

# Filter Strip

## Conservation Practice Job Sheet

**393**

Participant Name: \_\_\_\_\_

**INFORMATION ON THIS JOB SHEET IS  
CONSIDERED TO BE PART OF THE  
CONTRACT AND/OR CONSERVATION  
PLAN.**

### **Definition**

A strip or area of herbaceous vegetation that removes contaminants from overland flow.

### **Purpose**

Filter strips function by 1) reducing suspended solids and associated contaminants in runoff, 2) reducing dissolved contaminant loadings in runoff and 3) reducing suspended solids and associated contaminants in irrigation tailwater. Filter strips can also be used in restoring, creating, or enhancing herbaceous habitat for wildlife and beneficial insects; and maintaining or enhancing watershed functions and values when strategically placed and seeded so as not to reduce any of the above three primary purposes for which the filter strip was originally planned to address.

### **Where Used**

Filter strips are established where environmentally-sensitive areas need to be protected from sediment, other suspended solids/contaminants or dissolved contaminants in runoff. Multiple filter strips can be strategically located in a watershed to reduce and slow runoff and increase infiltration and groundwater recharge. A filter strip is designated as a vegetated area to treat runoff and is not part of the adjacent cropland rotation. A strip is designed to filter surface sheet flow. Concentrated flows need to be dispersed before water enters a strip. A filter strip is typically



positioned at the down-slope edge of a field or disturbed area. Filter strips are normally only used when adjacent and up-gradient areas have slopes gradients between 1 and 10 percent. To the extent practical, an individual filter strip is placed on the approximate contour, with its upper edge ideally not exceeding a 0.5% gradient (measured perpendicular to the flow length). When establishing a filter strip, consider using vegetation that is tolerant to herbicides used in the adjacent crop rotation.

### **Establishment Specifications**

1. Species, seeding rates, and seeding dates will be according to the Plant Materials Table.
2. Seed will conform to minimum state standards for purity, germination and other features. Seed tags and other information may be requested by NRCS representatives to verify contract compliance.
3. For introduced species, certified seed is required unless there is a documented statewide shortage and the use of uncertified seed is deemed allowable by the State Resource Conservationist. For native grass species certified seed is not required because typically, they are not found in plentiful supplies in Kentucky so certified seed is more the exception than the rule for native grasses.

4. Soil amendments, when planned, shall be made according to University of Kentucky fertilizer recommendations. Nitrogen is not recommended on native grass plantings for conservation cover. See Specification Sheet for more detail on soil amendments.
5. The top edge of the filter strip will be laid out with NRCS or Conservation District assistance
6. Competition control, seedbed preparation and seeding shall be done according to the following.

#### Competition Control Before Planting

Competition control is critical to ensuring a good stand of native grass. Conventional seedbed preparation, herbicide application or both may be used to control competition prior to planting.

Several steps are required to get successful competition control when using herbicide especially on fescue stands. The first step in killing fescue is to mow the area in late summer for a fall herbicide burn down or in late summer or early spring for a spring herbicide burn down. If possible after mowing and prior to herbicide application, remove the hay to provide a better seed bed and allow for better herbicide contact with vegetation. (Hay removal is not allowed if the area is currently under a CRP contract.)

If needed, a second herbicide application should be planned. This application should occur just prior to native grass planting and after the remaining vegetation has regrown to a 4 - 6 inch height. All herbicide applications shall be made when vegetation is actively growing.

A second herbicide application is required for dense fescue or orchard grass stands and other areas where competition may not be controlled by one herbicide application. The Weed Suppression Table provides some options for controlling competition prior to planting.

#### Seeding and Seedbed Preparation

**Important: Regardless of the seeding method**

**used, the seeding depth for most species should never exceed ¼ inch unless specifically recommended. Avoid no-till planting or cultipacking planted seedbeds in wet soil since it may result in placing the seed too deep. Having some seed on the soil surface is better than having it too deep.**

No-till establishment is the preferred method since soil disturbance is minimum, thus reducing weed competition and the risk of soil erosion. Conventional seeding may be used for establishment on areas that have been recently cropped where weedy competition will be lessened and where the risk of soil erosion is minimal.

#### No-Till Seeding

Smooth seeded species like Switchgrass can be planted using a conventional drill with the legume box set to place the seed ¼ inch deep.

Fluffy seeded species will need to be seeded with a no-till drill specialized to plant these seeds. These specialized drills have seed boxes with dividers and agitators, picker wheels, and oversized drop tubes. Specialized drills are also designed so they can be adjusted to ensure shallow planting depths. Some conventional no-till drills have been retro fitted with a fluffy grass seed box. Care needs to be exercised when setting these drills to ensure that planting depths are no deeper than ¼ inch. Two common mistakes when no-till planting native grasses include pulling the drill to fast and not stopping to check seeding depth often enough.

#### Conventional Seeding

Prepare a clean seedbed by plowing and disking. After disking, make at least one trip over the field using a cultipacker to firm the seedbed. The importance of a dry firm

seedbed cannot be over emphasized to ensure proper planting depth.

