

**NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATION**

**FENCE
(Feet)**

CODE 382

STANDARD BARB WIRE FENCE (SBWF)

Standard barb wire fence (SBWF) shall consist of 5 strands of barb wire with the top wire 48 inches above the ground line. 3 and 4 strands of barb wire may be used for interior and exclusion fences.

Do not use this type of fence for:

- Horses, sheep, swine, or goats.

1. Materials.

a. Wire.

Wire will consist of 2 twisted strands of 12.5 gauge steel wire with class 1 galvanizing or 2 twisted strands of 15.5 gauge high tensile wire with class 3 galvanizing. The barbs shall be 4 point on 5-inch centers.

b. Fasteners.

- (1) Staples shall be of 9 gauge class 3 galvanized steel or heavier with a minimum length of 1¾ inches for softwoods and a minimum length of 1 inch for close-grained hardwoods.
- (2) Manufacturer's clips or 14 gauge class 3 galvanized wire may be used to fasten wires to steel posts.

2. Posts.

a. Wood.

All wooden posts and brace members (except red cedar, osage orange, or black locust) shall be treated with a minimum of 0.40 lbs/cubic foot of chromated copper arsenate (CCA) type A, B, or C or ammoniated copper quat (ACQ) preservative by a method to ensure that complete penetration of the sapwood is obtained or have a 20 year warranty. All bark shall be removed from the red cedar, osage orange and black locust. At least half the diameter of red cedar shall be heartwood. Quality of treated wood shall provide sufficient strength and last for the expected life of the fence. **(NOTE: Do Not Cut or Notch Treated Post)**

All corner, end, pull, and gate brace assembly posts shall be wooden with a 6-7 inches diameter. Assembly posts shall be a minimum of 8 feet long for 5-6 inch diameter single H-brace assemblies. Bend assembly post shall have a 5-6 inch diameter and will be a minimum of 8 feet long.

Wooden line posts shall have a 4-5 inch diameter (4 inch for osage orange). Wood line posts shall be a minimum length of 8 feet.

b. Plastic.

Plastic line posts shall be at least 4-5 inches in diameter, able to accept and hold staples, or insulated for electric fencing and be durable for the life of the fence. Plastic line posts shall be a minimum length of 7 feet.

c. Steel.

Steel line posts shall have the standard "T" section, nominal dimensions of 1 3/8" x 1 3/8" x 1/8" with anchor plate. The post shall weigh at least 1.25 pounds per foot of length and be painted with a weather resistant paint. The posts shall be studded to aid in wire attachment. Steel line posts shall be a minimum length of 7 feet.

d. Other.

Other materials may be used for line and assembly posts if they are of equal or greater strength and quality of above. They must be approved by the fence designer.

3. Construction.

a. Post Installation and Spacing.

Live trees used for corner, bracing, and line posts shall have a diameter breast height (DBH) 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 and prevent excess fencing needs. Wire or insulators will not be fastened directly to trees. A board or boards will be placed on the tree to keep the wire from contacting the bark. Wire shall not be wrapped around the tree. A CCA treated 2" x 6", fiberglass strip, plastic strip, or an untreated red or white oak board with a minimum size of 1" x 4" must be securely fastened to the tree with at least three 40 d. pole barn nails. The board must be long enough to accommodate the wire. The fence will be fastened to the board with staples.

b. Corner, End, Pull, and Gate Brace Assemblies.

One of the following brace assemblies for all corners, ends, pulls, and gates shall be used:

(1) The posts are to be set or driven to 3 feet below the ground line using an 8 foot post.

(2) Deep soils and sandy soils shall have post driven 4 feet or deeper below the ground line, to secured the H-Brace with a minimum 9 foot post.

(Post should be 5 feet above ground. NOTE: Do Not Cut or Notch Treated Post.)

Brace assemblies are required at all corners, gates, pull, and ends.

The horizontal cross member shall be a 4-5 inch in diameter and a minimum of 8 feet in length installed with 10" and 4" galvanized pins (H-Brace Standard) placed 2 feet from top of post or 3 feet from top of the ground to the galvanized pins. The horizontal cross member shall be a 4-5 inch in diameter and a minimum of 8 feet in length. A tension wire composed of 2 complete loops of number 9 gauge smooth wire using a twist stick, or a inline stainer, or a double loop of 12 1/2 gauge high tensile smooth wire with a inline striner shall be used. One end of the tension wire shall be at the height of the horizontal cross brace member galvanized pin and the other end of the tension wire shall be 1-2 inches above the ground line on the other post. Do not staple the tension wire. Used a staple assembly.

A corner assembly or a bend assembly shall be used when the horizontal alignment changes more than 15 degrees and a pull assembly when vertical alignment changes more than 15 degrees. A bend assembly will be used only when it will not affect the integrity of the fence.

Post spacing for a bend assembly can be determined by placing 3 stakes, each spaced 14 feet apart along the fence line. A string is then stretched between the first and third stake. A measurement is then taken from the second stake and the string. The spacing of the posts is determined as follows:

0 to 4 inches	14 feet
5 to 7 inches	12 feet
8 to 10 inches	10 feet
11 to 15 inches	8 feet
16 or more inches	6 feet

These bend assembly posts will be wood and set with a 6-inch lean from vertical to the outside of the curve and set or driven 36 inches deep.

Pull assemblies shall be used with the non-high tensile barb wire installed at intervals not to exceed 660 feet. Pull assemblies not needed for high tensile barb wire.

4. Line Post.

Wooden (Preferred) line posts shall be set or driven 34 inches below ground line at an 90 degree of the ground. If soil depth is less than 28 inches, use standard "T" steel posts. Post should be above the ground 5 feet for an 8 foot wooden post.

Steel line posts shall be set or driven 21 inches below ground line. Post should be 5 feet above the ground for an 7 foot steel post.

Post spacing for line posts shall be a maximum of 16 feet.

If posts are not driven, the backfill around the post shall be thoroughly compacted with a hand tamping tool.

In areas where soil depth restricts the embedment depth, additional anchors or deadman applied against the direction of pull shall be used.

5. Wire Spacings and Fastenings.

The spacing of the barb wire for 5 strand fences shall be 12, 9, 9, 9, and 9 inches, starting at the ground line. The spacing of the 4 strand fence will be 12, 12, 12, and 12 inches, starting at the ground. The three wire spacing will be 15, 15, and 18 inches, starting at the ground.

The top wire shall be at least 2 inches below top of wooden post and 1 inch below the top of steel post.

The tension on the high tensile barb wire should be 200-250 lbs. on each wire. Tension will be applied with an in-line stretcher on each strand.

Staples shall be driven diagonally to the wood's grain and at a slight downward angle, (upward if pull is up) to avoid splitting the post and loosening of the staples. Space should be left between the inside crown of the staple and post to permit free movement of high tensile wire. Barbed staples shall be used for pressure treated posts.

Wires may be attached to steel posts by use of manufacturer's clips or by two turns of 14-gauge, class 3 galvanized wire. The staples, wires, and clips should allow free movement of the high tensile fence wire.

Wire shall be spliced by means of a Western Union splice or by suitable splice sleeves applied with a tool designed for the purpose. The Western Union splice shall have not less than 8 wraps at each end about the other. All wraps shall be tightly wound and closely spaced.

6. Grounding.

Non-electrical wire fences using wood posts shall be grounded at least every 1,000 feet. Ground rods should be driven not less than 4 feet into the ground. The rods shall be galvanized steel and a minimum of .0.50 inch in diameter. All line wires of the fence must be grounded. An alternate grounding material is the use of a steel line fence post every 100 feet.