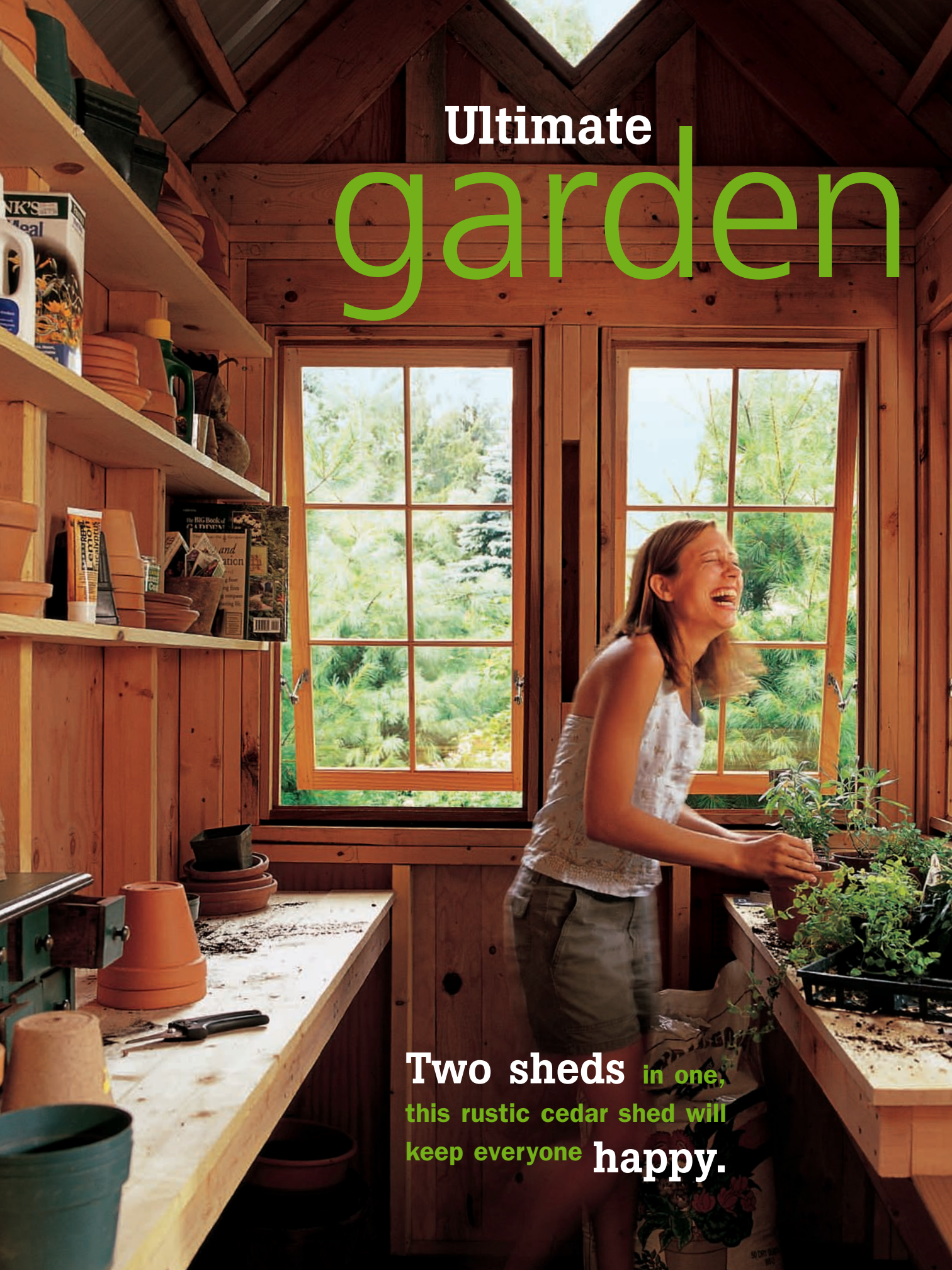


Ultimate garden

Two sheds in one, this rustic cedar shed will keep everyone happy.

shed

This cedar garden shed is the perfect storage solution for every gardener and family member who enjoys working and playing in the back yard. At 8 ft. x 9-1/2 ft., the storage area has loads of room for all your lawn and garden equipment. And you can access it easily through the 46-in. wide sliding door in the back. With the addition of workbenches and shelves, the smaller 5-1/2 ft. x 8-ft. room makes a perfect potting shed. The concrete paver floor, natural cedar siding and steel roofing add up to a low-maintenance shed that will last for generations.

