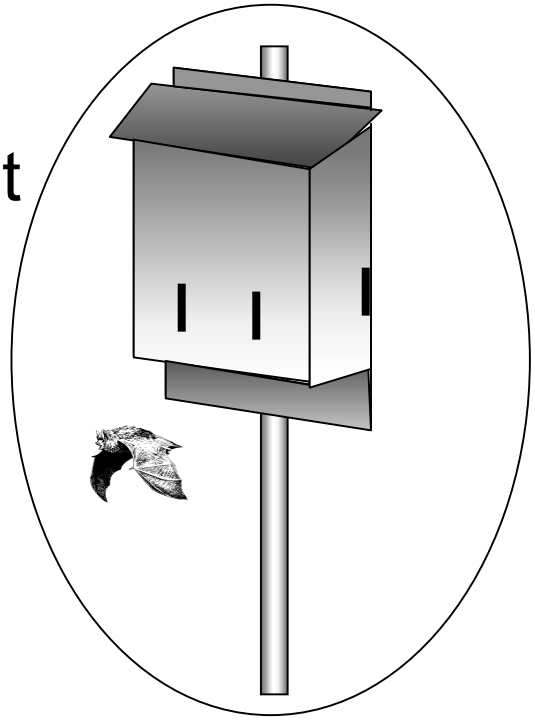
PENNSYLVANIA GAME COMMISSION

2001 Elmerton Avenue, Harrisburg, PA 17110-9797

Bureau of Wildlife Management



Wildlife Diversity Section

Bat Box Plans

By: Cal Butchkoski

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(rev. 01/98)

ASSEMBLY DIRECTIONS

This bat box plan has been successful in attracting nursery colonies of little brown and big brown bats.
Bat roosting requirements are strict, necessitating adherence to construction details.

1. Tools and supplies needed for assembly include the following:

Lumber:

4' x 4' x ½" cdx, exterior plywood

4' x 8' x ¼" plywood, A-C or B-C. (For roost baffles) Luan is not recommended due to delamination problems. 3/8" thick cdx may also be used but increases weight. Whatever thickness is used, maintain as many ¾" roosting crevices as possible. These plans will assume ¼" plywood. If other thickness is used, make appropriate modifications.

1" x 8" x 8' board

1" x 8" x 4' board

Other Needs:

Electric screwdriver

1 ¼" long wood or galvanized drywall screws.

Caulking – tube of black roof cement

Caulking gun for above

Black, matt finish, dark base, solid color, acrylic exterior stain (1 qt.)

Black Rolled Roofing – 25 ½" x 9 ¾"

Staple Gun with 3/8" staples

Utility Knife with snap off blades

Fiberglass window screening – 22" x 6"

2. Cut out parts according to part details on page 4.

3. Apply a bead of caulk to front edges of box SIDES and attach to box FRONT with 8 screws per side. Clean excess caulk. Refer to page 3 for graphic illustration of assembly.

4. Score inside of front and sides with utility knife to roughen. Also score bottom 4.5" on outside of box FRONT below vents. Make horizontal scratches ¼ inch apart. While the knife is out, score both sides of all ROOSTING BAFFLES and the interior side of box BACK. These are landing / roosting footholds and are very important. Do not use saw to roughen, this will cause plywood to delaminate.

5. Attach 2 BAFFLE SPACERS to inside front corners with two screws each, and screwed in from front of box. Space about 1.5 inch from top of box FRONT with ¾" dimension to sides. Lay assembled parts FRONT down on table or floor.

6. Attach SHORT ROOST BAFFLE to spacers about 1" down from top of sides. Use 2 screws on each side.

7. Attach 2 BAFFLE SPACERS to new corners made by short roost baffle. Use 2 screws on each side and into baffle.

8. Attach LONG ROOST BAFFLE to spacers about 1" down from top of sides. Use 2 screws on each side.

9. Repeat installation of BAFFLE SPACERS and ROOST BAFFLES alternation short & long roost baffles until six ROOST BAFFLES are in. The last 2 baffle spacers should be attached to previously affixed baffle and box SIDES for stability.

10. Caulk back edges of box SIDES and attach box BACK with scored side in. Do not caulk inside vent areas. Back should extend 2" above top of SIDES. Use 8 screws on each side. Clean excess caulk.

11. Center ROOF SUPPORT strip on inside top of box FRONT. Align angled edge with top edge of FRONT and SIDES. Attach with 3 screws through box FRONT.

