

# Construction - 6x8 Hut - Front Panel

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## Tools

- Hammers
- Measuring tape
- Marker
- Chalk Line
- Cat's Paw

## Materials

- 4 91.5" 2x4 studs
- 2 65" 2x4 studs
- 1 full sheet 3/8" plywood
- 16d nails
- 8d nails

## Techniques

- Basic framing
- Basic squaring
- Custom cut

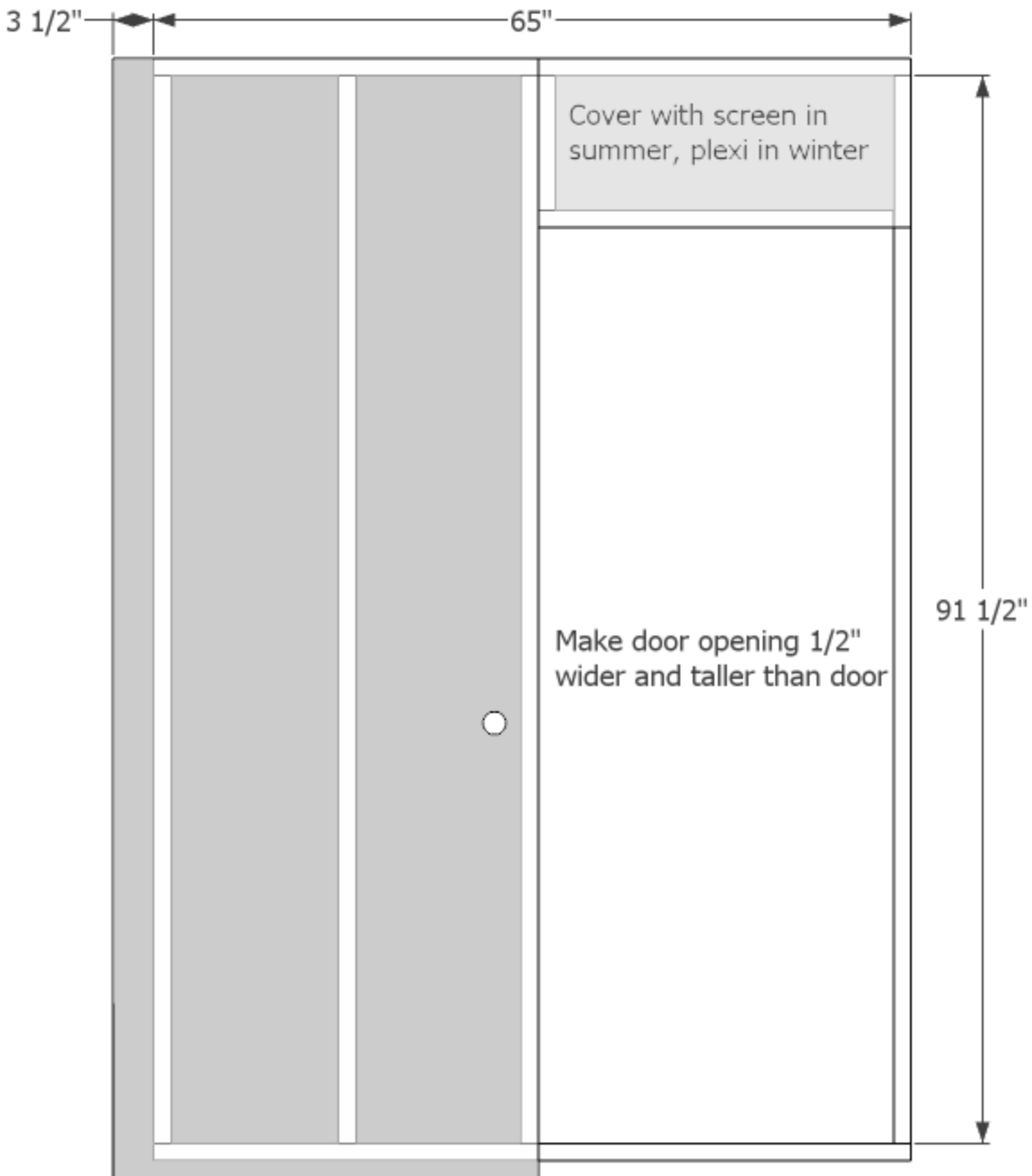
## Notes

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The location of the interior studs depends upon the width of the door, and so are not marked on the blueprint.

