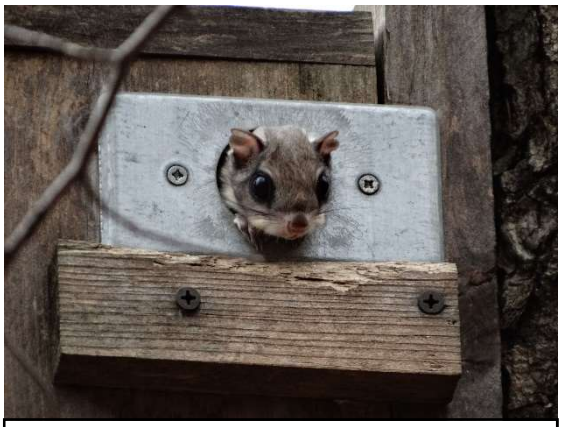
Making a Southern Flying Squirrel (SFS) Nest Box:

A Few Steps But Lots of Details

By Don Althoff 2020

Plug and check behind the door



Knock…and you may find someone home!

A "cut" hickory…the SFS is the only species in our region to have this distinctive entry into a hickory nut. Larger tree squirrels are able to crush these hard shelled nuts

Flying squirrel box half full of 'cut' hickory nuts…a sure sign of SFS in your woods

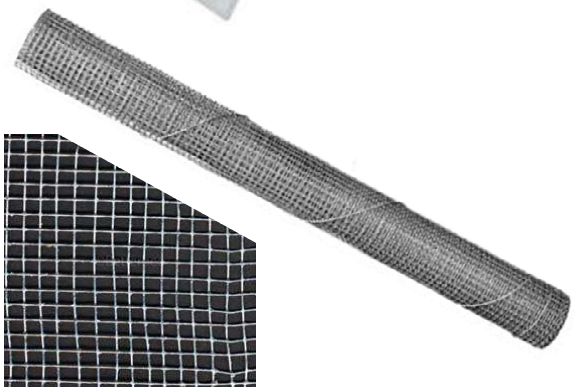
Basics

You need one (1) board per box:
1” x 8” x 8-ft white board
(aka pine/spruce/fir)

Screws or nails. 2”
2 carriage bolts/nuts/washers
¼” diameter, 2 ½” long

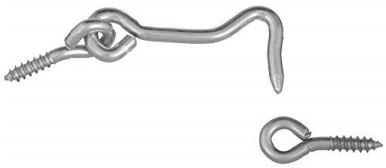
You need 1-pair of hinges.
1 ½” will do.

You need ¼” x ¼” hardware
cloth/screen mesh
(get 24” wide roll. A 5 ft. long
roll will yield 10 screens)

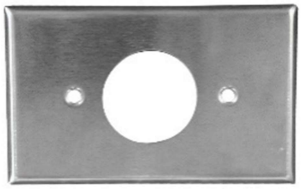


2 carriage bolts +nuts +washers
¼” diameter, 2 ½” long

Hook & eyelet
1 ½” is sufficient



Electrical outlet plate
1 ½” opening
to keep larger species of
squirrels (i.e., red, gray, and fox)
out of the box



SOUTHERN FLYING SQUIRREL NEST BOX

Basic Schematic (be sure to use metal plate over hole)

