

ELECTRIC FENCE INSTALLATION GUIDE

Pro-Tek Braid

Pro-Tek Rope

Pro-Tek Tape

Hote Cote Rail



RAMMfence.com

-your equine solutions partner®-

TROUBLE SHOOTING HOTLINE 1•800•878•5644 • EMAIL: rammfence@ramminc.com

Planning your Electric Fence Installation

Types of Fencing described in this guide:

Pro-Tek Braid: Braid is a polyester and stainless steel wire braided together to create a very strong and effective fencing product. Braid must be tensioned with a come-a-long or tensioning device, therefore the ends and corners posts must be braced. Follow steps outlined in this guide to build a proper bracing system.

Pro-Tek Rope: Rope is a combination of stainless steel wires and

polypropylene to create an economical yet effective fencing system.

Pro-Tek Tape: Tape is a very visible product with a combination of polyethylene and stainless steel wires. Tensioning is done by hand.

Note Cote Rail: Hote Cote utilizes high tensile wires with a 5/16" polyethylene coating and carbon black for the electrified portion of the product.

WARNING: Braid and Rope when over-stretched, may break and recoil causing serious injury. Caution is advised when working with any tension fencing. Eye and hand protection should be worn when working with Braid and Rope fence systems.

BEFORE YOU START

Careful planning of your fence design and advanced preparation is the key to proper installation and long term trouble free electric fence operation. The first step in the installation is laying out the site to be fenced. Below are a list of ground rules that may help you with you fence installation.

NUMBER OF STRANDS: Determining the right number of strands to use and the height of your fence requires some evaluation. The type of horses and the amount of property is first. If you ride as a casual pastime and have trail type, mature horses , 3 strands of tape or 4 strands of rope or Braid will be sufficient for pasture areas.

RULE OF THUMB: Less than 1 acre per horse use 4 strands, more than 1 acre per horse 3 strands of tape is sufficient. If you have breeding stock with foals 4 strands is a must. Stallions, depending on their attitudes may require 5 or 6 strands, 5 to 6 feet tall. The average height of most installation is 54 inches to the top of the post and 50 inches to the top strand. Spacing between strands would be 13 inches with 3 strands of tape, leaving 24 inches from ground to the bottom strand. If you are using 5 foot long Safe-Tee-Sleeves over tee-posts you may go the full 5 feet or cut the bottoms to the height you desire. However you should never exceed 15 inches spacing between strands. Boarding facilities should always put up 4 strands at 5 feet high due to the prospect of new animals that may be unfamiliar with electric fence. It also adds aesthetic value and a very secure appearance that your customers will value. Pasture separations and in cell grazing applications 2 strands may be used were no foals are present. Never use less than 4 strands for perimeter fencing or where property parallels a highway.

SOIL: Soil conditions is an issue that must be considered when installing electric fencing. Dry or sandy soil may require a fence charger with greater power that in moist areas where green foliage is abundant year round.

EXPANSION: When choosing the fence charger it is recommended to not only consider the area being fenced, but to look ahead at fence to be added later. That way the right charger may be purchased the first time around.

GATES: Location of gates, type, and amount of traffic going through the area is an important consideration. Installing metal gates in high traffic areas and in corners makes handling animals easier. Electric gates are great for pasture separations or implement traffic.

LOCATION OF THE FENCE CHARGER:

Locate the fence charger close to or at the fence where 110 volt power is accessible. Placing the charger under cover is recommended as under the eave or inside of a building. If your power source is greater than 50 feet from the fence it is advisable to run underground 110 volt wire from the source to the fence and install a weather proof plug-in rather than run a long distance of high voltage burial wire. A certified electrician should be used for the installation of 110 volt wiring. When

fencers are located on a corner or gate post, a small, rectangular, plastic waste can is an easy way to protect the fencer from direct rain. Cut a section out of one side of the waste can to clear the mounting screws and slide it upside down over the fencer. Solar chargers do not require a cover and should be placed in a position facing the equator.

GROUND ROD INSTALLATION:

Installing a minimum of 3 - 6 foot long ground rods, 10 feet apart will insure maximum efficiency in the operation of you electric fence system. Inadequate grounding is the most common failure in electric fence operation. Consider that the grounding system of an electric fence is similar to the antennae on a television set, the larger the antennae, the greater the reception. Ground rods serve to collect the voltage as it passed from the fence, into the animals, through the earth and returns to the fence charger completing the circuit. The animal will only feel the amount of power that returns back to the fence charger; therefore it is critical that the ground field, like the antennae, is large enough to insure the collection of all available power.

