DISCLAIMER:

READ BEFORE YOU BEGIN! THESE PLANS ARE INTENDED AS A GUIDE ONLY! READ THESE INSTRUCTIONS COMPLETELY THROUGH ONCE AND UNDERSTAND WHAT IS REQUIRED.

We will not be held responsible for any accidents or injuries anyone may sustain. Builder assumes all risks associated with construction work!

We assume some builder competency in the use of tools, safety and equipment.

If you are unsure of any procedures, please contact a professional. The methods in this plan assume a minimum amount of power tools. Also, if you know of alternate methods of construction, feel free to use them!

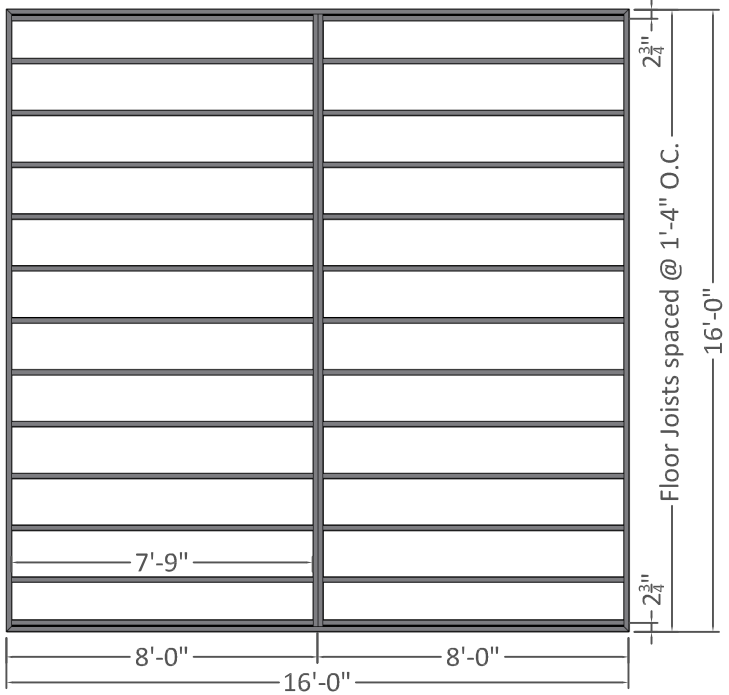
Using other tools to speed the work process is just fine.

Work safely and wear proper safety equipement such as gloves, ear protection and eye protection.

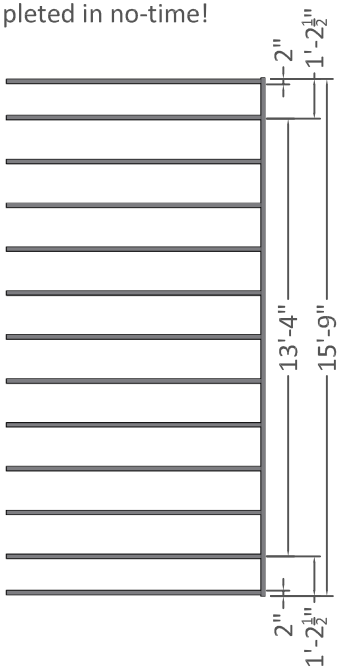
MATERIALS

Description	Dimensions	Quantity
2x4 plank	2x4x8'	120
2x4 plank	2x4x16'	24
Oak or Cedar Sheet	4x8x$\frac{3}{4}$"	8
Oak or Cedar Sheet	4x8x$\frac{1}{2}$" Min.	36
4x4 Pressure-Treated Post	4x4x8'	10
4x4 Pressure-Treated Post	4x4x16'	13
2x6 plank	2x6x16'	4
1"Ø Min. Dowel	1"Ø x 8'	4
Metal connector plate	By Builder	
Metal Angle Brackets	By Builder	
Roll insulation	By Builder	
Roofing	By Builder	
Windows (42x42")	By Builder	
Hinges	By Builder	
Handles	By Builder	
Sealant, paint, epoxy, etc.	By Builder	
Weatherproof stripping	By Builder	
Optional: Chicken Run		
2x4 plank	2x4x8'	83
2x4 plank	2x4x24'	8
Chicken Wire	By Builder	
Hinges	By Builder	
Latch	By Builder	

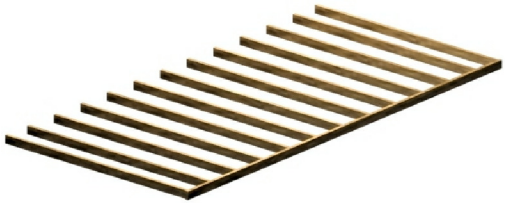
To begin, cut 2x4 planks as dimensioned below. Mitering the ends is NOT required, but we recommend it for a professional-looking finish!



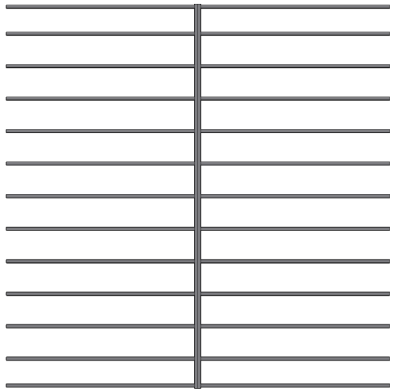
To make things easier, we have broken down construction into steps. Follow the diagrams below and you will have the sub-floor frame completed in no-time!



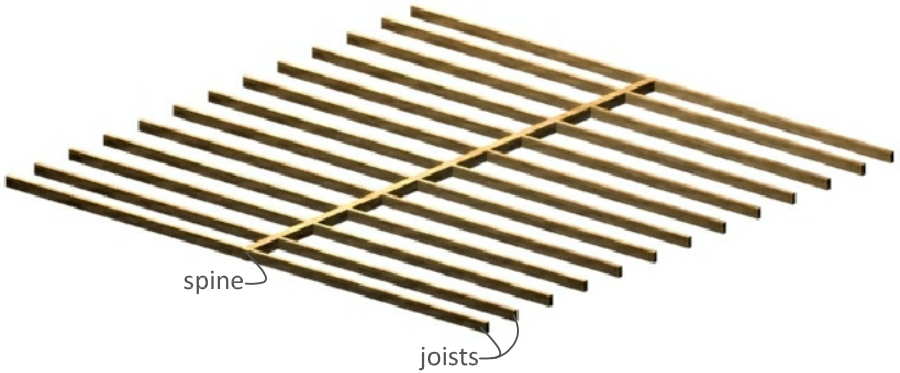
Construct the inner frame first. You will need two of these!



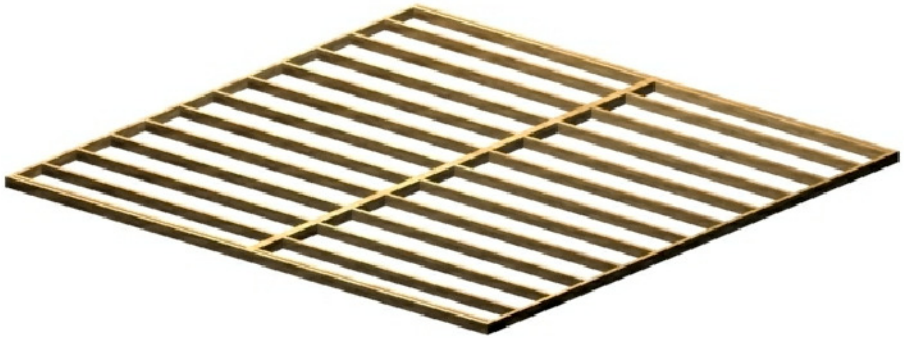
Connect the two frames together. It is **ABSOLUTELY CRITICAL** to ensure the ends of the long planks are flush!



Once you have the frames connected and secure, take some time and use either a speed square or a rafter square (a.k.a. carpenter square) to ensure the 2x4 joists are at 90° or perpendicular to the "spine".

