

**NATURAL RESOURCES CONSERVATION SERVICE**  
**CONSTRUCTION SPECIFICATION**  
**FOR**  
**FENCE (FT.)**

**CODE 382 CONTAINMENT HIGH TENSILE SMOOTH FENCE (ELECTRIC PERMANENT CONSTRUCTION)**

**Wire**

Electric high tensile smooth fences will be constructed of at least four wires. Total height to the top wire of the fence is to be not less than 42 inches. Smooth wire shall be 12 1/2 gauge (minimum) or equivalent in strength with a tensile strength of 170,000 psi or greater. All wire shall be new galvanized or aluminum coated material. Total height to the top wire is to be determined on a site specific basis depending upon terrain and livestock species/class/frame score, but not less than 42 inches.

**Staples**

Staples shall be 9 gauge, class IV galvanized or heavier with a minimum length of 1 1/4 - 1 3/4 inches long depending on wire and post type. They shall be driven diagonally across the wood grain to avoid splitting. For high tensile fencing material, the staples shall not be driven into the post so deeply (including line, corner, gate, and brace posts) that the wire will not move when tightened or with expansion and contraction.

**Tension Springs**

Tension springs shall be used in the top one or two strands in areas where the fence is near trees or where animal pressure will be heavy, and may be used for all strands.

**Fastening**

Wrap and twist or use crimping sleeves on end and gate panels. At corner posts, wrap and twist a separate wire to form an 18 to 20 inch loop to support fence strands or a wrap around insulator may be used.

If wire clips are used to hold wire in batten slots, they should allow the wire to slide.

**Electrical Fence Charger**

The electric fence charger shall be a low impedance (0.0003 seconds or less pulse length), high voltage type charger. Capacity of charger shall be adequate to effectively electrify

the system. In all cases, the fence charger must be capable of meeting specifications as recommended for the type of fence being electrified.

**Insulators**

If needed, these shall be UV stabilized (plastic) high density polypropylene Type W or Type S, high strain end and corner, tube insulator, or high strain porcelain. Insulators must be strong enough to support long spans of wire and must allow the wire to slide freely. Insulators must be used on all posts that are not self-insulating.

**Ground Wires**

Consider a fence earth return (alternating "live" and ground wires) for use in drought prone areas or in sandy soils.

**Posts**

**Corner Posts and Gate Posts**

Untreated posts of such species as cedar, locust or Osage Orange, or non-durable wood properly treated with a wood preservative may be used. Top diameter for wooden brace and corner posts shall be a minimum of 6-8 inches. Length must be sufficient to provide for the construction of at least a 42 inch high fence. Length must also permit setting brace and corner posts at least 36 inches in the ground. Gate posts shall be of sufficient construction to support the gate assembly. Gate posts used in brace and corner situations will require the same specifications as mentioned previously for brace and corner posts. Wood preservative should meet industry standard for "ground contact".

**Bracing**

**Brace Assemblies**

Bracing is required at all corners, gates, and at all definite horizontal or vertical angles in the fence. All fence bracing/pull post assemblies and stretch distances must be installed in consideration of fence type, terrain, soil conditions and other site specific conditions.

Generally stretch distances for all fencing shall be reduced on rough terrain. Brace assemblies should be installed at distances not to exceed 2,000 feet apart. All fence bracing/pull post assemblies and stretch distances must be installed consistent with the wire manufacturer's recommendations.

Brace posts shall be a minimum of 6-8" top diameter and at least 8' long. Set posts at least 36" deep. A two post brace can be used for pulls up to 1,320 feet. A three post brace shall be used for pulls over 1320 feet. Pulls should not exceed 2000 feet.

The brace wire shall be tightened to secure the brace and pull post assemblies. If a wide stream or gully is to be crossed, the fence section will be terminated on one bank with a brace assembly and a new section started on the other bank. A floodgate or water gap will be installed across the stream or gully to restrain livestock and constructed so as to minimize debris buildup and prevent structural damage to the line fence on either side during flooding events.

#### **Brace Rails**

Brace rails (horizontal brace) shall be either 2 inch diameter by 10 foot long galvanized steel tubing, or a 4 inch by 4 inch square eight foot long timber, or a 3 1/2 inch minimum diameter long round post or pole. Horizontal braces will be attached to posts using galvanized steel pins.