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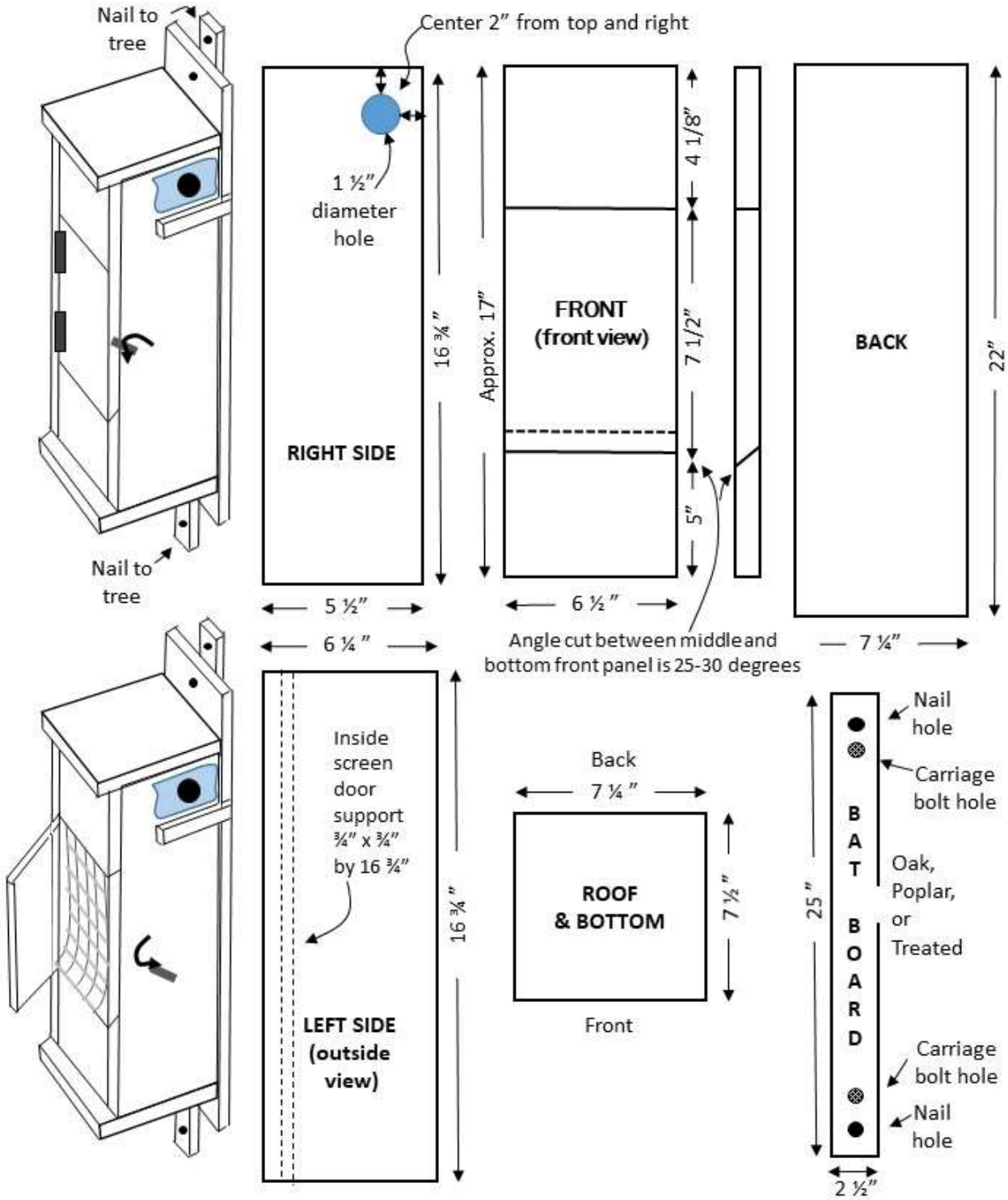
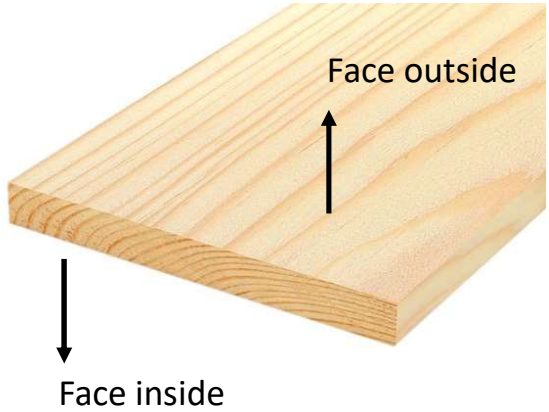
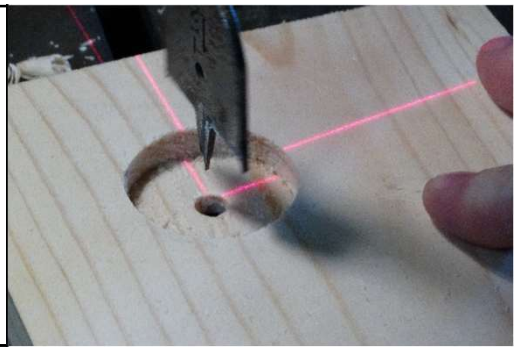


Cutting & Assembly Tips

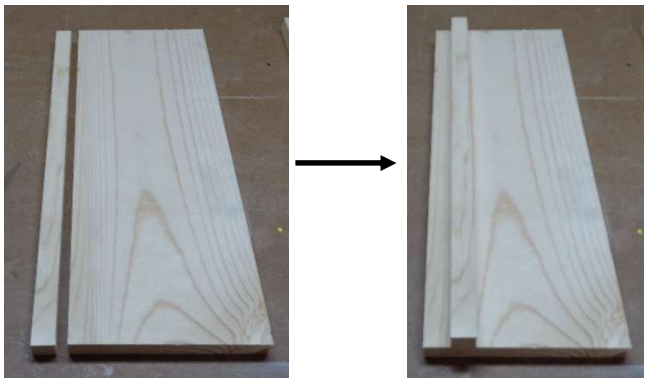
Pay attention to grain. Look at the end of your boards. Always have the curve facing to the inside

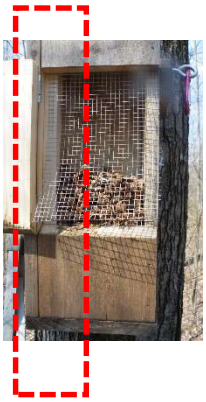


Suggest you use 1 ½" paddle bit to make side hole. Drill about ¾ way through on one side, then flip over board and drill from other side to complete hole. This reduces tear-out/splintering on one side



For left side (box door side facing you), use strip from piece you just cut to create the inner strip piece. Glue and nail. Position as shown to allow both the screen and front pieces to rest on it on the hinge side. Enlargement of this on pg. 7.

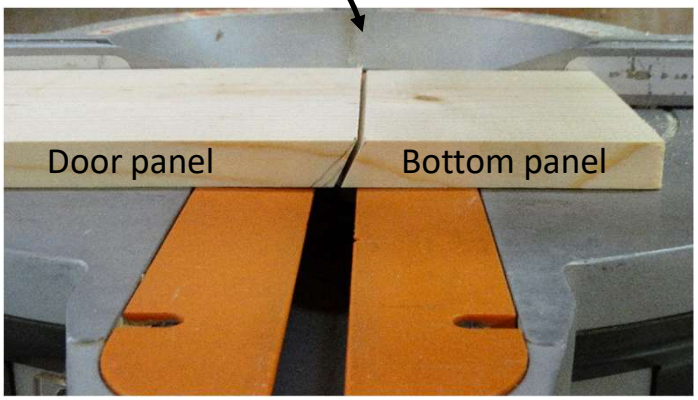




Cutting & Assembly Tips

Front panels – be sure to cut the initial front piece a 1/4“to 3/8” longer to account for the saw kerf (i.e., what the blade will remove). Always better to be a bit too long as it is easy to shorten the door (the last front panel to go on) once the top and bottom panels are in place.

