RAMM

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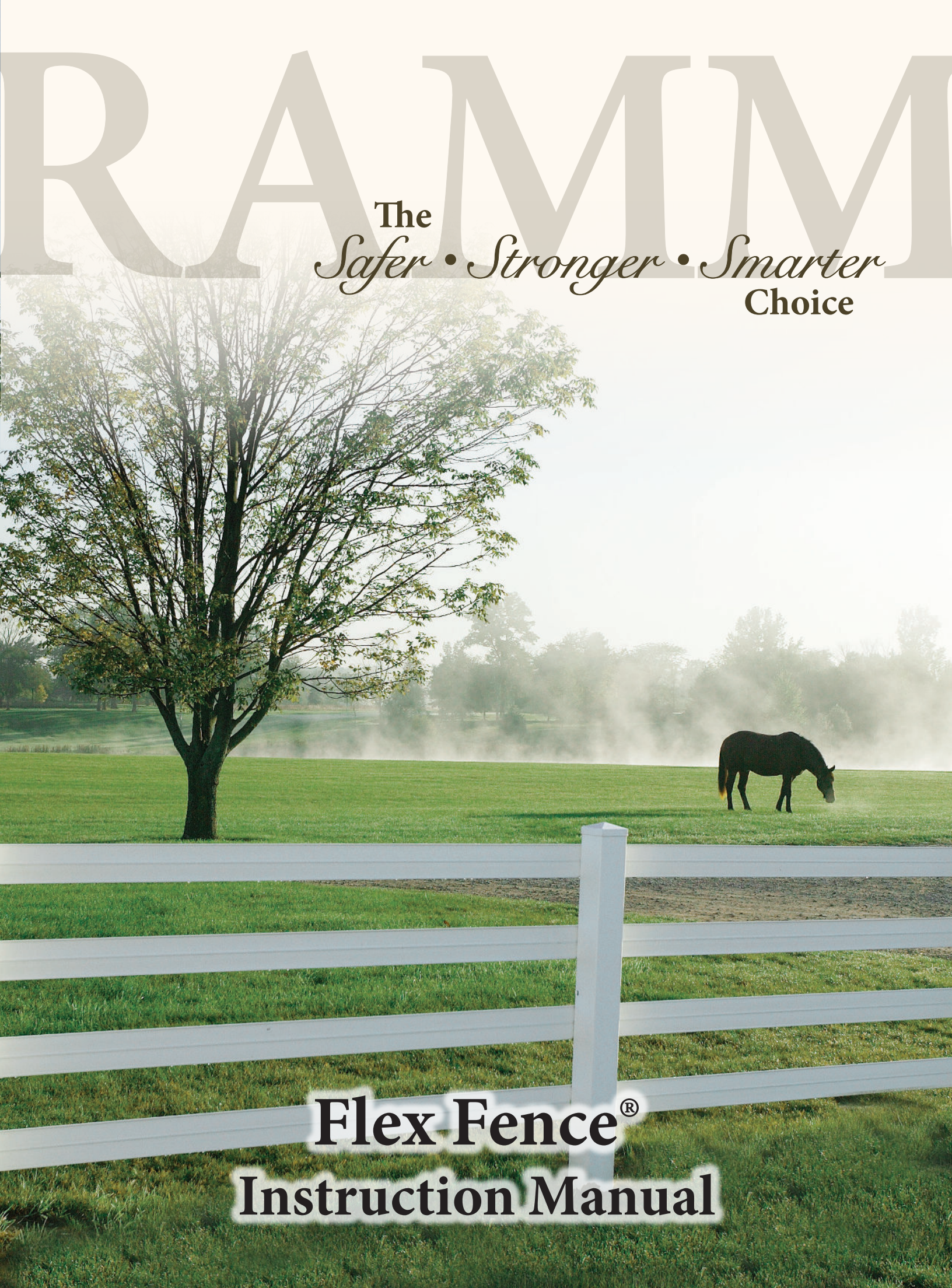

Flex Fence®
Instruction Manual

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SUPPLIES, TOOLS AND EQUIPMENT

1.

Fence Rail

2.

Bracket with Nails

3.

End Plate Package

4.

End Tightener

5.

Splice Plate

6.

Diagonal Brace Plates and Nails

7.

Safety Glasses

8.

Posts

9.

Concrete

10.

Paint

11.

12" Diameter 48" Long Auger

12.

Paint Brushes & Rollers

13.

Chain Saw

14.

Shovel, Spade, Post Hole Digger & Tamping Bar

15.

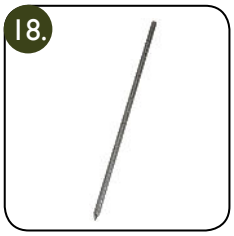
Level

16.

Hammers

17.

Crowbar

18. 

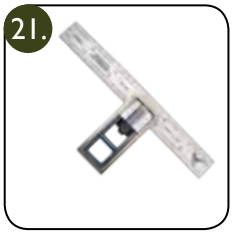
Layout Stakes

19.

Fence Cutters

20.

Utility Knife

21. 

T-Square

22.

1/2" Drive Long Ratchet Handle

23.

Templates (Homemade)

24.

Side Cutters, Lineman Pliers & Snips

25.

Drill with 3/8" Bit

26.

Layout Paint

27.

String

28.

Tape Measure

29.

