



## HOW-TO BOOKLET #3080

# PICKET FENCES

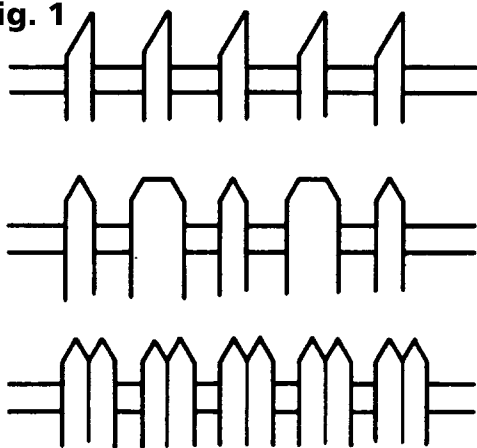


### TOOL & MATERIAL CHECKLIST

- Fence Posts
- Fence Pickets
- Post-hole Digger
- String
- Water Bucket
- Paint or Stain and Finishing Tools
- Fence Rails
- T-Plates or Fence Brackets
- Line Level
- Cement Mix
- Galvanized Nails

*Read This Entire How-To Booklet for Specific Tools and Materials Not Noted in the Basics Listed Above.*

**Fig. 1**



Picket styles can vary. Mix and match them to suit your taste.

Fences can define boundary lines or hide a bad view. They can screen the sun or block and redirect the wind. They can complement the architecture of your home. They can contain pets and small children—most times.

Picket fences are probably more aesthetic than functional; they're definitely a fencing classic. They look good with many different types of architecture. But most of all, picket fences are easy and fun for a do-it-yourselfer to build.

### FENCING AND CODES

First, determine if building codes in your community, or specifically in your neighborhood, permit fences. Special building permits may be needed. It's also a smart idea to consult your neighbors about your fence-building plans. Fences sometimes make bad neighbors—to paraphrase a poet.

If the fence has been included in a deck or patio plan, the building permit, if needed, will include the construction of the fence. Height is important when applying for a fence building permit. Some local codes dictate the maximum heights permitted. Picket fences normally are "low" in profile, so height probably won't be a factor.

## PICKET FENCE CONSTRUCTION

Lay out the fence plan on a piece of graph paper, locating (approximately) the position of the posts and gates in the fence run. The layout will serve as a material's buying list and can save you lots of time as well as money.

Fence posts, rails, pickets, and hardware are standard items at most home center and building supply stores. You may find pre-cut pickets, along with pre-fabricated sections of picket fencing in the store's inventory. As a rule the pre-cut and pre-fabricated materials usually are slightly less costly than the boards and lumber you would buy to build from scratch. However, check the quality of these ready-made components; some are better than others (**Figs. 1 and 2**).

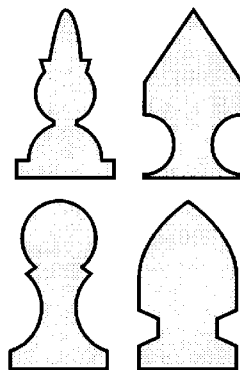
**A picket fence consists of five components:**

1. Posts
2. Rails
3. Infill (or pickets)
4. Footings
5. Gates

**Posts.** Posts for picket fences are almost always wood 4X4s or 6X6s. If you will use round posts, the posts should be 6" diameter. The posts usually are set 8' on center; that is, 8' apart. Because they are sunk in the ground, wood posts must be chemically treated to prevent decay. Cedar is an option that is now being used because of its rot-resistant and insect-repellent properties. Bottom ends of posts should be treated with a wood preservative when they are cut. The height of the posts depends on the height of the fence and the depth of the postholes. A depth guideline:

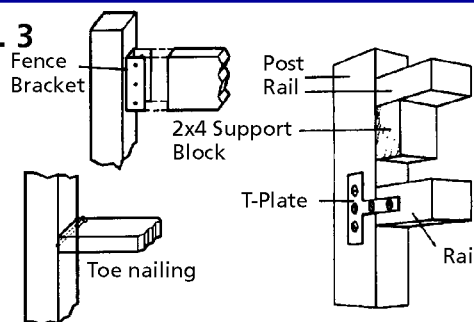
5' fence	32"-36" posthole	8' post
6' fence	32"-36" posthole	9' post
8' fence	32"-36" posthole	11' post

**Fig. 2**



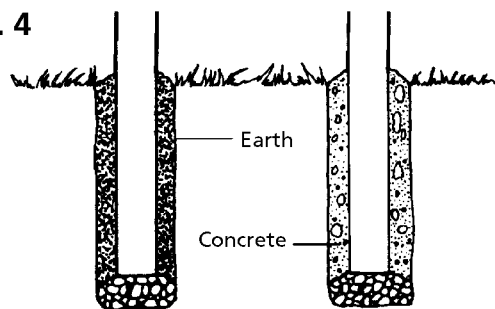
Picket designs are limited only by your own imagination.

**Fig. 3**



Metal T-plates and fence brackets are two of the best ways to attach rails to posts. Or you can use a support block under the rail that is nailed to the post. Toenailing, or driving the nails at an angle, is also recommended.