Nothing magical about the bevel here…roughly 30°



Top panel inside

Door panel inside

Bottom panel inside

Only bevel bottom of door panel…not top

All the boards you need…except for the 'bat board' to anchor to a tree.

Back panel

Cleat (below hole)

Right side with hole

Left side

Left side trim (see pg 4)

Front panels

Top and bottom
Note: schematic shows front edges even with front panels. Ok to cut slightly longer—as indicated on pg 7, bottom right.

Using the strip from the left side board, position it as indicated in the schematic and as indicated below.

7

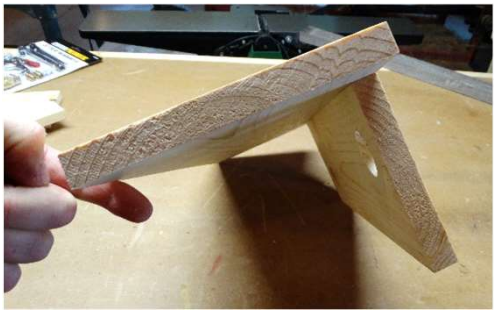
Glue and nail

The front panels will rest on this added strip of wood—with the hinges on this side of the box.

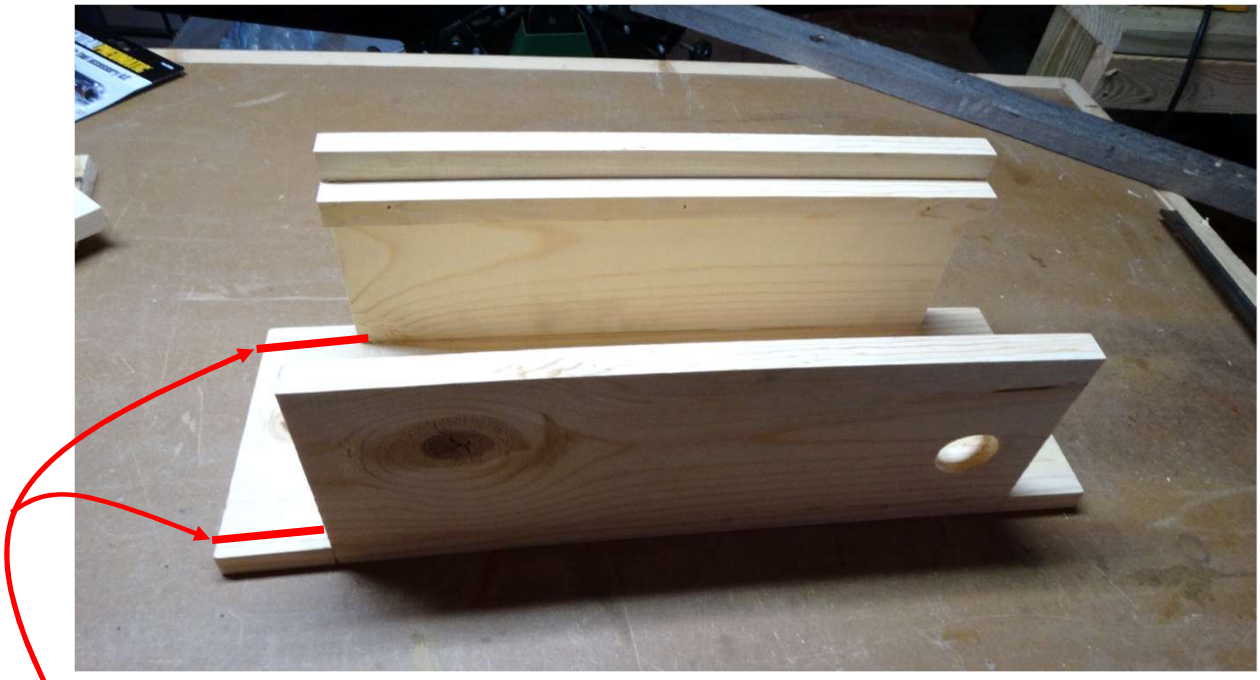
Suggest you assembly right side (with the hole) to the back panel first. Glue and nail.

At least 3 nails/screws—recommend 4…and glue

Need to center on this board so that there will be sufficient back overhang—once top and bottom boards are added. One way to assure this side and the other side are equal distance from the top is to mark a line on the side of the back board



