dike and other disturbed areas should be seeded and mulched. If the soils or climatic conditions preclude the use of vegetation for erosion protection, non vegetative linings such as gravel, rock riprap, or cellular block may be used.

**What maintenance is required?**

The vegetation or other erosion protection must be kept in good condition. The dike should be checked after each flood event, and repaired as necessary. Temporary dikes should be removed when they have served their purpose.

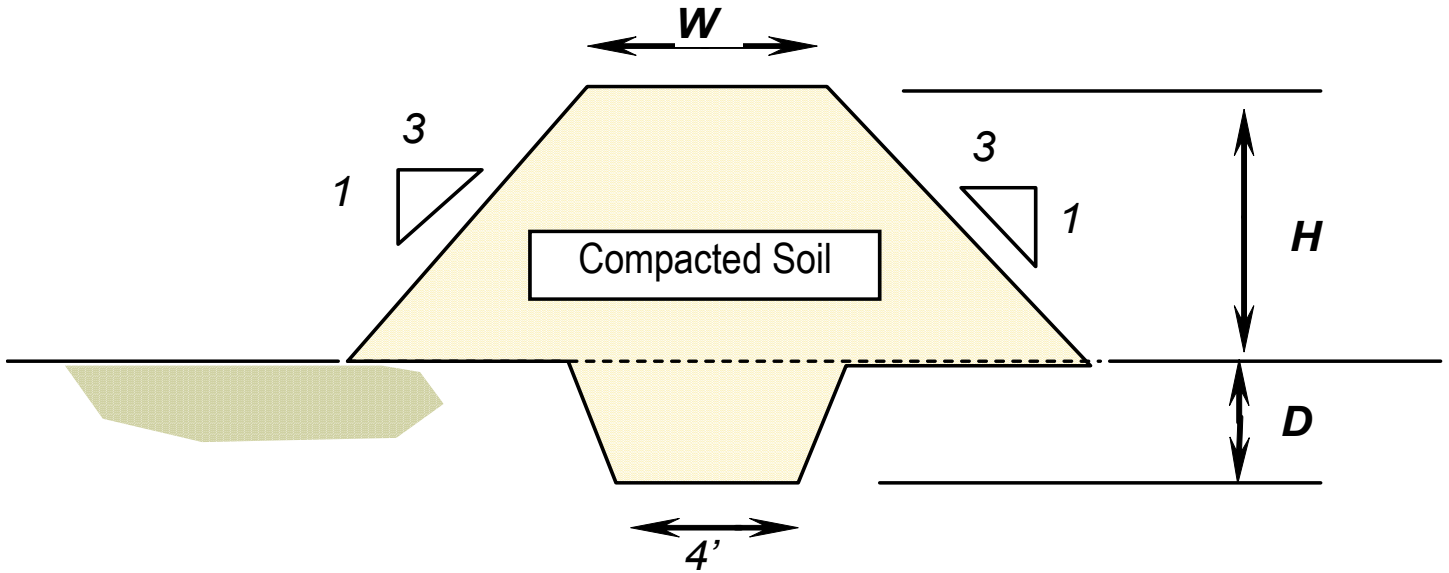


FIGURE 1 - Typical dike cross section

Height, H	Minimum Dike Top Width, W	Dimensions Core Depth, D
< 3'	4 ft.	1 ft.
3 - 5 ft.	6 ft.	2 ft.
5 - 10 ft.	8 ft.	3 ft.
> 10 ft.	Not recommended	

TABLE 1 - Recommended top width and core depth for alternate dike heights