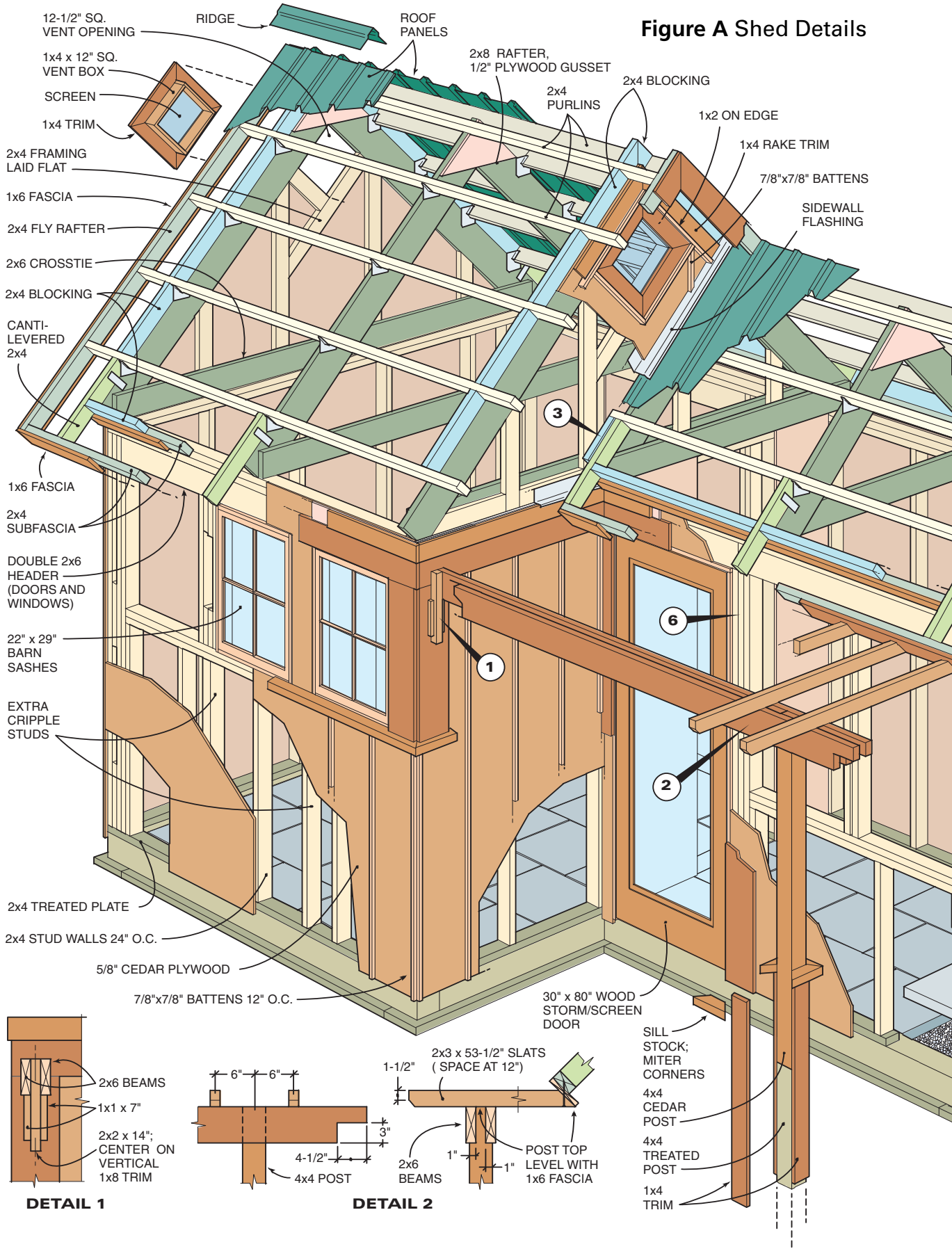
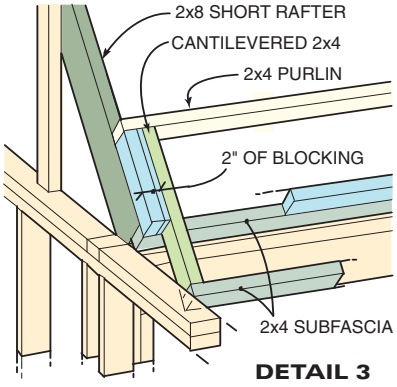
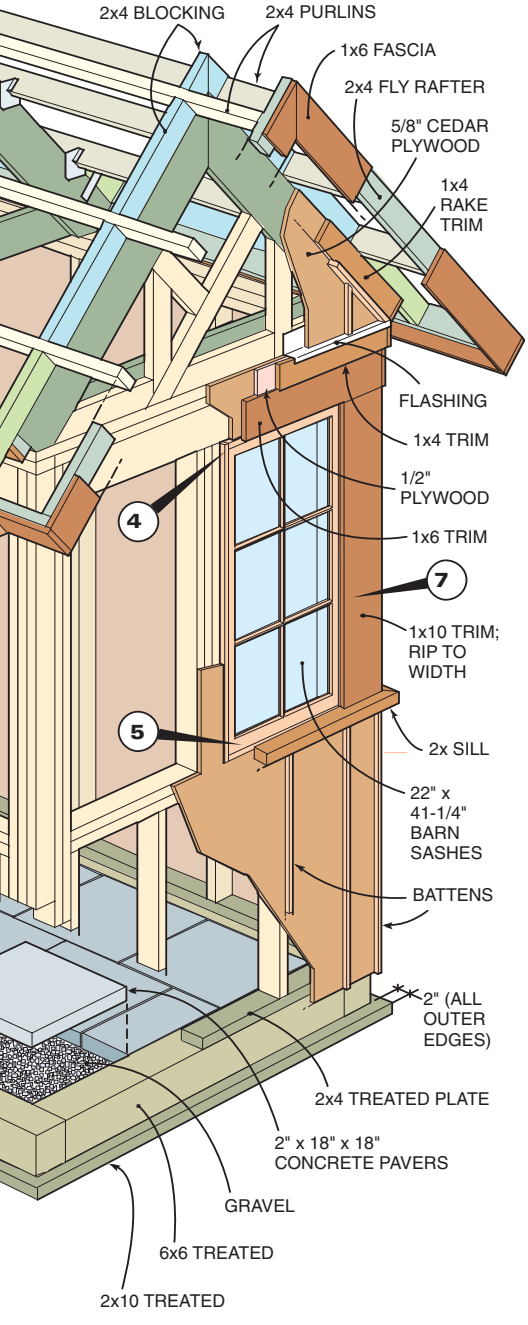


Figure A Shed Details



DETAIL 3



Ultimate garden shed

Building this shed isn't complicated, nor does it require more than basic carpentry experience. Still, it's a big job, and if you've built a deck or done other major remodeling, you'll find this project the next step up in skill level. It'll take you and a helper three or four weekends to build plus another few days to seal the siding and put on the finishing touches.

The total cost of materials for the shed shown is about $3,600, including $360 for the concrete paver floor and $250 for the metal roofing. If this is a little beyond your budget, you could easily save several hundred dollars by simplifying the exterior trim details and using less expensive flooring material.

In addition to basic hand tools, you'll need a circular saw, drill, table saw and power miter saw. You'll also need 6-ft. and 10-ft. stepladders to work on the roof and tall gable ends. If you really want to speed up the work and simplify your job, rent scaffolding with a set of casters.

Check with the city—you may need a permit

Most cities require a building permit for large sheds. Call the building department to find out. This shed is 120 sq. ft. Also check for restrictions on where the shed can be placed on the lot. If you're planning to build near the edge of your lot, you may have to hire a surveyor to locate the lot lines. Start this planning process at least a month in advance just in case there's a snag. A few days before you intend to start digging, call (888) 258-0808 to have buried utility lines located and marked.

You'll have to special-order the roofing

Most of the materials for this shed are readily available at home centers and lumberyards. You may have to order the barn sash windows and the grooveless cedar plywood, however. If your lumber supplier doesn't sell the metal roofing material, check local roofing or farm supply retailers. A few colors are stocked, but you'll have to special-order the roofing materials to get a custom color or have the panels cut to the exact length you need. Check p. 47 for the list of the roofing materials.

