

**NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATIONS**

FILTER STRIP

1. Scope

The work shall consist of furnishing all materials and placing them on all designated areas to the limits as shown on the drawings, or as staked in the field, and performing cultural operations to establish a filter strip. Procedures, technical details, and other information listed provide additional guidance for carrying out selected components of this practice. This material supplements the requirements and considerations therein.

2. Specifications

Filter strips shall be a minimum of 30 feet and no more than 120 feet in flow length. The design width shall be determined to the extent needed to meet the primary purpose of the practice and the producer's objectives.

To maintain sheet flow into the filter strip without additional water spreading applications, the contributing area will not have a slope length exceeding:

Slope	Slope Length
1 to 3 %	300 feet
3 to 6%	200 feet
Greater than 6%	100 feet

Minimum design flow length will be computed as a 3:1 ratio of contributing area to filter strip flow length (i.e., 300 feet) contributing area slope length would require a minimum of 100 foot of flow length across the filter strip.

When designing adjacent to watershed flood control structures or other surface water reservoirs with fluctuating water levels, the filter will be designed above the elevation that would be inundated during a 10-year, 24 hour frequency storm. The filter flow length will also continue from the design storm elevation to the crest of inlet of the structure. The maximum flow length will be the design filter flow length plus the distance between the design storm elevation to the crest of inlet of the structure.

3. Vegetation

The filter will be established to permanent herbaceous vegetation consisting of a single species or a mixture of grasses, legumes, and/or other forbs adapted to the local conditions.

Species selected should be adapted to the conditions and pollutants the filter is being designed for. For seeding design, rates and seedbed preparation refer to Conservation Practice Standards 512, Pasture and Hay Planting, and 550, Range Planting, or if the site has a predicted erosion rate exceeding 2 times the tolerable soil loss (T) refer to Conservation Practice Standard 342, Critical Area Planting.

Plant characteristics may be reviewed at <http://plants.usda.gov/>.

4. Setback Zones for Wells, Surface Water Inlets, and Surface Water Systems

When the filter strip is being designed to serve as a set back zone for potential pollutants, the minimum flow length will be 30 feet unless specified by product labels, local, state, or federal regulations.

For Atrazine-containing products, the flow length will be a minimum of 50 feet from all wells, sinkholes, tile inlets, intermittent streams or rivers, natural or impounded lakes or reservoirs. The minimum flow length will be 66 feet from points where field surface water runoff enters a perennial or intermittent stream or river. Flow length will be a minimum of 200 feet.

5. Wildlife Food and Cover Enhancement

When wildlife food and cover is a secondary purpose for applying the filter strip practice, the minimum width will be 30 feet. Increased widths provide higher quality wildlife habitat. Plant species diversity will also increase quality.

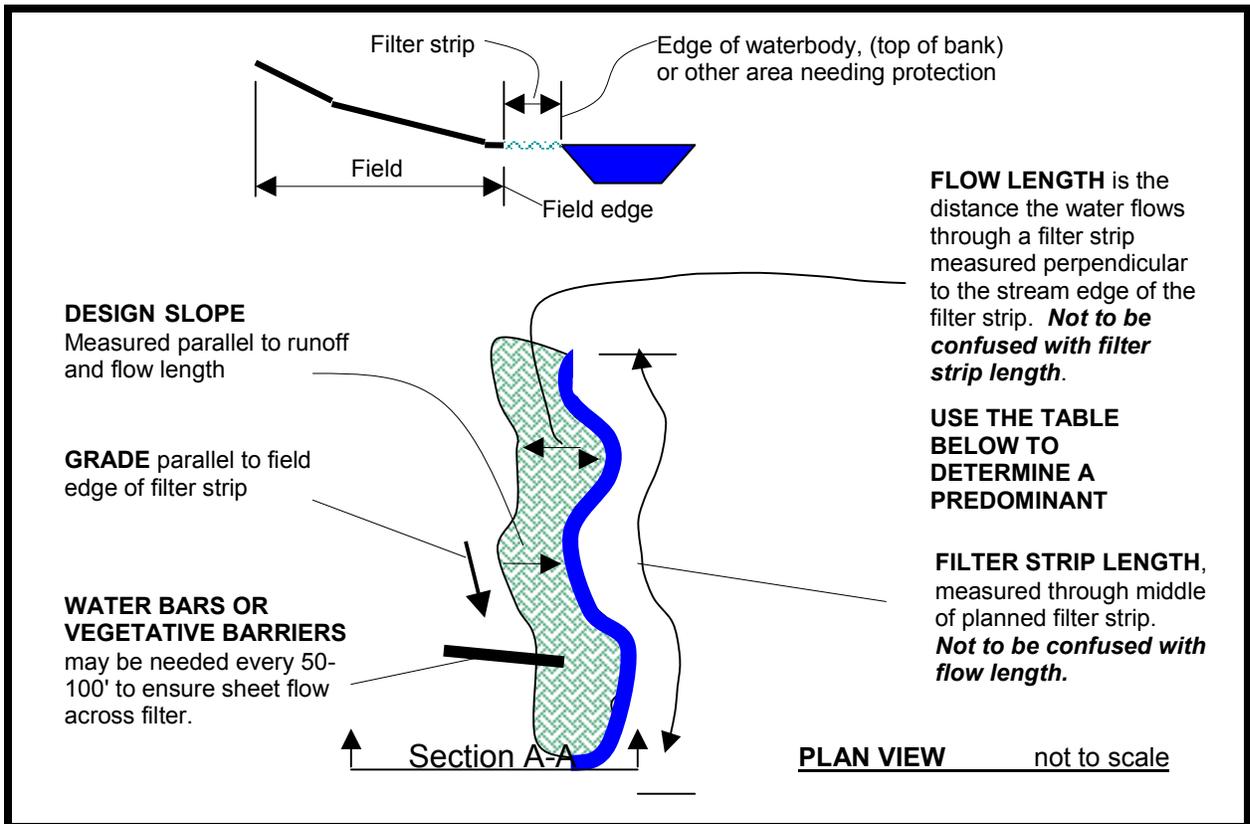
6. Required Documentation

Filter Strip Design, Documentation, and Certification Job Sheet
Kansas Field Sheet: Grass Seeding, Form KS-ECS-4
Aerial photo or detailed sketch identifying practice location

7. Operation and Maintenance

Refer to Agronomy Technical Note KS-42.

PLAN VIEW AND SECTION A-A, DESIGN COMPONENTS



Filter Strip Design Flow Lengths in feet

Contaminant Trapping Criteria	Average Design Slope					
	0.5%	1.0%	2.0%	3.0%	4.0%	5.0% or greater
Sediment, Minimum Allowable** (Minimal level of sediment trapping)	30	30	30	30	30	30
Sediment, Preferred** (15 minute flow through time, 75-95% effective)	50	70	100	120	120	120*
Soluble Contaminant, Minimum Allowable** (Minimal dissolved contaminant trapping)	30	30	30	30	30	30
Soluble Contaminant, Preferred** (30 minute flow through time, 50-75% effective)	100	120	120*	120*	120*	120*

* It is difficult to maintain sheet flow for distances greater than 120' through the filter strip. Once sheet flow has converted to concentrated flow, the effectiveness of the filter is reduced. Filter strips wider than 120' often will require additional practices such as spreader ditches, level berms, vegetative barriers, or other grade control practices to be installed at the field/ filter strip edge and/or within the filter strip at critical locations.

** When determining flow lengths for both sediment and soluble contaminants do not add the two together. The required flow length for soluble contaminants will also be effective for trapping sediment.