

NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE SPECIFICATION

POST AND TIMBER FENCE

(FEET)

CODE 382(g)

I. SCOPE

The work shall consist of furnishing materials and constructing fence at the location(s) shown on the plan map and, if needed, on the drawings or as staked in the field.

Fencing includes brace assemblies, gates, cattle guards, and other components required to meet site conditions and achieve objectives for practice application.

II. CONSIDERATIONS

Fence type and the fence design selected will be adequate to control the animal(s) of concern, and must be suited to the landscapes over which it will be installed and shall be adapted to the physical environment of the site.

In areas where big game passage is a concern, top of fence should be no more than 42-inches (40-inches is preferable). To accommodate passage of antelope, young deer or elk calves under the fence, set bottom rail 16-inches (18-inches is preferable) above the ground line.

There are several types of post and timber fence designs that are rustic in appearance and require relative low maintenance, including:

BUCK-AND-POLE FENCES

Buck-and-pole fences are suitable for camp grounds and recreation areas with high scenic values. This fence design is adapted to sites with high snow accumulation.

LOG-WORM FENCES

Log-worm fences have a zigzag appearance because each section is constructed at an angle to the previous section. This fence design is well suited to areas of high snow accumulation.

BLOCK-AND-POLE FENCES

Block-and-pole fences are similar to the log-worm fence, but the spans are shorter and the material is usually sized larger. This fence design is appropriate for areas of deep, drifting, snow, and where appearance and durability are important concerns.

III. SPECIFICATIONS

MATERIALS

Where appropriate, materials other than the timber poles and posts (primary fence supports) will be in accordance with the requirements set forth for standard post-and-wire fencing.

All commercially produced fencing materials will be new, unless an exception is noted, with a minimum life expectancy of at least 10-years.

All poles shall be of sound wood that is free of knots and shall have the bark stripped from two sides to hasten seasoning.

BUCK-AND-POLE FENCES See Exhibits 1 and 2.

Timber for bucks shall be at least 6-inches in diameter. Length of logs used for bucks is determined by the fence height planned but is commonly cut 6-feet long.

Buck legs have a mortise joint and each leg is notched at an angle where they cross.

Poles shall be at least 3-inches in diameter at the small end and are 12-feet long.

Brace poles shall have a minimum diameter of 4-inches.

LOG-WORM FENCES See Exhibit 3.

Logs used in fence construction should have minimum taper and be at least 6-inches in diameter.

Logs can be to 18-feet long, depending on diameter size.

Treated wooden stays at least 4-inches in diameter or treated 4-inch x 4-inch dimension lumber are used to support the logs.

BLOCK-AND-POLE FENCES See Exhibit 4.

All logs used in fence construction shall have minimum taper and be at least 8-inches in diameter.

Logs used in the main fence spans are 10 to 14-feet long.

Logs used in block sections are a minimum of 4-feet long.

Treated wooden stays at least 4-inches in diameter or treated 4-inch x 4-inch dimension lumber are used to support logs.

Large rocks used to keep bottom logs above the ground.

CONSTRUCTION SPECIFICATIONS

BUCK-AND-POLE FENCES See Exhibits 1 and 2.

Bucks are spaced 10-feet apart.

Brace poles shall be placed on every fifth buck, except on steep slopes or heavy snow areas where every panel may need to be braced.

Bucks are notched for a tight fit and to provide rigidity.

Buck members are spread at a 60° to 80° angle.

The top pole shall not be less than 3-feet nor more than 4-feet high for livestock control or 6-feet high for deer control.

A top wire on the buck-and pole-fence may be used for deer exclusion.

For livestock control, the bottom pole should be set 16-inches above the ground line with the remaining poles spaced 12-inches apart.

Pole spacing and number approximates the line wire spacing and number recommended for standard post-and-wire fence designs.

LOG-WORM FENCES

Each section of a log-worm fence is constructed at an angle to the previous section - the sharper the angle, the greater the fence strength and stability. See Exhibit 3.

Span sections are 12 to 14-feet long, with 2-feet extending beyond span crossing points.

The bottom poles of a log-worm type fence shall be raised off the ground using relatively flat rocks that are wider than the bottom pole. Rocks are placed at section ends and in the section center if the log sags excessively.