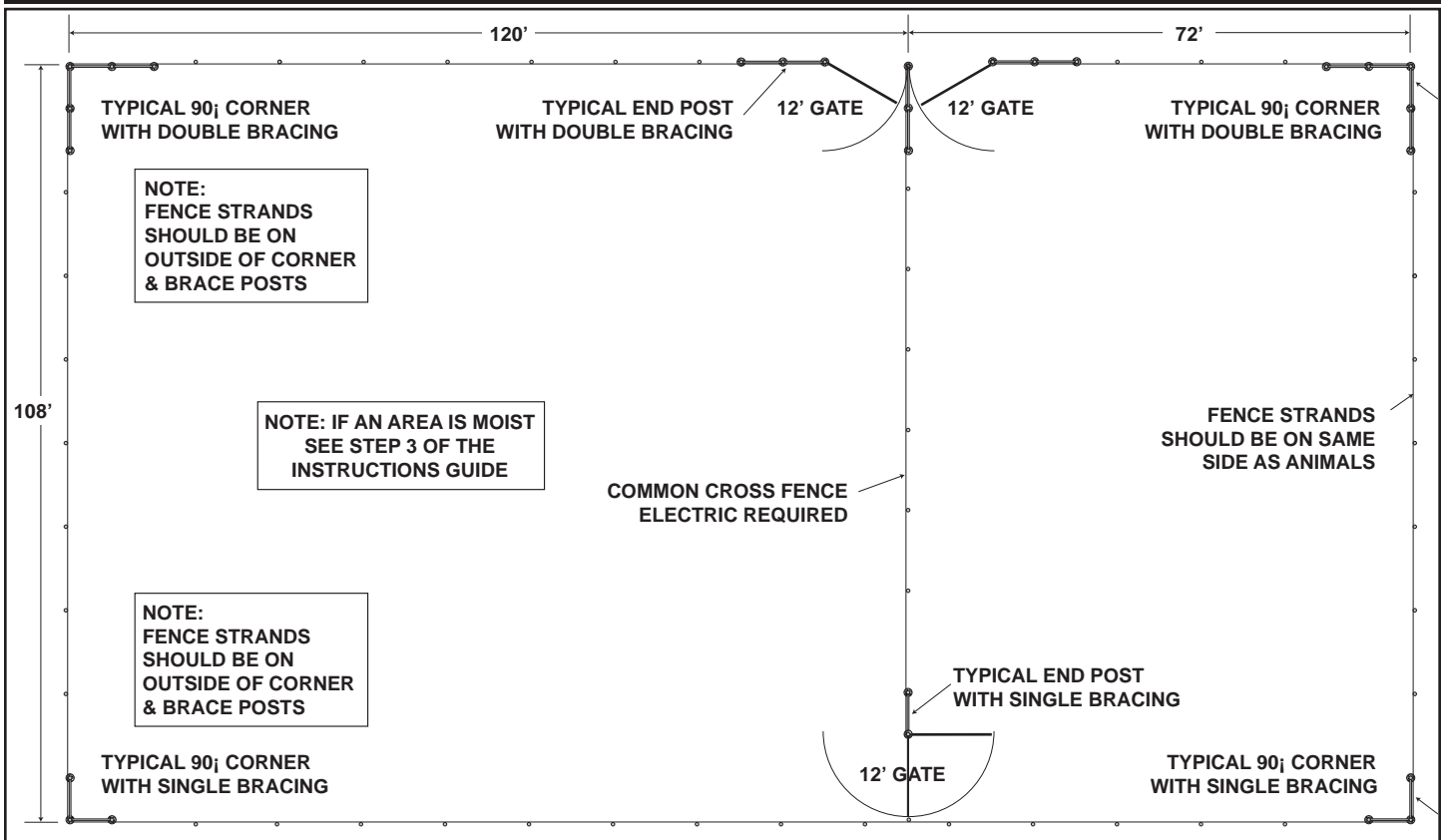
Within 20 feet of the location of the fencer dig a 4 to 6 inch deep trench 20 feet long. This should be in an area that is out of the way of animal or vehicle traffic. Drive a ground rod into the ground at each end of the trench and one in the middle. With the brass acorn ground clamps, attach the galvanized wire to the rods laying it in the bottom of the trench.

Attach the end of the wire to the negative or ground post of the fence charger. Attach high voltage shielded wire to the positive post of the fence charger and then to the fence. Do not use unshielded wire to make connections from the fencer positive post to the fence. If there is any danger that horses may walk or run in the area of the ground rods we suggest that a coffee can be buried over the top of the ground rod ends to reduce the possibility of injury.

CAUTION: Do NOT install ground rods within 50 ft. of a utility ground rod, buried telephone line, or buried water line. Shock Hazard may result. **REMEMBER TO CALL YOU LOCAL UTILITY COMPANIES BEFORE YOU START YOUR INSTALLATION.**

Improving **POOR GROUND** system conditions: Dry or barren ground is a poor conductor of electricity. Voltage returning to the fence charger will decline substantially in these conditions. In arid regions or sandy soil areas it may be necessary to install grounding around the fence to achieve maximum fence efficiency. You may ground one of the strands of fence, or the best solution is to run bare galvanized wire just below the surface of the ground, attached to each post, for optimum functionality.

