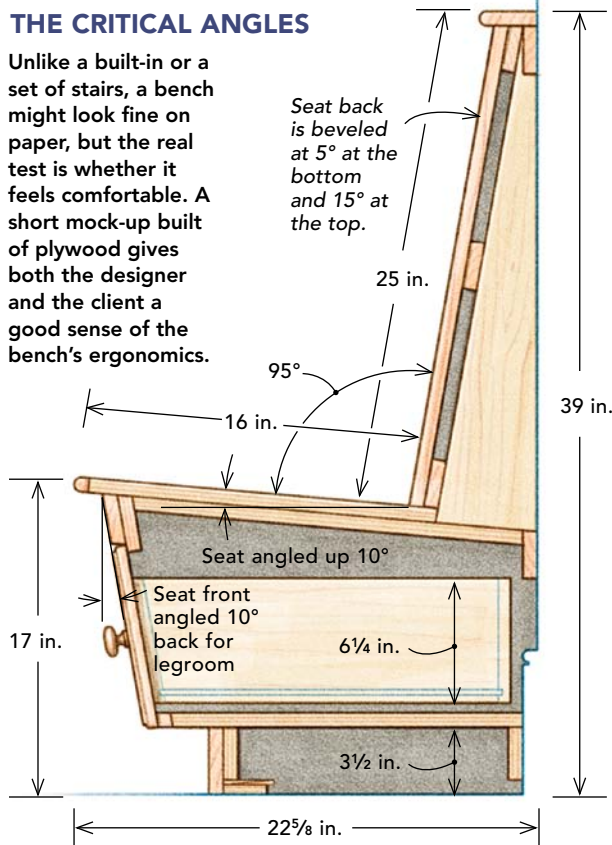


A Built-in Corner

THE CRITICAL ANGLES

Unlike a built-in or a set of stairs, a bench might look fine on paper, but the real test is whether it feels comfortable. A short mock-up built of plywood gives both the designer and the client a good sense of the bench's ergonomics.



Plywood boxes assemble into an elegant, comfortable kitchen bench with storage

BY JOSEPH LANZA

My friends Debbie and Tom decided to make better use of a small room next to their kitchen. They wanted a built-in seat that could serve as an informal dining area and a place for board games or homework. After measuring the space and designing the seat in cross section, I made a SketchUp model of a seat with enough room for four people, storage drawers below, and a cabinet in the back of the corner seat. (See "Drawing Board," p. 88, for more on the design.) Tom and Debbie liked the design, but before I started building, I made a 24-in.-wide plywood mock-up to make sure they would be comfortable sitting in it. We agreed that the mock-up was more comfortable with a 3/4-in. plywood block under the front edge. I gave the seat an additional 5° tilt, then made a new SketchUp model of the base of the seat.

Because I would be working alone, building the seat in the shop and installing it as a complete unit were out of the question. Even if I had the strength to do so, the house was built in the 18th century, so plumb, level, and square had long since vanished. Because there was sure to be lots of scribing and fitting before the seat was in place, it made sense to break down the job into manageable parts. I decided to start