1 **Drive stakes 2 in. beyond the perimeter dimensions (see Figure B). Check for square by measuring diagonally (as in Photo 2). Tie a string to the stakes level at the height of the future floor. Dig an 18-in. wide trench down to 12 in. below the string. Fill the trench with 5 in. of gravel and level the top. Cut treated 2x10s so their outside edges are even with the string and tamp them into the gravel with a sledge until they're level and 5-1/2 in. below the string line.**

Start by outlining the shed with stakes and string

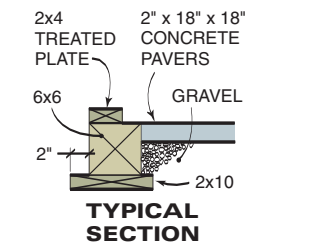
The first step in the construction process is to accurately stake out the perimeter (**Photo 1**). We're using 2x10s as our foundation with 6x6s resting on them. The 2x10s will stick out beyond the 6x6s about 2 in., so set your stakes 2 in. beyond the shed dimensions to mark their outer edges. Use a line level ($3) to level the strings. Then double-check the distance between stakes and make sure the diagonal measurements of each rectangular section are equal before you start digging.

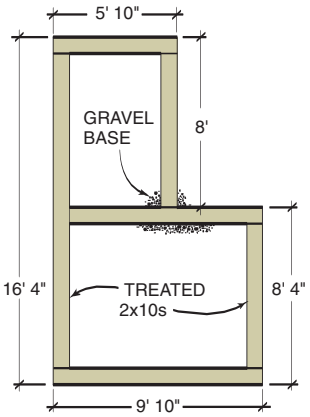
Remove all the sod or other organic material inside the perimeter of the strings. Then dig the trench and set the 2x10 footing plates on a bed of gravel (**Photo 1**). Roughly level the 2x10s by measuring down from the string. Then fine-tune with a 4-ft. or longer level. Take your time here. An out-of-level foundation will cause you problems later.

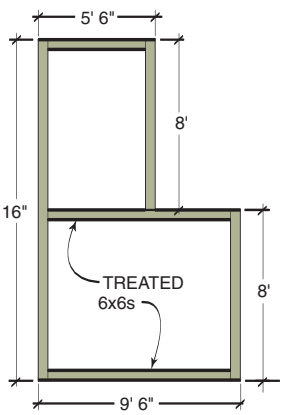
Complete the wood foundation by cutting the 6x6s to length and nailing them together at the corners (**Photo 2** and **Fig. B**). The edge of the 6x6s should be about 2 in. inside the string line and the top should be level with the string. Square the 6x6s (**Photo 2**) and level them with shims. Then toe-screw them into the 2x10s and pack gravel around the perimeter to hold everything in place. You'll need about 3-1/4 yards of 3/8-in. to 1/2-in. crushed gravel.

2 **Cut treated 6x6s to form the perimeter of the shed. Check with a level and slip treated shims under them at low spots. Drill pilot holes and nail the corners together with galvanized timber spikes. Adjust the 6x6s until the diagonal measurements are equal. Toe-screw the 6x6s to the 2x10s to hold them in place.**

Figure B Foundation







3 **Add 3-in. layers of gravel and pack each layer with a hand tamper to within 2 in. of the top. Drag a notched 2x4 over the gravel to create a flat, level base for the concrete pavers.**

Loose-laid pavers are easy to install and allow water to drain

You can choose any size or style paver you like for the floor. Notch the 2x4 screed board to match the thickness of the pavers you choose (**Photo 3**). The 18-in. square cement pavers we picked cost about $7 each. We used a circular saw and diamond blade to cut the 2-in. thick pavers to fit, but if I had it to do over, I'd rent a larger masonry-cutting saw instead ($40 per day). We offset the joints for a more interesting look and to avoid having to keep the pavers precisely aligned.

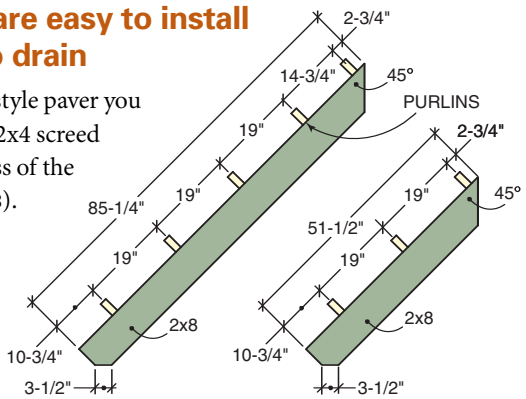


Figure C Rafter Details

4 **Lay the pavers over the gravel, adding or removing gravel as needed to level the tops. Mount a diamond blade in a circular saw and cut pavers to fit. Make multiple passes with the saw, increasing the cut's depth by 1/2 in. each time.**

5 **Mark and cut a pair of long and a pair of short rafters from the dimensions in Figure C. Check the fit (Photo 6), then use them as a pattern for the rest.**

6 **Align the rafters with the outside edges of the 6x6s as shown to build three large trusses. Do the same on the narrow end to build three small trusses. Use temporary wood blocks to center the tops of the rafters on the end wall while you nail them together with triangular plywood gussets. Add flat 2x4s 24 in. on center to create one small and two large gable end trusses. Build one large and two small trusses without the studs.**

7 **Cut treated 2x4 bottom plates and 2x4 top plates and tack them into place around the perimeter. Mark window and door rough openings and the edge of each stud according to the dimensions in Figure D.**

Build the roof trusses before you build the walls

First cut the rafters according to the dimensions in **Figure C**. Then cut three 9-ft. 6-in. and three 5-ft. 6-in. 2x6 crossties. Arrange the truss parts on the shed floor as shown in **Photo 6**. The angles at the top should fit tightly together. Tack positioning blocks at the top and mark the bottoms on the 6x6 as a guide for building the remaining trusses. Repeat this process at the narrow end to build the three small trusses.

Connect the pairs of rafters at the top with a plywood gusset and ten 6d nails. Connect the bottoms with a 2x6 nailed to each rafter with three 10d nails. On the end trusses, cut and nail additional 2x4 framing as shown to provide nailing for the plywood siding and square openings for the screened vents (**Photo 6**). Mark the location of the purlins along the tops of each truss (**Figure C**). Cut the purlins to length and mark the truss locations on them as well (**Figure E**).

