

Disturbed Area Stabilization (With Mulch) - MU



DEFINITION CONSTRUCTION SPECIFICATIONS

Applying hay, straw, mulch, plant residues, or other suitable materials, produced on the site if possible, to the soil surface.

PURPOSE

- To reduce runoff and erosion
- To conserve moisture
- To promote germination of seed
- To prevent surface compaction or crusting
- To protect seed from birds
- To modify soil temperature
- To increase biological activity in the soil

CONDITIONS

Mulch may be used to promote vegetation germination and growth during a vegetative stabilization practice, or may be used as a temporary stabilization measure on its own where seed may not germinate due to temporary conditions.

CONSTRUCTION SPECIFICATIONS

Mulching Without Seeding: This standard applies to cleared areas where seed may not have a suitable growing season to produce an erosion-resistant cover, but can be stabilized with a mulch cover. Mulch can be used as an erosion control device for up to six months, but it shall be applied at the appropriate depth (depending on the material used), anchored, and have a continuous 95% cover or greater of the soil surface. Maintenance is required to maintain 95% cover.

Mulching With Seeding: Mulch should be applied when seeding for vegetation stabilization. It significantly assists germination by protecting the seed from birds, by holding moisture at the surface of the soil, and by reducing soil surface temperature. Mulch applied to seeded areas shall achieve 75% soil cover.

Site Preparation: Consider these factors when preparing to use mulch:

- Grade to enable the use of equipment for applying and anchoring mulch.
- Install best management practices as required such as diversions, terraces, and/or sediment barriers.
- Loosen compacted soil to a minimum depth of 4 inches if using mulch while seeding.

Mulching Materials: Select one of the following materials and apply at the rate indicated:

- Dry straw or hay shall be applied at a rate that provides 95% or greater soil coverage.
- Wood waste (chips, sawdust or bark) shall be applied at a rate that provides 95% or greater soil coverage. Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs. This method should not, however, be used in conjunction with seeding due to soil acidification and nitrogen reduction problems that the decomposition of the "green" material will produce.

Anchoring Mulch: Anchor straw or hay mulch immediately after application by one of the following methods:

- Ermulified asphalt can be (a) sprayed uniformly onto the mulch as it is ejected from the blower machine or (b) sprayed on the mulch immediately following mulch application when straw or hay is spread by methods other than special blower equipment. The combination of asphalt emulsion and water shall consist of a homogeneous mixture satisfactory for spraying. The mixture

shall consist of 100 gallons of emulsified asphalt and 100 gallons of water per ton of mulch. Care shall be taken at all times to protect state waters, the public, adjacent property, pavements, curbs, sidewalks, and all other structures from asphalt decoloration.

Hay and straw mulch may be pressed into the soil immediately after the mulch is spread. A special "creeper" or disk harrow with the disks set straight may be used. Serrated disks are preferred and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disks shall be dull enough to press the mulch into the ground without cutting it, leaving much of it in an erect position. Mulch should not be plowed into the soil.

MAINTENANCE

Inspection of the application should be performed along with other regularly scheduled erosion and sediment control inspections. Any areas that have washed out due to high storm water flows should be reseeded for different BMP use, or at least retreated. Areas that have been disturbed by blowing wind should be retained. Maintenance needs identified in inspections or by other means shall be accomplished before the next storm event if possible, but in no case more than seven days after the need is identified.

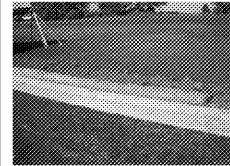
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MU-2

Chapter 7 Management Practices

SEDIMENT CONTROL PRACTICES

7.37.1 TUBES AND WATTLES



Definition: A small temporary sediment barrier constructed to interrupt sheet flow. In this application, wattles and tubes are primarily sediment control measures. Section 7.25 discusses wattles as erosion control measures used in concentrated flow applications.

Purpose: To stoppage flow, decrease velocities, pool water and allow runoff/produced sediments to settle out behind barrier.

Conditions: This practice is applicable along or on the ground contour or at the toe of slopes and aids to sediment retention. While they are generally used as regular barriers on a slope, they may also be placed at the top or toe of the slope, or at breaks in grade. In addition, they may be placed out or around the perimeter of soil stockpiles or around catch basin inlets.

