

# Post & Rail Crossbuck

## 1. Getting Started

- Be sure to call underground prior to digging
- Assemble gates (if necessary) and decide where they will be located
- Stake out the fence line
- Space and mark post hole locations for gate and sections (spacer bar/template may be useful)
- Start at gate end post and work outward to determine proper fence height relative to ground

## 2. Dig Holes

- Dig holes 30" deep or to frost line
  - hole size for 5x5 posts = 12"
- Clean holes and check for straight walls

## 3. Install First Post

- Insert post in hole
- Determine rough height
- Fill hole around post with concrete mix (sand, gravel and cement) approximately 2" below grade
- Tamp concrete in hole to eliminate air pockets
- Level and square post
- Fence may be installed post and bottom rails first, then upper rails

## 4. Install Rails

- Tape the ends of any rail going into a post that is to be filled with concrete to prevent concrete seepage
- Standard rails are supplied in 16 foot lengths
- For rolling terrain, rails may need to be cut to 95-1/2"
- The starting point for rails should be staggered from post to post for bottom/mid/toprail for maximum strength
- Insert lock ring into one end of rail by depressing tabs, insert in rail end and release
- Depress lock ring tabs to insert bottom rail in first post
- Tabs will recoil to hold rail in post
- If bottom rail is 16' long, slide rail through second post and then insert post in ground
- Insert lock ring in rail end, insert end into third post
- When installing rails leave a 1" gap between rail ends, inside post to allow for expansion

## 5. Support and Secure

- Block up bottom rail to determine correct fence height
- Fill holes around posts with concrete mix
- Tamp, level, and square
- Fence assembly may be continued by installing all bottom rails first or one section at a time
- To lower a post, place a wood block from corner to corner of the post and carefully tap with a mallet
- Never strike the PVC post without a wood support

## 6. Crossbuck

- Insert lock rings in diagonal rails and insert into each post  
NOTE: Standard diagonal rails are cut to 97" to compensate for angle of install

## 7. Hang Gate/Install Hardware

- For complete details, see gate installation instructions in hardware box
- Position gate between posts
- Allow 1-1/2" gap on hinge side of the gate and 1-1/4" on latch side to allow for the gate swing and hardware
- Block up gate to square with fence, rails should be level
- Gate hardware must be mounted to two sides of the post

