› INTERMEDIATE

MODERN MOBILE COOP-TRACTOR

GUEST DESIGNER: NICOLE STARNES TAYLOR OF MAKE DESIGN STUDIO IN SEATTLE, WA

This coop is ideal for urban lots where space is tight. The designer and her husband live in Seattle. They liked the idea of having chickens for composting their food, fertilizing plants, working the soil for new garden beds, and tilling under their vegetable garden at the end of the year. The eggs, which are creamy and delicious, are simply a bonus for them.

The size of the chicken coop was determined by the width of their home's "planting strip," Seattle's planted paradise between the street and the sidewalk. Their first project for the chickens was to convert the gravel- and weed-filled planting strip into a rich soil ready for new plants. This required a coop that could convert into a chicken tractor to allow the chickens to work the ground directly; all this takes is removing the screws between the coop house and its rollable floor (a.k.a. the "dolly") and setting the house structure directly on the ground. The coop also needed to be sturdy enough to keep the chickens safe from dogs and raccoons.

While sources on raising chickens typically recommend a minimum of three birds (and this coop is large enough for three), the designers found in their six years of raising chickens in an urban environment that two birds are ideal. With two, the chickens are quieter and more content, and they don't have the same dominance issues common among larger flocks.

One unexpected result of this coop's mobile design is how fun and easy it is to share the experience of raising chickens with others. When the designers started a major home construction project, they rolled the coop and chickens down the street to a friend's house. The friends were interested in raising chickens but had some reservations. The "loaner chickens" and coop gave them the opportunity to try it out without taking the plunge. One month into their chicken-sitting, the friends started building their own coop and had chickens of their own before they returned the loaners.

MATERIALS

- Two 4 × 8-foot sheets ½" CDX plywood
- Eight 8-foot 2×4s (common lumber, or use rot-resistant cedar for greater weather resistance)
- Four 8-foot 2×2s (same as above)
- One 4 × 8-foot sheet ¾" CDX plywood
- Nine 5-foot rough-sawn cedar 1×3 fencing boards
- One hundred 3" deck screws
- One hundred 1½" deck screws
- Fifty 2½" deck screws
- Six 6" deck screws
- Heavy-duty staples or 1" exterior screws with washers (see step 8)
- One hundred fifty 1½" exterior trim-head screws
- Two 6" swiveling, locking casters (mounting plate must fit 2×4 face; see step 1)
- Two 6" fixed casters (nonswiveling, nonlocking; same as above)
- One-half gallon exterior primer
- One-half gallon exterior paint
- 20 square feet ½" galvanized hardware cloth, 18-gauge
- 16 square feet expanded metal that is smooth on both sides (see step 8)
- 18½ square feet roofing material (see step 9)
- Two exterior 3" hinges with screws
- Two exterior 2" hinges with screws
- Two exterior door pulls with screws
- Three exterior barrel-bolt latches with screws
- One branch (or 2×2; for roosting bar)

SPECIALTY TOOL

- Grinder with metal-cutting wheel or circular saw with metal cutoff disc

OPTIONAL SPECIALTY TOOLS

- Miter saw
- Table saw
- Pocket hole jig (and screws; see step 2)
- Metal file
- Router

A few helpful hints for this project

- Use screws for all fastening, making cleaning and future disassembly much easier.
- Feel free to experiment and make material substitutions based on the simple form of the original coop design.
- Use recycled, found, or salvaged material as much as possible.
- Choose a solid floor over a screened floor. The designers have tried both, and the solid one is easy to clean with a flat shovel and leaves less feed on the ground, reducing night visits from rats and raccoons.
- Fill the wall space between the screen and the siding with straw in the winter, if desired, for cold weather protection.
- Build the coop before you get the chicks. The designers learned this the hard way. Baby chicks grow fast. Having chickens in the living room isn't nearly as fun as it sounds.
- You can replace the plywood roof with sheet metal or any other easily sourced roofing material.