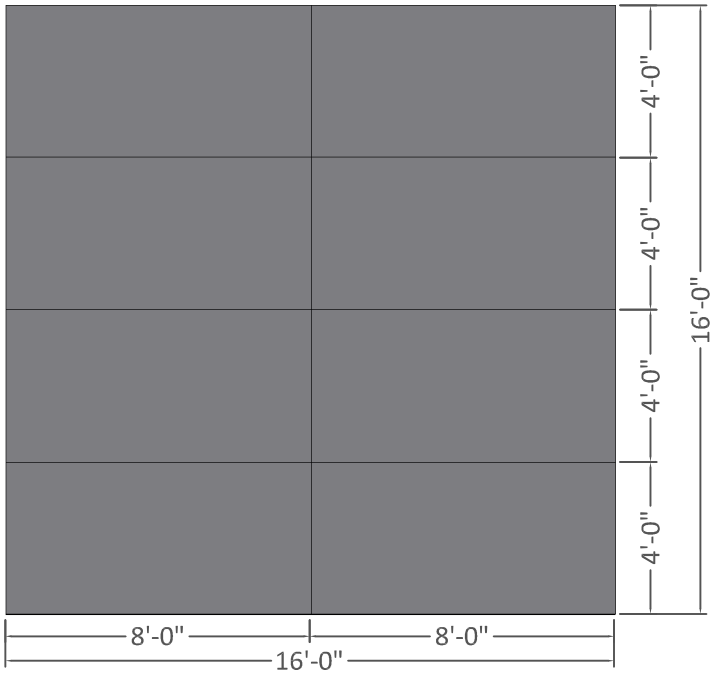


Complete the sub-flooring with the rim joists. Make sure the joists are perpendicular to both the rim AND the spine!



We recommend using Torx head screws to connect the planks though you may use any method you wish, including pneumatic nailers.

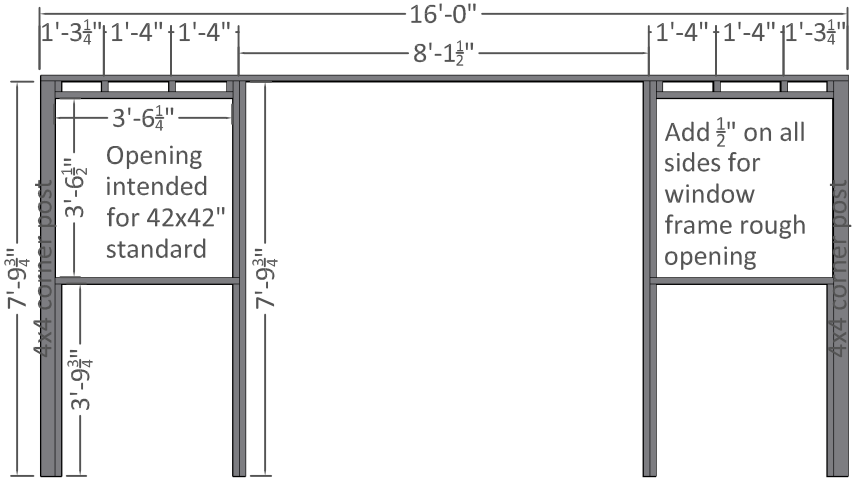
Adding the flooring is easy! You should have a nice 16x16' frame with which to attach a MINIMUM of $\frac{1}{2}$" plywood sheeting. We RECOMMEND at least $\frac{3}{4}$" **cedar** or **oak plywood sheet** for the flooring. Cedar and oak plywood both have excellent water and insect resistant properties. They are more expensive than conventional flooring but they don't break down like cheaper sheets or plywood. You don't want to fall through the floor while cleaning or feeding do you? We didn't think so!



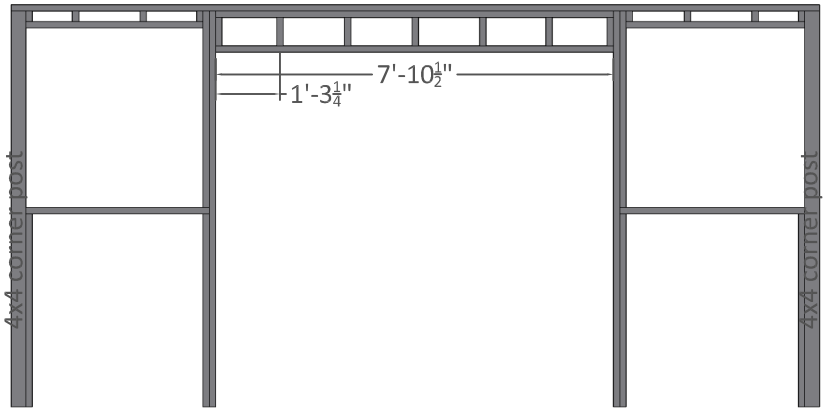
That's it! The floor slab is complete! Before going any further, you will want to consider where to put this thing while it is still movable.

Notes:

For the walls, we are going to start with the front and rear walls. Now, we realize you are going to have to take some constructive leeway with respect to the window and door openings. Follow the diagrams below to give you and idea how the coop is to be assembled. **We have also included instructions on making a SIMPLE door and window in an appendix but we highly recommend purchasing at least the windows!**



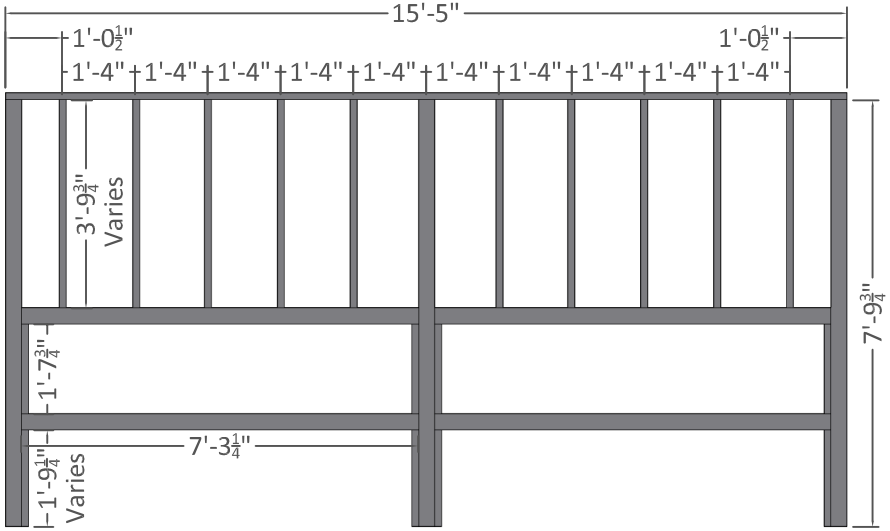
Don't neglect the 4x4 pressure treated corner posts! You are also going to need a header over the door frame. We recommend constructing this frame separately and installing in the opening. Make sure to make it a TIGHT fit. You should need a hammer to tap the frame into place and attach it with screws.



Once you have the front wall frame in place, go ahead and repeat the process for the rear wall.

Notes:

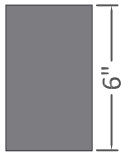
The side walls are a little more complex, only in the fact that you will need to determine where you want to put the nesting boxes. We recommend you put the nesting boxes at a comfortable height, at least two feet from the ground. If you have kids, you may want to put the nesting boxes lower or higher depending upon your preferences.



Notes:

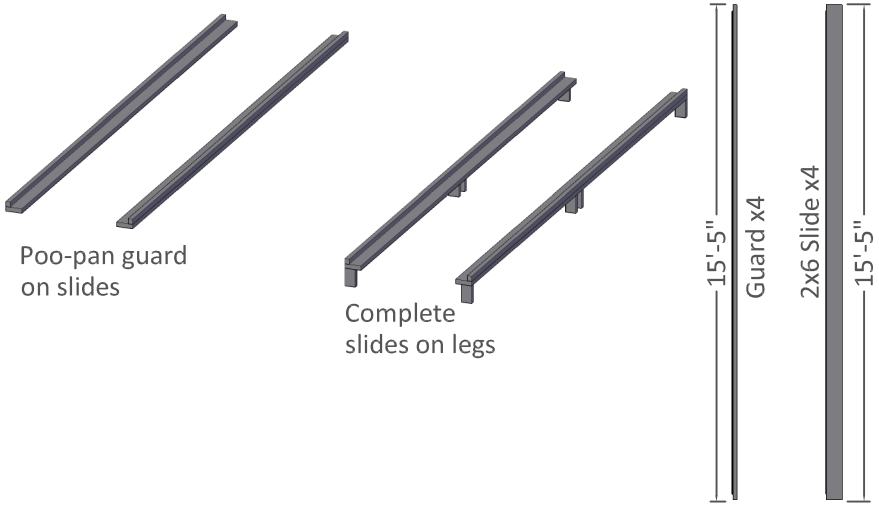
Once the side walls are completed and in place, it is time to work on the roost and nesting box. We will start with the roost. Once of the nice things about this coop is that we have included diagrams for poo pans. These will greatly assist with clean-up.