Seating Nook



JOIN BASE UNITS WITH A COMPOUND ANGLE

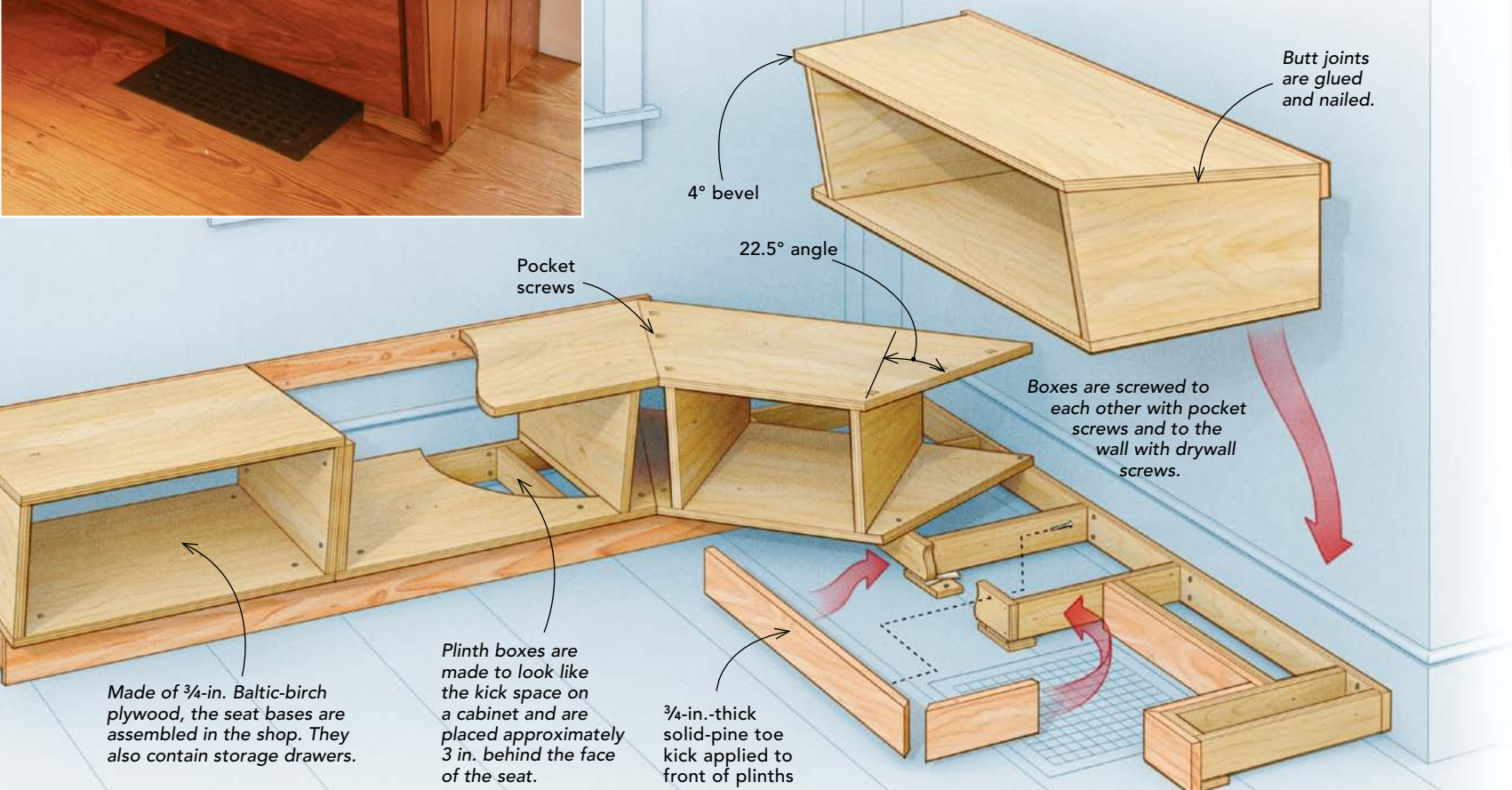
Begin with a level framework of plinth boxes. The plywood seat bases sit atop the plinth boxes and will eventually house drawers. Because the seat is angled back, the corner boxes are joined with a 22.5° angle and an approximately 4° bevel.



A scribe may be necessary. Position the opposite side base, and check the fit. Use a set of scribes to mark the cut.