Like the back panel, the front panel has a 3.5" overlap on the side to cover the stud of the side panels. For the sake of neatness, you may wish to have a 5" strip for the opposite side, where the door hangs, to cover the join.

You may wish to hang the door in the panel before taking it out into the field. If that's the case, you'll want to install the kickstop boards to keep the door from falling through the doorway during transport. See the assembly instructions about installing the door for more details.



# Construction - 6x8 Hut - **Narrow Wall Panel**

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## Tools

- Hammers
- Measuring tape
- Marker
- Chalk Line
- Cat's Paw

## Materials

- 4 91.5" 2x4 studs
- 2 65" 2x4 studs
- 1 full sheet 3/8" plywood, 96"x48"
- 1 half sheet 3/8" plywood, 96"x24"
- 16d nails
- 6d nails

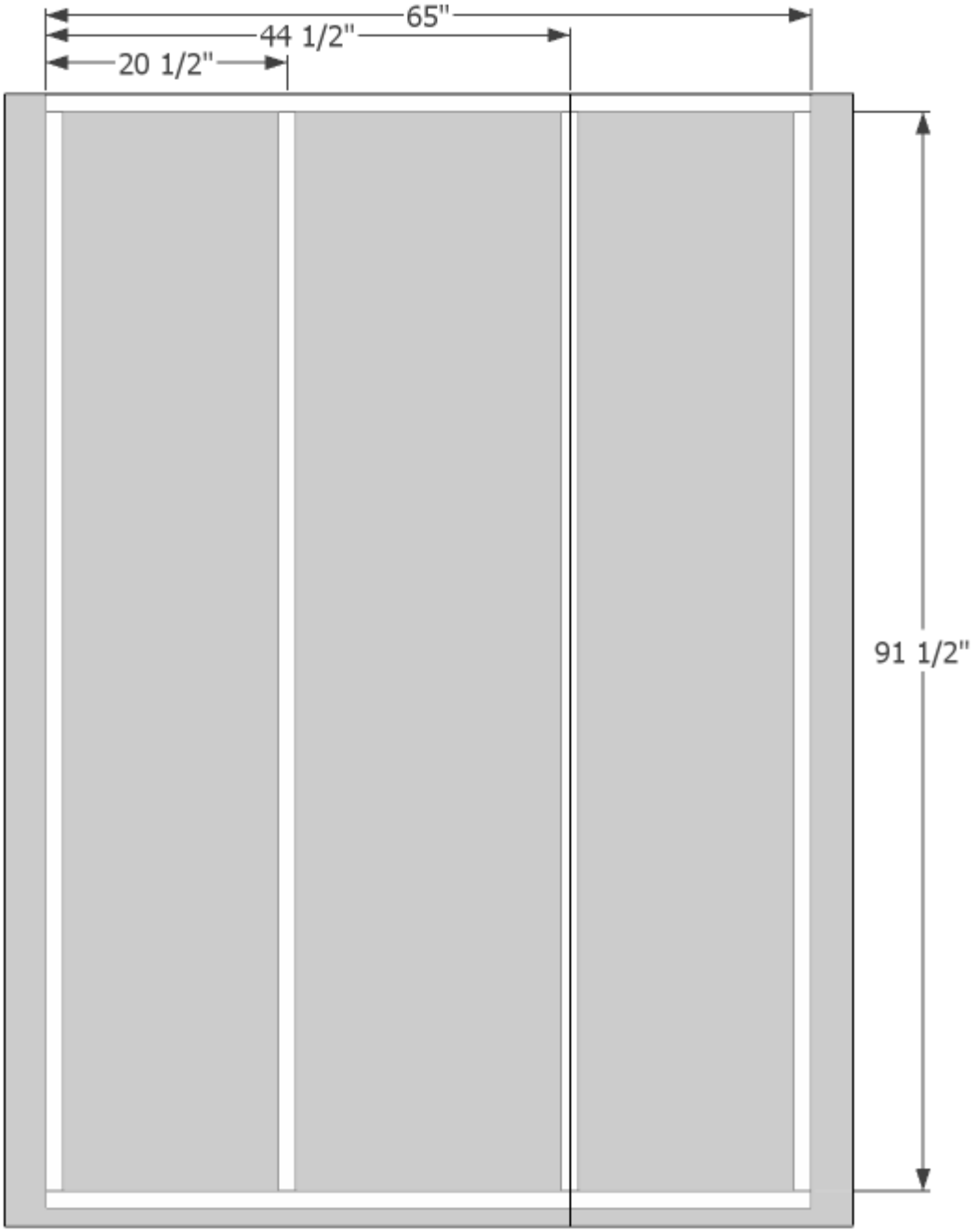
## Techniques

- Basic framing
- Internal squaring
- Toe nailing

## Notes

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The plywood on this panel extends 3 1/2" on each side past the stud frame, to cover the side stud of the side panels. You can confirm the squareness of your panel by sliding a scrap of 2x4 along the sides, under the overhangs. A crooked panel will have a different width of overhang from the top to the bottom. You may want to use toe nailing on the internal plywood seam to get better grip of the shared stud. Remember to match the factory-cut sides on the internal seam, to ensure a nice tight join.



