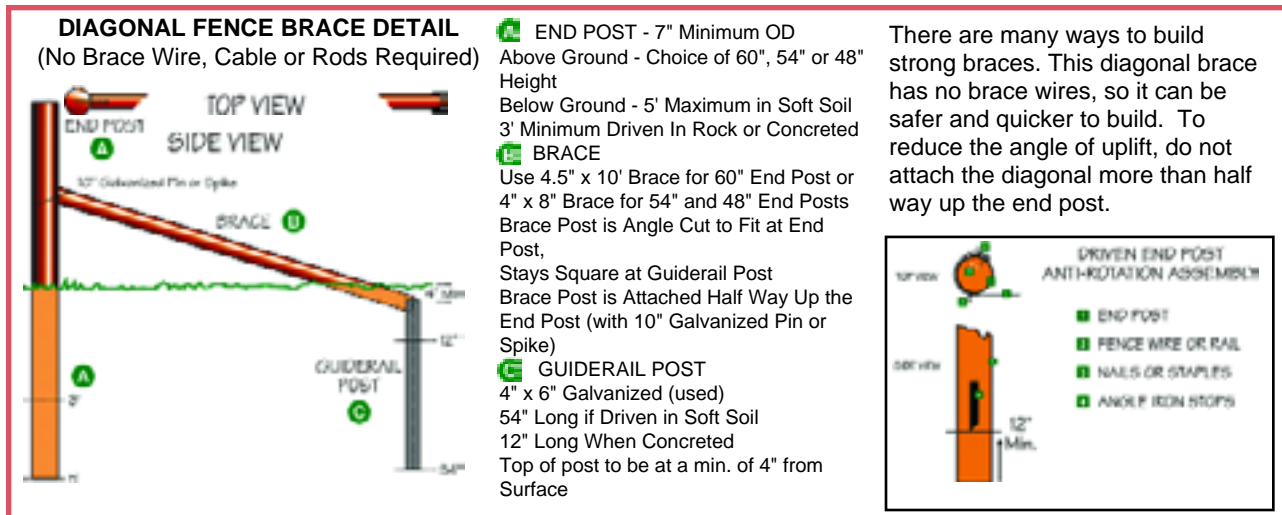


## HORSE RAIL - HOW TO



There are many ways to build strong braces. This diagonal brace has no brace wires, so it can be safer and quicker to build. To reduce the angle of uplift, do not attach the diagonal more than half way up the end post.

### How To Build a Kencove Horse-Rail Fence - DIY!

The following is a list of instructions for building a 3 rail fence with single "H" brace ends. The numbers match the drawing's sequence of construction:

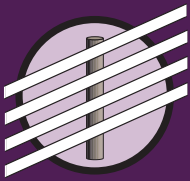
1. Dig or drive end post holes at least 4 foot deep. Dig the bottom 1/3 of the hole wider like a bell. Keep the side of the hole that the post will be pulled against, straight and undisturbed for the upper 2/3 of the hole.
2. Use 6" to 7" x 9' pressure treated round Wood End Posts. Skip steps 3 and 4 if you drive the posts.
3. Cut a treated wood 2" x 4" x 8' into 8" lengths. Attach 4 pieces 3" from the bottom of the end posts with galvanized nails or lag bolts (will be put into the bottom of the hole).
4. Using concrete, quarry dust and/or rocks and clay, the ends must be anchored and tamped very well. The most common problem with high-tension fences is the end and corner posts may lift up over time. Lean the end posts a few inches away from the direction of the pull of the fence.
5. Set the 4" to 5" x 8' round Wood Vertical Posts so the 10' Horizontal Brace Posts snugly fits between it and the end post at the expected rail height. Tamp this post very well.
6. The line posts should be 2.5 to 3 foot deep. Except for dip and rise posts, these do not require extra effort when tamping. Posts should be 8 to 12 feet apart.
7. You may want to position the 4" to 5" x 10' treated round Wood Horizontal Brace Posts behind the top Horse Rail

8. for a better look or put it halfway between the top 2 rails so it is easier to work on the ends of the horse rail.
8. At the planned horizontal brace post position, drill 2.5" into the end post. Also drill 2.5" into the center of one end of the 10' top rail. Insert the 5" brace pin into the hole in the end post.
9. Drill all the way through the 2nd vertical brace post and drive the 10" brace pin into the post from the fence side. Put the drilled end of the 10' brace post onto the stub of the 5" pin. Drive the 10" pin on through the 2nd horizontal brace post into the other end of the horizontal brace post. Leave 1" of the pin out to hold the diagonal brace wire up.
10. Cut 53 feet of the 210,000 PSI Brace Wire. At the middle of the wire make a 180 degree bend.
11. Put one strand of the wire through the hole in the bracket of the (SDS) Wire Tightener and slide the tightener down to the 180 degree bend. Lock the pliers onto the square lug of the tightener spool. Make a complete loop around the brace posts in a figure 8 shape. Put the 2 ends of wire into the holes in the spool of the wire tightener. Pull all the slack out by hand and turn the spool about 90 degrees so the wire is locked. Cut off the excess wire and

wind the spool until the brace wire is snug.