Pencils

INTRODUCTION

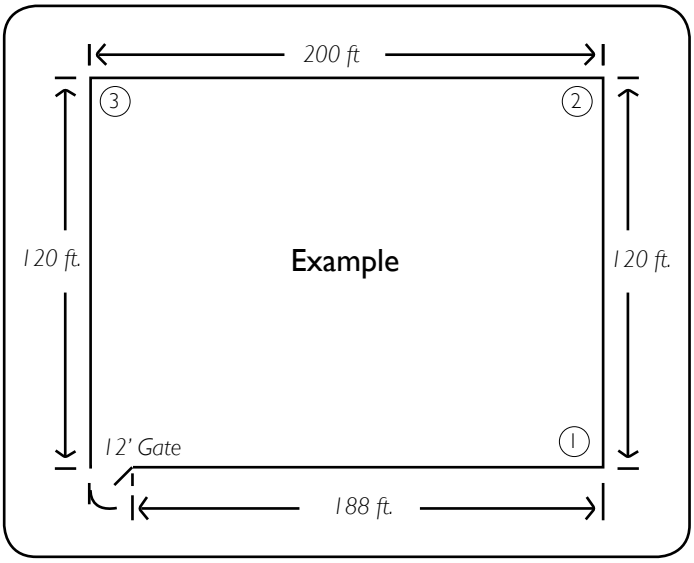
The first steps of your installation is having an accurate layout of the site to be fenced.

Your fence utilizes high tensile wires embedded in the polymer that must be tensioned in order to function properly.

This means that all ends and posts that are not in a straight line will have to be braced and concreted to withstand the forces. If you do not follow the manuals instructions for building the ends and corners you will not be satisfied with the appearance or function of the fence.

Also, if you have posts in an abrupt valley they will have to be concreted as well.

LAYING OUT OF YOUR PROPOSED FENCE



- How many end assemblies do I need?
  Answer: Two (one on either side of the gate.)

- How many corner assemblies do I need?
  Answer: Three, marked at 1,2 and 3 on Example on left.

- How many line posts do I need?
  First, add up the footages
  200+120+188+120=628
  Second, divide by the spacing and we have selected to use 12 ft. Therefore 628 ft. divided by 12 ft.= approximately 53.
  Answer: 53

- How many End Plates & Tighteners will I need?
  Since the distance around the paddock is less than 660 ft. we will need only one of each per rail.
  In this case:
  Rolls of rails times the End Plate
  Rolls of rails times the Tightener
  Assume 4 rail-therefore we will need 4 of each.

- How many rolls of fence is required?
  628 ft around time 4 rails = 2512 ft total.
  2512 ft around divide 660'/ROLL = 3.8 rolls - round up to 4
  4 rolls are required.

Total up what is required so far.

Posts
6" diameter* x 8 to 9' long (End and corner upright posts)
3+2 = 5 posts.
4-5" diameter* x 7-8' long,
53 Line Posts + 2 Termination Brace Posts + 6 Corner Brace Posts = 61 Posts TOTAL
4 Rolls of Fence
4 End Plates
4 Tighteners

***Measured at smallest end**

POST REQUIREMENTS

Listed below are the post specifications recommended for use with High Impact Flex Fencing.

ALL WOOD POSTS MUST BE TREATED

POST TYPE	POST DIAMETER*	LENGTH
Line	4"-5"	7'-8'
End/Corner	6" min	8'-9'
Diaganol Braces	4" min	7'

*Measured at smallest end

CONCRETE REQUIREMENTS

Mix each 80 lb. bag of concrete according to the concrete manufacturer's methods found on the bag.

All concrete footer depths must be below the frost line for your area.
If frost line is unknown talk with your local extension office.

Concrete volumes for post footers can very depending on hole size, but we are assuming 12" diameter augured holes.

NOTE: IF YOU HAVE UNSTABLE SOIL YOU MAY HAVE TO USE A HORIZONTAL/DIAGONAL END AND CORNER ASSEMBLY OR A LARGER DIAMETER AUGER. CALL HIGH IMPACT FLEX FENCE AT 1.800.853.1611 FOR DETAILS.

FOR DIAGONALLY BRACED END ASSEMBLY

Northern states you will need **7-8**, 80lb bags of pre-mixed concrete (assuming 47" frost line.)
Southern states you will need **4-5,** 80lb bags of pre-mixed concrete (assuming 17" frost line or less.)

FOR DIAGONALLY BRACED CORNER ASSEMBLY

Northern states you will need **11-12,** 80lb bags of pre-mixed concrete (assuming 47" frost line.)
Southern states you will need **6-7,** 80lb bags of pre-mixed concrete (assuming 17" or less frost line.)

LAYOUT YOUR FENCE LINE PERIMETER (EXAMPLE BELOW 200'X120' PADDOCK)

A. Locate all corner posts

B. Run string lines (dashed line) approximately 6' past corners and Drive a stake (solid black squares) into ground as shown in sketch below.