# Construction - 6x8 Hut - Side Panel

## Tools

- Hammers
- Measuring tape
- Marker
- Chalk Line
- Cat's Paw

## Materials

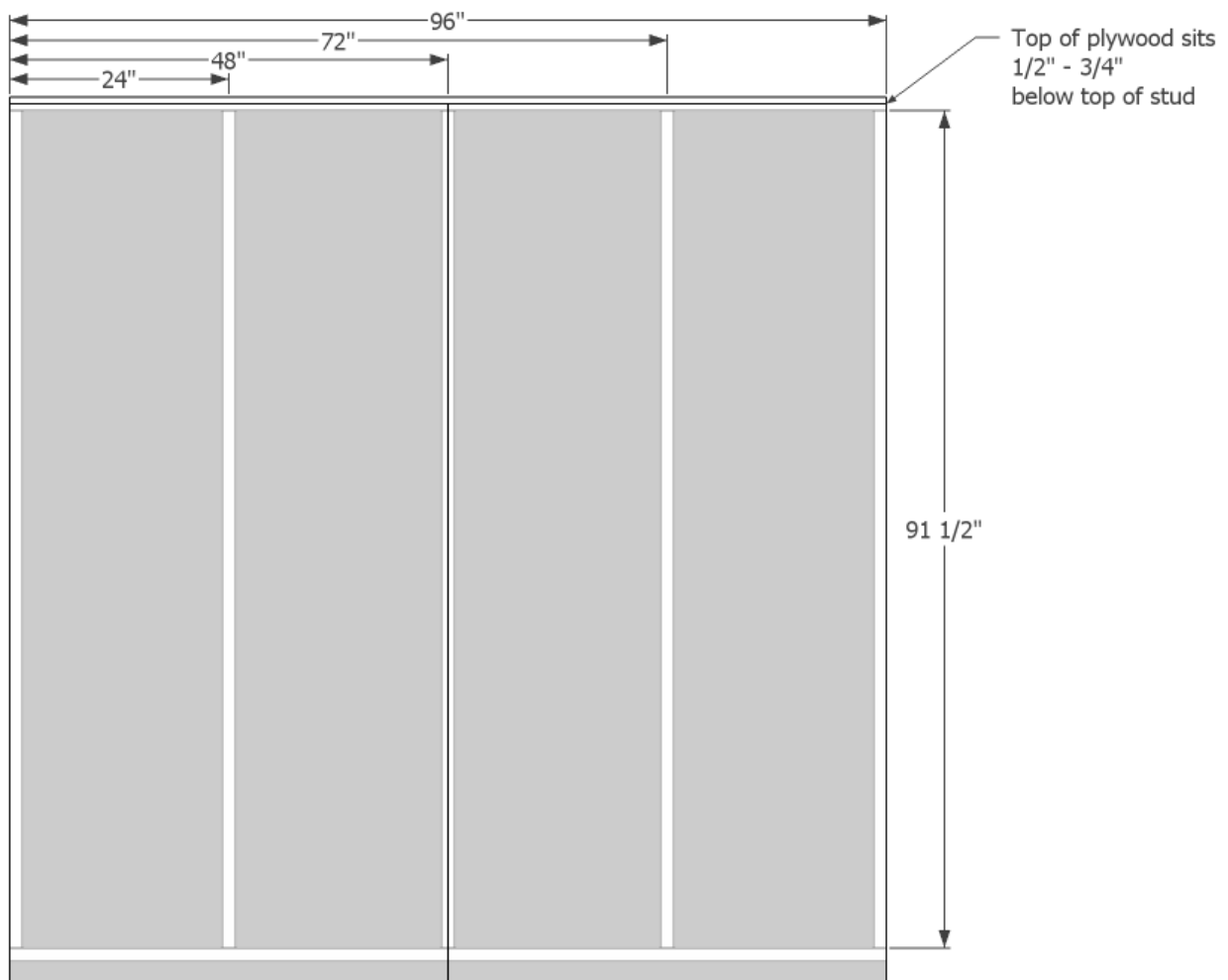
- 2 96" 2x4 studs
- 5 91.5" 2x4 studs
- 2 full sheets 3/8" plywood, 96"x48"
- 16d nails
- 6d nails

## Techniques

- Basic framing
- Basic squaring

## Notes

This is the simplest panel to build, consisting of two full sheets of 3/8" plywood covering the frame. The top of plywood should sit a bit below the top of the stud frame. This allows the plywood of the roof to rest against the top stud instead of pressing against the plywood of the wall.