12. Nail through the bracket hole in the Donalds Stainless Wire Tighteners onto the side of the end post. These are for attaching and tightening each of the 2 wires in the plastic rail. The square tightening lug should face out from the post.
13. Carefully unroll the 4.25" White Plastic Horse Rail on the ground or with the (TSJ-HH or TSJD) spinning jenny. To attach the rail to an end post, use a utility knife to cut the plastic off the top of the wire for 12 inches. Cut in 1 inch directly under that wire and snap on the locking pliers. Peel back the foot of bare wire. Wind each of the 2 wires of the 4" rail onto separate tightener spools (2 revolutions). After the fence tightening has been finished, trim the stub of rail that extends beyond the tighteners. You may want it just reaching the post, halfway along the post or completely around the post.
14. Lightly staple the rail with the 4.3" Galvan coated wire Staple Bracket at rises and dips. It is better to keep a relatively straight look to the rail than to keep the exact same height from the ground on each post. After a rail has been tightened from the 2nd end, the brackets should be set so the rail can freely move through the bracket.





## HORSE RAIL - HOW TO

### Other ways to build:

- 7a. The brace post may be diagonal. Longer is better. It can come against an underground block, underground guardrail post or base of a line post. This requires the end to be anchored down especially well.
- 7b. The sliding diagonal system allows the diagonal to slide on the surface of a block. Loops of wire or a rod from the base of the end post transfer much of the tension to the sidewall of the end posthole. The increased friction helps hold the post down.
- 11a. It is common to tighten the diagonal brace wire with an in-line strainer. Also a chain grab wire tightener can tighten the brace wire, then splice it with crimping sleeves, a wirelink, a wirelok or a wrap connector.
- 11b. The diagonal wire can be threaded through plastic pipe.
- 12a. A stronger method of attaching the tighteners at the end is to use loops of high-tensile wire around the post rather than nails. A crimping tool and sleeves is best. Make up the loop with a wire tightener 1st, then slide it over the top of the end post. This will keep the strainer closer to the post.
- 12b. One end of a stretch can be terminated without tighteners.
- A. Crimp a loop in each wire and attach with a lag or nail and washer.
- B. Install a painted bracket on the fence side of the end post. Go around the post with the rail, overtop the bracket then through the bracket. Put 6" of rail through the bracket. Clamp a 2nd bracket over the double layer of rail right beside the 1st bracket. Drive some barbed staples tight on the wires at the end of the rail.
- C. Crimp loops of standard high tensile wire around the post in the normal method of fastening off h-t wire. Leave 2" of wire beyond the crimping sleeves. Crimp the wire of the rail onto this 2" stub.
- 12c. If there will be one corner with tighteners at both end posts, staple the wires tight at the corner to keep it from wearing.
- 12d. A 3-in-1 spooler is now out. It can be used for an end attachment as well as for joining and tightening the rail. The cost is \$10.00.
- 14a. The painted hot dip galvanized brackets are safer and stronger because they have 2 holes on the top

and 2 holes on the bottom. These will handle barbed staples, screws or nails.

### Materials Needed For Building The Horse Rail Fence Yourself

The following is a list of tools and materials to build up to 213 feet of 3 rail fence. This is numbered in the order of use to match the numbers on the drawing. Some things are best bought locally.

			Tools to dig post holes or drive posts, 3/8" bit and drill, hammer, razor knife, saw, locking pliers with wire cutter (10WR Vicegrip brand - imports break)
1.	(local)		
2.	PC9	2 each	6" x 9 'treated round Wood End Posts FOB
3.	(local)	1 each	treated wood 2" x 4" x 8' End Post Anchor + galvanized nails or lag bolts
4.	(local)		concrete, gravel, rocks – ends must be anchored and tamped very well
5+6	PC4	18 each	4" to 5" x 8' treated round Wood Vertical Brace Posts FOB
7.	PC1	2 each	4" x 10' treated round Wood Horizontal Brace Posts FOB
8.	H5PE	2 each	5" Brace Pin
9.	H1PE	2 each	10" Brace Pin
10.	WM2FT	200 feet	12.5 gauge galvanized 210,000 PSI Brace Wire FOB
11+12	SDS	14 each	Donalds stainless steel Wire Tightener for wire in rail
	WSN5	12 each	hot dip galvanized hardened 5"ringed nails to attach (SDS) FOB
13.	WSRW	1 each	660 foot roll of 4.25" White Plastic Horse Rail FOB
14	WSP-SB	53 each	4.3" Galfan coated wire Staple Bracket (12 foot post spacing)
			Total WITH POSTS is \$2.41/ft x 213 feet
			Total WITHOUT POSTS is \$1.55/ft x 213 feet

Wood Posts in above example at Kencove's Blairsville yard cost.