C. To assure square corners use the 3'4'5' triangle method, see corner 3

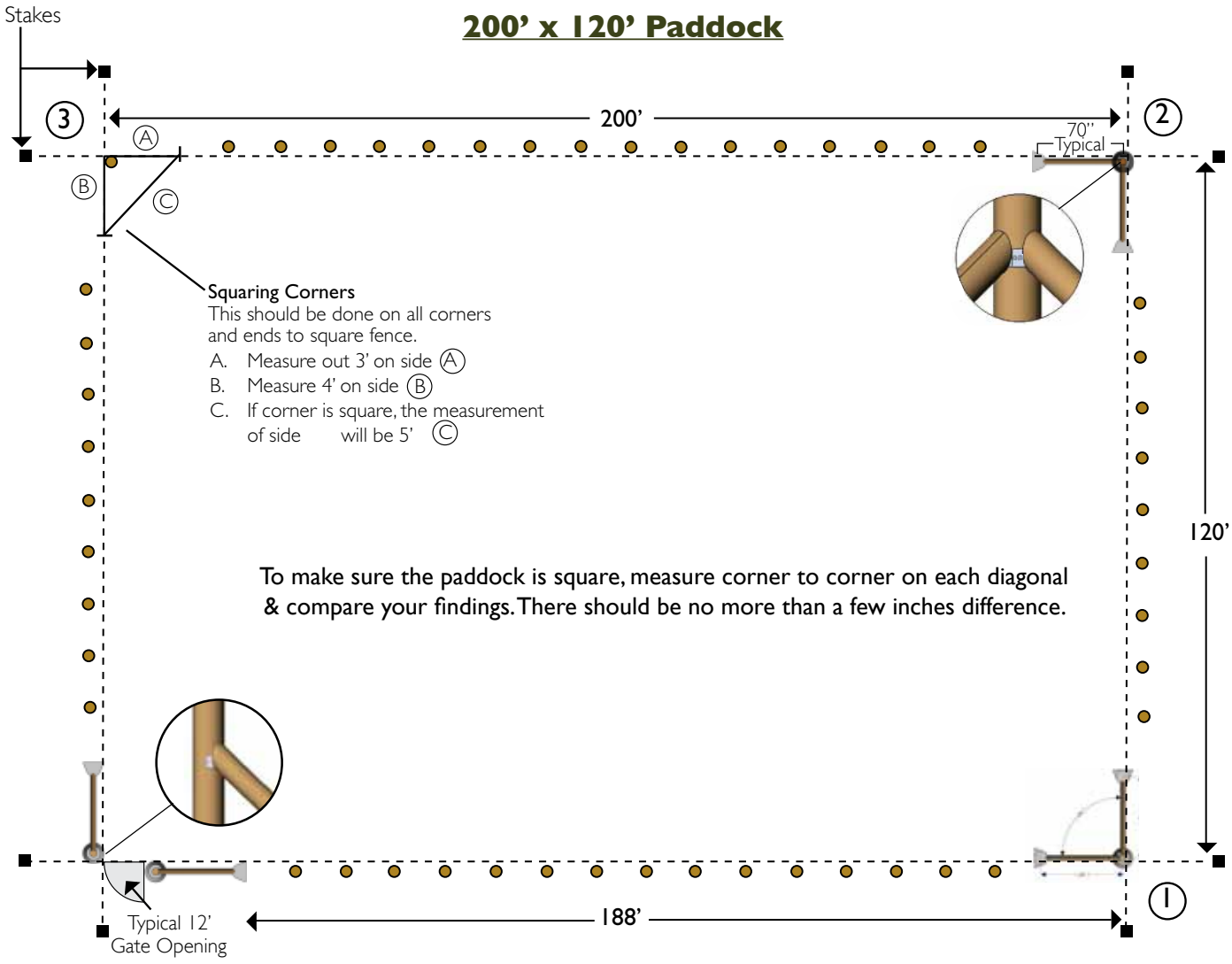
D. Mark your ends, corners and line post locations. Marking paint is helpful.

E. Line posts are usually set apart 12' distance from each other.

F. The diagonal brace post, hole location is 70" center to center distance from upright end or corner posts. See pg. 7 for sketch.

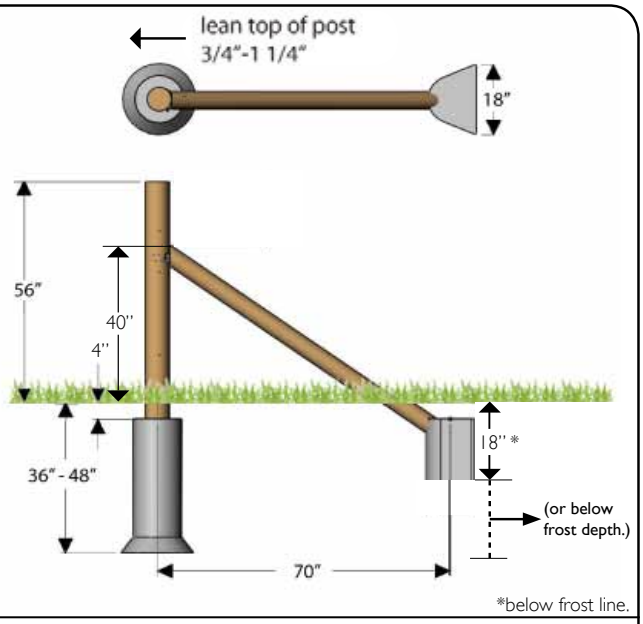
G. Gates are usually sold by opening. A 12' gate goes in a 12' opening making the gate 11 1/2 ft. long.

H. All corners need to have rail run on the outside of the assemblies as shown.

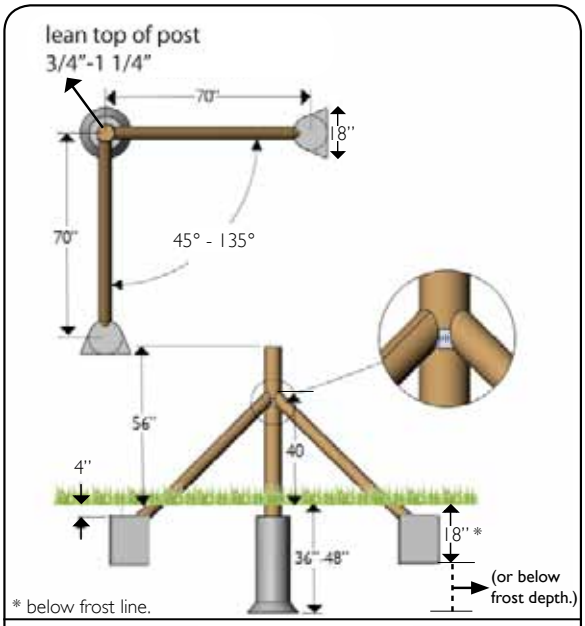


AUGERING HOLES

- BEFORE YOU DRILL, call local utilities (dial 811 they will mark your utility lines).
- After you have marked the location of your end, corner, line and brace holes, you are ready to drill your holes.
- Typical auger depths are shown in the diagram below.
- All holes that are filled with concrete need to be below the frost line for your area.



