



# Requirements for Erosion & Sediment Control Best Management Practices

# Level 2 Season

October 1- April 31

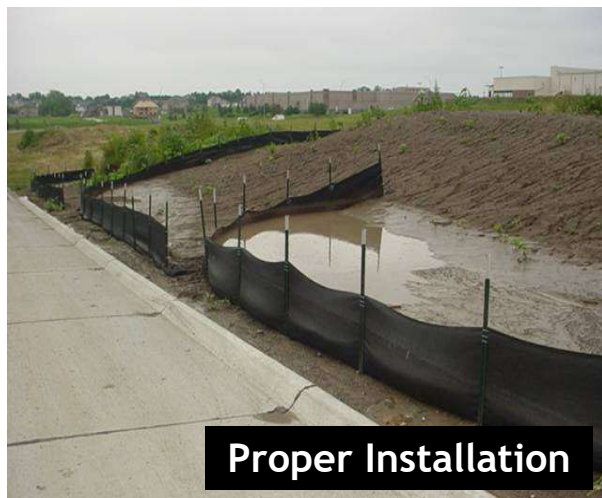
- ▶ October 1<sup>st</sup> is the official beginning of level 2 season which signifies the start of increased erosion and sediment control requirements for all active construction sites
- ▶ This means:
  - ▶ Increased emphasis on erosion control with every visit to a site.
  - ▶ Any bare earth not actively being worked within 48 hours shall be covered.
  - ▶ Sites must be contained regarding sediment and runoff.
  - ▶ Best Management Practices (BMP) onsite need to be closely inspected for proper installation.

# Typical Best Management Practices for Temporary Erosion & Sediment Control

- ▶ Silt Fence: BMP C233
- ▶ Construction Entrance: BMP C105
- ▶ Straw and Wood mulch: BMP C121
- ▶ Straw/Jute Net & Matting: BMP C122
- ▶ Plastic covering: BMP C123
- ▶ Inlet Protection: BMP C220

# Silt Fence-BMP C233

- ▶ Silt fence is meant to serve as a means of containment for sediment and runoff traveling across a project. When properly installed it will contain all runoff from a site.



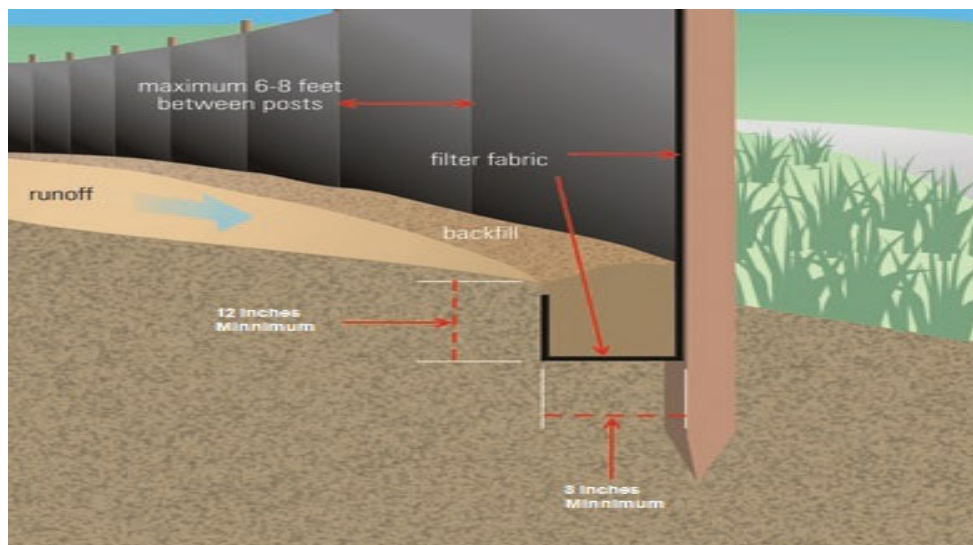
## What's wrong here?

- Improper post spacing (6-8' is required)
- Lack of maintenance to remove sediment
- 2.5' should min should be above ground

# Silt Fence-BMP C233

## Installation

- ▶ Silt fence footing must be installed a minimum of 12" deep with a minimum 8" width.
- ▶ A minimum of 2.5 feet of silt fence must extend above the ground surface
- ▶ Silt fence with a wire backing will be used on all Commercial Sites.
- ▶ The geotextile fabric is located on the uphill side of the stake.
- ▶ Stakes must be driven 6-8 feet apart and a minimum of 18 inches deep.



