NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

FIREBREAK

(Feet)

CODE 394

DEFINITION

A permanent or temporary strip of bare or vegetated land planned to retard fire.

PURPOSES

- To prevent spread of wildfire.
- To contain prescribed burns.

CONDITIONS WHERE PRACTICE APPLIES

All land uses where protection from wildfire is needed or prescribed burning is applied.

CRITERIA

Firebreaks may be temporary or permanent and shall consist of fire-resistant vegetation, non-flammable materials, blackened (burned) areas, or bare ground surrounding the area to be burned. The designed width of the firebreak can include any combination of these.

Firebreaks will be of sufficient width and length to contain the expected fire.

Firebreaks shall be located to minimize risk to the resources being protected including minimizing soil erosion.

Plant species selected for vegetated firebreaks will be non-invasive and capable of retarding fire.

The landowner should comply with applicable federal, state, and local laws and regulations, during the installation, operation, and maintenance of this practice.

Location
The firebreaks should be located:

- Parallel to public roads, railroads, and adjacent to field boundaries.
- Along property boundaries and within fields where it is determined necessary to protect areas that are not to be burned. Farm roads may serve as firebreaks.
- Where possible the firebreaks should be connected to natural barriers such as cultivated fields, streams, rock bluffs, or roads.
- To protect farmsteads or other structures by surrounding them at a safe distance.

Types and Sizes of Firebreaks

There are 5 basic types of firebreaks. They include: Natural, Constructed, Burned, Vegetated, and Mowed Wet-line. The type selected will be determined by the specific site conditions because of the variability of vegetation types, topography, and soil conditions.

The width of the firebreak type(s) is based on the type of fuel to be burned and the location in relation to the area to be burned.

These firebreaks will be used in combinations to create a firebreak on the downwind side of the area to be burned of at least 100 feet wide when burning grass and 500 feet wide when volatile fuels like Juniper are involved. The minimum width on the down wind flank edge of the area to be burned involving volatile fuels is 300 feet. All volatile fuels (live and dead) will be removed from the firebreak prior to ignition. The minimum width of the firebreak on the upwind side of the area to be burned will be 10 feet.

Natural firebreaks
Existing terrain features can serve as a firebreak. Small roads and trails may be used for

installing low-intensity backfires when relative humidities are above 40%, air temperatures are below 60 degrees, and wind speeds are not above 6 mph. However, adequate personnel and equipment must be available for spot suppression.

Any terrain feature such as cropland, rivers, roads, or other areas devoid of fuels can serve as a firebreak for headfires when at least 100 feet wide (300 to 500 feet minimum involving volatile fuels).

Constructed Firebreaks
This firebreak will be completed before the fire hazard season and be constructed so that it can be traversed by fire suppression vehicles.

All flammable material will be removed or covered with soil by machinery on a strip of land adequate to contain the fire. Discs, graders, plows, and bulldozers can be used to construct the firebreaks. Heavy equipment such as a bulldozer will be required to remove thick brush or large trees in rocky areas, creek crossings, and on steep slopes. This debris will either be stacked outside the burned area or burned prior to the prescribed burn when the surrounding fuel source is too green to burn, covered with snow, or is too wet to burn.

The constructed width of the firebreak shall be a minimum of 10 feet.

Slopes 10% and greater will have water bars constructed. (Refer to: Forestry Extension Report #5, Best Management Practices for Forest Road Construction and Harvesting Operations in Oklahoma.)

Maintenance - Remove flammable vegetation from permanent firebreaks at least once annually before the fire danger season and prior to implementing a prescribed burn. The firebreak should be reworked as needed to maintain fire protection during extended summer drought conditions.

Burned Firebreaks
Burned firebreaks are installed only when used in combination with other types of firebreaks to meet the minimum widths required.

Burned firebreaks can be installed by constructing two 10 foot wide parallel strips with bare soil around the area to be burned (Refer to Oklahoma NRCS Job Sheet JS 394 01). The two parallel strips should be approximately 100 feet apart on grasslands and up to 500 feet apart when volatile fuels are to be burned. Remove large flammable material, such as logs, limbs, standing cedar, or discarded fence posts from the area between the strips. Burn the area between the strips to complete the firebreak.

If the land to be burned is located in the Oklahoma Forestry Services Division fire protection area, their closest office must be contacted prior to the burn to obtain permission to burn. The legal description or coordinates must be provided.