Stays are set solidly into the ground to a depth of 18-inches and tied together at the bottom and top using No. 9-gauge smooth wire, double wrapped, and stapled to each stay.

Log-worm fences shall be at least 3-feet high and not more than 4-feet high for livestock control or 6-feet high for deer control.

Sections of a let-down type, post-and-wire, fence can be installed to allow seasonal passage of big game.

BLOCK-AND-POLE FENCES

The block-and-pole fence is constructed similar to the log-worm fence, except that short fence sections are set at right angles to the main sections for added fence stability. See Exhibit 4.

Span lengths of the main fence sections should not be more than 12-feet.

Block sections have a minimum span of 2-feet.

All log ends have a 1-foot overlap.

Block sections must be level.

The largest diameter logs are used for the bottom fence members and the smallest logs for the top tiers. Logs must fit snugly.

Stays are set solidly into the ground to a depth of 18-inches.

The end of each top log in a main fence span is tied to the top log of the associated block and stays using No. 9-gauge smooth wire, double wrapped, and stapled to logs and stays.

The bottoms of stays are tied together using No. 9-gauge smooth wire, double wrapped, that is stapled to each stay.

The bottom logs of a block-and-pole type fence shall be raised off the ground by means of large rocks at section ends and at the center of each main span. The bottom log should be raised above the ground line no more than 14-inches.

IV. INSTALLATION

Installation of the fence shall conform to the specifications and Exhibits or other drawings, as provided. The completed job shall be workmanlike and present a good appearance. The installer and other persons will conduct all work in accordance with proper safety procedures.

V. BASIS OF ACCEPTANCE

After the fence has been installed, a site inspection will be made to determine if fence construction, and the materials used, meet practice specification requirements.

VI. MAINTENANCE

This practice will require the performance of periodic maintenance.

REFERENCES

The following references provide excellent guidance for fence construction, selection of fencing materials, and the installation of fence components such as brace assemblies, cattle guards, gates, rock jacks and wire cribs.

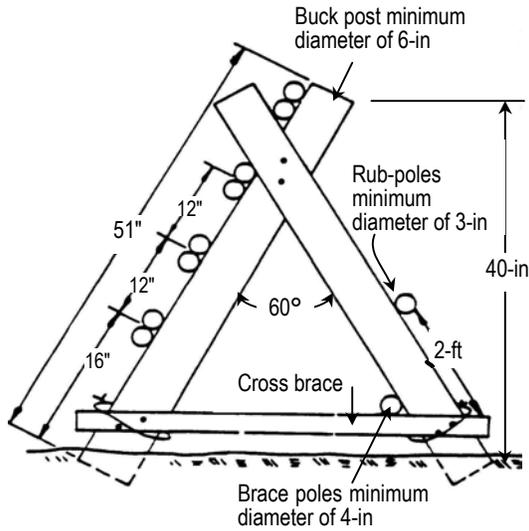
Henderson, G.E. Planning Farm Fences. American Association for Agricultural Engineering and Vocational Agriculture. June 1966.

Sanderson, R. et al. Specifications for Structural Range Improvements. General Technical Report PNW-GTR-250. USDA Forest Service-Pacific Northwest Research Station. September 1990.

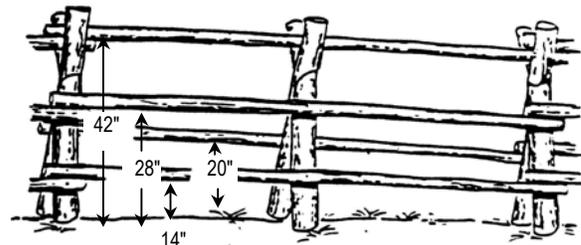
Valentine, J.F. Range Developments and Improvements. Brigham Young Univ. Press. 1971.

USDI Bureau of Land Management and USDA Forest Service. Fencing. 2400-Range 8824 2803. July 1988.