EXAMPLE Paddock LAYOUT



POST INSTALLATION & HORIZONTAL BRACING SYSTEM

Bracing is the key with any tension type fence system. It insures a strong and safe fence for many years.

- Determine your end and corner post locations. (See above) for an example paddock layout.
 - End Posts: The posts placed where the fence line ends or starts example gate opening.
 - Corner Posts: The posts in a fence line at the point where the fence line changes direction.
- Auger or drive your end and corner posts in the ground a minimum of 42". This should leave an approximate post height of 54". (See fig 2) If you choose augering you will need to use concrete to aid in the stability of the post (Post driving is the stronger of the two methods, and is recommended for posts installed in unstable ground such as low lying and weak soil areas.)
- After the corner and end posts are installed take a string and attach it to the end and corner post on the same side as your fence rail will be. This string will be used as a guide for the line posts ensuring a straight and attractive fence system.
- Now measure out 8' from all end posts and corner posts for the position of the brace posts. Note: that you will need to do this to both sides of the corner posts. (See fig 2)
- Mark the rest of the post positions at your desired post spacing. Start from the brace post. Use spray paint on the ground to mark where the posts will be placed. Note: be sure to calculate the distances correctly

or you may end up with odd spaced posts at one end.

- Set all your post in position to a height of approximately 54".
- Start at one end. Measure and cut the horizontal brace post using 4" diameter post approximately 8' long. (See fig 2) It should be placed about 6" from the top of the installed post height. Fasten the horizontal brace post in position using either the brace plate or brace pin method. There are two methods of fastening the horizontal brace post. The first is the brace plate method the second is the brace pin method. Both methods are equally effective choose whichever method you desire. Below we have described how to use both methods.
 - 7A-1 BRACE PLATE METHOD: First mark a center line approximately 8" from the top of the end and brace posts where the horizontal brace post will be located. Then nail or screw the brace plates to both the end and brace posts facing each other. Next install and fasten the horizontal brace post in place between the end and brace posts using nails or screws.(See fig 2)
 - 7A-2INSTALLING BRACE WIRE FOR BRACE PLATE METHOD: Now in order for the system to be secure a brace wire must be installed. The brace wire is used to prevent the posts from leaning. To install the brace wire for the Brace Plate Method do the following, put a fence staple vertically at the bottom of the end or corner post approximately 3" from the ground opposite the horizontal brace post. (See fig 2) Put a second fence staple at the top of the brace post just above the horizontal brace post approximately 4" from the top of the post. (See fig 2) Tightly wrap a 9 to 12 gauge high tensile wire at least 40' long

WARNING

As no fence product is totally safe, there remains a potential for injury to livestock. Therefore, the fencing referred to in this manual shall in no event be responsible for any injury to persons, livestock or personal property.

through the fence staples at least two complete times and fasten as shown fig 2A at the top of the brace post. Now using a 2"x 2" stick or dowel roughly 16" to 24" in length place it between the wires and turn in one direction until the wire is tight. If you choose a short stick you may want to start closer to the top so your stick will reach the horizontal brace when the wire is tight to retain the tension. You will need to fasten the stick to the horizontal brace post using a piece of wire or a nail. Be sure you can remove it from the post for future tensioning if needed. (See fig 2)

over the exposed brace pin at the top of the brace post and diagonally under the fence staple at least two complete times and fasten as shown fig 3B at the top of the brace post. Now using a 2"x 2" stick or dowel roughly 16" to 24" in length place it between the wires and turn in one direction until the wire is tight. If you choose a short stick you may want to start closer to the top so your stick will reach the horizontal brace when the wire is tight to retain the tension. You will need to fasten the stick to the horizontal brace post using a piece of wire or a nail. Be sure you can remove it from the post for future tensioning if needed. (See fig 3)

7B-1 BRACE PIN METHOD: On the end post, drill a 3/8" hole, 2.5" deep and 44" up from the surface facing the first brace post see fig 3 & 3A. Drill a 3/8" hole all the way through the first brace post 44" up and inline with the end post. Drill a 3/8" hole 2.5" deep into both ends of the top horizontal brace post. Drive a 3/8" x 5" brace pin 2.5" into the end post. The horizontal brace post is now ready to be slipped onto the 5" brace pin in the end post. Then drive a 3/8" x 10" brace pin through the brace post in to the top horizontal leaving 1.5" exposed. (See fig 3A)

7B-2 INSTALLING BRACE WIRE FOR BRACE PIN METHOD: Now in order for the system to be secure a brace wire must be installed. The brace wire is used to prevent the posts from leaning. To install the brace wire for the Brace Pin Method do the following, put a fence staple horizontally at the bottom of the end or corner post approximately 3" from the ground opposite the horizontal brace post. (See fig 3C) Then tightly wrap a 9 to 12 gauge high tensile wire at least 40' long