**Fig. 4**



Fill bottom of hole with several handfuls of coarse gravel. This promotes drainage and deters wood rot. Crown fill or concrete at ground level so water will tend to run away from the posts.

Even fences less than 4' high should have posts sunk 3' deep. It's easier to work with square posts than round ones. If the picket fence you are building comes pre-assembled and uses round posts, be sure that the posts are pre-cut; this will reduce the difficulty of construction. The species of wood most often used for posts includes redwood, cedar, cypress, spruce, pine, or fir.

**Rails.** Rails span the posts horizontally. There are always two rails—sometimes three if the fence infill is heavy. For picket fences, 2X4 rails are plenty heavy to handle the weight. There are several methods to attach rails to posts: metal T-plates, fence brackets, support blocks, or toenailing (**Fig. 3**).

**Infill.** Infill is the pickets on a picket fence. Infill on other fences includes pressure-treated boards, aluminum panels, and exterior-grade plywood (T1-11 plywood is grooved by design and is a good choice).

**Footings.** These are the materials placed under and around posts to support them. You can set the post directly into the ground and support it with gravel and earth. Or, you can set the post into the hole and support the post with concrete. The concrete footing, as you would suspect, is best in areas prone to extreme frost heave.

**Gates.** The maximum width is 48". The gate posts should be larger than the fence posts to support the movement of the gate. It is recommended that you use 4X6 posts. Also, the posts for a gate should definitely be placed in concrete to insure stability. We recommend at least three gate hinges—top, middle, and bottom—and that the hinges be extra hefty for support.

## EXCAVATION

For best results building a picket fence should follow a plan. You will find that the job will go faster and easier and that the final product will look great.

**1** Clear a line that the fence will pass through. At least 1' to either side of the line is sufficient. Any shrubs, bushes, trees, or stones that are in the line should be moved, or the fence should be designed to avoid them. You don't have to remove the ground cover. Make sure that buried power lines will not interfere with the posts. Your utility company can provide a site plan of buried lines. Check with them before you start digging.

**2** Once the path has been established, you can position the posts. After you determine the post spacing—6' or 8' on center—measure the distances and stake these points. Continue until you have staked all post centers. Keep in mind that the dimensions are taken from the center of each post to the center of the next post. Try to keep the units in even feet. This will avoid waste. Verify all dimensions twice before cutting. If you are installing a pre-fabricated fence, center-to-center distances may be 4', 6', or 8'. Measure, mark, and stake with care—especially with pre-fab fencing. The spacing sometimes is not consistent.

**3** Digging postholes can be the most difficult part of building the picket fence—or any fence. The digger, which you can rent, can be the auger type or the clamshell. You can rent power post-hole diggers; you may need a helper to handle this equipment, however. The secret to a power digger is to hang onto the handles and let the digger dig. Don't force it. Let it do the work.

If you have lots of holes to dig, it is recommended that you have the job done professionally. The cost may not be as prohibitive as you might first think; get at least three bids and a definite time schedule.

As each hole is dug, make sure that it is vertical. This is important when you set the posts. The depth of the posthole depends on the height of the fence, as detailed earlier. The diameter of the hole can vary from 10" to 12".

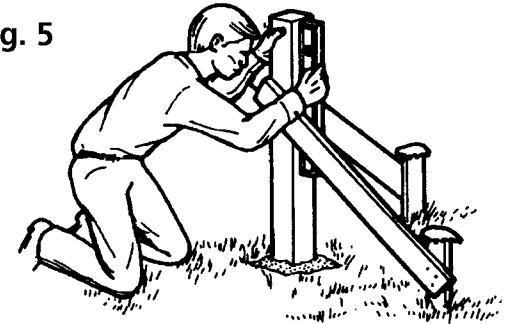
### SETTING THE POSTS

After driving stakes in line with the post run, stretch a string down this run. Dig the end post-hole first, set the post in this hole, and align and plumb it with the string. If the fill will be earth, pack the earth taken out for the hole around the post until the hole is full. Tamp down the earth firmly (**Fig. 4**).

If you will set the posts in concrete, follow the technique below. One bag (80 lb.) of cement mix is usually required per hole. It yields 2/3 cubic foot.

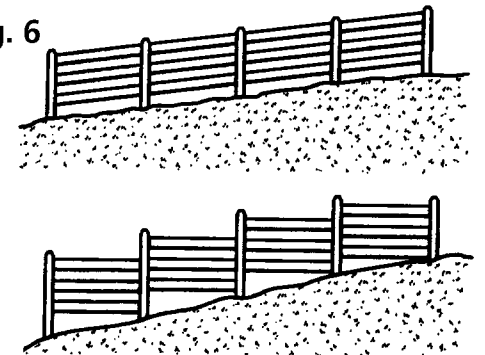
- 1** Throw a couple handfuls of gravel into the bottom of the hole.
- 2** Set the post in the hole.
- 3** Align the post and plumb it. Temporarily stake it plumb (**Fig. 5**).
- 4** Fill the hole about one-third full of pre-mixed cement mix.
- 5** Pour a 2-gallon bucket of water into the hole over the cement mix.
- 6** With a length of 1X2 scrape, tamp, or puddle the water into the cement mix. It doesn't have to be mixed as you would mix it in a tub or mixer. Just stir the water into the mix so it is damp.
- 7** Fill the hole another one-third with cement mix. Pour in the water and mix as you did before.
- 8** Fill the hole completely with cement mix, pour in the water, and puddle. Then trowel the top of the mix so it slopes from the post to the ground.

