

# Horizontal Shadow Box

## GATE BUILDING INSTRUCTIONS

# Contents

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|   |    |
|---|----|
| Required Tools                          | 3  |
| Materials & Hardware                    | 4  |
| Preparation, Safety & Other Precautions | 5  |
| Step 1 – Build Gate Frame               | 6  |
| Step 2 – Cut & Install Rails            | 7  |
| Step 3 – Install Brackets               | 8  |
| Step 4 – Cut & Install Pickets          | 9  |
| Step 5 – Cut & Install Final Picket     | 10 |
| Step 6 – Install Hardware & Hang Gate   | 11 |

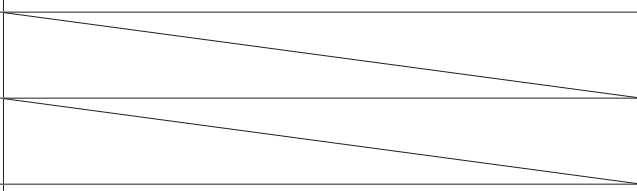
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## Required Tools

| <b>TOOL</b>                     | <b>PURPOSE</b>  |
|---------------------------------|---|
| <b>Circular Saw</b>             | To cut materials.   |
| <b>Power Drill</b>              | To drive screws and drill pilot holes.                                |
| <b>#2 Robertson driving bit</b> | To drive screws.  |
| <b>#2 Phillips driving bit</b>  | To drive screws.  |
| <b>1/8" drill bit</b>           | To drill pilot holes.   |
| <b>Hammer or Mallet</b>         | For knocking boards into position.                                    |
| <b>Tape Measure</b>             | To measure materials.   |
| <b>4' Level</b>                 | To ensure the top and bottom rails are level on each panel.           |
| <b>Brush</b>                    | To apply preservative to end cuts.                                    |
| ∨ <b>OPTIONAL</b> ∨             |   |
| <b>Table Saw</b>                | An alternative to using a circular saw for cutting boards lengthwise. |
| <b>Mitre Saw or Chop Saw</b>    | An alternative to using a circular saw for cutting boards to length.  |

Materials & Hardware

| WOOD        |          |                                  |  |
|-------------|----------|----------------------------------|--|
| PART        | QUANTITY | NOMINAL SIZE                     | ACTUAL DIMENSIONS (lengths will vary)                  |
| Posts       | 1        | 4 x 4 x 10'<br>or<br>6 x 6 x 10' | 3-1/2" x 3-1/2" x 120"<br>or<br>5-1/2" x 5-1/2" x 120" |
| Frame Edges | 4        | 2 x 4 x 8'                       | 1-1/2" x 3-1/2" x 96"                                  |
| Rails       | 4        | 2 x 4 x 8'                       | 1-1/2" x 3-1/2" x 96"                                  |
| Pickets     | 13       | 1 x 6 x 8'                       | 3/4" x 5-1/2" x 96"                                    |

| HARDWARE   |              |  |
|--|--------------|--|
| PART   | QUANTITY     | NOMINAL SIZE   |
| Deck Screws for Frame and Rails  | 24 per gate  | #8 3"  |
| Deck Screws for Pickets  | 120 per gate | #8 1-1/2"  |
| <div style="text-align: center;"> <span>∨</span> GATE HARDWARE KIT <span>∨</span> </div> |              |  |
| Corner Brackets  | 4 per gate   | 7-3/4" x 8-1/2"  |
| Butt Hinges  | 2 per gate   |  |
| Gravity Latch (2 parts)  | 1 per gate   |  |
| Round head screws  | 6 per gate   | #8 1"  |
| Round head screws  | 24 per gate  | #8 1-1/2"  |
| Countersunk head screws  | 16 per gate  | #8 1-1/2"  |



## Preparation, Safety & Other Precautions

### PERSONAL PROTECTION EQUIPMENT

Always wear eye protection. Use eye and ear protection when using power tools. Always wear eye protection, gloves and the appropriate respiratory protection when working with concrete as it's caustic and can cause serious, permanent injury. Respiratory protection is also recommended in the presence of sawdust.