8 **Assemble the walls on the floor. Align the edge of full-length studs with the marks and nail them in between the top of bottom plates with pairs of 16d nails. Cut and assemble the double 2x6 headers and nail them into place between the king studs. Cut trimmers and nail them into place under the ends of the headers. Cut and assemble the cripples and doubled rough sills to form the window openings. Finally, build the short posts that separate the windows and toenail them into place.**

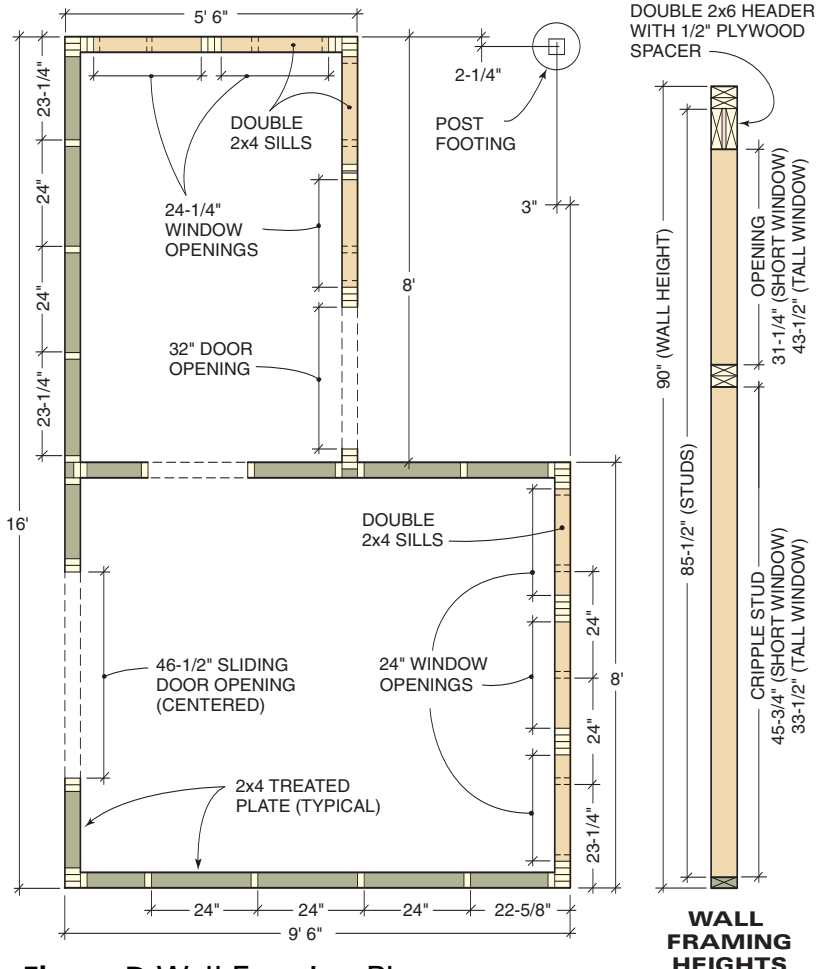


Figure D Wall Framing Plan

Frame the walls on the floor and stand them up

Cut the plates to length (**Figure D**) and tack them to the 6x6 exactly where they'll go to check the fit. Leave them tacked while you lay out the stud and opening locations on the plates. This eliminates guesswork. Study **Photos 8, 9, 11 and 12** to help with the exact header and stud assembly details.

Then cut the studs and other wall framing parts to length according to the dimensions shown in **Figure D**. Build the headers by sandwiching a layer of 1/2-in. plywood between 2x6s and nailing them together with pairs of 10d sinkers spaced every 8 in. Choose a pair of straight 2x4s for each corner and nail them together with short lengths of scrap 2x4s as spacers. Once all the parts are cut and the headers and corners are built, you're ready to assemble the walls.

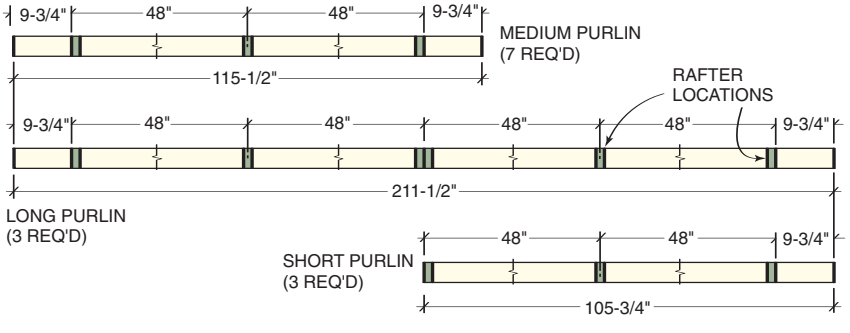
Build the long back wall first. Lay the bottom plate along the 6x6 and place a stud at each mark. Sight down the length of each stud and set it with the bowed (crowned) side up. Line up the top plate over the studs and nail the plates to the studs with two 16d sinker nails into each stud. We're using a framing nailer (**Photo 8**) to speed things up. This is a dangerous tool. We recommend you avoid this tool and hand-nail this entire project unless you have prior experience using a framing nailer. Stand and brace the back wall (**Photo 9**), then the front walls, and finally the end walls. Tie them together with doubled top plates (**Photo 10**) and finally plumb and brace the corners (**Photo 11**).

9 **Stand and brace the front and back walls first, making sure the tops tilt out slightly to allow room for the walls that fit in between. Align the outside edge of the walls with the 6x6s and nail down through the bottom plates. Build the end and center walls and stand them up. Remove the temporary braces and nail the corners together, making sure the top plates are aligned with each other.**

10 **Tie the walls together with a second top plate that overlaps at the corners. Nail with pairs of 16d nails at the ends and one nail centered over each stud location.**

11 **Tape a level to a long straight board with equal spacers at each end. Push or pull the wall until it's plumb and hold it in this position while your helper nails on a temporary diagonal brace. Repeat this process for each wall. Plumb both end walls first. Then sight down the long back wall to make sure it's straight before you nail the diagonal brace across the center wall.**

