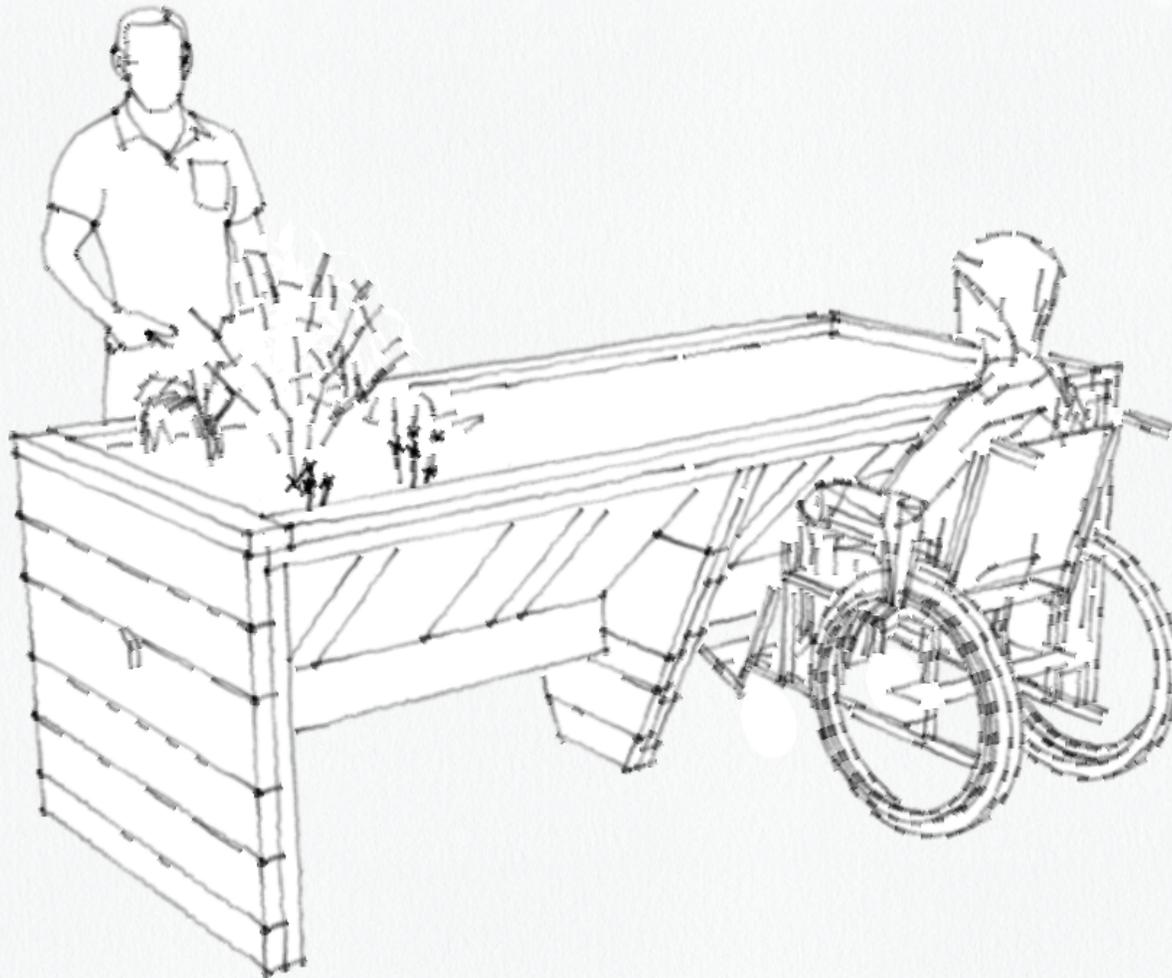


Accessible Raised Bed

Instructions and Plans



Introduction: Accessible Raised Bed

DISCLAIMER: Use of the plans is at your own risk. The Resource Conservation District (RCD) makes no promise and gives no guaranty or warranty regarding the accuracy, completeness, reliability, or functionality of the plans, or of the accessible raised bed identified within the plans. RCD does not assume responsibility for any impact that the use of the plans, or that construction of a raised bed pursuant to the plans may have on your or any third party's site, existing buildings, or personal safety. In addition, RCD does not promise that the plans are free from defects, whether in design or construction, or that the plans comply with any local or state requirements.

Resources

- Overview and Construction Guide Video: <https://youtu.be/mxzgut0dIDk>
- SketchUp Model: <https://bit.ly/sketchup2025>
 - Note: If you don't have Sketchup, you can download their free SketchUp Viewer from desktop or mobile here: <https://bit.ly/sketchupviewer25>
- Parts, Prices, and Tools (Excel): <https://placerrcd.org/projects/accessibleraisedbed/>

Care Guide

This bed is designed to endure a long life by resisting sagging and decay over time. Most of this is achieved through its design. However, it is made of wood – and wood will decay over time. Due to the nature of the use of this garden bed, it is not recommended to use treated lumber of any kind unless you know that what it is treated with is food safe or if you can ensure that the treated lumber will not come into contact with the soil.

To protect the accessible raised bed, it is important that you do several things well:

1. Place and seal the plastic lining correctly and limit all punctures of the plastic. Any hole, even small ones, will leak onto the wood below and cause decay over time.
2. Install the HDPE barrier along the long-edges to protect the LDPE plastic lining from tools and such.
3. Place a thin brick or other material that does not decay under the legs. This will keep the wood from touching the ground or other surfaces where water can sit for extended periods of time.

4. Use a food-safe, zero VOC (volatile organic compounds), wood preservative like Gardener's Supply Company Penetrating Water Proofer ([link](#)) at least on the top of all surfaces and the inside of the raised bed. Repeat application on the handrails once per year.

Goals (and advantages) of This Design

The primary goals of this bed include:

1. To increase access to the bed for those in chairs and for those who prefer/benefit by standing. This is achieved by the width of the garden bed (40 in.) and the "V" shape which allows someone to sit under the bed and reach further across the bed rather than bending at the hips. Those who prefer to stand can also benefit from this design.
2. To design a bed that (almost) anyone, with basic tools, can build. With the exception of a few tools and techniques that are novel to some people, I believe this bed can be built by almost anyone with basic building skills and confidence.
3. To design a bed that doesn't fail due to weight and decay/rotting over time while offering plenty of soil depth for roots. Many accessible raised beds fail due to weight and moisture and usually pretty quickly. This goal has been achieved in many of the details. For example, the railings on the top seal the plastic lining and prevent water from getting between pieces of wood. All screws, with a few exceptions, are protected from getting wet even when it would more convenient to screw items together in other locations. Also, there is a custom drain pipe to that will decrease the water-weight and saturation of the bed while also improving infiltration. Furthermore, the water can be collected and recycled thereby reducing nutrient loss over time.

Disadvantages of This Design

Some disadvantages include its overall weight, experience level required to assemble, and cost.

Like every structure, including our own bodies, there are weaknesses. The weakest part of the design is on the long sides. The "V" shape of the garden bed is advantageous in that it equally distributes weight to the bottom beam and to the sides. By comparison, other raised beds place all the weight on the bottom. That being said, the weight pushing out on the sides of the bed between the ends and middle leg could prove problematic over time. Though not in this design, one possible work around is installing a metal brace in the "V" of the garden bed below the soil to prevent those areas from bowing over time.

The second weakness is the LDPE (which is food safe) lining (black plastic) in the garden bed could get damage and leak over time. To repair, it will require moving all of the soil and the top rails to replace. However, with care, the LDPE plastic lining can last a very long time. To protect the lining, it is recommended to put a HDPE (high-density polyethylene) board on the sides. HDPE is also food safe.

Open-source Creativity

Gardening is open-source. Gardeners are known for their fierce tenacity in borrowing, practicing, inventing, and innovating strategies and technologies that better facilitate our gardening goals. This bed is also open-source. I've borrowed elements from other raised beds I've seen over the years and made something new from it. There are other similar concepts on the market, too, but I have yet to see one that comes close to the quality and anticipated longevity that this design will offer. That being said, I encourage you to make modifications as you see fit and share it with others. For example, a shorter, 4' version of this design would be an awesome contribution to the community.

Resizing

This bed can be resized to fit your specific and unique needs. I often debated making this shorter, for example, to improve reach. However, making it shorter may make it more difficult for users to sit under the raised bed.

Information Before You Begin

Resources

- Overview and Construction Guide Video: <https://youtu.be/mxzgut0dIDk>
- SketchUp Model: <https://bit.ly/sketchup2025>
 - Note: If you don't have Sketchup, you can download their free SketchUp Viewer from desktop or mobile here: <https://bit.ly/sketchupviewer25>
- Parts, Prices, and Tools (Excel): <https://placerrcd.org/projects/accessibleraisedbed/>

Before Beginning / Things to Keep in Mind

1. Look through the entire plan and tools required before beginning.
2. I've offered dimensions for cuts. However, because cutting is rarely accurate enough, and because even the best thought-out plans have their flaws, it is strongly advised that you measure and remeasure pieces as you proceed through the process. One piece slightly off in one spot can make a bigger difference down the road. Be adaptable and measure often. In other words, the dimensions presented in the instructions assume a perfect world scenario. All cuts and dimensions should be checked and verified prior to cutting.

3. There are many cuts of the same length - especially the bed sides and end legs. Therefore, if possible, setup gauges or jigs to ensure that each cut is the same. This will make your life much easier.

Default Directions and Assumptions Throughout the Project

- Refer to the video first to gain a better understanding of the construction plan.
- Except where indicated, countersink all drill holes so that the screw is flush with the face of the lumber/piece it is attaching. Refer to the “Tools Needed” sheet in the “Accessible Raised Bed Parts Price and Cost” Excel file.
- The space between lumber pieces of the side legs and middle leg are all 1/8”.

Tools Needed

Refer to the “Accessible Raised Bed Parts and Price” Excel document. In this document there is a sheet called “Tools Needed” which lists all the tools and their uses in this project.

*NOTE: By accident I have referred to this Excel document by a few different names throughout this document. There is only one Excel document associated with this project.

Materials and Parts

Refer to the “Accessible Raised Bed Parts and Price” Excel document. In this document there is are sheets that list all materials needed including prices, color codes that match the Sketchup file and plans below, information on what size pilot hole and countersink sizes to use, and links to these parts.

*PLAN AHEAD: Some parts may need to be ordered.