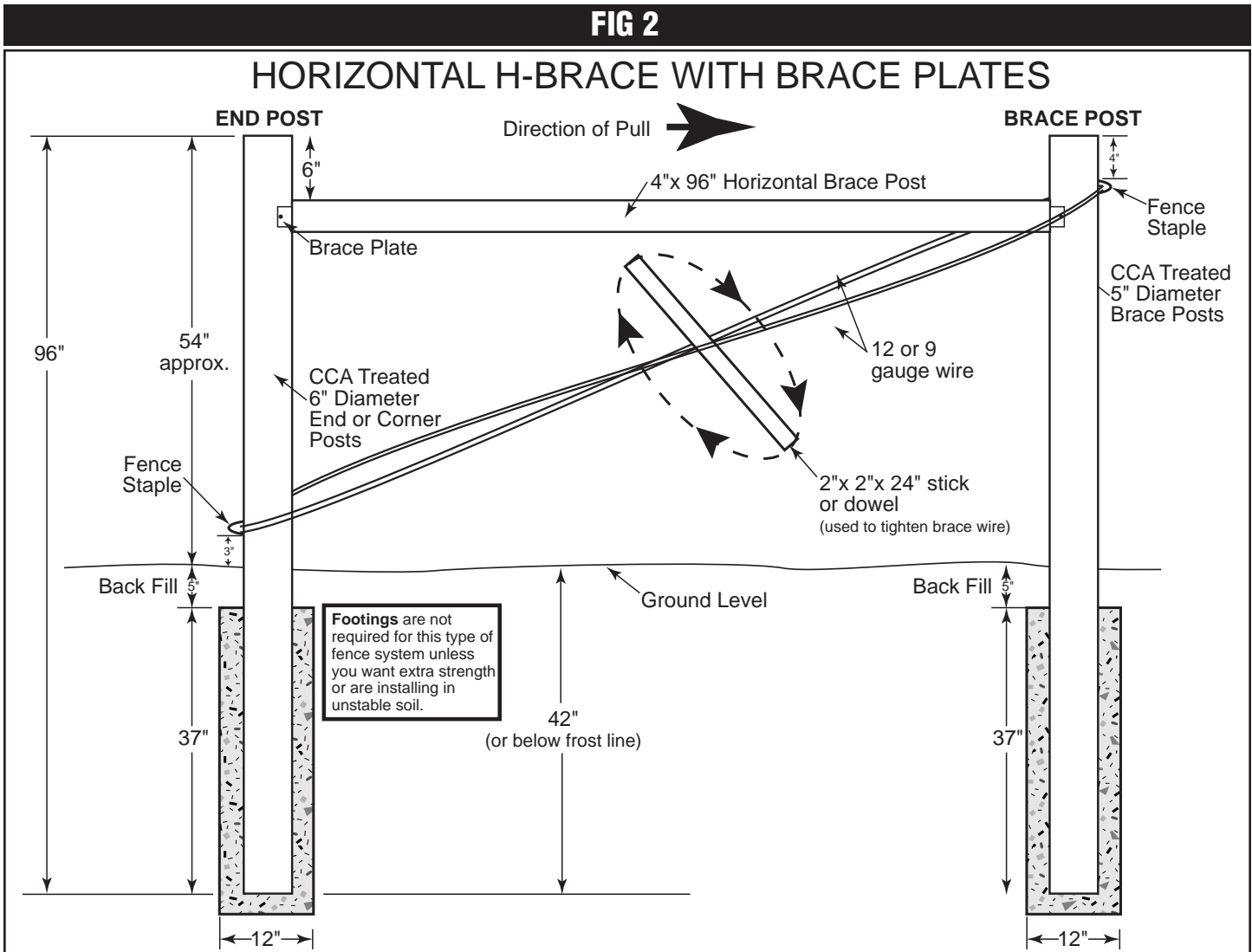
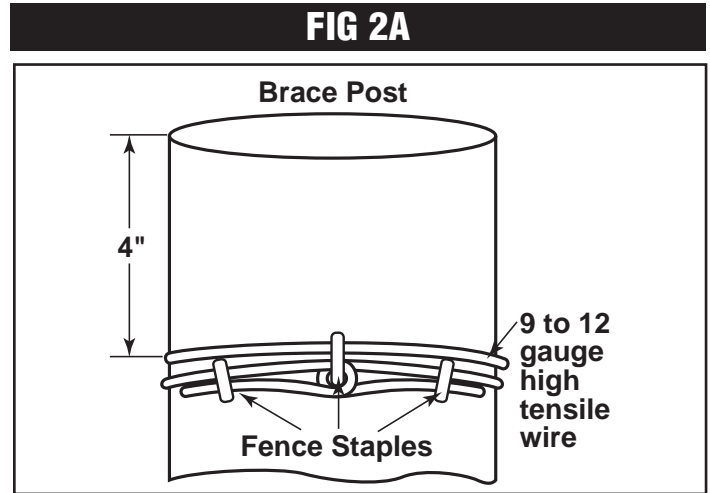


