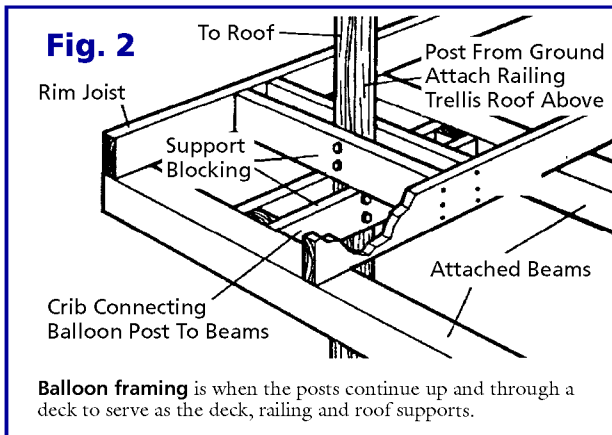
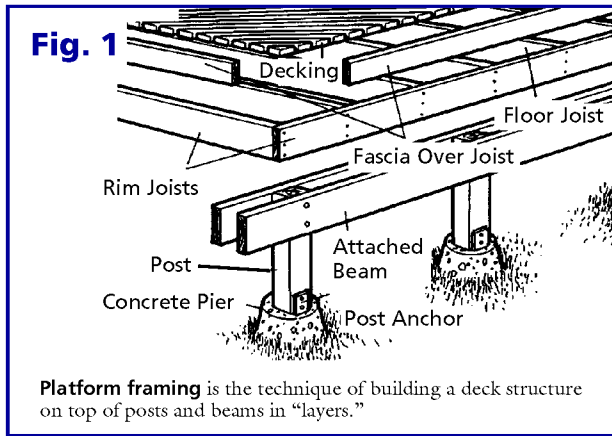


# HOW-TO BOOKLET #3112

## DECKSCAPING



### TOOL & MATERIAL CHECKLIST

- Hammer
- Tape Measure
- Circular Power Saw
- Snap Line
- Safety Goggles
- Drill/Screw Gun
- Nail Apron
- Level
- Handsaw
- Workbench
- Framing Square
- Non-rust Fasteners

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

Deckscaping is adding the finishing touches to a deck to make it more livable and enjoyable. Bench seats, trellis roofs and railings all add to the security, safety and beauty of your new deck.

Local codes determine the structural nature of the deck as well as the safety requirements for handrailings, roofs and seats. You need to always check on local building codes before building any addition to your deck.

### TYPES OF FRAMING

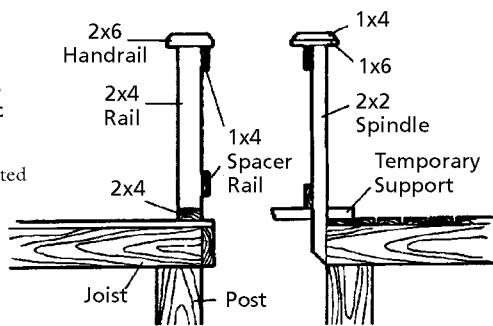
Platform framing is the technique of building a deck structure on top of posts and beams. Each component is added to the previous in “layers” until the job is complete (**Fig. 1**).

Balloon framing is when the posts continue up and through a deck to serve as the deck, railing and roof supports (**Fig. 2**). This is more difficult to build and requires additional planning at the very beginning. It also may require larger materials for the structural support of the deck, railing and roof.

Many types of handrails and bench seat styles do not depend upon the framing method. This booklet describes some simple railings, seats and trellis roofs that may be applied to platform balloon framed decks.

Fig. 3

There are two basic railing types: top-mounted (left) and outside-attached.



## TYPES OF RAILINGS

There are two basic railing types: outside-attached and top-mounted (Fig. 3). Top-mounted railings are fastened to the deck surface, usually built between two pieces of dimensional lumber. The spindles can be nailed either between the top and bottom material or toe-nailed into the deck/top rail.

Outside railings are attached to the rim joist or fascia board of the deck. These are stronger than top-mounted railings and necessary when the railings are lengthy.

Both types have a variety of styles and shapes to fit nearly every taste. Both may be built on a workbench and installed later on top of or on the front of a deck.

## TOP-MOUNTED RAILING

This style “sandwiches” 2x2 spindles between 1x4 or 2x4 top and bottom rails. There are 1x4 side rails, also at the top and bottom, that serve as the layout guides for building the rails.