1. BUILD THE COOP FLOOR.

Cut the floor piece to size at 32" × 60" from ½" CDX plywood, using a circular saw and a straightedge guide. Cut two 2×4s to length at 60", mitering both ends at 45 degrees in opposite directions. It's easiest to make these cuts with a miter saw, but you can use a circular saw or even a handsaw and a miter box. Measure the length of all angled cuts from the long points on the miters.

Cut two more 2×4s at 32" with opposing 45-degree miters. Arrange the 2×4s on top of the plywood to create a frame that aligns with the edges of the plywood. Fasten together the 2×4 frame at the corners, using 3" screws.

Place the frame on a flat surface and position the plywood floor on top of the frame so all outside edges are flush. Screw through the plywood and into the frame pieces with 1½" screws. Flip the assembly over so the 2×4s face up. Install four casters on the 2×4 frame, placing the two swiveling casters on one end of the frame and the two straight casters at the other end.

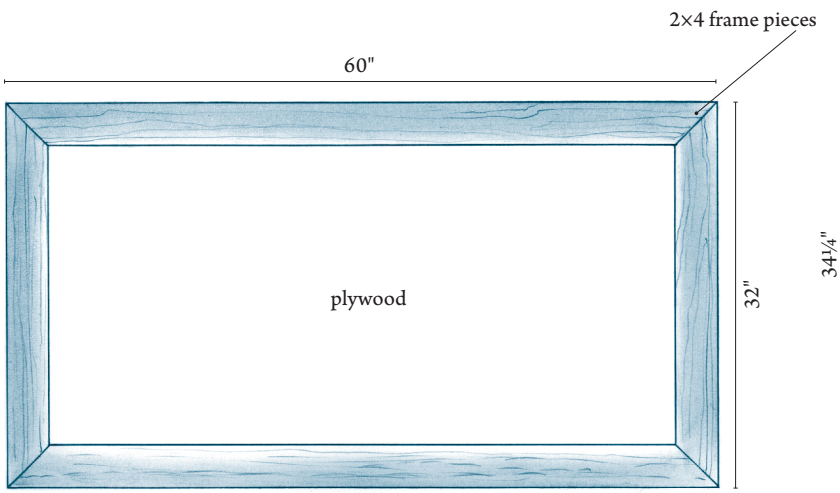
NOTE: *As an optional detail for more experienced woodworkers, you can cut a rabbet into the 2×4 frame and recess the plywood (cut smaller than specified above). This provides a cleaner look on the outside by hiding the plywood edge.*

2. CONSTRUCT THE SIDE WALLS.

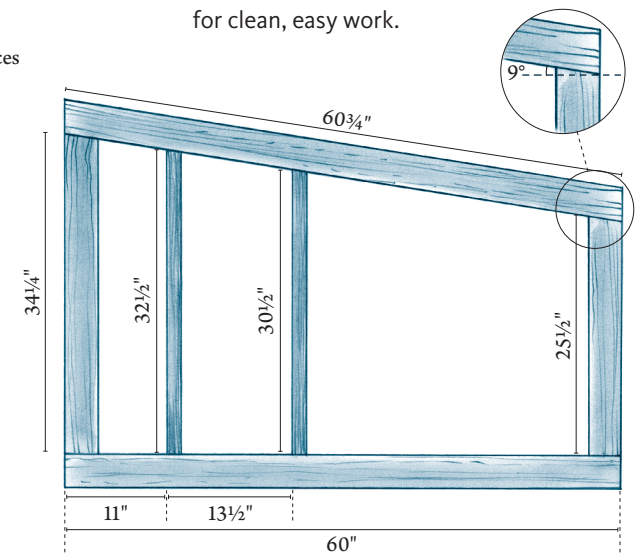
Cut the following pieces for each of the two angled side walls of the coop (remember to measure from the long point of all angled cuts):

- One 2×4 at 60"
- One 2×4 at 25½", with a 9-degree angle on one end
- One 2×4 at 34¼", with a 9-degree angle on one end
- One 2×4 at 60¾", with parallel 9-degree angles on both ends
- One 2×2 at 30½", with a 9-degree angle on one end
- One 2×2 at 32½", with a 9-degree angle on one end

Following the *Side wall diagram*, assemble each wall frame using 2½" screws. If you have a pocket hole jig (and appropriate screws), you can fasten all of the joints from the inside, which makes for clean, easy work.