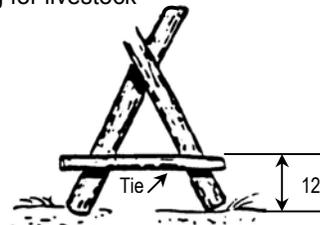
EXHIBIT 1



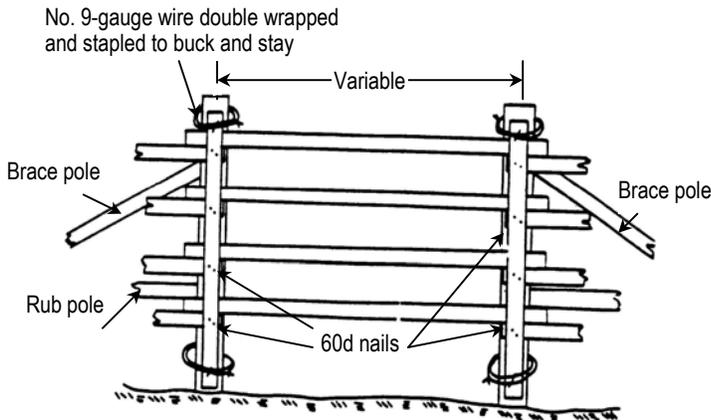
Sanderson et al (1990)



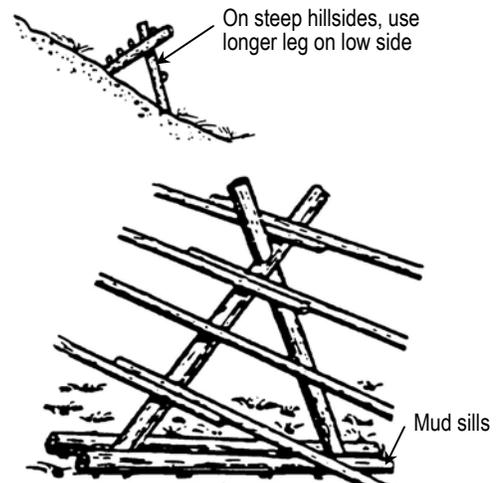
Rider-pole spacing for livestock



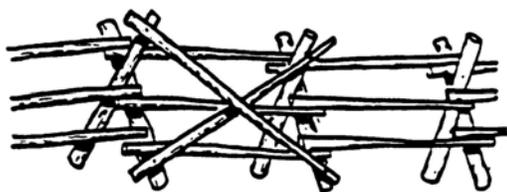
Use reinforcing tie to keep legs from spreading



Gate poles are slightly smaller in diameter than fence poles to allow gate pole to slide freely



USDI/USFS 2300-Range 8824 2803 (1988)