This wood has been preserved by pressure treatment with a PMRA-registered pesticide, copper azole (tebuconazole) to protect it from insect attack and fungal decay. Some chemical may migrate from preserved wood into surrounding soil over time. It can also rub off from the wood surface upon contact with the skin.

### OTHER HANDLING & USAGE PRECAUTIONS

Exposure to copper azole may present certain hazards, therefore the following precautions should be taken when handling and working with the preserved wood.

- Do not use treated wood under circumstances where the preservative may become a component of drinking water, food or animal feed.
- Only use treated wood that is visibly free of surface residue should be used where contact is likely.
- Use gloves when handling wood. Loose fitting gloves should never be used when operating power tools.
- Avoid frequent or prolonged inhalation of sawdust from wood, treated or untreated.
- Always saw, sand and machine wood in the outdoors or in a well-ventilated area and wear a dust mask.
- After working with wood always wash exposed skin thoroughly, especially before eating, drinking, toileting and smoking.
- Always launder clothes that have been exposed to sawdust and preservatives before reuse.
- Wash work clothes separately from other clothing.

### DISPOSAL PRECAUTIONS

- NEVER BURN TREATED WOOD
- Dispose of treated wood as you would regular trash.

### BEWARE OF UNDERGROUND HAZARDS

Find out what is in the ground before you dig holes for your posts. Contact your local gas, electric, and water providers before finalizing the placement of your posts to ensure that there won't be a conflict. Failing to do this can cause serious damage that is very expensive to repair and can cause serious injury or death.

### RECOMMENDED HARDWARE

Hot-dipped galvanized and/or ceramic coated fasteners (meeting ASTM A 153) connectors (ASTM A 653 Class G185 sheet) or better are recommended for protection against the effects of moisture.

Aluminum should not be used in direct contact with this wood.

# Step 1

## Build Gate Frame

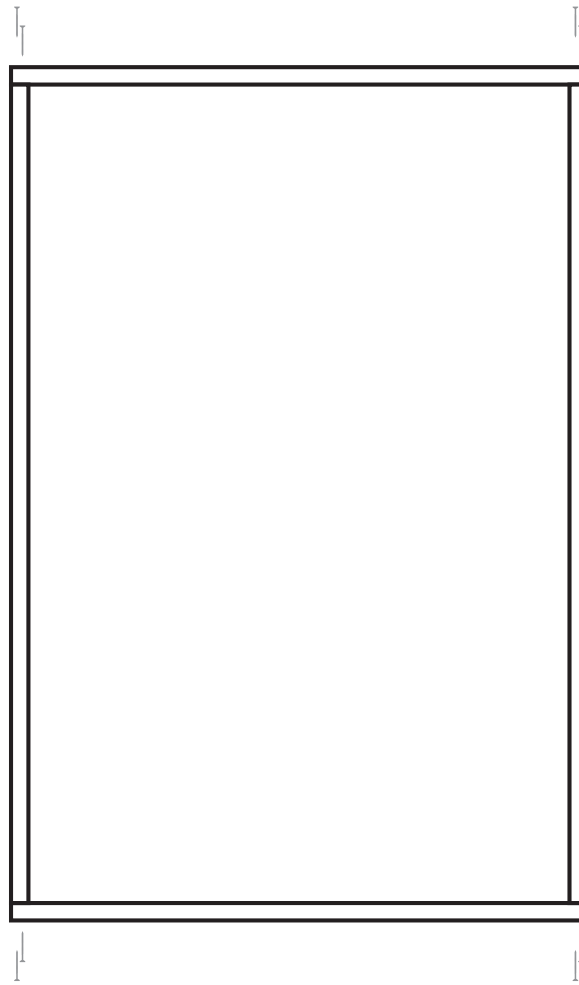
**1a)** Determine the width of the gate by measuring the width of the opening, then deducting 1" to allow space for hardware and the swing of the gate.

**1b)** Start building the gate frame by cutting the top and bottom frame edges (2 x 4) to the width of the gate that you determined in the previous step.