Figure E Purlin Details

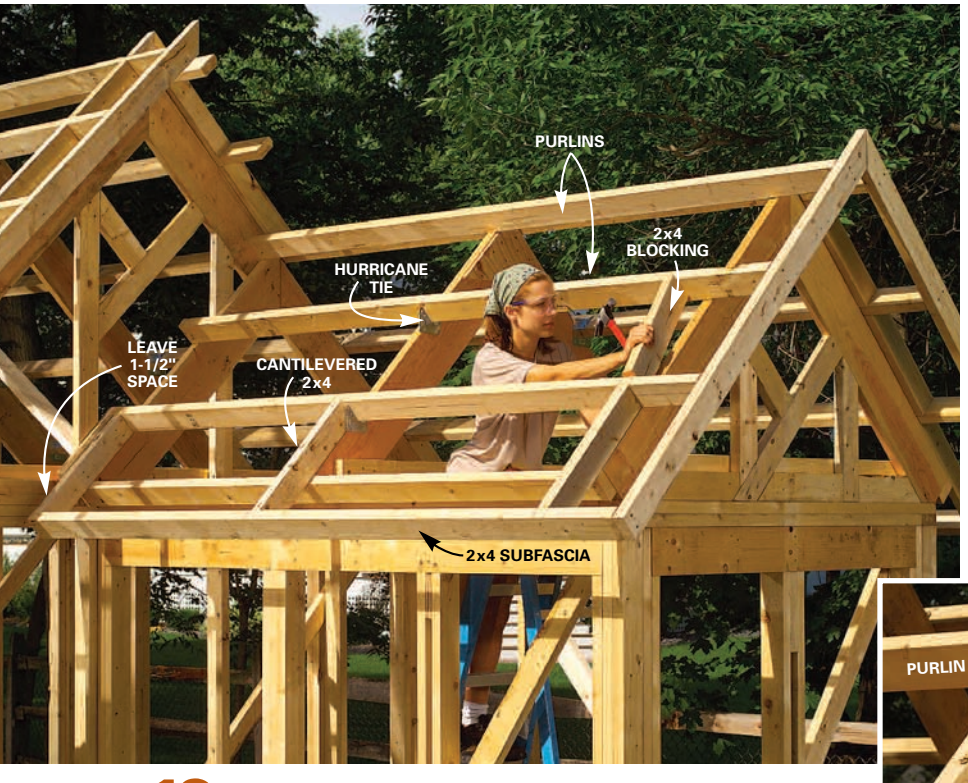


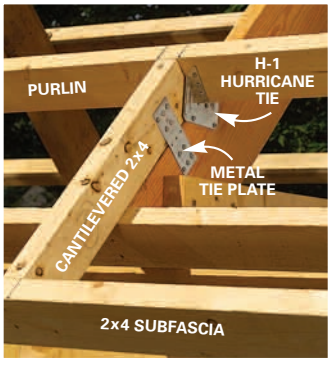
12 **Erect the two end trusses and brace them with 2x4s nailed to the walls. Line up the outside edges with the walls and toenail them into place. Align the one long purlin and toenail it into place. Tip up the remaining trusses and toenail them to the purlin. Toenail the ends of the trusses to the top plates.**

Stand the trusses and connect the purlins

Once the walls are plumbed and braced and the trusses are built, you're ready to frame the roof. It'll take shape quickly, but you'll need some help lifting and positioning the trusses. Also line up a few tall ladders or scaffolding. The key to this roof is to make sure truss positions are marked on the top plates, purlin positions on the rafters, and rafter positions on the purlins. Then all will go together smoothly. Start by nailing a long 2x4 brace to the end walls. It should extend up to the rafter (**Photo 12**). Once these are in place, you can install the two end trusses and connect them with a purlin (**Photo 12**). Then install the intermediate truss. Toenail everything with 8d nails and add metal hurricane ties where there's space to do so (**Photo 13**).

Complete the roof framing by building the cantilevered overhangs. Cut lengths of 2x4 and line them up over the ends of the trusses to form the cantilevered overhangs. Connect them to the trusses with metal tie plates (**Photo 13 inset**). Then complete the overhangs by cutting and nailing up the 2x4 rough fascias. Finally, cut and install the blocking to complete the roof framing.



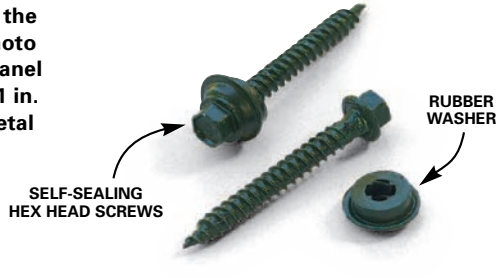


13 **Nail on the remaining purlins using hurricane ties (inset photo) where possible. Complete the roof framing as shown by adding the cantilevered 2x4s that support the overhang and nailing on the 2x4s that form the rough fascia. Finally, add 2x4 blocking between the purlins on the end walls to keep out birds.**

14 **Cut metal panels with a 24-tooth carbide blade in a circular saw. Clamp the panel between a straight board to guide the saw and a 2x4 that backs up the cut. Cut the first rib from the starting piece to create a flat edge (see Photo 15).**

15 **Nail 1x6 cedar fascia boards to the 2x4 subfascia boards. Overhang the metal panel 1 in. on the end and 2 in. on the bottom and attach it to the purlins with special self-sealing hex head screws. Overlap the second panel onto the first and screw it into place (Photo 16). Measure and cut the last panel to overhang the cedar trim by 1 in. Finally, cap the top with the metal ridge cap (Figure A).**

16 **Drive special self-sealing hex head screws into the purlins to secure the panels. Place screws along one side of each rib and on both sides of ribs where panels overlap. Snug up screws to compress the rubber washer but don't overdrive.**



Install the metal roofing

Since this design doesn't include a metal fascia that would typically cover the edge of the metal roofing at the gable ends, you'll have to cut the first rib from the starting sheet to leave a flat spot (**Photo 14**). We tried tin snips and abrasive metal-cutting blades but settled on a standard 24-tooth carbide blade mounted in a circular saw as the best method for making the long, straight cuts in the metal sheets. Be careful, though. The blade throws metal chips quite a distance. Keep bystanders away and make sure to wear safety glasses, hearing protection and leather gloves. Smooth the cut edges with a mill bastard file to remove sharp burrs.

Photos 15 and 16 show how to install the sheets. Screw down each sheet before moving to the next. Use special hex head roofing screws that have a built-in rubber washer to seal the hole. Set the last sheet into place, overlapping at the seams as usual, and mark it 1 in. past the fascia for cutting. On the backside of the roof, you'll have to notch one panel where the roof transition occurs. If your last panel is a few inches short of the end as ours was, rather than cutting a 2-in. strip, cut a piece 13 in. wide and run it underneath the previous panel so the seam won't show from below.

