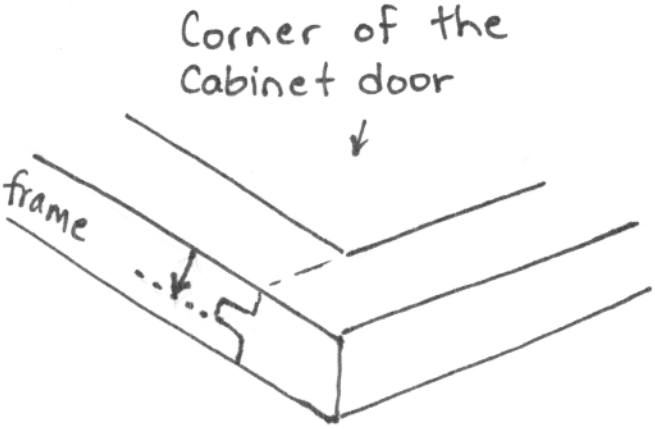
The "Little Schoolhouse" Design
HOW TO BUILD THE LIBRARY
STEP-BY-STEP
(give yourself 2-3 days)

Prepping the Pieces

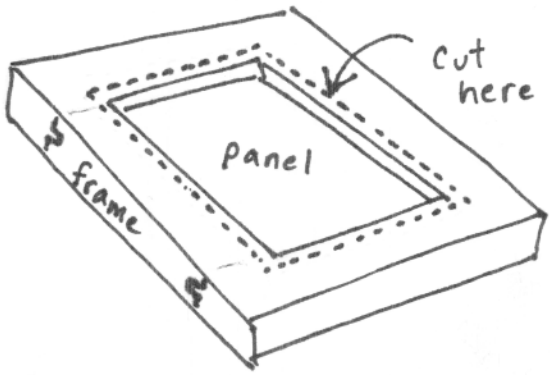
1. Go buy materials. (See the shopping list)

2. Take your cabinet door and measure the panel in the center that you are going to turn into window. Now turn it over, face-down, and mark out your cut. You want to only cut as deep as the panel, and 3/8 " in from the opening, so the glass has a ledge to lay down on, when you set it in with silicone. Before you set the glass down in there, be sure there are no chips or splinters sticking up in the way- it is important that you get a good seal all the way around. Put down a bead of silicone, then set the glass on top of that, then press it down gently to see that the silicone has contacted all the way around, then leave it alone for 4 hours!

For good measure, you can add a bead of silicone all along that crack between the glass and the frame



this is the depth to set the blade of your circ. saw



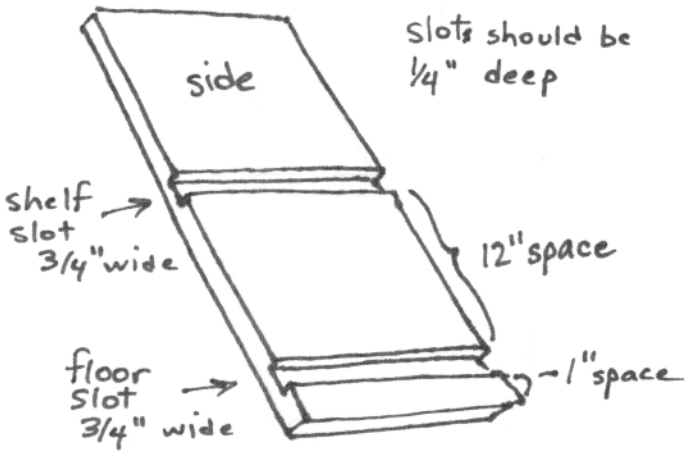
face down- cut out the panel, by measuring 3/8" more in all directions, mark, and cut there.

Lift the panel out and cast it aside.

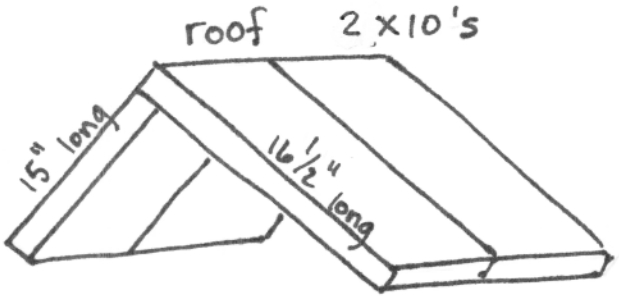
3. Cut out your pieces from the half-sheet of plywood. (see the diagram page)

the hole for the front door should be 1" smaller than the door in every direction
example- door 16 x 12
cut out hole 14 x 10

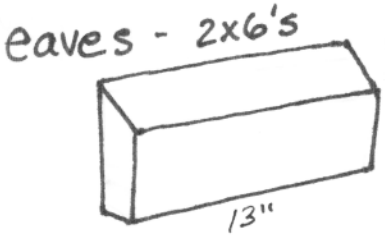
4. Using a radial arm saw, or a table or circular saw with a dado blade, cut the grooves in the side pieces. They should be snug but not too tight or too loose.