Burn the area between the strips using guidance found in the Oklahoma NRCS Prescribed Burning (338) standard and/or with the assistance of the Oklahoma Forestry Services Division.

Vegetated Firebreaks
Vegetated firebreaks are constructed firebreaks that are planted in cool season plants to reduce future maintenance costs, prevent soil erosion, and provide wildlife food. Annual plants like rye grass or small grain can be planted. However during their dormant season they will allow a fire to cross the fireguard.

Before planting, a seedbed 10 to 100 feet wide (depending upon need) should be tilled. Use the maximum width if the vegetated firebreak is the only means of fire protection. If volatile fuels are involved, plant an area 300 to 500 feet wide as needed.

Seed and fertilize the prepared area at rates consistent with the Oklahoma NRCS Pasture and Hayland Planting (512) standard and/or the Cover Crop (340) standard[1/]. Firebreaks planted with alternating strips of cool-season crops and warm-season crops offer year-round protection.

Maintenance - Fertilize at maintenance rates as recommended in the Oklahoma NRCS Nutrient

[1/] *Seed only where locally adapted.*

Management (590) standard. Replant if an adequate stand is not established.

Disk standing residue as needed for protection following seed maturity.

Allow seedlings to develop an adequate root system prior to grazing.

Mowed Wet-Line
Mowed firebreaks using wet-lines can be used as long as adequate personnel, equipment, and water supply areas are available to safely conduct the procedure.

Mowed firebreaks shall be a minimum of 10 feet wide or 10 times the height of the vegetation in the area to be burned. The mowing height should be about 4 inches or less. Piles of grass should be removed by raking or baling.

Water will be sprayed on the mowed firebreak to create a wet-line immediately in advance of ignition of the fire. If the fire attempts to creep across the fireguard it should be immediately be extinguished.

Mowed wet-line firebreaks can be quite time consuming and less predictable, therefore it is not the preferred method.

Access Road as a Firebreak
New roads should be located to provide adequate access to the area for fire protection. Water control devices will be installed on slopes that could cause damage to the road from soil erosion. Refer to Forestry Extension Report #5 for guidelines. Ridge tops are excellent locations for access roads and make good firebreaks. Refer to the Oklahoma NRCS standards Forest Harvest Trails and Landings (655) and Access Road (560) for construction.

Maintenance - Each year remove any flammable materials and debris that would prohibit access on the roads just prior to the fire danger season.

CONSIDERATIONS

Use existing barriers such as streams, lakes, ponds, rock cliffs, roads, drainage canals, railroads, utility right-of-way, and cultivated land as natural firebreaks.

Electric lines can be hazardous in heavy smoke and may conduct electricity to the ground. Locate firebreaks on the contour where possible to minimize risk of soil erosion. Consider the effects on wildlife and fisheries.

Attempt to locate firebreaks near ridge crests and valley bottoms. If winds are predictable, firebreaks should be located perpendicular to the wind and on the windward side of the area to be protected.

Select plant species that provide wildlife habitat if they are compatible with the purpose. Consider the effects of the firebreak installation on cultural resources, threatened and endangered species, protected natural areas, riparian areas, and wetlands.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, narrative statements in the conservation plan, technical notes, or other acceptable documentation. In the prescribed burn plan record location, type, dimensions, equipment requirements, and maintenance of the firebreak.

OPERATION AND MAINTENANCE

Mow or graze vegetative firebreaks to avoid a build-up of dead litter, and to control weeds. Do not allow the annual vegetation to volunteer since this allows the spread of plant diseases and insects.

Inspect the firebreaks annually and rework erosion control measures as necessary to ensure proper function.

Control access by vehicles or people to prevent damage to the firebreak.

Bare soil firebreaks which are no longer needed will be vegetated.

REFERENCES

OSU Extension Facts No. 5019, "Need to Burn Debris? Burn Within the Law".

OSU Extension Circular No. 927, "Using Prescribed Fire in Oklahoma".

OSU Extension Video Tape No. 108, "Wildfire Strikes Home".

A Guide for Prescribed Fire in Southern Forests. USDA Forest Service, Southern Region. Technical Publication R8-TP 11, February 1989.

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Fuelbreaks and Other Fuel Modifications for Wildland Fire Control, Agricultural Handbook No. 499, USDA-Forest Service, 1977.

Guidelines and Criteria for Wildfire Hazard Areas, Colorado State Forest Service and Colorado State University, Fort Collins, Colorado, 1974.