Lumber Layout and Cuts Visual

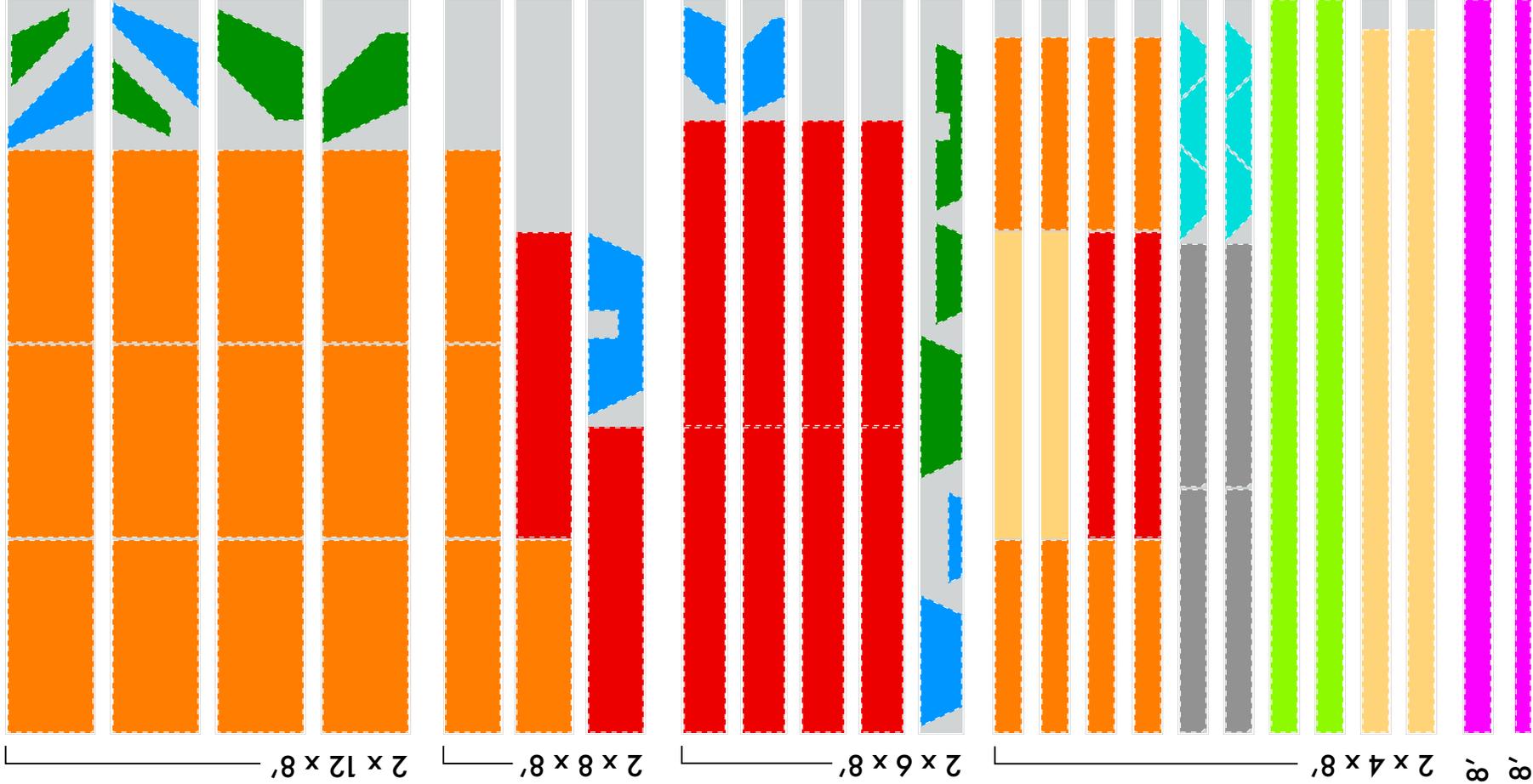
Refer to the Lumber Layout and Cuts Visual below to get an idea of how much lumber and what types of cuts you will be making.

Lumber Layout & Cuts Visual

Lumber Color Guide

- Side and End Upper Rails
- Bed Sides
- Middle Leg (spout side)
- Middle Leg
- Side Legs (both sides)
- Inner Side Legs (all)
- Support Beam
- Lower Side Rails
- Bed Side Lower Attachment

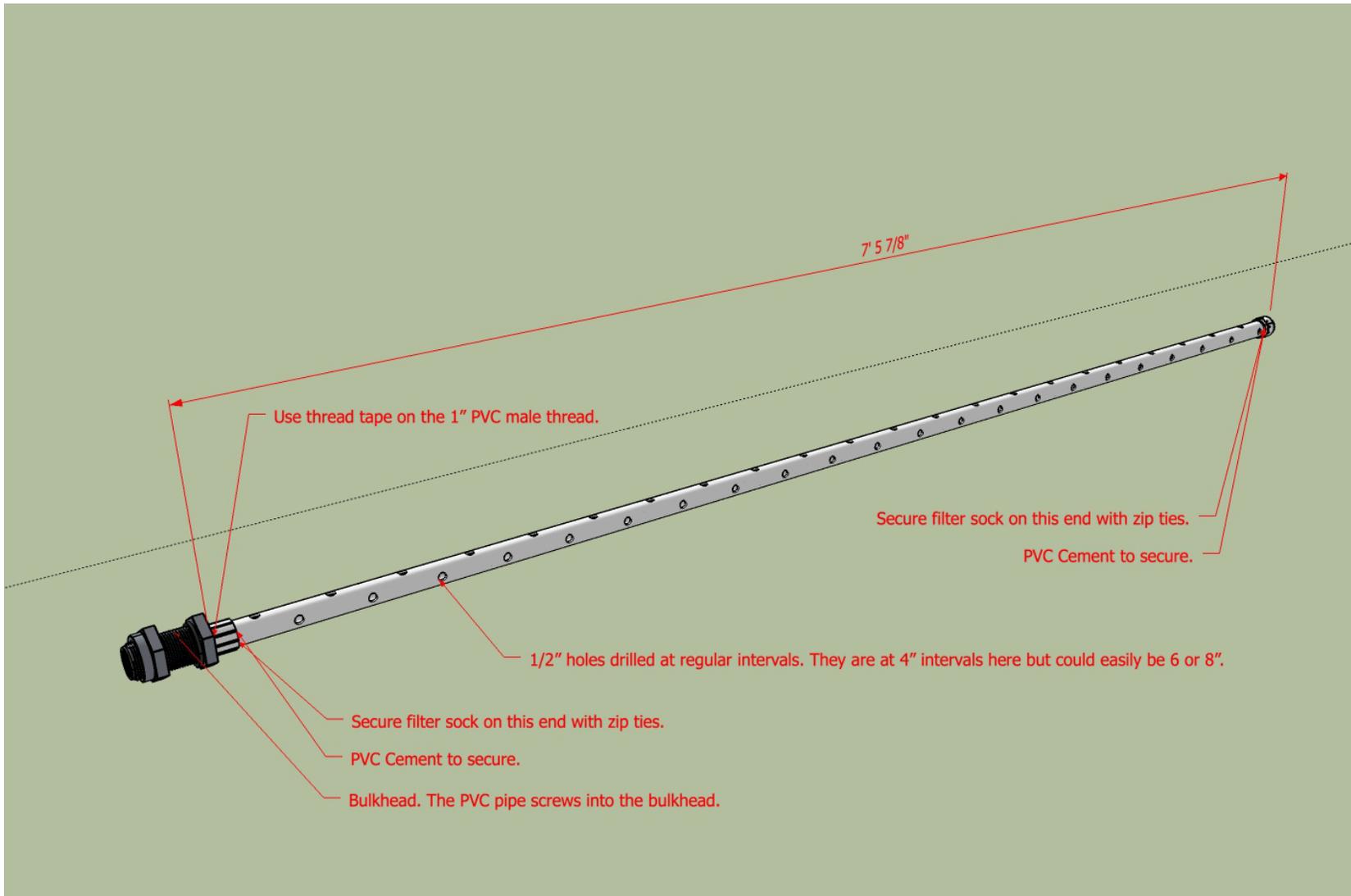
Colors correspond with Sketchup model and other drawings.



