Shedking's Gambrel Shed Building Guide

by John Shank, owner of shedking, LLC 2014



This shed building guide should be used in conjunction with the shed plans available at shedking.net . These sheds can be used for storage sheds, chicken coops, playhouses, tiny houses, garden sheds and more!

I have tried to make this guide as simple as possible, and I have tried to make my building plans as comprehensive and easy as possible to follow and understand. If at any time anything presented in the plans or building guide is not clear to you please contact me at shedking@gmail.com.

As I always advise, please get a building permit and have your plans inspected and gone over by your local building inspector. Many counties in the United States do not require a permit for structures under a certain square footage, but it is still very wise to get the advise of your local building department no matter what the size of the structure.

If after purchasing a set of my plans and you want to know if they are good for your county, I won't be able to answer that question! All my plans are written utilizing standard building practices, but I cannot write my plans so that they satisfy every local building code.

Safety is and should be your number one concern when building any outdoor structure.

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Disclaimer

Do not purchase materials or attempt to build this shed project unless you have studied the information provided thoroughly, and have verified all dimensions and material requirements for yourself.

Also verify that the plans conform to local building codes and practices. Although every effort has been made to ensure the accuracy of the information and design, the user is ultimately responsible for the use of this information. All information provided is copyrighted and cannot be duplicated without the permission of Shedking.

You, the plan buyer and builder, assume all risks and responsibilities associated with building this shed/barn and hold harmless John Shank, shedking.net or barn-n-shed-plans.com from any misconceptions or misunderstandings about anything construed or implied in these plans.

Shed Floor Construction

The plans that you have purchased show a wooden shed floor with 4x4 treated skids that can be anchored down with concrete anchors in the corners and blocking of some sort used in between those anchors. Or, the 4x4 skids can be resting on a base of 4" compacted stone. Building a wooden shed floor on concrete anchored posts is one of the most widely accepted methods of anchoring a shed floor for county permits. You will want to check with your local county building inspector to make sure you adhere to their regulations.

Your shed floor is going to be built off of 4x4 skids which are attached to posts which are in turn sitting in a hole filled with concrete, usually with the bottom down below the freeze depth. This will typically be 30" or more. Obviously if you live in a warmer climate this will not be an issue for you, but it would still be wise to check to see what depth you need to dig for your anchors. Check to see what your depth should be by calling your local building department.



Framing a Wooden Shed Floor

A wooden shed floor consists of the following:

4x4 skids Treated lumber Anchored Posts Joists -Treated Lumber Rim joists -Treated Lumber Band boards -Treated Lumber Floor Sheeting -Treated Lumber optional



Having level ground to build your shed floor on is the ideal situation. Unfortunately this is seldom the case! If your ground is not level, you will have to take steps to either level it out, or shim up your shed floor where ever necessary. The optimal system for good support under your wooden shed floor is to have a 4" thick level bed of gravel. This can be the entire area of the floor, or just where your skids will be located.



If you are building your shed on very uneven ground then you may have to have your floor supported with all concrete anchored posts, or concrete posts in the corners with some sort of support blocking in between these anchors. These can be pieces of treated 2x4's or concrete blocks.



1.Cut all skids to proper length listed in the plans and place them on the ground according to plan specifications.

2.Cut all interior floor joists and 2 rim joists to proper length and position on top of the skids you just laid down on the ground.

3.Cut the band boards to proper length. Make marks for your joist locations simultaneously on both band boards for nailing your floor joists in the right spots. You'll use 16d galvanized or coated nails here.

Nail one band board onto the floor joists using 2 - 16d nails per end.



4.Now pull the floor joists over until other ends are above the other skid and nail the other bandboard in place.

5. With the floor framed up and band boards in place, pull your floor frame so that it is correctly positioned over the floor skids.

6.Square up your floor by first taking diagonal measurements from opposing corners. These two measurements need to be equal. As an example, if your shed floor is 10x12, the diagonal measurements would be 15' 7-1/2". Measure diagonally across the floor to square it up, then measure diagonally across the other two corners. Shift the frame until both measurements are the same. Using a sledge hammer and gently tapping one corner or the other will help shift your framing to where it needs to be.

