CONSTRUCTION SPECIFICATION

NATURAL RESOURCES CONSERVATION SERVICE

FENCE - WOVEN WIRE

(Ft.)

CODE 382

1. Scope

The work shall consist of furnishing and installing woven wire fences, including gates, posts, braces and fittings in accordance with the Conservation Practice Standard, Fence, 382, this construction specification and as shown on related drawings.

2. Wire Spacing

The base of the woven wire shall be placed near the ground surface.

- **Woven Wire less than 39 inches:** Fences constructed with woven wire less than 39 in. in height shall have as least two wire strands above and in addition to the woven wire. The wire strands shall be installed with a spacing of approximately 4 to 6 inches. Do not use barbed wire as an electric wire. The top wire shall be about 42 in. or higher above ground level. If the woven wire is 32 in. and the wire strands are installed 5 inches apart then the total height is 42 inches.

- **Woven Wire at least 39 inches:** Fences constructed with woven wire 39 inches or higher shall have at least one strand of wire above the woven wire. The spacing between the woven wire and the wire strand shall be about 4 to 6 inches.

- **Woven wire for sheep or goats:** For sheep or goats the woven wire shall be at least 32 in. in height.

3. Type Wire

Top and bottom strands of woven wire shall be 12½-gauge or heavier and 14½-gauge or heavier wire for intermediate strands. The wire specifications for the barbed wire shall be the same as for a barbed wire fence. High Tensile woven wire may also be used.

4. Pull Assemblies

Use H, H+H, H+N (Refer to Fence Drawing AL-ECS-382-20) braces, or corner post assemblies and space at intervals not to exceed 660 feet woven wire in straight sections of the fence. Shorter intervals should be used when terrain is irregular or fence directions change. Wire must be kept tight.

Use wooden corner/pull posts that are at least 5 inches in diameter or steel posts that are at least 2 7/8 in. diameter.

Post Spacing, Length, and Depth

First, install posts in dips and rises. Secure posts in dips to keep them from pulling up. Standard woven wire fences shall have a maximum post spacing of 16 feet. High tensile woven wire maximum post spacing is 25 feet.

Wood posts must have a minimum length of 6 feet and set or driven to a minimum depth of 24 inches. When posts are set, thoroughly pack earthfill around posts. Wooden line posts shall have a minimum 3-inch top diameter.

Steel posts shall be driven minimum of 18" deep. Use standard "T" or "U" shaped steel posts that are a minimum of 5.5 ft. long.

Post spacing in areas shallow to rock may vary based on availability of post sites. Probe area with a rock probe to determine desirable post sites. Steel pipe and steel post are recommended to use in cracks between rocks. Use concrete around posts where possible. Rock bits are available in some areas for drilling rock. Use stays to maintain wire spacing. Post set in a 5-gallon bucket of concrete may be used as a line post when proper setting of post in soil is not possible. Bury the bucket as deep as possible. Use live trees as post where needed, see section F.

5. Line Posts

All wooden posts (except Red Cedar, Osage Orange, or Black or Honey Locust or Catalpa or mulberry) shall be treated to meet the American Wood Preservers' Association (AWPA) U1-06, UC4A standard.

Treatment	Retention lb/ft^3
Creosote coal tar	10
Pentachlorphenol	.5
Amoniacal copper arsenate	.4
Chromated copper sulfate	.4
Alkaline copper quat (ACQ)*	.4

*Do not use aluminum fasteners or metals ACQ treated wood due to corrosion. Use hot-dipped, galvanized staples or wires.

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.

Steel posts shall be rolled from high carbon steel and have a protective coating either galvanized by the hot dip process, painted with one or more coats of high-grade weather resistant steel paint, or enameled and baked. Steel posts shall be studded, embossed, or punched to aid in the attachment of the wire. Steel posts shall weigh at least 1.25 lbs. per linear foot. For lightning protection, steel posts should be driven every 100 ft. to act as a ground, if other forms of grounding are not used.

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

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.

Wire or insulators will not be fastened directly to trees. When using live trees, protection will be provided between the tree and wire or insulators (UC3 treated 2 x 4's, fiberglass, or rigid plastic strip).

7. Corner, Gate, or End Assembly

Braces and end assemblies are required at all corners, gates, and angles up to 150° in the fence line alignment. No brace assembly is required for angles between 150 and 180°; however, do use a 5-in. diameter post as a corner post. On all corner posts, lean the corner posts 2 inches or more away from the direction of pull. Refer to Fence Drawing AL-ECS-382-7.

Brace assemblies will be an H-brace, N-brace, or a floating angle brace. Posts will be 5-inch nominal wood or 2 7/8 in. nominal steel pipe (capped). Steel pipe shall be set in 30 in. of concrete. Wood posts will be sufficient length for the construction of at least a 45-in. high fence and permit driving or setting the post at least 36 in. deep. Earth backfill shall be thoroughly tamped. If concrete is used, set the posts a minimum of 30 in. deep in a hole at least 12 in. in diameter.

8. Bracing

The brace member shall be the equivalent of a 4-in. top diameter wood post or standard weight galvanized steel pipe of 2 in. diameter installed at least 3 ft. above ground, or between the top two wires, whichever is higher. Place brace at least 8 inches below the top of post. The brace member shall be at least 6 ft. long or 2.5 times the height of the top wire (i.e., 42 in. x 2.5 = 105 in. or 8.75 ft).

Wooden brace members shall be attached to wooden posts with either 3/8 in. metal pins or nails that penetrate to the middle of the post. Nail holes will be pre-drilled if the nail size is such that splitting of the brace member will occur.

The brace wire shall be number 9 gauge smooth wire or 12½-gauge high tensile strength smooth wire. Twist sticks or inline strainers will be used to tighten brace wire.

9. Staples and Wire Fasteners

Staples shall be of 9-gauge or heavier, hot-dipped, galvanized or stainless steel with a minimum length of 1½ in. for softwoods and a minimum length of 1 in. for close-grained hardwoods. Barbed staples shall be used for softwood posts. Drive staples 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. 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 galvanized wire.

Do not use aluminum fasteners or metals with ACQ treated wood due to corrosion. Use hot-dipped, galvanized or stainless steel staples or wires.