Construction Guide

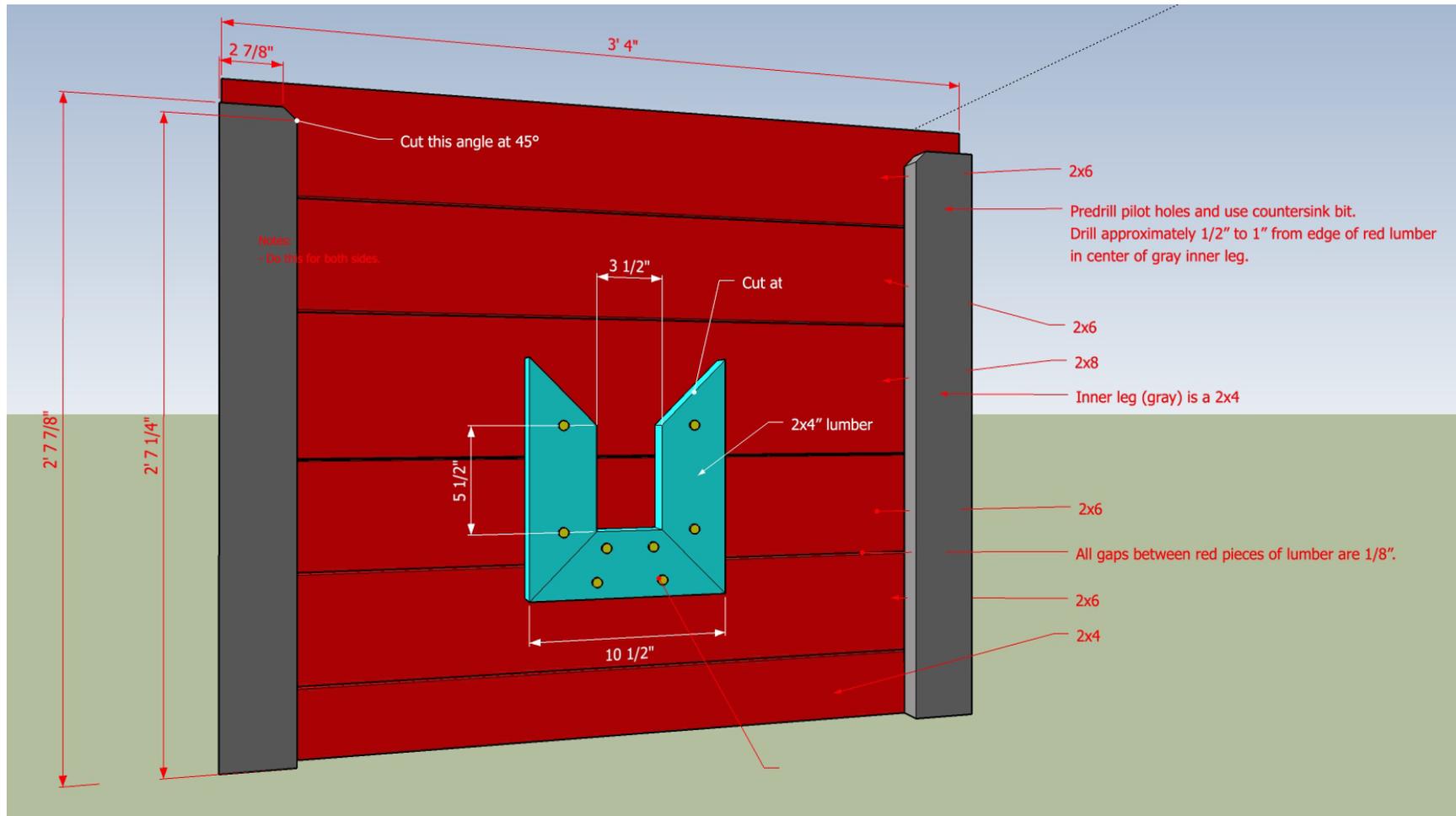
Step 1: Assemble Drain

Corresponds with *Dimensions 01 Drain* in Sketchup Model



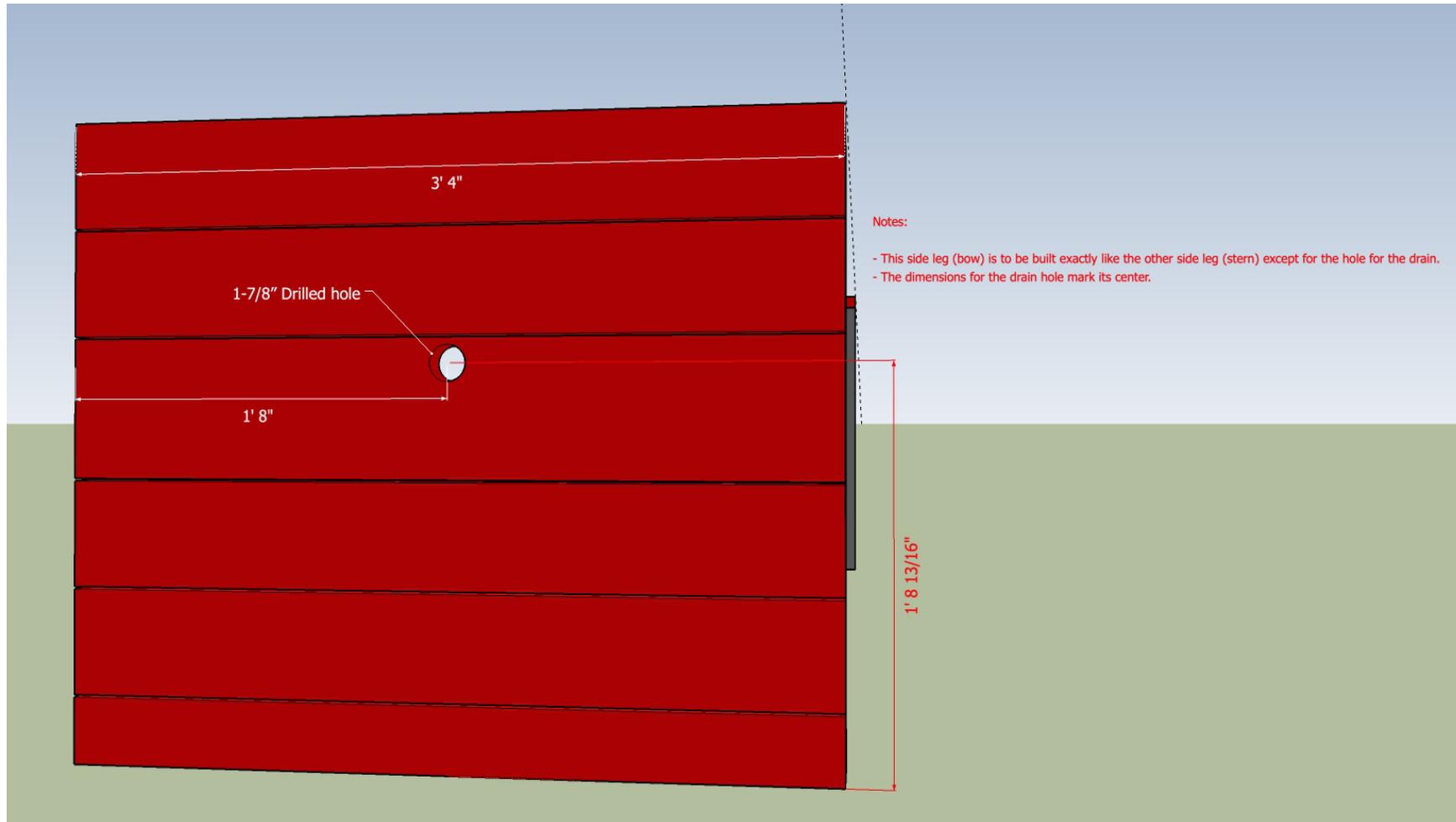
Step 2: Side Legs (1/2)

Corresponds with *Dimensions 02 Side Leg A* in Sketchup Model



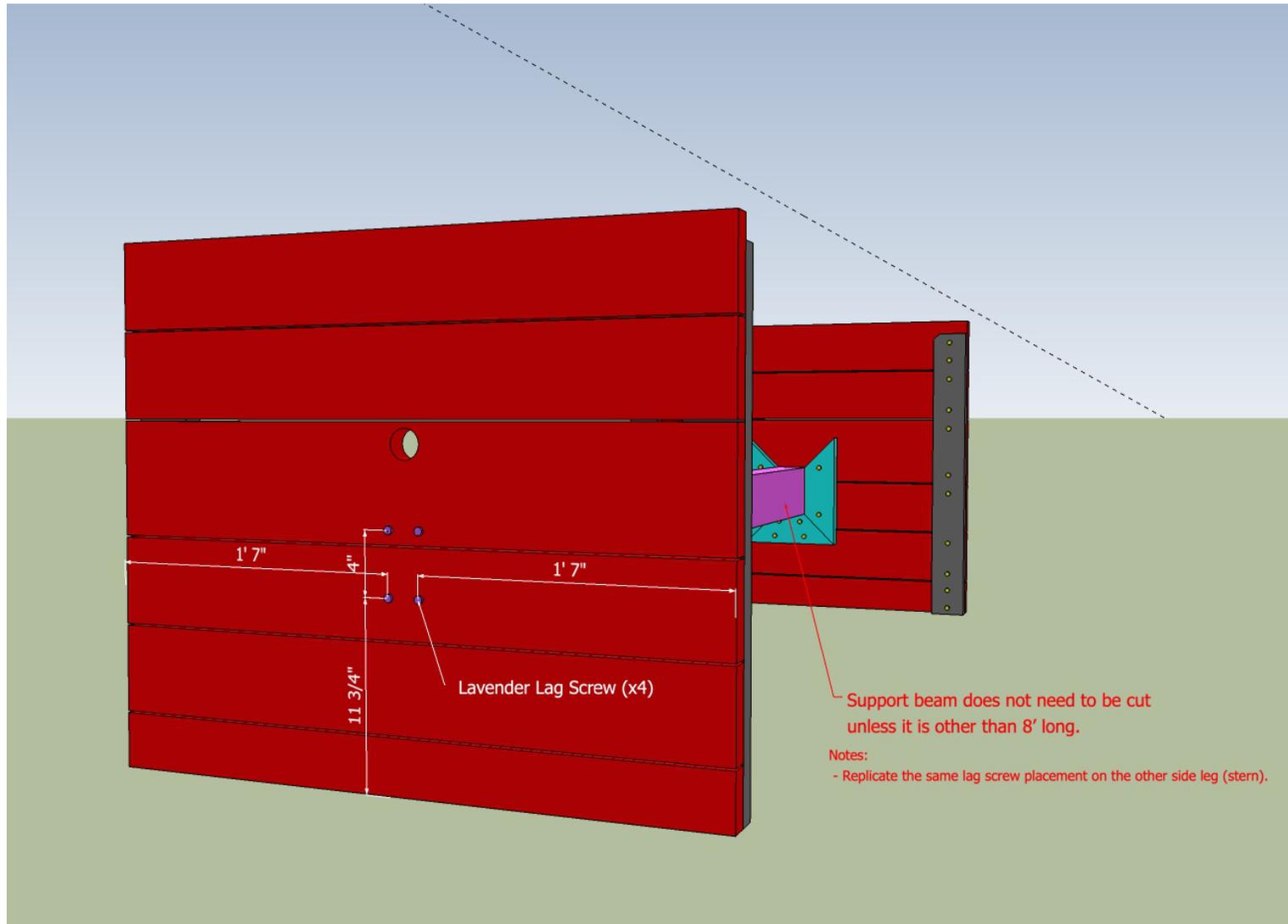
Step 3: Side Legs (2/2)