**1c)** Cut the two vertical sides of the frame to the desired height of your gate minus 3 inches that will be made up by the top and bottom frame edges from the previous step.

**1d)** Brush the preservative onto the cut ends of the wood. Follow the application instructions and safety precautions as listed on the can.

**1e)** Fasten the top and bottom frame edges to the ends of the vertical sides using 2 (3") screws at each corner.



# Step 2

## Cut & Install Rails

**2a)** Cut 2 horizontal rails (2 x 4) to fit inside the frame, one flush against the inside of the top of the frame, one against the bottom.

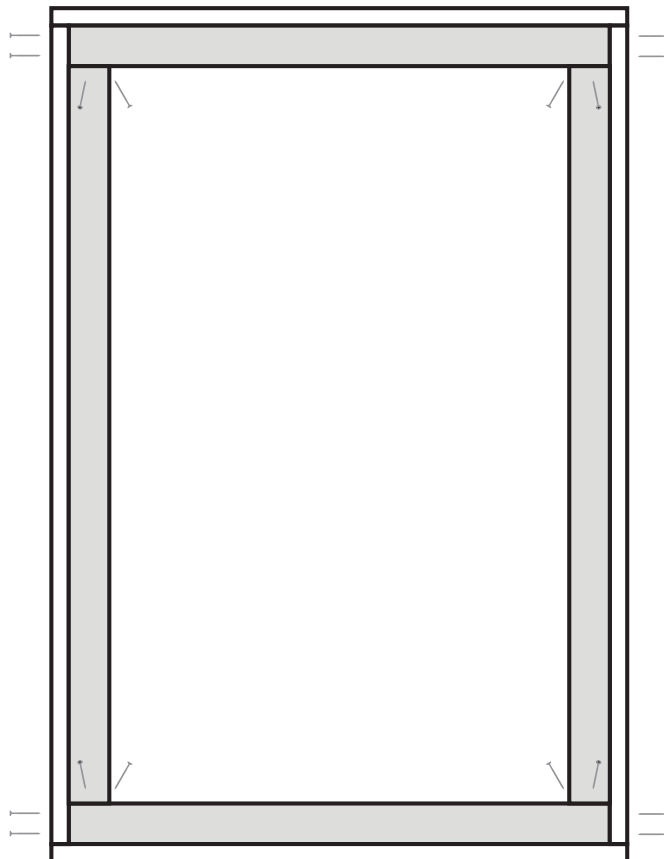
**2b)** Brush the preservative onto the cut ends of the wood. Follow the application instructions and safety precautions as listed on the can.

**2c)** Using 2 (3") screws at the end of each rail, install the horizontal rails perpendicular to the frame edges so the wide faces are facing out.

**2d)** Cut 2 vertical rails (2 x 4) to fit inside the frame and rails from the previous step. These should be 10 inches shorter than the desired height of the gate.

**2e)** Brush the preservative onto the cut ends of the wood. Follow the application instructions and safety precautions as listed on the can.

**2f)** Using 2 (3") screws at the end of each rail, install the vertical rails perpendicular to the frame edges so the wide faces are facing out.



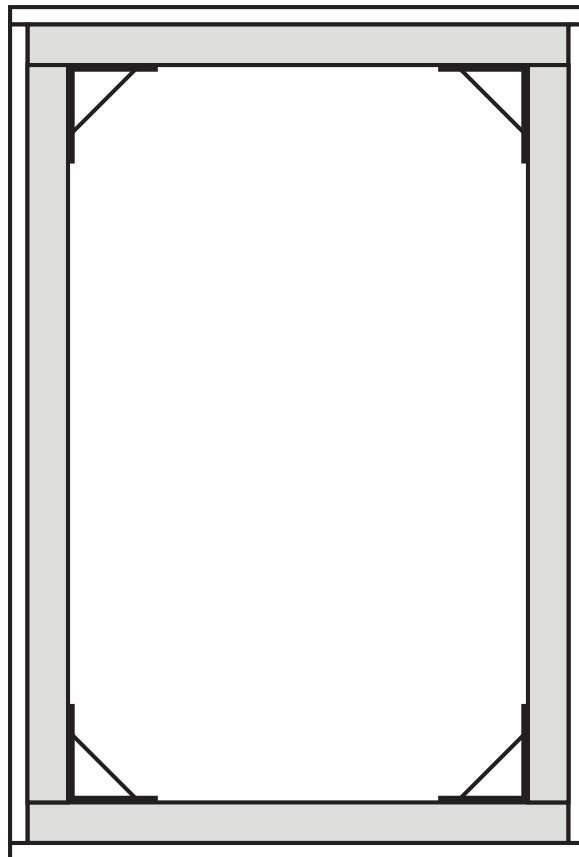
**PRO TIP:** Square your frame before tightening the screws. You can check if it's square with a framing square or by measuring diagonally, corner to corner.