Where Practice Applies: The stability of tubes, wattles, and socks are very dependent upon proper staking. Thus, they may not be utilized on pavement, rocky soil or in any location where the socks cannot be driven to the required depth.

Planning Considerations: When applied on slopes, temporary sediment tubes should be placed along the contour, and the ends of the tubes should be turned up-slope in order to prevent erosion which could occur as flow bypasses around the ends of the row. This will force the discharge to overlap the row away from the end points. The spacing between rows of tubes should be based on Table 7.37-1. The maximum drainage area to a wattle is 1/4 acre per 100 linear feet of wattle.

Design Criteria: When applied on slopes, temporary sediment tubes should be placed along the contour, and the ends of the tubes should be turned up-slope in order to prevent erosion which could occur as flow bypasses around the ends of the row. This will force the discharge to overlap the row away from the end points. The spacing between rows of tubes should be based on Table 7.37-1. The maximum drainage area to a wattle is 1/4 acre per 100 linear feet of wattle.

- 273 -

Chapter 7 Management Practices

Table 7.37-1 Wattle and Tube Spacing Table for Slope Application

Slope	Wattle and Tube Diameter			
	12"	18"	24"	36"
2%	70'	100'	N/A	N/A
5%	20'	60'	100'	100'
10%	20'	30'	70'	100'
6:1	N/A	20'	40'	50'
4:1	N/A	20'	30'	30'
3:1	N/A	N/A	20'	25'
2:1	N/A	N/A	20'	20'

The side of a sediment tube for a slope application should be selected based on the gradient and length of the slope. In general, larger tube diameters should be selected for steeper or longer slopes.

Where long runs are required on a slope, the ends of the individual tube segments should be overlapped as shown on the standard drawing. This will ensure that gaps will not occur between individual tube segments, allowing sediment laden water to escape the monolith. Tubo-wattle netting should be a limited material with 1/8 to 3/8 inch openings and made of photodegradable (polypropylene, HDPE) or biodegradable (coconut fiber, straw) material.

Construction Specifications: Proper site preparation is essential to ensure sediment wattles and tubes are in complete contact with the underlying soil or underlying surface. Remove all rocks, stumps, vegetation or other obstructions so installed sediment tubes have direct contact with the underlying soil or surface.

Install tubes by laying them flat on the ground. Excavate a small trench 2-3 inches in depth on the contour and perpendicular to water flow. Seal from the upstream end. Install tubes so no gaps exist between the wall and the bottom of the sediment tube. Tap the ends of adjacent sediment tubes a minimum of 6 inches to prevent flow and sediment from passing through the joint.

Wooden stakes should be used to stake the tubes to the soil. When a wooden stake is used, a straight metal bar can be used to drive a "hole" through the soil and into the soil.

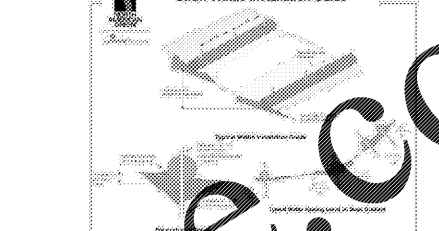
Drive wooden stakes through the wattle and angled slightly against the direction of flow to a depth on the contour and perpendicular to water flow. Seal from the upstream end. Drive wooden stakes through the wattle and angled slightly against the direction of flow to a depth on the contour and perpendicular to water flow. Seal from the upstream end.

Tension ends of tubes may be dug together to ensure placement and prevent churning of sediment.

Refill the upstream end of the wattle with the excavated soil and compact.

Chapter 7 Management Practices

Straw Wattle Installation Guide



Where long runs are required on a slope, the ends of the individual tube segments should be overlapped as shown on the standard drawing. This will ensure that gaps will not occur between individual tube segments, allowing sediment laden water to escape the monolith. Tubo-wattle netting should be a limited material with 1/8 to 3/8 inch openings and made of photodegradable (polypropylene, HDPE) or biodegradable (coconut fiber, straw) material.

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Tension ends of tubes may be dug together to ensure placement and prevent churning of sediment.

Refill the upstream end of the wattle with the excavated soil and compact.

- 275 -

MU DISTURBED AREA STABILIZATION (WITH MULCH) NTS

TW TUBES & WATTLES

Disturbed Area Stabilization (With Sod) - SO



DEFINITION

A permanent vegetative cover using sod brought from locations off site.