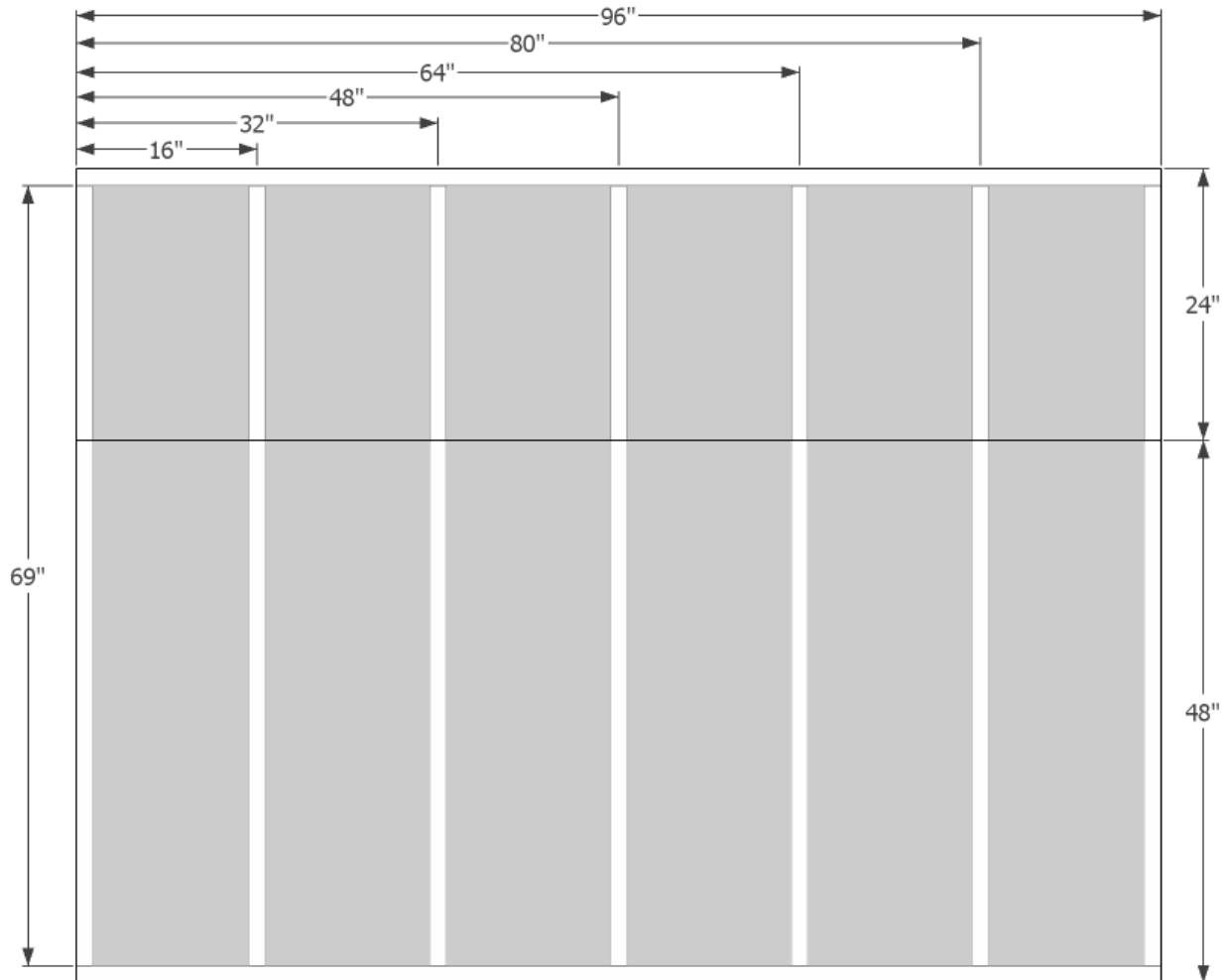
# Construction - 6x8 Hut - Floor

Tools	Materials	Techniques
<ul style="list-style-type: none"> <li>• Hammers</li> <li>• Measuring tape</li> <li>• Marker</li> <li>• Chalk Line</li> <li>• Cat's Paw</li> </ul>	<ul style="list-style-type: none"> <li>• 7 69" 2x4 studs</li> <li>• 2 96" 2x4 studs</li> <li>• 1 full sheet 5/8" plywood or OSB, 96"x48"</li> <li>• 1 half sheet 5/8" plywood or OSB, 96"x24"</li> <li>• 16d nails</li> <li>• 8d nails</li> </ul>	<ul style="list-style-type: none"> <li>• Basic framing</li> <li>• Basic Squaring</li> </ul>

## Notes

This is the most critical, and the heaviest, panel. Unlike the other panels, the interior studs are at 16 inch intervals instead of 24 inch intervals. Once you've put together the basic frame, square it and skin it with 5/8" plywood.

Set aside an extra pair of 96" studs to accompany the floor. These studs, applied in the field, will act as runners, providing extra stiffness and support.



# Construction - 6x8 Hut - Loft

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## Tools

- Hammers
- Measuring tape
- Marker
- Chalk Line
- Cat's Paw

## Materials

- 2 72" studs
- 4 62" studs
- 1 sheet 65"x48" 5/8" plywood
- 1 sheet 65"x24" 5/8" plywood