12. Center ROOF SUPPORT strip on inside and 2" below top of box BACK. Align angled edge with top edges of SIDES. Attach with 3 screws through box BACK.

13. Apply bead of caulk to top of SIDES, FRONT, two ROOF SUPPORTS and angled back edge of roof.

14. Lay ROOF in position and attach with at least three screws on each SIDE, FRONT and BACK. Clean excess caulk.

15. Caulk back of rooftop where it butts against the back. Smooth with damp towel. Inspect all other caulked seams and caulk exterior as necessary. Top of box must be air tight to hold heat.

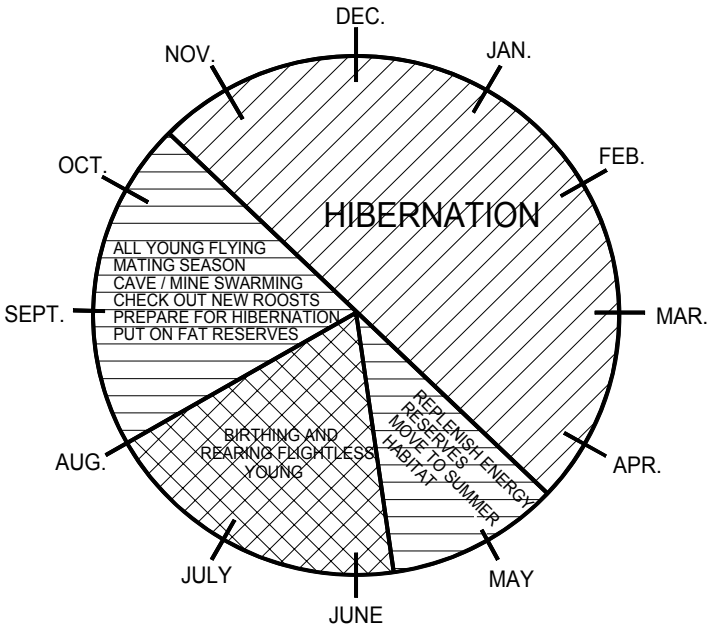
16. Apply two to three coats of stain to exterior, including landing plate.

17. Cut section of rolled roofing to fit on rooftop. Apply thin bead of caulk around top of roof edges. Set rolled roofing into position and staple down. Caulk back edge of rolled roofing where it butts against box BACK. Caulk exposed stapled on rolled roofing.

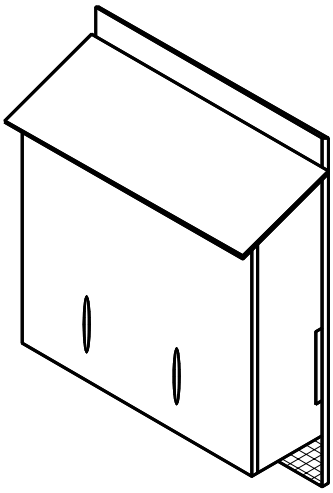
18. Cut out piece of fiberglass window screening to fit on landing plate to provide a good landing platform. Staple to bottom front of box BACK. Coat exposed staples with black stain. Landing plate should be roughened under screening since screening may eventually fall off.

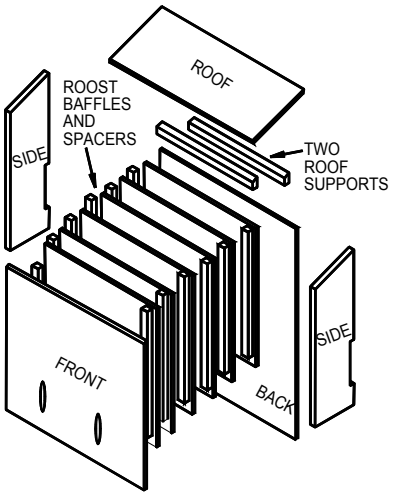
Attach box at least 10 feet high to a building or pole. See pole mounting direction (page 4). Orient box to southeast to catch the morning sun if possible. If not possible, orient between the Southeast and Southwest to get at least seven hours of direct sun. Many successful boxes get 12 hours of sun. When evicting bats from a building, place box near existing entrances preferably a year prior to eviction. Do not evict bats between the middle of May and end of July when flightless young may be trapped inside. Capacity of this box is about 250 bats. Overcrowding can cause heat stress on hot days. If more capacity is needed, additional boxes can be placed side by side.

