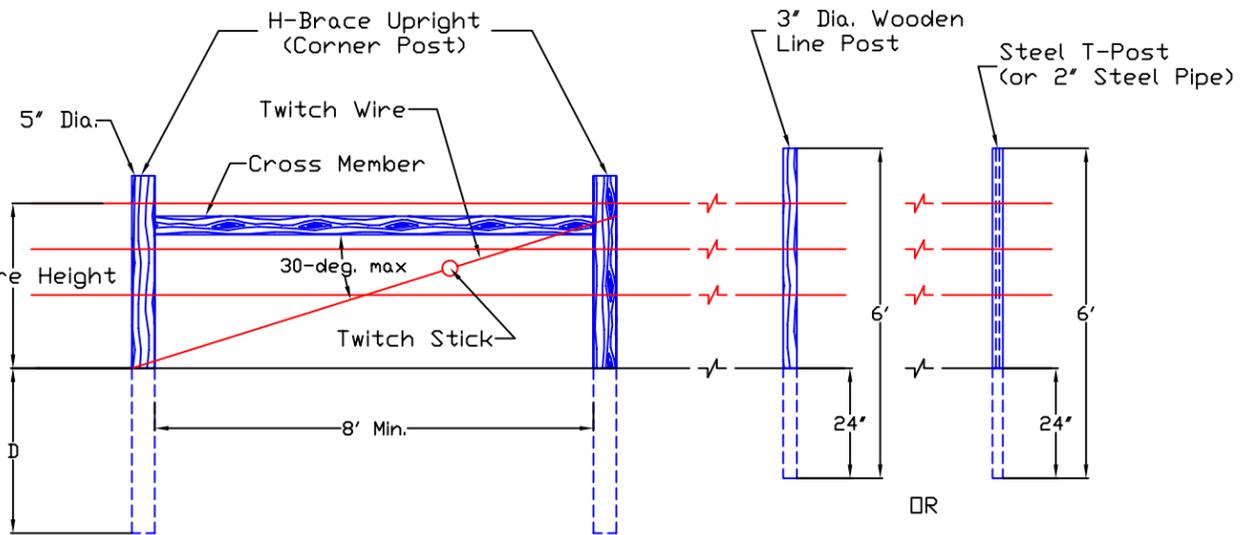


D = Height of Top Wire

### ANGLE BRACE ASSEMBLY



### H-BRACE ASSEMBLY

### LINE POSTS

#### Corner, H-Brace and Line Post Minimum Criteria

Post Type	Cross Member		Line Posts			H-Brace Uprights		
	Minimum Diameter	Length	Minimum Diameter	Length	Minimum Set Depth	Minimum Diameter	Length	Minimum Set Depth
Wood, Treated	3'	8'	3'	6'	24'	5'	D	36'
Wood, Untreated	4'	8'	3'	6'	24'	5'	D	36'
Steel, T-Post	N/R	N/R	**	6'	24'	N/R	N/R	N/R
Steel, Pipe	2'	8'	2'	6'	24'	4'	D	36'

\*\* See Note #2 under "Line Posts."

D = Minimum Set Depth should equal the height of the top wire

SUITABLE LIVESTOCK AND OPTIMUM TOP WIRE HEIGHT					
Number of Wires	Wire Gauge	Cattle	Goats	Sheep	Horses
5	12-1/2 HT	48'	36'	36'	50'
3	12-1/2 HT	36'	30'	32'	48'
2	12-1/2 HT	36'	Not Suited	Not Suited	48'
1 *	12-1/2 HT	32'	Not Suited	Not Suited	Not Suited

\* No Angle Brace required for corner posts with only 1 installed wire.  
HT = High Tensile

#### ENERGIZERS AND COMPONENTS

- Energizers for permanent electrical fencing must be:
  - High voltage/low impedance, short pulse which can produce at least 5000 volts output with all livestock containment fences charged (on) when under maximum anticipated.
  - Recommended one digital read-out volt meter to accompany energizer.
- A minimum of 18 feet of galvanized steel (1/2" minimum) grounds must be installed near the Energizer. Locate ground rods in water accumulation area and in deep soil area, preferable three, 6-foot rods, spaced at least 10 feet apart. If energizer terminals can accept copper wire, copper ground clamp, and copper wire may be used. Avoid mixing dissimilar metals to prevent electrolysis. An additional set of four 6-foot galvanized (1/2" minimum) ground rod for each one mile of fence, located in moist area or preferred site between end of fence and energizer. For large energizer systems (14 or more joules), use a minimum of 3 additional feet of ground rods per joule of energizer output capacity.
- For 120 volt or 240 volt energizers, install a voltage spike protector and inspect or install a ground rod at electric company's transformer pole (primary ground) and another ground rod at electric circuit breaker box (secondary ground). Both primary and secondary grounds must have less than 10 ohms resistance.
- A lightning arrester or lightning choke is required.

