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Constructing Wire Fences

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This guide will provide some basic construction information to help you build a good fence. Good fences start with good materials. Information on selecting fencing materials is in MU publication *Selecting Wire Fencing Materials*.

Corner and brace assemblies

Once the fence line has been cleared of brush and other obstructions, the first step is locating and installing corners and brace assemblies. This is the most important part of the fence construction process. A fence is no better than its corners and braces. Installation of these assemblies frequently takes up to half the total fence construction time.

Figure 1 shows proper construction of double-span wood-anchor post assemblies. The double span assembly is more than twice as strong as the single span and should be used whenever fence length exceeds 200 feet. A corner post will need a brace assembly for each fence line leading to it. Post depths shown in Figure 1 are minimums. Use deeper settings for clay or wet soil conditions.

The proper method of securing brace wire is shown in Figure 2.

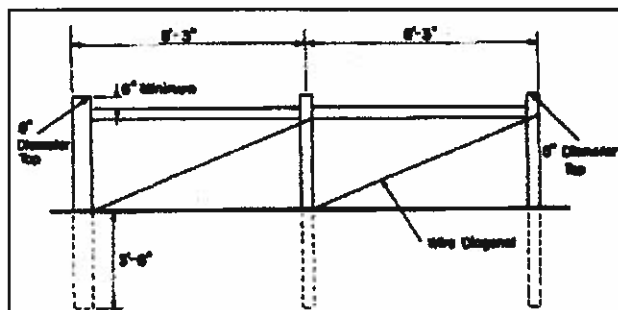


Figure 1. Double span brace post assembly. Post depths shown are considered to be minimum.

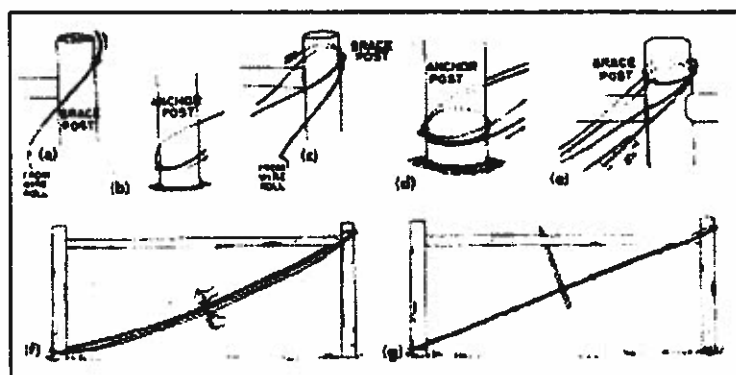


Figure 2. Correct procedure for threading the nine gage smooth wire used as a diagonal in the brace assembly.

When a fence is more than 650 feet between corner posts, put braced-line post assemblies every 650 feet in the fence line. A braced line assembly is the same as a single-span braced corner except that a second diagonal brace wire is used to take fence pull in the opposite direction.

Steel corner post and brace assemblies are available and can be used in place of wooden assemblies. Both posts and braces should be anchored in concrete. The concrete anchor for corner posts should be 20 inches square and extend 3-1/2 feet below ground. Braces may be anchored in 20-inch square blocks extending 2 feet below the ground.

Line posts

Stretch a cord or wire between the completed corner and brace assemblies to help guide the alignment of line posts.

Locate line posts 15 to 20 feet apart. Use the 15-foot spacing for steel posts or wooden posts with less than 3-1/2-inch diameter tops.

Posts may be driven or set with either power or hand tools. If you have more than a few hundred feet of fence to build, use a power driver or auger. Line posts should be set or driven to a minimum depth of 2-1/2 feet.

Steel line posts must be oriented for proper wire placement when installed. Wires normally are placed on the inside, or pasture side, of the post. In some cases, however, wires may be placed on the outside of the post to improve the appearance of the fence. One example of this is where fence lines run along a highway.

Installing fence on posts

The last step in fence construction is installation of the wire. Use the following general procedure:

1. Install and stretch the wire in sections running from one corner or brace post assembly to the next.
2. Always work from the top down when installing wire; install the top wire first, then the next highest, etc.
3. Attach wire to the side of the post closest to the livestock being fenced except where appearance is important.
4. Use galvanized staples or the wire clips that come with steel posts to attach wire to posts. Minimum staple size should be 1-1/2 inches. Staples should not be driven in so far that they will prevent the wire from moving without moving the post.

Special instructions for installing woven wire are:

1. Attach the end of the wire to the anchor post by removing a few vertical wires and wrapping the wires around the post and splicing them back onto themselves.
2. Unroll wire along the ground adjacent to the row of posts and stand the roll on end at the next anchor post.
3. Prop the wire up against the line posts.
4. Attach the stretcher unit to the fencing. Use a single jack for fencing under 35 inches and a double jack for higher fencing.
5. Stretch the fence slowly, making sure tension is being applied evenly to all points. Continue

stretching until tension curves in the wire are straightened about one-third (Figure 3).

