

Four-chamber Nursery Bat House

Materials (makes two houses)

1/2 sheet (4' x 4') 1/2" AC, BC or T1-11 (outdoor grade) plywood
1/2 sheet (4' x 4') 3/8" AC or BC (outdoor grade) plywood
Two pieces 1" x 6" (3/4" x 5 1/2" finished) x 8' pine or cedar
One lb. coated deck or exterior-grade screws, 1 5/8"
20 – 25 coated deck or exterior-grade screws, 1 1/4"
20 – 25 exterior-grade screws, 1"
One quart water-based primer, exterior grade (see Fig. 3)
Two quarts flat water-based paint or stain, exterior grade
One tube paintable latex caulk
Black asphalt shingles or galvanized metal (optional)
12 – 20 roofing nails, 7/8"

Recommended tools

Table saw or circular saw
Variable-speed reversing drill
Screwdriver bit for drill
Tape measure or yardstick
Caulking gun
1 1/2" hole saw or spade bit
Paintbrushes
Hammer (optional)
Tin snips (optional)
Bar clamp (optional)
Sander (optional)

Construction

1. Measure, mark, and cut out all wood according to the sawing diagrams in **Figs. 1 & 2** (below).
2. Roughen interior and landing surfaces by cutting horizontal grooves with sharp object or saw. Space grooves 1/4" – 1/2" apart, cutting 1/32" to 1/16" deep.
 - a. We no longer recommend the use of mesh type material. Over time, the material degrades and can trap bats or damage their wings.
3. Apply two coats of dark (any color), water-based stain to interior surfaces. Do not use paint, as it will fill grooves.
4. Attach sidepieces to back, caulking first. Use 1 5/8" screws. Make sure top angles match.
5. Attach 5" and 10" spacers to inside corners per drawings (**Fig. 1**). Use 1" screws. Roost chamber spacing will be 3/4" (front to back). Do not block side vents.
6. Place first roosting partition on spacers even with bottom edge of roof. Place 20" spacers on partition and screw to first spacers (through partition), using 1 5/8" screws.
7. Repeat step 6 for remaining spacers and partitions (three times).
8. Attach front to side: top piece first (caulk seams).
 - a. Be sure top angles match (sand if necessary).
 - b. Leave 1/2" vent space between top and bottom front pieces.
 - c. A bar clamp may be useful if sides have flared out during construction.
9. Attach roof supports to the top inside of front and back pieces with 1" screws. Do NOT let screws protrude into roosting chambers.
10. Caulk around all top surfaces, sanding first if necessary, to ensure good fit with roof.
11. Attach roof to sides and roof supports with 1 1/4" screws.

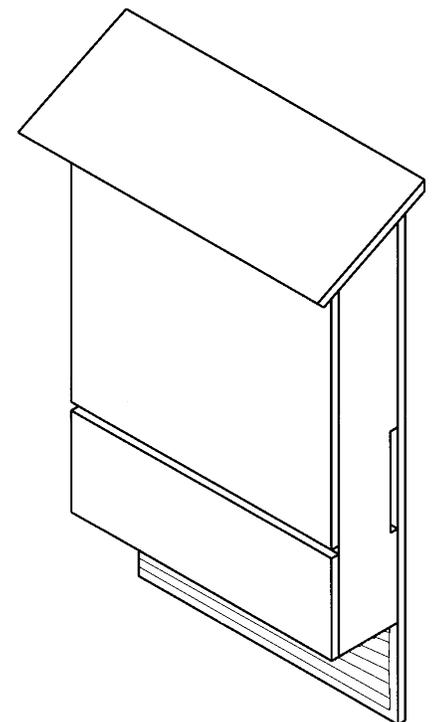
- a. Caulk around roof and side joints to further guard against leaks and drafts. Do NOT let screws protrude into roosting chambers.
12. Paint or stain exterior three times (use primer for first coat). See **Fig. 3** for recommended colors.
13. Optional: cover roof with shingles or galvanized metal. Houses will last longer with this roofing material.