End Post Assembly



Corner Post Assembly

End /Gate Assemble

- Typical end/gate post with concrete illustrated
- Note: end post should be set to lean 3/4" - 1 1/4" away from tension
- A brace post should be in the footer no more than 3 to 4 inches

**All footers must be below frost line.

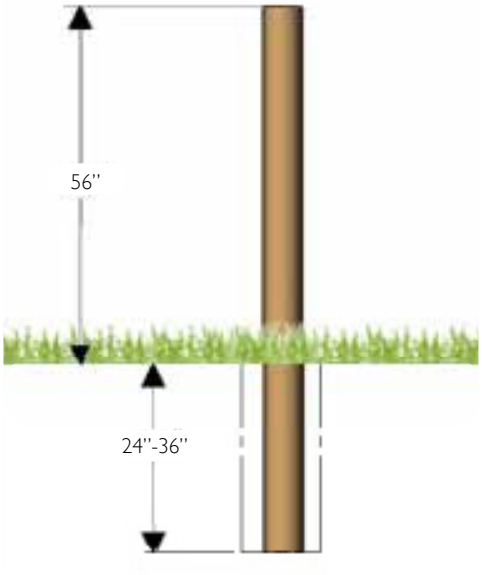
Corner Post Assemble

- Typical corner with concrete illustrated
- Note: corner post should set to lean 3/4" - 1 1/4" away from tension
- Corner post must be round
- A brace post should be in the footer no more than 3 to 4 inches

**All footers must be below frost line.

Drill All Line, Corner, End and Brace Post Holes Using a Minimum of 12" Diameter Auger.

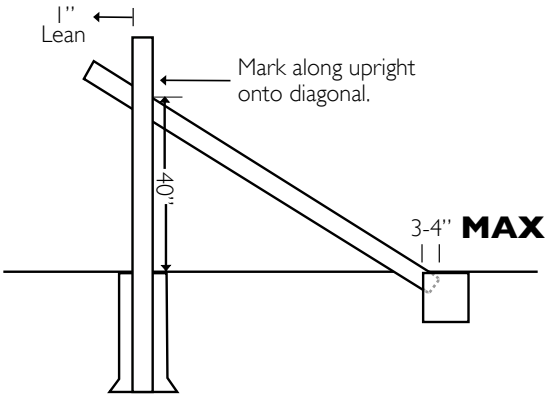
- Line Post Holes- should be approximately 24-36" deep
- End/Corner Posts Holes- should be 36-48" deep depending on frost line. Fill hole with concrete to approximately 4" below ground level. Make sure that the bottom of holes is at least 6" wider than top of hole.
- Diagonal Brace Post Holes- should be at a minimum of 18" deep with an 18" squared face. Hole must extend below your frost line and be 70" from the end/corner post hole (center to center)



Line Post- Tamped Soil

END AND CORNER ASSEMBLIES

- After you auger your holes you will attach your diagonal braces to your upright posts for both your ends and corners. These will be done with brace plates and 3 1/2" Ring Shank nails.
- The diagonal braces will be selected from your line posts. Select all the brace posts that will be required at this time. Select the cleanest (straight and as few knots as possible) of your line posts.
- Follow the step by step procedures to assemble your end posts assemblies as follows:



1. While holding post at 40 inch mark, make a mark along upright on diagonal

2. With a chain saw, cut off extra post at this mark

3. After you cut it, hold it up and you may have to trim it if the angle is off very much
4. Nail the brace plate to the bottom angle of the diagonal brace post.

5. Then nail brace post to upright post 40 inches from ground level

Your corner post assembly is the same as this except one additional brace is required. When nailing the brace plates to the upright post you may have to overlap them and use a common hole. Hold them up to your upright post prior to nailing to determine if they will set side by side or you indeed need to use a common hole.

FILLING HOLES WITH CONCRETE

- Fill all end and corner holes with concrete keeping in mind the following:
- Fill to within 4" of ground level so you can put dirt back in around your posts and grass will grow.
- Lean upright posts back approx 1" away from fence tension.
- Make sure your diagonal braces are in the footer no more than 3-4 inches or they could push through the concrete when tension is applied.
- Make sure all concreted holes are below front line for your area.

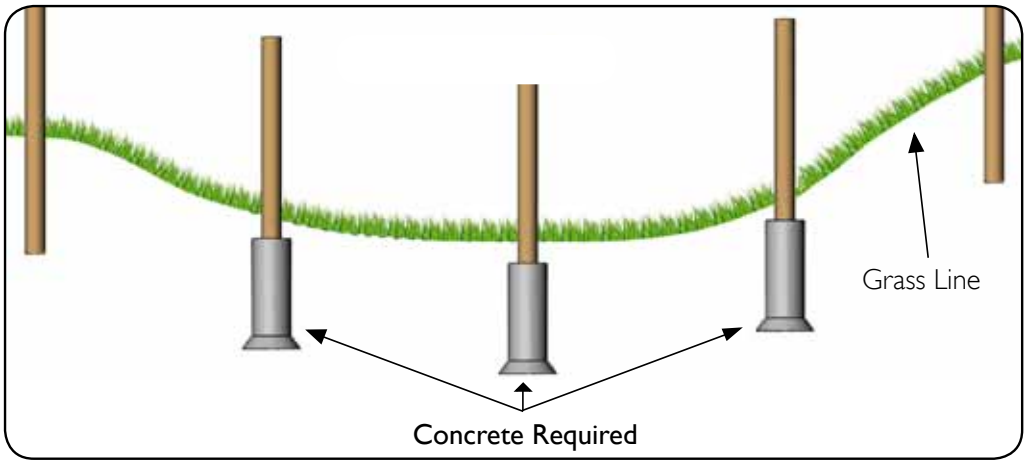
Make sure your upright posts are correct with your string line and all string line is on the outside of your corners. Remember, your string line represents your fence.