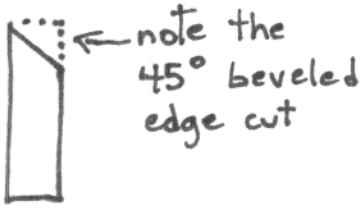


5. Cut your 2X6 and your 2X10 now.



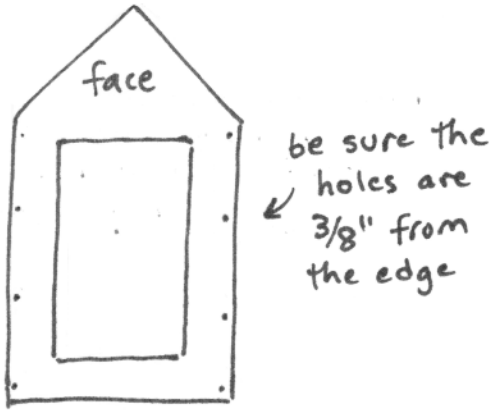
6. Take a sanding block or electric sander and soften the edges of all this fresh-cut wood to minimize the chance of splinters.
7. If you really want this LFL to last a long time in the wet Oregon climate, you should prime all your pieces at this point before assembling. Oil-base primer is the best for outdoor wood. Paint it all, but the most critical thing to prime is the ends of the plywood- sealing all those plies (layers) of wood from moisture getting in there and ruining the plywood. (Note, if your roof boards- those 2 X 6's and 2 X 10's, feel heavy, they probably are not kiln-dried and therefore have moisture in them; don't bother priming them- the moisture needs to come out over time. You can leave them natural, or just paint the visible parts when you do your final decorating. This is the end of day 1- you need to let the primer dry, or it will be a mess! Note- the one place you do NOT want to prime, is the surface that will receive a strip of silicone caulk and





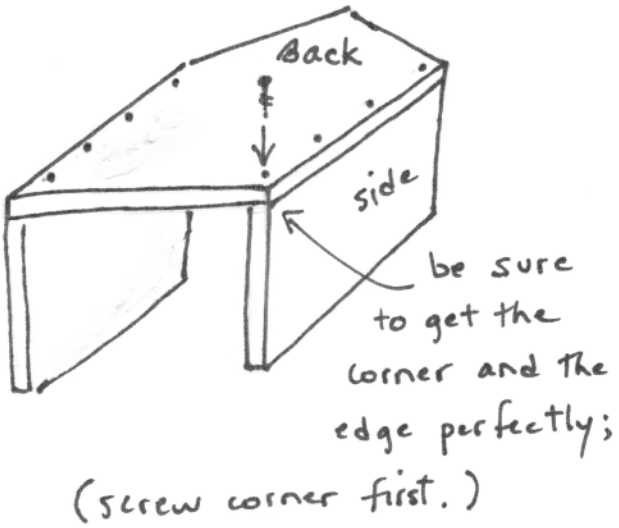
Assembling the LFL

8. Pre-drill 4 holes on the face and also on the back pieces. Holes should be smaller than the shank of the screws, so that the threads carve and grip tightly.)

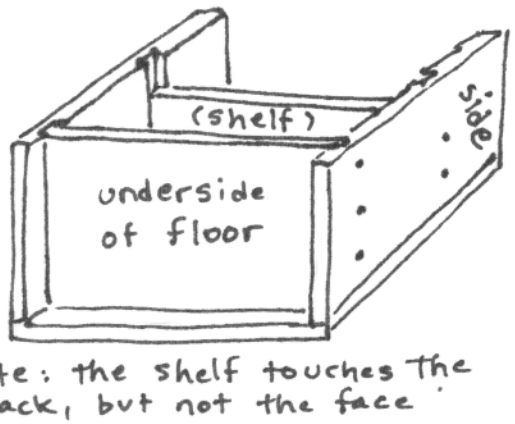


9. Pre-drill 2 holes for the shelf, and 3 for the floor. Clean out any splinters obstructing a clean hole.

10. Grab the back and a side; paint a stripe of wood-glue on one of the edge that will come together and while one person steadies the back piece and the side piece, the other screws them together. See that the screw countersinks itself so the head is flush but does not spin to the point of reaming out the hole and losing its grip. Be very careful to line up the corner at the bottom perfectly before the first screw is started.



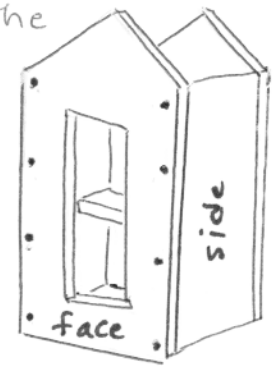
11. Laying the LFL on its back, both sides up, paint a strip of glue on each of the slots and slide the floor in and the shelf into place, and while one holds it all together, the other screws them together.



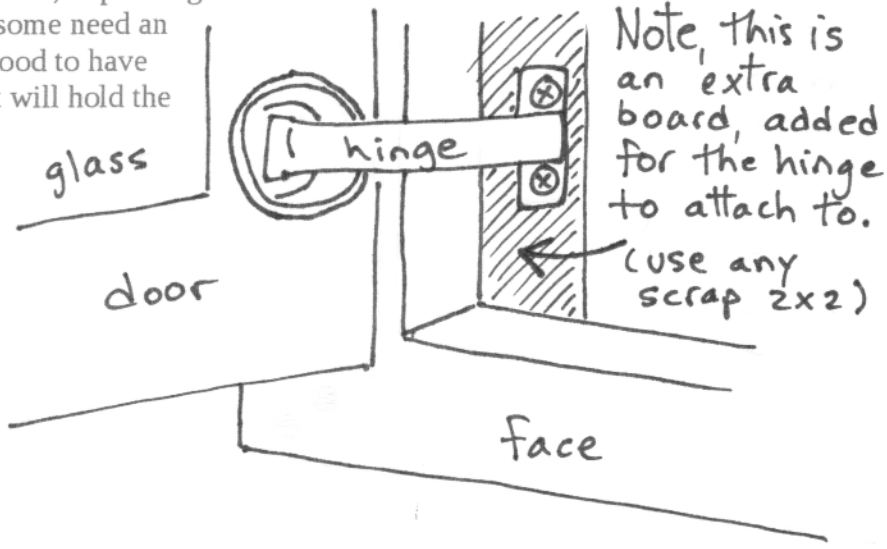
12. Now you are ready to attach the face.

↖ not sure that should have its own number.