FIG 3

HORIZONTAL H-BRACE WITH BRACE PINS

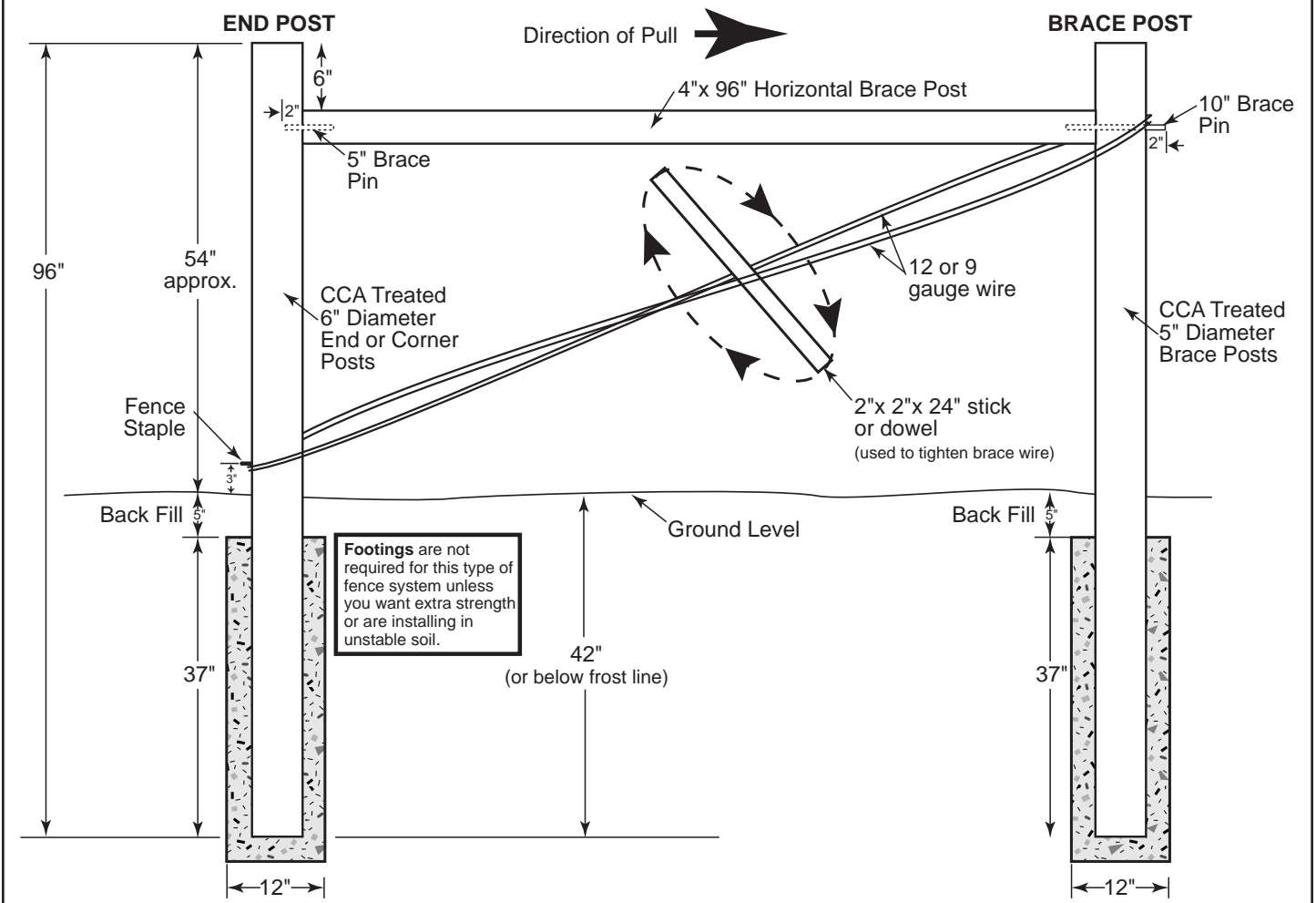


FIG 3A

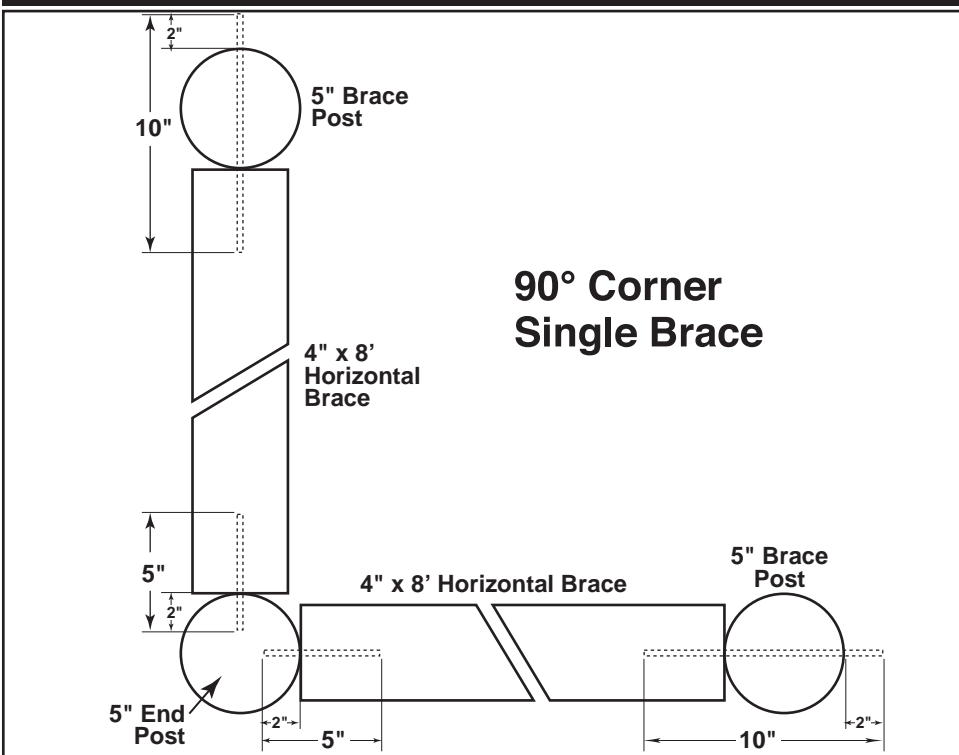


FIG 3B

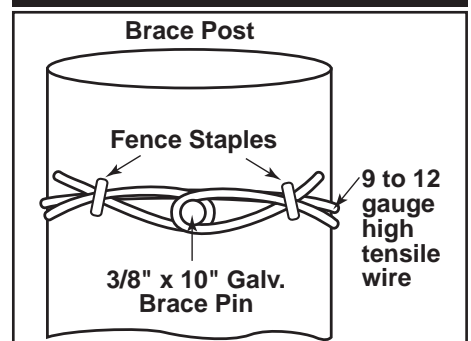
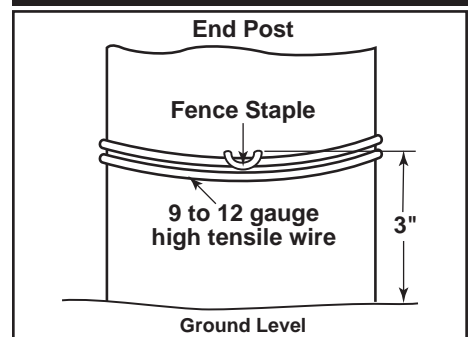


FIG 3C



LINE POST INSTALLATION

Now that the end posts, corner posts and brace posts are installed it is time to move on to the installation of the line posts.

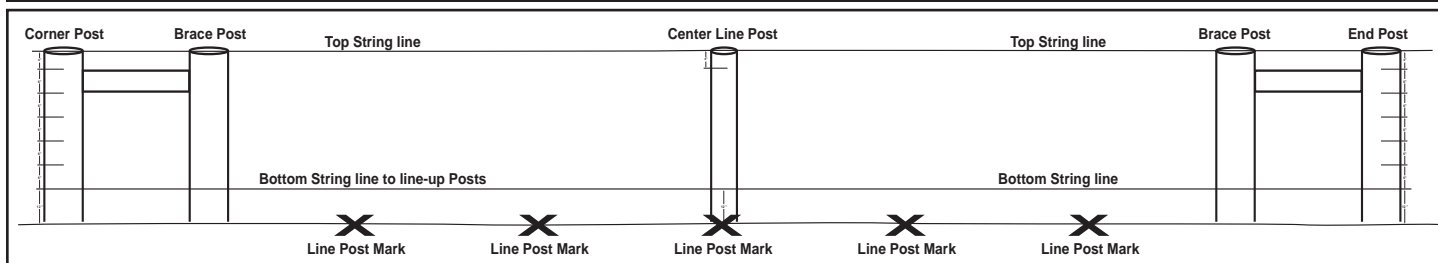
Line posts can be wood, steel "T" posts, pipe, plastic or "T" post sleeves.

1. Stretch a highly visible, strong, coloured guide string around the outside of all of corner posts and on the inside of the end & brace posts you have just installed. At a height of approximately 3" off the ground. (See fig 4)
2. Now choose your post spacing and mark the locations on the ground along the guide string. The recommended line post spacing is between 8' to 16' apart (in heavy snow or wind regions post spacing should be

no more than 12') Install line posts perpendicular to the ground to keep tape fencing from binding or curling.

3. Drive the posts in with a post driver at the spacing of your choice. **NOTE:** It is important that the tops of the posts are all at the same height. The easiest way to accomplish this is to run a second string line from the top of the corner or end posts. It may be difficult to get the string tight enough to be level between the posts. However if the first post you install is in the middle of fence line it will be easier to judge. **NOTE:** Be sure to maintain your post spacing. (See fig 4)
4. Install the remaining posts making sure to follow the guidelines we just laid out for you.