Broadcast fluffy seed with a drop spreader. When using a cyclone type spreader, a carrier should be used to help distribute the seed. The following carriers may be used: pelletized lime at a 200 lbs/acre rate; or oats at 32 lbs./acre rate. Since fluffy seed will only broadcast as far as the carrier, make sure your passes overlap to ensure even coverage. If oats or other cereals are used as a carrier, mow prior to seed head formation.

After broadcasting, cultipack or roll the seeded area only once to ensure good seed to soil contact and the proper, shallow seeding depth.

### ***Operation and maintenance***

Mow filter strips as necessary to encourage dense vegetative growth. Avoid mowing between May 15<sup>st</sup> and August 1<sup>st</sup> which is the primary nesting season for ground-nesting birds and animals whenever possible. Inspect and repair after storm events to fill in gullies, remove flow-disrupting sediment accumulation, reseed disturbed areas, and take other measures to prevent concentrated flow into and across the filter strip. Lime and fertilize to soil test recommendations to maintain a vigorous stand. Exclude livestock and vehicular traffic from filter strips during wet periods of the year to

reduce compaction that will limit infiltration. This type of traffic should be excluded at all times to the extent practical. Restoration is required if the filter strip has accumulated sediment to a point that it no longer functions effectively.

All planted species must be taken into consideration when implementing a herbicide treatment. For example, do **not** use a broad-spectrum broadleaf-weed herbicide to control ragweed only to kill all the legumes that were planted also!

**If conservation cover is being established under a program, follow management requirements as outlined on the program specific operation and maintenance job sheets or as outlined in the Addition Specification and Notes Section located at the end of this document.**

### **Specifications**

Site-specific requirements and additional provisions are listed on the next pages. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See practice standard Filter Strip, code 393.

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Landowner \_\_\_\_\_ Field  
 number \_\_\_\_\_

**Weed Suppression.** This table contains options for controlling competing grass and weed vegetation with burn down herbicides\* prior to planting native grasses. Eastern Gama Grass, Switchgrass, Virginia Wild Rye, and some forbs/wildflowers may not be compatible with Plateau herbicide. If Plateau herbicide will be used, check the label to determine which forbs/legumes are compatible with Plateau prior to species selection. Remove excess vegetation prior to application if needed. (For land currently under a CRP contract, vegetation can only be mowed and may not be removed.) Apply herbicide after vegetation has re-growth of at least 4 to 6 inches.

Applied	Option	Current Condition (circle one)	Timing	Method
<input checked="" type="checkbox"/>	1 (Single Application)	Cropland Or Grassland	Spring (April/June)	Apply just prior to planting.  Herbicide Rate: 26-39 ounces of glyphosate active ingredient (a.i.) per acre. May be tank-mixed with 1-2 ounces of imazapic active ingredient (a.i.) per acre.*
<input checked="" type="checkbox"/>	2 (Two Applications)	Grassland	Spring (April/June)	Apply first application several weeks before planting and second application should be applied just prior to planting if green up occurs two to four weeks after initial application.  <ul style="list-style-type: none"> <li>1<sup>st</sup> Herbicide Application Rate: 26-39 ounces of glyphosate active ingredient (a.i.) per acre.*</li> <li>2<sup>nd</sup> Herbicide Application Rate: 6.5-13 ounces of glyphosate active ingredient (a.i.) per acre. May be tank-mixed with 1-2 ounces of imazapic active ingredient (a.i.) per acre.*</li> </ul>
<input checked="" type="checkbox"/>	3 (Two Applications)	Grassland	Fall (Sept/Oct) And Spring (April/June)	<b>Fall</b> Herbicide Application Rate: 13-20 ounces of glyphosate active ingredient (a.i.) per acre.*  <b>Spring</b> Herbicide Application Rate: 26-39 ounces of glyphosate active ingredient (a.i.) per acre. May be tank-mixed with 1-2 ounces of imazapic active ingredient (a.i.) per acre.*

\* These rates are directly from the University of Kentucky publication "Weed Management In Grass Pastures, Hay Fields, and Other Farmstead Sites" (AGR-172) and based on a 41% a.i. formulation; Washburn, B. E. and Barnes, T. G., 2000, "Native Warm-Season Grass and Forb establishment using imazapic and 2, 4-D", *Native Plants Journal*, Vol. 1, No. 1, pp. 61-69; and the University of Tennessee publication "Native Warm-Season Grasses: Identification, Establishment and Management for Wildlife and Forage Production in the Mid-South" (PB1752). AGR172 was specifically referenced from the *Pasture Renovation or Replacement of Endophyte-Infected Tall Fescue* section. Additional information pertaining to vegetation control can be found in the above listed references. Note: Methylated soybean oil (MSO) or other additives may be used according to the label.