7.Double check to make sure that the 4x4 skids are in the proper position and then toe nail your floor joists to them. Make sure that your floor joists are spaced where they need to be. The ends of the skids should be flush with the rim joists outside face. Use 2 -16d nails per joist/skid location, one toe-nailed on either side of the joist into the skid.

8.If you are going to use the post anchoring method, you'll want to slide your shed floor over about 1 foot and mark the location for the holes you are going to dig. I typically put the corner posts between the first and second floor joists. Drop your 4x4 posts into the holes and plumb them up vertically. Mark from the bottom of the 4x4 skids adjacent to the posts. This is where you will cut the post(s), then slide your shed floor back over on top of the posts.



9.Make sure everything is lined up properly and your floor is still square. Attach your skids to the tops of the posts using mending plates and then add concrete down into the holes.



10.Next step is to nail down floor sheeting over your floor joists. Stagger your sheets for strength. The example shown below is with 3/4" treated plywood 4'x8' sheets cut to fit.



Floor Sheets Staggered for Strength

11.Nail the sheeting down with 8d or 6d galvanized nails every 6" along the perimeter and every 12" inside on the joists.

12.Start the first sheet in one of the corners by first nailing the short edge making sure its flush with the rim joist. Next you can pull or push if you have to to make sure the long edge is flush with the band board and nail this edge next. Next you will nail the flooring panel down along the inside floor joists.

13.Next continue on with the rest of the floor panels finishing that row first then nailing down the rest of the floor sheets.

14. With the floor finished now you are ready for assembly of the shed walls.

Building Your Shed Walls

Follow these steps for building shed walls. The two longest walls are usually built and placed on the floor first.

1.Shed walls can be laid out and built right on your shed floor. If this doesn't work for you a flat surface like a garage floor will work fine.

2.Cut bottom wall plates and top wall plates to length. Place your top and bottom plates together, and mark off locations of wall studs on both plates. This way your on center wall stud locations will be exactly the same for both plates.



Example of 2' on center wall studs

If you are going to add a window on this wall, or another door, make sure you indicate this with your wall stud markings. There's nothing worse with framing then to get your wall erected on the floor just to discover that you forgot to frame in for a door or window. You have to cut out several wall studs and re-do some of the framing.

3.Cut the wall studs to length, place between your top and bottom plates along with any door and window framing studs, and nail into place. Framing is typically done with 16d nails. Use 2 nails per stud nailed through the plate into the stud end.

4.If you prefer, you can cut your siding now and nail onto the walls before standing them up. This will actually help square your wall studs up. Leave a 1 to 2" overhang past the bottom wall plate so that when you go to stand your wall up, this additional siding can be nailed to the floors outside rim joist or band board with 6d galvanized nails.



Extend Siding Below Floor Sheeting

5. The top of the siding is flush with the top plate. Start by lining up your top left corner and left edge, then nail down the siding along that edge. Next, square your wall up by lining up the top edge with the edge of the top plate then nail the siding into the top plate. Now you can finish nailing your siding into place along all other studs and the bottom plate. Nail every 12" along the interior studs and 6" around the perimeter of the siding.

6. Stand your wall up and make sure it is in the correct position on your shed floor, then nail down through the bottom plate into the floor using 16d galvanized nails. I always try to nail into the floor joists if I can.

7.At this point, nail on a brace(s) temporarily to secure your wall in place while you build the opposite wall.



8.Build the opposite side wall in the same manner and stand in place, or if you want to continue using your shed floor for building walls, temporarily move the wall you just built and set it aside. This way you'll still have plenty of room to build your front and

back walls.

9.At this point, let's build the wall containing the door.

Building The Wall with Double Shed Doors

The information shown below is off my website and is for building double shed doors at any location of your wall. Your plans will be identical to what is shown below or may be a very similar version of whats illustrated in the following pages. If you want to frame your doors out with cedar as opposed to 2x4's and 2x6's, you would just place the 2x's on the back side of the door panel, and frame out the front with 1x4 cedar pieces.