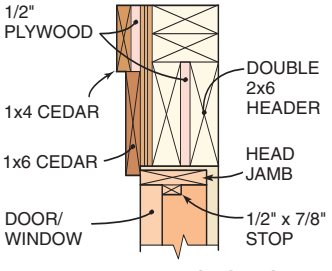
It's difficult to reach the top of the roof to install the ridge cap after all the roofing is on. One solution is to complete one side of the roof, then cut the ridge and screw it down over the completed side. Slide the panels on the opposite side of the roof under the ridge and screw down the ridge as you fasten each panel.

17 **Cut 5/8-in. cedar plywood panels to fit and nail them to the studs with galvanized siding nails. Lap the bottom of the panels 1 in. over the 6x6. Complete the lower panels and window and door installation and trim before installing the panels on the gable end trusses.**

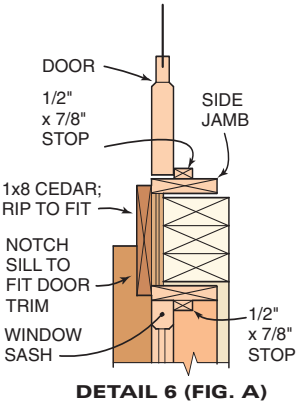
Finish the exterior with cedar plywood panels and cedar battens

Since all of the cedar plywood panels for the walls are the same height, you can start by marking and cutting them all to 91 in. long. A drywall square works great for marking the 4x8 sheets. Mark and cut from the back-side of the sheets. The studs are spaced so you'll be able to start each wall with a full-width sheet and cut the last sheet to fit.

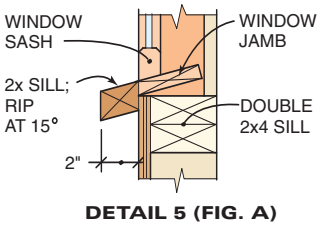
Drive 6d galvanized nails every 6 in. around the perimeter of the panels and at 8-in. intervals along the studs (**Photo 17**).



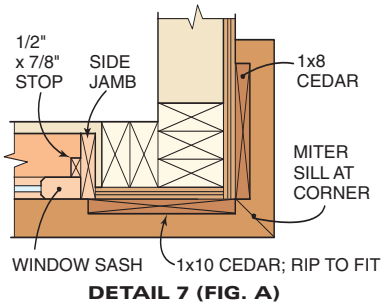
DETAIL 4 (FIG. A) DOOR/WINDOW HEAD JAMB



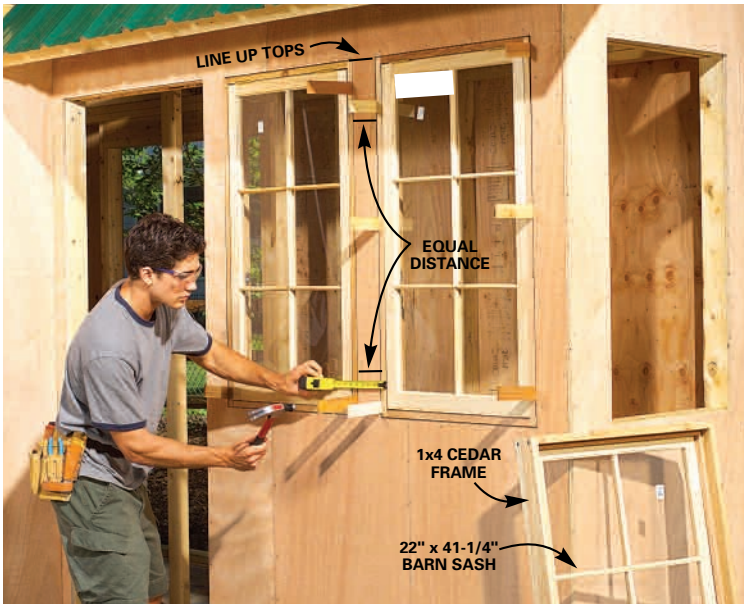
DETAIL 6 (FIG. A) DOOR/WINDOW SIDE JAMB



DETAIL 5 (FIG. A) WINDOWSILL



DETAIL 7 (FIG. A) WINDOW CORNER DETAIL



18 **Build 1x4 cedar frames for the barn sash, allowing for a 1/8-in. gap around the sash. Hinge the sash at the top and nail 1/2-in. x 7/8-in. stops around the inside. Level the frames in the openings and adjust with shims until the gap between the sash and frame is even and the space between pairs of windows is equal on the top and bottom. Nail through the frame and shims from inside to secure the windows. Cut off the shims.**

Build your own windows with barn sash and cedar boards

Adding the windows, doors and trim can be time consuming. But it's these details that make the shed look sharp. Patience pays off here. Construct the window frames by screwing together 1x4 cedar boards to form a box that's about 1/4 in. wider and taller than the window sash. You'll have to pull out your table saw to cut out the 1/2-in. x 7/8-in. stops, as well as the sills (15-degree angles), battens and window trim. Mount the larger barn sash in the frames with a pair of 3-in. screen door hinges at the top. We chose to mount the smaller sashes between stops and leave them permanently closed. Then mount storm window hold-open hardware 10 in. up on each side to hold the windows open or closed. Finally, shim and install the windows (**Photo 18**).

Add the trim and battens. Position the battens so every other one falls over a stud (24 in. on center). That way, you can use 8d galvanized finish nails. Fasten intermediate battens with 4d nails and construction adhesive. A layout stick (**Photo 20**) speeds up the layout. After you've completed the siding, trim and drip cap on the lower walls, seal the gap between the small front roof and the gable end wall with sidewall flashing (**Photo 22**).

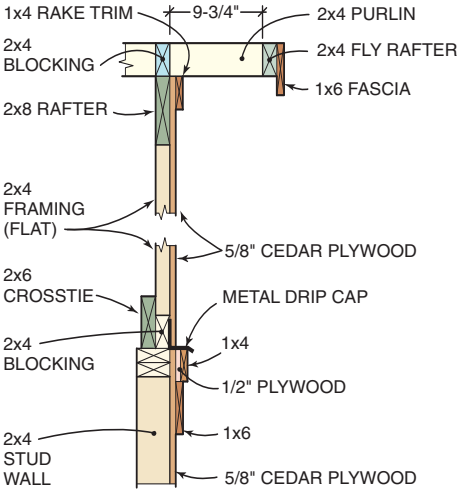
The optional cedar arbor is a great place to hang plants or grow vines

You can be as creative as you want with this part of the project. **Figure A** shows how we built our arbor. The key is to temporarily brace the post and level across from the bottom of the fascia to mark the height and cut the notches. Then it's a simple matter to plumb the post, attach the beams, and finally top them with the 1-1/2 in. x 2-1/2 in. cedar lattice pieces. We screwed the lattice through the fascia and into the 2x4 subfascia with 4-in. galvanized deck screws run in at a 45-degree angle.