Corresponds with *Dimensions 02 Side Leg B (Bow)* in Sketchup Model



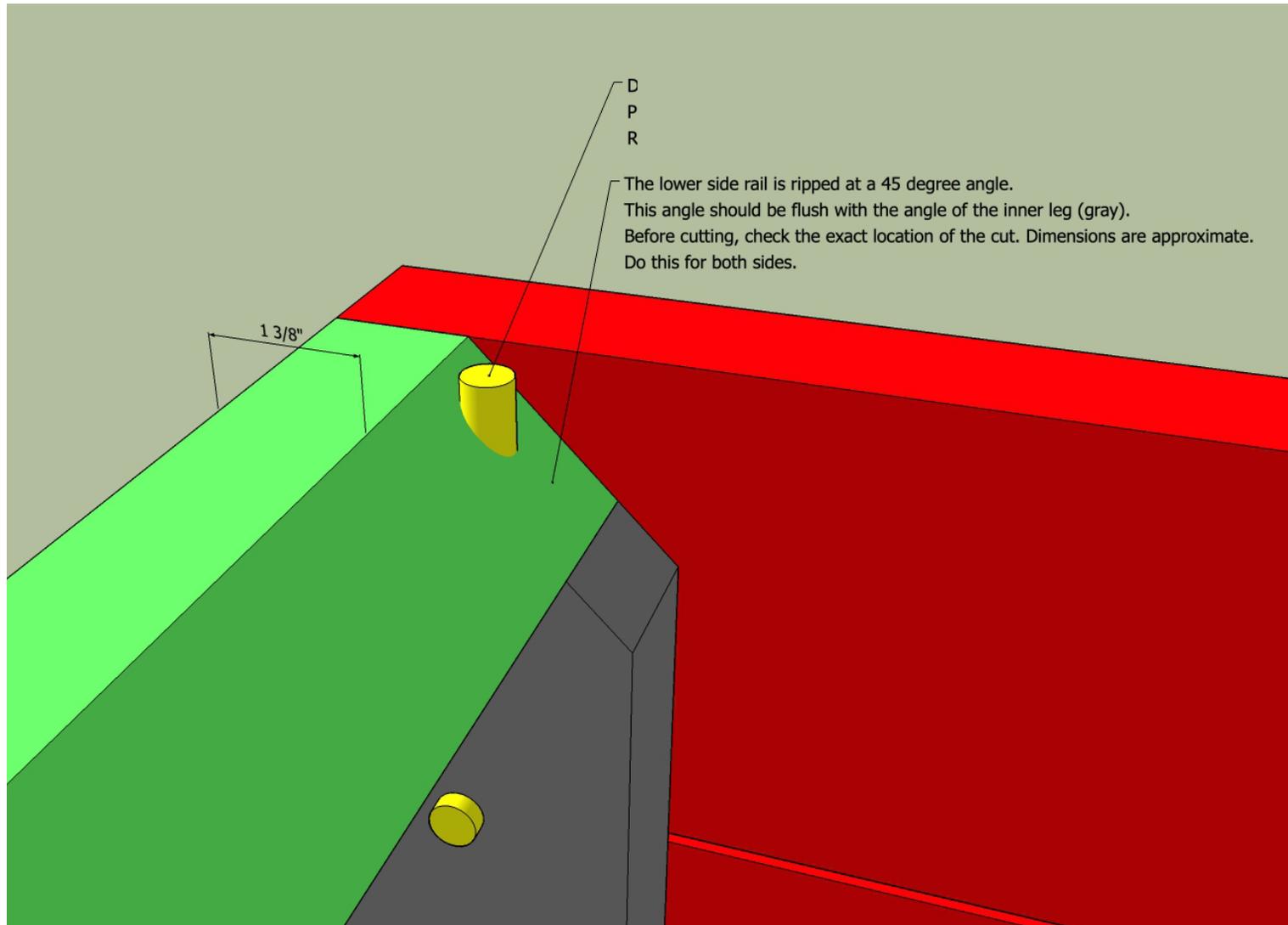
Step 4: Support Beam

Corresponds with *Dimensions 03 Support Beam* in Sketchup Model



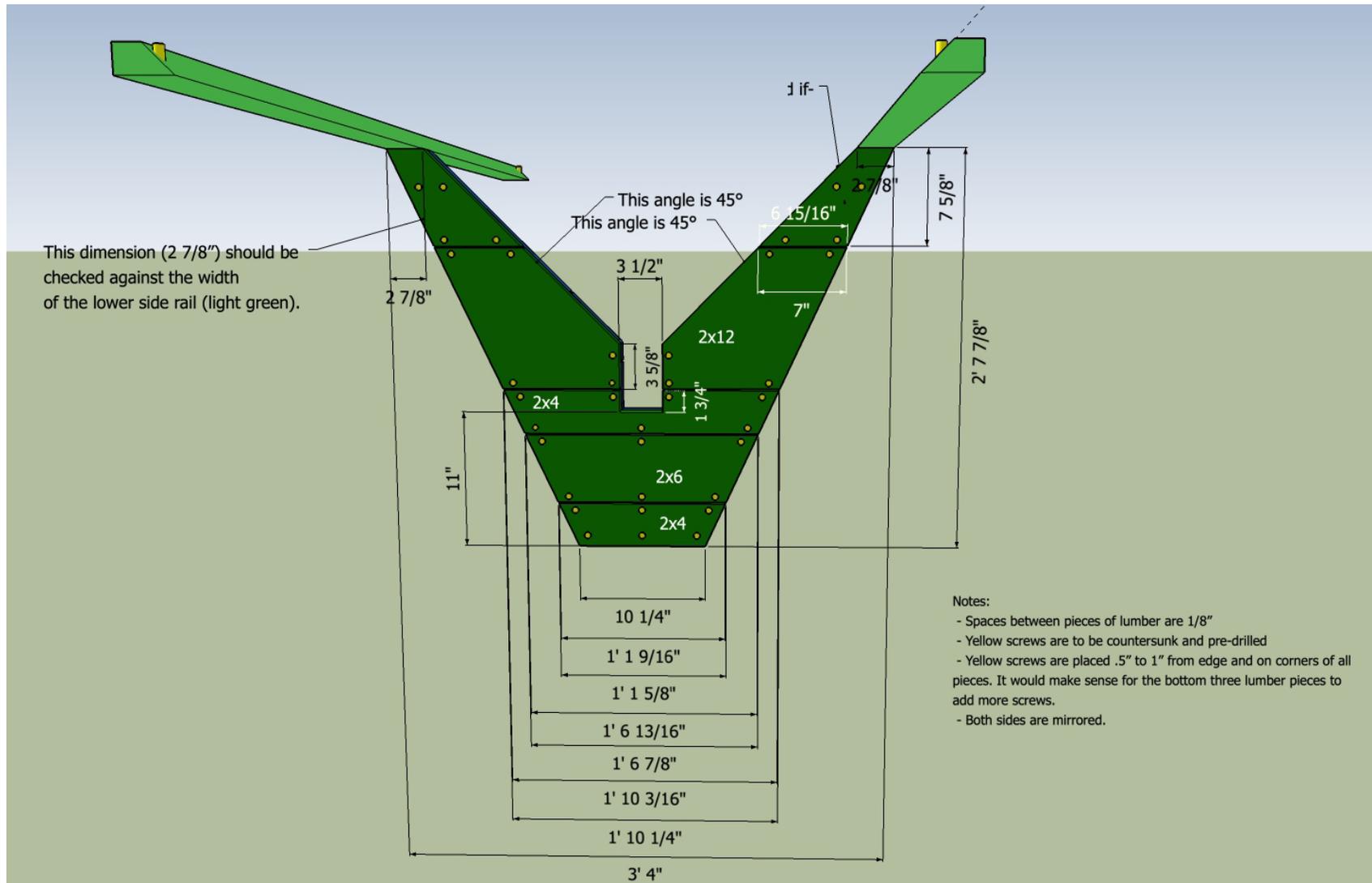
Step 6: Lower Side Rail (2/2)