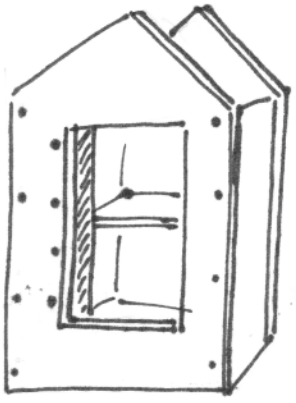
Again, be sure the corner is perfect and set it first



13. The door should not be attached until the glass has had 4 hours or more, curing the silicone caulk that will hold it in place. Once the door is ready, you can attach the hinges to the door, and the hinges then to the door frame of the LFL. Note, depending on the hinge you are using, some need an extra board behind the plywood to have something to screw into that will hold the weight of that heavy door.

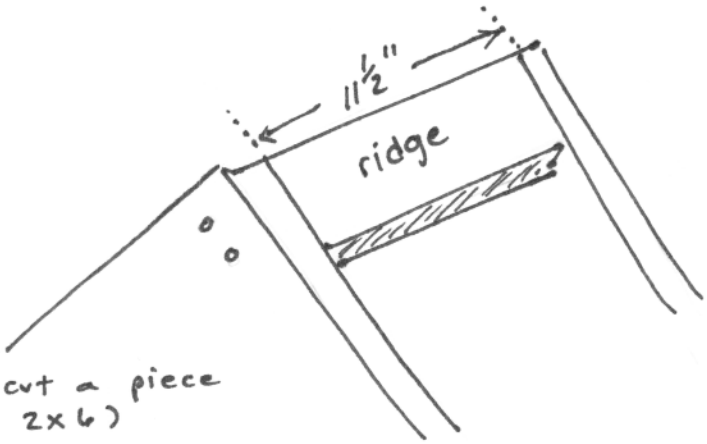


14. Stand back and admire the beauty of your LFL taking shape. High fives all around!



Note: this extra board for securing hinges is attached by several screws through the face.

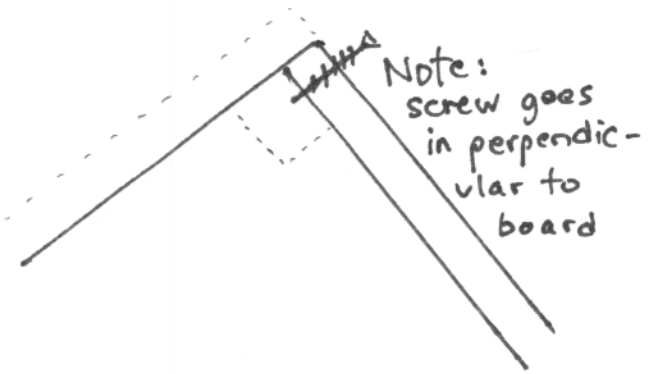
15. Ready to begin the roof? Measure and cut the piece that will span between the two peaks. It can be a 2X4 or 2X2. Nobody will ever see this piece. Pre-drill the holes and attach it with screws. Be sure it is flush or below the edge- and not sticking up. We'll call this the ridge-piece.



(You could also cut a piece from that 2x6)

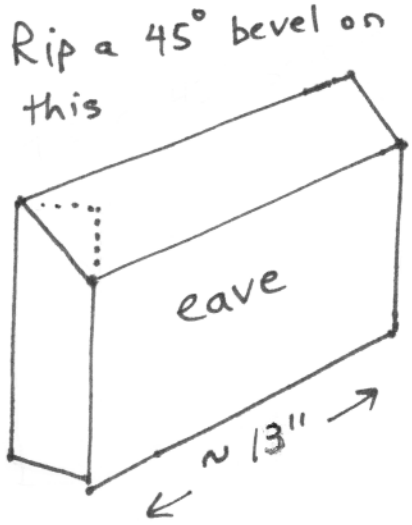
16. Place the 2 smaller wide boards on the roof. Now add the other 2. Move it back and forth to experiment with how much overhang you want in the front. The more it overhangs- the more protection from raining in on the books. We suggest 3 ½" overhang in the front and 1 ½" in the back. But remember, you set the shorter boards first, the longer boards second.

17. When you are sure, you paint a strip of glue over the ridge-piece and along the top of the back and the face- (but not the sides, as the roof does not touch the sides) and place the first one. Be very sure that it sits squarely on the LFL. Measure top and bottom to insure that it does not sit at an angle. Also, be sure it does not pass the peak. Screw the roof board down into the ridge-piece below, screw at a 90 degree angle so the screw will reach. If you stay away from the edge, you should not need to pre-drill each hole.

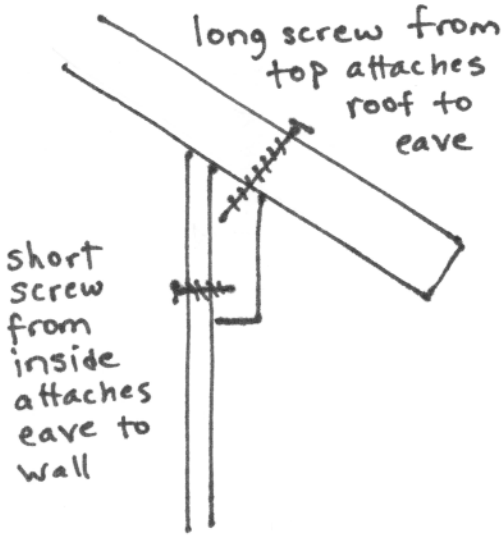


For now, just screw down the top of the roof, being careful to not screw into air or plywood - only into the ridgepiece!

18. Place the next one beside it, using the same technique. If you are really hard-core you can put a bead of caulk between the boards and clamp them together before screwing the second one down. But if this roof is going to have shingles, tar paper and caulk- that's a little paranoid!



