NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD AND SPECIFICATIONS

CONTOUR STRIPCROPPING

(Acre)
CODE 585

DEFINITION

Growing row crops, forages, small grains, or fallow in a systematic arrangement of equal width strips on or near the contour of the field slope.

PURPOSES

This practice may be applied as part of a conservation management system to support one or more of the following:

* Reduce sheet and rill erosion.

* Reduce transport of sediment and other water-borne contaminants.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to sloping land where crops are grown and where it is an essential part of the cropping system to reduce sheet and rill erosion or sediment yield.

This practice is most suitable on uniform slopes with slope lengths equal to or less than the critical slope length determined using the Field Office Technical Guide (FOTG), Section I-(iv)-A-17, Figures 1 through 23.

Although this practice may be applicable on steeper slopes, it will be less effective in achieving the purpose(s) of the practice on slopes exceeding 15 percent. The practice has the greatest impact where cropped strips having less than 10 percent cover are alternated with close grown or grass and legume strips, or strips with a cover-management condition code equal to 3 (refer to FOTG, Section I-(iv)-A-17, Table 1).

This practice is not well suited to rolling topography having a high degree of slope irregularity because of the difficulty in maintaining parallel strip boundaries and row gradients.

CRITERIA

General Criteria Applicable to All Purposes

Where more than one strip boundary will be placed on the hill slope, strip boundaries shall run parallel to each other as long as their grades meet the row grade criteria. If parallel strips are unachievable, establish a new baseline at a distance up or down the slope equal to some multiple of the strip width. Limit the number of correction strips (non-uniform width strips) needed to keep all strip boundaries within row grade limits.

All tillage and planting operations will follow the contour lines established.

The row grade of the contour strip shall align as closely as practical to the contour to achieve the greatest erosion reduction possible. The maximum in-row grade of the contour strips shall not exceed one-half of the up and down hill slope gradient used for erosion prediction or 2 percent, whichever is less. Row grades up to 3 percent are permitted for short distances (a maximum of 150 feet) as crop rows approach a stable outlet.

The critical slope length for a system of contour strips is 1.5 times the critical slope length for contour farming. When the true slope length exceeds the critical slope length for the cover-management condition that represents the field to be contour stripcropped, install structural measures such as terraces or diversions to interrupt the actual slope length.

Establish and maintain field borders in perennial herbaceous cover where concentrated water flows will develop or where up and down hill farming of end rows will result in soil loss or sedimentation exceeding tolerable levels. Field borders shall be a sufficient width to accommodate turning farm equipment without additional end rows.

Surface flow from contoured crop rows must flow to a stable outlet. Stable outlets include grassed waterways, field borders, underground outlets for terraces and diversions, water and sediment control basins, or similarly stabilized areas.

Contour strips shall be an alternating pattern down the slope with equal or nearly equal width strips of perennial legumes, grass-legume mixtures, grasses, or small grain crops alternated with cropped strips that are typically planted in tilled seedbeds (includes annual crops planted in rows or drilled).

The width of contour strips shall be as uniform as possible not to exceed those listed below:

Land Slope (%)	Cropped Strip Width (ft)
1-2	150
3-5	135
6-8	120
9-15	105
16-20	90
>21	60

Cropped strip widths shall be adjusted downward to accommodate all equipment to be used in the strip.

When used in combination with terraces, the layout of contour stripcropping shall be coordinated with the grade and spacing of the terraces so that strip boundaries will parallel terraces whenever possible. Where grass-back or narrow-base terraces are used, allow for the uncropped width along the terrace and maintain the same strip width for all strips in the field.

The maximum benefit for all purposes will be achieved when strips of perennial grass or grass-legume mixtures are alternated with annual crops planted in a tilled seedbed.

The level of sheet and rill erosion control achieved by the contour stripcropping installation and associated conservation practices shall meet the conservation plan objective. The benefit of applying this practice shall be determined using the Revised Universal Soil Loss Equation (RUSLE) in the FOTG.

CONSIDERATIONS

The crop rotation on the cropped field strips should be consistent with the farm enterprise crop needs and associated livestock operations. These will influence the proportion of row crops, close grown crops, and forage crops.

To avoid wide fluctuations in the acreage of different crops from year to year, fields having identical crop rotations can be established that are offset in the rotation commencement.

Design and install the strip layout to best facilitate operation of all machinery used on the strips. To avoid point rows and partial equipment passes, lay out strip widths to have some multiple of the full width passes by all farm implements not to exceed the allowable strip widths stated previously.

All field obstructions should be removed and field boundary changes completed prior to design and layout. This will improve the effectiveness of the installation and the ease of performing farming operations across the slope.

Prior to layout, inspect the field to find key points for starting the layout or getting a full strip width to pass by an obstruction or ridge saddle. Whenever possible to maintain within gradient limits, run the strip boundary parallel to fence lines or other barriers. Account for the uncropped width of access roads when they traverse the field and adjust strip boundary on either side accordingly.

Retaining the most crop residue possible on the soil surface can maximize critical slope lengths. Certain tillage practices, such as plowing to throw the furrow slice uphill and deep tillage, can also be used to increase random roughness and cause deposition to occur in depressions and increase critical slope length. If the contoured strips are kept maintained under heavy residue cover, the need for contour stripcropping as an erosion and sediment reduction practice will be reduced.

PLANS AND SPECIFICATIONS

Site specifications for establishment and maintenance of this practice shall be prepared for each field or treatment unit according to the

Criteria, Considerations, and Operation and Maintenance described in this standard.

Site specifications shall be recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

Conduct all farming operations parallel to the strip boundaries. The only exception is farming end rows that have gradients flat enough that erosion predictions are within acceptable levels.

Where contour row curvature becomes too sharp to keep machinery aligned with rows, establish sod turn strips on sharp ridge points. On ridge tops where grades are within row grade limits, row crops may be planted in these turn strip areas. In drainage ways, establish grassed waterways at least up to that point of sharp curvature. These sod areas shall be wide enough for all the equipment to be lifted and turned to meet the same rows across the turn strip. Mow sod turn strips and waterways at least once yearly (after July 15 if ground-nesting birds are a concern).

Follow the planned crop rotation. Rotation of crops is the key to making the contour strip-cropping system effective for both crop production and erosion reduction. Substituting a crop or adjusting the crop rotation due to failed crops is acceptable provided no two adjacent strips are planted to crops that do not provide adequate erosion control.

Heavy sediment accumulations along the upslope edge of protected strips may need to be smoothed or redistributed to maintain uniform sheet flow along the strip boundary.

Field borders will be managed to maintain ground cover above 65 percent. No-till renovation of permanent vegetative cover is recommended, but renovation may include tillage to prepare a seedbed and immediate reseeding to a sod-forming cover with or without a nurse crop. Maintain the full field border width at the end of tilled strips to allow turning of farm implements to double back on the same strip.