Coop floor — bottom view

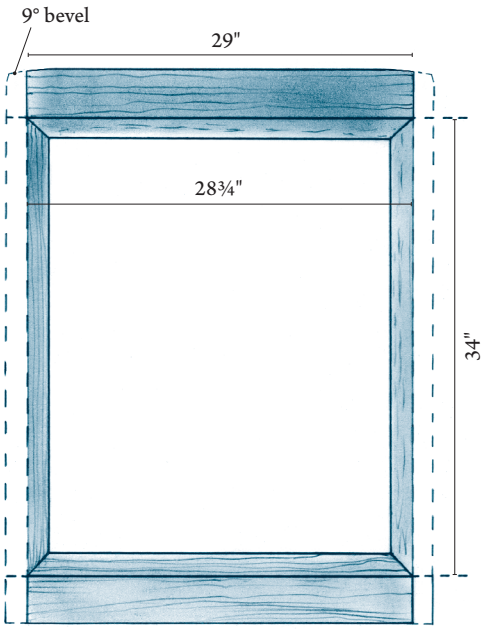


Side wall diagram

3. PREPARE THE DOOR AND FRONT WALL PIECES.

You will assemble the frame structure of the coop after preparing the front wall (and door frame), the rear wall, and the roof. To prepare the front wall, cut two 2×4s to length at 29" to serve as the top and bottom rails of the front wall. Bevel the top edge of the top rail at 9 degrees to follow the slope of the angled side walls, using a table saw (if you have one) or a circular saw.

Cut two 2×2s at 34" and two at 28¾", all with opposing 45-degree miters at the ends. Assemble these pieces picture-frame-style, using 2½" screws to create the door frame (the frame will be much more stable after expanded metal is installed on its back side, in step 8).

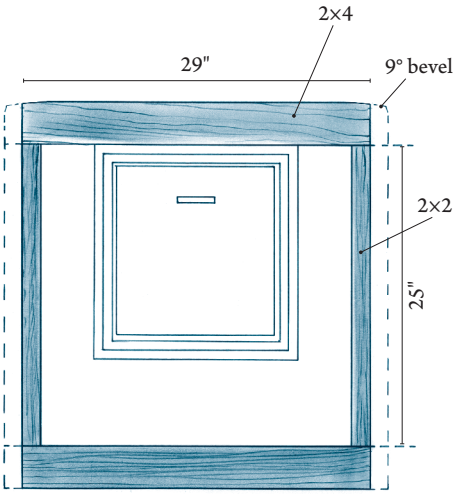


Front wall diagram

4. BUILD THE REAR WALL FRAME.

Cut two 2×4s to length at 29" for the rear top and bottom rails. Bevel the top edge of the top rail at 9 degrees to match the slope of the angled sides, as you did with the front wall's top rail.

