NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATIONS

MULCHING

1. Scope

The work shall consist of the application of various plant residues, by-products, or other suitable material applied to the site to meet the identified resource need. Documentation shall include purpose of mulch application, type of mulch material used, percent cover and/or weight of mulch material, timing of application, site preparation, listing of netting, tackifiers, or method of anchoring, and required operation and maintenance.

2. Mulching Material Requirements

Natural materials not anchored with asphalt (in order of preference):

Native grass hay with viable seed	4,000 lbs/acre
Native or introduced grass hay	4,000 lbs/acre
Legume hay	4,000 lbs/acre
Straw	4,000 lbs/acre
Wood chips	11 to 15 tons/acre
Corn cobs	10 tons/acre
Shredded sorghum/corn stalks	4 tons
Strawy manure	10 tons/acre

Natural materials anchored with asphalt emulsion:

Native or introduced grass hay	2,000 lbs/acre + 300 gal. asphalt/acre
Straw or legume hay	2,000 lbs/acre + 300 gal. asphalt/acre
Wood chips	6 tons/acre + 300 gal. asphalt/acre
Wood shavings	2 tons/acre + 300 gal. asphalt/acre
Corn cobs	5 tons/acre + 300 gal. asphalt/acre

Commercial mulches:	(Follow manufacturer's installation recommendations for specific type mulch used)
Fabric mulch	1 layer on soil surface (see Kansas Forestry Technical Note KS-9 for additional information)
Erosion control	1 layer on soil surface blankets; excelsior, curlex fiber, jute netting, other
Spun glass fibers	1,000 lbs/acre
Wood cellulose	1,500 to 2,000 lbs/acre
Hydro-Mulch fiber	1,500 to 2,000 lbs/acre
Synthetic resin	105 gallons per acre

3. Installation Requirements

All areas to be mulched shall be reasonably smooth and free of rills and gullies. Mulch should be spread evenly over the surface. Natural mulch material should be free of any weed and or grain seed to avoid competition with newly seeded areas. Mulching material shall be less than two years old.

The mulch material shall be evenly applied and anchored to the soil. Tackifiers, emulsions, pinning, netting, crimping, or other acceptable methods of anchoring will be used to hold the mulch in place for specified time periods.

Mulch may be applied to both seeded and unseeded areas. When applied to seeded areas, mulch shall be applied immediately after seeding. Mulch can also be applied to unseeded areas to reduce the erosion hazard if timing is not suited for seeding the area.

Mulching operations shall comply with federal, state, and/or local laws and regulations during the installation, operation, and maintenance of this practice.

4. Purpose

The percentage of required mulch coverage depends upon the purpose.

Erosion control. When mulching with cereal grain straw or grass hay, apply in sufficient amounts to provide 70 percent ground cover. When mulching with wood products such as wood chips, bark, or shavings or other materials, apply to a 2-inch thickness if the soil is not well-drained; and to a 3- to 4-inch thickness if drainage is good. More finely textured mulches should be no thicker than 1 or 2 inches, as they allow less oxygen penetration than coarser materials. Gravel or other inorganic material shall be applied approximately 2 inches thick and shall consist of pieces ¾ to 2 inches in diameter.

Suppress weed growth. Mulch applied for weed suppression shall have 100 percent ground cover. Thickness of the mulch shall be adequate to prevent emergence of targeted weeds. Mulches shall be kept clear of the stems of plants where rotting is likely to occur.

Vegetative establishment. Mulch shall be applied at a rate that achieves 50 percent ground cover to provide protection from erosion and runoff and yet allow adequate light and air penetration to the seedbed to ensure proper germination, emergence, and disease suppression.

Improve soil condition. Apply and incorporate into the soil mulch materials with a carbon to nitrogen ratio less than 30 to 1 such as animal manure, bio-solids, food processing wastes, or similar materials. Apply other practices such as contouring, filter strips, or riparian buffers to assure that runoff from the mulched areas will not transport mulching materials to sensitive water bodies.

Conserve soil moisture. Mulch materials applied to the soil surface shall provide at least 60 percent cover to reduce potential evaporation. Mulch material shall be applied prior to moisture loss.

5. Anchoring Requirements

Mulch material must be anchored during or immediately after application. Heavy materials such as cornstalks or wood chips shall be disked in lightly. After disking, roll or cultipack to firm the mulched area. Strawy manure with heavy solids usually does not need anchoring.

For hay or straw, use a mulch crimper or similar tool with serrated straight disks that punch the mulch into the ground to a depth of approximately 2 inches. A farm disk, set straight, with a maximum spacing of 12 inches, may be used if a regular crimper is not available. Crimping operations will be done on the contour, if possible, or across the slope.

An asphalt emulsion or other type of tackifier or binder may be used to anchor mulch. The method and rate of application shall be according to manufacturer's recommendations.

Manufactured mulches such as netting, blankets, hydro-mulches, fiberglass, etc., shall be installed according to manufacturer's recommendations. For information on weed fabric installation, see Kansas Forestry Technical Note KS-9.

6. Maintenance

Mulched areas will be periodically inspected and mulch shall be reinstalled or repaired as needed to accomplish the intended purpose.