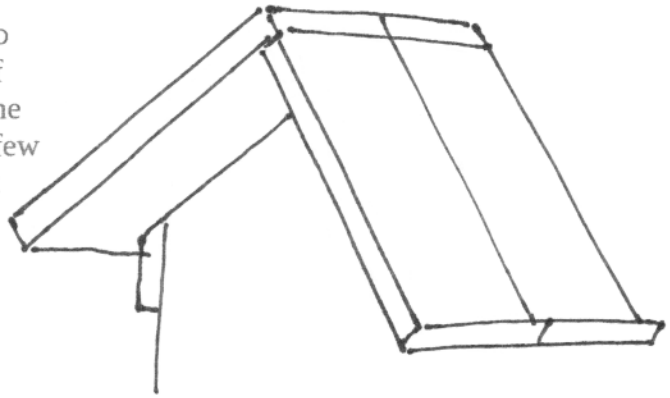
19. The eaves must be cut before placing them. They need a perfect 45 degree beveled edge so they can be tucked up there under the roof-board, and attached to the side wall by glue and then 3 short screws.



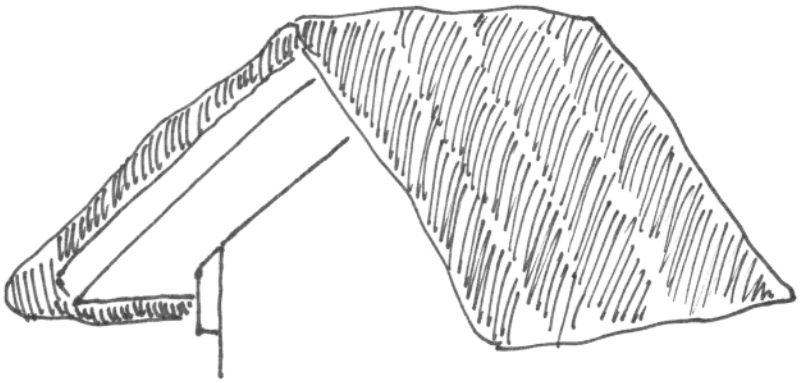
20. Once the eave board in on, you can screw down from the roof into the eave to grab hold, but remember to go at a 90 degree angle so your screw will reach.

21. Repeat this process for the other side.
22. Wet wipe all your drips and trails of glue, if there is any- when it is wet it wipes right off, but if you wait til dry, you will be sorry!
23. Stand back and admire what you have done. It is so cute! You are in the last lap now. But take a little break.

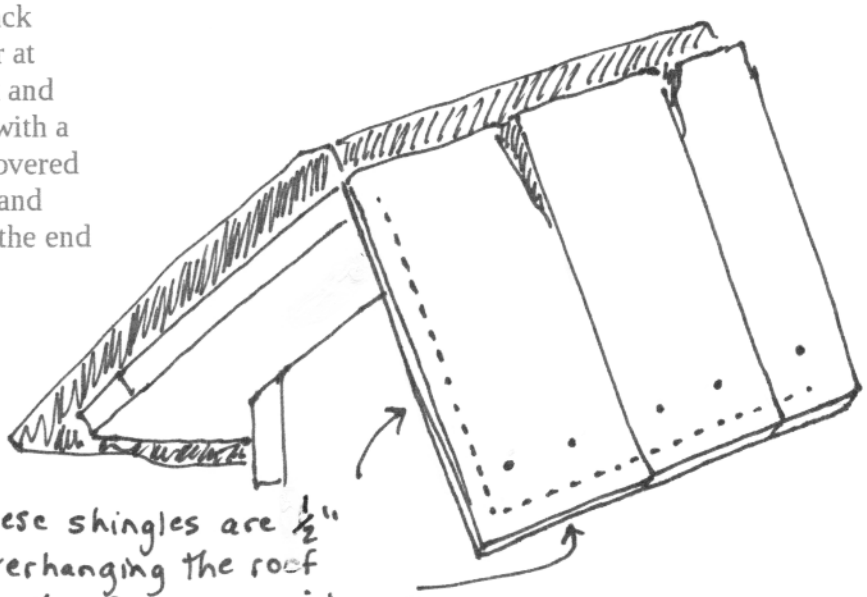
24. Next put on the roofing felt (tar paper) to create a moisture barrier, should the roof fail to shed water. Place the piece over the whole roof and tack it into place with a few staples or thumbtacks or anything. Don't worry about the edges til later.



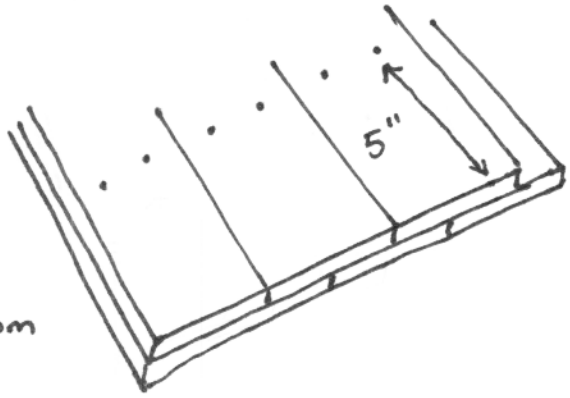
25. If you want to put any trim, flashing, drip-edge, etc. on the front and back- it looks nice, and it helps, but it is not necessary. But if you do- put it on now.



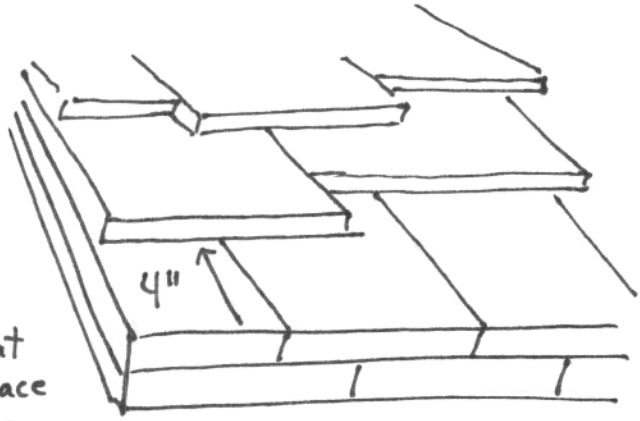
26. Take the first pieces of shingle and tack them on. You want them to stick over at least a half inch along the front, back and bottom of the roof. Nail these down with a couple of nails. These nails will be covered by the next course. You can let front and back stick over and cut a nice line at the end if you like. Less cutting that way.