These side rails add a distinctive look to an otherwise simple handrailing.

- 1 Determine local codes for railing. Some codes allow a range of 32" to 48" height to fit specific needs.

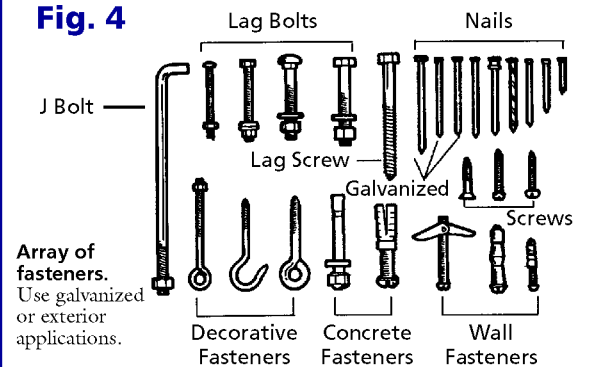
**NOTE:** Most codes require a space of no greater than 6" between spindles so that small children cannot fall off decks, between the spindles. Always build to codes.

- 2 Layout the spindle spacing onto the 1x4 top and bottom side rails. For a 6" maximum open space, use 7 1/2" O.C. (on center) with 2x2 rails. Check your codes first.
- 3 Cut spindles to size and place on workbench spaced roughly 6" apart.

**NOTE:** Spindles are the finished railing height minus the thickness of bottom and top horizontal rails. For example, a 42" railing with a 2x6 top rail and a 2x4 bottom rail requires spindles to be cut at 39".

- 4 Fasten 1x4 side rails to spindles, flush to the top and bottom rails. Use galvanized casing nails to prevent rusting and for increased strength and looks.
- 5 Fasten through the bottom side of the bottom rail into the ends of the spindles.
- 6 Place rail section in place onto deck surface and fasten through bottom rail into the deck.
- 7 Fasten the rail section to intersecting sections by fastening the spindles.

Fig. 4



- 8 Cut and fasten the top handrails to the top of the spindles. Intersecting handrails should be cut and joined at 45 degree angles.

**NOTE:** For the strongest joints, glue and nail the mitered cuts. Also, consider doubling the handrail such as a 1x6 with a 1x4 on top.

- 9 Stain/paint the railings to match or complement the deck and house. REMEMBER, stain/paint will not cover nor prevent rust from bleeding through and onto the deck. Use non-rust fasteners (Fig. 4).

## OUTSIDE-ATTACHED RAILING

An outside railing is attached to the outside of the deck framing or fascia. The deck joists are rimmed by a “rim joist,” which may be covered by a protective “fascia” board.

The spindles are eventually fastened through the rim joist or fascia board that skirts the deck. The railing is laid out the same as the top-mount railing on the workbench.

The outside railing requires more materials for the spindles. If, for example, the railing height is 42" off of the deck surface and the rim joists are 2x10 with 2x4 plank decking on top, the spindle needs to be about 51".

- 1 Determine code requirements for railing.
- 2 Layout the spindles onto the side rails, as in the previous section.
- 3 Position the top side rail flush to the top of the spindles. Position the bottom rail 1 1/2" above the fascia/rim joist. Use galvanized casing nails to attach.
- 4 Tack a support block into the deck surface and allow to overhang about 4". Set the rail in position against the rim/fascia. The support block should hold the railing in place until it can be fastened.

- 5 Nail each spindle to the rim/fascia. Then, drill and fasten lag screws or bolts through the spindles and into fascia/rim joist. Use 12d-16d galvanized casing nails and galvanized, stainless steel or other non-rusting screws/bolts.

**NOTE:** Bolts drilled completely through the spindles and rim joists are stronger than lag screws. The strength is dependent upon the codes and your personal safety requirements.

- 6 Attach intersecting rail sections at the connecting spindles.
- 7 Cut and attach the top handrails the same as with the top-mounted railings.