# Construction Entrance -BMP C105

- ▶ Construction entrances are stabilized to reduce the amount of sediment transported onto paved roads by vehicles or equipment by constructing a stabilized pad of quarry spalls at entrances to construction sites.



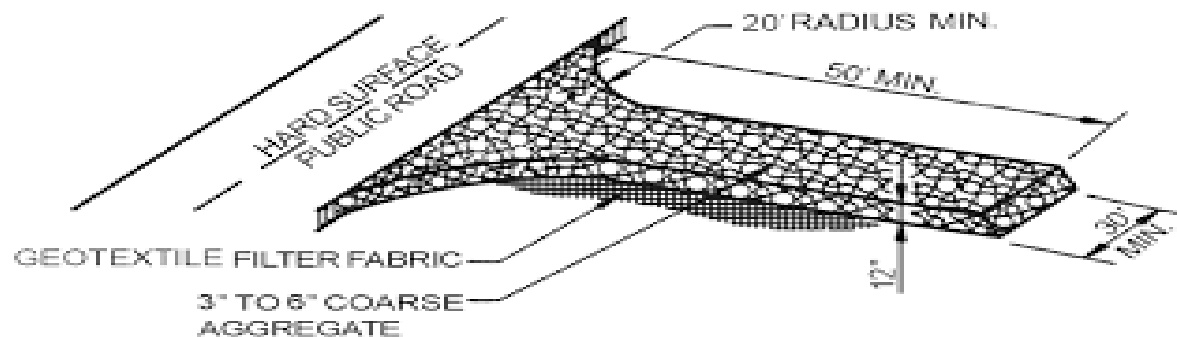
## What's wrong here?

- No rocked construction access
- Track out onto road that will send sediment to active catch basins

# Construction Entrance -BMP C105

## Installation

- ▶ Minimum length 100'. Note: Minimum length of the entrance may be reduced to the maximum practicable size when the size or configuration of the site does not allow the full length (100').
- ▶ A separation geotextile shall be placed under the spalls to prevent fine sediment from pumping up into the rock pad.
- ▶ Fencing shall be installed as necessary to restrict traffic to the construction entrance.
- ▶ Rock Used in the pad shall consist of 4"-8" quarry spalls



# Straw and Wood Mulch-BMP C121

- ▶ The purpose of mulching soils is to provide immediate temporary protection from erosion. Mulch also enhances plant establishment by conserving moisture, holding fertilizer, seed, and topsoil in place, and moderating soil temperatures. There are an enormous variety of mulches that can be used. Only the most common types are discussed in this section.



- What's wrong here?
- Straw is too thin. 2-3" of straw is needed when initially spread to ensure a full coverage is in place when it rains and straw flattens.



# Straw and Wood Mulch-BMP C121

Straw Mulch



Wood Mulch



# Straw and Wood Mulch-BMP C121

## Application

**Table 2.7**  
**Mulch Standards and Guidelines**

Mulch Material	Quality Standards	Application Rates	Remarks
Straw	Air-dried; free from undesirable seed and coarse material.	2"-3" thick; 5 bales per 1000 sf or 2-3 tons per acre	Cost-effective protection when applied with adequate thickness. Hand-application generally requires greater thickness than blown straw. The thickness of straw may be reduced by half when used in conjunction with seeding. In windy areas straw must be held in place by crimping, using a tackifier, or covering with netting. Blown straw always has to be held in place with a tackifier as even light winds will blow it away. Straw, however, has several deficiencies that should be considered when selecting mulch materials. It often introduces and/or encourages the propagation of weed species and it has no significant long-term benefits. Straw should be used only if mulches with long-term benefits are unavailable locally. It should also not be used within the ordinary high-water elevation of surface waters (due to flotation).
Hydromulch	No growth inhibiting factors.	Approx. 25-30 lbs per 1000 sf or 1500 - 2000 lbs per acre	Shall be applied with hydromulcher. Shall not be used without seed and tackifier unless the application rate is at least doubled. Fibers longer than about ¾-1 inch clog hydromulch equipment. Fibers should be kept to less than ¾ inch.
Composted Mulch and Compost	No visible water or dust during handling. Must be purchased from supplier with Solid Waste Handling Permit (unless exempt).	2" thick min.; approx. 100 tons per acre (approx. 800 lbs per yard)	More effective control can be obtained by increasing thickness to 3". Excellent mulch for protecting final grades until landscaping because it can be directly seeded or tilled into soil as an amendment. Composted mulch has a coarser size gradation than compost. It is more stable and practical to use in wet areas and during rainy weather conditions.
Chipped Site Vegetation	Average size shall be several inches. Gradations from fines to 6 inches in length for texture, variation, and interlocking properties.	2" minimum thickness	This is a cost-effective way to dispose of debris from clearing and grubbing, and it eliminates the problems associated with burning. Generally, it should not be used on slopes above approx. 10% because of its tendency to be transported by runoff. It is not recommended within 200 feet of surface waters. If seeding is expected shortly after mulch, the decomposition of the chipped vegetation may tie up nutrients important to grass establishment.
Wood-based Mulch	No visible water or dust during handling. Must be purchased from a supplier with a Solid Waste Handling Permit or one exempt from solid waste regulations.	2" thick; approx. 100 tons per acre (approx. 800 lbs. per cubic yard)	This material is often called "hog or hogged fuel." It is usable as a material for Stabilized Construction Entrances (BMP C105) and as a mulch. The use of mulch ultimately improves the organic matter in the soil. Special caution is advised regarding the source and composition of wood-based mulches. Its preparation typically does not provide any weed seed control, so evidence of residual vegetation in its composition or known inclusion of weed plants or seeds should be monitored and prevented (or minimized).

