

LL Shed Plans

Is pleased to offer you this **FREE** guide to building your shed from our shed plans.

Just print and follow for easy instructions on building your shed.
Or just refer to it if you have a question along the way.

If you have a question and it is not covered in this guide, please feel free to contact us at:

<http://www.llshedplans.com/cpcontact.htm>

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If you would like to see pictures of a shed being built step by step follow this link
<http://llshedplans.com/stepbystep1.htm>

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Lu Lewis

INTRODUCTION

I have written this guide to assist you in the building of one of the sheds from one of our web sites. This guide is by no means meant to replace local code requirements. Each state, city and town seem to have their own ideas on what a shed or even what foundations should be. Make sure you check with your local officials to determine if the method you have selected meets with local or state requirements.

I will go through each step of building a shed. Some areas are more difficult and I will spend more time and provide more details in those areas. This project is really a simple one. If you are totally unclear as to what steps to take next, send us an e-mail or head on down to your local library and you will find many good books on shed construction. I never claimed to be a writer☺

FOUNDATIONS:

Whether you decide to go with a complete concrete slab type floor and footing or use blocks or concrete pillars is up to you. I will not get into detail about soil preparation. You know the type of soil you are placing the building on and will need to take steps to insure it is prepared to support the weight of the concrete slab or the building. A foundation anchors the entire structure against settling or being turned over by the wind. It also distributes the load of the building into the ground and protects wood from direct contact with the ground. Foundations normally consist of two parts, a footing, which distributes the weight of the building underground and a platform or pier, which raises parts of the building above ground.

The length and width of the buildings stated on the plans will be to the outside edge. So if you have a plan that says, 8'x10' building, then this is the size you will want your slab or floor to be.

First I will explain a foundation where the slab and footing are poured as one.

SLAB AND FOOTING AS ONE: I will not get into the details of using batter boards, wire mesh and reinforcing bars. There are whole books written on the subject your local lumber dealer should be able to provide you with details. You can also do a search on the Internet for information.

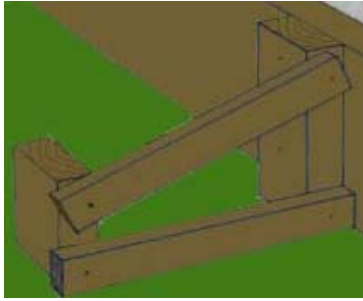
The first thing is to stake out the outline of your shed. I normally use eight stakes, one at each corner and one in the middle of each side. It is important that your dimensions are correct. Once you have your four corners staked off and insure that the dimensions are right, you can run a strong string around your layout. You can use a simple string level to insure that your forms will be level. For each section of forms, nail three 16 inch 2"x4"

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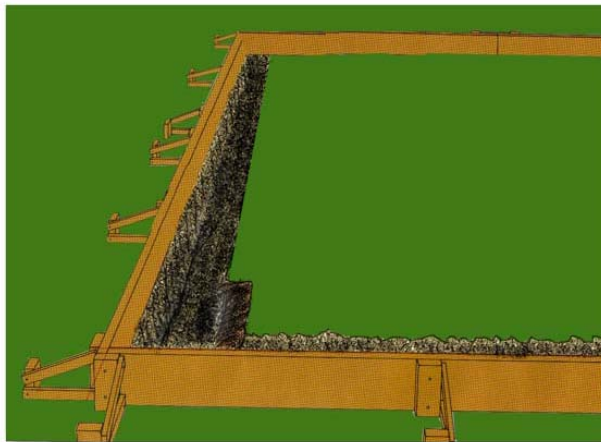
stakes to an 8' length of 2"x4" making sure the top of the stakes are level with the top of each form board. Set the interface of the forms along the strings lines and drive the stakes into the ground until the top of each form is level with the line.

Make sure there are no gaps between the bottom of you forms and the ground where the concrete can seep out. Where two forms come together, nail a section of plywood across where the two boards butt together. This will prevent the concrete from being forced out of this crack between the ends of the forms. Brace the forms boards,



This is the time to double and triple checks your dimensions. If your measures are off, it is not easy to tear up a slab and start over. If you find after you pour your slab your measures are off, don't panic. You can just change the size of your building to match you slab. The only different between an amateur and a professional, is the professional has made so many mistakes, they have finally learned how to cover them up.