27. The next course will go right on top of the first course, such that any cracks are covered up. Note- this is the only time you will have a double-row of shingles.

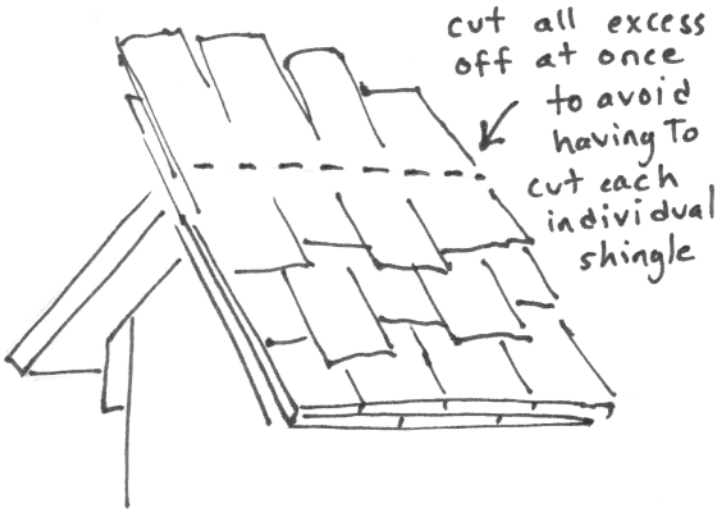


28. The next course of shingles will go up about 4" and you need to decide if you want all the shingles to end neatly in a row or to end in a staggered pattern, which is more like a real cedar-shake roof look.



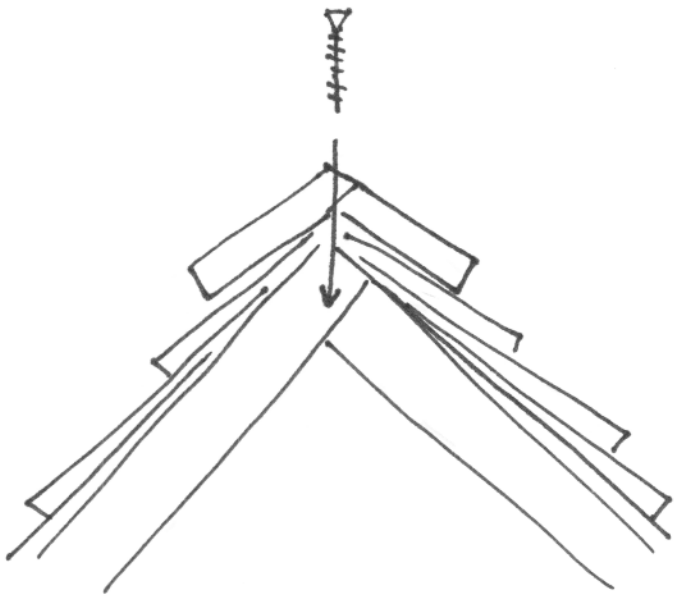
Be sure, in shingling, that you never place a crack over a crack

29. Keep going up, each time the next row will be sticking out over the top more. When you get to the top, use a circular saw to cut off all that excess. Be careful not to touch the tar paper with the blade.

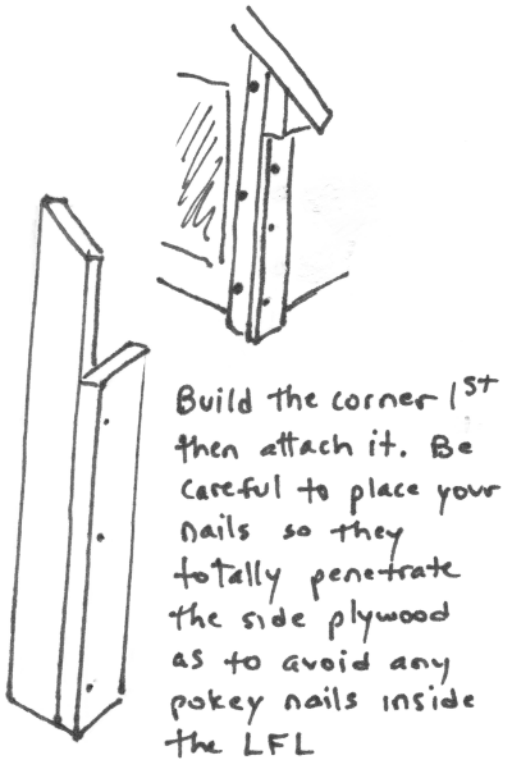


30. Do the other side the same. At the end, cut along the front and back to give you a nice straight line.

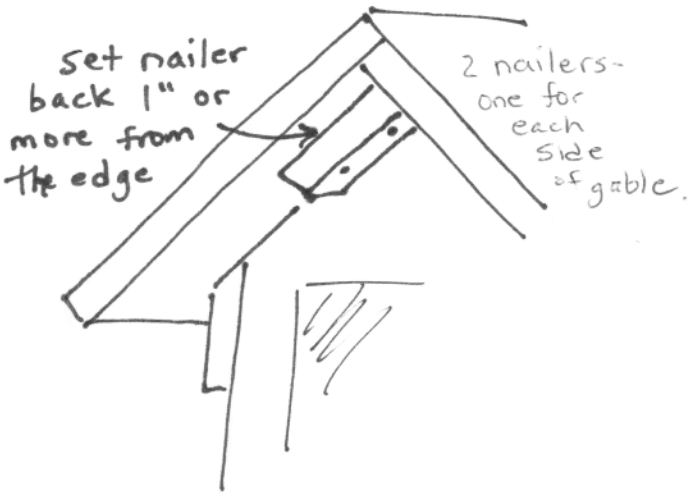
31. Your last step is to measure the roof, from front to back, and cut 2 pieces of cedar board to join together into a ridgecap to cover the very peak of the roof. Cut the 2 boards, glue and tack them together with shingle nails before you approach the roof. Set them on top, predrill 2 holes, and anchor them with 2 long screws that will reach down to the roof boards and really hold it down well. And you are done.