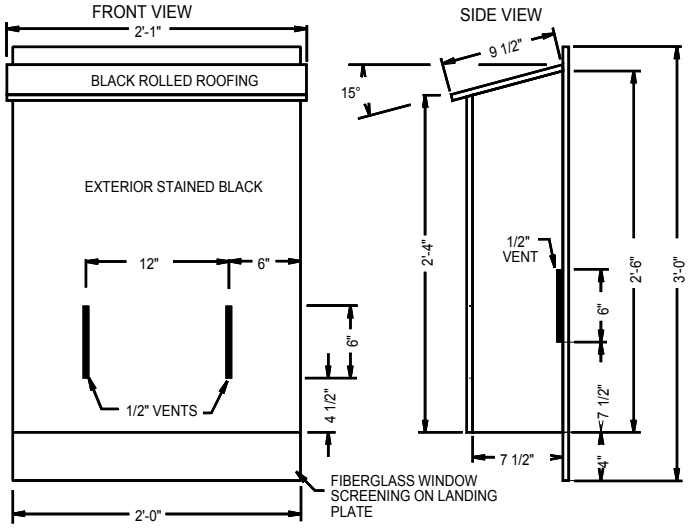
YEARLY BEHAVIOR CYCLE
(Little Brown and Big Brown Bats)