SETTING LINE POSTS

- After you have set and concreted all your end and corner post assemblies - RECHECK YOUR STRING LINES. If the concreted ends and corner post are not within approx 1/8" from the string line, take out the stakes and tie the string line to the corner and ends posts. Make sure you wrap it around each one, so it stays.
- Set line posts as follows:

1. Place line posts in holes making sure they aren't on string line and are out of holes at least 56".
2. Level each post individually keeping it within 1/8" of string line. **MAKE SURE YOUR POST IS NOT TOUCHING THE STRING LINE.**
3. While holding posts level put about 3 to 6" of dirt in hole.
4. Tamp dirt around post at bottom of hole.
5. Continue adding dirt in 3-6" segments around post and tamp until hole is filled to ground level around line post.

Note: If you have line posts in a valley, concrete may be required to hold them in place.



POST PAINTING

- If you select to paint your posts it should be done at this time. We advise you use a good quality paint.
- We offer a latex based paint that will not fade or peel and is lead free. It will also resist mildew and corrosion and can be sprayed or brushed on.
- Another alternative paint solution would be an oil based A-100 primer and a A-100 latex overcoat.

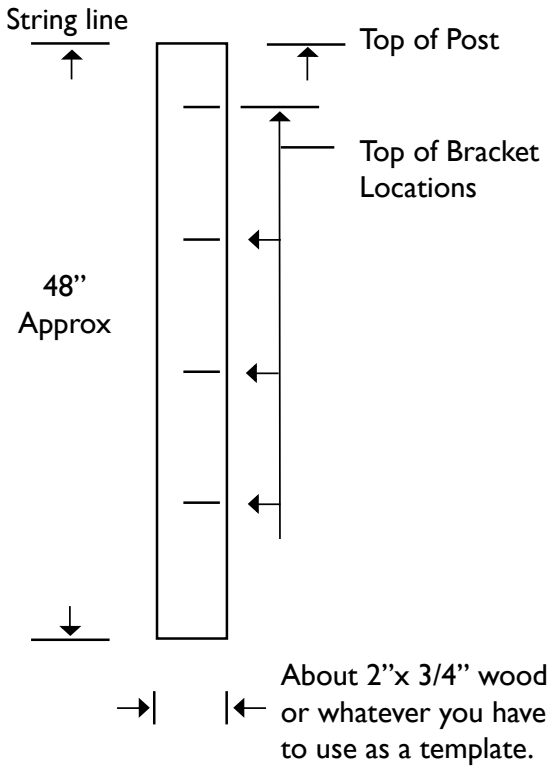
DETERMINING POST TOP & BRACKET LOCATION

- After paint is dry you need to determine the tops of your post. From this line you can determine the bracket locations. Everything, all post tops need to be over 56 inches.
- Mark on the side of the post a small line at 54" from the ground. Do this on all posts.
- Starting at an end post and using a thick and visible string wrap it around every post.
- Make sure it is tight between each post.
- Site over the string line and you will see abrupt changes in the flow. By raising and lowering the string line you can make the flow smooth from post to post.
- You are looking for the average height of your fence over the entire length.
- Make sure you are satisfied with your flow of the string line because this will influence the overall appearance of the fence itself.
- Usually look at your string line from various angles.
- More than one opinion is helpful.
- Keep the corner and end posts string at the 54 inch mark, do not move the string line on them.

TAKE YOUR TIME AND DO IT UNTIL YOU LIKE IT!

- **With the bracket locations from the sketches on page 13 you should make yourself a wood template so you can mark your bracket locations.**
- Mark the new string line (top of post) on each post and the bracket locations.
- After you have determined and marked your bracket locations, remove your string.
- Cut the tops off at the mark from the string. Use a 5° to 10° angle away from your bracket location marks.