Optional modifications

- **For larger colonies:** These nursery-house dimensions were chosen to permit construction of two bat houses per half sheet of plywood. Increasing house width to 24" or more or adding partitions benefits bats and attracts larger colonies. Additional spacers are required to prevent warping of roost partitions for houses more than 24" wide.
- **Taller house:** Taller bat houses provide improved temperature gradients and may be especially useful in climates where daily temperatures fluctuate widely. Bat houses 3' or taller should have the horizontal vent slot 12" from the bottom of the roosting chambers.
- **Dual mounting houses:** Two bat houses can be placed back-to-back mounted on poles. This can save on mounting costs and creates a more stable internal temperature.
 - Before assembly, a horizontal 3/4" slot should be cut in the back of each house about 10" from the bottom edge of the back piece to permit movement of bats between houses.
 - Two pieces of wood, 1" x 4" x 10 3/4", screwed horizontally to each side, will join the two boxes.
 - Leave a 3/4" space between the two houses, and roughen the wood surfaces.
 - One 2" x 4" x 40" vertical piece, attached to each side, over the horizontal pieces, blocks light but allows bats and air to enter.
 - Use a 2" x 6" vertical piece if securing houses with U-bolts to metal poles.
 - A galvanized metal roof that covers both houses protects them and helps prevent overheating.
 - Eaves should extend about 3" in front in southern areas and about 1 1/2" in the north.
- **Colder climates:** Ventilation may not be necessary in cold climates. In that case, the front of the bat house should be a single, 23"-long piece.
 - Far-northern bat houses may also benefit from a partial bottom to help retain heat. Slope the sides and bottom at an angle of 45° or greater to reduce guano build-up. Leave a 3/4" entry gap at the back and be sure the bottom does not interfere with access to the front crevices. A hinged bottom is required to permit annual cleaning.
- **Removable partitions:** Make partitions removable by attaching small cleats with thumbscrews to the bottom of sidepieces for support. Spacer strips are unnecessary if grooves for partitions are cut in the sidepieces with a router or dado saw blade.

Mounting recommendations

- Mounted bat houses on wooden posts, steel poles, pivot poles, or on the sides of buildings, but do not mount them on trees.
 - Example: well pipe; galvanized pipe can be too thin
- Mount in an area that gets 6-8 hours of direct sunlight (facing East or South).
- To the extent possible, locate houses 20 to 30 feet from tree branches or other obstacles and 12 to 20 feet above ground (or above the tallest vegetation beneath the bat house).
- The best locations are along streams, rivers, lakes or forests because



these are natural bat flyways. However, over your garden is always a good place too!

- Two bat houses can be mounted back to back on a pole; this can create a more stable temperature for the bats.