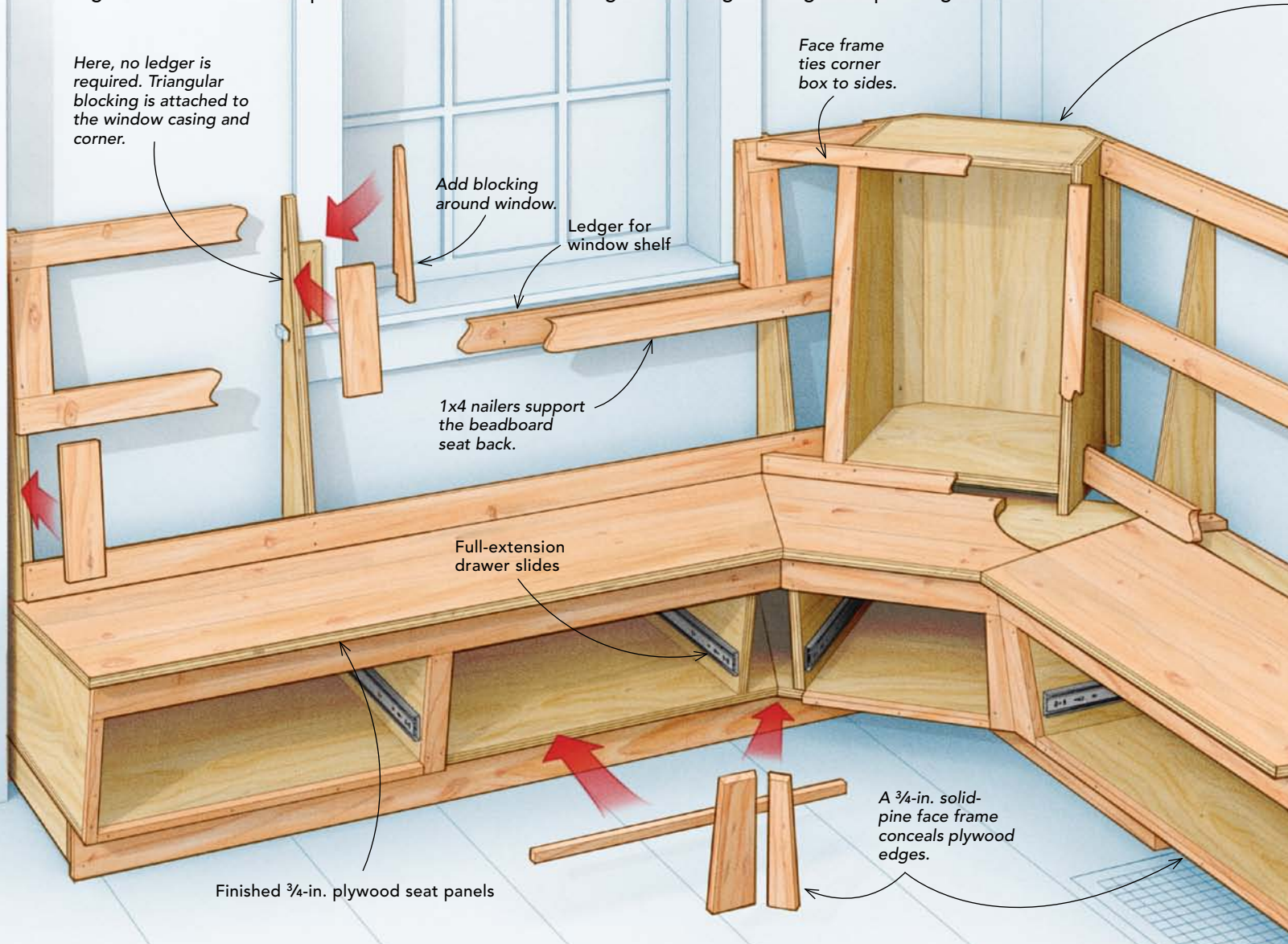


A saw guide is a must. When trimming scribed cuts, a site-built saw guide is a fast way to make an accurate cut.



ADD THE CORNER CABINET, SEAT PANELS, AND BACK FRAME

Built in the shop, the corner storage cabinet is installed on top of the seat bases, followed by the finished seat panels. To establish the top of the seat-back frame, a 1x3 ledger strip is screwed to the wall on the right. A framework of 1x pine is installed to create backing for the tongue-and-groove paneling.



Install the corner cabinet. Centered plumb and level in the corner, the corner cabinet in part anchors the framing for the seat back and establishes the width of the seat.



Fit the plywood seat panels. Start by locating the corner piece, which determines the location of the adjacent panels. After being scribed to fit, the panels are clamped in place and attached with screws driven from below.

The corner cabinet is installed first, followed by the seat panels. To establish the top of the seat-back frame, a ledger strip is screwed to the wall on the right.

Triangular blocking for the seat back is notched around the ledger.

1x3 ledger



Assemble elements of the back frame. On the right side, a 1x3 ledger screwed to the wall establishes the height of the back. Triangular pieces of plywood blocking are plumbed up and nailed to the base. Horizontal nailers then are attached across the top, middle, and bottom.



A ledger for the window shelf is nailed to the window apron. On the left, the triangular blocking is attached to the window casing and corner post; no ledger is needed.



Tie both sides together. The corner storage unit's face frame is extended across to the sides to provide blocking for the seat-back transition.

with a level plinth, then to install the base as four separate boxes. Next, I would install the seat and the corner-cabinet unit, and then finish up with all of the solid-wood parts (the seat back, nosings, and moldings). I could make all the parts in the shop, then assemble everything together at the house.

Build boxes to form the seat

For the boxes below the seat, I used dimensions from the SketchUp model to cut parts from 3/4-in. birch plywood. Because the seat has a 10° pitch, the joint between the cabinets at the top is a compound miter. To cut the joints, I used a circular saw with the blade set to a 3.81° bevel and a shooting board. The bevel angle came from a chart I found online (www.woodshoptips.com/tips/012003/012003.pdf). I cut the corner cabinet to the dimensions on the SketchUp model, but I made the two adjoining cabinets 1 in. longer so that I would have room to scribe and fit the joints in place.