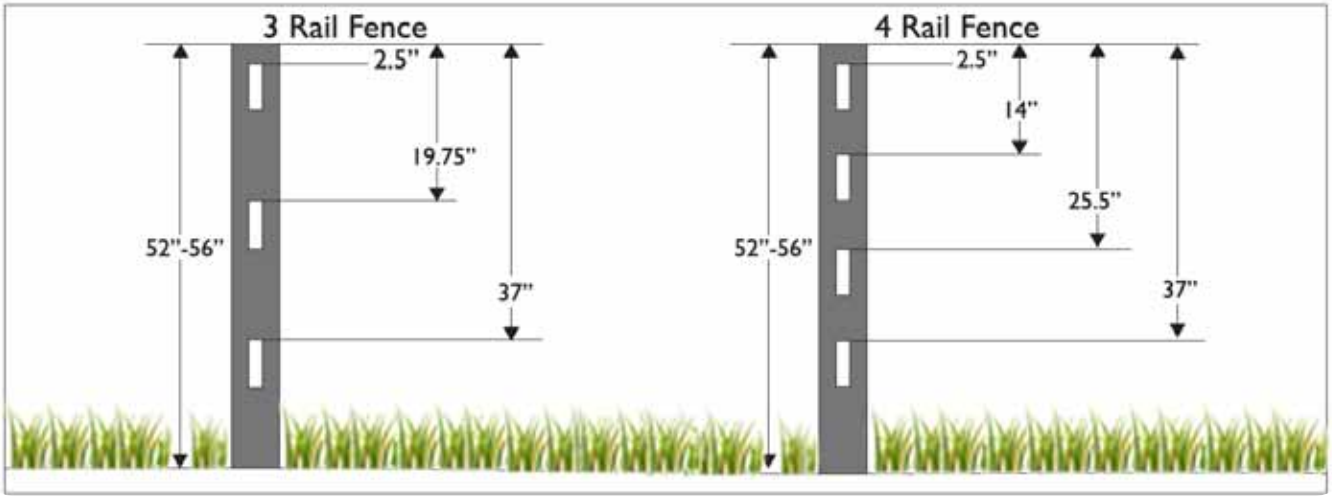
TEMPLATE



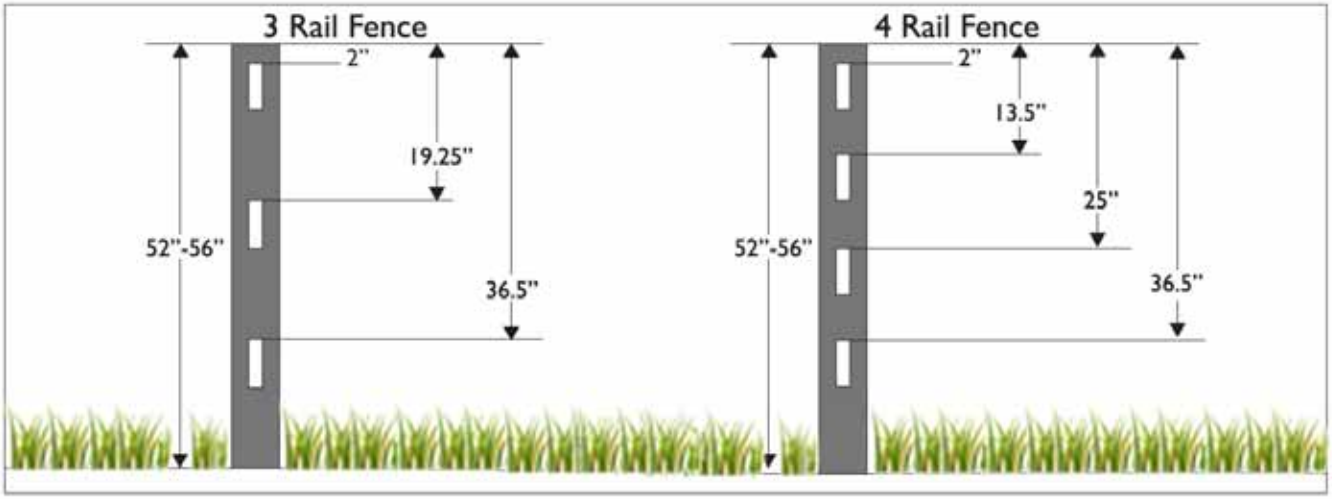
PAINT POST TOPS

- If you decided to paint your posts, paint the top of the posts at this time.

4" Bracket Locations



5" Bracket Locations



BRACKET INSTALLATION

- After your painted tops have dried it is time to install your brackets.
- The brackets are installed at each mark on the posts with the bottom nail only. You will install the top nail after the fence rail is paid out.
- MAKE SURE THE BRACKETS ARE CENTERED ON EACH LINE AND CORNER POST. This is important because the rail must slide freely through each bracket and around the round corner posts.

LAYING OUT YOUR FENCE RAIL

- Drive a crow bar in the ground near the end post.

- Place your roll of fence over the crow bar.
- **Remove plastic wrap from rail and retain label for your records.** Label has manufacture details on label like batch #, roll # and ect. These items are very important if you ever need to file a warranty claim.

- Pull one rail of fence around your perimeter.
- Leave a couple of feet extra on both ends before cutting rail off.
- Pull out another rail of fence around your perimeter of your paddock or pasture
- Lay out all rails at the same time, so if you need to splice your rails, they will all be consistent and in the same spot.

- Put rail in brackets on all posts.

- Hammer the top nail into all brackets. Put up all fence rails in brackets and nail in place

SPLICING YOUR FENCE RAIL

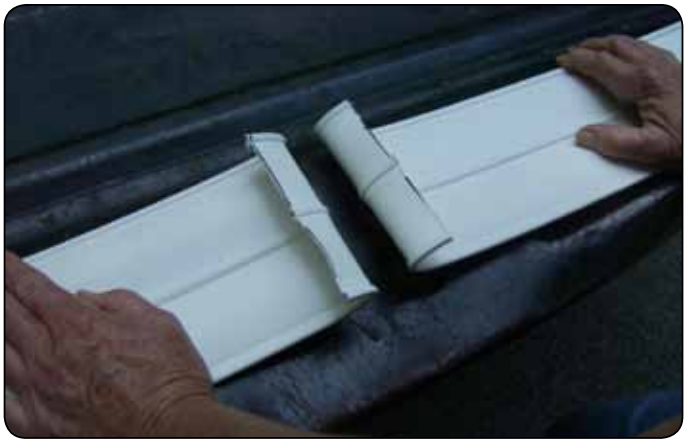
- Decide where you need to splice your fence.
- Your splice should be between two posts and not directly next to either one, so the fence can be tightened afterwards.
- Take each end of the fence rail that is to be spliced, select one side and fold it over, **making sure the rail has a curved bend (not folded flat)** and keeping sides parallel.

- Measure back one inch and mark a spot on the fence rail.

- With the aid of a t-square draw a line on the fence.

- Cut excess off at this mark. You will need high tensile wire cutters to cut through the wire.