#### **Line Posts**

Line posts may be 2" x 1 1/2" x 6' long slotted, sawed hardwood or 3-4" diameter, 6 foot long round pressure treated softwood, or equivalent. Set posts 24 inches deep and space up to 75 feet apart, if battens are used, depending on terrain. Maximum spacing between battens (or posts if no battens used) will be 35 feet.

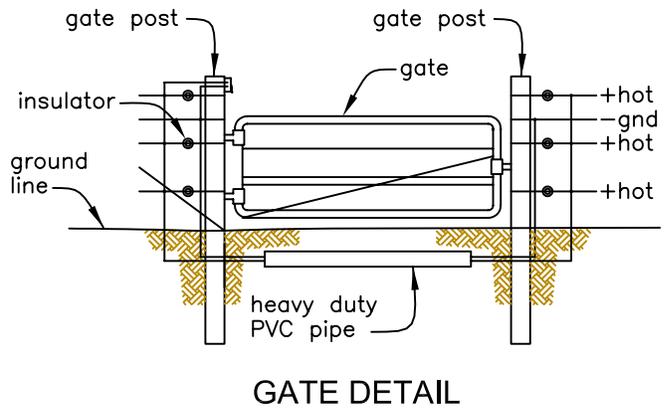
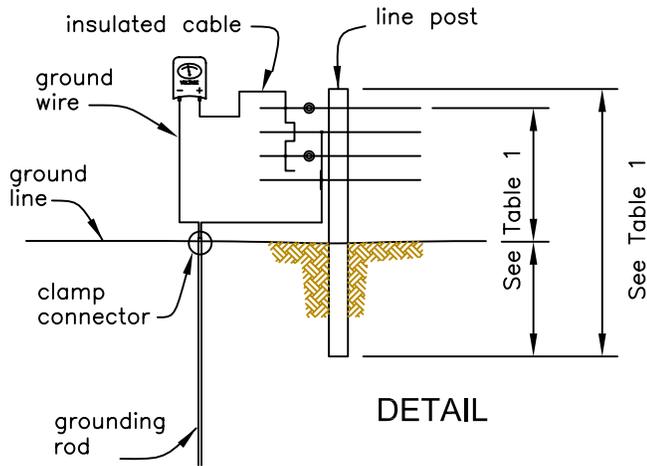
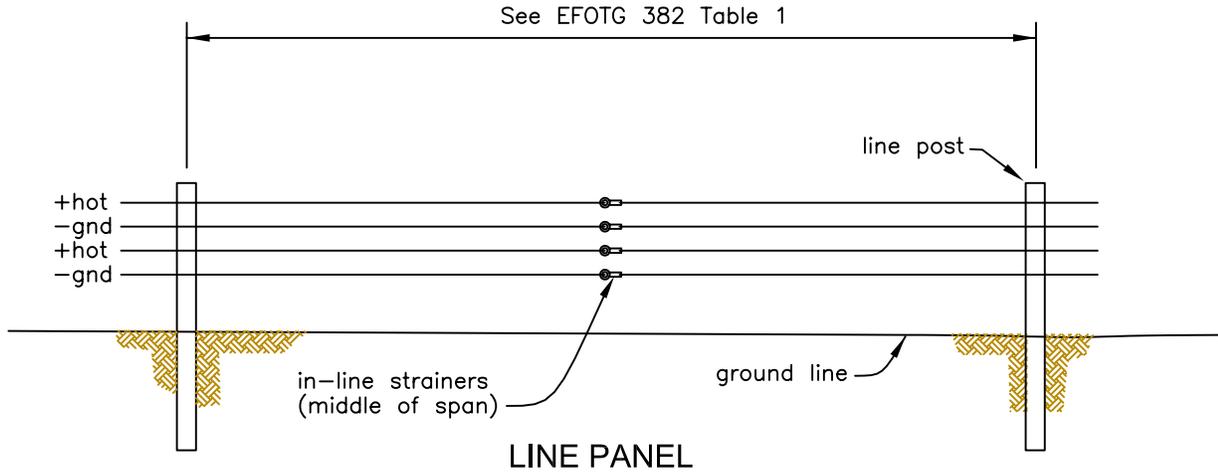
Installation of hold-downs is recommended in depressions. Standard "T" or "U" steel posts may be used as line posts.