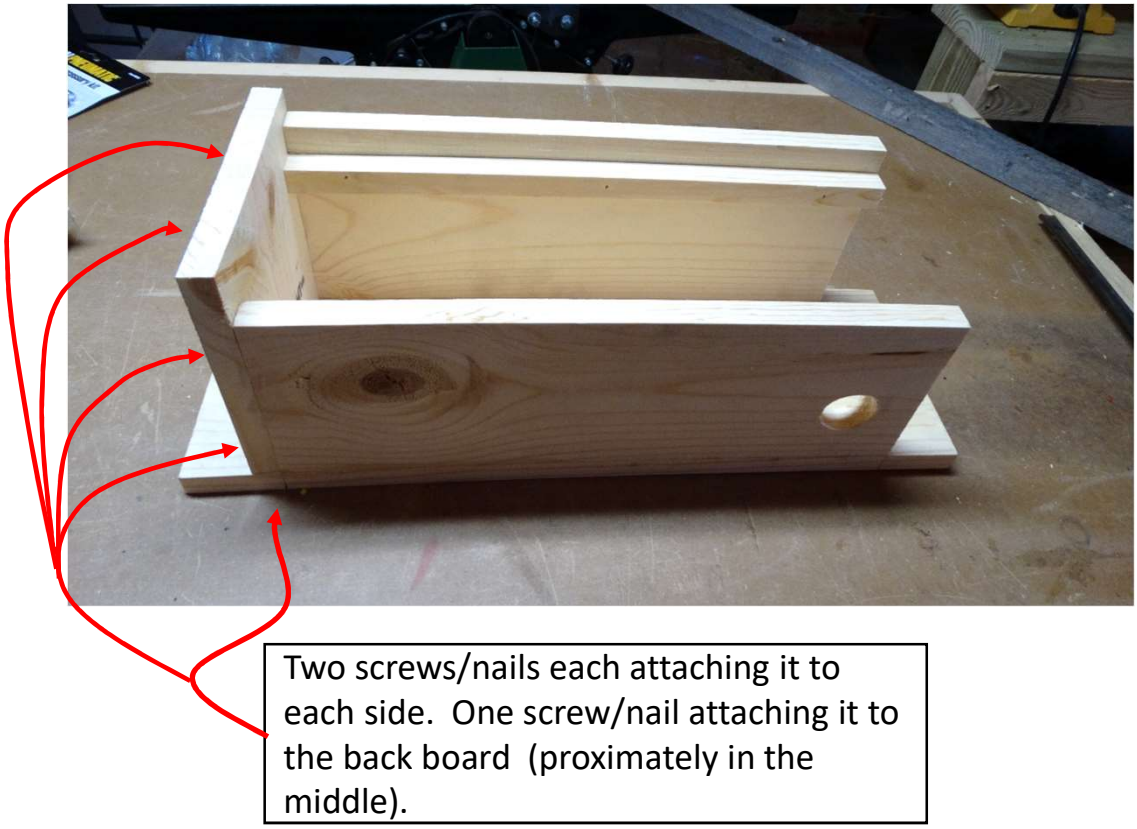
Add the other (left) side board, next, to the back panel. Glue and nail.



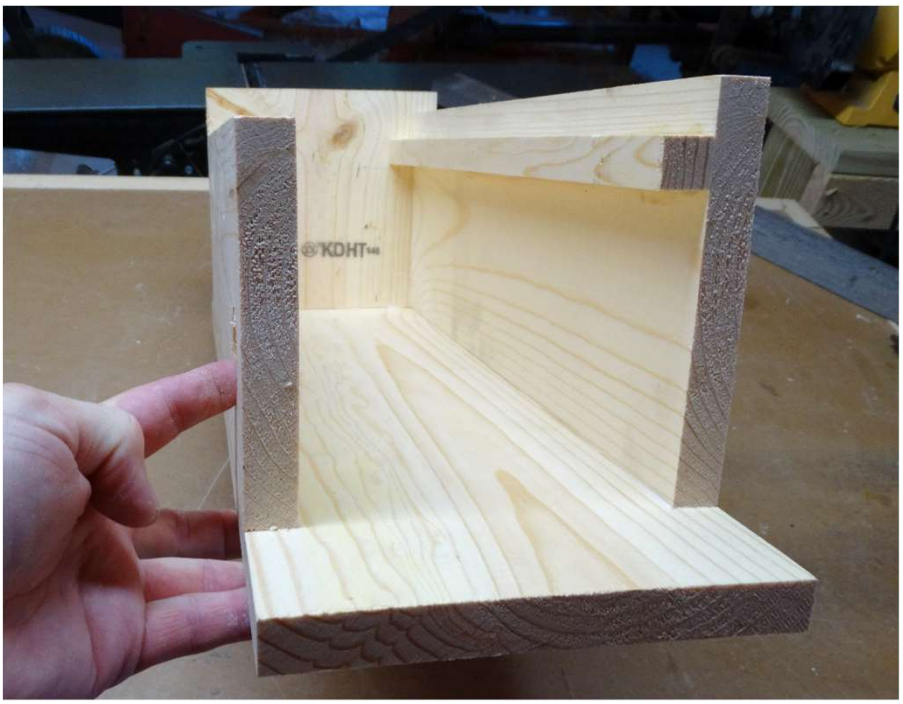
These two distances should be the same

At least 3 nails/screws—recommend 4…and glue

Add the bottom. Glue and nail.



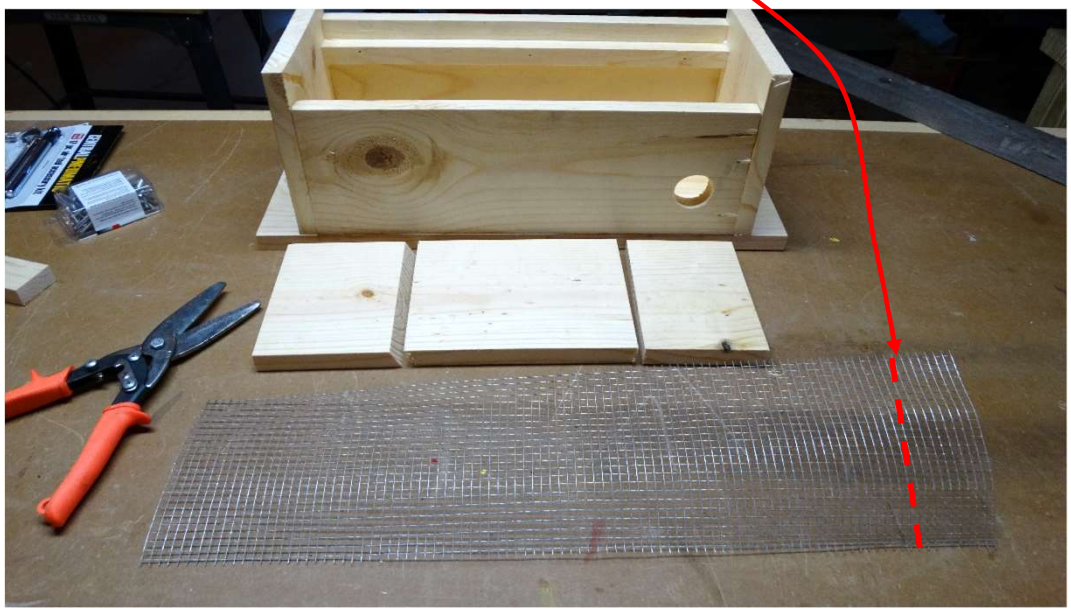
Two screws/nails each attaching it to each side. One screw/nail attaching it to the back board (proximately in the middle).