FIG 4



ROPE AND BRAID FENCE INSULATORS AND CORNERS INSTALLATION

Before you can install your insulators you must determine the number of strands of fence you will require. See page 2 for a guide on horse types to aid you in this decision.

1. With the number of strands now decided. Layout your corner and end posts as follows. The center of the top strand is usually placed 4" from the top of the post. The bottom strand is usually placed 12" from the ground. Measure the distance between these two marks and divide by the number of strands. This will give you your spacing between your strands. (See fig 5B)
2. Mark these measurements all the way around on all corners and end posts ONLY. (See fig 5B)

CORNERS FOR ROPE AND BRAID FENCE: Installation of the corners can be done in several ways we recommend the following method. This will help keep the animals from contacting any part of the fence bracing or posts.

3. First cut rope at 3' lengths for each corner and end post equal to the number of strands in your fence. Next using the same number of corner/end strainer insulators slide the 3' length of rope through the strainer insulators. Now attach to the corner or end post at your predetermined strand spacing. **NOTE:** To ensure that all strainers are at equal distances from the corner and end posts cut a piece of wood to a length of 6" and place it between the post and the strainer as shown. (See fig 5A & fig 5B)
4. Measure and mark off ONLY the position for the top strand insulators on all line posts. Then install ONLY the insulators for the top strand on all line posts.
5. Install the top strand completely before moving to the second strand. Start with one strand at an end or gate post. First insert the fence

strand into the strainer. Set the roll of fence up so it can be unrolled

FIG 5A END POST

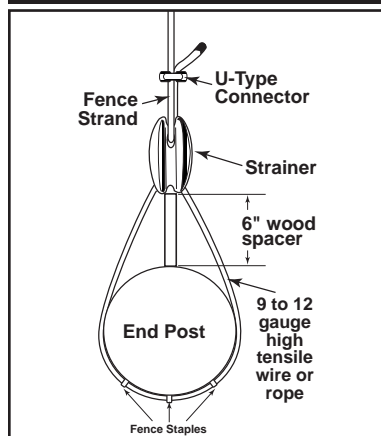


FIG 5A CORNER POST

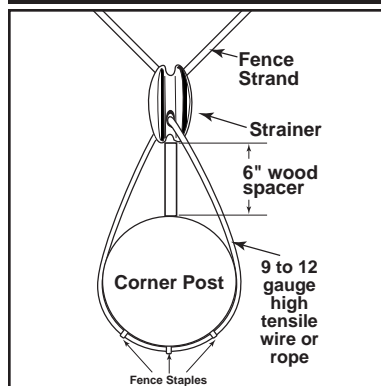
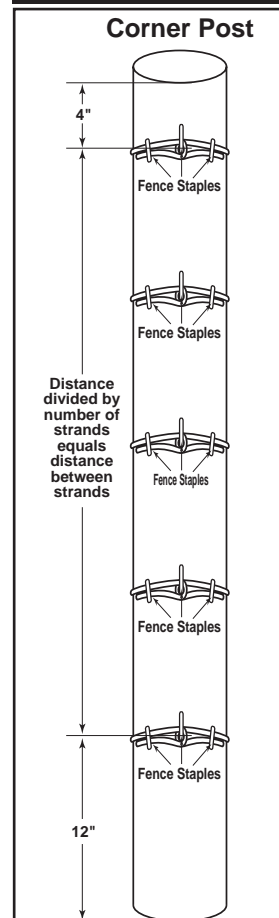


FIG 5B



- easily without stopping. (See fig 5C)
- With fence roll set up on either a spinning jenny or just a dowel through the center of the roll pull the fence strand and thread it through the insulators and strainer at the corners until you reach the other end or gate post strainer.
 - Then fasten one end of the strand in to the strainer with the U-type connector as shown in fig 5A END POST.
 - To tension the strands the use of a come-a-long is required. First fasten the come-a-long with a chain or strong cable to the brace post of the "H" bracing system as close to the strand that you are working on as you can. **NOTE:** Be very careful not to damage any of the insulators that you have already installed. After you feed the strand through the end strainer pull as much slack out of the fence line as you can. Then place a U-type connector on the fence line as you did at the other end but do NOT tighten yet. Attach the free end of the fence strand to the other end of the come-a-long using a loop in the strand and U-type connector. (See fig 5C)
 - WARNING:** Braid and Rope when over-stretched, may break and recoil causing serious injury. Caution is advised when working with any ten-