## 8. Solidify Gate Posts

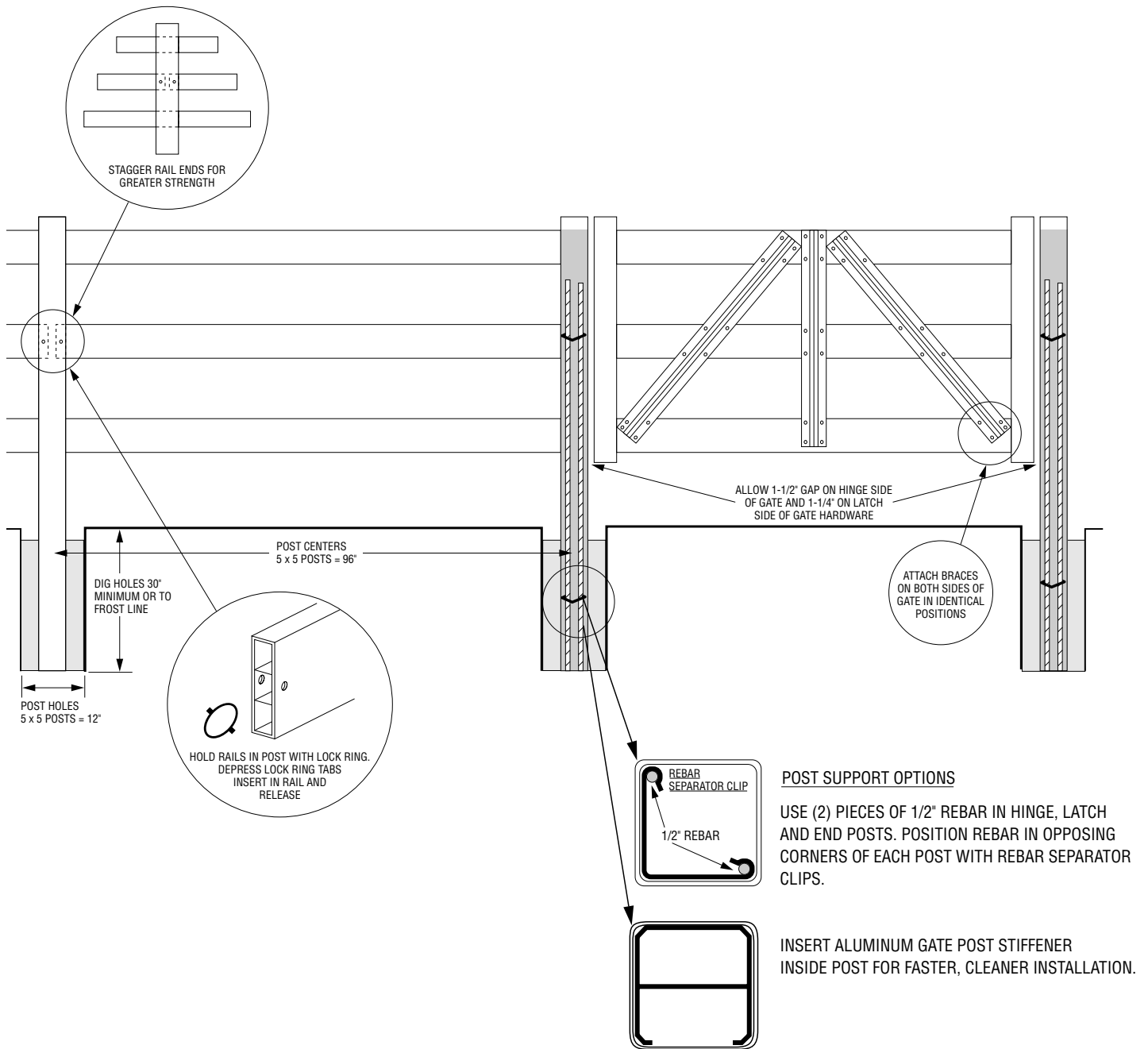
- It is critical that gate hinge and latch posts are solid to ensure proper gate functionality. Two methods are available:
  - A. Concrete and rebar
    - Use two pieces of 1/2" rebar in each hinge, latch and end post
    - Rebar should extend from the bottom of the hole to 12" from the top of the post
    - Hold rebar in opposite corners of post with rebar separator clips
    - Fill post with concrete mix to cover rebar and hardware fasteners
    - Tamp post with a rubber mallet to eliminate air pockets
    - Leave gate on blocks for 72 hours to allow concrete to set
  - B. Aluminum gate post stiffener
    - Slide aluminum gate stiffener inside hinge, latch or end posts with open end facing routed hole
    - Drive a screw through the vinyl into the aluminum stiffener at the bottom of the post to hold in place
    - Insert post into ground
    - Fill hole with concrete around outside of post

## 9. Install Caps

- Install post caps by pressing in place inside post

# Post & Rail

Includes: Crossbuck, 2-Rail, 3-Rail and 4-Rail



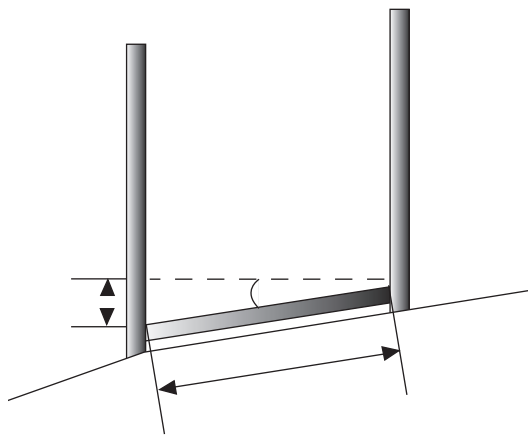
# Variable Terrain Installation

## Calculate Rise/Foot Angle

To determine the hole enlargement size, first calculate the slope rise/foot or the angle of the slope. Refer to the diagram and examples.

- Measure section length in inches.
- Determine section rise by using line level and measuring vertical rise. (measure rise in inches)
- Divide rise by section length to get rise per inch.
- Multiply by 12 to determine rise per foot.