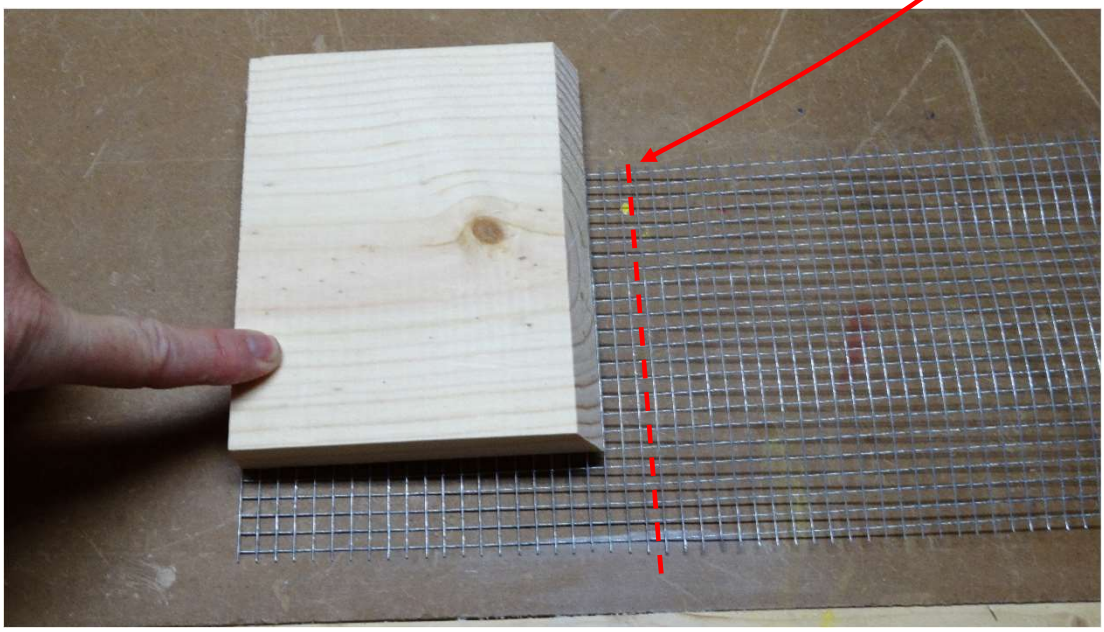
Add the top. Glue and nail.

Same as attaching bottom: Two screws/nails each attaching it to each side. One screw/nail attaching it to the back board (proximately in the middle).

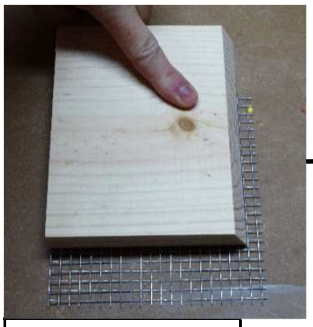
Hardware cloth should be cut at a width about ¼-1/2” less than width of opening (left to right).



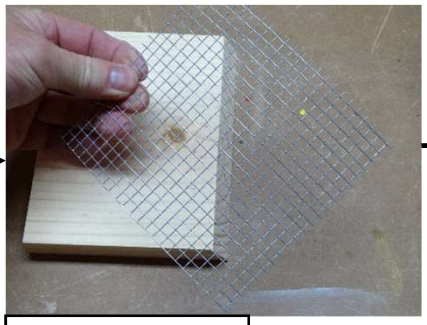
For the next cut, the bottom screen portion should be approximately ½” above bevel. After cutting the hardware cloth, turn it 180^0 so that the relative smooth edge will now be at the top.



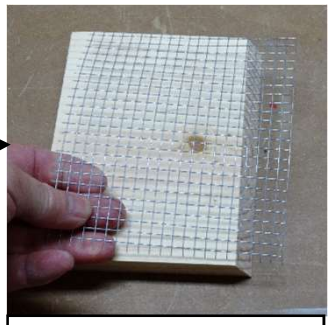
After making cut for bottom screen portion, turn as shown, then nail/screw bottom front panel.



You cut here.



