

## **Compost bin construction.**

Prepared for the Sudbury Community Garden Network

by

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### **Materials**

The bin, Photo 1, is simply constructed from 2x4's and 1x6" strapping.

One bin requires:

2 2x4's 8' long, split lengthwise with a thin kerf saw; and, 12 1x6" 8 feet long strapping.

It should be noted that "2x2's" are actually  $1\frac{1}{2} \times 1\frac{1}{2}$  and are now manufactured from short lengths of wood spliced together. These are not made to be used outdoors; hence, the decision to manufacture one's own from 2x4's which, again, are actually smaller ( $3\frac{1}{2} \times 1\frac{1}{2}$ ).

It would seem sensible to cut the 1x 6 planks from 10 foot long 1x6's to minimize waste but these are almost always warped or twisted. One has better success with 8 foot long boards. Even so, one needs to hand-pick the material to minimize warping and cupping; the latter is always present to some degree.

The bin is assembled using 56  $2\frac{1}{2} \times 1/4$  " galvanized carriage bolts , nuts and washers.

### **Construction**

The 2x2" posts made from the 2X4 are cut into two to yield 8 posts each 4 feet long.

Two of the 2x2' posts are drilled as shown in Figure 2 and are the two rear corner posts. It is essential that the  $5/16$ " drill holes are centred precisely to avoid problems on assembly. The template provided can be clamped to a fresh 2x2 with C-clamps and then drilled on a drill press. Both pieces are drilled identically. It should be noted that because the 2x4 was split lengthwise the resultant "2x2" is slightly wider in one dimension than the other ( $1\frac{11}{16}$  and  $1\frac{1}{2}$ ). Care should be taken when drilling to orient the wood correctly and as shown in the diagram; the side is a fraction larger than the back. Alternatively, the 2x4's can be run through

the saw twice to yield posts that are 1 ½ x 1 ½. The front posts are only drilled on the side face (Fig 2B) because the boards that form the front are removable and are held in place by two of the 2x2's (Photo 5). These have only the top and bottom two holes drilled using the side face of the 2x2 template.

The twelve 1x6's are cut into 24 1-metre (39 3/8") long planks. These are drilled as follows:

4 planks drilled as indicated in Fig 1 B. These provide the structural rigidity of the two sides of the bin.

2 planks drilled as indicated in Fig 1 C. These form the top and bottom of the back of the bin and further stiffen the structure.

8 planks as indicated in Fig 1 D. These are the four central planks of each side. Note, that hole at one end is 1 ½" from the end of the board rather than 3/4". The reason is that the side boards overlap the back boards at the two rear corners of the bin (Photo 2).

4 planks drilled as shown in Fig 1 E. These are the four central planks for the back and are offset from the centre to match to offset drill holes in the posts. Proper orientation of the boards, as indicated in Fig 1 E and Photo 3 and 4, is essential to maintain the proper spacing between boards.

## **Assembly**

Although assembly is possible by one person it certainly helps to have another pair of hands.

The sides are constructed first by bolting the top and bottom planks to two posts and then adding the four central planks. The posts that have been drilled only at the top and bottom can then be added to form the slot into which the removable boards that compose the front are inserted, Photo 6.

With the two sides completed the bin can be transported easily to the required site if this is different to the "shop" site.

Final assembly is simply a case of bolting the sides to the back, starting with the top and bottom boards.

The removable slats that form the front of the bin, Fig 2 D, Photo 5, require one inch high spacers, nailed at each end of the slat, and cut from waste wood. Finally, a crossbar, Figure 2 E, Photo 1 and 6, of 2X2 with a 2x2 block screwed to each end to serve as a stopper is placed across the two sides of the bin to prevent the sides from bowing out when the bin is filled with compost.