Step 1

Before you begin any framing for your shed, it's best to decide what size doors you actually need because the framing for the wall containing these doors will have to be framed correctly for this.

For our example to use to explain how easy this really is, I am going to use the following guidelines to build a 5' wide double door for a shed that has a 10' long wall that this door has to be framed into.

This is really easy if you are siding your shed with the smartside siding panels, or planning on siding over OSB sheets with some sort of lap siding. It doesn't matter.

Ok, lets say with this 10' wall you want your door on the right side 1' away from the corner. Here's what the framing for this wall will look like with 16" on center wall studs, and the example shows a wall that is 7' tall.



Step 2

When it's time to put your siding on whether it be OSB or T1-11 or smartside siding panels, the next step is to find the exact middle of your door opening. Cut your siding to the desired length. Usually this will be so that your siding extends down past the floor by about 2" or so. What ever you decide on this measurement, it should remain the same all around your shed.

If you are just using osb, your first osb panel will be attached to the wall framing so that your panel edge is even with your middle of the door mark. To make things easier for you, a temporary board can be nailed on to the rim joist or band board so that your siding panels rest on this board. Nail this panel to the wall framing along the header edge, and the jack stud of the door framing. You won't be nailing into the bottom of this osb panel where the door will be opening.



Using a reciprocating saw you can cut the door panel out from the back side then cut the front section left on the bottom front with a circular saw.

If you plan on building a ramp for your shed, you will want to cut the bottom of your door panel so that it is flush with the top of the floor.

The next panel can now be placed into position so that the overlapping edge is in the right place leaving a gap that is consistent with the grooves in your panels if you have them. Nail this panel to the framing and cut this panel as you did with the first.



Now both panels have been cut out and your shed wall containing the door opening will look like this:



We have our 5' door opening for double shed doors and we have the two door panels we cut out that we can now build our doors with.

We can start with either panel, it makes no difference. If you decide that you want a shed ramp on this shed, as I mentioned earlier, the panels we have for the doors will have to have the bottoms trimmed off so that the panels when opened and shut will clear the top of the shed ramp.

For this example, we will figure on cutting the panels off for a ramp. This works out to be roughly about 2" off the bottom of each door.



Working with each door panel individually, we can now frame the outside of these panels with 2x4's and 2x6's as such. These doors will be easier to build using exterior grade 1.5" screws, screwing from the back of the panels into the front 2x4's and 2x6's.



With the door panels assembled now with 2x4's and 2x6's the shed itself now needs to be framed out with 2x4's and a lentil around the door opening The 2x4's will serve as door jambs and should be screwed or nailed to the frame flush with the door opening.

The door lentil can be made of a 2x6. Mount the jambs on each side so that they extend above the door opening about 1/4". Once the door jambs are screwed on and in place, your lentil can be nailed into place. With the door jambs extending 1/4" above the door opening, this will allow the doors to swing freely.



Building Single Shed Doors Made Easy



Here's a simple, fast, and very easy way to build your single shed doors up to 36" wide. You could go wider, but any wider than 3' would necessitate the building of double shed doors as the weight would be too heavy.

Our example will be to frame in a single swing shed door on a 10' long wall. This method will work for placement of the door anywhere you want but for example sake, we will be building this shed door 3' from the right side and it will be a 3' wide door.

Here's what the framing will look (below) like for this shed wall, with our wall height being just shy of 7'. 7' is a typical height for shed walls. If you are wanting to put in a pre-hung exterior door, then 8' would be your ideal wall height.



The framed wall shown above is without any other walls showing for illustration purposes only. Your shed will probably have all walls up and possibly the roof framed before any door construction occurs!

For this door opening we will have a 2x6 header framed in above the door opening.



Construction of a door header is shown above..

If you are siding with a material like t1-11 or LP smartside siding panels, or putting lap siding over 1/2" osb, this method works great!

Take a sheet of siding mentioned above and cut it too length so that you will have a 1.5" to 2" overhang at the bottom past the floor. This is for weather protection. Nail on your siding panel (the full 4' width) so that the entire door opening is covered up but your panels vertical edges fall right in the middle of the wall studs.