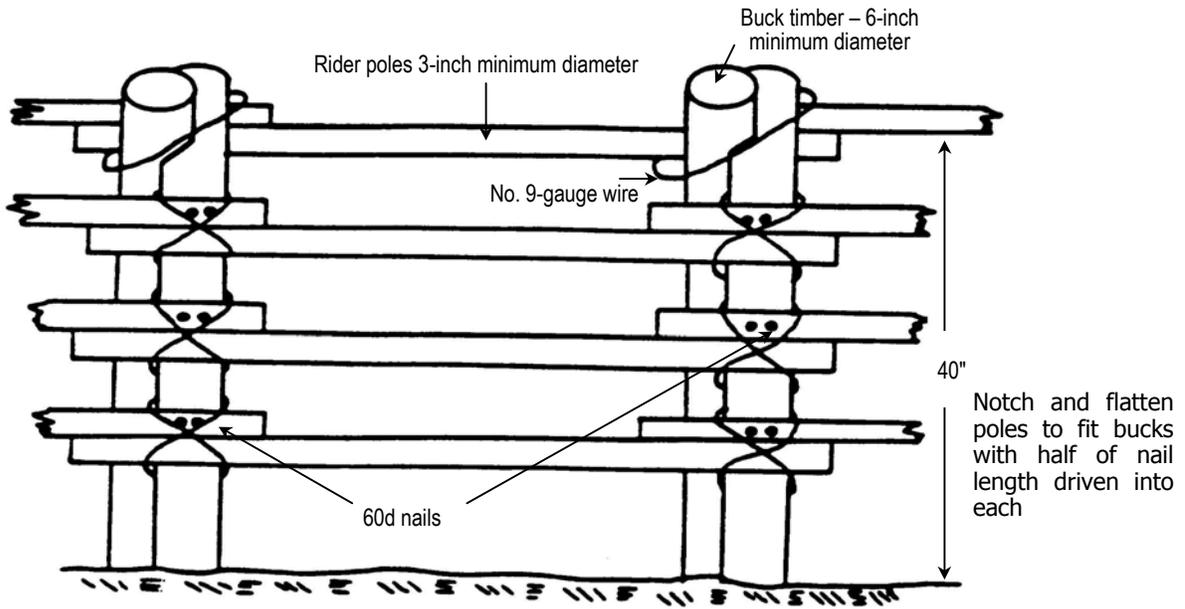


A double pole "X" brace can be added to completed fence for reinforcement



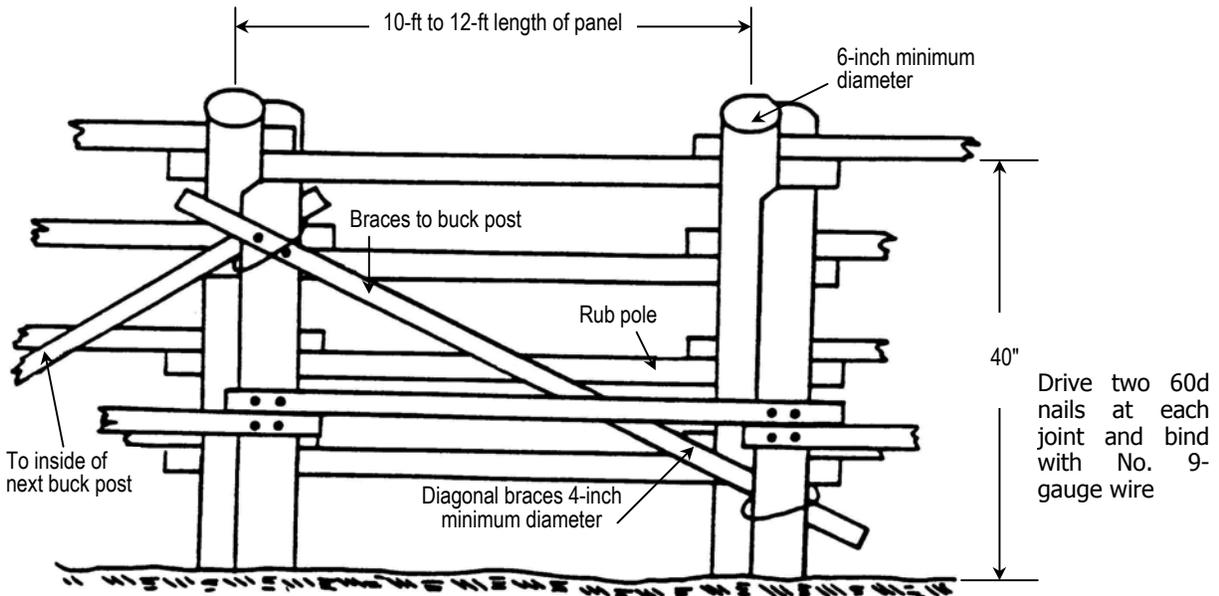
BUCK-AND-POLE FENCE

EXHIBIT 2



RIDER POLE DETAIL

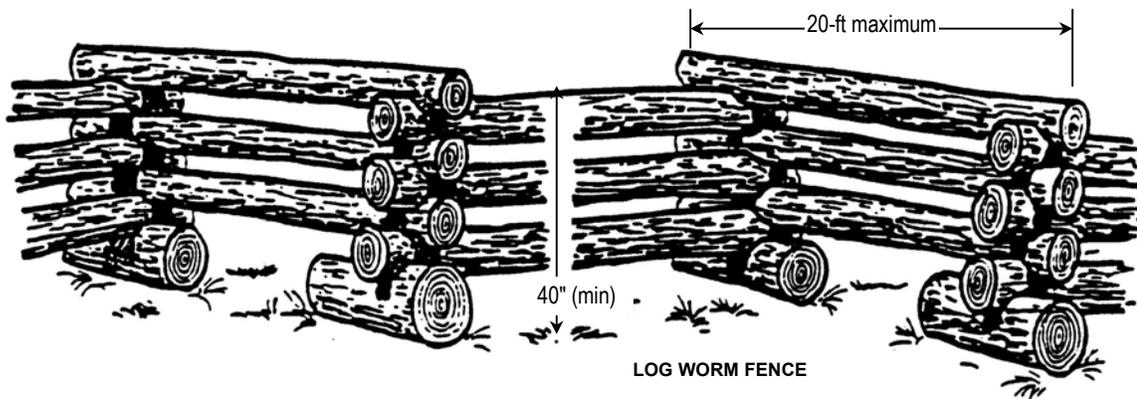
Sanderson et al (1990)