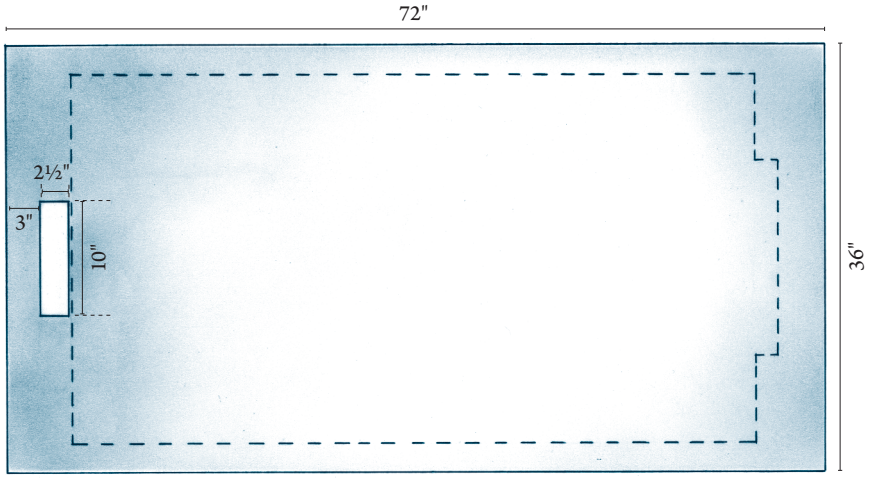
Cut two 2×2s to length at 25". Assemble the rails with 2½" screws as shown.



Rear wall diagram

5. CUT THE ROOF DECK.

Cut the roof deck to size at 36" × 72", using ½" plywood. Lay out and cut a handle at the front end of the roof deck, following the *Roof deck diagram*. Use a circular saw with a plunge-cutting technique (see page 34) or a jigsaw (by drilling a starter hole to insert the blade inside the cutout).