6. Fasten wire to line posts starting at the end farthest from the stretcher.
7. Fasten the end of the wire to the anchor post assembly.

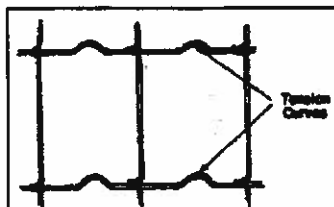


Figure 3. Typical tension curve in woven wire. This curve should be straightened by 1/3 when fence is properly stretched.

Follow the same general procedure for **barbed wire** with these precautions:

1. Unroll wire straight off the roll, not off the side.
2. Stretch wire until it is fairly tight, being careful not to break it. There are no tension curves in barbed wire to aid in stretching.
3. Wear protective clothing and use extreme caution when working with barbed wire.

Gates

Gates for fences may be purchased or constructed. Several plans for gates, people-passages, and cattle guards are in the Midwest Plan Service livestock handbooks. These books are available through your nearest University Extension Center.

Special problems

There are two problems that occur often enough to merit special attention. They are contour fencing and uneven terrain.

Contour fences are most often associated with terraces. Reduce post spacing when the fence line curves to prevent wire tension from overturning the posts. Use the following procedure to determine the proper spacing:

1. Stake out a smooth curve for the fence line using stakes at 14-foot intervals.
2. Select any three adjacent stakes on the curve and stretch a string between the first and third stake (Figure 4).

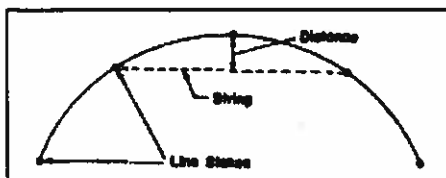


Figure 4. Method of determining curvature for contour fences. Use "distance" measurement to determine proper post placement.

3. Measure the distance from the string to the center stake and use the following table to determine post spacing.

Distance (inches)	Post spacing (feet)
4	14
8	10
12	8
20	7

When setting posts on the curve, slope them outward about 2 inches. Attach the wire to the side of the post facing the outside of the curve. Posts will straighten when the wire is stretched.

Crossing low spots requires special precautions to prevent post withdrawal or washout. In locations not subject to frequent flooding, use extra length posts set 3-1/2 to 4 feet deep or set posts in concrete to prevent withdrawal (Figure 5).

A hinged flood gate may be used in low spots that flood or when crossing streams with fences (Figure 6).

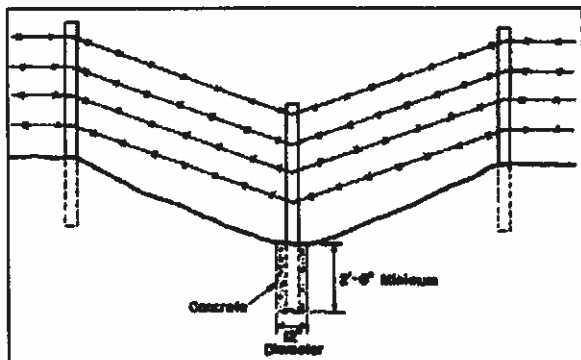


Figure 5. Line post anchored in concrete to prevent withdrawal or washout because of its gully location.

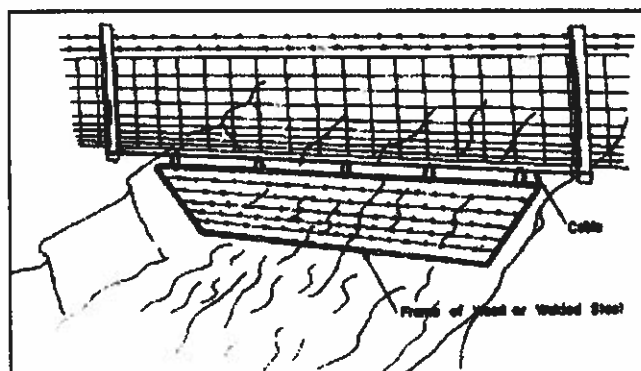


Figure 6. Hinged flood gate assembly for use over streams or in gullies subject to frequent flooding.

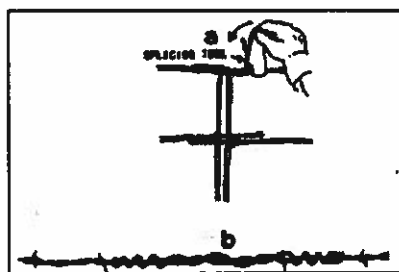


Figure 7. Method of splicing together lengths of (a) woven wire and (b) barbed wire.

Maintenance

A properly maintained fence will give long and trouble free service. The following items should be a part of your regular maintenance program:

- Repair or replace anchor post assemblies whenever they show any signs of weakness.
- Refasten loose wires to posts and splice broken wires as necessary.
- Keep the fence properly stretched.
- Keep the fence line clear of weeds and brush.
- Plan and follow a regular inspection routine to locate any needed maintenance.

To order, request G1192, Constructing Wire Fences (50 cents).

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