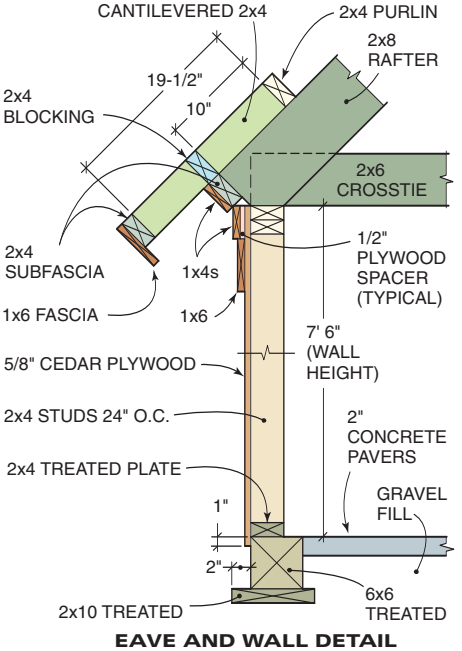
19 **Rip 2-in. wide cedar sills with 15-degree bevels on each side with a table saw. Cut 45-degree miters where the sills wrap around the walls. Nail the sill pieces below the windows with 16d galvanized casing nails.**

20 **Cut cedar boards to fit around windows and doors and nail them into place. Continue the top 1x6 cedar board across the end of the shed. Shim out the 1x4 board over this with 1/2-in. plywood strips and add a metal drip cap overtop before cutting and installing the gable end plywood. Mark the batten locations every 12 in. and nail them up with galvanized siding nails.**

Figure F Gable and Eave Details



GABLE (END WALL) DETAIL



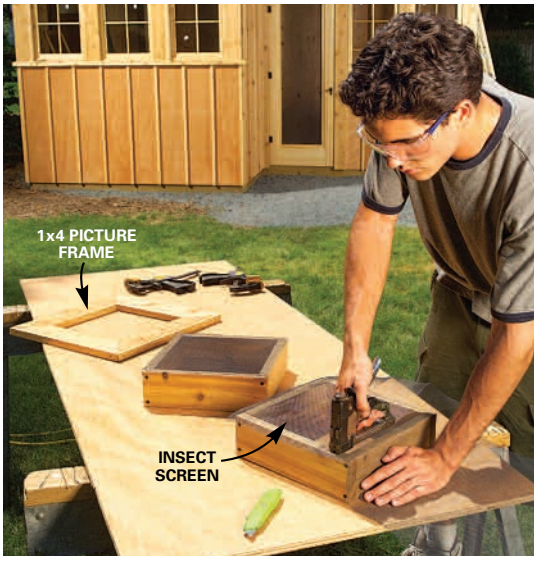
EAVE AND WALL DETAIL

21 **Cut the wood storm door 3/16 in. narrower and 1/2 in. shorter than the framed opening. Hold it in place with shims while you attach it with storm door hinges. Install the storm door latch and a spring or closer if desired.**

Simple shelves and benches add storage and workspace inside

We fitted the smaller side of the shed with two full-length workbenches and 1x6 wall shelves. The workbenches are simply 2x4 frames screwed to the studs and supported by angled 2x4 braces (**lead photo**). We covered the tops with three 1x6 boards for a total width of 16-1/2 in. For the shelves, we notched 1x6 boards to fit around each stud and supported them by nailing 2x4 spacers to the studs under each shelf.

22 **Using a tin snips, cut and fit sidewall flashing to fit around the 2x4 framing at the top and the drip cap at the bottom. Nail the flashing to the studs and then cover the wall with the cedar plywood, battens and cedar trim. Leave a 1-1/2 in. space between the plywood and the metal roofing.**

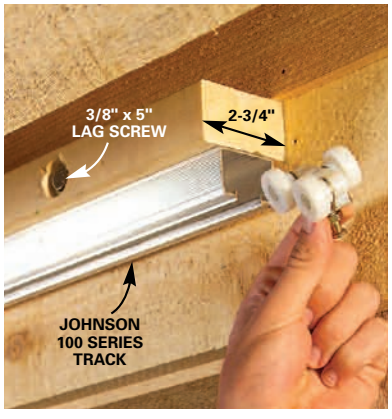


23 **Build 12-in. square frames of 1x4 cedar and cover them with screen. Build mitered 1x4 picture frames and nail them to the front of the screened boxes. Shim and screw the screened vents into the openings in the ends of the shed.**

Build the sliding door from a sheet of plywood

Referring to **Figure G** and **Photo 24**, build the sliding door from a sheet of 5/8-in. cedar plywood. Then mount the heavy-duty sliding door track to the wall of the shed and hang the door. To keep the bottom of the door from bumping into the battens, cut 1-1/2 in. from the bottom of each batten that's under the track and nail on a horizontal 1x2 for the door to ride against. Keep the bottom of the door from swinging out by mounting a metal 2x4 bar holder to the foundation 6x6 just to the left of the door. (See **Figure G** below.) Install a gate latch to hold the door shut.

24 **Glue and screw 1x3s flat and then 1x3s on edge to the perimeter of a 48-in. x 80-1/2 in. sheet of 5/8-in. thick cedar plywood to create a sliding door. Screw pocket door wheel brackets to the top 4 in. from the ends and centered in the top 1x3.**



25 **Rip a 102-in. 2x4 to 2-3/4 in. and screw it to the wall above the door opening with 5-in. lag screws. Extend the end 2 in. beyond the edge of the door opening. Screw a 5-ft. section of aluminum track to the ripped 2x4 with an additional 42-in. piece to complete the track. Slide the two sets of wheels into the track before wrapping it with 1x3 cedar trim. Finally, hang the door and adjust the rollers until it hangs evenly. Screw small blocks of wood into the track to stop the rollers at each end.**

Art Direction • BECKY PFLUGER
Photography • BILL ZUEHLKE
Technical Art • EUGENE THOMPSON

