NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

CONNECTICUT / RHODE ISLAND

FILTER STRIP

(ACRES)

CODE 393

DEFINITION

A strip or area of herbaceous vegetation situated between cropland, grazing land, or disturbed land (including forestland) and environmentally sensitive areas.

PURPOSE

- To reduce sediment, total suspended solids, particulate organics, and sediment-adsorbed contaminant loads in runoff
- To serve as Zone 3 of a Riparian Forest Buffer, Practice Standard 391

CONDITIONS WHERE PRACTICE APPLIES

This practice applies when planned as part of a conservation management system in areas situated below cropland, grazing land, or disturbed land (including forest land) where an assessment indicates that sediment, total suspended solids, particulate organic matter, and/or sediment-adsorbed contaminants may leave these areas and enter environmentally sensitive areas.

On agricultural land, this practice applies when planned as a component of a conservation management system where soil loss is less than or equal to 2T and where a nutrient management plan and/or an integrated pest management (IPM) plan or wildlife habitat management plan has been implemented.

CRITERIA

General criteria applicable to all purposes

Filter strips shall be designated as vegetated areas to treat runoff and are not part of the adjacent cropland rotation.

Overland flow entering the filter strip shall be primarily sheet flow. Concentrated flow shall be dispersed.

Vegetative requirements shall be determined using the current NRCS Connecticut / Rhode Island Critical Site Planting standard (Practice Code 342).

Federally-listed noxious weeds and state-listed non-native, invasive plants shall not be established in the filter strip. Federally-listed noxious weeds shall be controlled if present.

If state-listed non-native, invasive plants are present, an assessment of the pros and cons of control will be made and acted upon.

Filter strip establishment shall comply with local, state and federal regulations.

Additional criteria to reduce sediment, particulate organic matter, and sediment-adsorbed contaminant loads in runoff

The minimum flow length for this purpose shall be 20 feet.

Filter strip flow length shall be determined based on:

- field slope percent and length,
- filter strip slope percent,

- erosion rate,
- amount and particle size distribution of sediment delivered to the filter strip in runoff,
- density and height of the planned filter strip vegetation, and
- runoff volume associated with erosion producing events.

Filter strip location requirements:

a) The filter strip shall be located along the downslope edge of a field or disturbed area. To the extent practical it shall be placed on the approximate contour. Variation in placement on the contour should not exceed a 0.5% longitudinal (perpendicular to the flow length) gradient.

b) The drainage area above the filter strip shall have greater than 1% but less than 8% slopes. The State Resource conservationist may, on a case by case basis, make exceptions for steeper slopes with short slope lengths, especially on HEL fields.

c) The ratio of the drainage area to the filter strip area shall be no greater than 60:1.

d) On cropland, the average annual sheet and rill erosion rate above the filter strip shall be less than or equal to 2T. Additionally, the land shall be managed in accordance with the NRCS standard for Nutrient Management, (Practice Code 590), the NRCS standard for Waste Utilization, (Practice Code 633), and/or the NRCS standard for Pest Management (Practice Code 595).

The filter strip shall be established to permanent herbaceous vegetation consisting of a mixture of grasses, legumes and/or other forbs adapted to the soil, climate, nutrients, chemicals, and practices used in the current management system. Species selected shall have stiff stems and a high stem density near the ground surface. Stem density shall be such that the stem spacing does not exceed 1 inch.

Additional criteria to serve as Zone 3 of a Riparian Forest Buffer, Practice Standard 391

Except for the location requirements, the criteria given in "Additional criteria to reduce sediment, particulate organics, and sediment-adsorbed contaminant loads in runoff" also apply to this purpose.

If concentrated flows entering Zone 3 are greater than the filter strip's ability to disperse them, other means of dispersal, such as spreading devices, must be incorporated.

CONSIDERATIONS

Use Field Border (Code 386) to protect filter strips or accommodate harvest and maintenance equipment or for the single purposes of creating or maintaining wildlife/beneficial insect habitat.

To avoid damage to the filter strip consider establishing a field border with vegetation that is somewhat tolerant to herbicides used in the upslope crop rotation or in the vicinity of the practice.

PLANS AND SPECIFICATIONS

Based on this standard, plans and specifications shall be prepared for each specific field site where a filter strip will be installed. A plan includes information about the location, construction sequence, vegetation establishment, management, and maintenance requirements.

Plans and specifications are to be prepared for the practice site. The following items should be specified. NRCS Conservation Job Sheet – 393 Filter Strip is available to document these items. Specifications will include:

a) Length, width, and slope of the filter strip to accomplish the planned purpose (length refers to flow length across the filter strip).

b) Species selection and seeding or sprigging rates to accomplish the planned purpose

c) Planting dates, care, and handling of the seed to ensure that planted materials have an acceptable rate of survival

d) A statement that only viable, high quality, and regionally adapted seed will be used

e) Site preparation sufficient to establish and grow selected species

OPERATION AND MAINTENANCE

An operation and maintenance (O&M) plan for the vegetated filter area will be prepared. Prior to construction, sufficient copies of the O&M plan shall be provided to the owner/operator, and approving agencies. The owner shall sign the O&M plan to indicate an understanding of the requirements and a commitment to operate and maintain the facility as specified.

The O&M plan shall contain as a minimum:

1. Ensure that a dense vigorous vegetative stand is established prior to introducing runoff.

2. Removal or incorporation of accumulated sediments, organic solids, or debris.

3. Inspection after major storm events, and at least quarterly.

4. Timely repair of any erosion rills, channels, berms, or trenches to restore sheet flow.

For the purposes of filtering contaminants, permanent filter strip vegetative plantings should be harvested as appropriate to encourage dense growth, maintain an upright growth habit, and remove nutrients and other contaminants that are contained in the plant tissue.

Control undesired weed species; especially federally-listed noxious weeds and state listed non-native invasive plants.

Inspect the filter strip after storm events and repair any gullies that have formed, remove unevenly deposited sediment accumulation that will disrupt sheet flow, reseed disturbed areas, and take other measures to prevent concentrated flow through the filter strip.

To maintain or restore the filter strip's function, periodically regrade the filter strip area when sediment deposition at the filter strip-field interface jeopardizes its function, and then reestablish the filter strip vegetation, if needed. If wildlife habitat is a purpose, destruction of vegetation within the portion of the strip devoted to that purpose should be minimized by regrading only to the extent needed to remove sediment and fill concentrated flow areas.

Grazing of the filter strip is prohibited.