Next, using a dado and rabbet joint that was glued and nailed, I made drawers from 1/2-in. Baltic-birch plywood. I delayed making the applied drawer fronts until the boxes and the face frames were in place and I could get an accurate measurement.

While in the shop, I ripped 3/4-in. pine plywood to 16 in. for the seats. The back just overlaps the back edge of the seat. I also milled other parts, such as the solid-pine roundover nosing for the seat, the pine grooved paneling, the face frame, and the cap stock.

Playing by old-house rules

Once on-site, my first task was to install the plinth, which is essentially a plywood box 3 1/2 in. high that is analogous to a cabinet's toe kick. Starting at the high point, I leveled each side across, shimming with blocks and screwing the base to the baseboard. I hid the plywood and the gaps with a 1x pine kick board that I scribed to the floor.

The corner base unit was next. I marked left and right reference points an equal distance from the inside corner, then centered the corner base between the two points and screwed it to the plinth. Next, I scribed each of the flanking base units to the corner, checked the fit, and pocket-screwed the top edges together. I also screwed them together at the sides and into the walls.

The next part of the puzzle was the corner seat back. Built in the shop, the unit doubles as a storage cabinet. The idea was to use the storage unit as a reference when it came time to frame the rest of the seat back. I positioned the corner unit

CAP THINGS OFF WITH SOLID PINE

so that it was parallel to the front and level, then toe-screwed it to the seat and to the wall.

I opted to fit and install the plywood seat panels first, then have the seat back land on the seat. Otherwise, I'd have to scribe the seat to the back, leaving a visible joint. Beveled to the same angles as the seat base, the panels were ripped at 16 in. wide and cut to length to form an equal overhang at the front and sides. I attached the panels with screws driven up through the base.

The seat-back frame is a custom fit

Because the walls were not flat or plumb, I began making the seat-back frame with a series of triangular plywood panels connected by 1x4s. Notched over a ledger, the triangles' bases were screwed to the seat bases. Next, I attached horizontal 1x4s across the top, middle, and bottom as nailers for the beadboard seat back. After both sides were complete, I covered the corner unit with a face frame.

Once these parts were fit and nailed up, I filled in the rest of the seat back, choosing the appropriate widths to fit the space. The right side went quickly, but the left was complicated by a window. There, I had to notch the first piece and lower a few more to make room for a small shelf below the windowsill.

When the back was complete, I glued and nailed the nosing to the front and side edges of the seat. Below the seat, I covered the veneer edges of the plywood with 1x solid stock, then filled in the face frames in the corners and above the drawers. After mounting the drawers on full-extension slides, I cut and fit the drawer fronts. Then I finished the beadboard paneling on the ends of the unit and added the final face-frame piece.

To cap it off, I started with a piece of 3/4-in. pine plywood, which I fit into the corner by tick-sticking (*FHB* #178, or FineHomebuilding.com/extras). I then scribed solid cap pieces to the wall along each side, butting them to the side of the plywood and mitering them where they met the nosing on the front edge. I hung the doors on the corner unit with full-overlay cup hinges and fit a quirked bead against the face frame around them. Finally, I cleaned up my pencil marks and finish-sanded the unit. After I left, the painter came in and applied oil-based stain, sealed it with a coat of shellac, and brushed on two coats of polyurethane. □

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The seat back and sides are covered with 3/4-in. solid-pine beadboard milled in the shop. The area on each side of the window casing is filled in with the same stock. The plywood cap is scribed in place on the corner cabinet and butted to the solid-pine cap stock that runs along the back. Solid-pine nosings hide plywood edges.



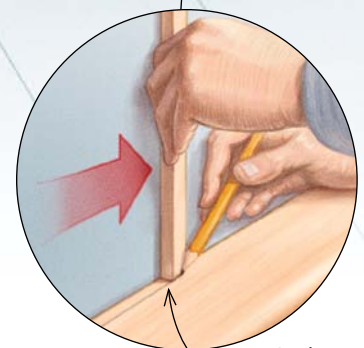
Install the beadboard from the corner out. Starting to the right of the bottom of the corner unit, nail the first board on a plumb line.



