NRCS Natural Resources Conservation Service

Contour Buffer Strips

Conservation Practice Job Sheet *332*

Definition

Contour buffer strips are narrow strips of permanent, herbaceous vegetative cover established around the hill slope, and alternated down the slope with wider cropped strips that are farmed on the contour.

Purpose

Contour buffer strips significantly reduce sheet and rill erosion, slow runoff and reduce transport of sediment and other water-borne contaminants down the slope, and increase water infiltration.

Where used

Contour buffer strips are used on all sloping cropland including orchards, vineyards, and nut crops. Where the width of the buffer strips will be equal to or exceed the width of the adjoining crop strips, the practice Stripcropping applies. They are most effective on slopes ranging from 2 to 10 percent. Contour buffer strips are more difficult to establish on undulating to rolling topography because of the difficulty of maintaining parallel strip boundaries across the hill slope or staying within row grade limits. These narrow strips of permanent vegetation are not part of the normal crop rotation and remain where originally established until they need to be renovated or re-established. The width of the cropped strip is designed to accommodate some multiple of full equipment width. Surface flow from contour crop rows must be delivered to a stable outlet. Buffer strips are not used for travel lanes for livestock or equipment.

No plants listed on the state noxious weed list will be established in a buffer strip. Link to Washington Department of Agriculture State Noxious Weed information:
http://agr.wa.gov/PlantsInsects/Weeds/default.htm

Requirements for establishing contour buffer strips include a minimum buffer strip width, with strips placed along the contour and farming operations that follow the approximate contour grade. Cultivated strip widths are determined by such variables as slope, soil type, field conditions, climate, and erosion potential and may be adjusted to accommodate machinery widths. Waterways or diversions are needed where runoff collects and concentrated flow erosion is a problem. Contour buffer strips can be established between terraces to enhance treatment of the hill slope.

Resource management system

Contour buffer strips are normally established as part of a resource management system for a conservation management unit. They are concurrently applied with other practices, such as residue management, conservation crop rotation, and contour farming. Cultivated strip widths are determined by such variables as slope, soil type, field conditions, climate, and erosion potential. Species to use for contour buffer strips depend on soil types, climate, and use by wildlife.

Reducing Sheet & Rill Erosion

Cropped strips need sufficient row grade to insure runoff does not pond and cause crop damage. The maximum row grade will not exceed one-half the up-and-down hill slope percent used in planning or 2% whichever is less. 3% row grade is allowed for 150 feet as crop rows approach a stable outlet. Cropped strips will be of uniform width and will not exceed 50% of the slope length used for the erosion calculation.

Strips will be at lest 15 feet wide when planted to grasses or grass-legume mixtures with at least 50% grass and 30 feet wide when legumes are used alone or make up more than 50% of the stand. Species need to be adapted to the site and tolerant of the anticipated depth of sediment deposition. Strips will have at least 95% ground cover during the most erosive period. Stem density shall be 50 stems/square foot (grass-legume stands) and 30 stems/square foot (legume stands).

Reducing Sediment Transport

As with reducing sheet & rill erosion sufficient row grade is critical to insure runoff does not pond and cause crop damage. The maximum row grade will not exceed one-half the up-and-down hill slope percent used in planning or 2% whichever is less. 3% row grade is allowed for 150 feet as crop rows approach a stable outlet. For this purpose, strips will be at least 15 feet wide, but will be increased as needed to keep the width of the cropped strips uniform. The maximum width of the cropped strip will be one half of the field slope length or 150 feet whichever is less. In addition to the buffer strips established around a hillside, a buffer strip will be established at the bottom of the slope that is two times the width of the narrowest strip in the system.

Increasing Water Infiltration

The row grade along the upper edge of the buffer strip will not exceed 0.2%.

Wildlife

The following activities can be carried out to enhance wildlife benefits as long as they do not compromise the effectiveness of the buffer strip:

- Establishment of herbaceous species that provide habitat enhancement for the species of concern;
- Addition of native forbs to increase diversity;
- Mowing the strips every other year or third year depending on location. The standing cover provides early and last season nesting and escape cover for many species displaced from adjacent, disturbed areas;
- Delaying mowing until after the nesting period of ground nesting species, but mow early enough to allow for re-growth before the growing season ends.

Specifications

Site-specific requirements are listed on the attached job sheet. These include percent slope, minimum and maximum allowable row grade, width of slope, species to be established, the location of baselines and stable outlets. Specifications are prepared in accordance with the NRCS Field Office Technical Guide. See practice standard Contour Buffer Strips, code 332.

Operation and maintenance

Mow buffer strips to maintain appropriate vegetative density and height for trapping sediment. Fertilize buffer strips according to soil test results. Spot seed or renovate buffer strip areas damaged by herbicides, equipment, or unusual rainfall events. Redistribute sediment accumulations as needed to maintain uniform sheet flow along the crop-strip boundary.

CONTOUR BUFFER STRIPS SPECIFICATION SHEET

DESIGN APPROVAL:

This practice is classified as Job Class _____

Design Approved by:/s/_____ Date:_____

Job title:_____

CLIENTS ACKNOWLEDGEMENT STATEMENT:

The Client acknowledges that:

a. They have received a copy of the specification and understand the contents and requirements.

b. It shall be the responsibility of the client to obtain all necessary permits and/or rights, and to comply with all ordinances and laws pertaining to the application of this practice.

Accepted by:/s/_____ Date:_____

CERTIFICATION:

I have completed a review of the information provided by the client and certify this practice has been applied.

Certification by:/s/_____ Date:_____

Job title:_____

Contour Buffer Strips – Job Sheet / Specification

Landowner: _____ Tract: _____ Field(s): _____

Purpose (check all that apply)	
☐ Reduce sheet and rill erosion	☐ Reduce transport of sediment and other water-borne contaminants downslope
☐ Increase water infiltration	

Layout	Strip 1	Strip 2	Strip 3	Strip 4
Cultivated strip width (feet)				
Buffer strip width (feet)				
Buffer strip length (feet)				
Area in buffer strip (acres)				

Plant Materials (species/cultivars)	Seeding Rate (lbs/acre of pure live seed)	Seeding Date
Strip 1:		
Strip 2:		
Strip 3:		
Strip 4:		

Soil Amendments and Fertilization	Strip 1	Strip 2	Strip 3	Strip 4
Lime (tons/acre)				
Nitrogen (lbs/acre)				
Phosphorous (lbs/acre)				
Potassium (lbs/acre)				

Site Preparation
Prepare a firm seedbed. Apply lime and fertilizer as indicated by soil testing. Additional requirements:
Planting Methods
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:
Operation and Maintenance
Maintain original width and length of contour buffer strips. 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 buffer strip. Additional requirements:

Contour Buffer Strips – Job Sheet

If needed, an aerial view or a side view of the practice can be shown below. 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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