Along the interface of each form board dig a trench 12" wide and as deep are required for footing in your area. Bevel 5 inches from the inner edges so that the concrete slopes down into the trench and doesn't just have a straight drop off into it.



***** This would be the time to put your reinforcing bars in the trench if you are going to use them****

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Spread a 3-inch layer of clean 1 inch gravel over the main part of the building site, but don't let any gravel fall into the trench. The bed of rock under the slab keeps the concrete dry and permits it to shift without cracking with weather changes. Cover the gravel with sheets of 4-mil polyethylene. Over these sheets lay down 6x6-10/10 wire mesh extended almost to the form boards.

Now, you are ready for the concrete. It is very, very important that once you start pouring it you finish the whole slab before it settles or starts to dry. So once you start, fill the area to the top of your form boards, take a 2x4 and use it to help compact the concrete down into the trench. Level the surface with a screen made of 2x4. You can also just use a 2x4 longer than the width of your form, with a person on each end. Work it back and forth as you move it forward to level the concrete with the top of your forms. Then smooth the concrete with a Darby or Trowel.

This is the time that if you know anyone who has worked with concrete to have them over for lunch. Laughs. People cause most problems with concrete at this stage, by over working it.

Also at this time, put your 1/2" x 12", J shaped anchor bolts in place. Making sure they are straight and you don't have one placed where a door or a wall stud will be. Also make sure they stick up enough above your forms to get your sole plate on and have room for the washer and nut. I use a plastic lid from a large coffee can to hold the bolt up and in place until the concrete sets enough to remove it. Just drill a hole in it, put your J anchor with washer and nut in place and a small block of 2"x4" and let the lid sit on the top of the concrete and the edge of the plastic lid on the form. Once the concrete sets up enough to hold the bolt, I remove the plastic lid.

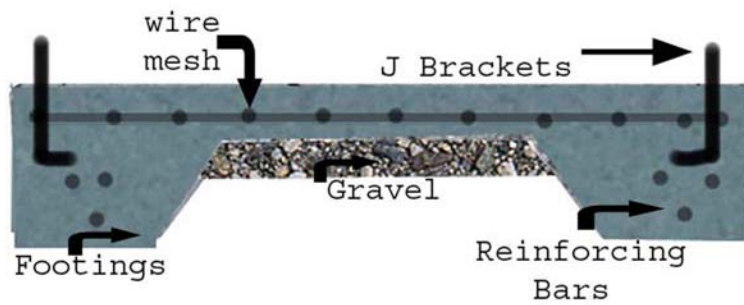
You can use your sole plates to do the same thing. Drill all your holes in the four sole plates for your walls. Put each sole plate in place along the edge of your concrete. Since I like to build the wall as one unit and then put them in place I don't use this method. It can be hard to get your sole plate back up from the concrete once it settles. Your other choice is just leave the sole plate there and build your wall with the top plate and studs. Move this unit on top of your sole plate on the concrete and toe nail the bottom of your studs in place.

When the concrete is hard enough to walk on but still damp, use a power trowel on it if you desire to have it smooth. Sprinkle it with water, cover it with sheets of polyethylene and let it cure for 3 days or more before you remove the forms.

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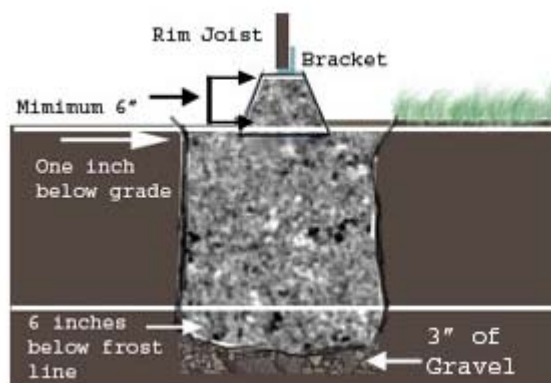
Here is a side view of what you are trying to accomplish.

