## Step 1

Mark off the deck area using string and "batterboards" (Fig. 2) making sure that it is level and square. The string will help you visualize the size and appearance of the finished deck and will also serve as a guide for excavation and post placement.

**Squaring with string**
(1) Attach string to house and/or batterboards - make sure it's level.
(2) Use felt tip marker to mark string 3' from corner in one direction and 4' from corner in other direction.
(3) When the diagonal connecting these two points is 5', you have a right triangle and the angle at the corner will be 90°.
*Note*: To obtain the 5' measurement, move string attached to batter board to the left or right until correct.
To check the accuracy of your layout, compare the corner-to-corner diagonal measurements. They should be the same.

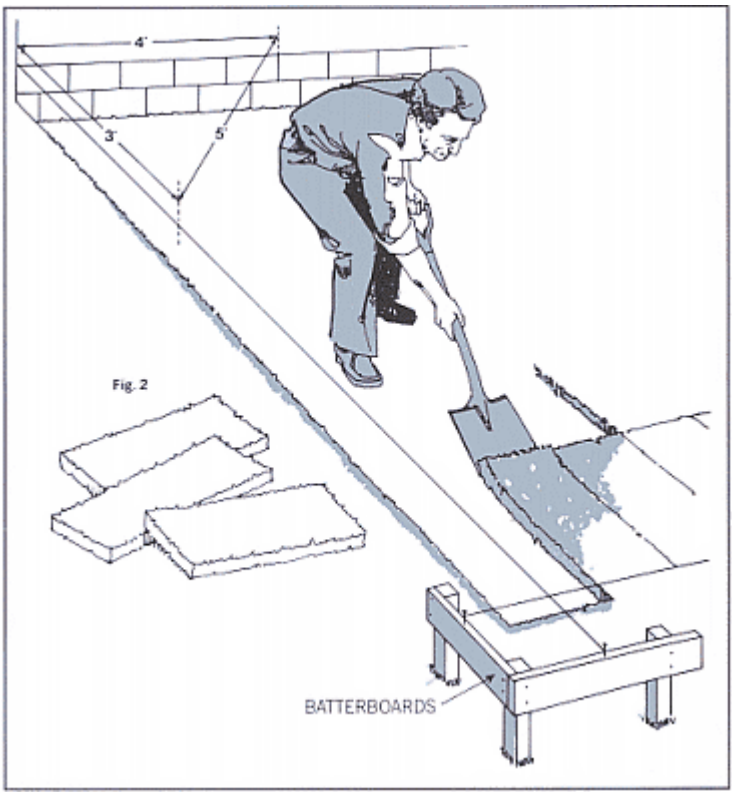


Fig. 2

## Step 2

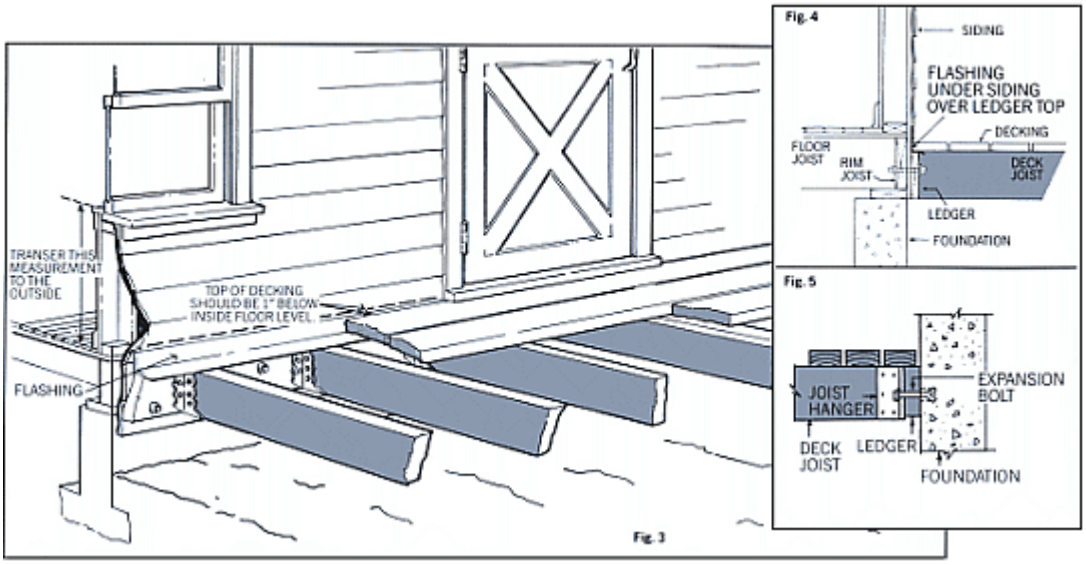
Prepare the site. With a spade or sod cutter, remove sod to a depth of two or three inches. Uncover an area approximately two feet larger than the planned deck. It's unlikely that grass would be able to grow in the shadow of your deck, so you might as well transfer the sod to a bare spot in your yard where it would be useful. To prevent weeds and unwanted vegetation from growing up through the deck, spread a sheet of polyethylene film over the area. You'll have to slit this to embed posts in the ground and to allow for drainage of rainwater. After the posts have been installed, cover the sheet with gravel, pebbles or bark chips.