Corresponds with *Dimensions 04 Lower Side Rail B* in Sketchup Model



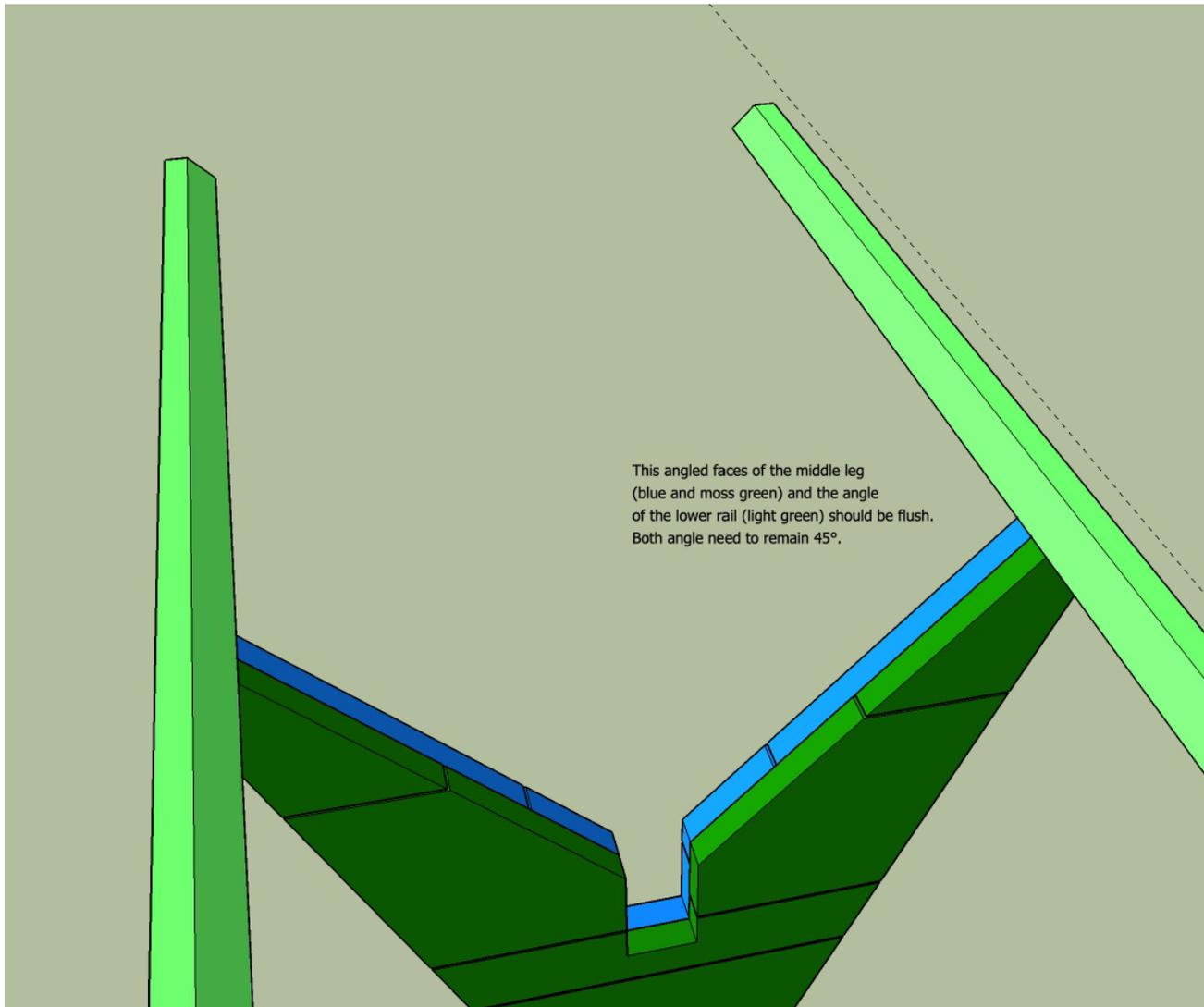
Step 7: Middle Leg, Green Side

Corresponds with *Dimensions 05 Middle Leg A* in Sketchup Model



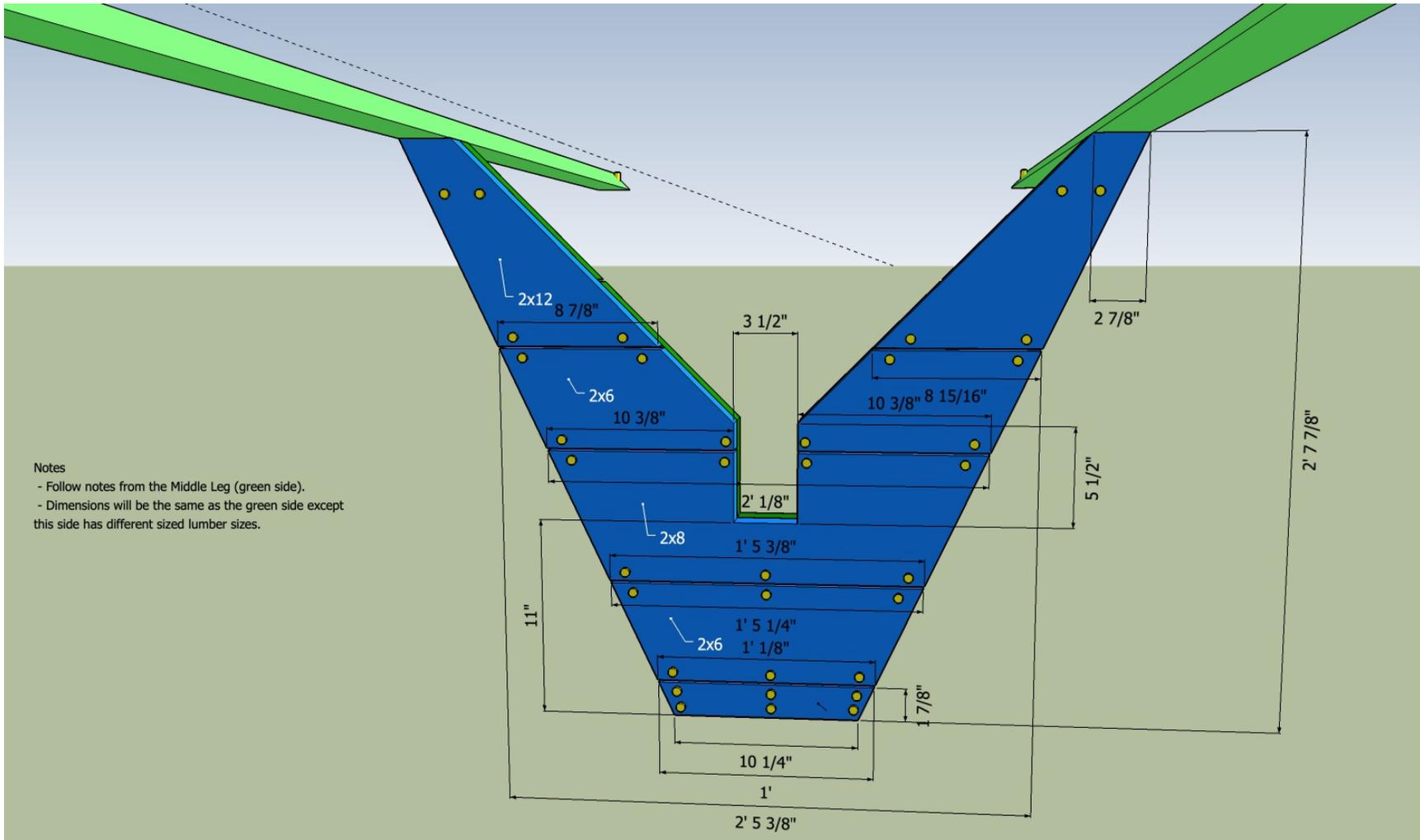
Step 8: Middle Leg Note

Corresponds with *Dimensions 05 Middle Leg B* in Sketchup Model



Step 9: Middle Leg, Blue Side

Corresponds with *Dimensions 05 Middle Leg C* in Sketchup Model

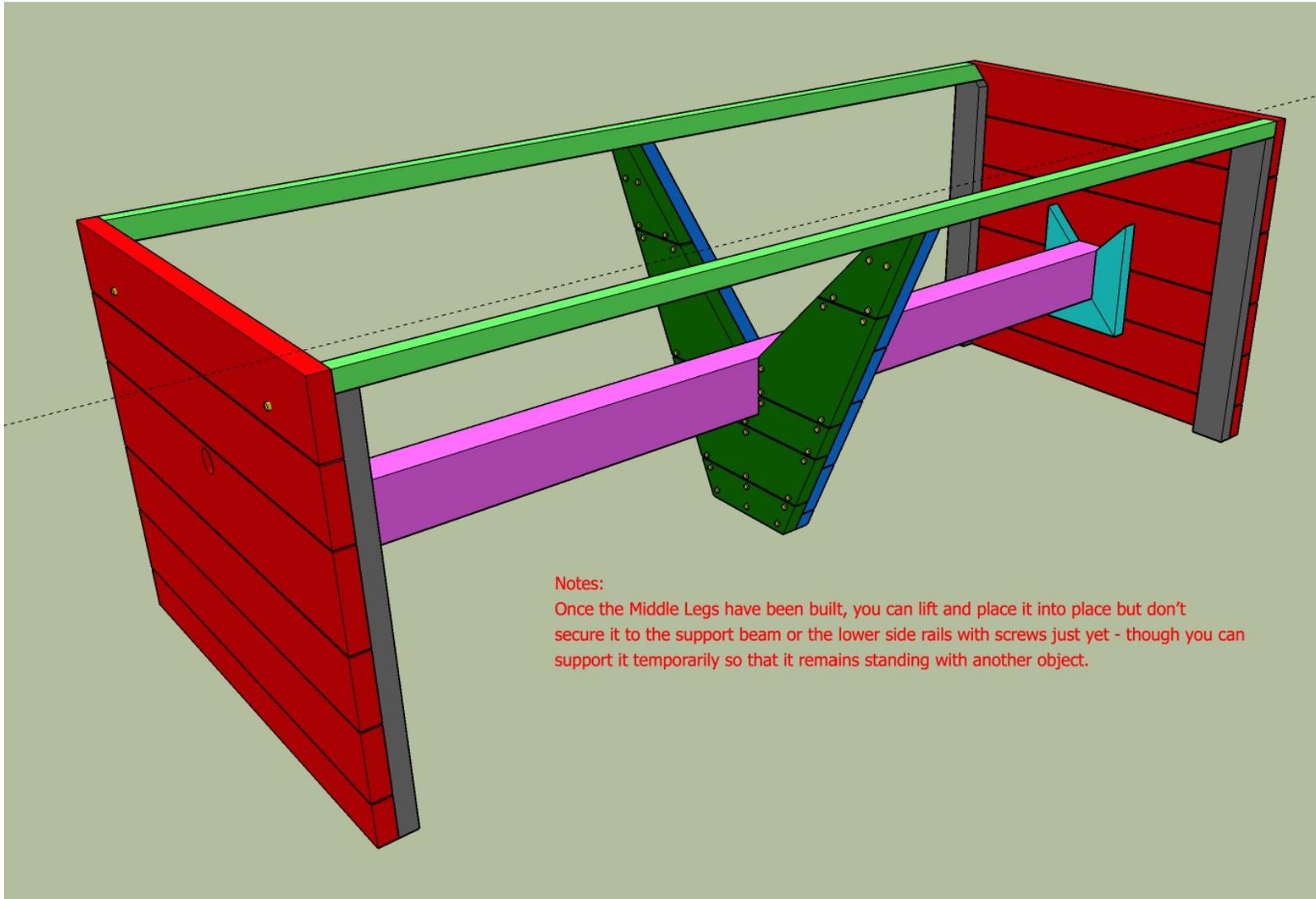


Notes

- Follow notes from the Middle Leg (green side).
- Dimensions will be the same as the green side except this side has different sized lumber sizes.

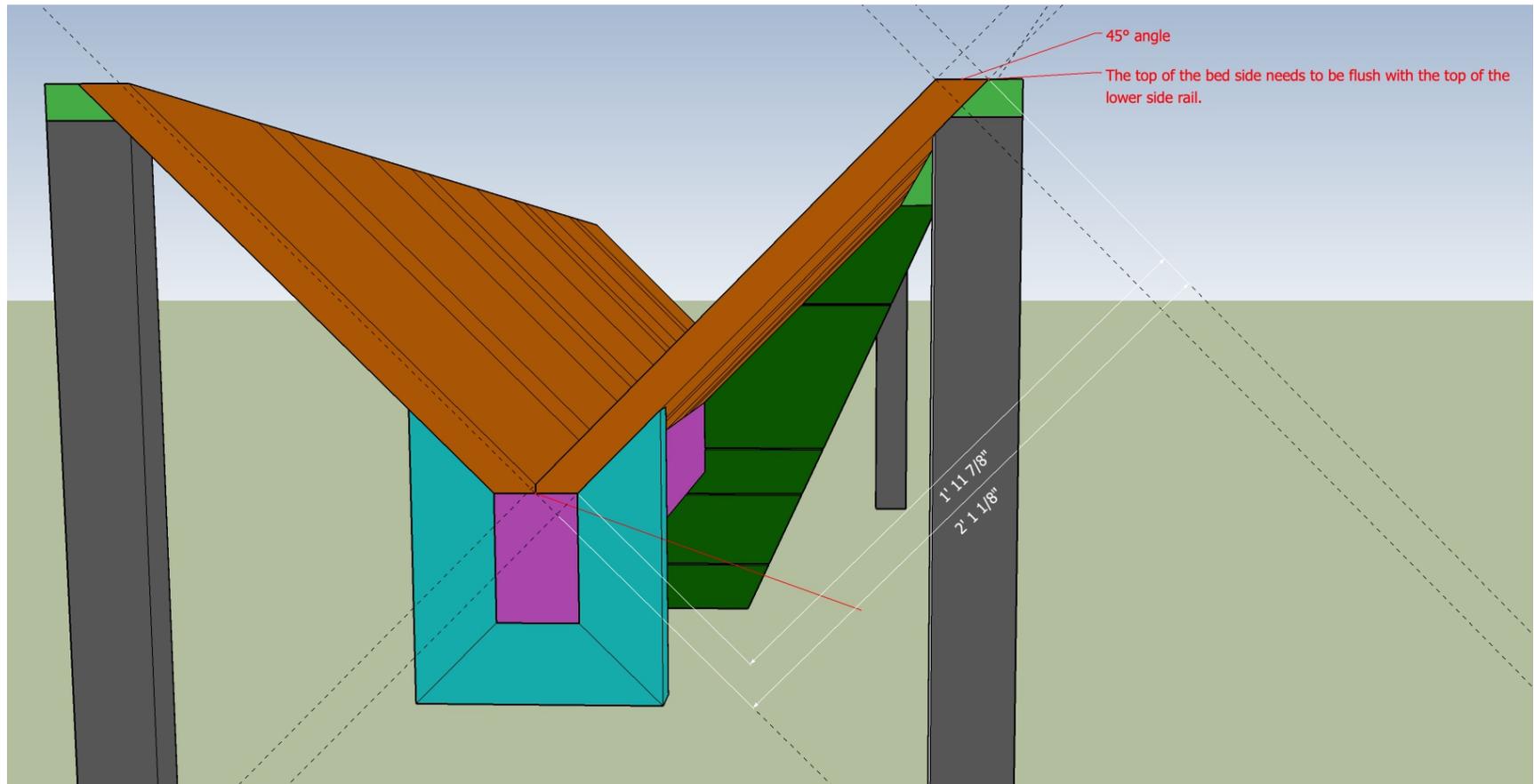
Step 10: Middle Leg Setup

Corresponds with *Dimensions 05 Middle Leg D* in Sketchup Model



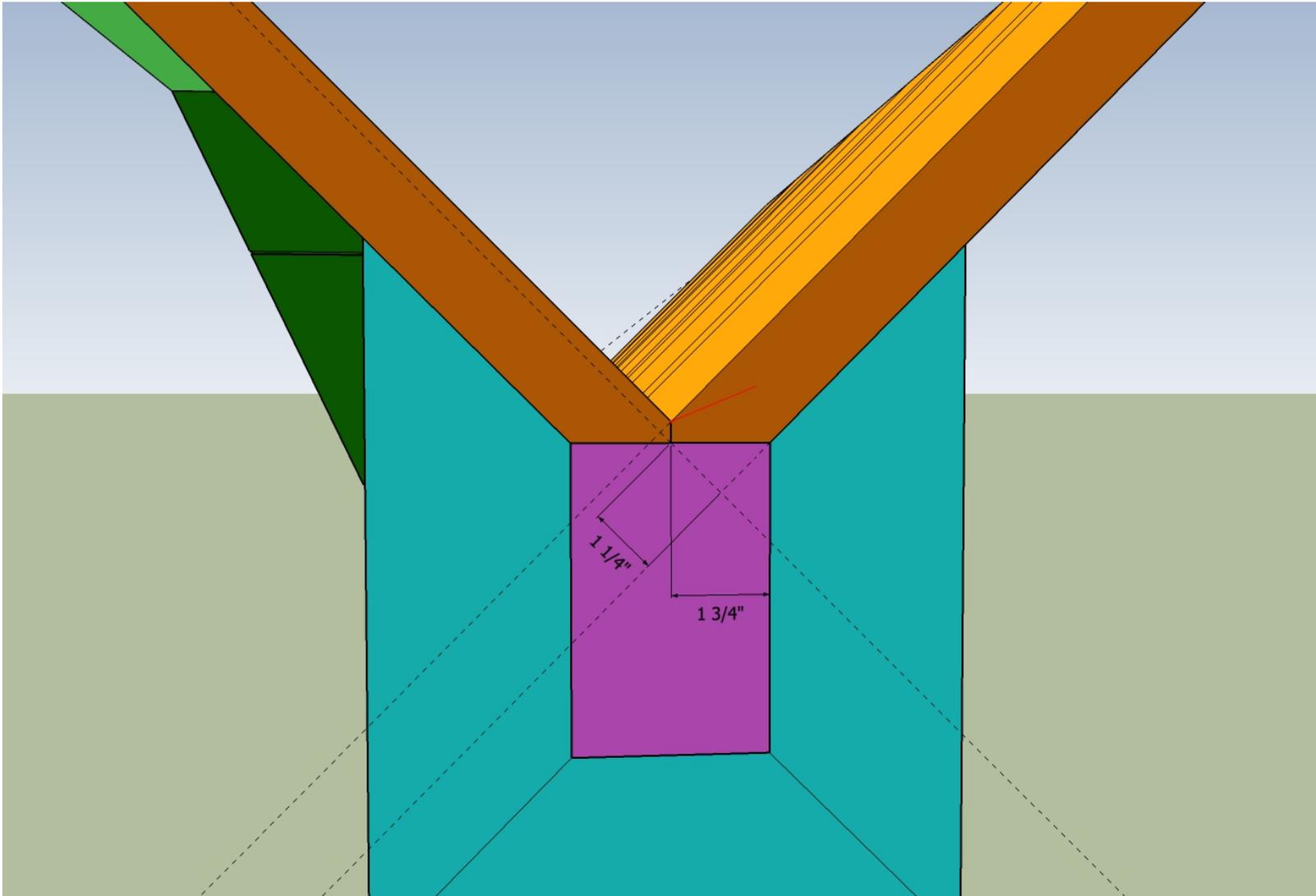
Step 11: Bed Sides, Angles and Cutting (1/2)

Corresponds with *Dimensions 06 Bed Sides A* in Sketchup Model



Step 12: Bed Sides, Angles and Cutting (2/2)