BRACE AND RUB POLE DETAIL

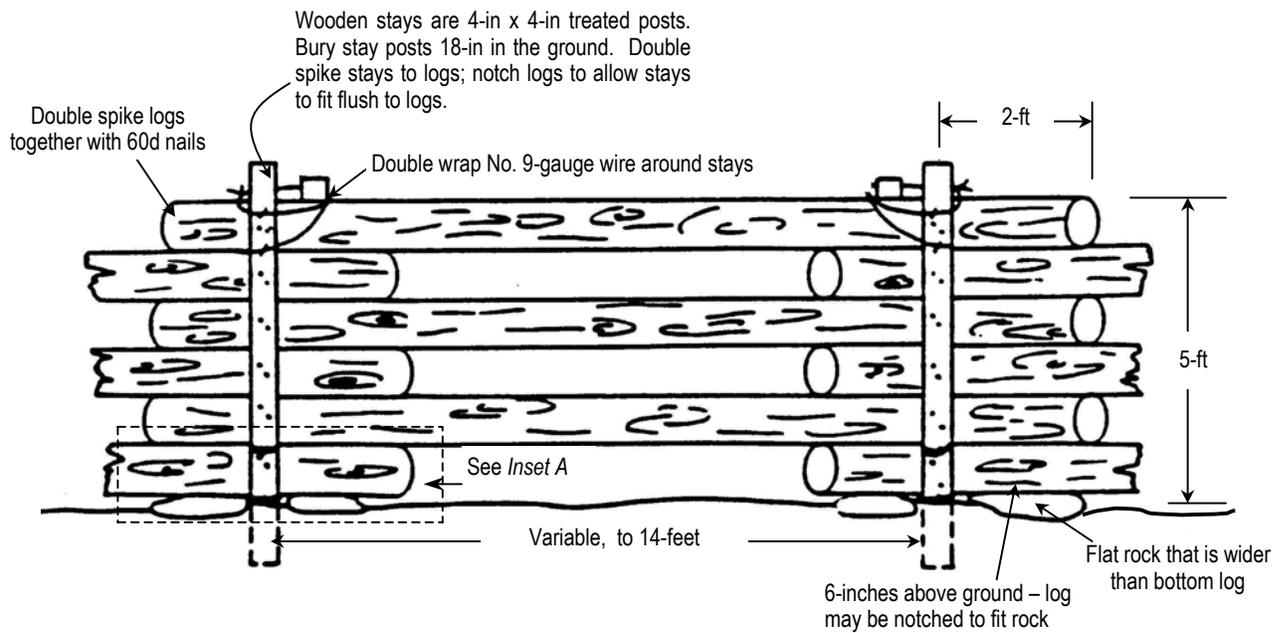
BUCK-AND-POLE FENCE

EXHIBIT 3

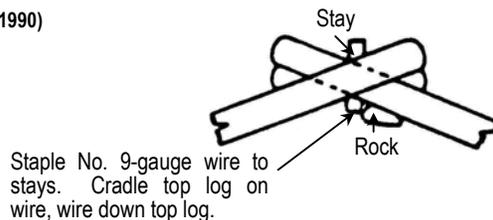


LOG WORM FENCE

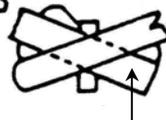
USDI/USFS 2400 Range 8824 2803 (1988)



Sanderson et al (1990)