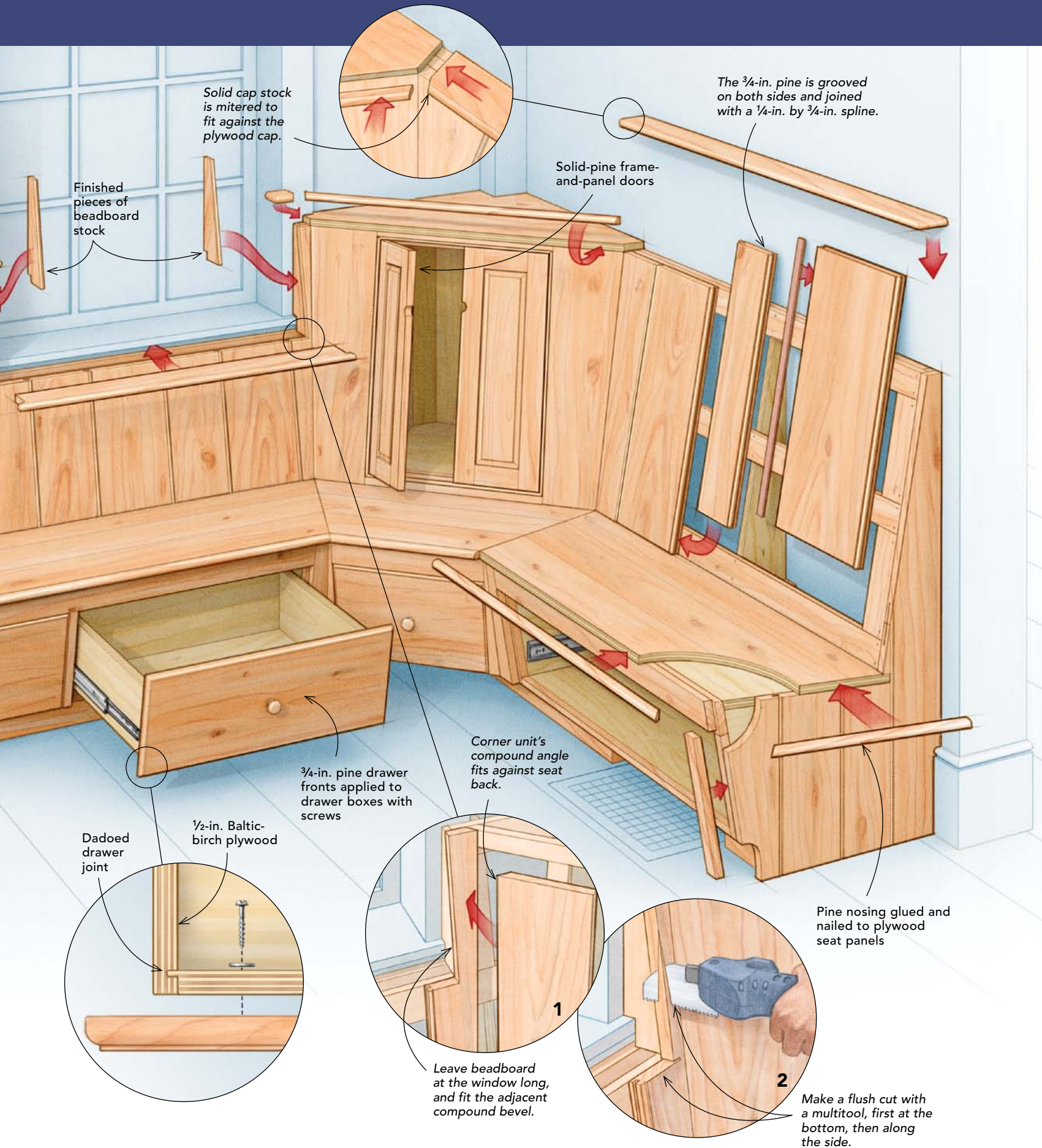
Find the angle. The corner unit's beadboard intersects at a compound angle. From the edge of the face frame, measure top and bottom.



Fit the board. After cutting the compound angle with a saw guide, nail it against the first board. After repeating the process on the other side of the corner unit, fill in the rest of the boards out to the ends.



Scribe caps to wall for a consistent overhang.



Solid cap stock is mitered to fit against the plywood cap.

Finished pieces of beadboard stock

Solid-pine frame-and-panel doors

The 3/4-in. pine is grooved on both sides and joined with a 1/4-in. by 3/4-in. spline.

3/4-in. pine drawer fronts applied to drawer boxes with screws

Corner unit's compound angle fits against seat back.

Dadoed drawer joint

1/2-in. Baltic-birch plywood

Leave beadboard at the window long, and fit the adjacent compound bevel.

Pine nosing glued and nailed to plywood seat panels

Make a flush cut with a multitool, first at the bottom, then along the side.