FIGURE 1
*Four-chamber
 Nursery House
 Assembly Diagrams*

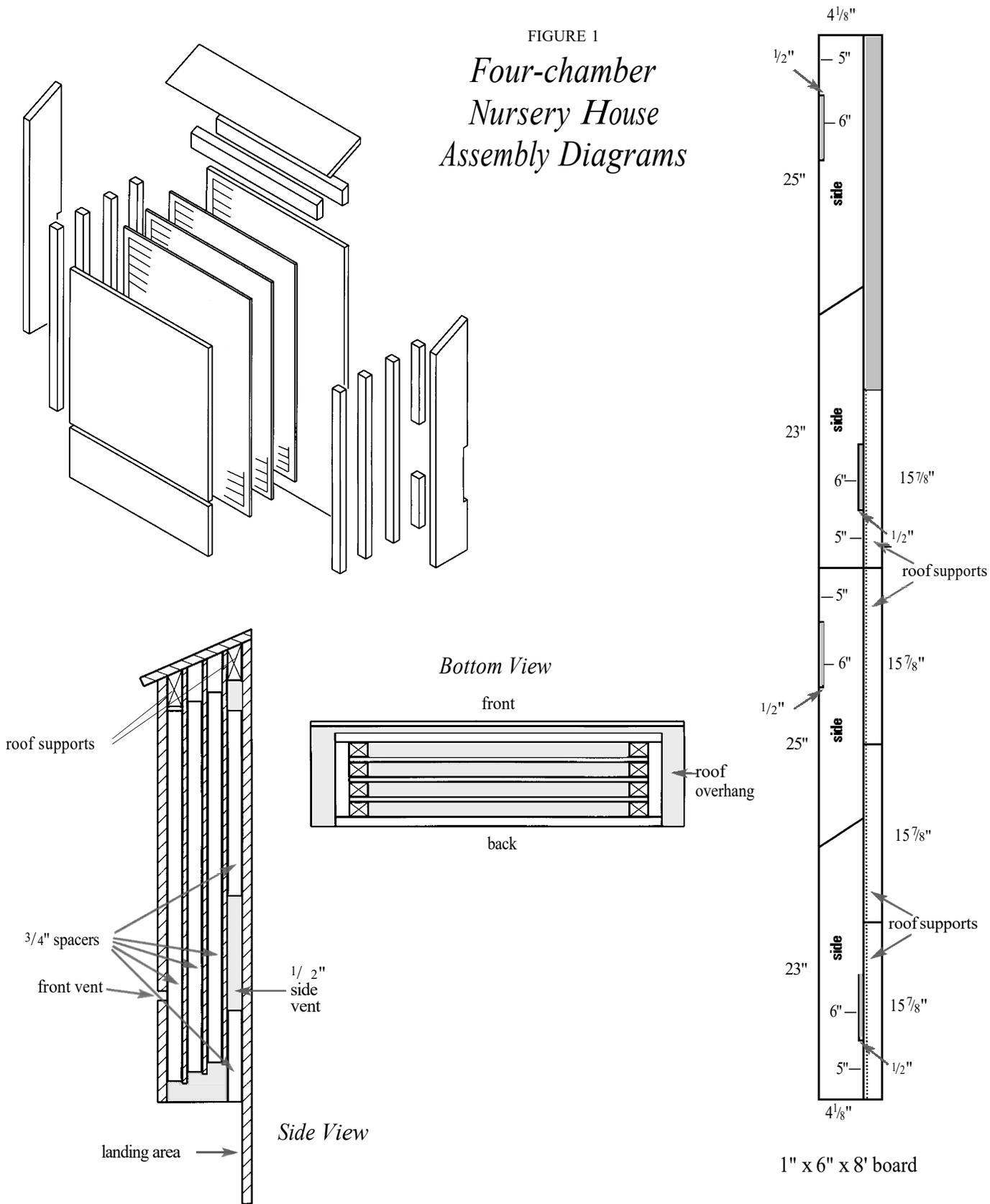
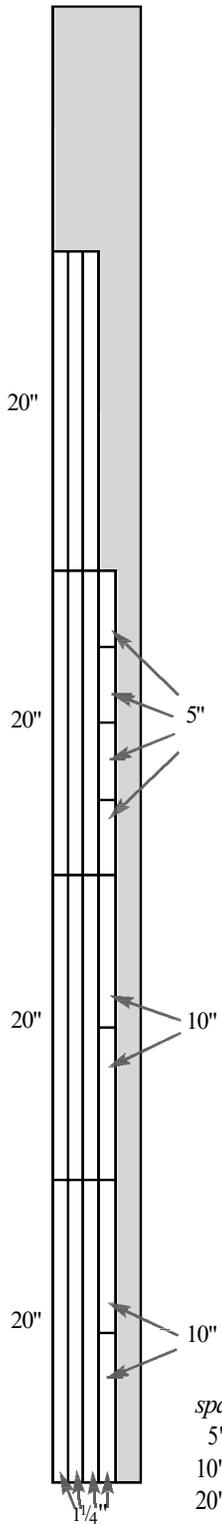