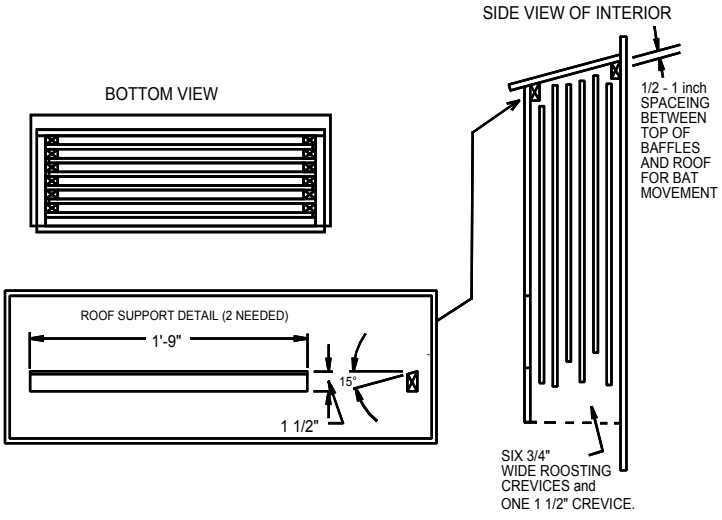


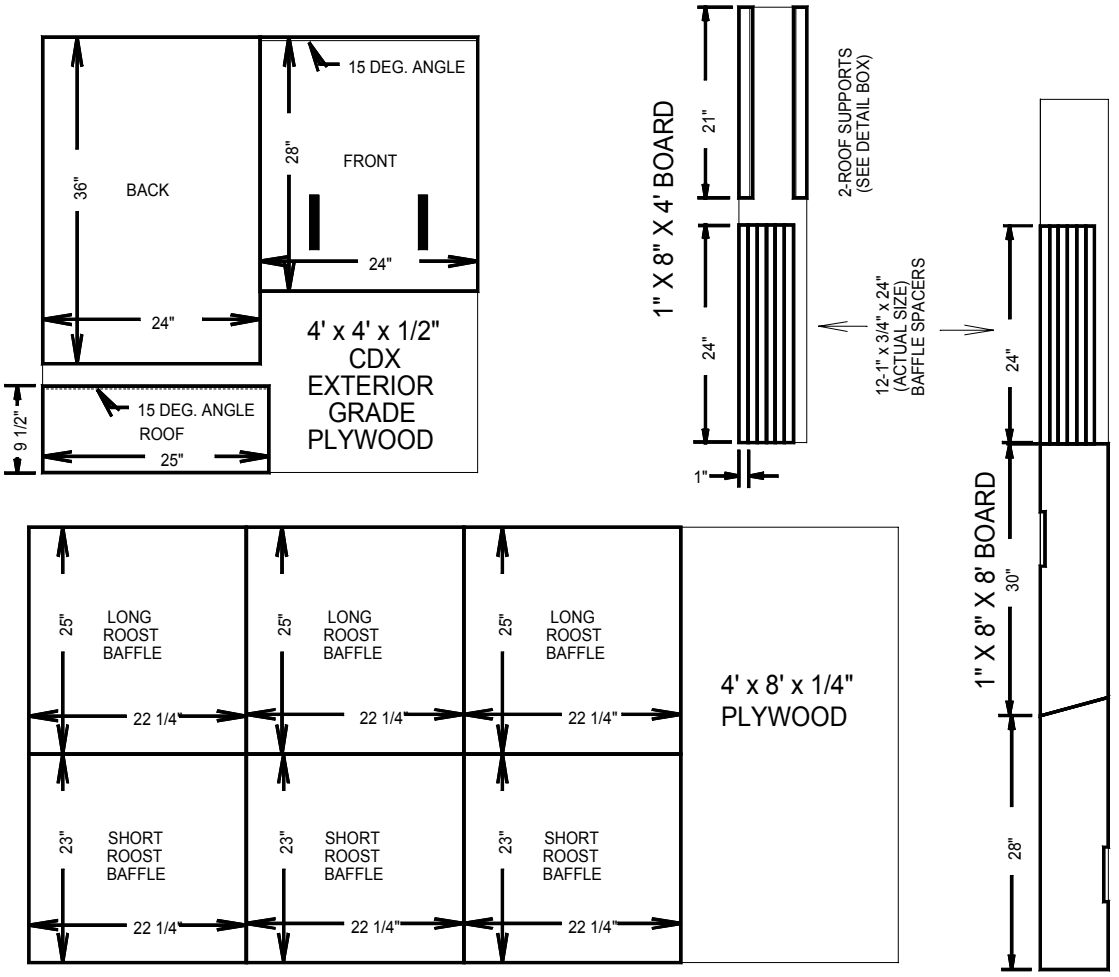
CONSTRUCTION DETAILS AND VIEWS











POLE MOUNTING DETAILS

(ONE PRESSURE TREATED 4” X 4” X 16’ POST AND THREE 2’ PRESSURE TREATED 2” X 4” s)

ATTACH 2X4 MOUNTS TO POLE BEFORE ERECTING POLE.

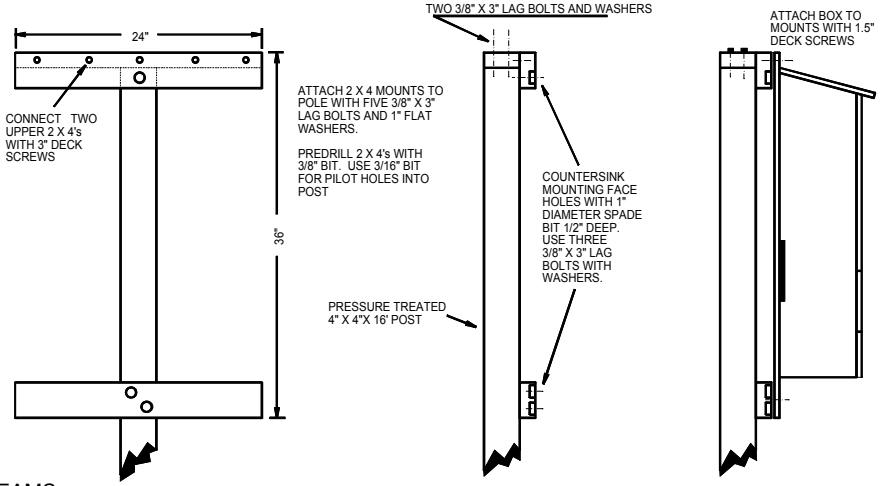
PLANT POLE IN HOLE 2.5 TO 3 FEET DEEP AND 8 – 12 INCHES IN DIAMETER.

USE 2 – 3 80 LB. BAGS OF PREMIXED CONCRETE IN HOLE AROUND BASE OF POLE. PROVIDE SUPPORTS AS NECESSARY WHILE CONCRETE CURES.