PIER BLOCK FOUNDATION:

If you are working with uneven ground, local code requires footing but you want a wooden floor or maybe you just want a more simple way to make a foundation for you shed, then pre-cast pier blocks are the way to go. There are many sizes and styles to choose from. I would suggest one with a metal anchor strap or post anchor.

The footings are easy to do.

Dig your hole to the depth and size to meet local code requirements. Fill the hole within one inch from the top of grade. Wait a few minutes for the concrete to settle enough to support the weight of the pier blocks. Soak the pier block with water, then position the blocks in the center of your hole and level them in both directions. Line the anchor strap up with your string. Fill in around the base of the pier block with dirt to prevent the concrete from drying out too quickly. It is suggested that you place one on each corner and one center between the two corners on each side of the building. Some plans will call for blocks down the middle.



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CONCRETE BLOCKS WITH NO FOOTINGS:

If you don't need footings, then you can go with standard concrete blocks. I like to use a small slab type block that is common at most concrete or lumber dealers. They distribute the weight of the building over a larger area and if you need to shift the building, you will have more area for the rim joist without moving the blocks. The most common size is 12"x16". Use one or two at each location to get the building high enough off the ground.



THE FLOOR:

This section is for those who have decided to go with a wooden floor.

You will find the dimensions and detailed drawings on the Floor Layout page of your plans. Some of the plans will call for pressure treated 4"x4" for rim joists, otherwise we used double 2"x4" or double 2"x6" for rim joists.

Some of the plans will call for a lag bolt and shield that will be used to anchor the ends of the rim joist together. It is the same as a bolt and nut.

You drill a hole for the shield in the end of one of the 4" pressure treated lumber and a hole through the other one for the lag bolt. When you screw the lag bolt through one 4"x4" into the pre drilled hole that you have placed the shield in, as the lag bolt goes in, it will force the shield to spread and anchor the two together.

This will help insure the bottom of the shed doesn't spread apart if the ground starts to settle under it.



Follow the diagram on your Floor Layout to determine which rim joist goes inside of the other one. Nail the rim joist in place using 16 d nails. You should use joist hangers to put your cross members in place. ****Now is the time to double check that your outside rim joists are square*****. Measure diagonally from a far corner to the opposite corner. Then do the other two corners. The measurements should be exactly the same.

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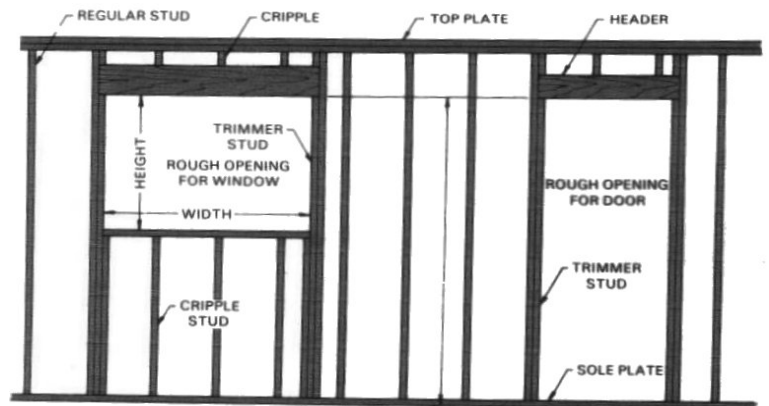
If they are not, then make adjustments to the rim joist to get the building square. This needs to be done before you put the plywood for the floor in place. If you insure the rim joist is square now, it will save you a lot of problems later during the construction of the rest of the shed.

Most of the plans call for $\frac{3}{4}$ " CDX Tongue & Groove (T&G) Plywood for the floor. Install it running across the 2"x4"s. Nail it with 8 d common nails at 6" on center around the perimeter of each sheet and 12" on center at the interior of each sheet make sure two seams don't line up; this will normally require you to cut some pieces into two sections.