## Techniques

- Basic framing
- Basic squaring

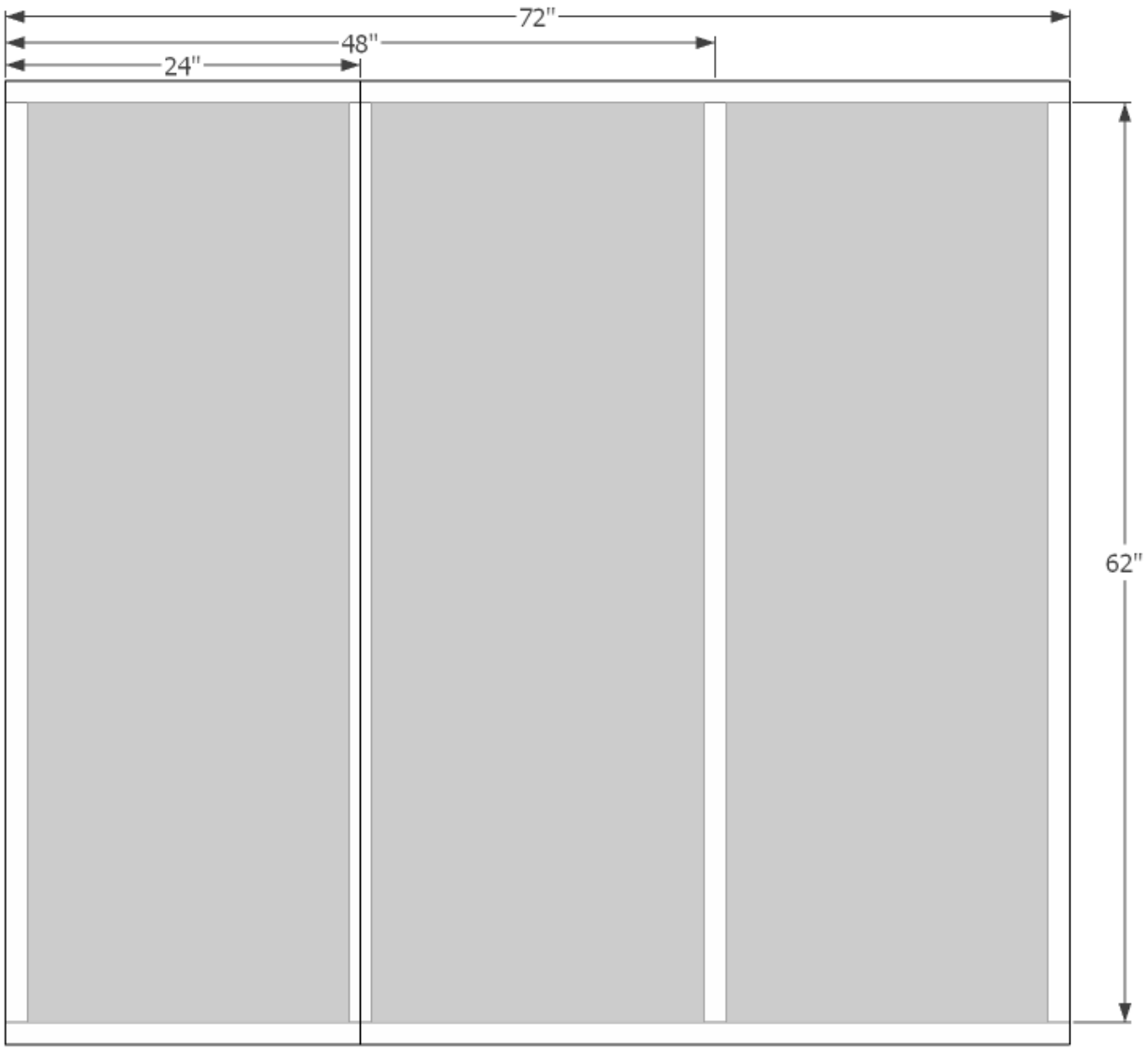
## Notes

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For the loft, you'll use the half-sheet of 5/8" plywood left over from building the floor, plus a whole sheet of 5/8", cut down from 96" long to 65" long. This will leave you with two 31" wide pieces of 5/8" plywood, one 2 feet long, the other four feet long, which can be turned into a 72"x31" front porch.

**Important:** the loft not only adds more floorspace to the hut, but also serves to hold the structure rigid and square throughout its volume, so *it should not be omitted*, even if the client isn't going to use it. The client may be unable to climb up to the loft, in which case you can use a short loft or, once the roof is in place, drop the loft to a lower level and create a crawlspace instead of a high loft.