## Step 3

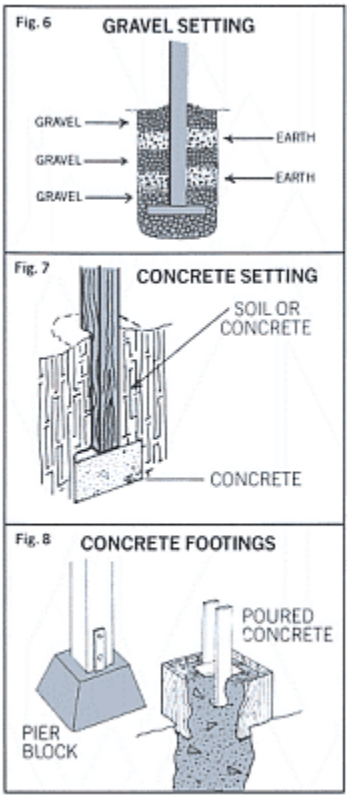
A ledger/header board is the next step if you are attaching your deck to an existing structure.

The placement of the ledger determines the level of the deck floor, so be sure it is positioned at the correct height and is horizontal. In positioning the ledger, don't forget to allow for the thickness of the decking which will be above the ledger level.

When fastening ledger boards to wood, the ledger can be held securely with nails or lag screws. Pre-drill a pilot hole first before driving the lap siding; a strip of the siding can be inverted and used as a shim to hold the ledger perpendicular. Where aluminum or vinyl siding is in place, it is best to carefully cut siding away from house so that ledger/header board can be secured directly to house (see Figs. 4 and 5).



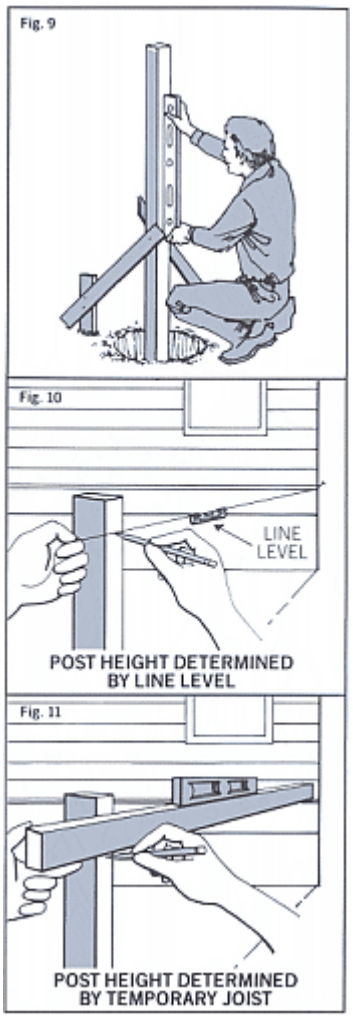

## Step 4




Locate and dig holes for footings. In normal soil the holes should be a minimum of 24 inches deep, although the actual depth will depend on the height of the column and the depth of the frost line. Posts should go *deeper* than the frost line to avoid heaving during freeze and thaw cycles. Fill the bottom of the hole with gravel.

Upright posts can then be positioned on this base (Fig. 6). Fill the post hole with alternating layers of 4 to 5 inches of gravel and earth. Tamp each layer until hole is filled and post is plumb and solid. Posts can also be set in concrete or attached to a pier. If concrete collars are used, taper the tops downward and away from the post for drainage.

In setting the posts, make sure they are plumb and in alignment with one another. Use a carpenter's level to check for vertical alignment (Fig. 9).




## Step 5

Secure beams to posts. Using a string and level, find the desired deck floor height on the posts. By subtracting the thickness of the deckboard and joist (use the actual dimension not the nominal one), you will have determined the correct height for securing the top of the beam to the posts. Carefully mark all 4 sides of all posts. You may cut all posts except those serving as railing supports at this time. Fasten the beam to the post, keeping post and beam flush.