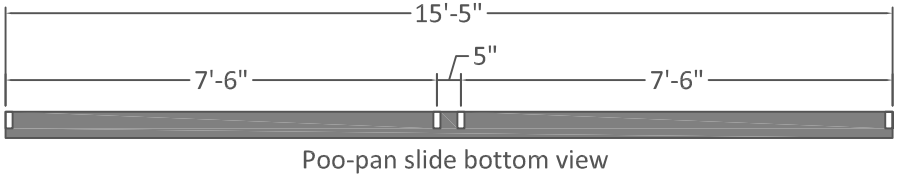
First, you are going to want to start with the poo-pan slides. Every good slide, starts with a leg (or 16 to be exact).



Then you will need the slides and the guards. To make the guards, rip two-2x4x16' planks down the center with either a table or circular saw. If you are not sure of your precision, use the factory edge as the bottom of the guard.

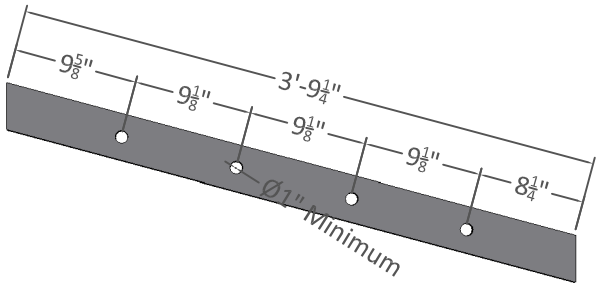
Screw the guard flush to one edge of the slide as show in the diagrams below.



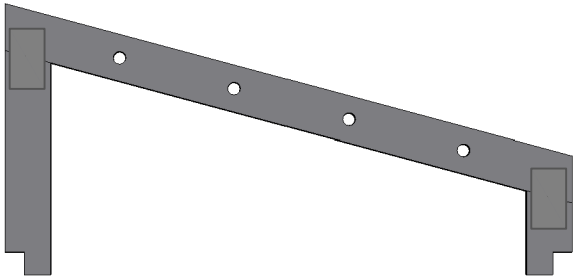


Poo-pan slide bottom view

The roosts will be located over the poo-pans (naturally). So, for the frame of the roost, begin with the roost supports (8 of them).

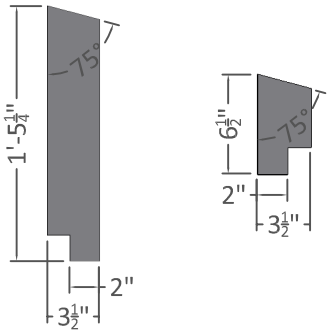


Now, attach the roost diagonal supports to the legs. We recommend using metal plates to connect the roost diagonals to the legs.

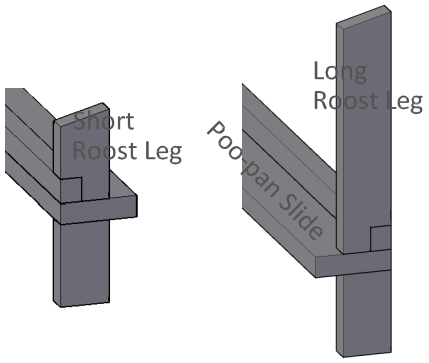


Place the roost supports as shown in the diagrams below. Use a minimum of 1"Ø dowels and thread them through the supports.

Now, the short and long legs (8 of each).

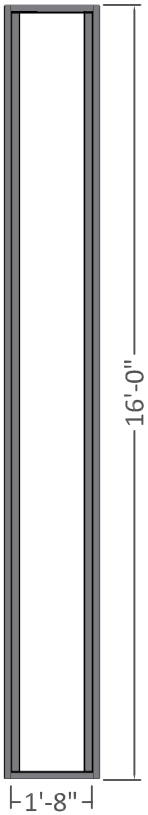


Now, if you put the legs on the poo-pan slides, you will see they sit right on top of the guards.

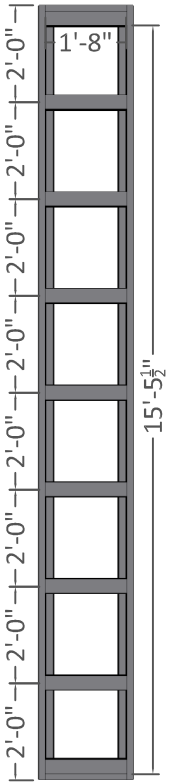


Once the roosts are up, we recommend constructing the nesting boxes.

Begin with the floor of the nesting boxes. Your chickens will use these boxes to lay eggs and nest those eggs.



Lay the flooring supports as shown in the diagrams below.



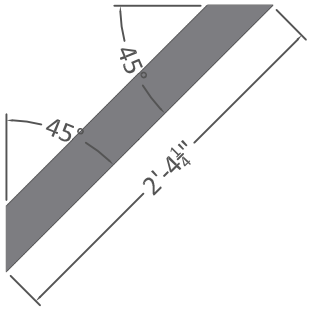
You will need two of these frames, one for each side of the coop.

With assistance, attach the base frames flush with the top face of the nesting box accesses (of the four horizontal posts, flush with the bottom of two). See the diagram below.

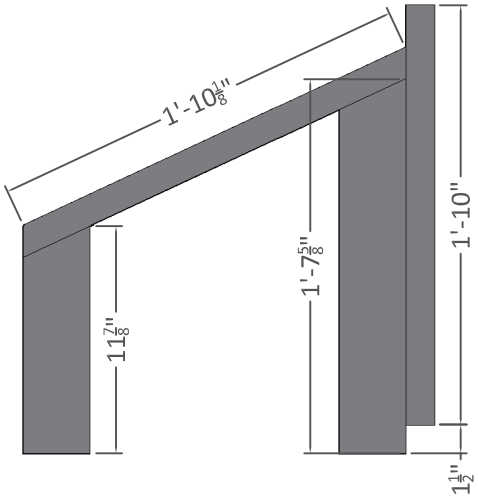
Cut a sheet of plywood to fit inside the nesting box base. Apply a soffit under the nesting box base. Hint: If you live in a colder climate, you may wish to insulate the base frame before enclosing with the sheeting.

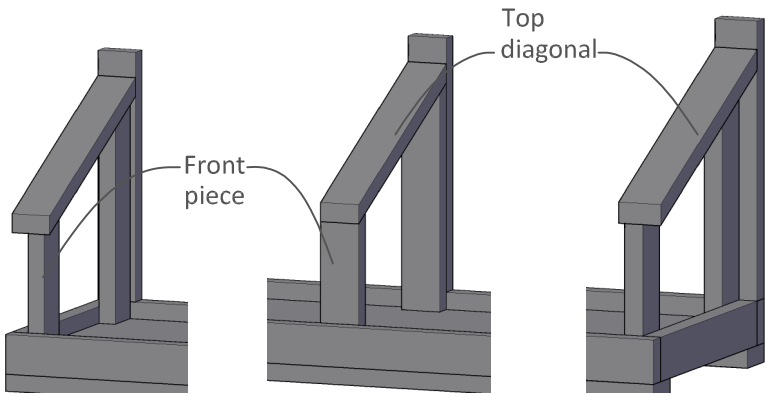
Once you have the base frame attached, you will want to think safety and sheet the exterior of the side walls beneath the nesting box so you can add some knee-braces for stability.

Cut the knee-braces as shown below and attach to the wall FRAME. Make sure the screws go into the studs behind the sheeting!



Now that you have a strong, sturdy nesting box base, you can construct the nesting box frame.



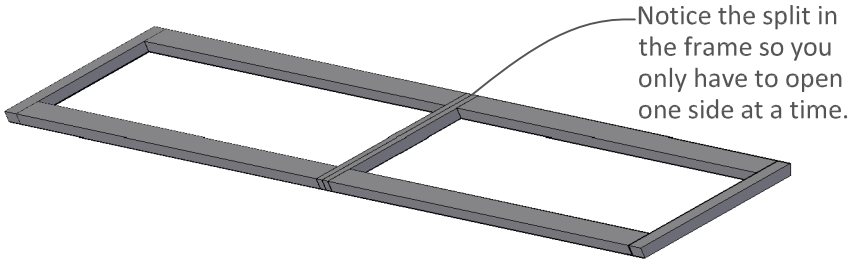


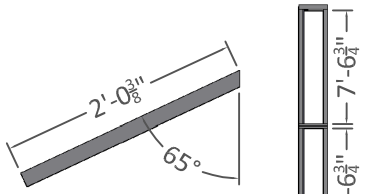
You will need 6 of these frames. Notice how they sit in the left, middle and right of the nesting box floor. Also notice the middle front piece is rotated the full width of the frame while the right and left front pieces are perpendicular and attached to the side. For ease of construction, you may want to cut the pieces for each frame first and then assemble in place. Make sure the top diagonal plate is flush with the exterior edge of the nesting box floor frame.

