

**NATURAL RESOURCES CONSERVATION
SERVICE BRACE ASSEMBLY CONSTRUCTION
SPECIFICATIONS CODE 382**

Brace assemblies determine the structural soundness and longevity of any fence line. If any brace fails, there is a loss of wire tension and fence effectiveness. Design and spacing are determined from factors such as number of wires used, type of wire, soil type, terrain and animals to be restrained.

Brace assemblies fail because of structural failure, soil movement, or end post pullout. Structural failures of end braces are usually due to improper design, poorly selected materials, poorly tamped brace posts or over-stressed brace members. By carefully designing, proportioning and sizing the brace assemblies, structural failures can be all but eliminated.

End Brace Assemblies-will be located at each end of the fence

Barbwire fence end brace assemblies-

- A single H brace assembly is required at each end of the fence when equal to or less than 1,320 ft. in straight, level sections of the fence.
- Double H Brace assemblies are required at each end when straight level sections of fence exceed 1320 ft.
- When fence length exceeds 1320 feet, install inline brace assemblies.
- Corner, End and Gate Posts-Fence wires shall never pass an anchor post without being cut and tied off to the anchor post.

Woven wire and High Tensile fence end brace assemblies-

- A single H brace assembly is required at each end of the fence when equal to or less than 660 ft. in straight, level sections of the fence.
- Double H Brace assemblies are required at each end when straight level sections of fence exceed 660 ft.
- Corner, End and Gate Posts-Fence wires shall never pass an anchor post without being cut and tied off to the anchor post.

In Line Brace Assemblies are located within straight sections of the fence line at:

- 1320 foot intervals for barbwire fence
- 660 foot intervals for woven wire and high tensile fences
- All corners and definite angles or changes in elevation in the fence line (15 degrees or more).
- An In-Line (Pull) Brace Assembly will be a minimum single H pull assembly in straight sections and a double H pull assembly at all corners and definite angles or changes in elevation in the fence line (15 degrees or more). At each inline brace assembly, cut wires and wrap twice around anchor post.

Brace Assembly Dimensions

The following dimensions apply to all corner, gate, end and brace posts*

Wood Posts- Minimum of 5.5 inch top diameter x 8 ft. length for vertical (upright) brace posts.

- Horizontal brace members will be at minimum 3 in. diameter and 6.5 ft. in length.
- Wood posts must be pressure treated with a 0.4 lb/ft³ of chromate copper arsenate (CCA-Type A, B or C) treatment or equivalent. Other acceptable wood types include black locust, red cedar, and Osage orange.
- Landscape timbers will not be used for posts or brace members.

Steel Posts-Minimum 4 in. diameter high-carbon steel pipe and is class 3 galvanized or coated with a rust-resistant metal paint. Pipe ends must have a water-tight cap. Horizontal brace pipe will be 2 in. diameter (minimum), high

carbon steel or coated with a rust-resistant metal paint Pipe ends must have a water-tight cap.

Construction

- Set posts for all fence assemblies a minimum of 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
- Anchor horizontal brace members to brace posts with a minimum 3/8 inch galvanized pin or spike driven through the post that penetrates the horizontal member at least 4 inches
- Attach horizontal brace member with the center of the member into the top third of the brace post and anchor post, at a minimum of 36 inches above ground level and below the top 6 inches of the brace and anchor post.
- Fences taller than 4 feet – the brace member will be in the top 1/3 of the post no closer than 6 inches from the top of the post.
- Notching the post is not required however if notched do not exceed 1.5 inches depth.
- Set steel pipe in concrete that extends 1 in. below the bottom of the pipe, and slightly above the soil surface.

Tension

H-brace assemblies must have a tension wire consisting of one of the following:

- Two complete loops of 9-gauge smooth single strand
- Two complete loops of 12.5 gauge twisted double strand barbed or smooth
- Two complete loops of 15.5, gauge twisted double strand high tensile barbed or smooth

One end of the loop is attached to the anchor (corner, end, or gate) post 2-4 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 to tighten tension wires. Use caution when tensioning the wire; serious injury may occur if the tensioning stick is released

Table 1

Barbwire Brace Spacing		
Distance Between End	End Brace Type	Inline Brace Requirements
0-1320 Feet	Single H	Install inline braces at 1320 foot intervals in straight level stretch. Install at angles and bends greater than 15 degrees. Tie off wire to anchor post.
Greater than 1320 Feet	Double H	
Woven Wire Brace Spacing		
Distance Between Ends	End Brace Type	Inline Brace Requirements
0-660 Feet	Single H	Install inline braces at 660 foot intervals in straight level stretch. Install at angles and bends greater than 15 degrees. Tie off wire to anchor post.
Greater than 660 feet	Double H	

Table 2.