#### **Battens**

Battens may be 1 1/4" x 1 1/4" x 3 1/2 feet long self insulating pressure treated, slotted hardwood or light duty fiberglass.

TYPE FENCE	TYPICAL WIRE SPACING 1/	TYPICAL TYPE OF WIRE	MAXIMUM DISTANCE BETWEEN PULL ASSEMBLIES 2/	MAXIMUM LINE POST SPACING 3/	MINIMUM LINE POST DIAMETER (D) POST LENGTH (L) AND DEPTH (d)
High Tensile Electric	4 or More Wires, 42" High (12, 22, 32, 42)	12.5 Gauge 170,000 psi	<= 2,000' Apart 3 1/2" Horizontal Brace 6-8" Brace and Corner Posts, 8' L	75' Apart with battens every 35'	Wood 3-4" D, 6' L, 24" d Steel, High Density Wood, Fiberglass 5.5' L, 18" D

1/ Actual installed wire spacing will be as needed to contain the livestock. 2/ Corner and brace posts shall be 6" minimum and driven or set in the ground and tamped around 36" deep or set in 30" of concrete. 3/ Closer post spacing may be needed to accommodate certain situations such as steep landscapes, fragile soils, deer crossings and other concerns.



Follow all manufacturer's instructions when installing the fence charger (energizer) and grounding the fence.

SPECIAL INSTRUCTIONS

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Drawing not to scale.  
Standardized drawing must be adapted to the specific site.

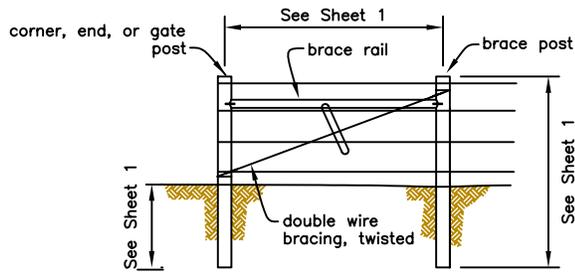
**NOTE:**  
For complete specifications  
see KY-EFOTG FENCE Code 382 (attached)



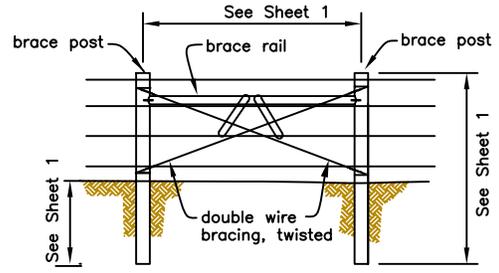
# ELECTRIC HIGH TENSILE FENCE

DESIGNED \_\_\_\_\_  
DRAWN **MAG. JD. RCG** **11/08**  
CHECKED \_\_\_\_\_  
APPROVED \_\_\_\_\_

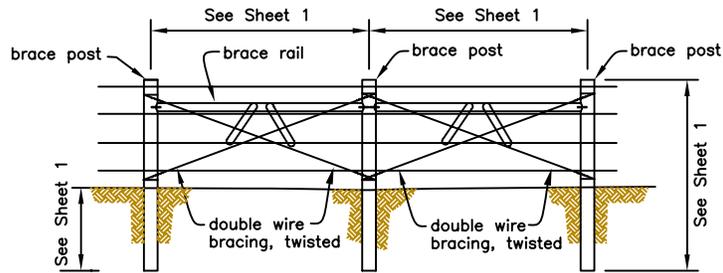
FILE NAME
DRAWING NAME KY-382-11/08
SHEET 1 OF 3