You will need two middle frames and 4 side frames total.

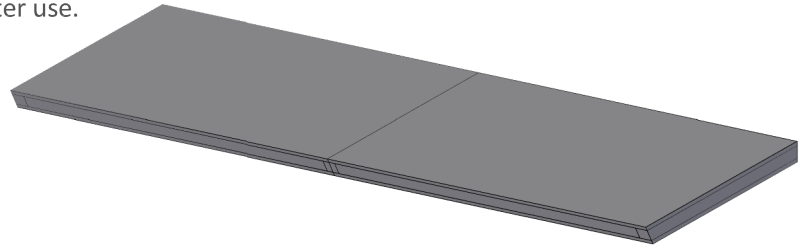
To this point, you should have something similar to the diagram below.

Now focus on the roof frame. Do NOT attach the frame until you are sure the access frame sits correctly on the nesting box frame.



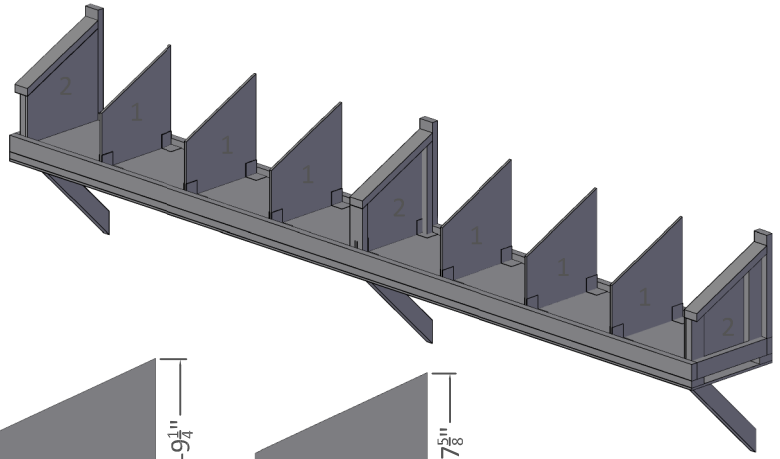


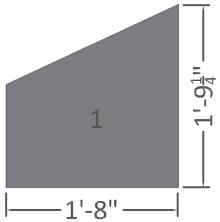
Now just attach the paneling to the top of each half as shown below. If you live in a colder climate, you will want to insulate the frame before enclosing it with paneling. Do NOT put in place just yet! Just put aside until later use.

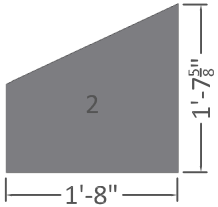


Before you put the access panels in place, you will want to make sure the dividers are in place to give your chickens their own space to nest.

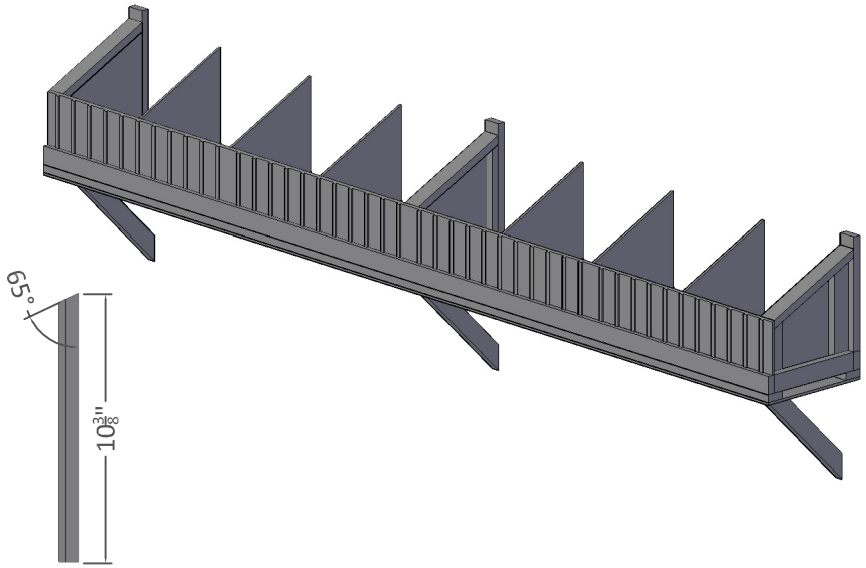
Now, there are two different divider sizes. We are going to keep this simple and use angle brackets. Simply cut the divider sheets as shown below. You will need at least 12 large dividers and 6 smaller ones. The smaller dividers should fit under the nesting box diagonals.







OK, you have the dividers in place, you have the access panel ready to go, and the nesting box frame is in place. You will want to cut some paneling and anchor the dividers vertically. If you live in a colder climate, you may insulate the inside of the paneling.

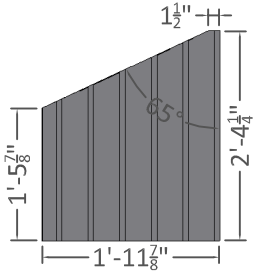


OK, the nesting boxes are closing in on being completed. Before you put the top on, you will need to sheath the side walls so you have something to connect hinges to.

Now it is OK to put the nesting box access in place. Make absolutely sure that the edges are flush (or even slightly smaller) with the external faces of the nesting box frames.

While you are at it, apply a fascia board to the front edge of the access panel and (if you wish) add a handle.

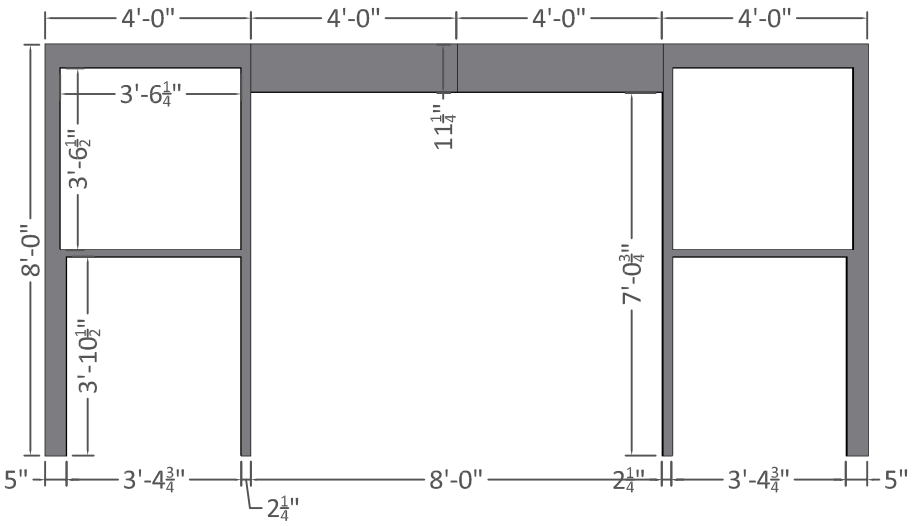
Now, enclose the nesting box. If you live in a colder climate, add insulation to the exterior frames before enclosing the external face.



Congratulations! Make sure the lid lifts properly and you are done with the nesting boxes!

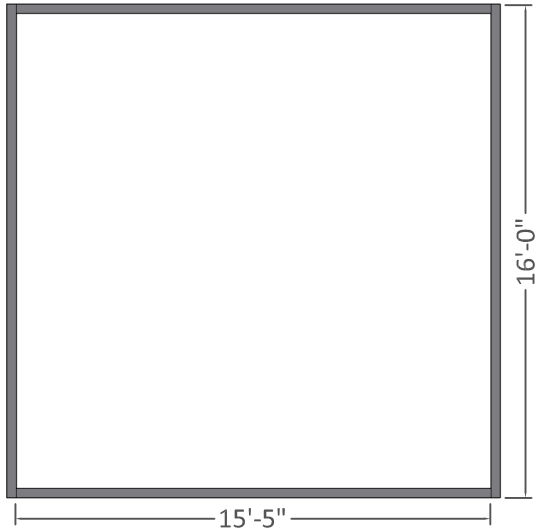
Notes:

Before continuing onto the roof, we would recommend sheathing the front and rear walls. Construct doors for your coop as described in the appendix. Remember! Your openings may vary from this diagram! Also, keep the cut-out pieces for paneling over the doors and access.