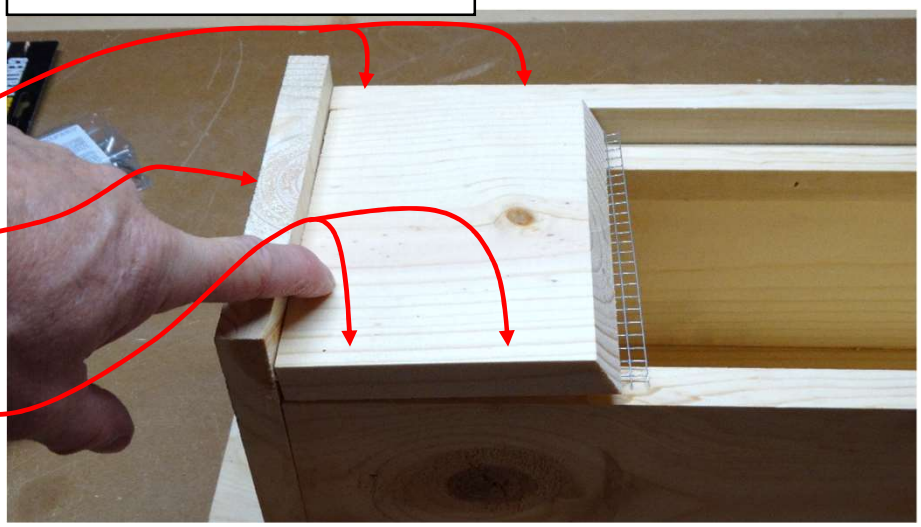
Rotate 180°.



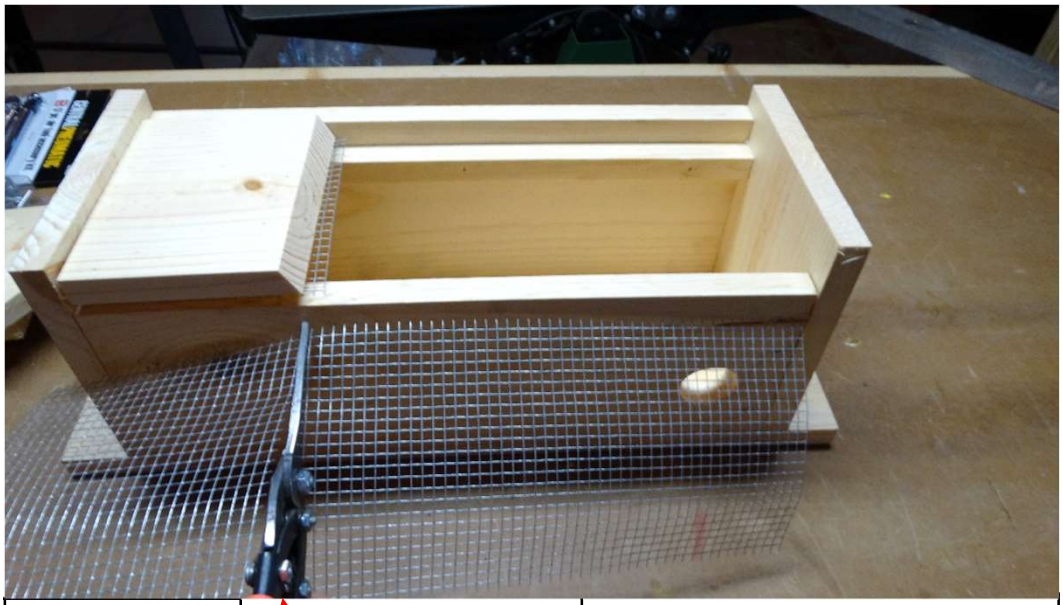
Result: your cut edge is to the bottom, smoother edge to top. This will minimize rough edge for you to clean out box…and some protection for the SFS…keeping in mind the screen becomes their ladder when the second piece is added

Lay down screen (hardware cloth) first, then lay bottom panel on top it. About ½" of screen should extend above bevel of the bottom panel.

Use 5 nails/ screws here. No need for glue.



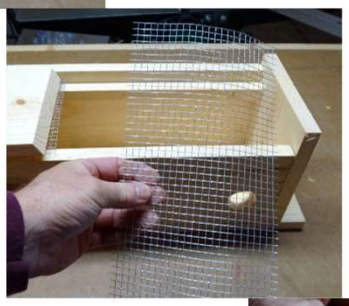
Cut remaining larger piece of hardware cloth—make cut on same end that was cut with 1st piece.

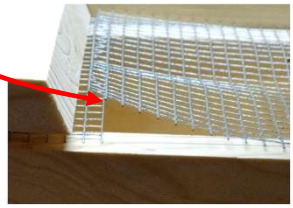


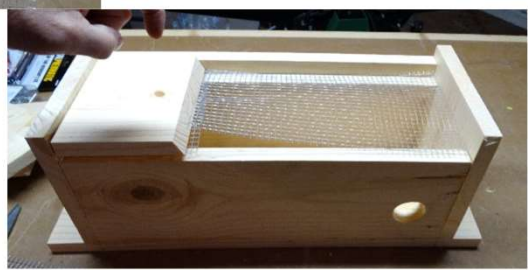
You cut here.

Do not cut from the remaining "smooth" end.