Corresponds with *Dimensions 06 Bed Sides B Bottom Notch* in Sketchup Model



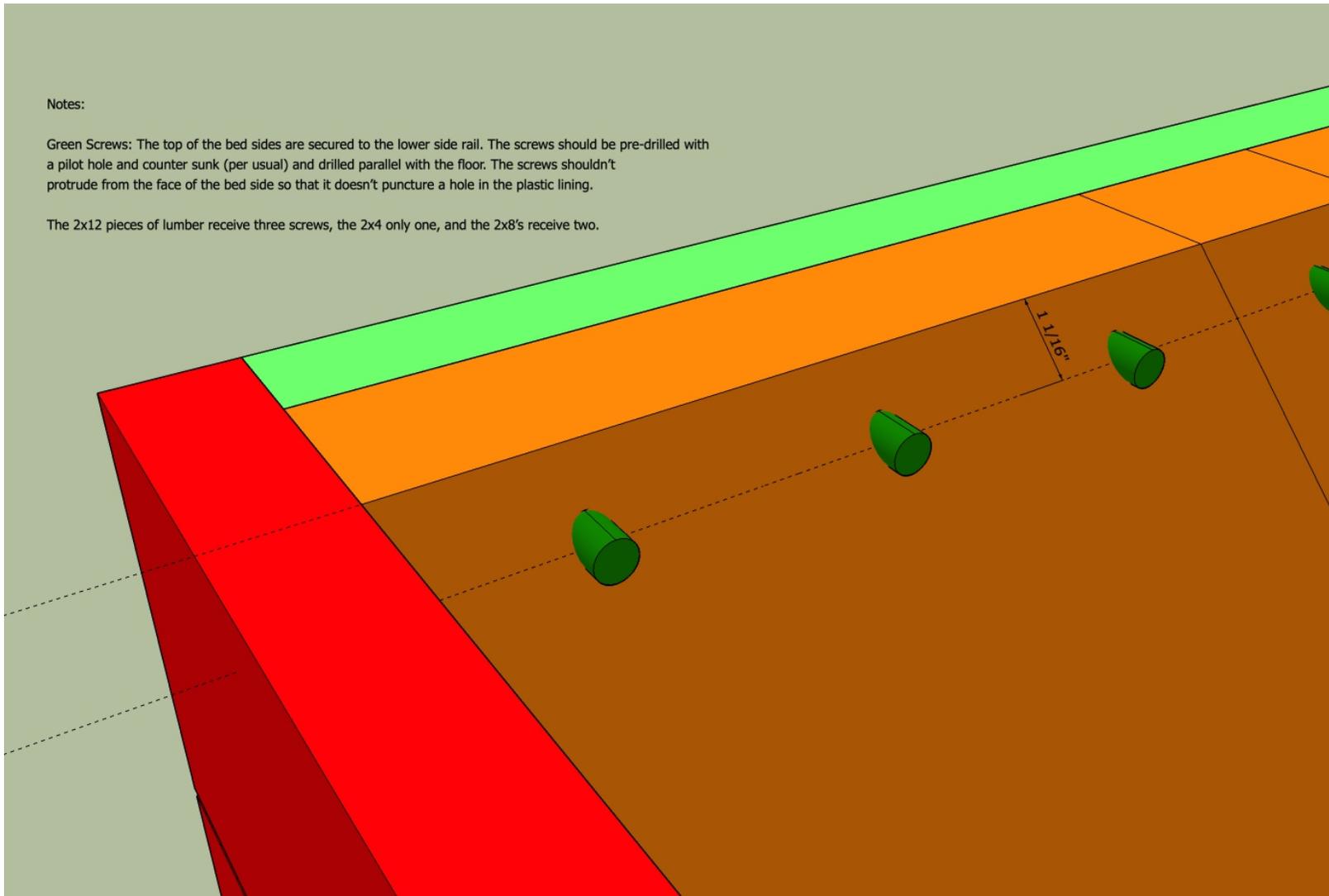
Step 14: Bed Sides Fastening (1/3)

Corresponds with *Dimensions 06 Bed Sides D Green Screws* in Sketchup Model

Notes:

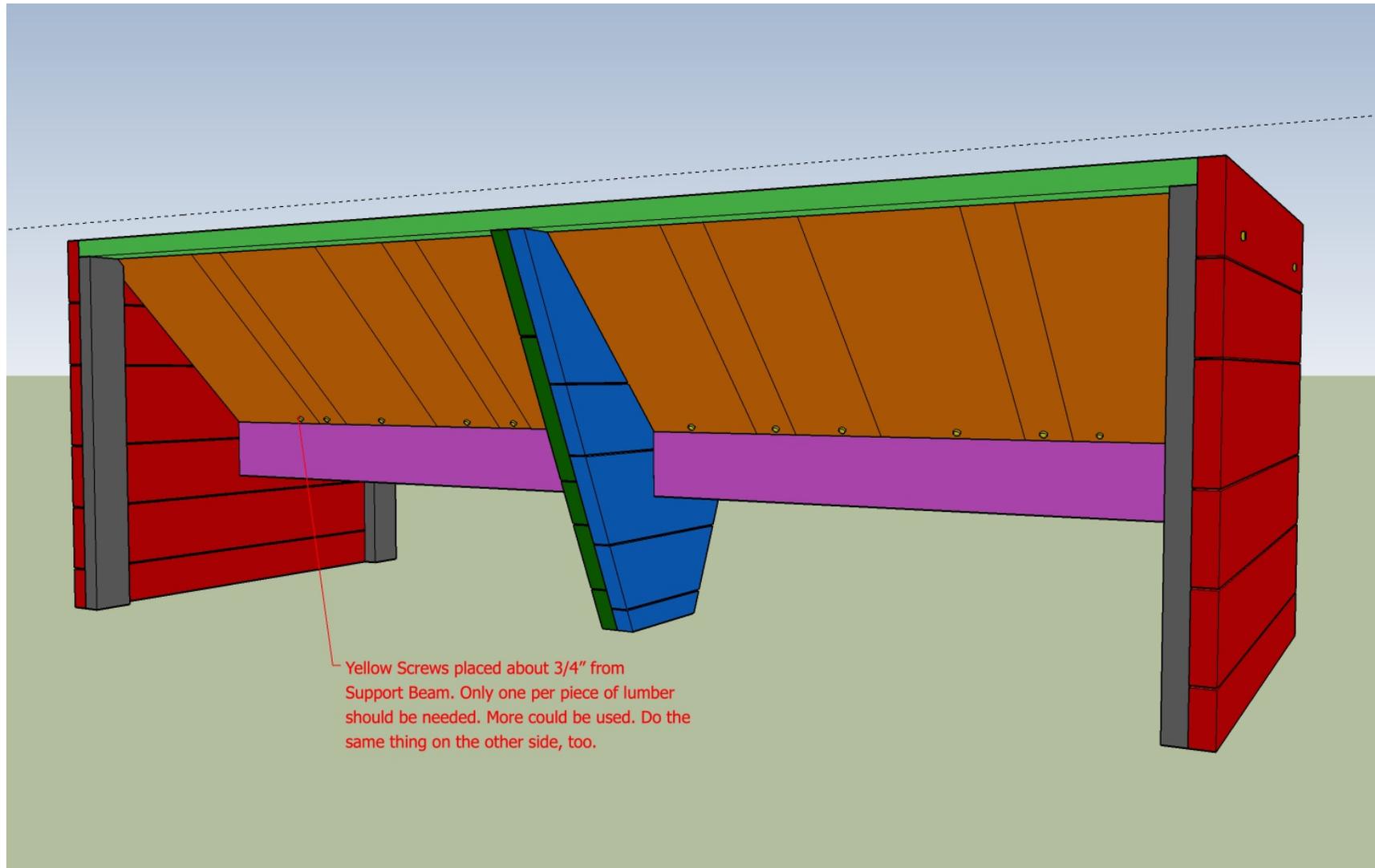
Green Screws: The top of the bed sides are secured to the lower side rail. The screws should be pre-drilled with a pilot hole and counter sunk (per usual) and drilled parallel with the floor. The screws shouldn't protrude from the face of the bed side so that it doesn't puncture a hole in the plastic lining.

The 2x12 pieces of lumber receive three screws, the 2x4 only one, and the 2x8's receive two.



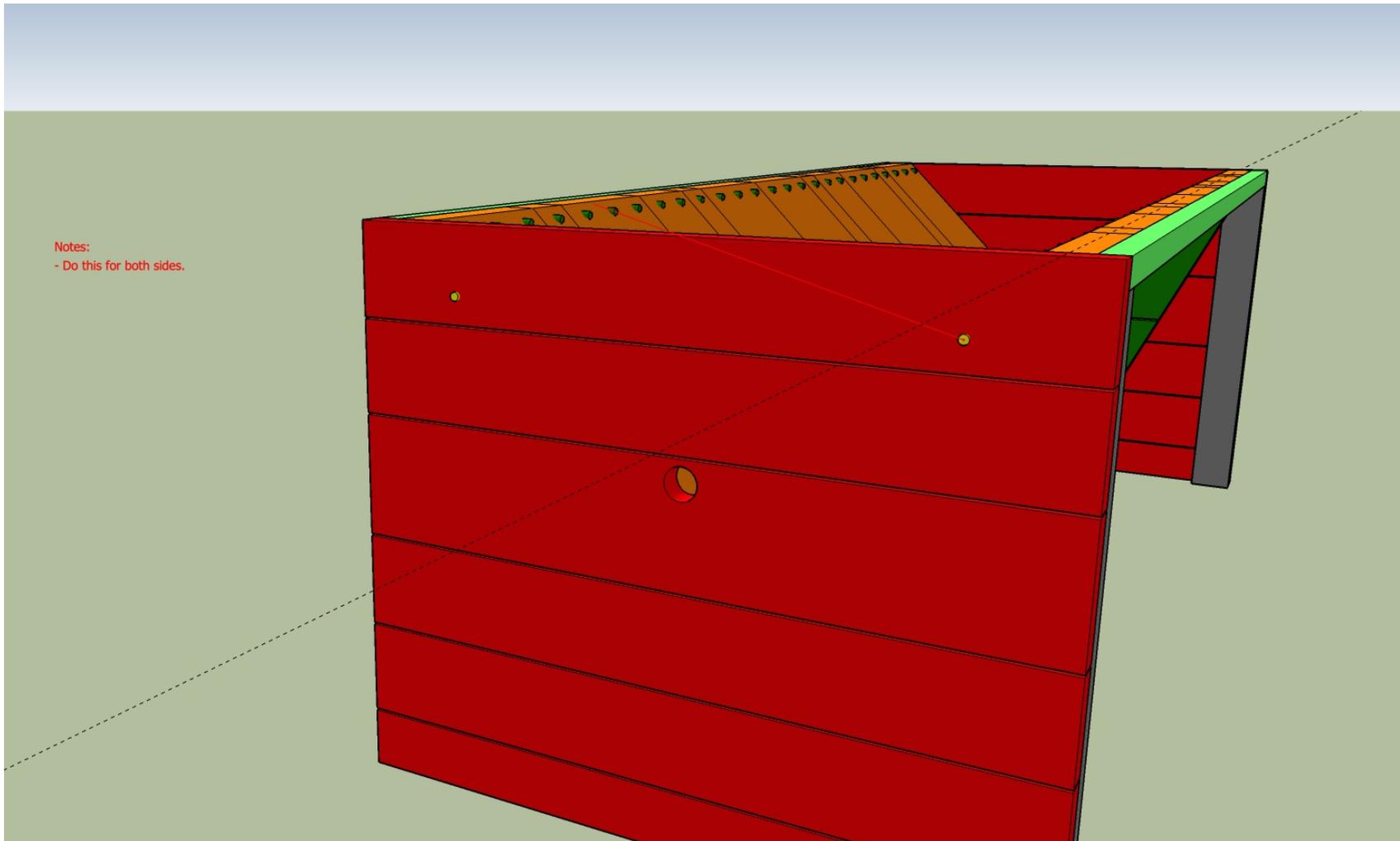
Step 15: Bed Sides Fastening (2/3)