WALLS:

The procedure is much the same from this point on if you have a wooden floor or concrete.

Most of my plans call for a wall height of 7'10"; this is so with a two inch over lap at the bottom, you can use a full sheet of siding without having to cut it. You can adjust the wall height up and down to meet your need, by just changing the length of your wall studs. This will not affect the angles cuts on the rest of the building.

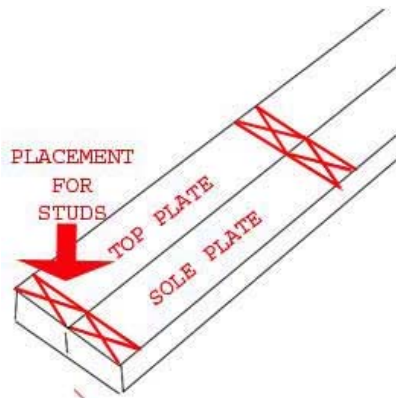


Study your Wall Layout of the plans to determine which wall goes inside of the other one. I normally do the back wall first. Cut and lay out side by side your Top and Sole plates. Measure and mark the placement for your wall studs. **If you have a concrete floor now is the time to drill the holes for your anchor bolts.**

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Cut the required amount of wall studs for this wall. It is best to cut one and use that as a master for all the wall studs. Then if you are off a little, all the walls will still be the same height. Build the wall on the floor. If you do not have room to build the walls on the floor for some reason, put the sole plate in place and build up from there. Frame the walls using Wall Plan Layout. Nail through top and bottom plates into the end of each stud.



Use two nails per stud. It normally works best to build the walls as a unit and then put them in place. Put the sidewalls up so that both ends (if shown in plans) are flush with the floor panel and the outside is flush with the outside edge of the floor. Nail through the sole plate into the floor panel with 16 d common nails, 6" on center, staggered. Use a level to insure the walls are plumb. Use a spare 2"x4" to brace the walls in place while you work with the other walls. Nail through inside studs on the left and right wall panels into the outside studs of the front and back panels at 6" on center.

****If you are changing the door size, and expand it more then what the plans call for in width, change the header to double 2"x 12"s up to eight feet. If you decide to exceed the door dimensions beyond eight feet, check with an engineer. On all headers above the window and doors, put a piece of 1/2" plywood between the two boards to make them flush with your other 2"x4"s. On the Saltbox styles and some of the bigger building you will see the requirement for this Spacer between the two 2"x4" studs that make up the corners.****

At this point you have two choices. Continue on with framing and move to the roof or put the siding in place. I always go ahead and put the siding on for two reasons. One, it makes the building more sturdy as I climb around on the roof section. Two, it insures the building will not twist as the roof rafters go in place.

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SIDING THE WALLS:

You can cover the exterior walls with about any type of siding you choose. Each manufacturer will provide instructions on the preparation work that needs to be done before applying their product.

Most of the plans call for T 1-11 type of siding. I use it for several reasons. T 1-11 (which may be referred by different names in different parts of the country), are sheets of 4'x8' wood, that is pre-primed for painting. It has grooves 8" on center and an over lapping edge to form a tight seal where two sections of siding meet.

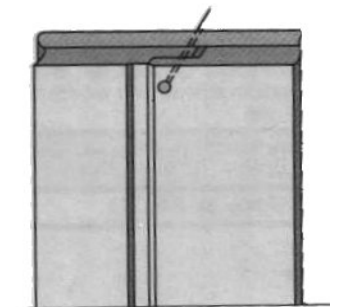
After you have all four walls up, check that they are plumb. Make whatever adjustments you need to before putting any siding in place.

Start at any corner of the building and work your way around, or I put up the full sheets first then fill in the corners. When you cut some of the sheets along the length, you will have a rough edge to deal with. I use these in the corners with the rough edges meeting at the corner and not along another sheet of siding. Trim boards will later cover the corners so the corners will not be seen. If for some reason you don't want to use trim boards on the corners but still want a nice clean look, then you will need to buy additional siding to get the thin edges to meet at the corners.

