



Downspout Planter

FABRICATION GUIDE

The following summary is provided to detail the fabrication of a 2 foot x 4 foot planter box constructed primarily of 5/4 inch x 6 inch lumber (5/4 x 6) to be used as the body of a downspout planter box for use in residential stormwater management. A list of tools required for construction, summary of materials needed, and the steps to build the planter box are provided below.

Tool List

- Electric drill/driver with Phillips head drill bit
- Table saw or circular saw
- Chop saw (miter saw)
- Tape measure
- Square
- Clamps
- Marker and pencil

Material List

Note: When using pressure treated lumber, it is recommended that the lumber be allowed to dry before fabrication to prevent shrinking and swelling of the lumber in a completed downspout planter.

Material	Quantity	Final cut sizes
3/4" exterior grade plywood	(1) sheet	(1) 24" x 48" - planter base
5/4" x6" pressure treated lumber	(8) 8' boards or (4) 16' boards	(4) 22" \\ (4) 24" \\ (4) 46" \\ (4) 48" /\ (2) 50 1/4" (with 45° angled edges) - skirt (2) 26 1/4" (with 45° angled edges) - skirt
5/4" x6" pressure treated lumber (ripped to 4 1/4" wide)	(2) 8' boards or (1) 16' board	(2) 51" (with 45° angled edges) - trim (2) 27"(with 45° angled edges) - trim
2"x2" pressure treated lumber	(3) 8' boards	(4) 22" - interior bracing (2) 20 1/2" - interior bracing for 4' planters (2) 42 1/2" - horizontal cleat (2) 18 1/2" - horizontal cleat (4) 3" pieces - skirt bracing
Deck (galvanized) screws	(100+) 2" and 3"	NA



Fabrication Instructions

1. Take two 46" $\frac{5}{4}$ " x 6"s and two 24" $\frac{5}{4}$ " x 6"s and stand them on edge. Place the short and long pieces at right angles (perpendicular) to form a rectangular frame with the 46" lengths abutted inside the 24" lengths. Attach clamps to hold the pieces together on edge. The frame should measure 24"x48".
2. Lay the 24"x48" plywood piece on top of the frame. This will be the bottom of the box. Make sure the edges are all flush.
3. Starting in a corner, drill a pilot hole through the plywood into the frame.
4. Drive a deck screw into the pilot hole so the head of the screw is flush with the surface of the plywood. Continue this around the perimeter of the bottom. There should be four screws in each long side and three screws in each short side for a total of fourteen screws.



5. Create three additional rectangular frames from the remaining $\frac{5}{4}$ x 6s. There will be no plywood component to these three frames. One of these additional frames will be constructed from two (46") $\frac{5}{4}$ " x 6"s and two (24") $\frac{5}{4}$ " x 6"s (as in Step

1), and the other two frames will be constructed from two (48") $\frac{5}{4}$ x 6s and two (22") $\frac{5}{4}$ x 6s. Drill pilot holes into each corner and secure with two 3" deck screws. Make sure each frame measures 24" by 48". This step requires (24) 3" deck screws.

6. Once the frames are stacked and flush, the corners of the planter box must be reinforced with the 22" 2x2s. One 2x2 should be attached to each corner of the box; 8 screws should be used to drill each 2x2 to the $\frac{5}{4}$ x 6 frames of the box as shown in the photo. Be sure to pre-drill each hole as in the steps above. This step requires (32) 3"



deck screws. (An angled cut at the top edge of the 2x2 supports is shown). For the 2'x4' and 1.5 'x.4' boxes, insert a 20 $\frac{1}{2}$ " brace in the middle of each of the 4' sides.

7. The cleats should be drilled into the top interior of the planter using 2" screws and pilot holes.

Trim Fabrication

1. The trim will be constructed using the $\frac{5}{4}$ " x 6" boards that were ripped to $4\frac{1}{4}$ " and cut to form (2) 51" and (2) 27" with 45° angled edges.
2. Lay the (2) 51" and (2) 27" pre-cut boards so they abut one another at right angles (perpendicular) to form a rectangular frame for the trim. Confirm that the boards line up properly.
3. Trim assembly will be attached to the planter during the liner and plumbing installation (see the Downspout Liner and Plumbing Guide) .
4. To reinforce strength of miter joints on trim assembly and to reduce risk of joints separating, joints should be secured using wood glue and either dowels, keys, biscuits, or splines. Sand joints as necessary to ensure smooth finish on the top side of the trim assembly.



Skirt Fabrication

1. The $\frac{5}{4}$ " x 6" boards that were cut to (2) 50 $\frac{1}{4}$ " and (2) 26 $\frac{1}{4}$ " with 45° angled edges will be used for the skirt.
2. Stand the two 51" boards and the two 27" boards on edge. Place them at right angles (perpendicular) to one another to form a rectangular frame.
3. Place a 3" 2x2 in each inside corner of the rectangular frame so it is flush with both boards and the base of the frame. There will be a gap between the top of the 2x2 and the top of the frame.
4. Starting in one corner, drill at least two pilot holes in both directions of the inner faces of the 2x2s (towards the long and short ends of the rectangular frame). This requires a total of four pilot holes per corner; two along each inner face. Evenly space the pilot holes along the length of the 2x2s to avoid interference during deck screw installations.

5. Drive deck screws into the pilot holes until the head of the screw is flush with the surface of the 2x2s. Continue this step for all pilot holes. There should be four total screws installed per corner (2 on each side). This requires a total of sixteen screws.
6. After skirt fabrication, follow the Downspout Planter Installation Guide for installation of the skirt.



Planter Box

Skirt

Trim