The corner to corner measurements should be identical on both diagonals. If you need to adjust the frame, just knock it as needed until it's square, then tighten your rail screws.

## Step 3 Install Brackets

**3a)** Fasten one bracket to the inside of each of the four corners of the frame rails. Orient the long sides of the brackets vertically.

Use 6, round head (1-1/2") screws on each bracket.





# Step 4

## Cut and Install Pickets

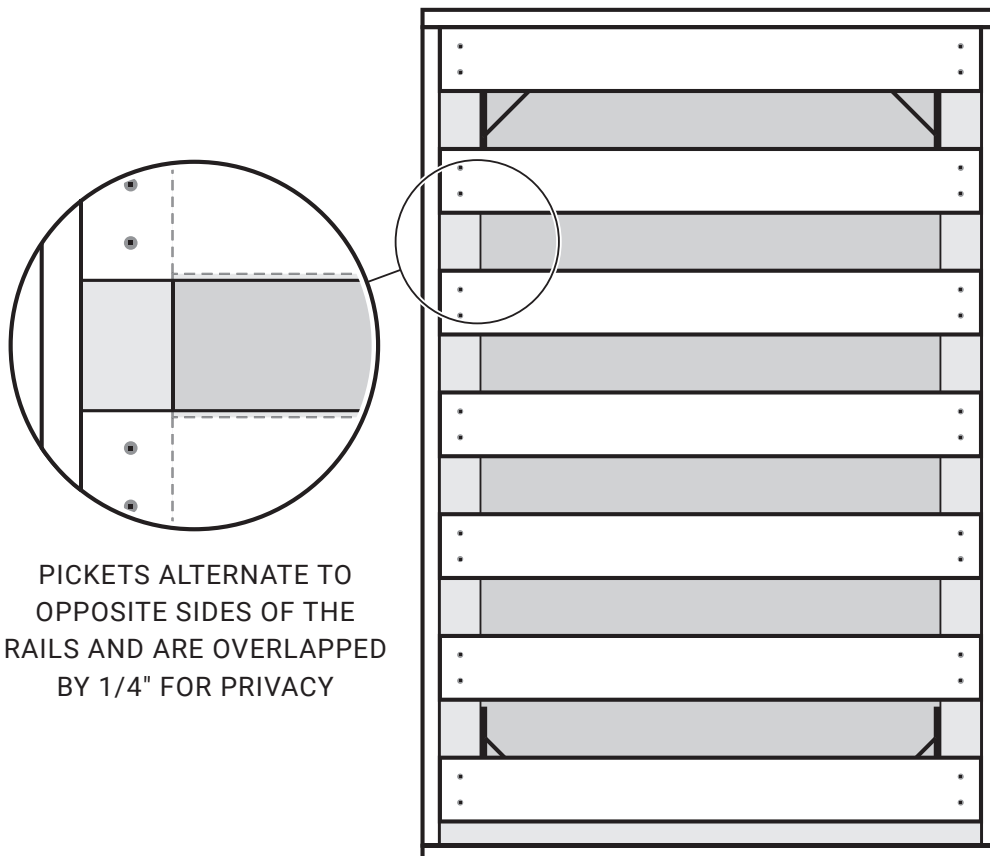
**4a)** Cut pickets to fit horizontally inside the frame.