**Example:** 24" rise ÷ 96" length = .25 rise per inch = 3" rise per foot

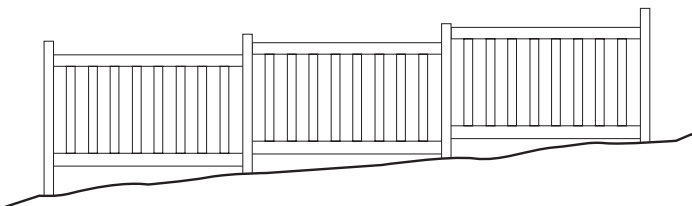


- Two methods for installing a fence on variable sloping terrain exist - stepping and racking
- For either method, divide slope evenly into all sections

## Stepping Method

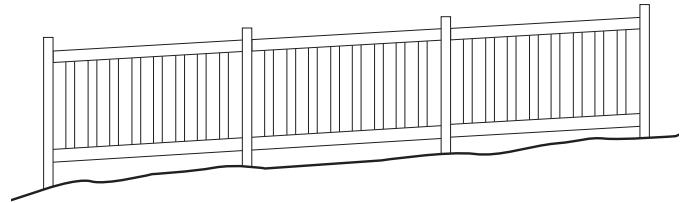
With the stepping method, the rails remain horizontal and the posts are extended to accommodate the variance in terrain.

**Longer end posts** should be used and holes for opposite side of post can be field fabricated with template kit and router or spiral saw to accept rails.



## Racking Method - 10° or Less

With the racking method, the horizontal rails will follow the sloping terrain.



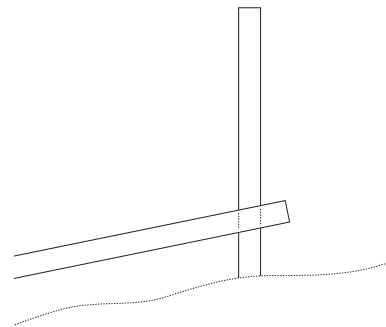
When installing multiple sections, it is advisable to use an End Post and field fabricate the opposite side of the post to avoid a jagged fence line.

Depending on severity of rack (and specific fence style), the following field fabrication may be necessary for proper installation.

1. Enlarge holes in post to accept rails
2. Enlarge holes in rail to accept pickets
3. Shorten picket length

**NOTE:** Depending on severity of rack, post centers may need to be decreased. Be sure to verify prior to setting posts.

1. Enlarge holes in post to accept rails
  - Determine angle or slope
  - Place first post in hole and hold plumb
  - Place rail next to post (not in routed hole) at correct angle of grade

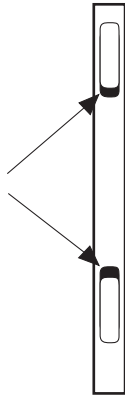


- Mark rail where post crosses it on angle
- Remove rail, measure the length of the drawn angle. Add 1/8" to this length to determine proper post hole size

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# Variable Terrain Installation

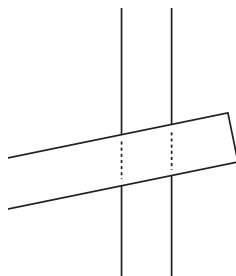
- Enlarge post holes. Note: Always open bottom of top hole and top of bottom hole to maintain proper fence height



- Holes may be cut utilizing a template kit and router or spiral saw
- Determine location of holes on opposite side of line post by laying post across side of rail (align with routed hole) and marking exit position of rail on opposite side of post
- Cut holes with template kit and router or spiral saw as previous

## 2. Enlarge holes in rail to accept picket

- Position rail at desired angle
- Hold picket plumb against side of rail
- Mark picket where rail crosses it on angle



- Measure the length of the drawn angle and add 1/8" to this length to determine proper rail hole size
- Enlarge holes with a spiral saw
- Note: Always cut the same side of each hole to maintain spacing

## 3. Shorten picket length

- For extreme racking situations, picket ends may need to be cut to accommodate rack
- Position top and bottom rails in routed post holes
- Position picket next to rails so it is plumb and aligned with bottom side of bottom rail
- Mark position where top of picket intersects with top of top rail. Subtract 3/8" and cut picket to length
- NOTE: For ribbed rails - top and bottom of picket will need to be aligned with internal rib

# Post Routing Template Kits

Routing template kit can be used to enlarge holes for racking as well as to create transitions for stepping. Changing heights or styles.

Install 3/8" router blade and 5/8" bearing or router guide. Any substitutions may result in improper hole size or damage to the template kit.

**Note:** Template cutout size is designed to be 1/8" larger than the finished cut to allow bearing to follow the shape.

Select the appropriate template for the application.

Assemble the template as shown, configured for the desired post size (4" or 5")

**Note:** It is advisable to practice routing on a scrap piece before attempting actual cut.

Mark location of hole to be routed. Offset template cut by 1/8" to allow for bearing. (ex. If hole is to be located 3" from top of post, position edge of template 2-7/8" from top.