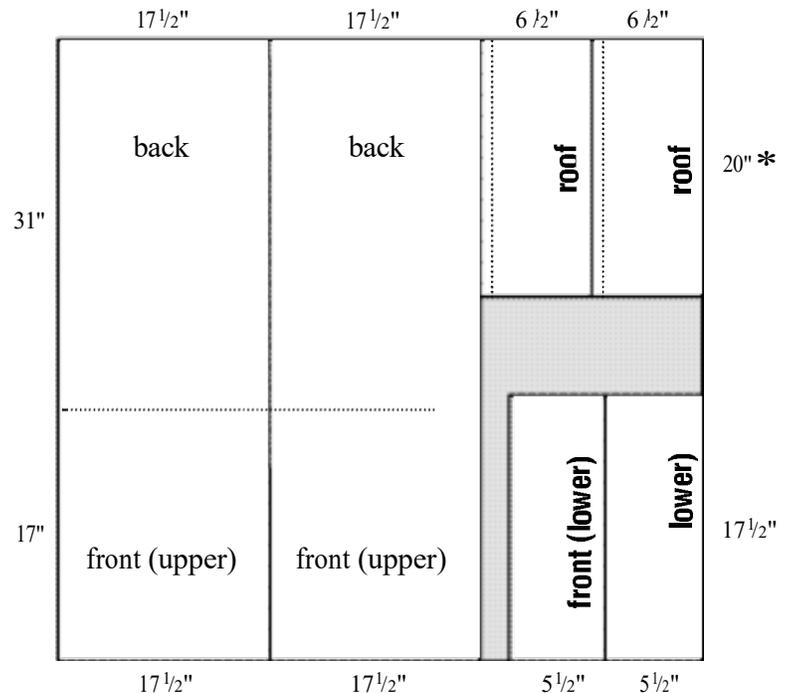
FIGURE 2
*Four-chamber
 Nursery House
 Sawing Diagrams*

 extra material
 25 degree bevel



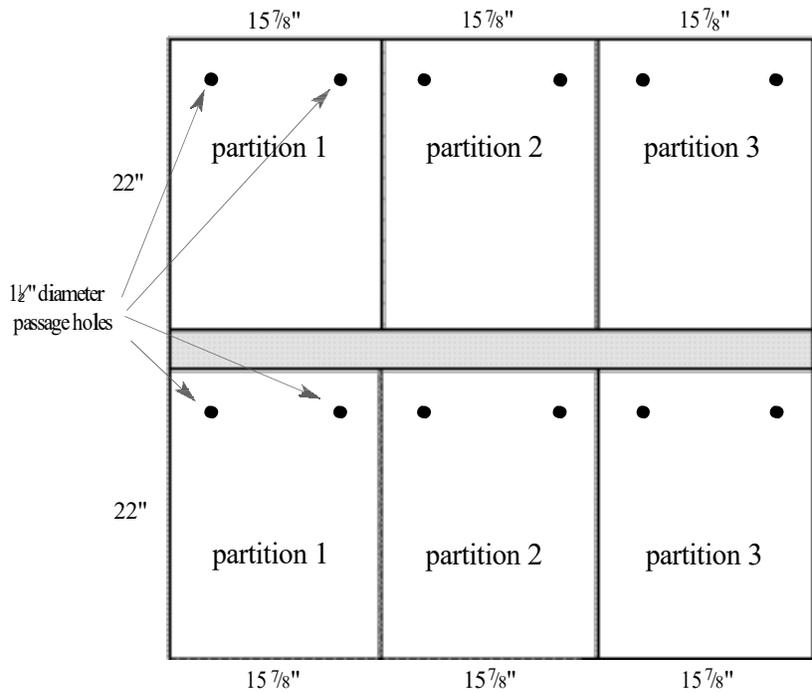
spacers:
 5" spacers = back bottom
 10" spacers = back top
 20" spacers = others

1" x 6" x 8' board



4' x 4' x 1/2" plywood

* 19" if mounted between two poles



4' x 4' x 3/8" plywood

Figure 3. Bat house external paint color guide based on average summer temperatures in the United States.