One variant of the loft is the short loft, which is only 48 inches deep instead of 72 inches deep. A short loft makes the hut seem bigger by opening up more headroom, but it takes out of the total square footage of the structure. Be extra careful if working with a short loft - it will be attached to fewer spaces in the hut, and so will support less weight. Keep the support studs in place as an extra precaution.





# Construction - 6x8 Hut - Hi Hat Roof Panel

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## Tools

- Hammers
- Measuring tape
- Marker
- Chalk Line
- Cat's Paw

## Materials

- 2 93" studs
- 5 72" studs
- 1 96" stud
- 2 full sheets 96"x48" 3/8" plywood

## Techniques

- Basic framing
- Overhang squaring

## Notes

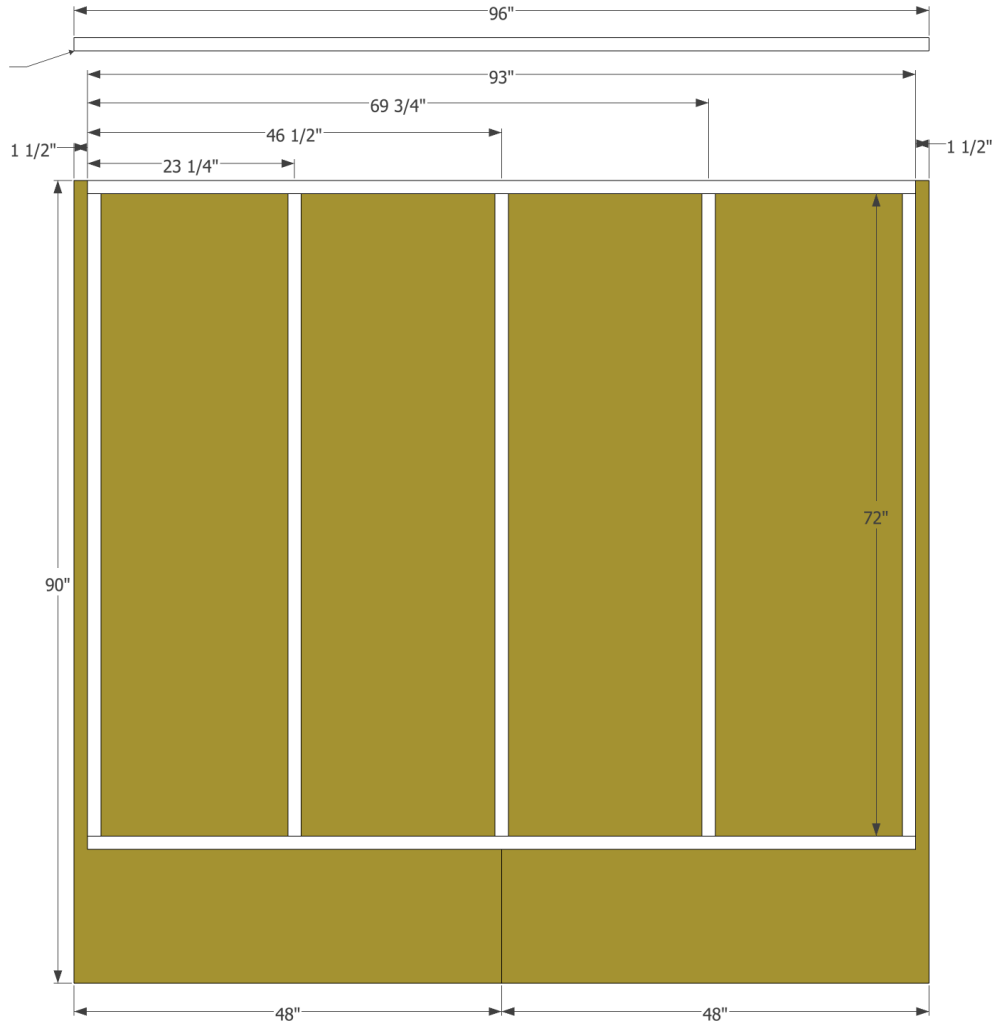
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This can be a challenging panel to build, particularly if you aren't careful.