**4b)** Brush the preservative onto the cut ends of the wood. Follow the application instructions and safety precautions as listed on the can.

**4c)** Install the first picket horizontally, tight to the side and top of the frame. Install each picket using 2 (1-1/2") screws through the face of each picket and into the vertical rails.

**4d)** Continue to install pickets, alternating them to opposite sides of the rails.

Overlap opposing pickets by 1/4" for added privacy.



# Step 5

## Cut and Install Final Picket

**5a)** Once you've reached the last picket in the panel you will notice that the gap available will be too small for a full-size picket. Measure the available gap and subtract the amount of space between the other pickets on the gate. This will give you the size of the final picket.

If you used 1/4" overlaps on the previous pickets, the amount to subtract will be 5".

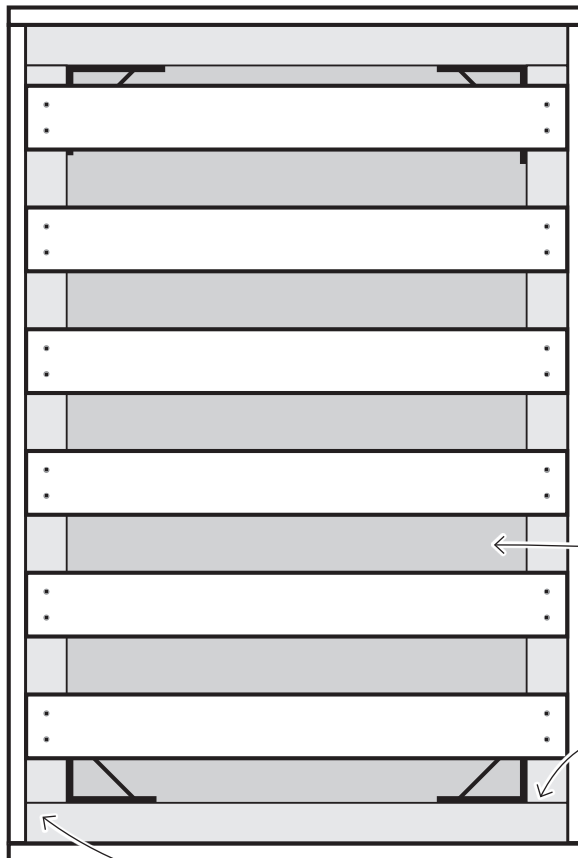
It is important that you take a measurement at both ends of the space as there may be a deviation.

**5b)** Using the measurements determined in the previous step, mark the picket and use a straight edge to draw a line from end to end.

**5c)** Use a table saw or a circular saw to cut along the line. Install the picket as per previous instructions.

**5d)** Brush the preservative onto the cut side of the wood. Follow the application instructions and safety precautions as listed on the can.

**5e)** Install the final picket as per previous instructions.



MEASURE GAP AT BOTH ENDS AND SUBTRACT THE AMOUNT OF SPACE BETWEEN THE OTHER PICKETS TO DETERMINE THE SIZE OF THE FINAL PICKET.

# Step 6 Install Hardware & Hang Gate

**6a)** Decide which way you want the gate to swing. The hinges must be hung so the hinge pin is on the face of the gate that faces in the direction of swing.

**6b)** Install the hinges and the latch arm to the frame of the gate.

**6c)** Precisely measure the positions of the hinges on the gate frame. Measure and mark the posts to properly position the other halves of the hinges.

**6d)** For hinges with removable hinge pins, it will be easier to hang the gate if you remove the hinge pins to separate the two halves.

Install the separated halves precisely on your marks, ensuring they are plumb and aligned.

Misaligned hinges are more likely to squeak and bind. Hinges that aren't plumb will allow gravity to swing the gate.

**6e)** Hang the gate by aligning the hinges and inserting the pins.

If the hinge pins aren't removable, you'll need a second person to hold the gate while you fasten the hinges to the post.

**6e)** Once the gate is hung, mount the other piece of the latch assembly to the post.