PURPOSE

- To establish immediate ground cover
- To reduce storm water runoff
- To protect the soil surface from erosion
- To reduce damage from sediment and runoff to downstream areas
- To improve aesthetics

CONDITIONS

This application is appropriate for require immediate vegetative cover, such as crop fields, grass areas, and wetlands with intermittent flow.

PLANNING CONSIDERATION

Sod can improve the temporary measures, but the advantages often outweigh the initial costs.

SO-1

On slopes steeper than 3:1, sod should be anchored with pins or other approved methods. Installed sod should be rolled or tamped to provide good contact between sod and soil.

Ingrate sod and the top 4" of soil immediately after installation.

Sod should not be cut or spread in extremely wet or dry weather. Irrigation should be used to supplement rainfall for a minimum of 2-3 weeks.

Materials: Sod selected should be certified in the general area of the project if desirable.

- Sod should be machine cut and contain 4" x 6" x 3/4" of soil, not include shoots or roots.

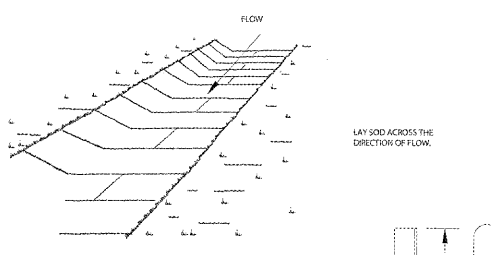
MAINTENANCE

Reseed areas where adequate stand of sod is not achieved. New sod should be mowed and sod height should not be less than 2".

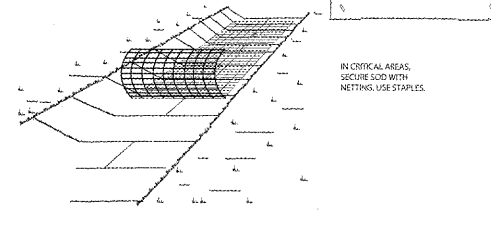
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SO-2

SODDED WATERWAYS



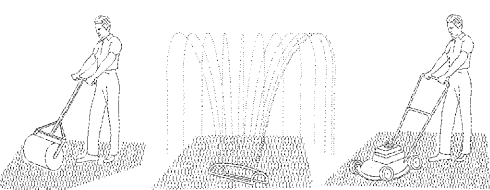
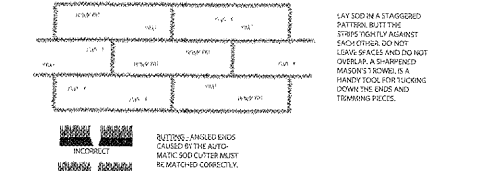
USE STAKES OR STAPLES TO FASTEN SOD FIRMLY AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3-4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE STAKES OR STAPLES FLUSH WITH THE GROUND.



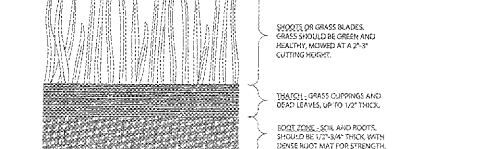
Source: VA DSWC

Figure 1

SODDING



USE STAKES OR STAPLES TO FASTEN SOD FIRMLY AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3-4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE STAKES OR STAPLES FLUSH WITH THE GROUND.



Source: VA DSWC

Figure 2

SO DISTURBED AREA STABILIZATION (WITH SOD) NTS



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REVISION HISTORY

NO.	DATE	DESCRIPTION
1	11/30/2018	ISSUED FOR PERMITS
2	11/30/2018	ISSUED FOR PERMITS
3	11/30/2018	ISSUED FOR PERMITS
4	11/30/2018	ISSUED FOR PERMITS
5	11/30/2018	ISSUED FOR PERMITS
6	11/30/2018	ISSUED FOR PERMITS
7	11/30/2018	ISSUED FOR PERMITS
8	11/30/2018	ISSUED FOR PERMITS
9	11/30/2018	ISSUED FOR PERMITS
10	11/30/2018	ISSUED FOR PERMITS

PROJ # 18050
DWG NAME 18050 C06.DWG
ISSUE DATE 11/30/2018
PROJ MGR LLC

ESPC DETAILS III
C06.5
SHEET NUMBER

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PROJ MGR LLC

ESPC DETAILS III
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SHEET NUMBER

Order Plans

SCALE FOR PERMITS