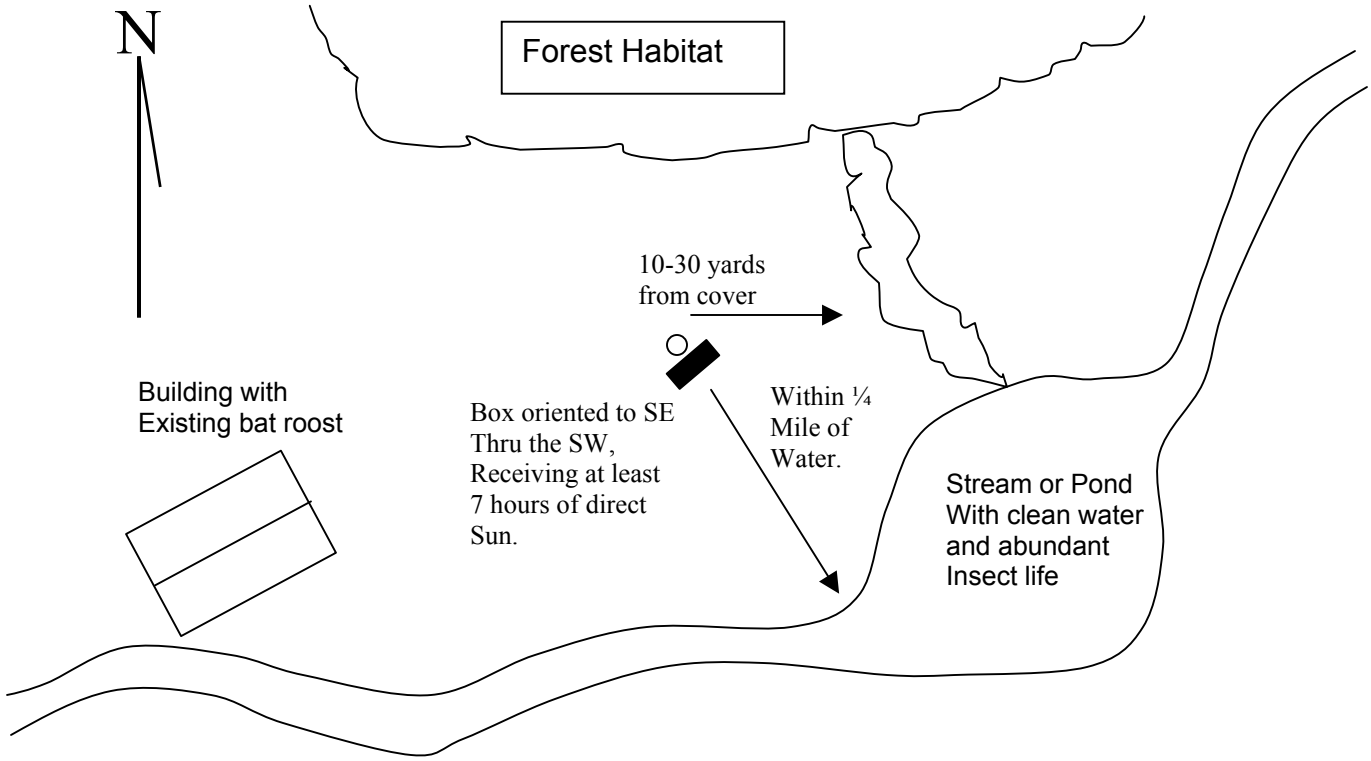
USE LADDER WITH ROPE & PULLEY TO ATTACH BOX TO POLE.

BOX CAN BE ATTACHED TO POLE BEFORE IT IS SET IN GROUND IF A ROPE & 2-3 PEOPLE ARE AVAILABLE TO HELP.

ONCE ERECTED, INSPECT ALL CAULKED SEAMS, RESEAL IF NECESSARY.



IDEAL BAT BOX LOCATION



The bat box should be:

Erected at least 10 feet off the ground.

Placed in an open area where it gets at least 7 hours of direct sun.

Placed within ¼ mile of water source.

Within 10 – 30 yards of cover (bats are vulnerable to predation when exiting)

Located in good foraging habitat containing forests, clearings, and wetlands with abundant insect activity.

If an existing bat roost is nearby, bats may or may not use the box, but they will be aware of box availability should anything happen to the existing roost.

The bat box should not be:

Erected in a shaded location, unless trying to attract intermittent use by several bachelor or non-breeding females.

Located over bright substrate, which will reflect light up into box.

Placed near burn barrels where smoke will disturb bats.

Erected where the box is prone to vandalism.

Erected directly over highways. Bats swarm the roosts during the dawn return and are vulnerable to automobile traffic.

Placed in brightly lighted areas.