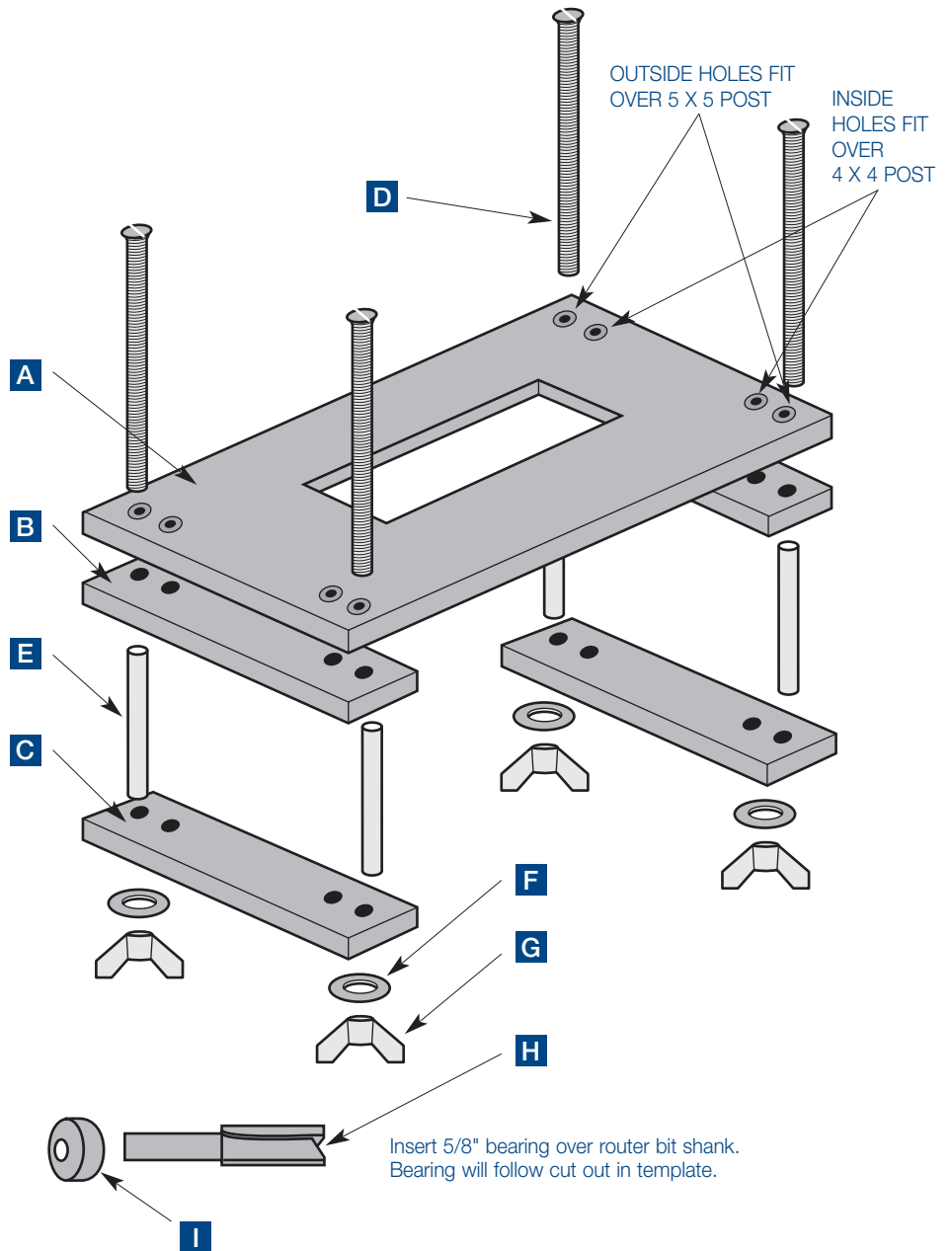
Tighten wing nuts. Place on a flat, firm surface to prevent tipping.

Route hole per manufacturers recommendations.

**ALWAYS WEAR SAFETY GLASSES**

Loosen wing nut and remove template

For situations that require a larger hole to accommodate racking, route a standard hole, loosen wing nuts and slide template to new position to route excess material.



- A** ROUTING TEMPLATE
- B** 1-1/8" TEMPLATE SPACER PLATE
- C** 1-1/2" TEMPLATE SPACER PLATE
- D** 1/4" -20 X 6" BOLTS
- E** 3/8" OD PLEXI TUBE
- F** 1/4" FLAT WASHER
- G** 1/4" -20 WING NUT
- H** 3/8" ROUTER BIT W/ 1/4" SHANK
- I** 5/8" BEARING W/ 1/4" ID OPENING