This panel can be nailed to your wall framing with spiral 6d galvanized nails. Just make sure not to nail the bottom under the door opening as we will be cutting our panel out to use for our door.

The easiest way to cut this panel out is to use a reciprocating saw or sawzall saw. Start on the inside and cut the siding out along the framed door opening all the way around down to the floor. The very bottom of the door will have to be cut out from the outside using your sawzall saw or a circular saw set to the depth of your siding thickness. When you are done, your wall with cutout will look like this:



With our door panel cutout, set it aside. We want to next nail on 2x4's around the outside edges and make a 2x6 lentil for the top of the door as shown below.



Next step is to frame out our cut out door panel with 2x4's and 2x6's. These can be attached with 6d galvanized nails nailing from the siding side into the 2x material. Frame out the door panel as shown in the illustration below. Attach the hinges to the door, and place a temporary 2x4 nailed to the floor so that you can rest the door on it while attaching the hinges to the framing around the door opening.

The 2x material around the perimeter of the door panel should be flush with the panel edges. This will allow you sufficient clearance for the door swing.



The 'D' handle shown on this shed door is available on my website. Look on the homepage on the right side and you will see a link for shed door hardware. This is a great supplier of shed door hardware and windows, etc.

Back Wall Framing

Our next phase of this shed building project is to build the back wall.

1.Following the plans again, cut the top and bottom plates, and wall studs to proper length, and build any headers if needed.

2.Assemble and nail this wall, attach the siding if you are doing this first before standing wall up, then stand this wall up and nail into place with 16d nails.

3.You'll want to make sure to nail the vertical corner studs together but first make sure the outside edges are flush. Nail about every 12" using 16d nails.

Gambrel Shed Roof Construction

These are the steps for building the gambrel roof for your shed:

- 1. Making trusses.
- 2. Placing and nailing the trusses onto the walls top plates.
- 3. Cutting and the installing the support studs from top plate to truss on the end walls, or building separate end truss assemblies.
- 4. Adding loft joists and flooring. (this should be done before sheeting the roof)
- 5. Sheeting the trusses with 1/2" osb or plywood.
- 6. Siding the upper roof ends.
- 7. Cutting and installing the front and rear fly rafters or overhangs, and side overhangs.
- 8. Installing felt paper, and drip edge.
- 9. Shingle installation.

Making Trusses

1. Cut truss pieces and gusset plates for just one truss, according to the truss layout in the plans.

2. Assemble your first truss by laying the pieces out on a large work surface or floor in the proper order then connect them together by nailing on 2 wooden gusset plates per joint. Nail gusset plates on one side first, flip over and nail on the remaining gussets. Each truss assembly will have a total of 6 gusset plates.



The most important thing to remember here is that the distance at the bottom of the truss from outside edge to outside is exactly the width of the building (not including the width of the siding, just to the outside edges of the top plates). This may be off somewhat but should be very close! Place this first truss on top of your shed walls to verify that it fits. You may have to push or pull the ends a little to get it to fit.

Your plans may show building end truss assemblies for the ends or framing in vertical studs after your end trusses are nailed into place. If your plans call for the end truss assemblies, build these now and nail into place using 3 16d nails per truss end.



Use 3 16d nails per truss end

If your plans call for framing in vertical studs after the end trusses are in place, measure and cut these vertical pieces and nail into place.



End wall studs notched to fit for nailing to trusses

3. Assemble the remaining trusses in the same manner as the first. Set the trusses on top of your shed walls, space and nail them in place according to the on center locations in the plans. If you are using hurricane ties (great idea and your building codes probably require this!) nail these in place now. Make sure if you are putting loft floor joists in that the hurricane ties are on the opposite side of the truss from the floor joists.

Adding a Shed Loft

If you want to have a loft in your shed, now is the time to add the loft floor joists and loft flooring. I always do this step now because it is that much more difficult to do after the roof sheeting is on.