**Fig. 5**



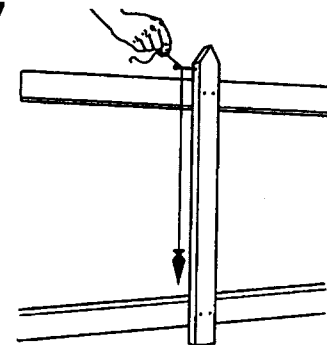
Plumb each post on two sides. Then hold with temporary stakes until post is set in the hole. Always set one post at a time, and finish the fence section between posts before you continue.

**Fig. 6**



On gentle slopes, the fence follows the slope. On steep slopes, the fence is stepped accordingly.

**Fig. 7**



Check that pickets are perfectly vertical with a plumb bob.

This method is easier than mixing the cement and placing it in the hole. Once set, the post is so tight in the hole that it would take a tractor and chain to remove it from the footing.

All other posts will be set from this key corner post. Dig the postholes as you come to them—don't pre-dig them, unless, of course, you hire a pro for this job. If you hire a pro, you **MUST** be perfect with your measurements, otherwise you may be in trouble with aligning and plumbing procedures.

Following the string and your stakes, locate and dig the next posthole. Double check all measurements, making sure that the posts are on the centers, i.e., 8' from the center of one post to the center of the next post. Dig the hole and set the post. Add the rails to each section (see details below). Then continue on with the remaining posts, measuring, marking, aligning, plumbing, and setting as you go.

## ATTACHING THE RAILS AND PICKETS

- 1 The top rail can be flush with the top of the posts or dropped several inches below them. Nail the top rail inside, outside, or within the frame.
- 2 Secure the middle (if required) and bottom rails in the same way. For shorter fences, you might want only top and bottom rails.
- 3 If fencing along sloped terrain, you can either lay out the fence in steps or follow the natural contours of the land (Fig. 6). In general, fences on short, steep slopes look better when they are stepped; if the fence follows the slope, it appears to bulge or lean. Longer or gentler slopes can be followed.
- 4 The installation of the pickets on the framework is easy. When you are ready to nail on the pickets, start at either end of the fence and set the first one in place. Be sure it is vertical; use a plumb bob and line to check it (Fig. 7).

- 5 Pickets should not overlap the top or bottom rail by more than a few inches. If it does, the unsupported board will warp and cause a ragged-looking edge.
- 6 For a privacy fence, butt the pickets side by side. If they are not being butted against each other, you will need a spacer to ensure even spacing between pickets (Fig. 8). After you nail up several pickets, check with the plumb bob again to be sure you are keeping the boards plumb. You will have to adjust as you go along.
- 7 After the pickets are on, you can cut the tops of the posts to match. However, if the top rail is nailed directly on top of the posts, the posts will have to be aligned, measured, and cut as the rails are installed.
- 8 Using a string and line level, establish a cutting guideline from the corner post to another corner or gate post. The posts, if not covered by rails, can be topped off with a metal cap to help protect the wood from rot. The caps slip over the post and are nailed with aluminum nails. Or you can use decorative post caps.

## GATE CONSTRUCTION

Gates (Fig. 9) should be installed as you come to them. Leave about 1/2" clearance between the post and the gate frame. Also leave about 3" of space at the bottom of the gate so the gate will swing free and easy. For building purposes, consider the gate and the post on which it swings as a single unit.

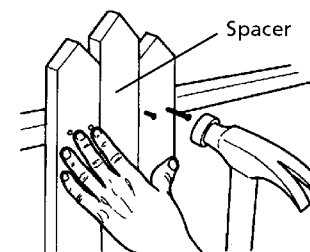
The gate frame is a rectangle of 2X4s butt joined and screwed or nailed together. We recommend a diagonal length of 2X4 between the top of the frame and the bottom of the frame. This diagonal piece helps stabilize and strengthen the gate. Always attach the lower end of the diagonal on the hinge side of the gate; reversing it will cause the gate to sag.

Once the frame has been assembled, hang the gate using three very strong strap hinges. The center hinge is centered between the top and bottom hinge. Make sure the gate swings freely. Then add the pickets to the gate rails to match the spacing and alignment of the pickets of the fence.

## FINISHING

Finish the picket fence, if you want, with any good exterior house paint. Use a primer and at least one top coat. Two top coats are best.

Fig. 8



Spacers can be a picket or a piece of scrap wood cut to the width you want the pickets to be spaced. Use aluminum or hot-dipped galvanized 8d nails to fasten the pickets to the rails.

Fig. 9

Use these details for constructing picket gates.