## Step 6

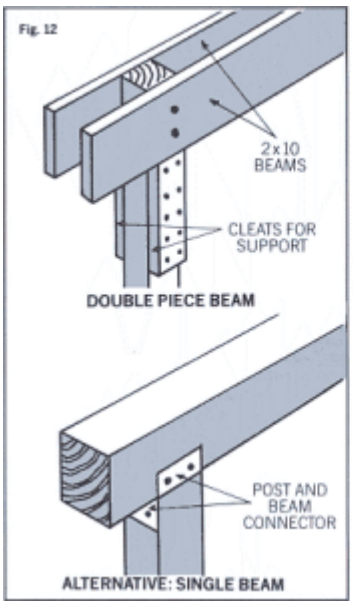
Attach joists. Joists are attached to the ledger with joist hangers. They must also be attached to the beams and ribbon joist.

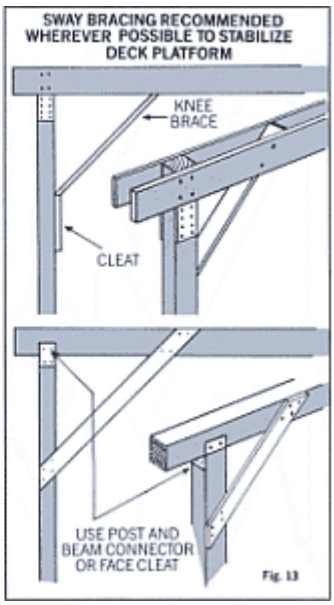
## Step 7

Install deck boards using hot-dipped zinc-coated nails. You may wish to consider various nail heads and choose one with the appearance you like best.

If a board is slightly humped, install it with the crown up. The weight of people and objects on the deck, and of the board itself, will tend to flatten it. A curved board can also be used; use a chisel to pry it to the desired position and nail securely.

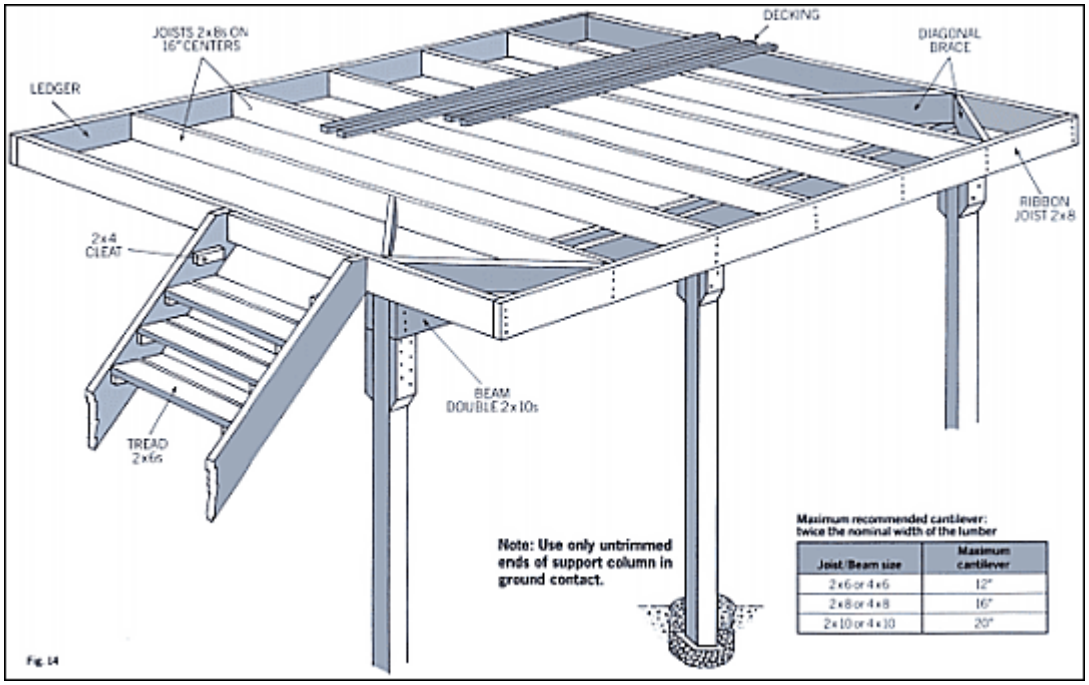
Your deck surface is an important part of your project, and the most visible. Make it simple with boards of equal width set on joists, or if you prefer, alternate planks of different widths. Make sure you measure as you go; and