If your shed is x' wide from opposite ends measured across from the top plates, this is the length of your support boards for your loft. The easiest way to measure the angle cuts for your supports is to put them in place and mark off with a pencil the outline of the outside edge of your roof truss.

Now, take this board down, and cut on your lines to get your length and angles. Put back into place to make sure it fits, then cut the remaining number of support boards needed for your loft.

I usually will place these support boards right up against and nail to the roof truss. See the illustration below.



Place Loft Joists Before Adding Roof Sheeting

You can see from the illustration above that if you have already placed your roof sheeting on the trusses, measuring and installing the support boards for your loft would be just about impossible.

Now all you have left to do is to floor your loft with 1/2" or 3/4" plywood or osb board.

Install the roof sheeting panels

Next step is to install the sheeting over your trusses. It's usually a good idea to start at the top and work your way down, making sure that your truss members stay lined. Stagger the joints and nail every 8" using 6d galvanized nails. You may have to push and pull your trusses to make everything lines up correctly.





Siding the Upper Front and Back Ends

Depending on the size of your shed, now is the time to finish installing any remaining siding that needs to go up. Anywhere you have horizontal edges it's a great idea to install your metal 'z' flashing in between the panels to protect from rain water.



After you have the Z flashing in place, start by placing your siding in the middle and working towards the outside of the roof with additional siding sheets. Your siding panels can be cut to the approximate height needed before installing them and trimmed

off later after installation with a reciprocating saw or circular saw.

If you plan on installing gable vents on the front and rear now is the time to do so before placing the front and back overhangs. It will be easier for you to cut the holes out.

Front and Back Fly Rafters and Side Overhangs

If your plans show fly rafters (see the illustration below) use the following directions. If they show framed ladder overlooks, skip to the next section, Framed Overlooks.

With the barn style shed roof, fly rafters are the overhangs on the front and back of the roof. These fly rafters are installed after the sheeting is done on your shed roof and the upper end siding is on.

The side overhangs have a 22.5 degree beveled cut on one side which is the side that gets nailed to the siding. The lengths of the side overhangs are equal to the measurement from the outside edges of the front and rear fly rafters.



For a complete explanation of how to measure, cut and install fly rafters and side overhangs, please visit my website here: <u>http://www.shedking.net/shed-roof-flys-overhangs.html</u>.

Framed Overlooks

Your plans may show the front and rear overhangs as being constructed by making a ladder assembly called an 'overlook'. These are made simply by cutting and making 2

trusses, then nailing 2x4 'struts' between the 2 trusses.



These overlook assemblies can be made in sections and nailed to the siding using 16d nails every 8" or so. They should be installed so that the top edge is flush with the adjacent truss. If you are using this option of building the overlooks, they can be installed before sheeting your roof, then starting your roof sheeting from the outside edge of the overlooks. Either method is fine, but your roof structure will be stronger if you sheet the roof after the overlooks are installed.

The illustration below shows a gable shed roof with roof sheeting installed after the overlooks are on. The concept is the same with the gambrel roof.

Once the overlooks are installed, measure and cut for the side overhangs and blocking that gets nailed on just below the bottoms of the overlooks.



Roofing Felt Paper and Drip Edge

Now you are ready to install your 15# felt underlayment, and drip edge (optional).

Roofing felt paper is installed by starting at the bottom edge of your roof, or the bottom edge of the side overhang. I usually put this down with a hammer stapler using 1/4" staples. On the bottom row of felt paper, don't staple the bottom edge because the drip edge on the bottom of the side overhang should be under the felt paper. The remaining drip edge is nailed down over the felt paper. Continue on with the next rows of felt paper overlapping the bottom edge by about 3". On the ridge, you will want to overlap again.

Putting Shingles on The Roof

Next step is to shingle your roof. I usually recommend using dimensional shingles because they are easier to install, but if you prefer, and the cost is way less, use 3 tab shingles. Install shingles according to manufacturers instructions.

I usually will leave about 1/2" to 1" of shingle out past the drip edge. Just an extra measure of protection here and it's worth it.