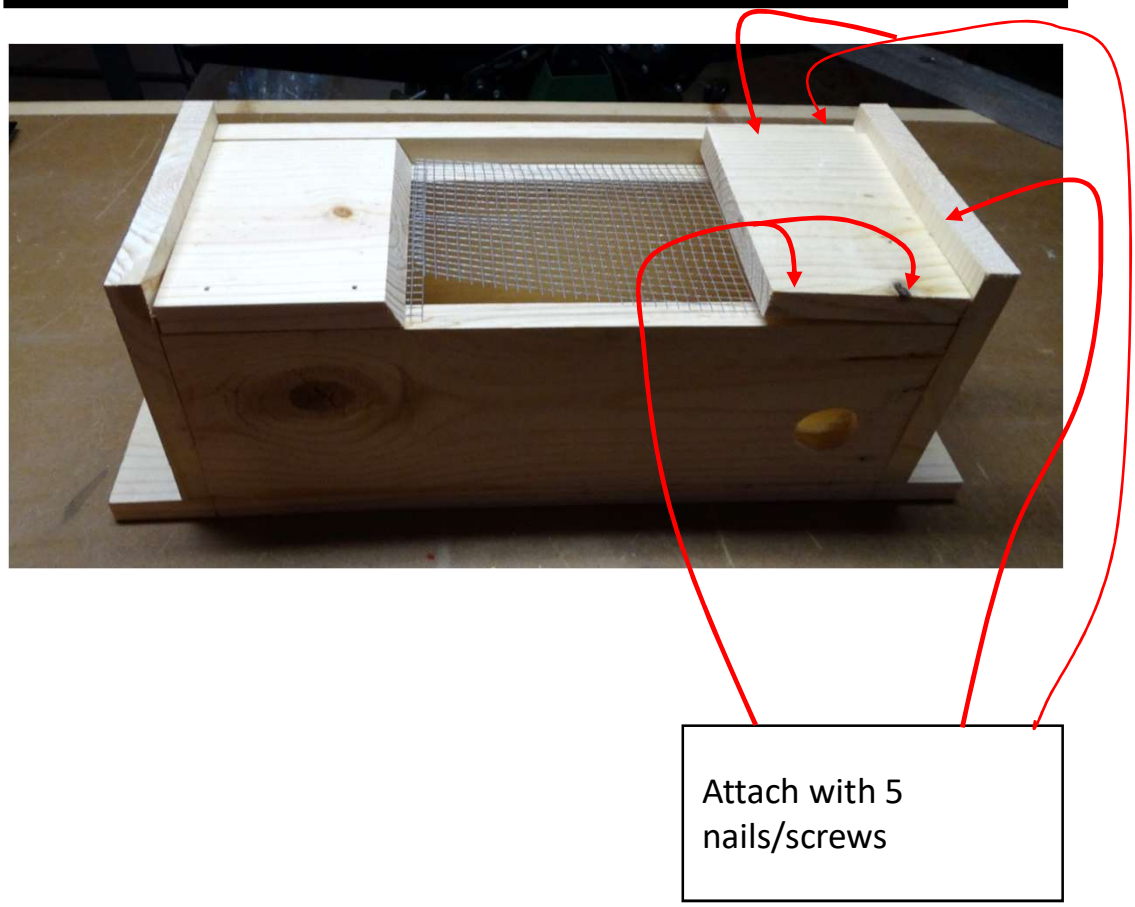
After cut, rotate screen 180^0 so that the smooth end will now be towards the bottom panel. This top portion of the screen should overlap the bottom screen by about ¼- ½" .







Add the top front panel.

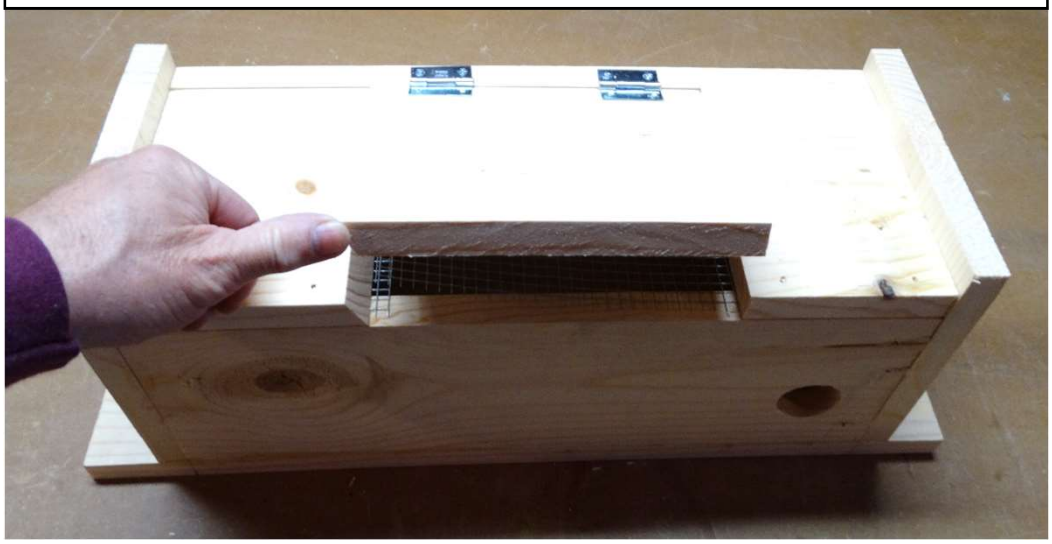


Add door. If it does not “sit” into the open space flush with the screen, trim some off the top.

Add the hinges.

Position hinges approximately 1/2 - 3/4” from each edge.

Once fastened, check that door opens and closes relatively easily. If it is very tight, you may want to remove hinges and trim some more off the top of the door because outside moisture will likely create some swelling of the wood making it difficult to open the door.



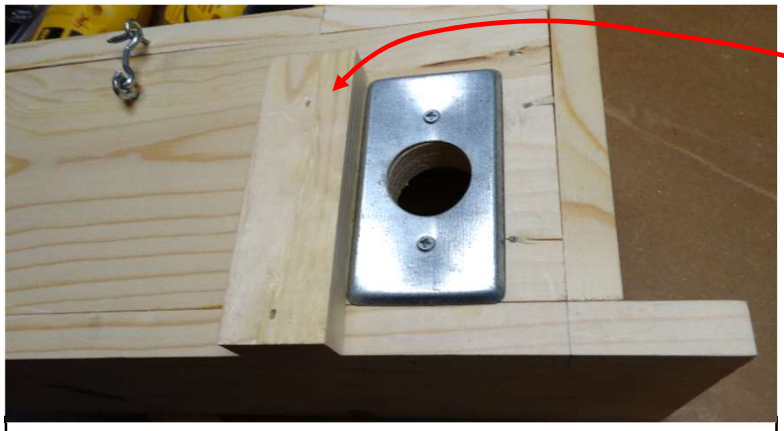
Install Hook-and-Eyelet Latch

Drill a pilot hole and attach the “eyelet” portion of the hook-and-eyelet.

