NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

FIREBREAK

(Ft.)

CODE 394

DEFINITION

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

PURPOSE

This practice is used to achieve one or more of the following purpose(s):

- Reduce the spread of wildfire.
- Contain prescribed burns.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies on all land uses where protection from wildfire is needed or prescribed burning is applied.

CRITERIA

General Criteria Applicable to All Purposes

Firebreaks may be temporary or permanent and shall be fire-resistant vegetation, non-flammable materials, bare ground, or a combination of these. See Table 1 for suitable firebreak options and specifications.

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.

Erosion control measures, such as waterbars, turn-out ditches, seeding/vegetation, etc. shall be installed to prevent sediment from leaving the site.

Constructed firebreaks may tie into existing natural or manmade physical barriers and should not direct drainage/sediment into receiving waters.

Comply with applicable federal, state, and local laws and regulations during the installation, operation and maintenance of this practice, including North Carolina (NC) Forest Practices Guidelines.

Additional Criteria to Reduce Spread of Wildfire

Firebreaks constructed to check wildfire should be permanent structures. Existing firebreaks to check wildfire must be refreshed regularly - every 1-3 years, depending on site conditions (topography, vegetation, potential for wildfire, value of property protected, etc.) to provide fire protection.

Additional physical treatment may be needed in addition to firebreaks to reduce the spread of wildfire. Refer to FOREST SLASH TREATMENT – NC Practice Standard 383, PRESCRIBED BURNING – NC Practice Standard 338 and TREE/SHRUB PRUNING – NC Practice Code – 660 for more information.

Additional Criteria to Contain Prescribed Burns

Firebreaks constructed to contain prescribed burns may be temporary or permanent structures. Existing firebreaks must be refreshed prior to application of the prescribed burn.

Table 1. Firebreaks adaptable to needs/conditions in North Carolina	
Plowed, Disked, Bladed Firebreaks *Plowed, disked or bladed firebreaks may be used in any forest type and on nearly all terrain conditions, provided location specifications are followed.*	
Location	Parallel to public roads, railroads or high risk areas adjacent to forest land. Along forest land property boundaries. Within forest land where and as necessary. Along main ridges and side ridges in steeper Piedmont and Mountain settings.
Construction	Use a fireline plow, heavy bush/bog disk, farm plow/disk or blades to expose mineral soil along the firebreak. Size and type of equipment will depend on terrain and type of vegetation to be moved/removed. Width is a site-specific determination, but is usually twice as wide as the tallest adjacent herbaceous material that will easily burn. Width for one equipment pass will generally range 5-8 feet. This width is usually sufficient to contain most creeping, slow moving ground fires. Wider widths, 10-12 feet and wider, should be used where firebreak is a permanent structure for wildfire control. Wider widths allow easier equipment access for maintenance.
Vegetative Firebreaks *Vegetative firebreaks are suited to pine woodlands in the Coastal Plain and on gentle slopes in the Piedmont.*	
Location	Parallel to public roads, railroads or high risk areas adjacent to forest land. Along forest land property boundaries. Within forest land where and as necessary.
Construction	Use appropriate equipment to clear/remove trees, shrubs, vines within the firebreak. Width should be 30 feet wide adjoining, or around the perimeter of forest land, and 50 feet wide within (through) forest land. Prepare a suitable seedbed, fertilize and seed to an adapted, non-invasive, grass or legume capable of retarding fire. Examples include fescues, partridge pea, etc. Refer to CRITICAL AREA PLANTING – NC Practice Standard 342 for help with seeding recommendations.
Burned Firebreaks *Burned firebreaks are suited to pine woodlands in the Coastal Plain and the Piedmont.*	
Location	Parallel to public roads, railroads or high risk areas adjacent to forest land. Along forest land property boundaries. Within forest land where and as necessary.
Construction	Use a fireline plow, heavy bush/bog disk, farm plow/disk to prepare 2 bare parallel strips, each 5 feet wide and at least 20 feet apart. Wider burned firebreaks will provide more fire protection. In the area between the bare strips, remove logs, limbs and other debris that might burn for several hours. Large, sound trees that will not affect function of the firebreak should be left unless the firebreak is being constructed during a harvest operation. Obtain appropriate burning permits and burn the area between the bare strips on a calm day.

CONSIDERATIONS

Use barriers such as streams, lakes, ponds, rock cliffs, roads, field borders, skid trails, landings, drainage canals, railroads, utility right-of-ways, cultivated land, or other areas as existing firebreaks.

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.

Firebreak refreshing by disking can promote wildlife friendly early successional annuals where soil erosion is not a concern.

Consider the selection of plant species that will enhance the needs of wildlife in the area when seeding a firebreak.

Locate on the contour where practicable to minimize risk of soil erosion.

Firebreaks can have multiple uses which should be considered in design and layout.

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Consider threatened and endangered species, natural areas, riparian areas and wetlands when applying this practice.

This practice has the potential to affect National Register listed, or eligible, significant cultural resources (CULTURAL RESOURCES INFORMATION - NC, FOTG Section II). Follow NRCS state policy for considering cultural resources during planning.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan and the burn plan, or other acceptable documentation.

Minimum documentation for this practice includes (as applicable):

- map showing location of firebreaks; additionally the map should delineate:
  - existing natural or constructed barriers to fire such as streams, water bodies, roads, etc.
  - sensitive areas such as critical areas, cultural resources, wetlands, natural areas, etc. that need to be considered during firebreak construction.
- type of firebreak (bladed, plowed, disked, vegetated, burned, etc.) and equipment needed to construct.
- when firebreak will be constructed (timing).
- average width and an estimated length or extent.
- seeding specifications for vegetated firebreaks, including:
  - plant material or species to be planted.
  -seedbed preparation requirements.
  - required soil amendments (lime, fertilizer, etc.).
  - time and method of planting.
- forest management plan or burning plan with firebreaks prepared by a registered forester.
- additional detailed specifications as needed for burned firebreaks.
- statement requiring compliance with all federal, state and local laws.
- required operation and maintenance instructions

OPERATION AND MAINTENANCE

The following actions shall be carried out to insure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance).

- Mow, disk, or graze vegetative firebreaks to avoid a build-up of excess litter and to control weeds. Treatment should be timed to reduce impacts to wildlife nesting when possible.
- Inspect firebreaks for woody materials such as dead limbs, blown down trees and remove them from the firebreak. Remove overhanging vines and brush that could carry fire across the firebreak.
- Inspect firebreaks at least annually and rework/refresh bare ground firebreaks as necessary to keep them clear of flammable vegetation and maintain the desired level of fire protection.
- Repair erosion control measures as necessary to ensure proper function.
- Control access by vehicles or people to prevent damage.
- Stabilize bare ground firebreaks, which are no longer needed.

REFERENCES

Bardon, Robert, 2001, Minimizing Wildfire Risk – A Forest Landowner's Guide, NC Cooperative Extension Service