You are NOT to this step yet, this is just to show you what the doors and accesses should act like.

For the roof, the first thing you want to do is construct a roof tie plate or top sill. This is very much like the nesting box base only wider. Be sure the bottom planks of the roof tie plate overlap the seams of the front, rear and side walls.



For the roof, please read the following disclaimer and understand all risks and procedures before continuing.

Roof construction can be a time-consuming and dangerous task. We recommend constructing all rafters and roof components on the ground before setting in place on the frame!

Also, read and understand all steps in the process. Complete one rafter at a time and ensure proper placement before continuing on to the others. Always, ALWAYS, use assistance when lifting, hoisting or using scaffolding.

Wear any and all pertaining safety equipment such as gloves, eye protection and (if possible) tie downs and fall protection.

Falls from even a short height can cause serious injury and roof construction should be performed by knowledgeable, competent persons only!

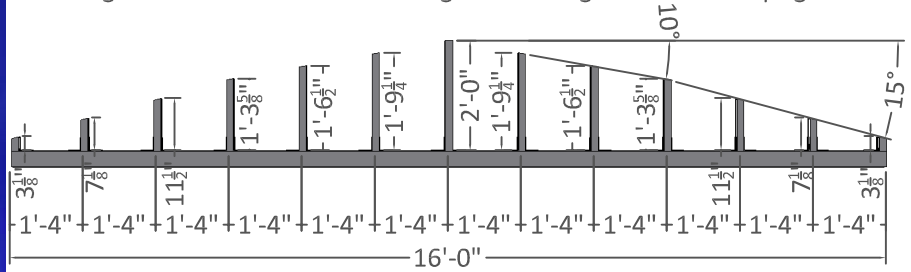
If, for any reason, you feel you are unable to complete the roof construction safely, contact a professional!

The roof construction plans continue on the next page...

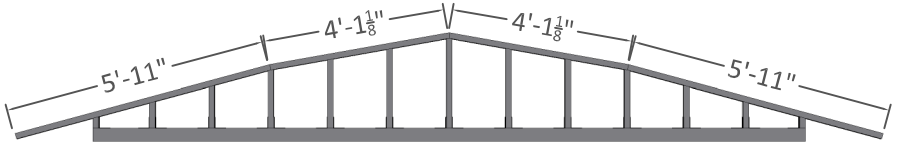
To construct a rafter we highly recommend using metal brackets and plates. Some hardware stores even sell rafter plates that are specifically designed to hold rafter components together.

Start by cutting and assembling the pieces as shown below.

The girder is 4x4 pressure treated post and the uprights are 2x4 anchored with angle brackets and bolted through both the girder and the uprights.

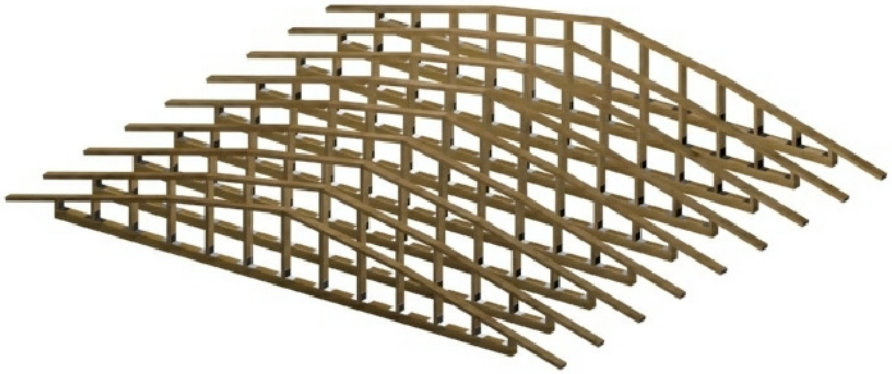


Once you have a strong, stable rafter frame, go ahead and cut and place the rafters on top to complete the rafter.

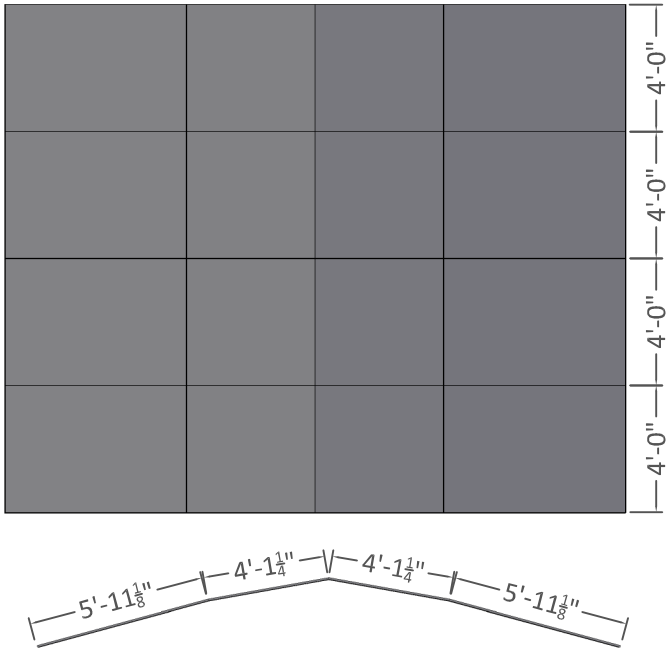


Repeat the steps until you have 9 of these rafters. Up on the tie plate, layout and mark the location of the rafters as shown below.

Once you have the rafter locations laid out on the tie plate, go ahead and get the rafters set up. We recommend bolting the rafters through the side wall top plate and tie plate and girders. Tie together with a minimum of ⅜"Øx 7" hex-head bolts.

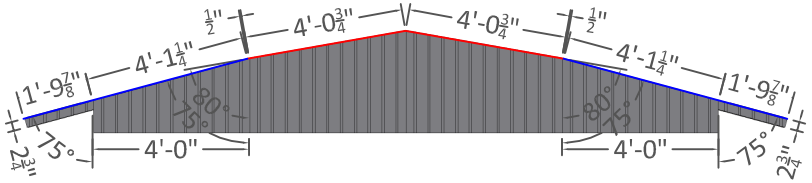


Carefully, attach the sub-roof sheathing. Use caution to make sure the rafters are straight vertical. Use a level and rafter square and attach the sheathing. The rafters should be laid out so the sheathing will, literally lay down and the seams will align down the center of the rafters.



Notes:

To finish enclosing the roof, measure, layout and cut the sheathing as shown below.



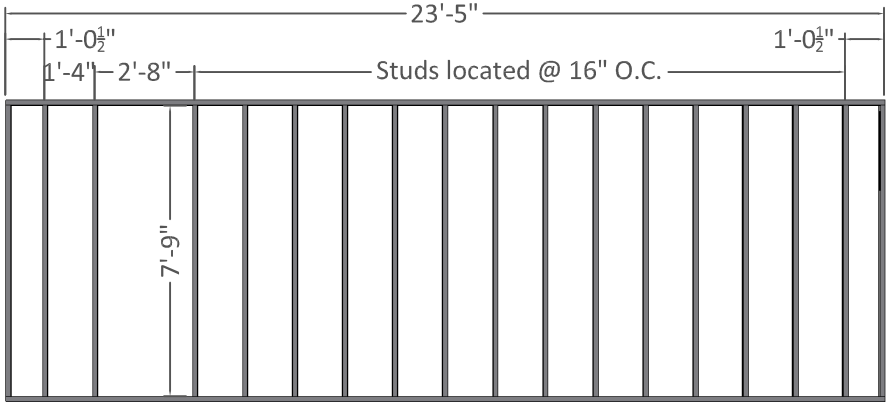
Almost done! We have included some basic instructions on building your own windows, but we highly recommend purchasing them! Install the windows according to manufacturer instructions.

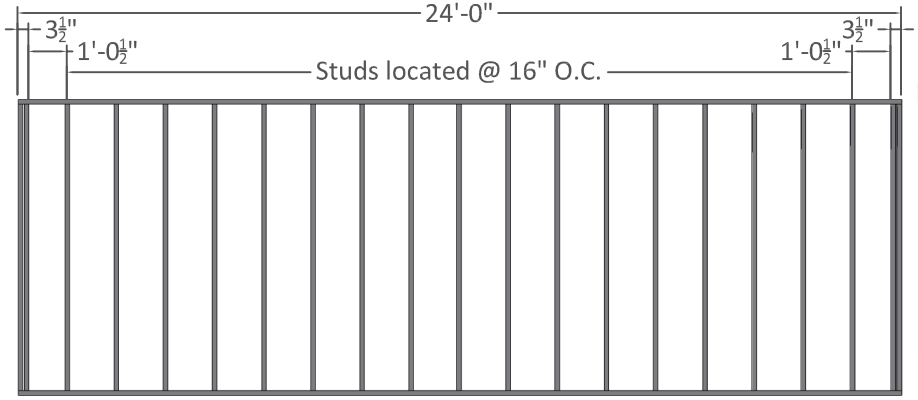
Finish the roofing.