32. Now you have to protect the corners, for these are the weakest link in this design. Not weak structurally, but weak in the elements. A second level of protection for those plywood edges, in addition to the paint, is to cover them with cedar corners. Cut your pieces as shown in the diagram and tack them into place with the skinny shingle nails. Careful that you do not send a nail through the wall- only nail from the front or the back. Glue before you nail them on/ Nail the corner together before you attach it to the LFL. Cedar does not need to be painted, but you can, if that is your preference.



(Optional feature- using one of the left-overs from the plywood sheet, you can a triangle to adorn the front and or back of your LFL. To attach it, you need to attach any board behind it- like screw it to the underside of the roof, and then screw the triangle to the board. One thing nice about this is that it is an additional anti-rain measure.)

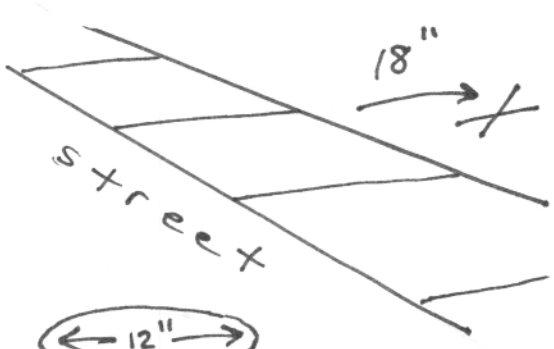


Now take it home and don't lose your momentum- you've gotta decorate it while you still have the energy, so you can mount it and get started.

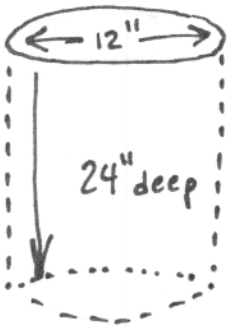
Mounting Your Post

Locate your intended site. It is wise to call 811 before you dig- to avoid hitting underground lines that can be expensive and/or embarrassing! They will come out days later and spray-paint some illegible marks along your sidewalk, leaving you confused about what that means. In general- the water line runs straight in from the little meter cover in the street or sidewalk- look for it. The gas line runs straight to the gas meter on the side of the house. Sewer is too deep to matter, and electric or cable lines are not underground in my neighborhood.

33. The hole should be 18" from the sidewalk at its center, so that it does not overhang the sidewalk.

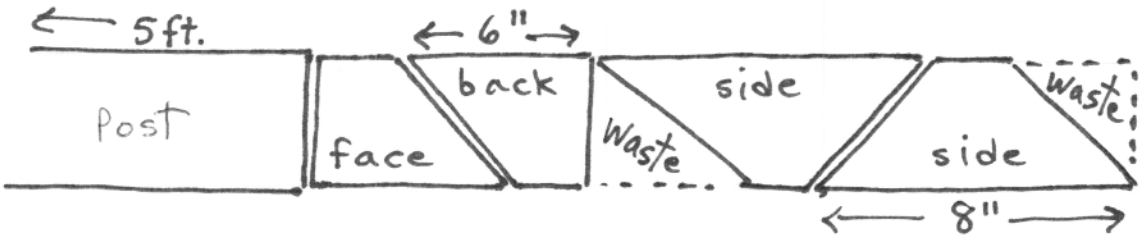


34. Dig down 24" deep, and a hole 12" in diameter. That's quite a task, in this rocky soil.

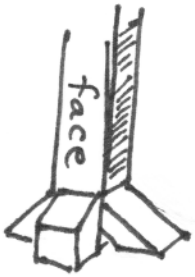


Be sure to cover the hole immediately as it is very dangerous - especially at night.

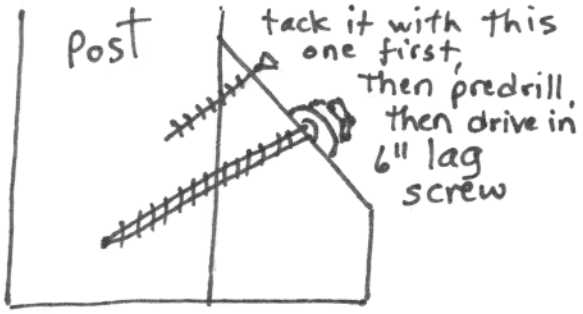
35. The post can be built any number of ways: here's one. Take an 8 ft. post and cut it off at 5 ft. That's going to be 2 ft. underground and 3 ft. above ground. But since these are so very top-heavy, they need a platform to sit on. From the excess wood you have left over, cut 4 pieces: see the diagram.