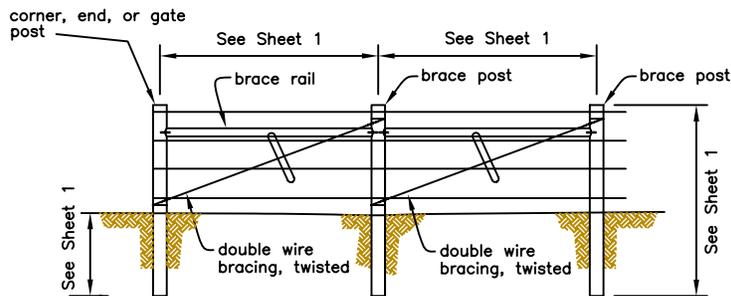
SINGLE SPAN BRACE ASSEMBLY  
(at corners, ends, or gates)



SINGLE SPAN LINE BRACE ASSEMBLY



DOUBLE SPAN LINE BRACE ASSEMBLY



DOUBLE SPAN BRACE ASSEMBLY  
(at corners, ends, or gates)

SPECIAL INSTRUCTIONS

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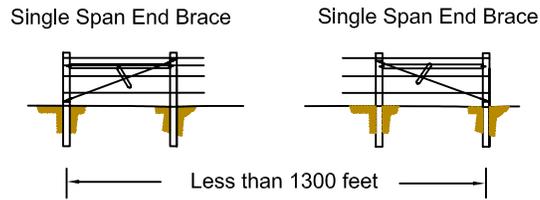
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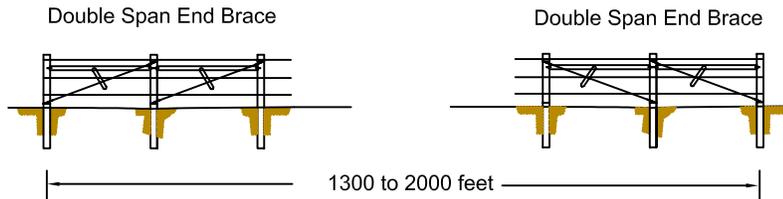
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NOT TO SCALE

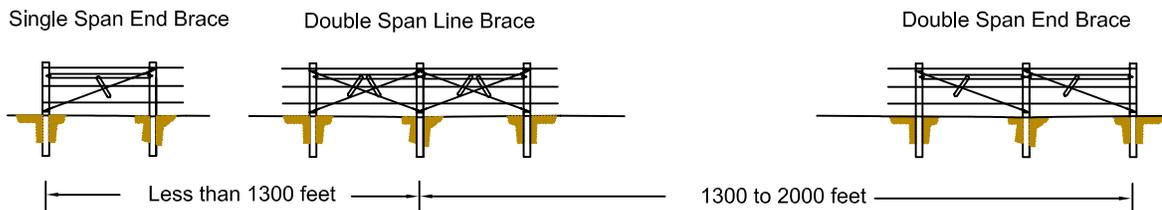
1. Use single span brace assemblies for runs of fence that are less than 1300 feet between corner, end, and/or gate posts.



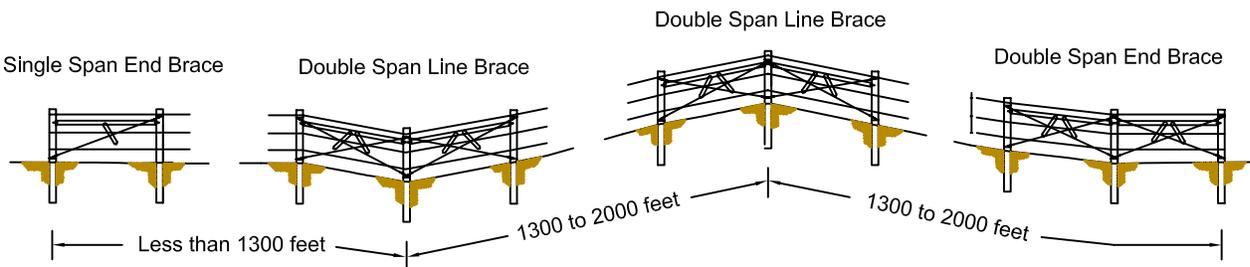
2. Use double span brace assemblies for runs of fence that are 1300 to 1700 feet between corner, end, and/or gate posts.



3. Use line braces to divide fence lengths where runs of fence are more than 1700 feet long. A run is the distance between a corner, end or gate post and the next corner, end, or gate post.



4. On uneven terrain, locate line braces at the top and bottom of each hill.



NOT TO SCALE