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Purpose (check all that apply)	
<input type="checkbox"/> Reduce suspended solids and associated contaminants in runoff	<input type="checkbox"/> Reduce dissolved contaminant loadings in runoff
<input type="checkbox"/> Reduce suspended solids and associated contaminants in irrigation tailwater	

Layout (see map on next page for more specific details)	Strip 1	Strip 2	Strip 3
Strip width (feet)			
Strip length (feet)			
Area in strip (acres)			
Field slope (%)			

Plant Materials (species)	Seeding Rate (lbs/acre of pure live seed)	Seeding Dates
Strip 1:		
Strip 2:		
Strip 3:		

Soil Amend. and Fertilization	Strip 1	Strip 2	Strip 3
Lime per Soil Test (tons/acre)			
N Fertilizer per Soil Test – (lbs/acre)			
P <sub>2</sub> O Fertilizer per Soil Test – (lbs/acre)			
K <sub>2</sub> O Fertilizer per Soil Test – (lbs/acre)			

Site Preparation
<i>Prepare a firm seedbed. Apply lime and fertilizer as indicated by soil testing. Additional requirements:</i>

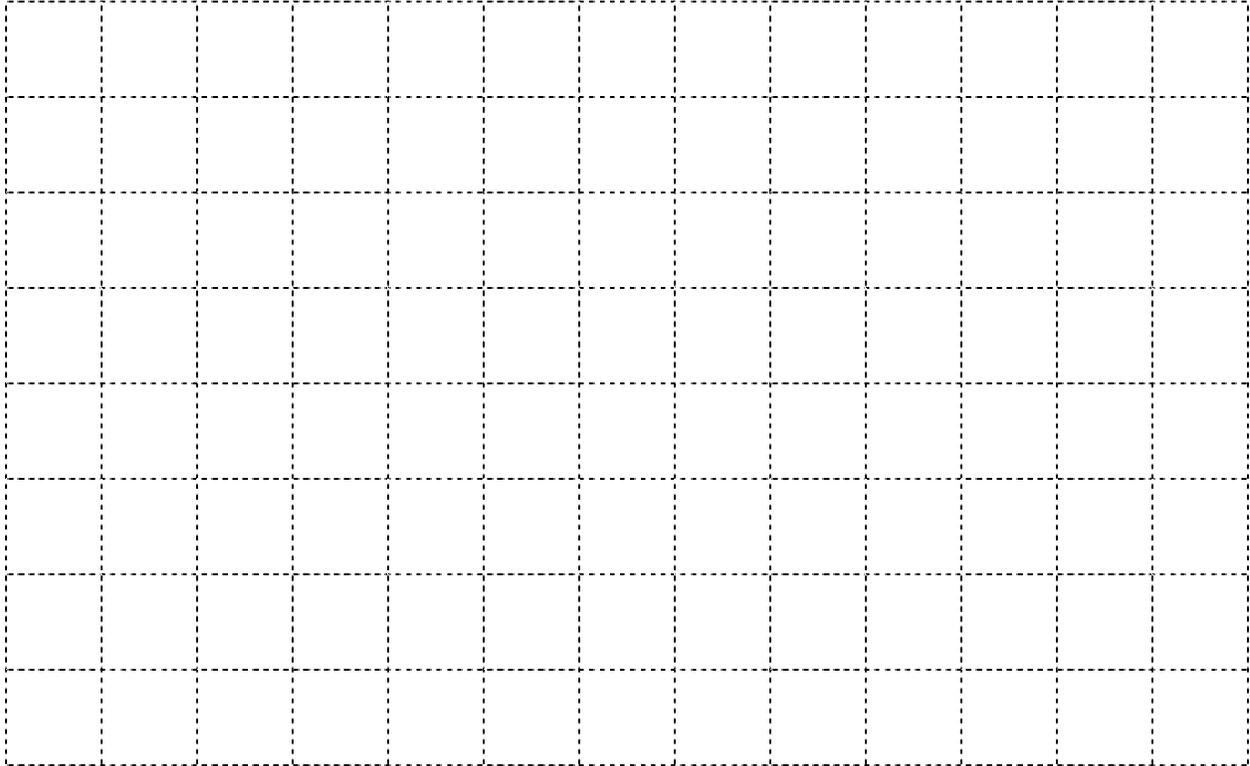
Planting Methods
<i>Drill grass and legume seed _____ inches deep uniformly over area. Establish vegetation according to the specified seeding rate. If necessary, mulch newly seeded area with _____ tons per acre of mulch material. A small grain crop may be needed as a companion crop at the rate of _____ pounds per acre (clip or harvest before it heads out). Additional requirements:</i>

Operation and Maintenance
<i>Maintain original width and length of the filter strip. Harvest, mow, reseed, and fertilize as necessary to maintain plant density and vigorous plant growth. Inspect after major storms, remove trapped sediment, and repair eroding areas. Shut off pesticide sprayers when turning on a filter strip. Additional requirements:</i>

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If needed, an aerial view or a Toolkit map can be shown below to identify relative location(s) of the practice. Other relevant information, complementary practices and measures, and additional specifications may be included.

Scale 1"= \_\_\_\_\_ ft. (NA indicates sketch not to scale: grid size=1/2" by 1/2")



Additional Specifications and Notes:

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**Attach "KY Filter Strip Design"  
Excel Spreadsheet Output Here.**