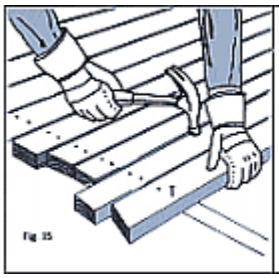


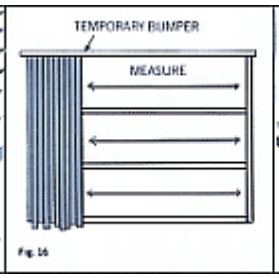



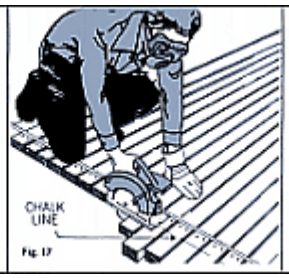
if you discover your spacing is off, adjust between the next 3 or 4 boards (see Fig. 16). When you get near the end, start adjusting your spacing to avoid a gap at the end of your deck.

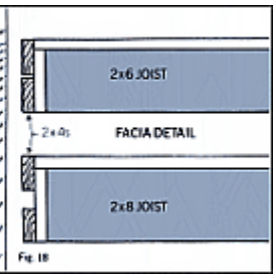
If you install decking, using straight planking, you can trim your deck after nailing to assure a straight line (see Fig. 17). Do not allow an overhang exceeding 1 1/2". For a more finished appearance, cut boards flush to the joist and add a fascia (See Fig. 18).



## Railings

Install posts for railing. These can be a continuation of the posts which support the deck, or railing posts may be bolted to the outside joist or joist extensions.

Notice in Fig. 19 how the main posts continue up from the actual deck floor level and by doing so provide a good sturdy railing post. Intermittent posts or spacer posts can be used between the main support posts. Top railing members can be easily nailed to side of main posts at desired height. Posts can then be cut off. Spacer posts height can be determined and added for additional support and appearance. Railing cap of suitable size can now be added as well as additional side rails. More railing ideas are illustrated in Figs. 20-23.

The safety and beauty of your deck are enhanced by its railings. They can be plain or very elaborate, offering as much opportunity for individual preference as a fence.

**Table 5 - Railings**

| Distance between posts | Post size (inches) | Cap size (inches) |
|---|---|---|
| 2' to 3' | 2x4 | 2x4 |
| 3' to 4' | 2x4, 4x4 | 2x4, 2x6 |
| 4' to 6' | 2x6, 4x4 | 2x6 |