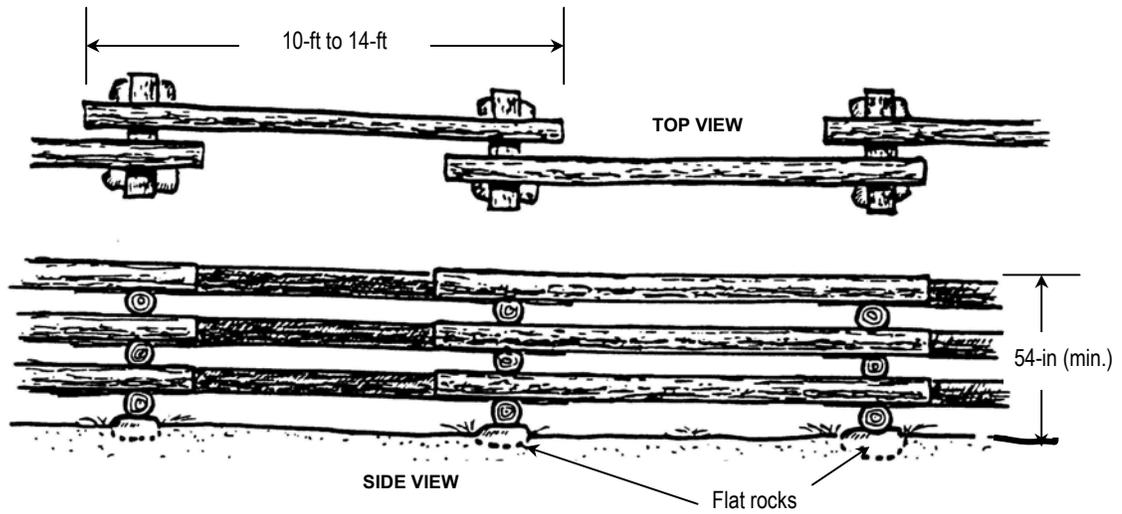
Inset A



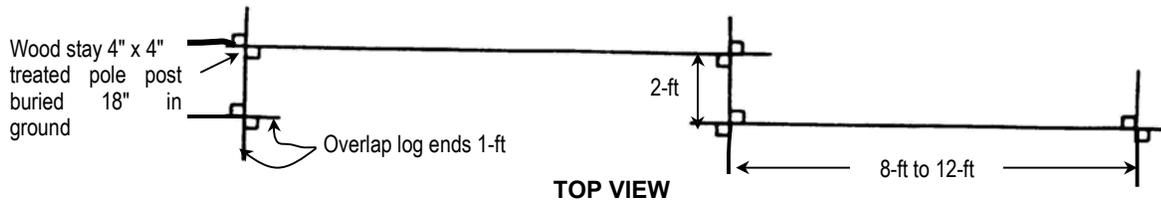
Use poles with 6-inch minimum diameter. Place largest poles on bottom, with large end leading downhill.

LOG-WORM FENCE

EXHIBIT 4



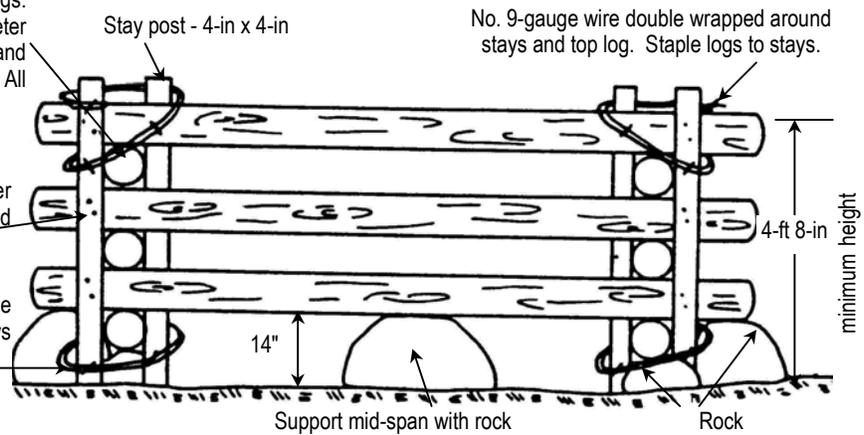
USDI/USFS 2400 Range 8824 2803 (1988)



Strip bark on one side of all logs. Logs to be 8" minimum diameter with largest logs on bottom and large end leading downhill. All logs notched to fit together

Double spike logs to each other and nail stays to logs using 60d nails

No. 9-gauge wire double wrapped around stays and stapled



BLOCK-AND-POLE FENCE