To manufacture:

- Build the 93" by 75" stud frame.
- Align the long end of a 96"x48" plywood double layer to the 93" top stud. Attach so there's a 1.5" overhang on each side.
- Using the thin side of a 2x4 stud scrap, which is 1.5" wide, square the frame by making sure that the 1.5" overhang runs consistently down both sides of the panel. Secure the square.
- Attach the second piece of plywood to the now-squared frame. Snap your chalk lines. Finish attaching the sheathing.
- Screw the 96" overhang stud onto the top of the panel, capping the overhang plywood. Do not use nails! The 1.5" stud overhangs slide into the notches on the top of the gables, meaning that the roof panel's weight pulls directly against the overhang stud; although unlikely, this could pull the nails out. Use screws.

This 96" stud is screwed onto the top of the top 93" stud, matching the 1 1/2" overhang of the plywood.

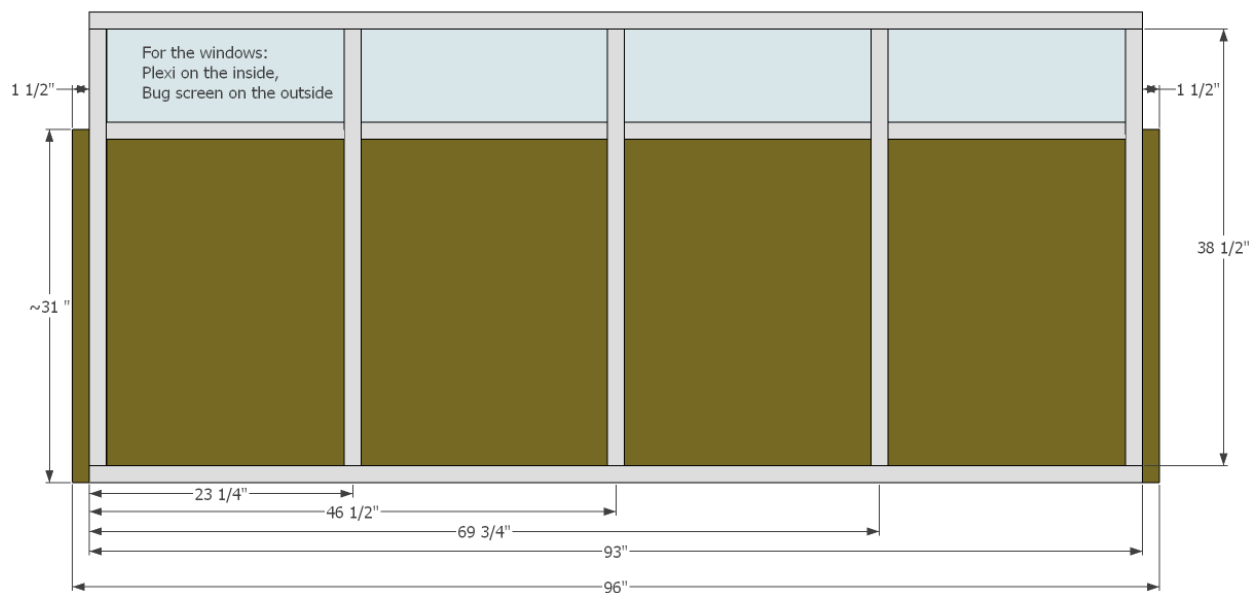


# Construction - 6x8 Hut - Topper

Tools	Materials	Techniques
<ul style="list-style-type: none"><li>• Hammers</li><li>• Measuring tape</li><li>• Marker</li><li>• Chalk Line</li><li>• Cat's Paw</li></ul>	<ul style="list-style-type: none"><li>• 5 38.5" 2x4 studs</li><li>• 2 93" 2x4 studs</li><li>• 4 assorted 22-24" studs</li><li>• 1 partial sheet 3/8" plywood, 96" long and at least 28" wide</li><li>• 16d nails</li><li>• 6d nails</li></ul>	<ul style="list-style-type: none"><li>• Basic framing</li><li>• Toe nailing</li><li>• Overhang squaring</li></ul>

## Notes

The topper sits atop one of the side walls, bracing the gables and providing a resting place for the roof panel. It's also the major source of light and ventilation for the structure. The size of the windows up top is arbitrary and based upon the width of the plywood you have on hand; in this example, it's a little over 31 inches because the remaining 17 inch strip is used for the floor insulation covering.



# Construction - 6x8 Hut - Hi Hat Gables

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Tools	Materials	Techniques
<ul style="list-style-type: none"><li>• Drill/driver</li><li>• Measuring tape</li><li>• Marker</li><li>• Chalk Line</li><li>• Carpenter's square</li></ul>	<ul style="list-style-type: none"><li>• 1 41.5" 2x4 stud</li><li>• 1 96" stud</li><li>• 1 62" stud <i>or</i> ~62 inches of scrap stud</li><li>• 1 72"x48" piece of 3/8" plywood</li><li>• 1.5" screws</li></ul>	<ul style="list-style-type: none"><li>• Angle cuts</li></ul>

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## Instructions

The hi-hat gables are the most unusual panels in the entire Mad Housers inventory. They're not square, or even triangular. The studs are not attached to each other; instead, they're mounted flat directly to the plywood and attached using screws. Furthermore, there is an intentional gap at the top of the panel where the roof panel's 'lock stud' slides into place during installation. For all its strangeness, however, the gables are actually simple to construct, as long as you're comfortable making diagonal cuts with a circular saw.