Side rails can be nominal 1" or 2" lumber of varying widths

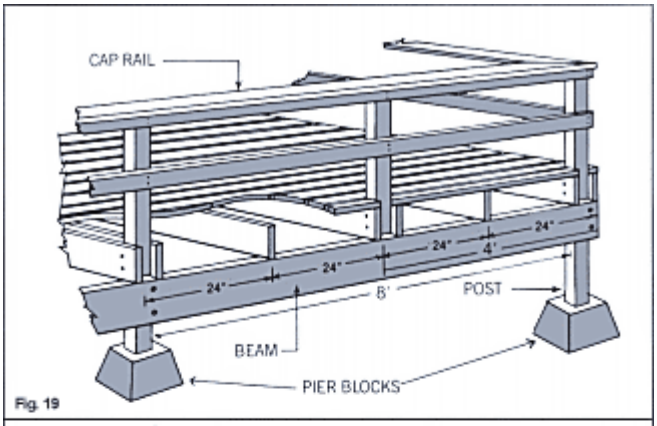


Fig. 19

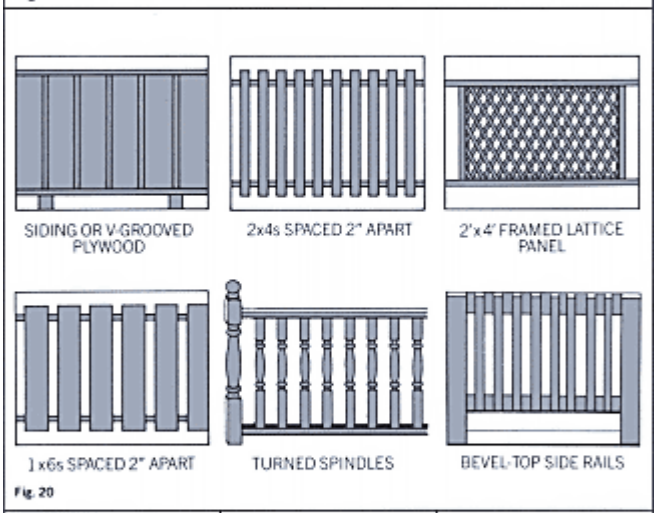


Fig. 20

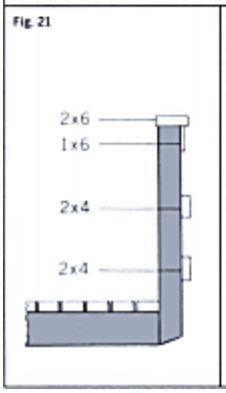


Fig. 21

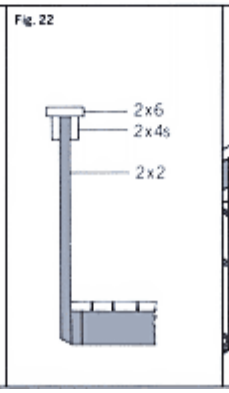


Fig. 22

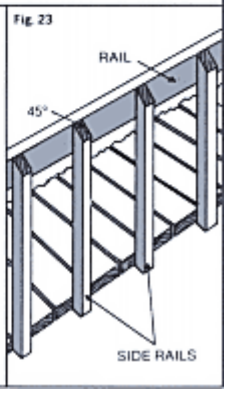


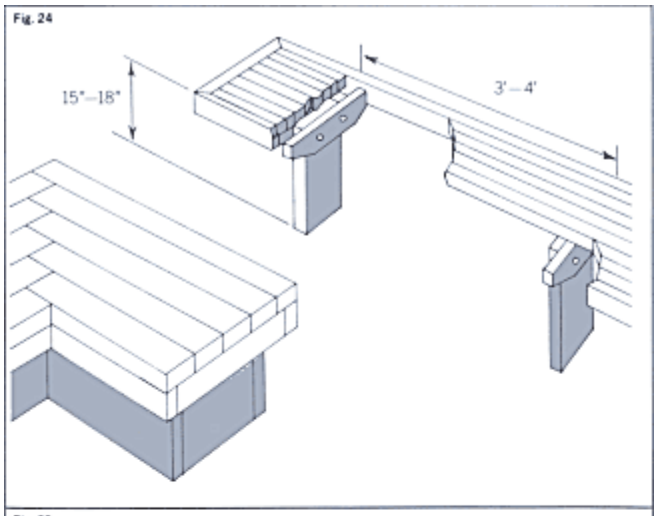
Fig. 23

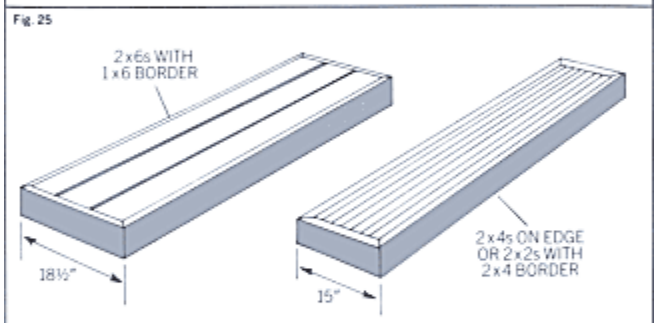
## Benches

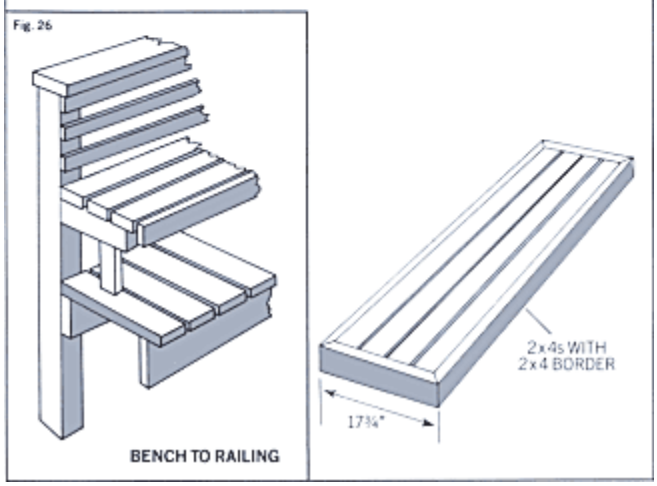
Built-in benches are a very efficient and practical way to provide seating on a deck.

Benches can be free-standing, integrated into railings, or combined with planter boxes.

Seats should be at least 15" wide and 15" - 18" above the deck floor.



## Steps

Construct steps. Measure the vertical rise and decide upon the best riser size for each step. This will determine the number of steps needed. Table 6 shows some recommended ratios of tread length and riser height. Multiply the number of steps by the tread length to find the overall run of the stairs.

Using 2x4 or 2x6 boards for treads will reduce cupping problems common with wider boards.

It is also possible to purchase pre-cut step stringers at certain lumber yards. A call ahead might eliminate some of the more difficult angle cutting you would otherwise have to do.