

# Description of Best Management Practices

## CHECK DAMS

A. **Description:** Check dams are small temporary dams constructed across a swale or drainage ditch. These can be constructed of rock, Triangular Silt Dike™, Geo-Ridge®, or super sediment fence under low flow conditions.

B. **Application:** Check dams reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the swale or ditch. They also trap sediment generated from adjacent areas or the ditch itself, mainly by ponding the stormwater runoff.

## CULVERT INLET PROTECTION

A. **Description:** A sediment settling device located at the inlet to storm sewer culverts.

B. **Application:**

1. To prevent sediment from entering, accumulating in, and being transferred by a culvert and associated drainage system prior to permanent stabilization of a disturbed project area.
2. To provide sediment control at culvert inlets during the phase of a project where elevation and drainage patterns change, causing original control measures to be ineffective or in need of removal.

## CURB OR DROP INLET PROTECTION

A. **Description:** Inlet protection consists of a sediment barrier or an excavated impounding area with free-draining material such as gravel around a storm drain drop inlet or curb inlet.

B. **Application:** Inlet protection prevents sediment from entering storm drainage systems prior to permanent stabilization of the disturbed area.

## GRASS-LINED CHANNELS WITH SOD OR SEED AND TRM

A. **Description:** Grass-lined channels are constructed for the purpose of handling concentrated surface runoff in such a way as to prevent damage from erosion and sedimentation.

B. **Application:** This practice applies to sites where:

1. Concentrated runoff will cause erosion damage;
2. A vegetative lining provides sufficient stability for the channel as designated;
3. Channel grades are less than 5 percent; and
4. Space is available for a relatively large cross section.

Typical uses include roadside ditches, channels at property boundaries, outlets for diversion, and other areas requiring stabilization of concentrated flow.

## MULCHING AND HYDRO MULCH

A. **Description:** Mulching and hydro mulch are the application of plant residues such as straw or other suitable materials to the soil surface. Mulch protects the soil surface from the erosive force of raindrop impact and reduces the velocity of overland flow. It helps seedlings germinate and grow by conserving moisture, protecting against temperature extremes, and controlling weeds. Mulch also maintains the infiltration capacity of the soil.

B. **Application:** Mulch can be applied to seeded areas to help establish plant cover. It

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## MULCHING AND HYDRO MULCH (continued)

the winter or until final grading and shaping can be accomplished. Application rates are found in Table 2151-8 in Section 2151.2 in Division II.

### PERMANENT SEEDING

**A. Description:** Permanent seeding is the establishment of perennial vegetation on disturbed areas for periods longer than 12 months. Permanent vegetation provides economical, long-term erosion control and helps prevent sediment from leaving the site.

**B. Application:** This practice is used when vegetation is designed to permanently stabilize the soil. It is necessary to protect earthen structures such as dikes, channels, and embankments. Particular care is required to establish a thick cover of permanent grass.

### ROLLED EROSION CONTROL PRODUCTS

**A. Description:** Rolled erosion control products are protective covering netting, blankets or turf reinforcement mats (TRMs) installed on a prepared planting area of a steep slope, channel, or shoreline. They aid in controlling erosion on critical areas by absorbing the energy from raindrop impacts and providing a microclimate which protects young vegetation and promotes its establishment. TRMs are also used to raise the maximum permissible velocity and shear stress of turf grass stands in channelized areas by enabling the turf to resist the forces of erosion during storm events.

**B. Application:** Netting, blankets, and TRMs will aid in controlling erosion on slopes steeper than 8 percent and of highly erodible soils by providing a protective cover made of straw, jute, wood, or other organic plant fiber with cotton string or polypropylene netting to hold the product in a flat form. Netting can be used alone over blown straw as an alternative to crimping or use of a tackifier.

These products can be used on short, steep slopes where erosion hazard is high and planting is likely to be too slow in providing adequate protective cover; in vegetated channels where the design velocity and shear stress of design flow exceed allowable on streambanks where moving water is likely to wash out new plantings; or in areas where the forces of wind prevent standard mulching practices from remaining in place until vegetation becomes established.

### SEDIMENT FENCE

**A. Description:** Sediment fence is a temporary sediment barrier consisting of a synthetic fabric stretched across and attached to supporting posts and entrenched or sliced in place. See Detail ESC-10, Sediment Fence, in Division III of this manual.

**B. Application:**

1. To intercept and detain small amounts of sediment from disturbed areas of limited extent in order to prevent sediment from leaving the construction site.
2. To decrease the velocity of sheet flows.

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## SODDING

A. **Description:** Sodding is the use of a vegetative cover to provide immediate erosion control in disturbed areas.

B. **Application:** Sodding is well suited for stabilizing erodible areas such as grass-lined channels, stormwater detention basins, diversions, swales, slopes, and filter strips because it provides an instant vegetative cover with an established root system.