Corresponds with *Dimensions 06 Bed Sides E Bottom Screws* in Sketchup Model



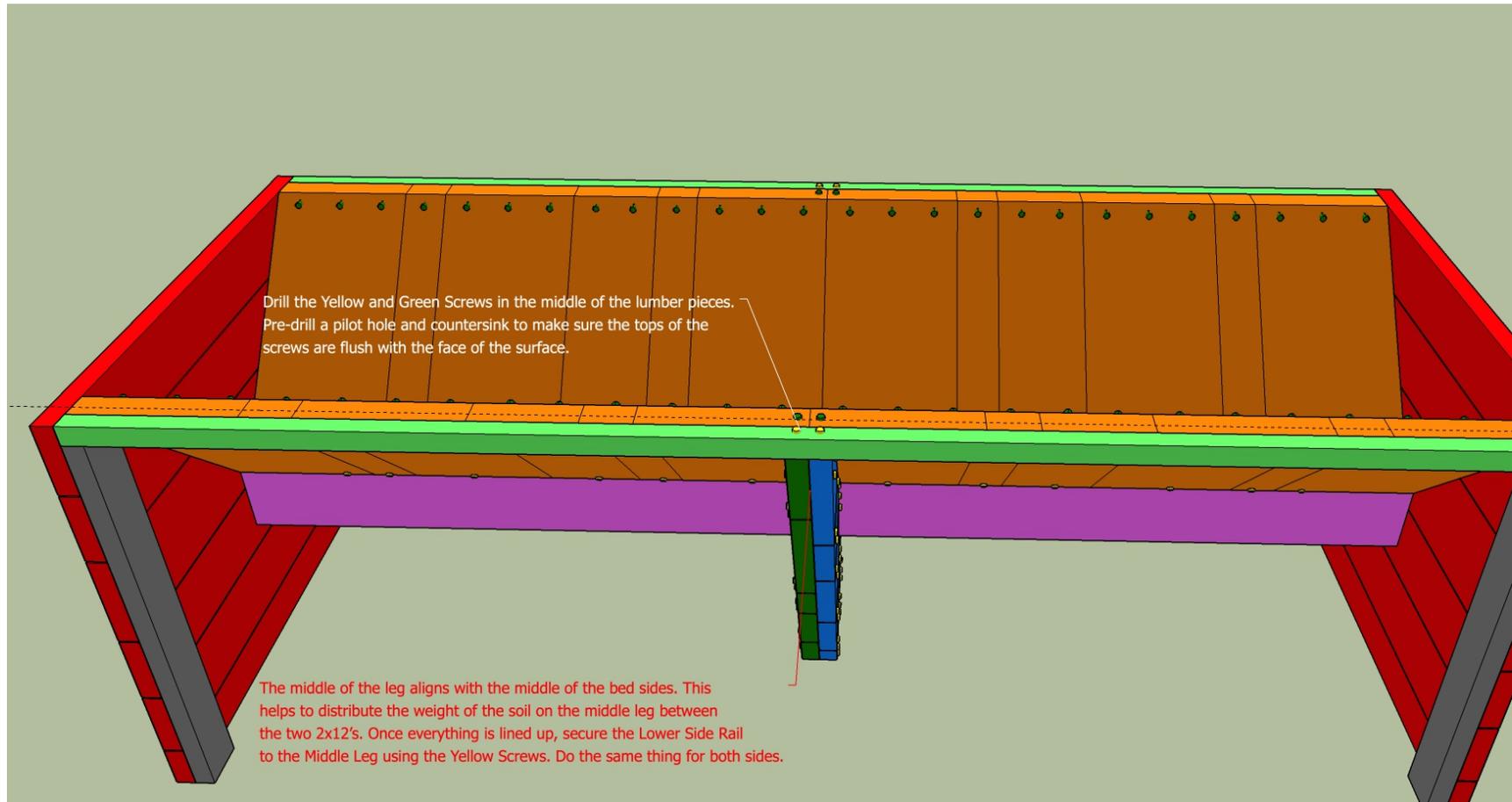
Step 16: Bed Sides Fastening (3/3)

Corresponds with *Dimensions 06 Bed Sides F Side Leg Screws* in Sketchup Model



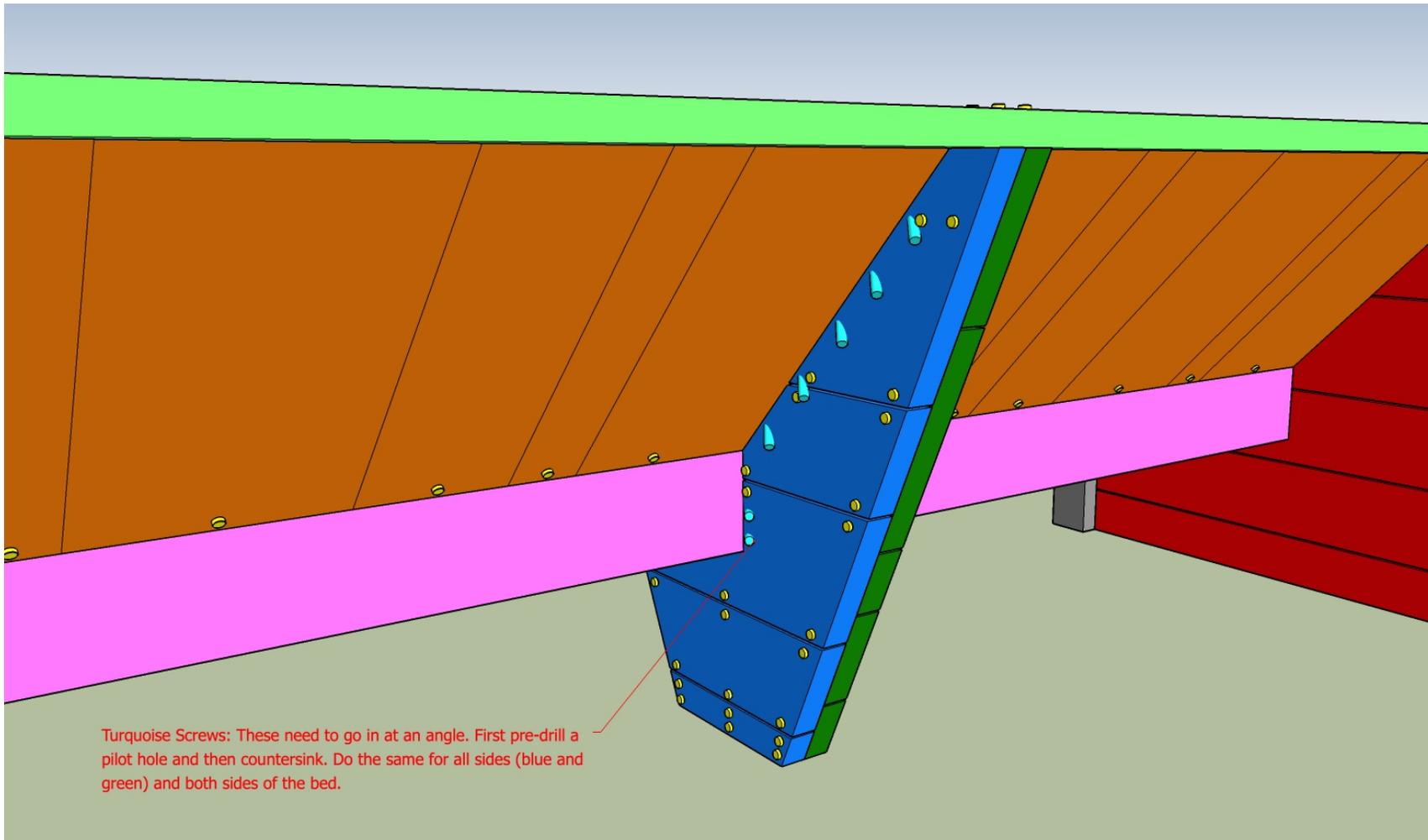
Step 17: Middle Leg Fastening (1/2)

Corresponds with *Dimensions 06b Middle Leg Fastening A* in Sketchup Model



Step 18: Middle Leg Fastening (2/2)