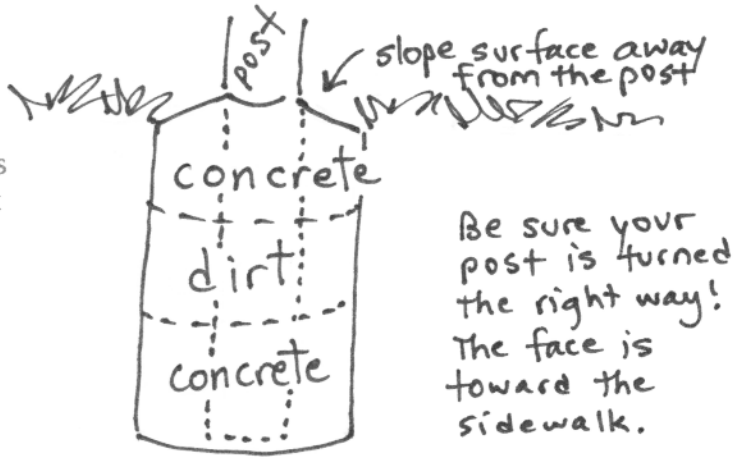
36. Place the cut end of the 4X4 down on a flat surface, like a garage floor. You are going to build it upside-down, so when it is finished, it will be perfectly flat. Place the pieces as they are going to be when done. (Be sure someone is spotting, and no one is hurt from the big post falling over.)



37. Use screws to set the 4 arms of the pedestal in place . In this way, it will hold still for you as you pre-drill a hole from the 2 larger pieces, directly perpendicular to the wood. Be sure that the hole is less than 3/8" so that the screw will grip well. (Use a ¼" bit.)

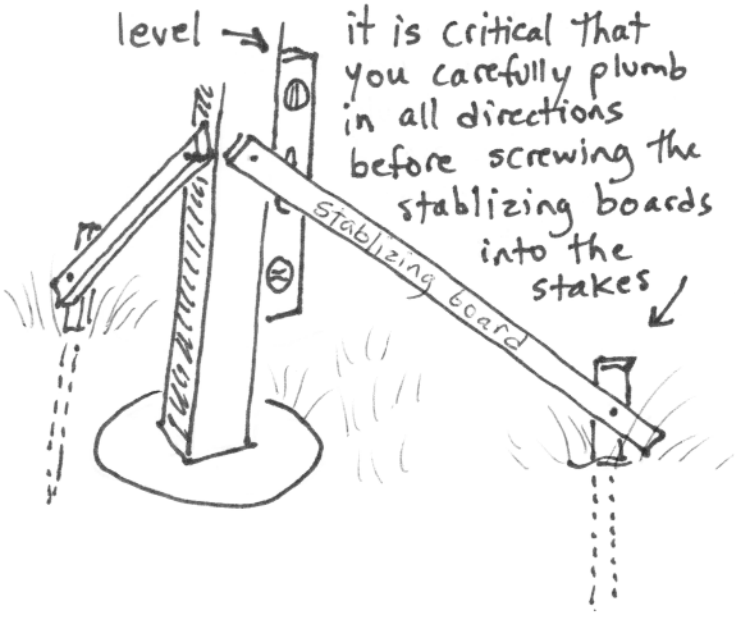


38. It is now ready to set in the concrete. Mix up the concrete with a hoe in a wheelbarrow or a bucket until about the consistency of mush, or so that it is still liquid enough to be poured into the hole. You can put in one bag, then dirt, then the final bag. This would allow you to set tiles and decorations in the surface concrete. If you use 3 bags, it will go to the surface. 3 Bags will be the sturdiest possible- you can even make the top of the hole wider, for more stability. Slope the concrete up to the post, so that rain will run away from the post- this will make it last longer.



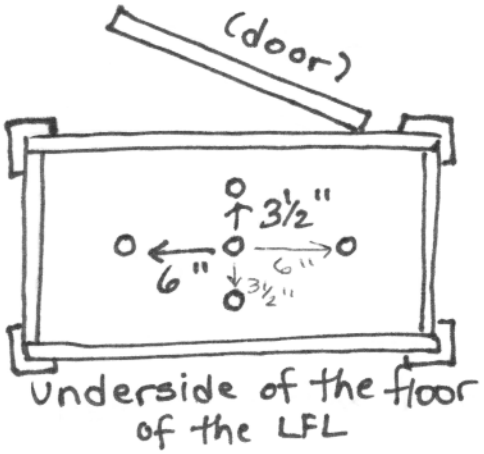
39. Put the post in the hold first and have someone hold it while the other pours.

40. Use a level and some scrap lumber to hold the post steady and perfectly "plumb" (straight up and down) for the next 24 hours, while the concrete is curing. Remember, these babies are tall and if the post is leaning a little, the whole LFL will look like it's leaning a lot.
(Drive the stakes in before you attach boards to them.)



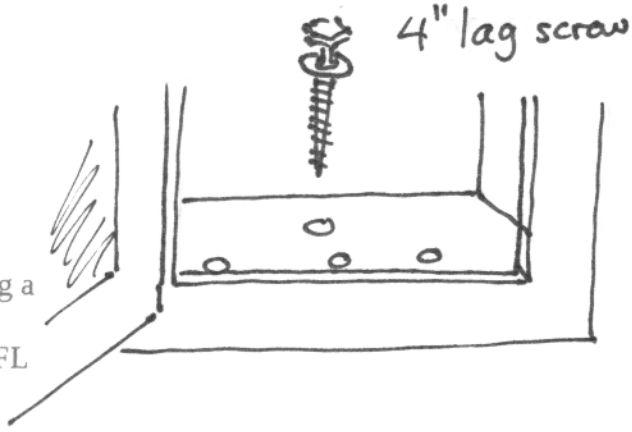
Setting the LFL

42. Do not mess with the post until it has been 24hours in concrete and undisturbed. After that, you may set the LFL. When ready, drill 5•3/8" holes in the floor of the LFL. See diagram. start by locating the exact center and marking your hole - then measure out from there.



Underside of the floor of the LFL

43. Then set the LFL atop its post, and drill those same holes into the post, using a smaller bit. (use ¼" bit)



44. Put a washer on each lag screw, and using a drill driver or a ratchet, sink those lag screws into the holes til they snug that LFL onto its post.

you can remove the stablizing boards after a day or two

45. Now just go stand in the street and watch the neighbors congregate and get all excited about donating some books to fill it with.