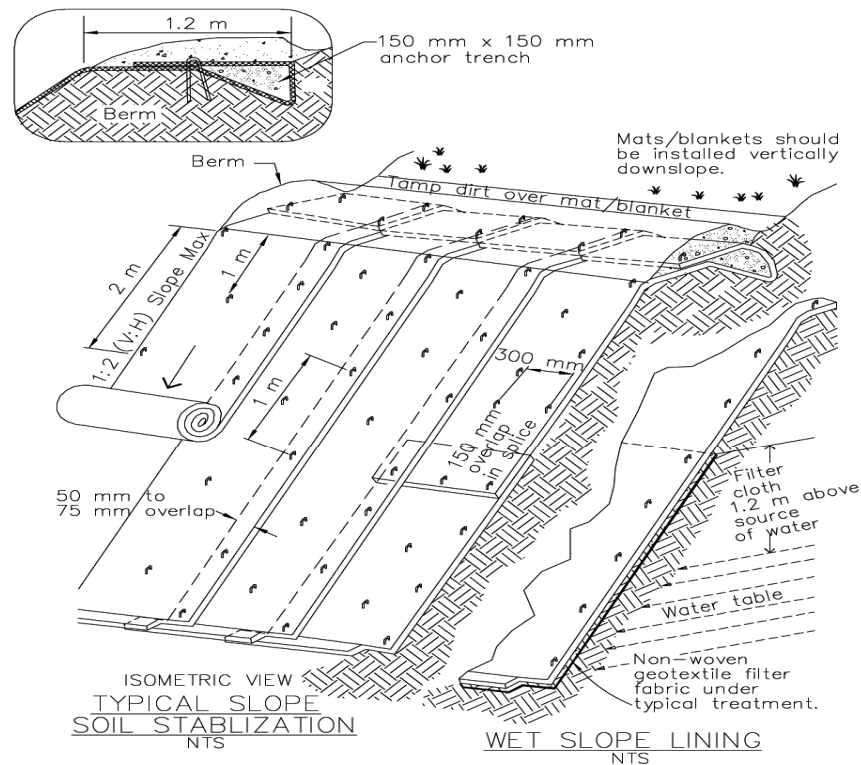
# Netting and Matting-BMP C122

- ▶ Erosion control nets and blankets are intended to prevent erosion and hold seed and mulch in place on steep slopes and in channels so that vegetation can become well established.
- ▶ Should be used to:
  - ▶ To aid permanent vegetated stabilization of slopes 2H:1V or greater and with more than 10 feet of vertical relief.
  - ▶ For drainage ditches and swales (highly recommended).



# Netting and Matting-BMP C122

## Installation



### NOTES:

1. Slope surface shall be free of rocks, clods, sticks and grass. Mats/blankets shall have good soil contact.
2. Lay blankets loosely and stake or staple to maintain direct contact with the soil. Do not stretch.
3. Install per manufacturer's recommendations

# Plastic Covering-BMP C123

- ▶ Plastic covering provides immediate, short-term erosion protection to slopes and disturbed areas.
- ▶ Plastic is particularly useful for protecting cut and fill slopes and stockpiles.
- ▶ Clear plastic sheeting can be used over newly-seeded areas to create a greenhouse effect and encourage grass growth if the hydroseed was installed too late in the season.
- ▶ Due to rapid runoff caused by plastic sheeting, this method shall not be used upslope of areas that might be adversely impacted by concentrated runoff. Whenever plastic is used to protect slopes, water collection measures must be installed at the base of the slope.