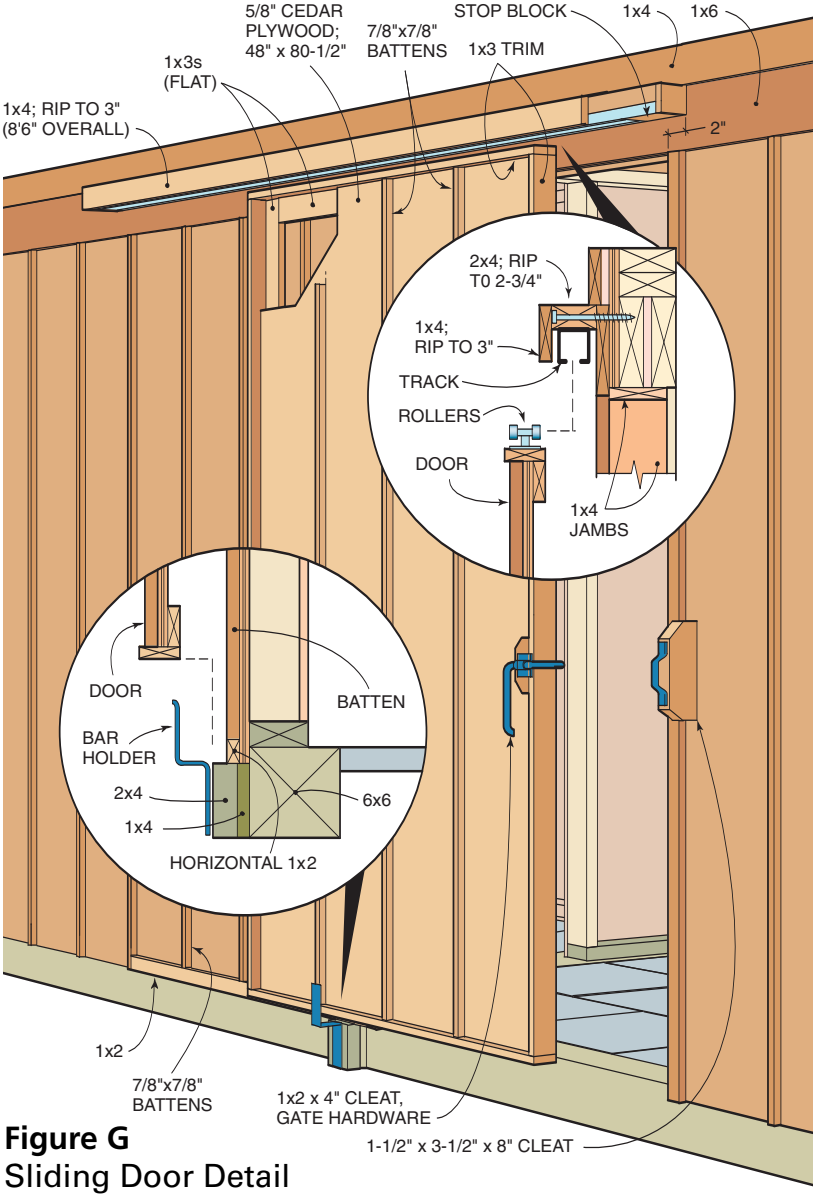


Figure G
Sliding Door Detail

Protect the cedar with exterior finish

We finished the outside of this shed with an exterior-grade penetrating oil finish. Recoating every few years with a cedar-tinted stain should maintain the natural beauty of the cedar.

Materials List

Item	Qty.
FOUNDATION	
3/8" crushed gravel	3.25 cu. yds.
2x10 x 10' treated	1
2x10 x 16' treated	3
6x6 x 6' treated	2
6x6 x 8' treated	2
6x6 x 10' treated	3
18" x 18" cement pavers	45
WALLS	
2x4 x 10' treated	1
2x4 x 16' treated	3
2x4 x 8' spf (spruce, pine or fir)	75
2x4 x 10' spf	2
2x4 x 16' spf	6
2x6 x 8' spf	4
2x6 x 10' spf	2
ROOF FRAMING—TRUSSES	
2x8 x 8' spf	6
2x8 x 10' spf	3
2x6 x 16' spf	3
4' x 8' sheets of 1/2-in. CDX plywood	2
ROOF FRAMING—PURLINS AND SUBFASCIAS	
2x4 x 10' spf	14
2x4 x 18' spf	5
ROOF FRAMING—OVERHANGS AND BLOCKING	
2x4 x 8' spf	26
SIDING	
4' x 8' sheets of 5/8" rough cedar plywood	15
1x4 x 7' cedar (rip to 7/8" for battens)	10
1x4 x 8' cedar (rip to 7/8" for battens)	7
EXTERIOR CEDAR TRIM	
2x6 x 12' cedar (rip to 2" at 15-degree bevel for sills)	1
1x2 x 8' cedar	7
1x3 x 8' cedar	6
1x4 x 8' cedar (rip four of these to 1/2" for stops)	29
1x4 x10' cedar	12
1x6 x 8' cedar	7
1x6 x 10' cedar	10
1x6 x 12' cedar	1
1x8 x 8' cedar	4
1x10 x 8' cedar	1
METAL ROOFING	
3' wide x 68" steel roof panels	5
3' wide x 102" steel roof panels	8
12/12 pitch ridge caps, 10' lengths	2
Sidewall flashing, 10' length	1
Self-sealing hex head screws	350
DOORS AND WINDOWS	
30" x 80" wood screen/storm door	1
22" x 41-1/4" window barn sashes *	4
22" x 29" window barn sashes *	3
HARDWARE	
1-1/2" metal drip cap, 10' lengths	2
1-1/2" joist hanger nails	5 lbs.
6d and 8d sinker nails	5 lbs. each
16d sinker nails	10 lbs.
4d, 6d and 8d galvanized siding nails	5 lbs. each
16d galvanized casing nails	1 lb.
3" and 4" deck screws	1 lb. each
3/8" x 10" spikes	28
3/8" x 5" lag screws	5
Simpson H-1 hurricane ties	36
Simpson 15-R tie plates	12
3" screen/storm door hinges	11
Storm window hold-open latches	4 pairs
Storm door handle	1
Johnson 1120 series pocket door hangers	1 set
Johnson 100 series pocket door track	9'
Open bar holder	1
National V13B Gate Latch	1
Construction adhesive	2 tubes
Window screen	2 sq. ft.
CEDAR ARBOR	
4x4 x 4' treated	1
4x4 x 6' cedar	1
2x6 x 10' cedar	2
2x6 x 10' cedar (rip to 2-1/2")	4
1x4 x 8' cedar	2

* Barn sashes are available from Lindsay Windows (507-625-4278).