If you want, side the structure with your personal preferences. Seal off any seams, corners and openings that rain can infiltrate.

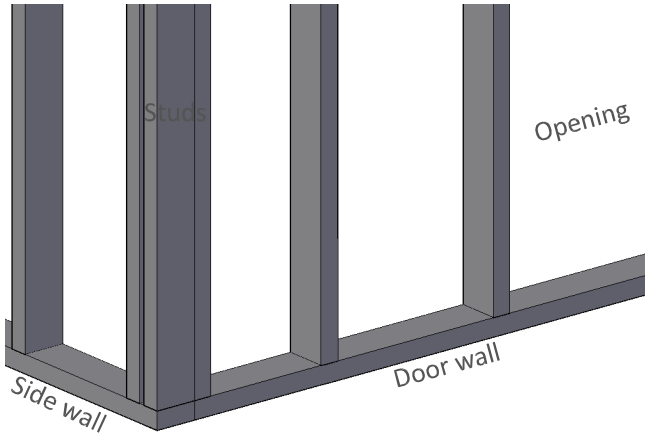
Add trim and you are done! **CONGRATULATIONS!**

Before you begin the chicken run, make sure you have at least 30x30 feet of space to work in. Begin by building two of each wall as show below.

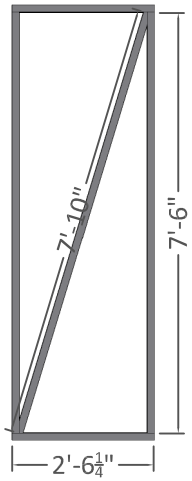




With assistance, attach the four walls to one another. The walls with the door openings will go inside the walls without.



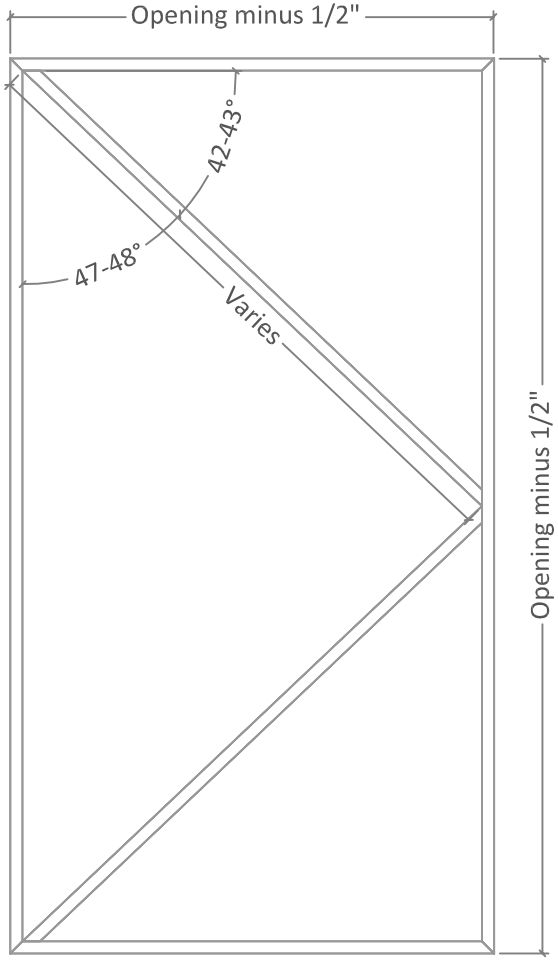
Construct the doors as shown below and hang with hinges. We have allowed ¼" for swing.



Add chicken wire and you are ready to go! We recommend using a slide blot or hook and eye pin to lock the door closed. Another option is to screw a piece of scrap wood in the center and use it as a pivot latch.

For the door, construction is relatively simple. If you want to install a latch, that is up to you. We do not show the details because there are special tools involved, most of which the normal person does not have. However, if you DO happen to come across such tools, you will be able to add a doorknob and catch should you desire.

As with the window, this is a very simple door and you do NOT have to construct the door in this way.
If you prefer to purchase a door, make sure the rough opening size is adequate. The frame rough opening in this instance can be anything. Just tweak the dimensions to match your rough opening. **Be sure you subtract $\frac{1}{2}$" from the rough opening to allow for swing!**
1) To begin, we are using 1'4 planks and $\frac{1}{2}$" plywood sheeting. Cut the frame pieces as shown below. You DO NOT have to miter the corners, we just recommend it for aesthetic purposes.



We will show the door in this example with a pattern cut out of the front and back sheeting, but this is not required. It is purely for looks and does not affect the integrity of the door at all.

Before you attach the panel to the door frame, you will want to check the swing in the doorway. We have allowed for $\frac{1}{2}$" swing, but depending on construction methods and accuracy, swing may be affected by as much as 1".

Please ensure the frame will swing in the opening without getting stuck or caught. You should allow more swing once you add the door panels so check after each step to ensure swing is not impeded.

Materials

Description:	Qty:
1x4x6' Planks	5
4x8'x$\frac{1}{2}$" Plywood Sheet	2
Hinges	3

2 Attach the front panel to the door frame, and MAKE SURE THE CORNERS ARE SQUARE and edges are flush. You may even want to sand the corners of the inside swing so they are rounded a little bit.

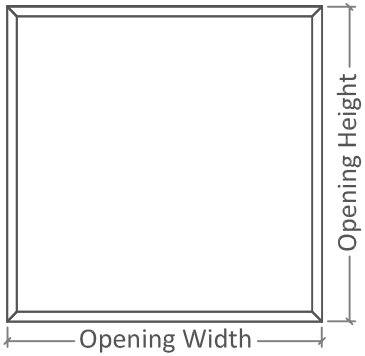
3) Insulate the door with either blow foam or regular R-13 roll insulation will work.

4) Enclose the door with the second panel. You may want to round the edges on this side also.

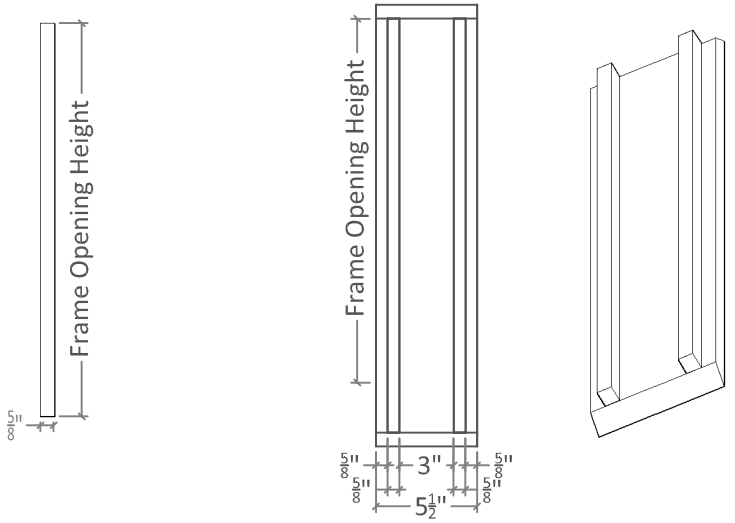
5) A single slide bolt works wonders on the outside and inside to lock the door shut. If you don't want your kids to be able to lock the door, only install the slide bolt on the outside! The slide bolt also offers a grip to pull the door open.

Windows are complicated to design and when at all possible, should be purchased. These details are for a very simple sliding window. You will need, and know how to use, a miter saw, a router (preferably with a guide) or table saw with an adjustable gouging blade (or blade kit, and a square (speed square, carpenter square, either works).

1) Cut and miter 1x6 planks as shown below. DO NOT ASSEMBLE YET!

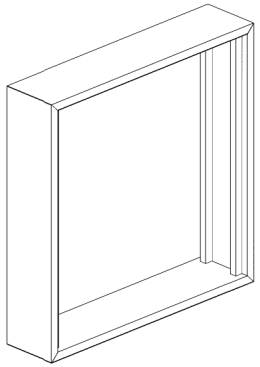


2) Rip a 1x4x8' into strips $\frac{5}{8}$" thick. These will serve many purposes in the future but for now, we just want four of them to match the opening, so either rip and cut one piece or rip an entire board into $\frac{5}{8}$" strips and place the pieces to the side for late.