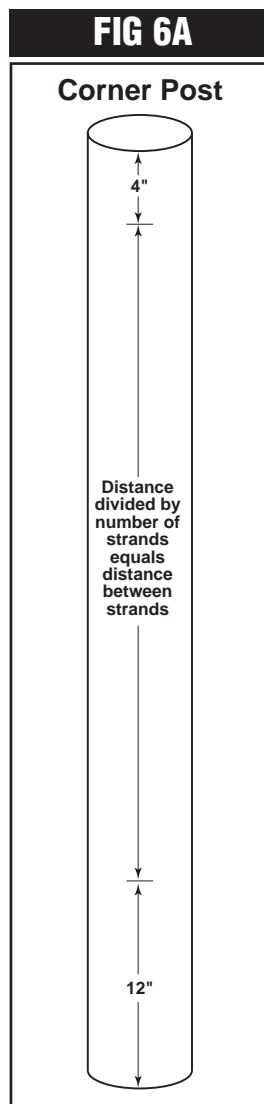
sion fencing. Eye and hand protection should be worn when working with Braid and Rope fence systems. Please keep all small children and animals away from fence lines when tensioning any fence.

- Work the come-a-long until the fence line is straight and taut between all the posts. When the desired tension is reached tighten the U-type connector. **NOTE:** Before disconnecting the come-a-long complete step 11 first.
- When the top strand is completely installed and tensioned stand back about a 50' to 100' from your fence to get a good view of all the fence line. Check to see it has a smooth easy transition from post to post. (It is much easier to make any adjustments to one fence strand then multiple strands.) **CAUTION: IF YOU HAVE TO MAKE ANY ADJUSTMENTS TO THE FENCE LINE REDUCE THE TENSION FIRST.** If everything is good cut the fence strand about 6" from the U-type connector and tape the end with electrical tape to prevent fraying. Once you are happy with the look of the fence line continue with the installation of the insulators on the line posts using the top strand as a guide for the other strands.
- Repeat steps 5 to 11 until all the fence lines are completed

TAPE FENCE INSULATOR AND TENSIONER INSTALLATION

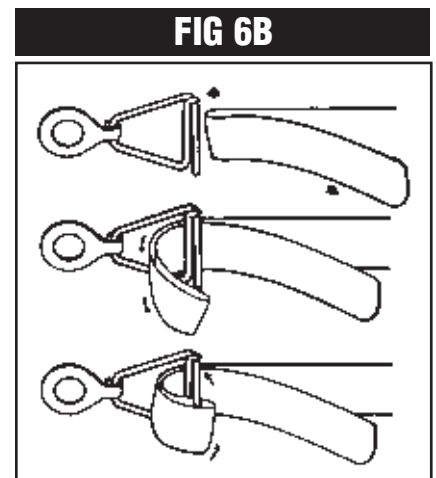
Before you can install your insulators & tensioners you must determine the number of strands of fence you will require. See page 2 for a guide on horse types to aid you in this decision.

- With the number of strands now decided. Layout your corner and end posts as follows. The center of the top strand is usually placed 4" from the top of the post. **NOTE:** if you are using post "T" post sleeves measure 4" down from the bottom of the cap. The center of the bottom strand is usually placed 12" from the ground. Measure the distance between these to marks and divide by the number of strands. This will give you your center-line spacing between your strands. (See fig 6A)
- Mark these measurements on all corners and end posts **ONLY**.
- At this point you can install your tensioners. Tensioners should be installed on all your corner and end posts. **NOTE:** Be sure to use the correct tensioners for your application.
- Install tensioners by drilling a 1/8" pilot hole in the post to accept the screw. Caution: Tighten the screw to the point of snug and no further. Over tightening of the screw may cause the tensioner body to crack. This will require the tensioner to be replaced.
- Next measure and mark off **ONLY** the



position for the top insulators on all line posts. Then install **ONLY** the insulators for the top strand on all line posts.

- Install the top strand completely before moving to the second strand. Start at an end or corner post by inserting the tape fence strand into the tensioner as shown in fig 6B. Then proceed to each insulator placing the tape in as you go down the line. **NOTE:** DO NOT CLIP INSULATORS CLOSED AT THIS TIME! After the tape is in place in all the insulators attach at the other end to the tensioner there as shown in fig ? but do not pull tight. **NOTE:** WHEN TIGHTENING TAPE DO NOT OVER STRETCH, JUST TIGHTEN ENOUGH TO REMOVE THE SLACK. Now go back to the first line post closest to the first tensioner, pull the tape tight with one hand and close the insulator with the other hand. **NOTE:** DO NOT USE A HAMMER TO CLOSE INSULATORS OR INSTALL FENCING IN TEMPERATURES BELOW 45° F. Repeat this procedure for each insulator then tighten tape at second tensioner.



- When the top strand is completely installed and tensioned stand back about a 50' to 100' from your fence to get a good view of whole the fence line. Check to see it has a smooth easy transition from post to post. (It is much easier to make any adjustments to one fence strand then multiple strands.) **CAUTION: IF YOU HAVE TO MAKE ANY ADJUSTMENTS TO THE FENCE LINE REDUCE THE TENSION FIRST.** Once you are happy with the look of the fence line continue with the installation of the insulators on the line posts using the top strand as a guide for the other strands.