Drill a pilot hole and attach the “hook” portion of the hook-and-eyelet. Should have a “snug” fit.

Add the metal plate cover—centered over the hole. Add the cleat below the metal plate.

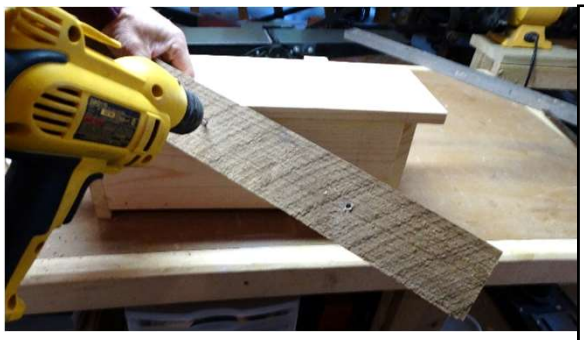
Be sure to use short enough screws so that they do not penetrate all the way through the wood. Ok to screw down until metal plates bows in a bit.



Add the cleat below the metal plate. Glue and nail/screw. Be sure the screw/nail here is short enough that it does not penetrate the wood.

Preparing to add the “bat” board to the “back” board.

Use a thicker board as the “bat” board. Can be treated or untreated. It will eventually be nailed to the tree. It should extend 1 ½-2” beyond each end of the back board. Width should be 2 ½-3”.



Drill 2-3 holes in the bat board that are a) large enough for the spike-size nail to easily go through (this will eliminate splitting this board when it comes time to attach it to the tree) and b) approximately 1” from what will be the ends of the bat board. Check schematic again for this general positioning of these holes.

Add the “bat” board to the “back” board.

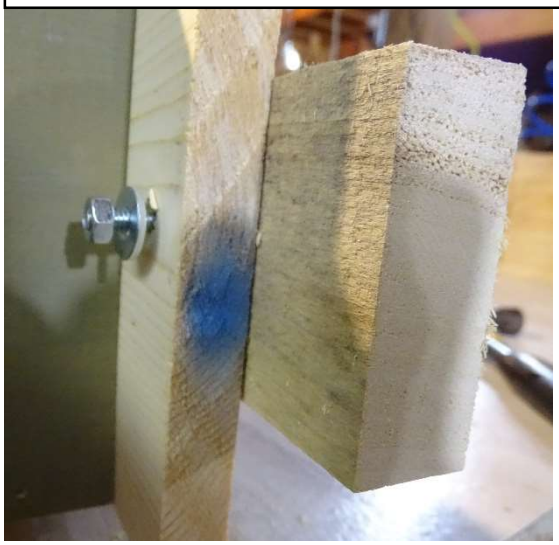
Center the bat board on the back of the back board—both left-to-right and top-to-bottom. Initially drill holes at each end that are ¼” diameter. You will use ¼”, 2 ½” long carriage bolts to eventually attach the box to the tree…once the bat board has been nailed to the tree.

After drilling those holes, remove the bat board and drill through the back board holes you just created using a larger drill bit (5/8 to 3/4” inch). This “slop” you are creating will make it much easier to hang the box…and remove it if you need to make repairs or clean it out periodically.

Attach carriage bolts to the bat board, and until installed, attach box to it with washers and nuts.

To “set” the carriage bolt, give it a good whack with a hammer. This will make a square dent that the carriage bolt will sit in. Once the bat board is nailed to the tree, you will not have an opportunity to adjust the carriage bolt. If it is snug, then it will not spin as you screw the nut on.

This set of images shows the carriage bolt through the “bat” board and the “back” board with a washer and nut. Once on the tree, you will tighten the nut down (hand-tightening is sufficient) as shown on the right.



Attaching the box (bat board first) to tree

1) Install box at least 10 ft. high
2) Suggest you attach to an oak, hickory (but avoid shagbark hickory), black gum, walnut, ash, elm, or other tree with a diameter breast height of 8” or more. Avoid shagbark hickory because it is more difficult for the SFS to negotiate the flaking bark of mature trees and avoid beech because it is generally too smooth reducing the amount of grip an SFS can get—especially for subadults.
3) Position box so that the hole is oriented to the E, SE, of S. This will increase the amount of sun hitting the box in the winter when there are no or few leaves creating any shading. During the summer, a box with an E, SE, or S orientation will be shaded.

Checking the box

1) Check as often as you like at first.
2) Carefully and quietly position a ladder up against the tree. When close enough, plug the hole—you can make a plug from a replacement furniture leg (adding some electrical tape to “soften” it to “stick” better in the hole) or use a sock or glove.
3) Open the door with one hand and secure the screen behind it with a thumb or index finger on other hand.
4) Look for signs of small scat (i.e., droppings) or if hickory trees are in the area, cut nuts. If an SFS female is building a nest, there will be very finely shredded strips of bark balled together—much like one would try to do if starting a fire without a match. If the nesting material is fluffed up, there maybe a SFS or two or three burrowed down below. Blowing on the nest might “encourage” one of them to pop up…and crawl on the screen—so be ready for that. As long as the screen is between you and any occupant, you’ll be safe. Occupants besides SFS can be snakes, mice, bees, and wasps—so be ready to close the door quickly. Only handle if you have a permit.