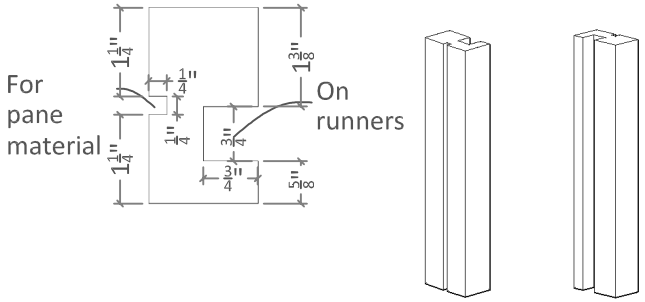
3) Using 1" screws and a level, screw two runners onto one of the exterior frame pieces. Repeat for the second side (see above).

4) Check to make sure the runners will fit inside the frame when assembled. Make any adjustments if necessary. DO NOT ASSEMBLE!

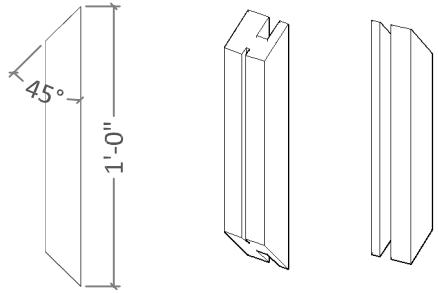


5) Rip a 8'-2x6 down the center lengthwise.

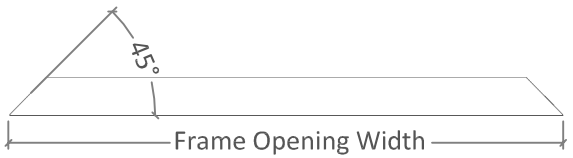
6) Use a router to gouge a $\frac{3}{4}$"x$\frac{3}{4}$" groove down the center of one side. Flip the board over and gouge a $\frac{1}{4}$x$\frac{1}{4}$" groove down the center of the other side (see detail)

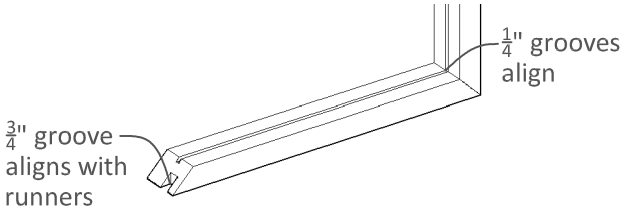


7) Miter the ends. Make sure the narrow ($\frac{1}{4}$x$\frac{1}{4}$") groove is facing inwards! The wide ($\frac{3}{4}$x$\frac{3}{4}$") grooves go out toward the runners, the inside grooves will hold a pane of window material.



8) Rip a 2x6 lengthwise down the middle and miter ends as shown below. Run a $\frac{1}{4}$"x$\frac{1}{4}$" groove down the middle, just as with the 2x6 above. Hold them together and MAKE SURE THE GROOVES ALIGN PROPERLY! You will need to gouge a $\frac{3}{4}$x$\frac{3}{4}$" groove out of the ends.





Materials

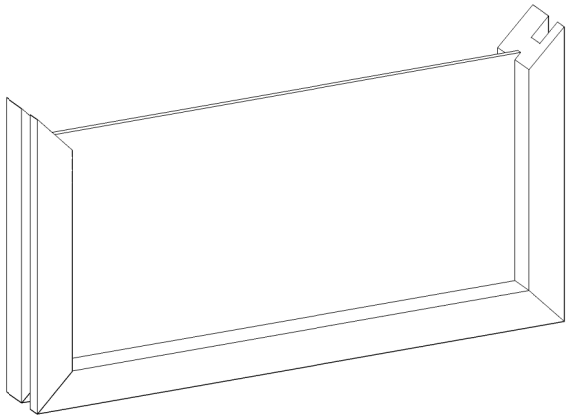
Description:	Qty:
2x6x6' Planks	24
1x6x8' Planks	6
1x4x8' Planks	6

9) Lastly, before construction, you will need to determine what type of pane material you want to use. For a playhouse, we would recommend against using glass and go with clear acrylic or polyvinyl pane.

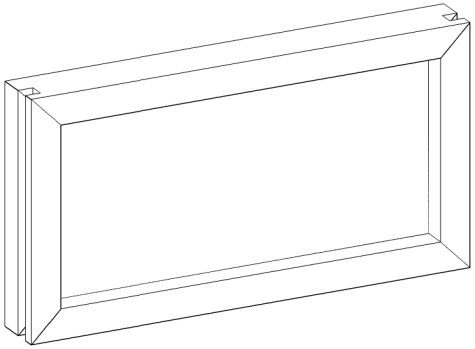
IF YOU DECIDE TO USE GLASS, WE HIGHLY RECOMMEND PURCHASING $\frac{1}{4}$" THICK PROFESSIONALLY CUT PANES. YOU WILL NEED 2 PER WINDOW. ON THIS SET THAT EQUALS 12 PANES OF GLASS TOTAL.

SHOULD YOU DECIDE TO CUT YOUR OWN GLASS, YOU DO SO AT YOUR RISK! USE ALL SAFETY PROCEDURES AND EQUIPMENT WHEN HANDLING GLASS!

10) Assemble the window frame around the pane. Run a bead of epoxy or polyethylene (or equivalent) seal down the frame pieces as you assemble the window to get a good, weather-tight, bond. You could increase rotting and mildew growth if you choose not to.

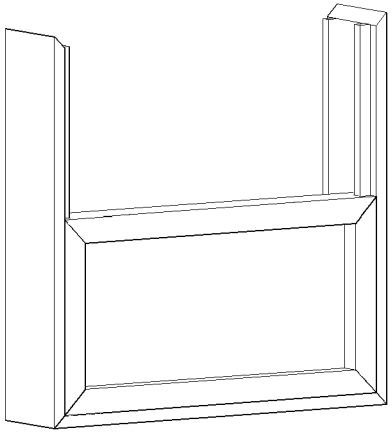


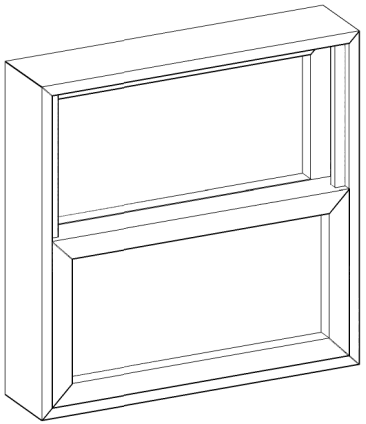
11) Cap off the window with the top piece and connect all pieces with 1" small radius ($\frac{1}{4}$" or smaller) screws. Be sure you don't screw down into the window pane!



12) Repeat for second window.

13) Once you have two window assemblies, two exterior frame pieces with runners on them, and two exterior frame pieces for the top and bottom, carefully assemble the exterior window frames AROUND the window assemblies.





14) Cap off the window assembly, Ensure the windows slide easily and there is about $\frac{1}{16}$-$\frac{1}{8}$" gap between the window assemblies so they will not impede each other's movement.

15) Place the window in the window frame. Screw the exterior frame to the opening provided. You may have to use a soft mallet or a dead-blow hammer to get the window centered in the opening.

16) How the windows stay up or down is up to the user. We recommend getting a slide bolt and installing at least one on the movable assembly. Which assembly moves or stays stationary is up to the builder.

17) Lastly, before construction, you will need to determine what type of pane material you want to use. For a playhouse, we would recommend against using glass and go with clear acrylic or polyvinyl pane.

IF YOU DECIDE TO USE GLASS, WE HIGHLY RECOMMEND PURCHASING $\frac{1}{4}$" THICK PROFESSIONALLY CUT PANES. YOU WILL NEED 2 PER WINDOW. ON THIS SET THAT EQUALS 12 PANES OF GLASS TOTAL.