Corresponds with *Dimensions 06b Middle Leg Fastening B* in Sketchup Model

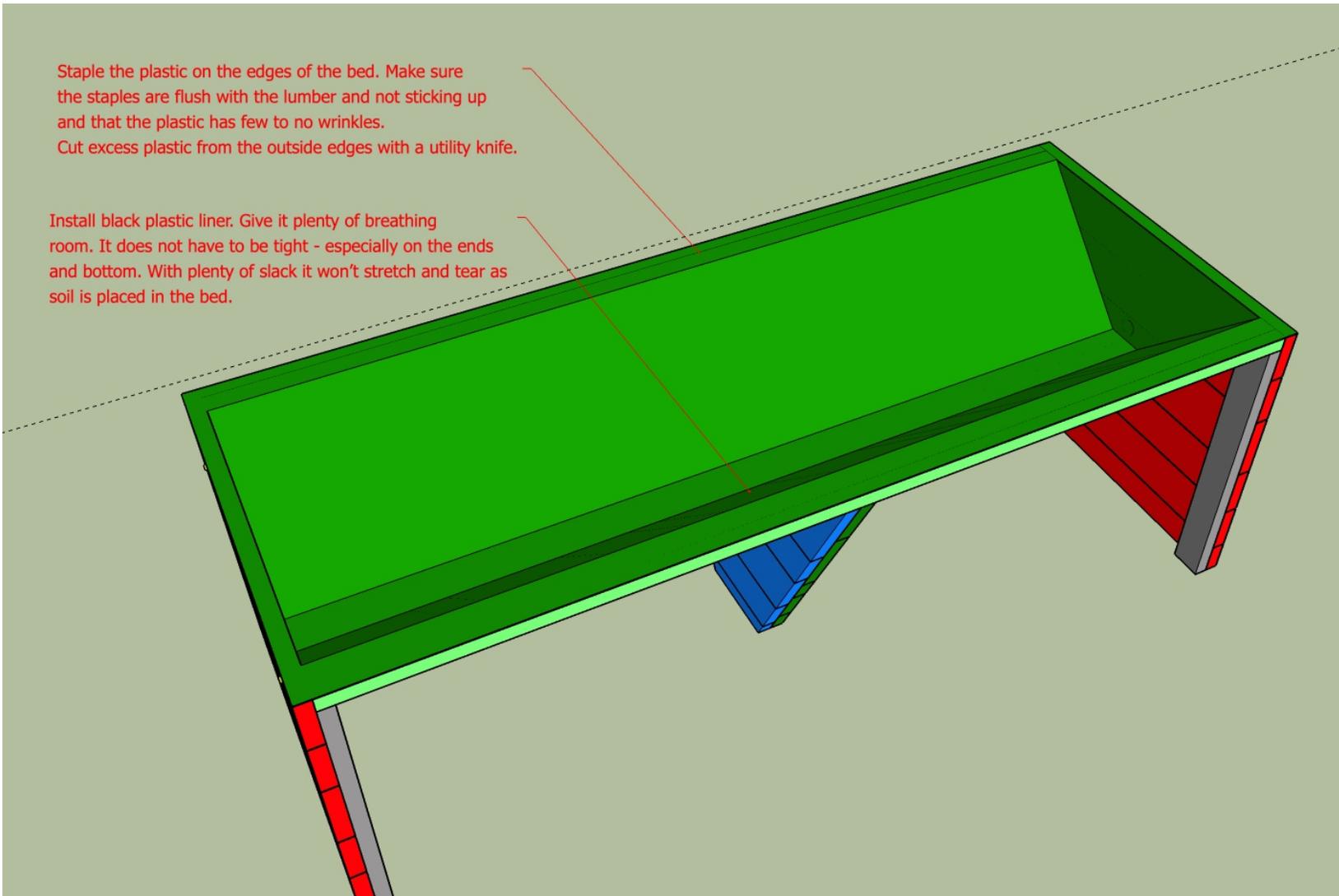


Step 19: Black Plastic Lining

Corresponds with *Dimensions 07 Black Plastic Liner* in Sketchup Model

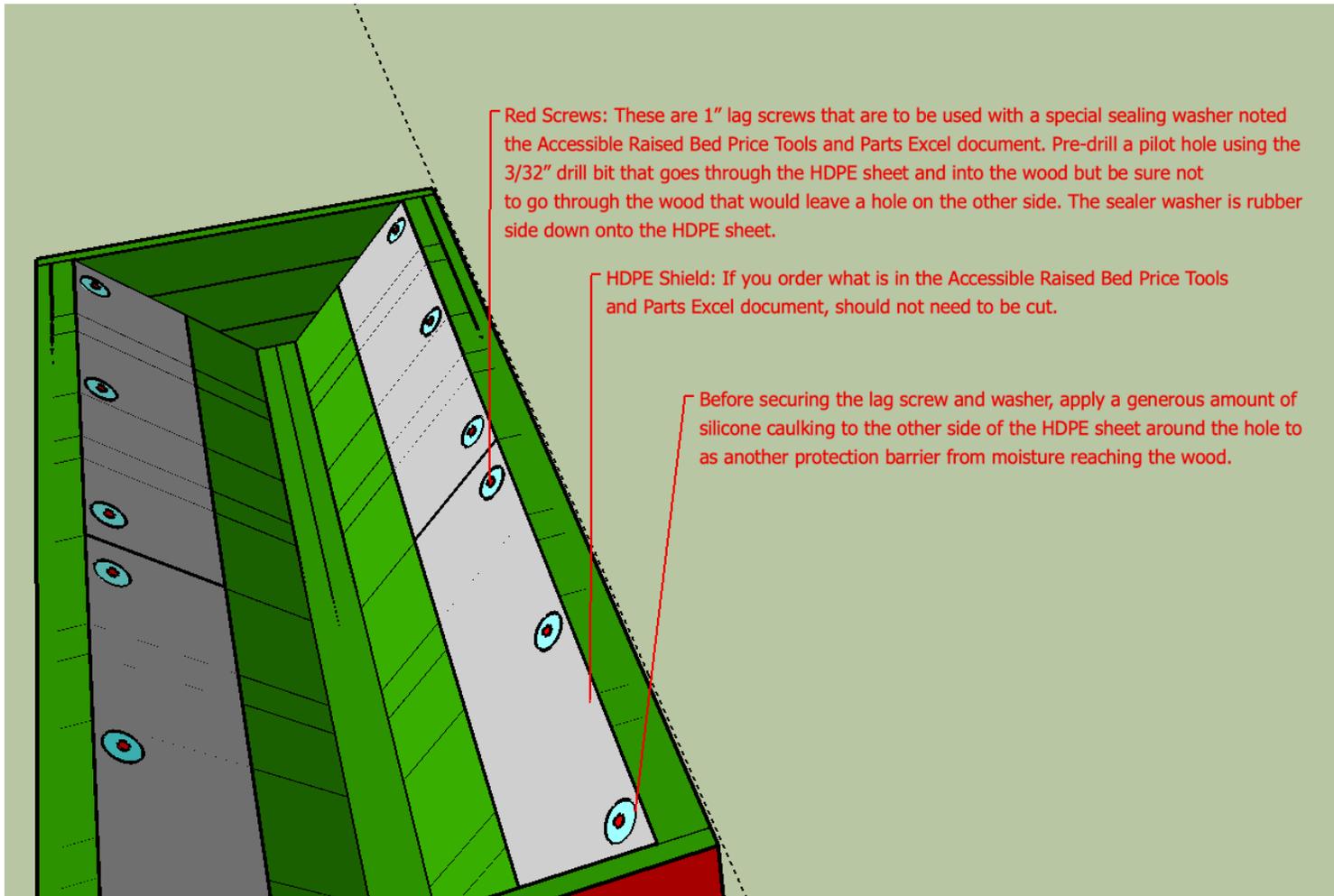
Staple the plastic on the edges of the bed. Make sure the staples are flush with the lumber and not sticking up and that the plastic has few to no wrinkles. Cut excess plastic from the outside edges with a utility knife.

Install black plastic liner. Give it plenty of breathing room. It does not have to be tight - especially on the ends and bottom. With plenty of slack it won't stretch and tear as soil is placed in the bed.



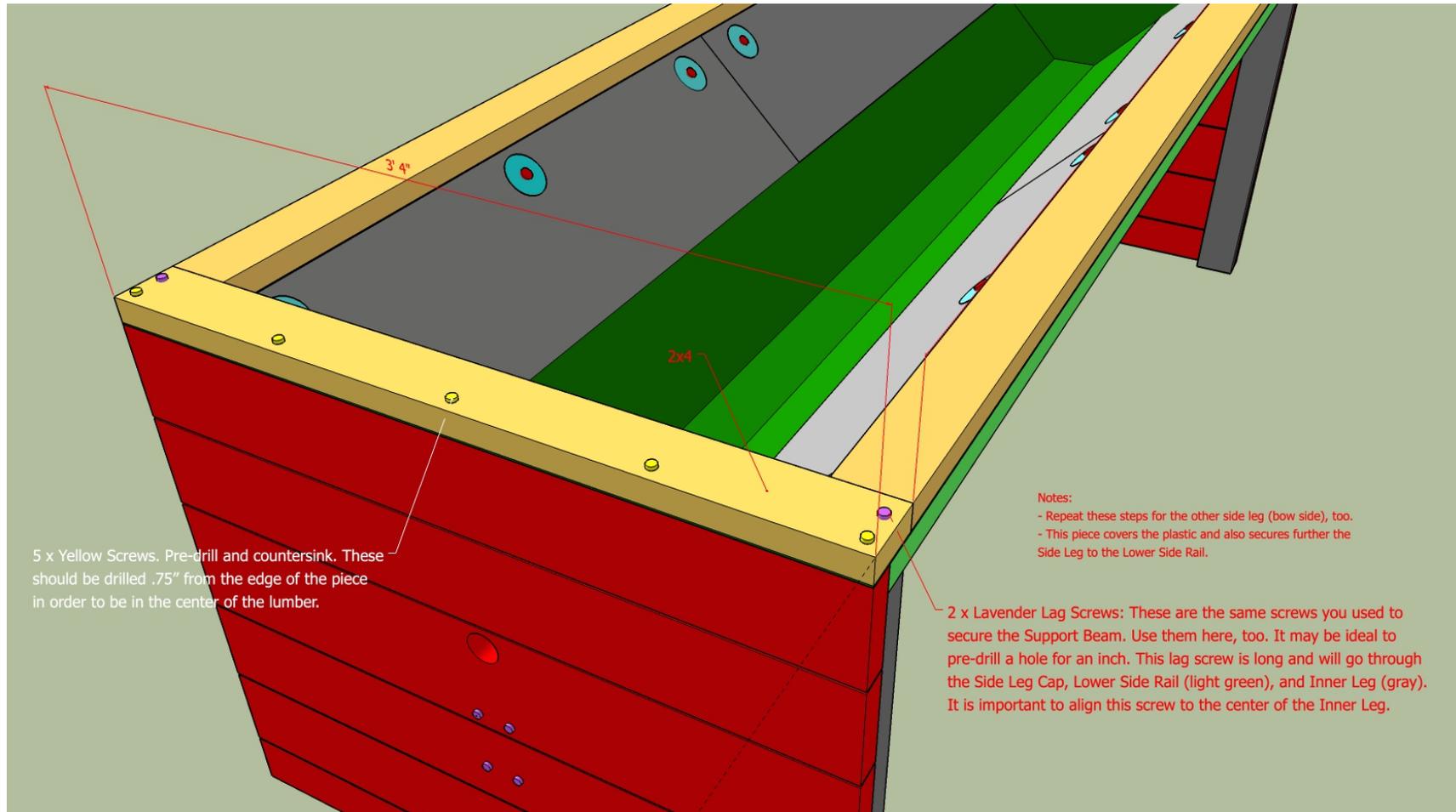
Step 20: HDPE Protective Shield

Corresponds with *Dimensions 08 HDPE Shield* in Sketchup Model



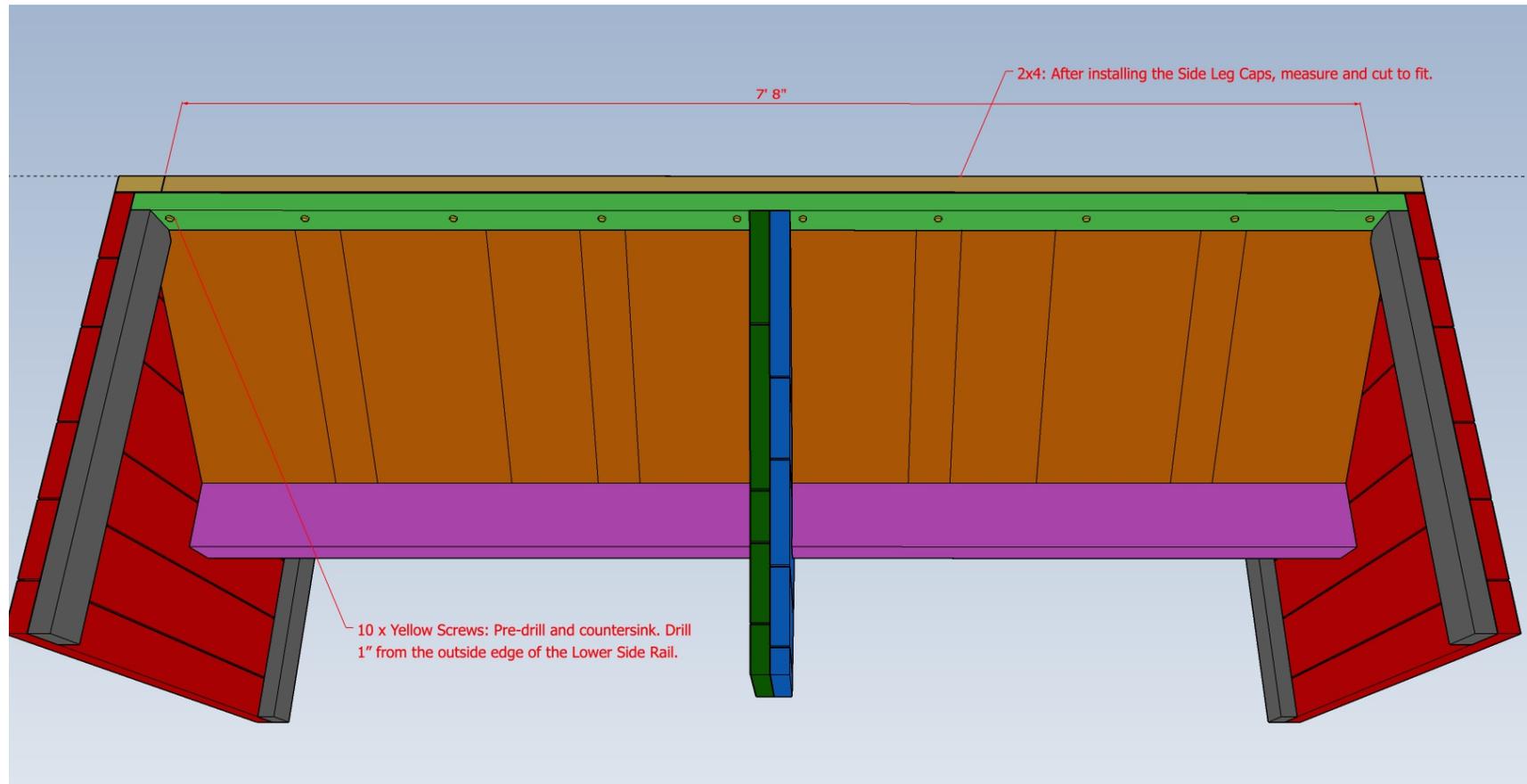
Step 21: Side Leg Caps

Corresponds with *Dimensions 09 Side Leg Caps A* in Sketchup Model



Step 22: Side Leg Caps

Corresponds with *Dimensions 10 Upper Side Rail A* in Sketchup Model



Step 23: Drain Installation

Corresponds with *Dimensions 11 Drain A* in Sketchup Model