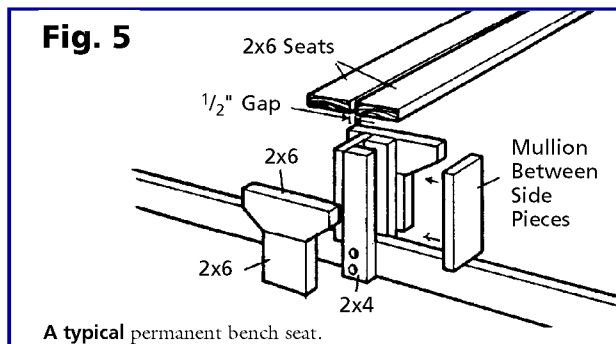
### PERMANENT BENCH SEAT

Bench seats are built to blend with the deck materials and to provide needed seating.

On small decks there may not be enough room to build seats. Use either patio furniture or build the seats as moveable benches.

This section shows how to attach the seat frame to the floor joists and how to finish the seat with regular decking materials (**Fig. 5**).

- 1 Determine any code requirements for bench seats in your area.
- 2 Start with an 18" seat height and raise or lower the height as needed. Comply with any local codes.



- 3 Cut 2-2x4s to the height of the seat minus the thickness of the seat material, plus the width of the floor joists, plus the depth of the deck surface, minus one inch.

**EXAMPLE:** 2x10 joists, 2x4 decking and an 18" finished height requires 4-2x4s cut to 27" per seat.

- 4 Cut a piece of deck material the width of the finished seat, usually 12 inches.
- 5 Cut a 45 degree angle half-way down the width of the material.
- 6 Set the material on top of the 2-2x4s lying on edge. Space the 2x4s with a scrap 2x4 and nail the material to the 2-27" 2x4s.
- 7 Turn the work piece over and add a second support to the other side of the 2x4s.

**NOTE:** Use galvanized casing nails, 12d to 16d depending upon codes.

- 8 Build an additional support and set both pieces on floor joists.
- 9 Install decking around the supports.
- 10 Cut vertical mullions to fit between the horizontal support and the deck surface.
- 11 Cut and fasten 2-2x6s as the bench seat to the supports. Space the seats evenly apart, about 1". The seats should be even to or slightly overhang the support.
- 12 Sand the surface smooth and stain/paint to the desired finish.

### OPEN PLATFORM TRELLIS ROOF

Trellis roofs are an attractive deck option. It depends on whether you want a sunny and open deck or one that's shaded.

All roofs are structural and subject to building codes. Enclosed roofs support greater weights than open roofs. This section deals with building an open platform roof on top of an existing deck.

Check local codes before proceeding.

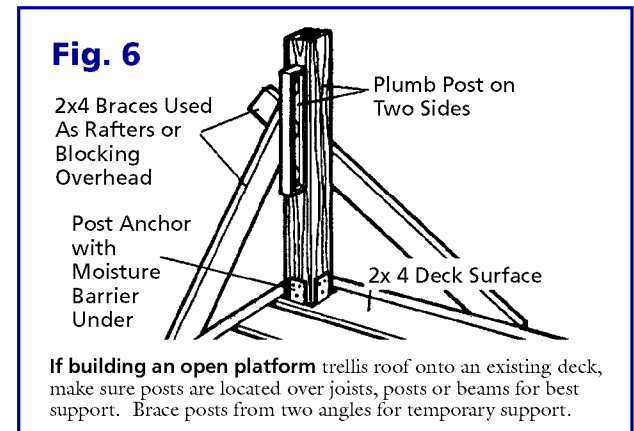
- 1 Determine the location for the roof and layout the post footings on the deck surface. Make sure the posts are located over joists, posts and/or beams for best support.

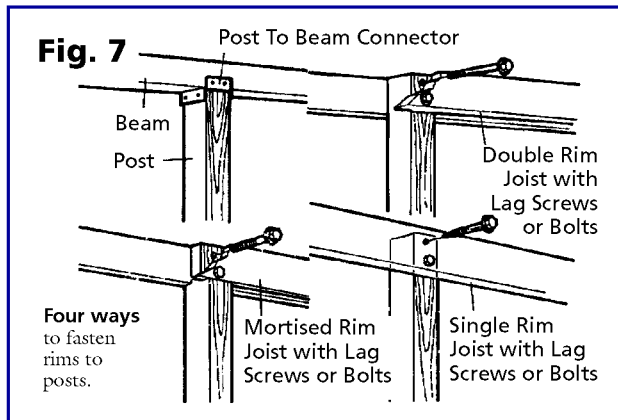
**NOTE:** Codes may specify the location and placement of the supports.