## STRAW BALE BARRIER

A. **Description:** A straw bale barrier is a temporary sediment barrier consisting of a row of entrenched and anchored straw bales.

B. **Application:**

1. To intercept and detain small amounts of sediment from disturbed areas of less than one acre in order to prevent sediment from leaving the construction site.
2. To decrease the velocity of sheet flows.

## SURFACE ROUGHENING

A. **Description:** This practice provides a rough soil surface with horizontal depressions to aid in the establishment of vegetation, reduce runoff, increase infiltration, reduce erosion, and provide for sediment trapping.

B. **Application:** Slopes steeper than 3H:1V may need surface roughening if not covered by a rolled erosion control product. Stair-step grading, grooving, harrowing, or tracking accomplishes this if the slopes are to be stabilized with vegetation. If the slope is designed for a rolled erosion control product, it should be fine graded. Areas with grades of 3H:1V or flatter should have the soil surface lightly roughened and loosened to a depth of 2 to 4 inches prior to seeding.

Areas that have been graded and will not be stabilized immediately may be

## TEMPORARY CONSTRUCTION ENTRANCE

A. **Description:** A temporary construction entrance is a stabilized layer of large aggregate that is located at any point where traffic leaves a construction site and move directly onto a public road or other paved area.

B. **Application:** A temporary construction entrance is a stone base pad designed to provide a buffer area where construction vehicles can drop their mud to avoid transporting it onto public roads.

## TEMPORARY DIVERSION DIKE

a. **Description:** A temporary diversion dike is a temporary ridge of compacted soil constructed at the top or base of a sloping disturbed area.

b. **Application:**

- 1) To divert storm runoff from upslope drainage areas away from unprotected disturbed areas and slopes to a stabilized outlet.
- 2) To divert sediment-laden runoff from a disturbed area to a sediment-trapping facility such as a sediment trap or sediment basin.

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## TEMPORARY SEDIMENT BASIN

A. **Description:** A temporary sediment basin is a temporary barrier or dam with a controlled stormwater release structure formed by constructing an embankment of compacted soil across a drainageway. It can detain sediment-laden runoff from disturbed areas in wet and dry storage long enough for the majority of the sediment to settle out.

B. **Application:** They are used below disturbed areas where the total contributing drainage area is greater than or equal to 3 acres. There must be significant space and appropriate topography for the construction of a temporary impoundment. These structures are limited to a useful life of 18 months unless they are designed as permanent impoundments. Due to their potential to impound large volumes of water, it is recommended they be designed by a qualified professional.

## TEMPORARY SEDIMENT TRAP

A. **Description:** A temporary sediment trap is a temporary ponding area formed by constructing an earthen embankment with a stone outlet. It serves to detain sediment-laden runoff from small-disturbed areas long enough to allow the majority of the sediment to settle out.

**B. Application:**

1. Locate the trap below disturbed areas where the total contributing drainage area is less than 3 acres.
2. The trap will be used no longer than 18 months.
3. The sediment trap may be constructed either independently or in conjunction with a temporary diversion dike.

## TEMPORARY SEEDING

A. **Description:** Temporary seeding is the establishment of fast-growing annual vegetation to provide economical erosion control for up to 12 months and reduce the amount of sediment moving off the site. Annual plants which sprout rapidly and survive for only one growing season are suitable for establishing temporary vegetative cover.

B. **Application:** This practice applies where short-lived vegetation can be established before final grading or in a season not suitable for permanent seeding. It helps prevent costly maintenance operations on other erosion control systems such as sediment basin clean-out. Temporary or permanent seeding is necessary to protect earthen structures such as dikes, diversions, and the banks and dams of sediment basins.

## TEMPORARY SLOPE DRAIN

A. **Description:** A temporary slope drain is a flexible tube or conduit extending from the top to the bottom of a cut or fill slope. A detail is located on Detail ESC-32, Temporary Slope Drain in Division III of this manual.

B. **Application:** It temporarily conducts concentrated stormwater runoff safely down the face of a cut or fill slope without causing erosion on or below the slope.

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## VEGETATIVE BUFFERS (FILTER STRIPS)

**A. Description:** These are wide strips of undisturbed existing vegetation or constructed vegetation areas consisting of grass, woody vegetation, or other erosion resistant plants surrounding the disturbed site. They provide infiltration, intercept sediment and other pollutants, and reduce stormwater flow and velocity. They can also act as a screen for visual pollution and reduce construction noise.

**B. Application:** They can be used as perimeter control for sites less than 5 acres on ground with slopes less than 15 percent. They can also be used in conjunction with infiltration basins or infiltration trenches.