NATURAL RESOURCES CONSERVATION SERVICE
CONSTRUCTION SPECIFICATION

HIGH-TENSILE SMOOTH WIRE FENCE (HTSWF)
(Feet)

CODE 382

I. MATERIALS

A. Wire

Use only new wire that meets the following minimum specifications:

- Class 3 galvanized
- 12.5 gauge
- 170,000 psi tensile strength

B. Line Posts

1. Wood

- Wood posts must be treated with a minimum of 0.4 lbs/ft^3 of chromate copper arsenate (CCA-Type A, B or C), or equivalent.
- Minimum 6-feet long and 3-inch diameter.

2. Steel

- Only new "T" or "U" posts, constructed of high carbon steel, and weighing a minimum of 1.25 lbs/foot exclusive of anchor plate.
- Minimum 6-feet long, studded, notched, or punched for wire attachment.

C. Corner, Brace, and Gate Posts

1. Wood

- Acceptable species include black locust, red cedar, and Osage orange. All bark must be removed. At least one-half the diameter of red cedar posts must be heartwood.
- All other wood posts must be treated with a minimum of 0.4 lbs/ft^3 of chromate copper arsenate (CCA-Type A, B or C), or equivalent.
- Corner, brace, and gate posts must be at least 8′ X 5$^{1/2}$″.
- Horizontal brace members must be at least 6-½′ X 3″.
- Landscape timbers cannot be used for posts or brace members.

2. Steel

- Minimum 3-inch diameter high-carbon steel pipe weighing at least 7 lbs/foot, is galvanized or coated with a rust-resistant metal paint. Pipe ends must have a water-tight cap.
- Horizontal brace pipe can be 2-inch diameter high carbon steel that weighs at least 3.6 lbs/foot and is galvanized or coated with a rust-resistant metal paint.

D. Fasteners

1. For wood posts, use staples that are at least 9 gauge, class 3 galvanized. Minimum length for softwoods is 1½ inch and for hardwoods is 1inch.

2. Use manufactured clips or minimum 14-gauge wire for steel line posts.

II. CONSTRUCTION

(See Florida Fence Drawings)

A. Corners, Braces, Ends, and Gates

1. Posts

- Set posts for all fence assemblies at least 42-inches deep, in holes with a diameter at least 2.5X the post diameter. The top of posts should be at least 2-inches above the top wire.
- Backfill wooden posts by thoroughly tamping soil around the post after every 4-inches of depth.
- Set steel pipe in concrete that extends 1-inch below the bottom of the pipe, and slightly above the soil surface.

2. Braces (See Specification Table 6 and FL Fence Drawing or Photos)

- H-braces are required for all corner, pull, end, and gate assemblies.

- Set the center line of all horizontal brace members 6 – 9-inches below the top of the post.
- Anchor horizontal brace members to brace posts with a minimum 3/8″ galvanized pin or spike driven through the post that penetrates the horizontal member at least 4-inches.
- H-braces must have a tension member consisting of 2 complete loops of 9 gauge smooth single strand, 12 gauge double strand, or 12.5 gauge high-tensile wire. One end of the loop is attached to the anchor (corner, end, or gate) post 4-inches above the soil surface, and the other end is attached to the brace post at the same height as the top of the horizontal brace member. Twist the loops to provide rigidity to the brace assembly, or use in-line strainers on high-tensile wire.

- Tighten tension member with a tensioner made of permanent material such as rebar, pipe or pressure treated wood.

3. Corner and in-line pull assemblies (See Specification Table 6)

- Use a corner post assembly for any angle in an otherwise straight fence line.
- Use an H-brace assembly with two crossed tension members at intervals not to exceed 660-feet and double H-brace >660-feet in straight line fence sections. Use braces at shorter distances in uneven terrain.

B. Line Posts

1. Steel

- The maximum distance between steel line posts is 16-feet without the use of stays, or 30-feet with stays between the posts.
- Drive posts at least 20-inches into the ground. The top of the post must be at least 1-inch above the top wire.

2. Wood

- The maximum distance between wood line posts is 16-feet without the use of stays, 22-feet with one stay or 30-feet with two stays between the posts.
- Drive or bury wood posts at least 24-inches into the ground. The top of the post must be at least 2-inches above the top wire. If post holes are dug, backfill by tamping the soil around the post at every 4-inch depth.

C. Wire for Cattle (see Specification Tables for more information for cattle and for other classes of livestock)

1. Spacing

- For cattle, use a minimum of four strands with the top wire 46-inches above the soil surface.
- Equally space the wires with the bottom 16-inches above the soil surface, and the top wire at least 2-inches below the top of wooden posts and at least 1-inch below the top of steel posts. When more than four wires are used, it is not necessary to maintain equal spacing as long as top and bottom wire positions are as above and no spacing is > 12-inches.

2. Fastening and Tension

- On boundary fence, attach wires to the side of the post closest to the livestock, except on corners.
- Avoid driving staples in-line with the wood grain. When using slash cut staples, place the staple parallel to the grain then rotate in the direction away from the cut face.
- Use in-line strainers on each wire to maintain 200 lbs. tension.
- To monitor tension, install a tension spring in the second wire from the top before applying tension to all the wires.
- Wires may be attached to steel posts by use of manufacturer's clips or by two turns of 14 gauge galvanized smooth wire.
- Wire should be able to move freely between the fastener and the line posts.