#### ELECTRICAL ACCESSORIES

- Insulation used for positive charged wire(s) must be high-density polyethylene or polypropylene with ultra-violet (UV) stabilizer and capable of withstanding a minimum of 10,000 volts or more current leakage.
- All underground wire(s) installations must be insulated, molded, high tensile strength steel 12-1/2 gauge or larger size. The insulation must be high-density polyethylene or polypropylene with ultra-violet (UV) stabilizer and capable of withstanding a minimum of 10,000 volts or more in current leakage.
- Insulators for steel and other conductive material posts must be high-density polyethylene or polypropylene with ultra-violet (UV) stabilizer, porcelain or other insulators which withstands a minimum of 10,000 volts or more current leakage.
- Insulators for end, corner, and angle braces must be high-density polyethylene or polypropylene with ultra-violet (UV) stabilizer, or porcelain. (Do not use insulated "tubing" for brace assembly.)

#### ANGLE BRACE ASSEMBLY

- Corner post shall be 5' in diameter and twice the height of the fence in length.
- Corner post shall be set in the ground equal to the height of top wire.
- The angle brace shall be a minimum of twice the height of the fence.
- The angle brace is mortised in the center of the brace post and the angle between the earth and the angle brace must be no more than 30 degrees.
- The mortise shall be a minimum of 1' deep and cut carefully to get a good tight fit.
- The foot must be strong because the entire pull of fence is directed straight down on the foot. A flat concrete block, an old disc plate, or a piece of treated bridge timber can be used as the foot. A minimum of 200 square surface inches is required for the foot.
- The twitch wire shall be constructed of 12-1/2 Ga. Hi-tensile wire or 9 Ga. Medium tensile wire.
- A small groove shall be cut on the top of the angle brace about 4" above the ground. The twitch wire shall run around the brace post and in the notch. The twitch wire must run parallel to the ground. An inline strainer is used to tighten the twitch wire.
- It is important that the corner post is always to be set perpendicular to the ground.
- When using the angle brace for a corner system you can use one angle brace splitting the corner or two running parallel to the fence.
- If the soil tends to become boggy the angle brace system is not recommended.

#### H-BRACE ASSEMBLY

- Bracing is required at all corner, gate, pull and end assemblies in the fence.
- Corner post minimum diameter is 5' for wooden post and 4' for steel post. Minimum H-Brace Upright (Corner Post) length is equal to twice the distance from the ground surface to the top wire.
- Corner posts shall be set in the soil a minimum of the equivalent distance from the ground surface to the top wire. The soil shall be packed firmly around the post.
- Brace post (cross member) minimum diameter is 3' for treated wood, 4' for untreated wood, and 2' for steel with a minimum length of 8'.
- The cross member shall always be placed between the top two wires and be nailed to the corner posts or mortised.
- The twitch wire shall be set at no more than a 30-degree angle to the brace assembly.
- The twitch wire shall be 12-1/2 ga. High tensile or 9 ga. Medium tensile wire, with a minimum of two wraps around the brace assembly.
- The twitch stick shall be #5 rebar, 1' sucker rod, or a 2' x 2' x 12' pressure treated pine. An inline strainer may also be used.
- The twitch stick shall always remain in the assembly and be anchored to the cross member.
- The twitch wire shall be tightened until the end post moves about 1/2" in the soil.
- Maximum distance between pull posts shall be 2,640 feet. Pull posts with appropriate braces must be set at significant topographical changes and directional changes.

#### LINE POSTS

- Use 3" diameter 6' tall wooden posts or 6' tall steel "T" posts.
- Standard "T" posts, weighing not less than 1.25 pounds per foot of length, shall have a protective coating; either galvanized, painted with one or more coats of high grade weather resistant steel paint or enameled and baked.
- Line posts shall be set a minimum of two feet in the soil.
- Line posts may be spaced a maximum of 100 feet apart with stays or 50 feet apart without stays.
- Fiberglass and eucalyptus stays are acceptable. Fiberglass stays shall be a minimum of 3/8" in diameter.

\*Only new materials shall be used in construction of the fence. No used materials such as cross-ties are acceptable.

\*No trees or live posts are allowed in the construction of the fence.

\*All wooden posts except red cedar, Osage orange or black locust shall be treated with pentachlorophenol, creosote, or chromated copper arsenate (CCA) by a method such that complete penetration of the sapwood is achieved.

These are minimum specifications. It is acceptable to construct a fence, which exceeds these specifications.

Date	Designed	Drawn	Checked	Approved
08-05	R. Childress	D. Ward	R. Childress	R. Childress
08-05				

Permanent Smooth Wire, Electric Fence



File No.	Permanent_Elec
Drawing No.	