Brace Assembly- Material, Dimension and Length		
	Wood	Steel
Minimum Diameter and Length of Brace Post	5.5 inches diameter x 8 ft. length	4 inches x 8 feet
Minimum depth in ground	42 inches	42 inches
Horizontal Brace Member dimensions	3 inches diameter x 6.5 feet length	2 inches diameter x 6.5 feet length

***End Post**-The brace post that anchors the brace set

Corner Post-The brace post that is planted at all corners of the fence. This post is an anchor post

Gate Post-Brace post where swinging gates are fastened

Brace Post-Posts at ends that provide rigidity and support to the corner, end, gate or anchor post

Anchor Post- An anchor post is the post to which all fence wires are securely attached. Anchor posts include the corner post, end post, gate post, and center post of a line-brace assembly.

Figure 1: Single H Brace

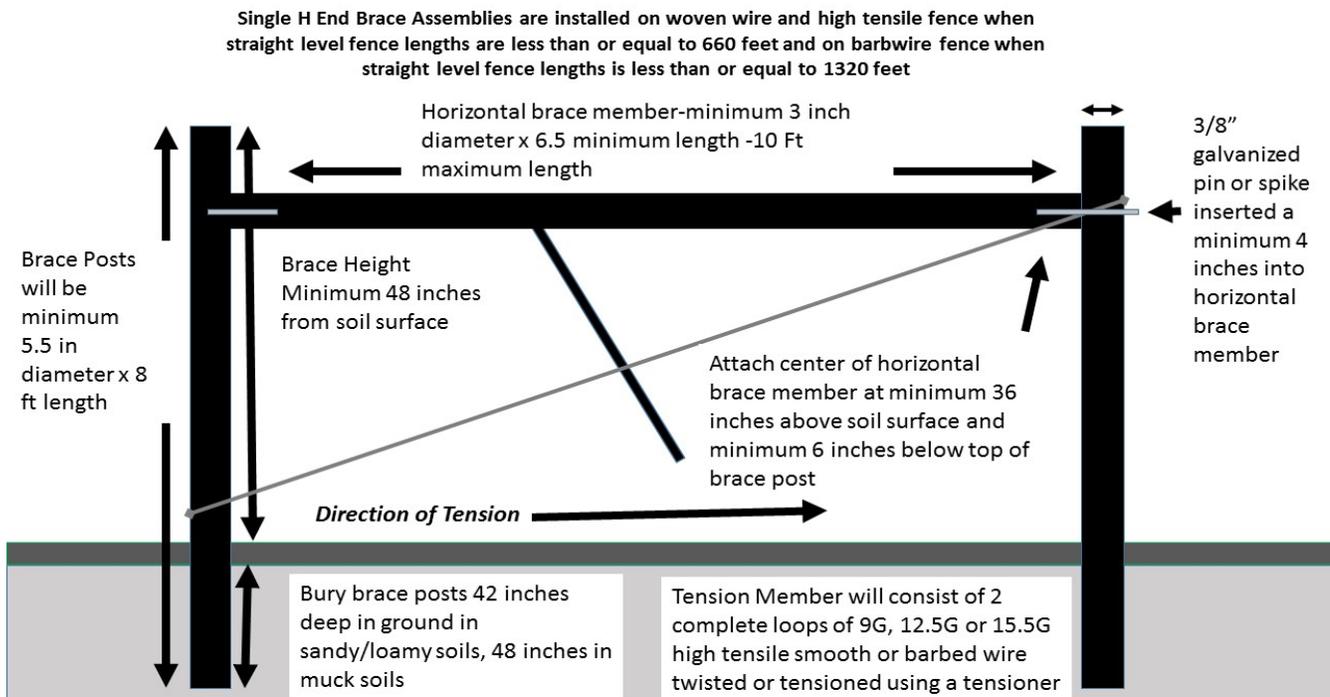


Figure 2: Double H Brace

Double H End Brace Assemblies are installed on woven wire and high tensile fence when straight level fence lengths exceed 660 feet. Barbwire fence when straight level fence lengths exceed 1320 feet