Adding Cedar Trim

Add cedar trim to the corners of the shed walls by measuring and cutting for the front wall first. Measure down from the bottom of the block to the bottom edge of the siding for both the front wall trim and back wall trim. Nail this corner trim so that the outside edge is flush with the siding using 8d spiral shank nails. Nail with 2 nails every 2'.



Next measure and cut for the side wall corner trim and nail into place as you did with the front wall corner trim. Make sure the corners and bottom edges are flush.

Simple Shelf Building

I usually always wait till shed construction is done before adding any shelving. That way, I can use all left over 2x4's, osb, siding, etc for the shelf construction.

The easies way I can tell you to add shelves to your shed would be the following:

Decide on the length and width of your shelves. I prefer going from stud to stud, but this may not always be possible.

Lets say you want an 8' long x 1' wide shelf. First thing to do is build the frame for your shelf as follows:

Cut $2 - 8' \log 2x4$'s, then cut $4 - 9'' \log \text{support } 2x4$'s. Build your shelf support by lining up the back and front 8' board and mark off 2' on center marks for the 9'' 2x4's. Assemble and nail together with 16d box nails so they look like this:



Now, hopefully with some help, place this frame exactly where you want it, and nail from back support board into a wall stud everywhere the two meet up, using 16d nails. Cut some support boards for this shelf as such:



Now, place and nail your support boards to the wall stud and cross members of your shelf as such:



Finished shelf frame with 45 degree support boards. First shelf height usually about 34" to 36" off finished floor.

One nice feature about building your shelves in this manner is that there are no shelf supports coming off the ground to interfere with a riding mower, etc.

If you want to add a second shelf above this, do it in this manner:



You can nail on leftover osb or plywood to complete your shelving!

The Finishing Touches

This is probably the best and most important advice I can give you for helping you give your shed some long life after you have built it. All vertical surfaces should be caulked with silicone. Latex caulk will crack over time in the weather, so use silicone.

Upper horizontal surfaces should be caulked, but I don't recommend the lower vertical surfaces as this will just retain water. For example, if you have a window on your shed and you have trimmed it out with lets say cedar, caulk all vertical edges, and upper horizontal edges of each trim board, but not the under edge as this will hold water and moisture. You don't want that as it causes rot over time.

Next after caulking, prime your shed with an oil based paint. I always use oil based paint on anything exposed the the elements outdoors, and sheds are no exception. After priming, your remaining finish coats of paint should also be oil based paint, and put at least 2 if not more coats of this on.

I can't stress this enough. Over time when wood is exposed to rain, it will rot unless you do something to deter this, and the more coats of oil based paint you can put on your shed, the better. Although not a major investment in money, you still don't want your shed to rot. Check it in the spring, and recoat with more paint, and recaulk if necessary.

Another nice little tip I'll give you is this. On the wooden edge of your floor that's exposed where your door way is, go buy a thin piece of aluminum angle iron and cut it to length, drill holes every foot on the top with a beveled bit, and attach to your floor. This will help immensely with keeping this area from deteriorating from moving

garden equipment in and out over the lifetime of your shed or barn.



Here's an example of a piece of aluminum angle iron used for a door threshold on your shed or barn.

I want to hear from you!

I sincerely appreciate the fact that you chose my website to purchase shed and barn building plans from. I am deeply indebted to you. Please, if you have made it this far with the construction of your shed, barn, playhouse, greenhouse or other outdoor structure, please send me an email and a picture if you don't mind, of your newly built project. I would love to hear from you, and I will post your pictures on my website.

You can email me and send pictures to:

shedking@gmail.com

Take care, and I look forward to hearing from you.

John Shank shedking.net

Gambrel Sheds You Can Build Using this Shed Building Guide



<u>12' wide x 16' long</u>



<u>10' wide x 12' long</u>



<u>8' wide x 10' long</u>



<u>12' wide x 12' long</u>



<u>12' wide x 16' long with side porch</u>

10' Wide x 16' Long x 13' 10" Tali Barn Shed Plans





autorian 18x 16 Barn Shed Plans Investment Base



<u>6' wide x 8' long</u>







8' wide x 12' long