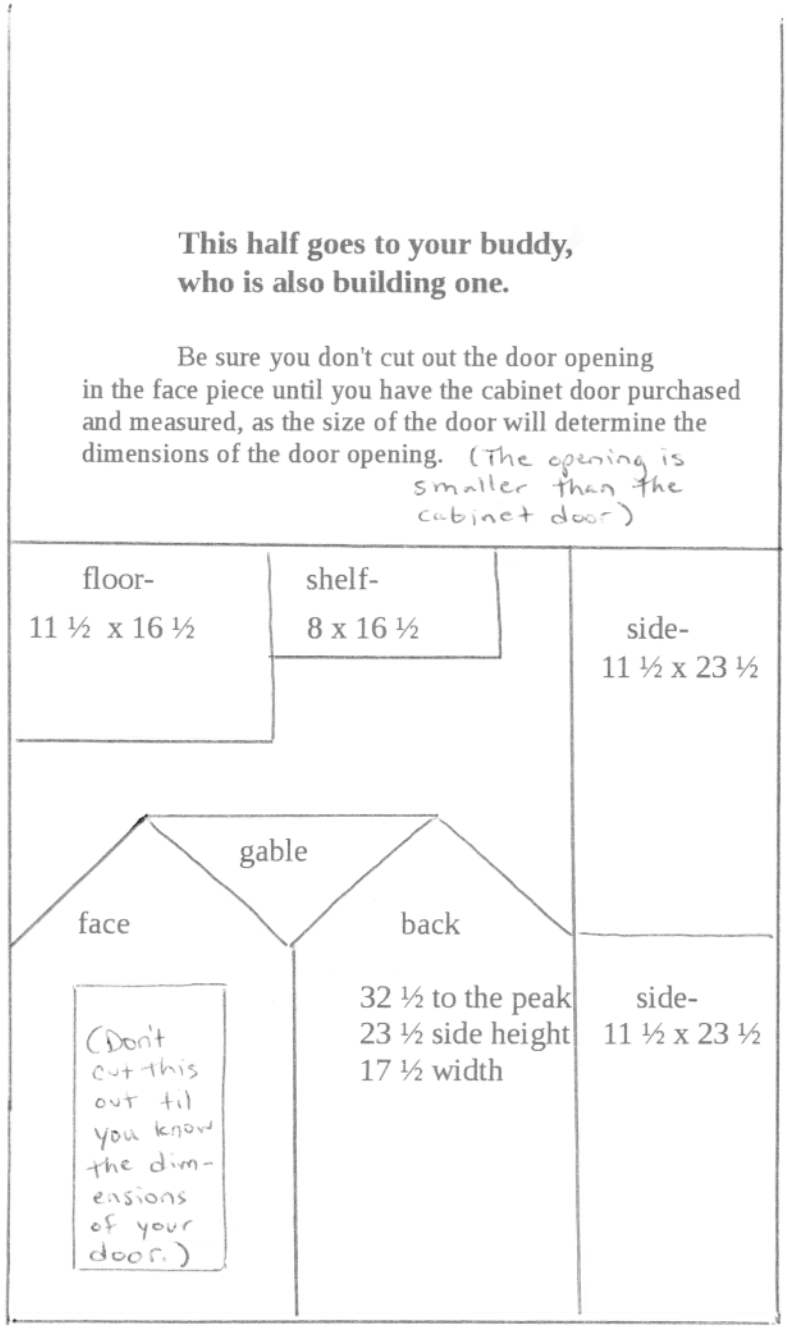
You can see samples of this design at many of our neighbors' homes in the Glenwood Park / Kelly Elementary School neighborhood.

Rusty Bonham
Brandon Ensz
541.974 0777

"Little Schoolhouse"

Little Free Library Plans

Pieces to be cut from a half-sheet of ¾" plywood



Materials List
for the Little Free Library
"Little Schoolhouse" Design

1. 8 ft. 4x4 Post- pressure treated, (or juniper from NW Sustainable on Johnson Creek)
2. 2-3 bags of concrete (60 lb. Bags)
3. sheet of ¾" plywood (you only need half of it- so split the cost with someone else.) You want something that will decorate nicely, inside and out- there are many kinds of plywood to choose from. Do not buy particle-board! (Nor OSB)
4. 1 - 6 ft cedar fence board
5. 1 - 8 ft. 2X10 (kiln-dried, if possible)
6. 1 - 8 ft. 2X6 (kiln-dried, if possible)(you will only use half of this board.)
7. 1 piece of roofing felt (about 24 X 48")
8. partial bundle of cedar shingles- under-layment shingles, not the outer, more expensive types (a bundle should roof 3 LFL's)- try 52nd Ave Lumber and Hardware
9. 30 - screws 1 ½" galvanized
10. 30 - screws 2 ½" galvanized
11. 50 - nails 1 ½" galvanized shingle nails
12. 5 – 3/8" lag screws 4" long
13. 4 – 3/8" lag screws 6" galvanized
14. 9 washers 3/8"
15. scrap piece of 2 X 4 or 2 X 2 at least 3 ft. long
16. a cabinet door- Try Ralph Mills (on Foster)
17. 2 hinges that match the door- try Brunkow cabinet shop (on Johnson Creek)
18. 1 door knob
19. piece of glass for window- try Alpine Glass, (on Powell) and ask them to do it for $10 if they use one of their ¼ " scrap pieces. You have to have a very exact dimension to tell them- this dimension you will only know after you have cut the panel out of the cabinet door. They will take 1/8" off the length and the width so there is room for error and for expansion/contraction.
20. Tube of 100% silicone caulk

I suggest you start by taking this list with you to 52nd Ave Lumber. This is a local father-and-sons business and good people. They will bend over backward to accomodate!