### *Cutting the plywood*

- Start with a single rectangular piece of 3/8" plywood, 72"x48". Use a chalk line to snap a diagonal.
- Cut the plywood into two right triangles, 48" high with a 72" base
- Measuring carefully along the hypotenuse from the bottom (narrow) angle of the triangle, mark 82 7/8" inches from the bottom. Use a carpenter's square to mark a line at a right angle to the hypotenuse from that mark. If your cuts are straight, the line will intersect the upright side of your right triangle at 41" and be about 5 1/2" long. It's OK if it's a little off, however
- Cut along the new line. This nips off a small triangle, and you may wonder why we bother. The reason is that when we used a straight 'shed' roof, rain would wick in between the underside of the top sheet of plywood and the stud of the roof panel, leaking right in the middle of the structure. Nipping off the top triangle means that the plywood is facing downwards from the rain at all points.

### *Cut the studs*

- Cut one stud normally at 41"
- Take a long (at least 84") stud. Laying the stud flat, mark 76 1/8" on one side of the stud and 81 3/8" on the other. Mark a line between the two points.
- Cut along the line. If you're planning to use scrap to build out the bottom stud (which is what we do), then hang onto the trimmed piece from the angle cut to fill in the bottom corner (see diagram).
- If you want a whole piece of stud for the bottom, take another 2x4 that's at least 63 inches, mark at 57" and 62 1/4", mark a line and cut.

### *Manufacture the panels*

It's very important that the studs are screwed to the plywood instead of nailed on - otherwise, the stud will simply pop off of the panel the first time the panel is flexed.

This is most easily done by laying the plywood on the floor and tucking the stud underneath it.

- Screw the 41.5" upright onto the plywood.
- Carefully making sure that the angle corner of the stud matches flush against the corner of the plywood, screw in the hypotenuse stud. The flat end of the stud should **not** come all the way up against the plywood. Instead, there should be a 1.5" gap between the end of the stud and the end of the plywood (see diagram).

- Screw in the bottom stud(s). This piece can be filled in with the cut from the hypotenuse stud and whatever scrap you have laying around; it's not important that it be a single piece.

## Notes

It's very important to remember that the two gables are mirror images of each other! Don't make 'two left feet'. It's easiest to simply make both gables at the same time, laid out on the ground in mirror images of each other, to prevent mistakes.