- If your rails are already in their brackets check to make sure your bends are opposite of each other. Keeping that in mind fold the other side over, keeping it parallel, measure back one inch from the bend and cut excess off.



- Fit each end into the splice plate and bend ends closed (**do not hammer**). *Make sure the fold is rounded and not pinched tight.

- Put the bolts with the washers through the plate.

- Put the mating plate on the bolts and install washers and acorn nuts. Screw down finger tight.
- Important: You must use a washer on the bolt side, then put the bolts through the plate. Put another washer on the bolts before you put the acorn nuts in place. You use a total of 2 bolts, 4 washers, and 2 acorn nuts to put splice plate together.

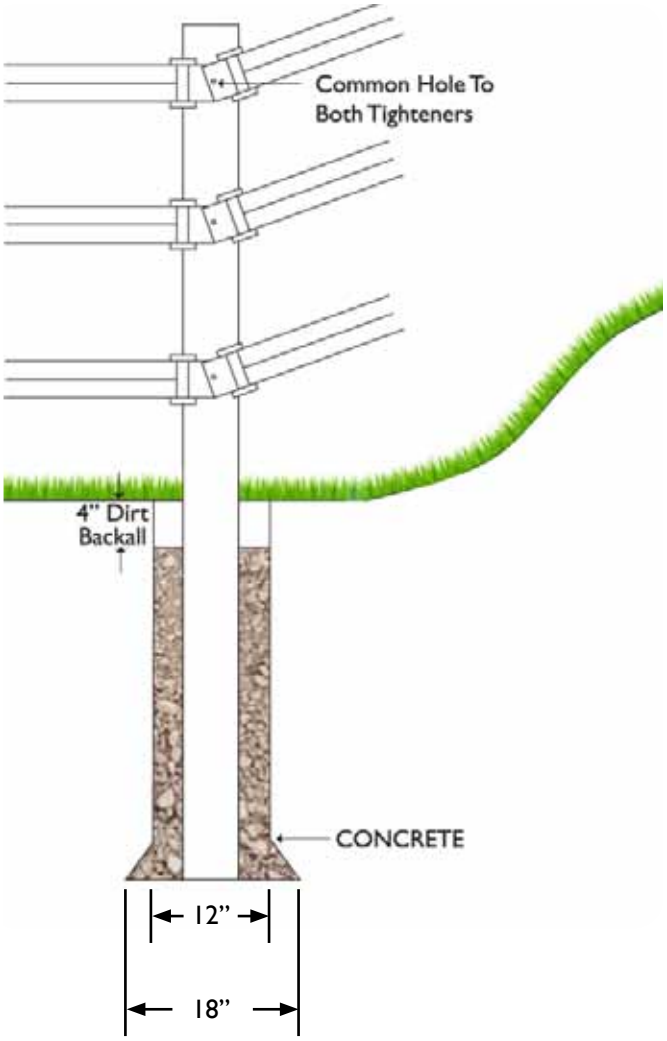
- Make sure your splice is to your liking and both sides are parallel. Tighten nuts on to bolts with 1/2 inch wrench & 9/16 inch ratchet or 9/16 inch wrench.

- This is your completed splice.

FENCING THE ABRUPT CHANGES IN GROUND LEVELS

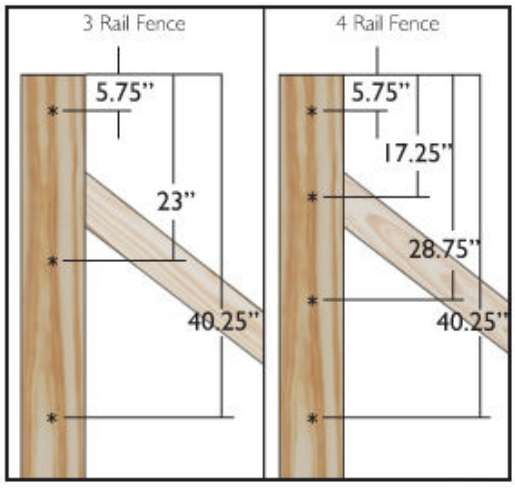
If your grade changes abruptly on your proposed fence lines you can do the following:

- At the change in grade, auger a 12" diameter hole 36" deep or below your frost line.
- Bell out the bottom of the holes to 18".
- Put a 6" minimum diameter post in hole.
- Add concrete until hole is full to within 4" of ground level.
- Mark post with the same spacing used to locate your end plate and tighteners.
- Drill a 3/8 inch diameter pilot hole at each mark approximately 4 inch deep.
- Match up two tighteners together and with one lag bolt through the hole on each one and screw it into the pilot hole.
- Make sure slack is pulled out in either direction and follow the tightening procedure as shown on pages 20-23.
- Do this on both tighteners.
- Try to have the same tension on each side when you are finished tightening.