# Plastic Covering-BMP C123

## Installation

- ▶ Plastic slope cover must be installed as follows:
  - ▶ Plastic up and down slope, not across slope;
  - ▶ Plastic may be installed perpendicular to a slope if the slope length is less than 10 feet;
  - ▶ Minimum of 8-inch overlap at seams;
  - ▶ On long or wide slopes, or slopes subject to wind, all seams should be taped;
  - ▶ Place plastic into a small (12-inch wide by 6-inch deep) slot trench at the top of the slope and backfill with soil to keep water from flowing underneath;
  - ▶ Place sand filled burlap or geotextile bags every 3 to 6 feet along seams and pound a wooden stake through each to hold them in place;
  - ▶ Inspect plastic for rips, tears, and open seams regularly and repair immediately. This prevents high velocity runoff from contacting bare soil which causes extreme erosion;
  - ▶ Sandbags may be lowered into place tied to ropes. However, all sandbags must be staked in place.

## Inlet Protection-BMP C220

- ▶ To prevent coarse sediment from entering drainage systems prior to permanent stabilization of the disturbed area.
- ▶ Used where storm drain inlets are to be made operational before permanent stabilization of the disturbed drainage area. Protection should be provided for all storm drain inlets downslope and within 500 feet of a disturbed or construction area.
- ▶ Inlet protection may be used anywhere to protect the drainage system.



# Inlet Protection-BMP C220

## Types of protection

- ▶ Excavated Drop Inlet Protection
- ▶ Block and Gravel Filter
- ▶ Gravel and Wire Mesh Filter
- ▶ Curb Inlet Protection with Wooden Weir
- ▶ Block and Gravel Curb Inlet Protection
- ▶ Curb and Gutter Sediment Barrier
- ▶ Catch basin Filters
- ▶ Silt Fence





# TESC Field Checklist

## (Work In Progress)

### Inspectors TESC Field Checklist

Permit # & Project Name:	Date:
Project Location:	Inspector:

Indicate whether or not the project is meeting the Minimum Requirements (if applicable) for erosion control. If the project is not meeting any requirements, indicate the corrective actions required/taken.

- 1. Stabilization and Sediment Trapping**  
 Are erodible soils stabilized? (Seed, mulch, erosion blankets, plastic, construction entrance, etc.) YES NO N/A  
 Are sediment trapping BMPs (sediment traps, check dams, silt fences, etc.) in place? YES NO N/A
- 2. Delineate Clearing and Easement Limits**  
 Are the limits of clearing and grading clearly marked with barrier fencing? YES NO N/A
- 3. Protection of Adjacent Properties (And Waters of the State)**  
 Is there any stormwater leaving the site and does the discharge meet State Water Quality Standards? YES NO N/A  
 Is sediment being deposited on adjacent properties or waterways? YES NO N/A  
 If no, what is the turbidity of site discharge and of receiving water? YES NO N/A
- 4. Stabilization and Sediment Trapping**  
 Are detention ponds installed to trap sediment from site runoff? YES NO N/A  
 Are side slopes and outfalls of detention pond(s) stabilized? YES NO N/A
- 5. Cut and Fill Slopes**  
 Are exposed cut and/or fill slopes stabilized and protected from concentrated flows? YES NO N/A  
 If there are groundwater seeps or springs, are the appropriate BMPs in place to dewater them (pipe slope drains, interceptor swales, dewatering wells)? YES NO
- 6. Controlling Off-Site Erosion**  
 Is the site discharge contributing to offsite erosion? YES NO
- 7. Stabilization of Temporary Conveyance Channels and Outlets**  
 Are temporary conveyance channels adequately stabilized? YES NO N/A  
 Are conveyance channel outlets adequately stabilized? YES NO N/A
- 8. Storm Drain Protection**  
 Are all storm drains onsite being protected with functioning temporary inlet protection devices? YES NO N/A

### Inspectors TESC Field Checklist

<b>9. Underground Utility Construction</b> Was the excavated material placed up gradient from the trench? YES NO N/A
<b>10. Dewatering</b> Is the groundwater treated in a way that optimizes overall site water quality? YES NO N/A
<b>11. Construction Access Routes</b> Is a stabilized construction entrance or wheel wash present and preventing trackout? YES NO N/A
<b>12. Removal of Temporary BMPs</b> Is the groundwater treated in a way that optimizes overall site water quality? YES NO N/A
<b>13. Maintenance</b> Is the contractor completing weekly BMP inspection forms and keeping records? Are BMPs adequately maintained? YES NO N/A

**Problems/Corrective Actions:**