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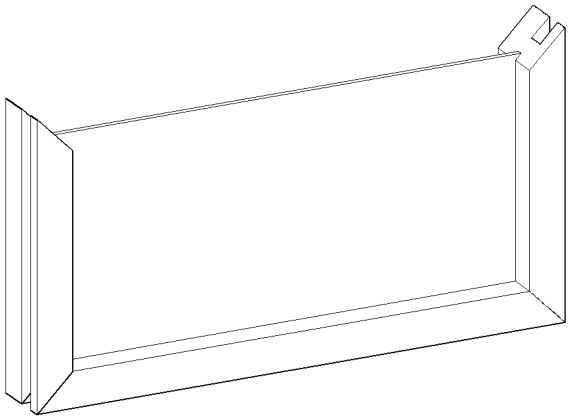
18) Assemble the window frame around the pane. Run a bead of epoxy or polyethylene (or equivalent) seal down the frame pieces as you assemble the window to get a good, weather-tight, bond. You could increase rotting and mildew growth if you choose not to.



Additional Stuff for the Window Assemblies:

1) Use weather striping along the seam between the window assemblies to keep wind, and weather out as much as possible.

2) We recommend having one stationary, and one movable window. Most often, anchor the exterior window to the top of the assembly and let the interior window slide up and down.

1) Drill a $\frac{1}{4}$" pin hole in the interior, left or right, side of the movable window assembly.

2) While the window is closed, drill into the runner about $\frac{1}{4}$".

3) Keeping the drill bit inside the pin hole, pull the drill bit back out a little, raise the window and drill back in about $\frac{1}{4}$" into the runner. We recommend about 3" increments.

4) Repeat as necessary for how much you wish the window to open. Cut a length of $\frac{1}{4}$" dowel (may need sanding to slide freely) to use as a pin.

5) Add a slide pin to both the top and bottom of the movable window so the windows can be "locked" shut if you wish.

To determine the rafter lengths,

1) Divide the entire span by two (example: If the roof span is 20 feet, divided by 2 = 10 feet, 0 inches.

2) Now add the overhang (example: 18-inch overhang makes the length 11 feet 6 inches).

3) Now, convert the 6 inches of the 11 feet 6 inches into a fraction. It happens to be 0.5 (6 divided by 12). Thus 11 feet 6 inches is now 11.5

4) Suppose you desire an 5/12 roof pitch, or for every 12 inches horizontally, you get 5 inches up and 12 inches vertically. Convert that number by using the rafter conversion chart below or can be found on any framing square.

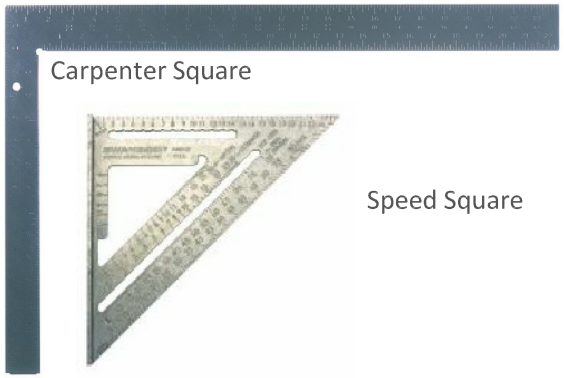
5) For the purpose of this article, the 5/12 roof pitch converts to 1.083 on the rafter conversion chart found on any framing square.Therefore, 11.5 x 1.083 = 12.4545 feet is what the rafter length will be.

6) Obviously, getting to the thousands of an inch is a feat in itself, so lets just round to the nearest $\frac{1}{8}$" which is 12.5 feet or 12'-6".

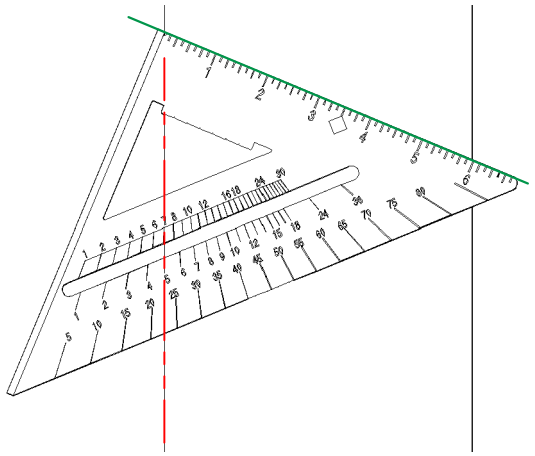
Roof Slope	Factor
Flat	1.0
1:12	1.003
2:12	1.014
3:12	1.031
4:12	1.054
5:12	1.083
6:12	1.118
7:12	1.158
8:12	1.202
9:12	1.250
10:12	1.302
11:12	1.357
12:12	1.414
13:12	1.474
14:12	1.537
15:12	1.601
16:12	1.667
17:12	1.734
18:12	1.803
19:12	1.873
20:12	1.943
21:12	2.015
22:12	2.088
23:12	2.162

If you feel at all uncomfortable constructing roof elements, consult a professional. Also, you will need to be comfortable with heights and please use all safety precautions when placing the rafters. Not every rafter will be directly above a solid surface and there will be open spans beneath them. We recommend use of a ladder and assistant(s) to help you get the rafters into position.

1) If you need to be introduced to the tools most professionals work with when cutting rafters. There are basically two tools used commonly, the speed-square and the carpenter square. Both are shown below.

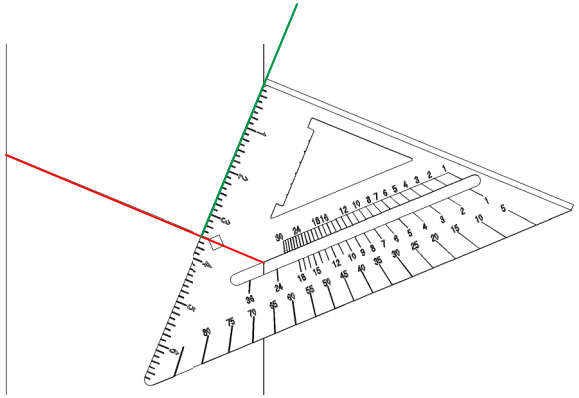


For the speed square, start by lining up your plumb cut by aligning the pivot point on the speed square with the desired pitch. This example is going to use a 5-12 slope but the principle is the same with any slope. See the diagram below.



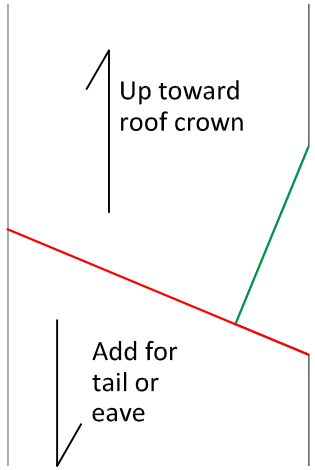
See how the red line lines up with the little notch in the back of the speed square and the number 5 in the "common". The common simply refers to a common rafter. Notice also, how the "HIP/VAL" lines up quite nicely with 7? For a $\frac{5}{12}$ slope, the corresponding hip/valley slope would be 7. Easy peasy.

2) Anyway, mark your line along the GREEN side with all the numbers.To make your seat cut, simply plumb the other side at the length you need and follow the diagram below for a nice $3\frac{1}{2}$" seat cut.



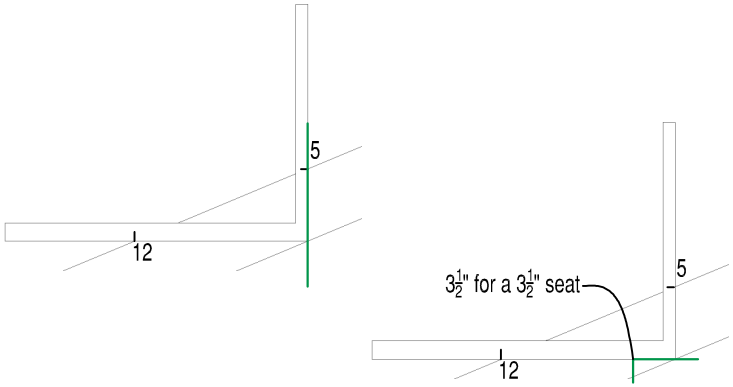
Align the diamond sight so the line cuts the sight down the center and your pivot point is flush against the outside edge of the rafter to be cut.

The RED line represents the mark you just made for plumb. Now again, mark along the green line for your seat cut. See the nice "L" shaped seat? Cut your seat out and it should look something like below.



The previous page contains instructions with a table which will help you measure the overall rafter length.

For a Framing (Rafter) Square it is basically the same principle. Align the 5 and the 12 as shown below. Mark the GREEN line shown in 1 for plumb.



To mark the seat measure the $3\frac{1}{2}$" on the square and mark the plumb at the end as shown above in 2.