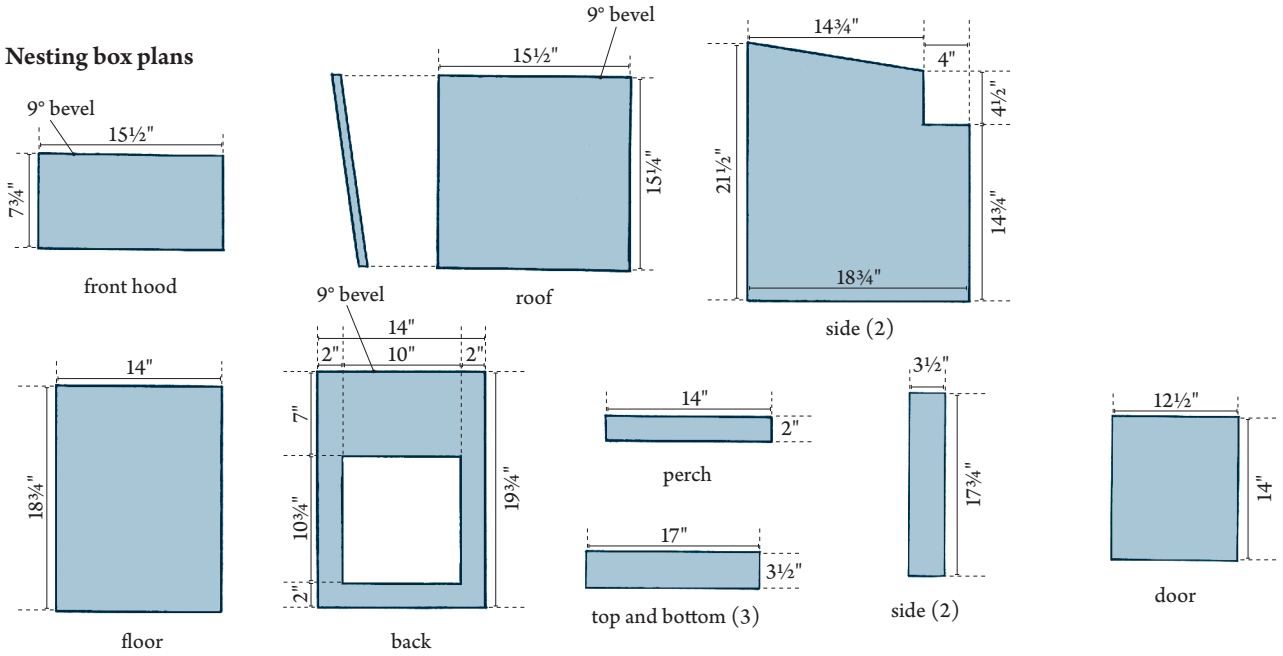
Roof deck diagram

6. ASSEMBLE THE COOP FRAME.

Stand up the angled side walls on top of the coop floor, and position the 2×4 rails of the front wall between the sides. Join the walls by screwing through the sides and into the rails with 3" screws. Do the same with the rear-wall rails, using 2½" screws. Make sure the wall assembly is aligned with the edges of the floor, then fasten the walls to the floor with 6" screws driven down through the top edges of the walls' 2×4s. The swiveling casters should be at the front end of the coop.

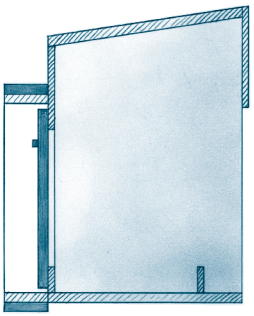
Position the roof deck on top of the wall assembly, following the *Roof deck diagram* in the previous step. Fasten the deck to the wall frames with 1½" screws. Confirm that all fits well, then remove the roof for the next two steps.

Nesting box plans

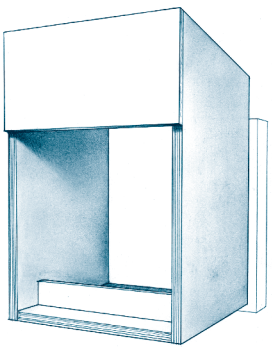


7. BUILD THE NESTING BOX.

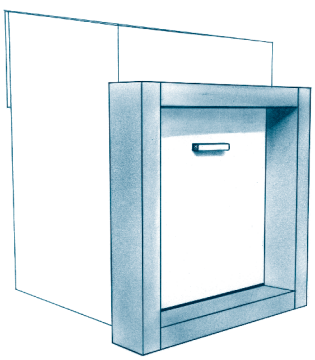
Lay out and cut all of the nesting box parts from ¾" plywood, following the *Nesting box plans* (previous page). Assemble the box with 1½" screws, but leave off the door for now. You will hang the door and install the nesting box onto the coop in step 9.



Nesting box side view



Nesting box front view



Nesting box back view

8. PAINT AND SCREEN THE COOP.

Disassemble the coop, then prime and paint all of the wood parts. The designers used Glidden Exterior Latex Satin GL6912 (Orange Marmalade) for a bright, yolk-yellow effect. Be particularly thorough in painting the end grain of the wood to protect against moisture.

NOTE: *Do not paint the top face of the coop floor or the nesting box floor, so there's no risk of the chickens' scratching loose and eating paint chips.*

After the final coat of paint has fully dried, cut and install hardware cloth and expanded metal on the insides of the walls and front door. Each of the side walls gets hardware cloth on the two inner sections, which will be covered on the outside by siding slats (step 10). All other openings and the front door get expanded metal (see note at the end of this step). Cut the hardware cloth and expanded metal so it overlaps the frame parts by at least 1", and fasten it with heavy-duty staples or 1" exterior screws with washers.

Install the hardware cloth first. At the rear corners of the coop, on the side walls, position the hardware cloth 2" back from the rear edge to allow the rear wall 2×2s to fit snugly against the side walls. Cut the expanded metal with a grinder, a circular saw, or a jigsaw with a metal-cutting blade. Install the expanded metal to the front door frame and the side walls.

