

**EARTH BERMS AND DRAINAGE SWALES**

ISSUED: 10-1-2008

**DEFINITION AND PURPOSE:**

A compacted earth or gravel ridge, excavated channel or a combination of ridge and channel designed to direct runoff away from or around disturbed areas. Diversions built on a level contour are used in combination with temporary slope drains to provide adequate conveyance. Diversions built with positive drainage slopes release runoff into additional BMPs, such as sediment traps or level spreaders.

**APPROPRIATE APPLICATIONS:**

These features may be used to: convey surface runoff down sloping land, intercept and divert runoff to avoid sheet flow over sloped surfaces, divert and direct runoff towards a stabilized watercourse, drainage pipe or channel, and intercept runoff from paved surfaces. Berms, swales, and lined ditches also may be used: below steep grades where runoff begins to concentrate, along roadways and facility improvements subject to flood drainage, at the top of slopes to divert run-on from adjacent or undisturbed slopes. Also, at bottom and mid-slope locations to intercept sheet flow and convey concentrated flows.

**CONDITIONS FOR EFFECTIVE USE:**

Type of Flow: Sheet flow and low-volume concentrated flows.

Contributing Area: Contributing slope length-300 feet maximum.

**WHEN BMP IS TO BE INSTALLED:**

Prior to disturbance of natural vegetation on slopes and at intervals during construction of fill slopes.

**STANDARDS AND SPECIFICATIONS:**

Care must be applied to correctly size and locate berms, swales, and ditches. Excessively steep, unlined berms and swales are subject to gully erosion. Grade and compact channel and/or ridge. Conveyances should be stabilized with vegetation or a protective lining. Provide stabilized outfall areas. Other BMPs, such as check dams and erosion control blankets, may be necessary to prevent scour and erosion.

**OPERATION AND MAINTENANCE PROCEDURES:**

Inspect every week and after every ½” storm event. Inspect channel linings, embankments, and beds of ditches and berms for erosion and accumulation of debris and sediment. Remove debris and sediment, repair linings and embankments as needed-replace riprap, linings or soil stabilizers as needed.

**SITE CONDITIONS FOR REMOVAL:**

Temporary diversions should be removed as soon as the surrounding drainage area has been stabilized.

**TYPICAL DETAILS:**

RM-2.1, RM-2.2, and RM-2.3