

NATURAL RESOURCES CONSERVATION SERVICE

CONSTRUCTION SPECIFICATIONS

FENCE - BARBED WIRE

(Ft.)

CODE 382

Barbed Wire

(See Standard Drawing Number FEN-382-BRB.)

A. Wire Spacing

Barbed wire fences shall have a minimum of four wires for farm borders, cross fencing or excluding livestock from special areas such as streams or forest, or other special use areas. Wires shall be spaced approximately an equal distance apart. The top wire shall be at least 38" high for cross fence and 42" high for access control and perimeter fence. Place top wire 2 inches below the top of post on wood posts and 1 inch below the top on steel posts. The bottom wire shall be 12 to 18 inches above ground level.

B. Type of Wire

Each line wire may consist of two twisted strands of 12 ½-gauge wire or high tensile strength wire of 15 ½-gauge. The barbs shall be either 1- or 4-point barbs on approximately 4-inch centers, or 4-point barbs on approximately 5-inch centers. Attach wires to the side of the post closest to the livestock.

C. Pull Assemblies

Two posts with braces shall be spaced at intervals not to exceed 1,320 feet (80 rods) for barbed wire in straight sections of the fence. Wires must be kept tight.

D. Line Post Spacing, Length, and Depth

Standard fences shall have a maximum post spacing of 14 feet unless stays are used between posts, and then posts shall not exceed 18 feet.

Wood posts must have a minimum length of 6 feet and set or driven to a minimum depth of 24 inches. When set, earthfill placed back around post shall be thoroughly tamped. Wooden line posts shall have a 4-inch top commercial size (3 inches for Osage Orange).

Steel posts shall be driven minimum of 12" deep (or top of the flange), use standard "T" shaped steel posts minimum of 5.5 ft. long.

Post spacing in areas shallow to rock may vary based on availability of post sites. Probe with a rock probe to determine desirable post sites. Steel pipe and steel post are recommended to use in cracks between rock. Concrete in post where possible. Rock bits are available in some areas for drilling rock. Use stays to maintain post spacing. Post set in concrete 30" diameter and 8" deep, may be used as a line post, bury as deep as possible. Use live trees as post where needed, see section F.

Line Posts

Wood posts of black locust, red cedar, Osage orange, redwood, pressure treated pine, or other wood of equal life and strength. At least one-half of the diameter of the red

cedar and redwood posts shall be heartwood. Remove bark from the side wires are on. Pressure treatment shall conform to Materials Specification 585. Line posts shall be at least 4 inches in diameter.

Steel posts may be "T" posts that are a minimum of 1.25 pounds per one foot of length.

For lightning protection, steel posts should be driven every 100 feet to act as a ground, if other forms of grounding are not used. Do not use barbed wire with electric fence.

Stays

1. High density wood 1 x 1.5 inches in diameter.
2. Fiberglass or rigid plastic at least 5/8" in diameter.
3. Wood-Plastic Composite minimum 1" diameter.
4. Fiberglass T-posts and stays of at least 1" in cross-section.

For the above posts, attach wire to posts by loose clips or by running through holes in posts. Attach to stays with tight clips to hold in place.

F. Live Trees as Line, Bracing, and Corner Posts

No more than 50% of post shall be trees unless in a flood plain or area shallow to rock. Live trees used for corner, bracing, and line posts shall have a diameter breast height (DBH, 4.5 feet aboveground) equal to or greater than those prescribed for normal wooden posts.

Some alignment variation shall be allowed, but caution should be taken to minimize offsets.

Wire will not be fastened directly to trees. When using live trees, protection will be provided between the tree and wire (CCA treated 2 x 4's, fiberglass, or rigid plastic strip). Do not attach wire to

high value timber species or short lived species such as elm and muscledwood. Do not use fast growing trees as end post.

When using live trees as end post, attach wire to a 3/8" lag eye bolt in the tree.

G. Corner, Gate, End or Pull Assembly, and Brace Posts

(See Standard Drawing Number FEN-382-BR1 and BR2.)

Braces and end assemblies are required at all corners, gates, and angles up to 150 degrees in the fence line. Tying off wires before and after the angle will lessen stress on the post in the angle. No brace assembly is required for angles between 150 and 180 degrees however, do use a 6" diameter post in the angle. Lean the corner post 2" or more away from the direction of pull. Five driven 6" post in the angle can be substituted for one brace assembly in the 150 degree angle.

Corner, gate, and end or pull assemblies will be an H-brace, N-brace assembly, or a floating angle brace. Posts will be 6" nominal wood or 2.5" nominal steel pipe (capped). Steel posts shall be set in 30" of concrete. Wood posts will be sufficient length for the construction of at least a 42" high fence and permit driving or setting the posts at least 36" deep. Earth backfill shall be thoroughly tamped. If concrete is used, set the posts a minimum of 30" deep.

Posts of equivalent strength may be substituted if they have suitable means of attaching wires and braces. Wood posts will be at least 2 inches higher than the top wire of the fence to prevent splitting.

Posts of other materials shall be at least 1" higher than the top wire of the fence.

H. Bracing

(See Standard Drawing Number FEN-382-BR1 and BR2.)

The brace member shall be the equivalent of a 4" diameter post or standard weight galvanized steel pipe of 2" diameter installed at least 3 feet above ground or between the top two wires, whichever is higher. An 8' – 10' brace member is ideal but the brace member shall be at least 6' long.

Floating brace member will ideally be 10' long but must be a minimum of 8' long when fence is flat or sloping downhill, for uphill slopes it must be 10' long. Do not use floating brace in high animal pressure area (e.g. adjacent to feed pad or water trough).

Brace wire composed of number 9-gauge smooth wire or 12½-gauge high tensile strength smooth wire may be used. Twist sticks or inline strainers will be used to tighten brace wire. Twist sticks must be a minimum of 2" x 2" and remain in place.

I. Staples and Wire Fasteners

Staples shall be of 9-gauge steel or heavier with a minimum length of 1½" for softwoods and a minimum length of 1" for close-grained hardwoods. Double barbed staples shall be used for pine pressure-treated posts. Drive staple diagonally to the wood's grain and at a slight downward angle (upward if pull is up) to avoid splitting posts and loosening of staples. Space should be left between staple and post to permit free movement of wire.

Wires may be attached to steel posts by use of manufacturer's clips or by two turns of 14-gauge galvanized wire.