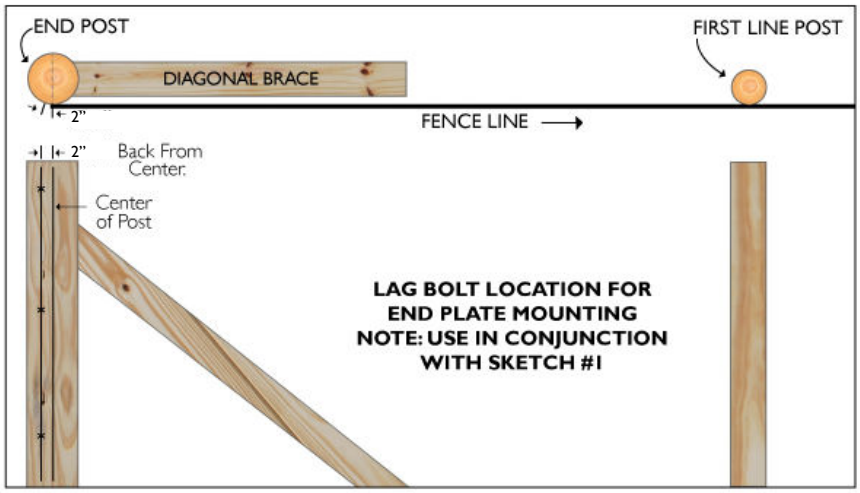


TIGHTENER & END PLATE LOCATIONS

4.25 and 5.25 inch High Impact Flex Fencing



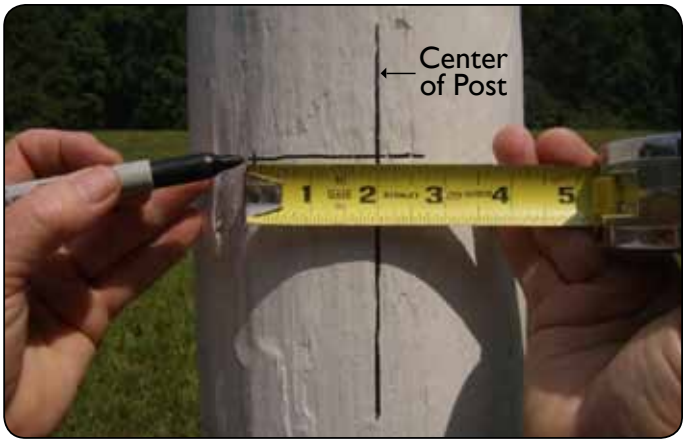
SKETCH #1



SKETCH #2

END PLATE INSTALLATION

Now that you have your fence put in their brackets, it is time to put up your end plates and tighteners. Your end plates will be installed first. It doesn't matter what end post you select.



- Use SKETCH 1 to locate the horizontal marks on the end post. Then you should measure back 2 inches (See SKETCH 2 for details) from the "middle" of the post to find the spot to drill the 3/8 inch diameter by 4 inch deep hole. This is the pilot hole for the lag bolt.

- Install lag bolt through end plate and screw it into your pilot hole you have drilled. **Important:** The endplate must be left loose until the fence is tensioned (which will be explained later). They should only be snugged up and not tightened. Do this on all rails.

- Take the end of the fence and fold it over about a foot **making sure the rail has a curved bend (not folded flat)**, keeping sides parallel. Fold it back to at least 1/2" apart **(do not hammer)**.

- Measure back 3 inches and mark a spot on the fence rail. With the aid of a t-square mark a line on the fence rail where your spot is.

- Cut excess rail off at your mark. You will need high tensile wire cutters to cut through the wire.

- Fit the short end into the slot of the end plate. Snug up the lag bolt pinching the short end. ONLY SNUG, NOT TIGHT.
- Pull all excess slack out of fence back to the other end post where you will install your tightener.

TIGHTENER INSTALLATION

Using SKETCH #1 for reference, mark and drill pilot hole for each tightener.

- Drill this hole in end post to a depth of approximately 4 inches using a 3/8 inch diameter bit. The location for your tightener is in the center of the post. DO NOT MEASURE BACK THE 2 INCHES AS YOU DID FOR YOUR END PLATES.

- If you are pulling the fence rail from the right of the end post you can use it as it arrives to you from the factory. If you pulling it from the left of your end post you will need to remove the linch pin and washer from the drop tube and then pull this tube out of the tightener body and flip it over. Put the washer back in place and also the linch pin.

- Put lag bolt through tightener and into your predrilled hole.

- Snug up the lag bolt on the tightener. Tightener is now ready to accept rail.

- Pull all slack out toward tightener and then measure 3 inches past the slot in the drop tube and mark the fence. Cut excess rail off at this point.

- Insert fence end into slot. Put your 1/2 inch drive ratchet in the square opening of the drop tube.

- While applying finger pressure tighten up the rail with the ratchet.
- Note: if your tightener is installed to the left of the end post turn your ratchet clockwise and if you are on the right side turn it counter clockwise. This will keep the rail closest to the post.

- You will have to put a rivet in a lined up hole while you are tensioning the fence rail. This will be required to get another "bite" with your ratchet. This is due to the spring back action you are creating with your spooling.
- Continue to ratchet until slack is removed but DO NOT TIGHTEN FENCE YET.

FINISHING A QUALITY INSTALLATION

Go back to your end plate post and follow the remaining instructions.

- The end plates should be lined up with your fence run because you have applied a minimum force with your tightener. Stand back, look it over and make sure the flow from the end plate is to your satisfaction. After you have determined the end plate is in line with your fence run, install the two smaller screws. A pilot hole should not be necessary. Can use 2 - 3.5 inch ring shank nails if screws are stripped.

- Tighten these two screws. These screws are designed to trap the bent short section of the fence between the end plate and the post.

- Tighten lag bolt.
- **Now that you have installed your end plates you are ready to completely tighten your fence.** With the aid of a long handle ratchet tighten your fence. If you have pulled about 2 feet of fence rail into your tightener and the rail is wavy at the other end do the following:

1. Start with removing the rivet and pulling the rail out of the drop tube.
2. Again, pull the rail back about 3 inches past the slot in the drop tube and cut off the excess rail.
3. Put it back in the slot and re-tighten.

- Note: Your fence will have to be worked around the corners through your brackets to achieve uniform tension through out the entire length. Once you have tightened the fence insert the two rivets into any two lined up holes.
- Tighten lag bolt.
- Hammer both nails through tightener holes and into posts. Do this at an angle that is different from the lag bolt.

- This will complete your installation.

REVISION DATE: 9/25/2019