

# NATURAL RESOURCES CONSERVATION SERVICE CONSTRUCTION SPECIFICATION

## FENCES

### 1. SCOPE

The work shall consist of furnishing and installing fences, including gates and fittings, as shown on the drawings.

The completed job shall present a workmanlike appearance and shall conform to the requirements indicated and shown on the drawings.

All operations shall be carried out in a safe and skillful manner. Safety and health regulations shall be observed and appropriate safety measures used. Contractor shall not begin construction prior to confirming buried utilities have been located.

### 2. MATERIALS

Materials for fences shall conform to the requirements shown on the drawings except the tolerance for minimum diameter of wooden line posts shall be within 1/2 inch of the standard as measured on the small end. All other posts shall conform as indicated on the drawings.

Wooden posts shall consist of high quality species with high resistance to decay (which include black locust, red cedar (diameter shall be at least 50% heartwood), catalpa, osage orange, iron bark eucalyptus or other wood of equal life and strength and approved by NRCS). Pressure treated wood shall be treated with pentachlorophenol (0.4 lbs/ft<sup>3</sup>), creosote solution (6.0-8.0 lbs/ft<sup>3</sup>), or chromated copper arsenate (0.4 lbs/ft<sup>3</sup>). Landscape timbers shall not be used.

Brace pins shall be class III galvanized steel with a minimum diameter of 3/8 inches. Brace pins shall be a minimum length of 5 inches on the end post and 10 inches on the pull post. The horizontal brace piece for "H" braces shall be placed between 6 and 12 inches of the top of the post and be a minimum 84 inches long. No used material shall be utilized.

### 3. POST INSTALLATION

Wood posts may be set in holes and backfilled with concrete or tamped earth except where otherwise specified. Steel and fiberglass posts shall be and wood posts may be driven unless otherwise specified. Wood posts may be set in holes with tamped ground limestone except where otherwise specified.

Post holes shall be at least 6 inches larger than the maximum diameter or side dimension of the posts when set in concrete or tamped ground limestone. Posts holes shall be at least 4 inches larger than the maximum diameter or side dimension of the posts when tamped with earth except where otherwise specified.

Earth and limestone backfill around posts shall be thoroughly tamped in layers not thicker than 4 inches and shall completely fill the post hole up to the ground surface. Concrete backfill around posts shall be rodded into place in layers not thicker than 12 inches and shall completely fill the post hole up to the ground surface except where otherwise specified. All backfill types shall be crowned up around posts at the ground surface. No stress shall be applied to posts set in concrete until at least 24 hours after the concrete has set.

### 4. PULL ASSEMBLIES

Unless otherwise specified, corner assemblies shall be installed at all points where the fence alignment changes 15 degrees or more, at any section end including at gates, at midline for stretches over 1320 feet, and where the vertical angle change exceeds 15 percent or as otherwise specified. Double assemblies shall be used in corner and end assemblies in high tensile fence stretches over 1320 feet with more than 3 wires including high tensile woven and

barb wire. The horizontal bracing in an H brace, if wood, must have a minimum diameter of 4 inches or be 4 inches square on the small end. The horizontal bracing materials may also be steel with a minimum 2.5 inch diameter or 2 inches by 3/16 inch or heavier angular. The minimum horizontal brace length shall be 84 inches.

## 5. WIRE AND ATTACHEMENT TO POSTS

Wire shall conform to the requirements shown on the drawings. Staples shall conform to the requirements shown on the drawings. Staples shall allow for wire movement. Wire attachment to steel and fiberglass posts shall be according to post manufacturer's recommendations or two turns of 14 gauge galvanized wire.

Fencing wire shall be placed on the livestock side of the post for permanent fence. On curves and corners, fencing may be placed on the outside.

The fencing wire (woven and barbed) shall be fastened to each end post, corner post, and pull post by wrapping each horizontal strand around the post and tying it back on itself with not less than three tightly wound wraps. High Tensile wire shall be fastened likewise except it shall be wound no less than five tight wraps or attached with a crimping sleeve.

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 of each end about the other. All wraps shall be tightly wound and closely spaced. Splices made with splice sleeves shall have a tensile strength not less than 80 percent of the strength of the wire. Spliced high tensile wire shall have a minimum of two single crimping sleeves or one double crimping sleeve.

## 6. ENERGIZERS

Barbed wire shall not be energized.

Energizers will be installed and grounded according to manufacturer's recommendations. All energizers will be protected by a lightning arrester and a surge protector. Energizers will be high power, low impedance with a minimum 5,000 volt peak output with a short pulse that is less than 300 mAmps in intensity, finished within 300-millionths of a second (0.0003 seconds) at a rate of 35-65 pulses per minute and a high impact weather resistant case. Ground rods shall not be placed inside buildings. The grounding system when applicable shall be heading towards the center of the energized acreage. Do not put ground rods near milking barns, water pipes or any other metal leading into barns or working areas.

## 7. ADDITIONAL ITEMS WHICH APPLY TO THIS JOB