To nail the siding in place, T 1-11 or overlap siding is normally nailed with a nail spacing of 6 to 8 inches along the edges.



On a building with a gable end, you should cut $\frac{3}{4}$ " off the top of the siding where it meets the top wall plate on the ends where the gables peaks are. This way when you put the siding in for the gable end, you will be able to nail the bottom of that sheet to the top wall plate. Where the top of one sheet and the bottom of another meet on the gable end, apply caulking between the ends.



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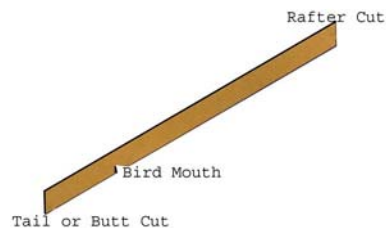
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ROOF:

Before I get into the roof rafters and the how to.

A couple of safety tips:

- 1. Watch for overhead wires.**
- 2. NEVER grab for anything you drop while working on a roof. This is when most accidents occur, people grabbing for things and lose their balance. Let it fall, it takes less time to go down and pick it up, then it does to recover in the hospital.**
- 3. Clear an area of at least ten feet around the building of all your tools and equipment. Most can survive an eight-foot fall without too much damage, but it is no fun to land on the saw you left running to save time 😊**



A roof is not hard to do, but can be hard to explain. First study your plans completely. Some of the plans will call for a ridge beam, others will not. Some buildings will use a more complex truss system.



Here is an example of a building with a ridge beam

Use the pattern provided with the plans to draw your angles on your roof rafter. I suggest you do one for each end before cutting them all. If you are doing a truss type, make one and test it on the building before making them all. The end rafters will go flush with the outside of the top wall plate. Check to insure that the middle of the rafter is center on the building, unless you are building a saltbox styles or one of the lean type buildings.

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NOTE: I am a firm believer in using metal ties. They are cheap, quick and easy to use. They will also prevent you splitting the wood by driving nails in at an angle.

RIDGE BEAM SYSTEM: Cut and tack in place the two end rafters. Use a string and some kind of weight attached to make sure they are center of the building. Put your ridge beam in place and allow for the correct over hang on the ends. Some plans call for you to notch the end of the ridge beam to make the top lookout.



NOTE: A lookout is just a board that extends pass the edges of the building to make the over hang or eave. Your plans may call for them to be placed from the outside edge of the building; other plans may call for them to be anchored back to one of the roof rafters.

Once you have the two end rafters and the ridge beam in place, then put the up right end studs in place to support the end rafters. Insure your end rafters are plumb. Then put the other rafters in place. I do two on each side at a time. This is to straighten any bow that may be in the ridge beam and to insure I don't force a bow in it. Even if your plans don't call for them, I suggest you place cross braces across each set of rafters. This will just be a 2"x4" board, place about 18 inches down from the inside peak of the building and nailed from one rafter to the opposite rafter. One of the biggest concerns in roof design is that you build it in such a way, that the weight of snow or the weight of the roof doesn't push the outside walls apart. These cross braces will greatly improve the strength of your roof system.

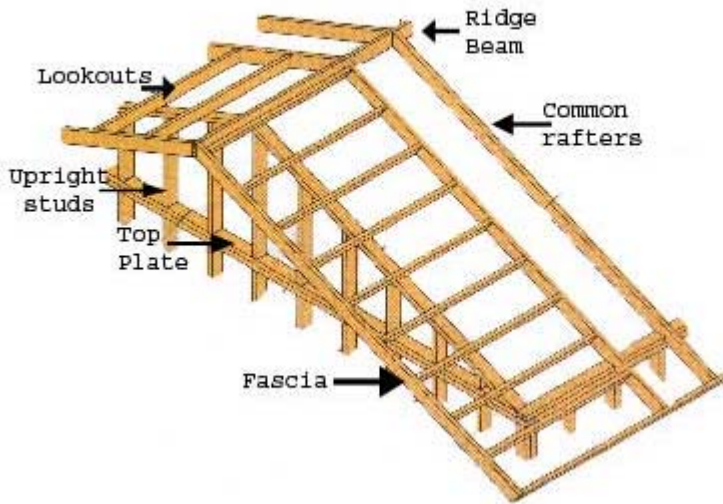


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TRUSS SYSTEM:



If you are working with one of the larger buildings, then most likely your plans will show a truss system for your roof. I still suggest building one and testing it on the ends before building all the trusses. On most of the buildings using a truss system for the roof rafters, the end rafters will not be the same size as the middle rafters. This is so when the lookouts are anchored to the second rafter back and rests on the first rafter they will be the same in height. Follow your plans as to size and location of the splices.

With some truss systems you don't have a ridge beam to tie all the rafters together. I suggest you nail a short 2"x4" from the inside of one rafter to the next, 18" down from the top. This will help tie all the rafters together as one unit and will help keep them straight while you put the roof sheeting in place.

All the buildings have an overhang to help keep water off the sides. If everything went right you should have the same amount on both sides of the building.

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ROOF SHEETING:

This is a pretty simple part. It is best if you can get someone to assist you with it. The pitch on most of my plans is 8/12. That is pretty steep. It will help dump snow and water off faster. This will also add a lot of additional overhead storage.

If you have not put your lookouts in place yet, now is the time.

The most important part is not to line up the ends of the plywood on the same rafters. To avoid this you will normally have to cut some sheets in half. There should be at least two rafters between where the ends of two sheets meet and the ends of the sheets above or below them.



edge of your fascia boards.

Fascia: Some plans will call for a 2"x4", 1"x4" or a 1"x6" board. The fascia is a board nailed to the ends of your roof rafters and lookouts to close the ends off and provide some support. If your plans call for lookouts front and back, nail the fascia on them as well. Line the edge of your sheeting with the edge of your fascia board. When you install the drip edge it will go over the

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FINISHING THE ROOF:

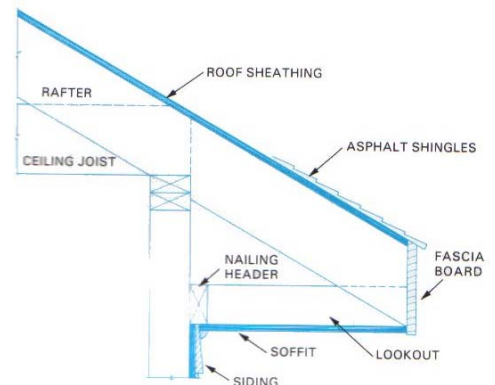
The next step is to cover your roof sheathing with felt paper. The rolls will provide details instructions on how each manufacturer recommends you use their product. If you rip a hole in it during installation, I suggest you patch it with another piece of felt nailed over the hole. Then seal around the edges with a caulk made for roofing.

Then install the metal drip edge completely around the premier of your building's outside edge. The metal drip edge helps hold down the edges of the roofing felt and helps keeps ice and water from getting under the edges of your felt.

Each manufacture has their own instructions for installing the shingles.



FINISHING THE BUILDING:



1. **Install your windows and doors.**
2. **Decide if you are going to enclose the Soffit or not. If you decide to enclose it, then you will need to put in a nailer header. It is just a board nailed to the wall so you have something to nail the back side of the material you are using to fill in the Soffit .**
3. **If you do enclose the Soffit, then you will need to vent the building. There are many styles of vents for small buildings. Some that goes into the ends of the buildings, others that are placed in the Soffit or even on the peak of the roof. This really an important step, an enclosed building can get very hot, especially up toward the loft area.**
4. **Put your trim boards in place at the corners and around the doors and windows.**
5. **Paint if desired.**

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Send photos to LL Shed Plans, PO Box 991, Kearney, NE 68848. This is a must before you can kick back and party over your fine work. Smiles.

If you think of something I missed or that could use more detail, please let me know.

E-mail to lu_lewis@llshedplans.com

I wish you the best of luck with your project.

And always remember, any day you wake up alive, the rest is easy☺

Lu Lewis

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