NOTE: *Be sure to use expanded metal that is smooth on both sides. Do not use stucco lath or similar materials that have a rough texture or any sharpness on either side.*

9. REASSEMBLE THE COOP AND COMPLETE THE ROOF.

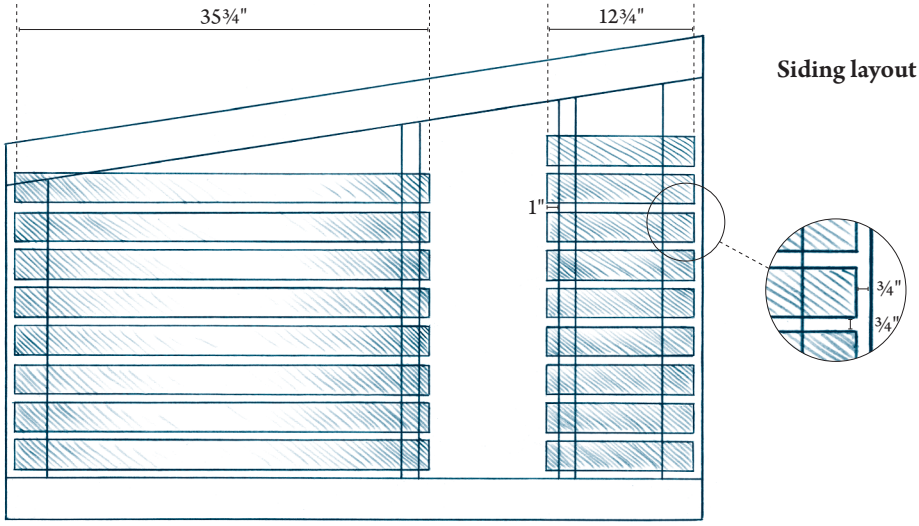
Reassemble the coop by screwing the parts back together just as they were before. Install the roof deck. Install the nesting box next, before screening in the rear wall: Position the box against the roof and top rear-wall rail and fasten it to both elements with screws (it's good to have a helper for this). Notch the expanded metal screen for the rear wall to fit snugly around the sides and bottom of the nesting box. Position the screening so the notched edges are behind the plywood trim of the nesting box, and fasten the screening to the rear-wall framing and the box's trim.

Mount a door handle to the outside of the nesting box door (the beveled top edge faces the inside of the box). Hang the door, using two 2" hinges screwed into the nesting box floor and the inside face of the door. Make sure the door doesn't rub the box floor; you may need a 1/16" shim under each hinge to raise the door slightly. Also make sure the door is centered side-to-side in the box opening.

Cover the roof deck with any roofing material you like: You can use corrugated metal (see page 26), standard shingles, or something creative, like reclaimed street signs or shingles cut from aluminum cans. The designer used hot rolled steel.

10. INSTALL THE SIDING SLATS.

Cut 16 pieces of rough-sawn cedar 1×3 fencing boards to length at 35¾" and cut 18 pieces to length at 12¾". These are the siding slats for the coop's side walls. At this point, you have the option of finishing the slats with stain. The designer did not stain the slats. If you choose to do so, use a pigmented stain to prevent the wood from turning gray over time. Install the slats on the outside of the side walls, as shown in the *Siding layout*. Fasten the siding to the wall framing, using two 1½" exterior trim-head screws at each joint.



Siding layout

11. COMPLETE THE COOP.

Hang the front door with two 3" hinges mounted to one of the side-wall frames. Install a pull on the front door, and add barrel-bolt latches to both doors. The front door gets one at the top and one at the bottom; the nesting box door should have at least one at the top, but you can use two for additional security.

Cut the roosting bar to fit snugly between the 2×2s located closest to the nesting box. The designers used a stout branch for their roost, but a 2×2 will work, too. Install the roosting bar about 23" from the coop floor and about 18" from the front of the nesting box, using screws.

TIP: *To add a waterer and feeder, you can hang them from the roof, install a rod across the width of the coop, or build a shelf.*

Note

The designer made a few improvements to the coop that are not shown in the photos but are reflected in the text and drawings. The hand hold shown in the roof over the nesting box was omitted, and two 2×2s were added on the rear panel to provide a better fastening surface for the expanded metal.