- 2 Fasten a post base to the deck surface. Use only galvanized or stainless steel fasteners to prevent rust.
- 3 Cut a 4x4 wood post to the correct height and set in post base. Brace the post from two angles for temporary support (**Fig. 6**).

**NOTE:** If the base is flush with the deck surface, place a section of asphalt shingle between the post and base. This precaution as well as the use of pressure treated lumber helps prevent water saturation at the post base.

- 4 Install the remaining posts into the bases as in Step 3. Brace the posts with the material to be used overhead, such as 2x4 or 2x2 material. Nail the braces only part way so they can be removed without damaging the wood.
- 5 Fasten the front rim to the front posts. This rim carries the weight of the roof structure (**Fig. 7**).





**NOTE:** Codes may require a rim on both sides of the post for added strength.

**CAUTION:** Most codes require at least 7" of head clearance between the deck surface and the bottom of the rim or roof structure. Check your local codes.

- 6 Repeat for the back rim and layout the roof joist positions on the rims.

**NOTE:** Use 16" O.C. (on center) for standard spacing, or as prescribed by codes. Use more or less spacing to fit shade and cosmetic requirements.

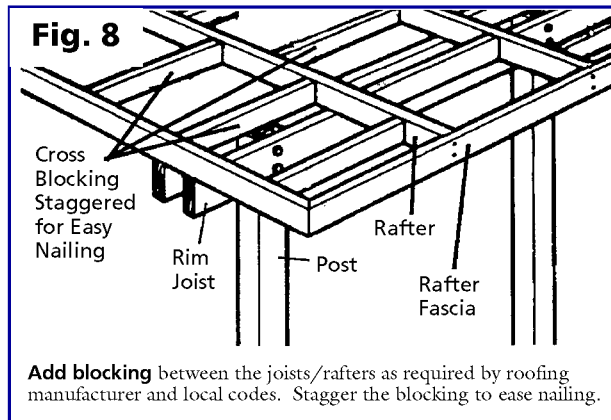
- 7 Fasten the joists to the layout locations on the rims. Use only galvanized or stainless steel fasteners to prevent rust stains on the deck.

**NOTE:** Rust penetrates paint, so use non-rust materials even if you intend to paint over them.

- 8 Add fabrics, plants and other color to put a nice finishing touch on your new open trellis roof.

## BALLOON COVERED ROOF

This type of roof is an extension of the deck supports. The primary vertical posts continue up and through the deck surface, up to support the roof (Fig. 2). The deck, handrails and roof are all attached to the same posts.



**NOTE:** Codes may require that extra weight be supported by larger posts, such as 6x8 posts.

This section begins after the deck and handrails are built. The roof support posts stand above the deck.

- 1 Measure the finished height of the deck surface on each post. Remember that 7" is a minimum amount of headroom many codes require between the surface and the roof. Check with codes first.
- 2 Cut the post tops off at the finished height. Treat the cut ends, even if covered, to repel water.
- 3 Attach the rims to the front and back posts in the open roof section. Layout the joists/rafters on the prescribed O.C. spacing determined by codes.

**NOTE:** Roof joist is a horizontal roof support while a roof rafter is sloped. Flat roofs carry greater weight and may require closer spacing and/or larger materials.

- 4 Attach the joists/rafters as before in the open roof section. Use only non-rust fasteners.
- 5 Add blocking between the joists/rafters as required by roofing manufacturer and local codes. Stagger the blocking to ease nailing (Fig. 8).

**NOTE:** Many trellis roofs use semi-transparent covers such as corrugated plastic or fiberglass. This material requires blocking so that it is supported every 2' or less in any direction. Living in heavy snow areas can increase the structural requirements for the joists and blocking. A rule of thumb is to order 50 percent more joist/rafter material just for blocking.

- 6 Install the roof covering. Be sure that the factory edges "break" or land on the center of a joist/rafter. If not, nail a piece of wood alongside the joist/rafter to support the roof panel (also known as a "scab").
- 7 Install the roofing material if different from the covering installed in Step 6.
- 8 Add gutters and downspouts to the front edge of the roof to channel rainwater to selected drainage areas.
- 9 Place angled flashing over the roof where the roof is attached or adjoined to the house. Freestanding roofs may skip this step.
- 10 Add plants and other colorful items to make your new deck area an open-air living room.

There are other variations to the railings, bench seats and trellis roofs than the ones described in this booklet, of course. Use a little imagination and design your own deckscaping for maximum enjoyment.