Figure 1. (NOT to scale)

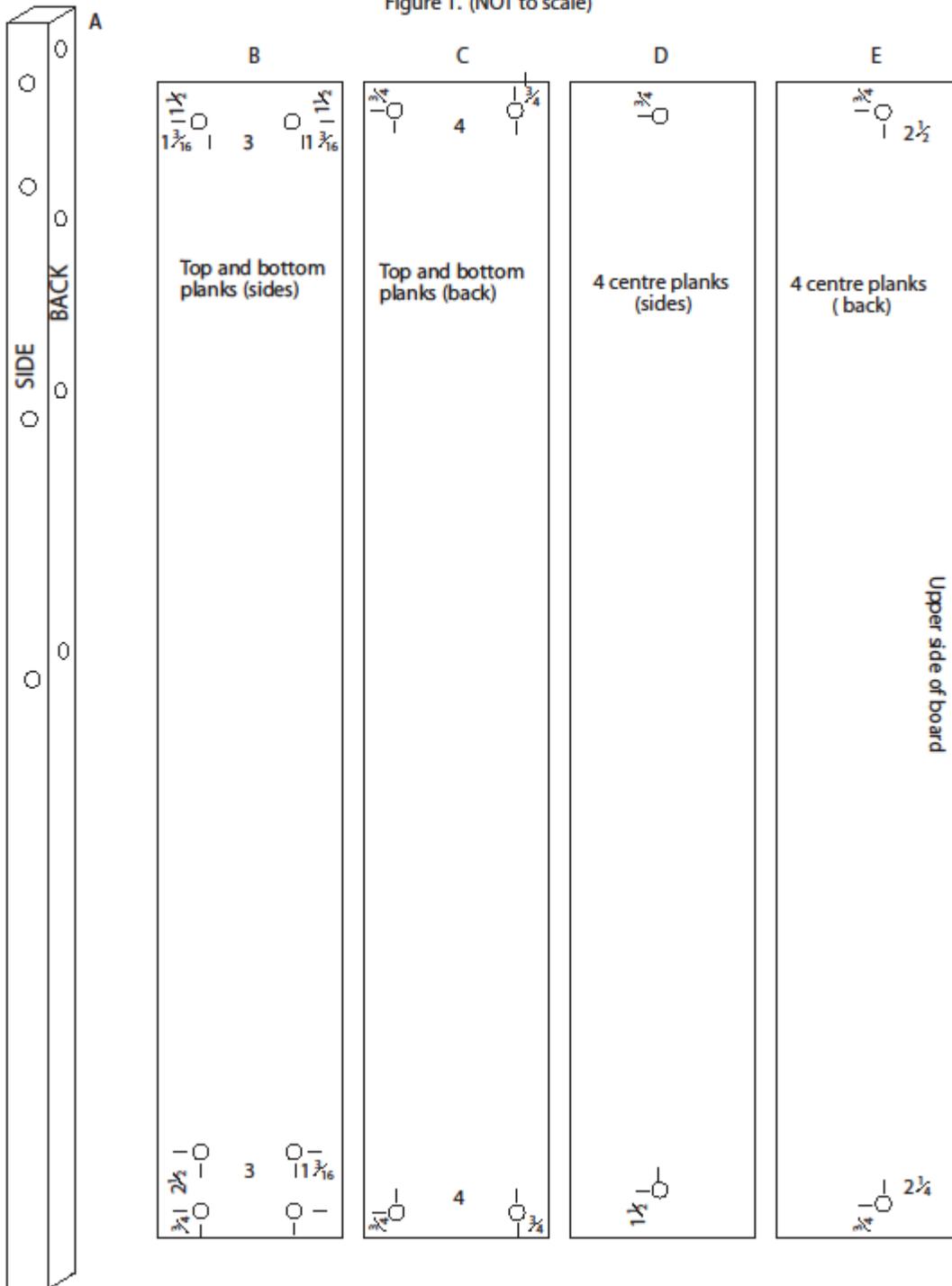


Figure 2 (NOT to scale)

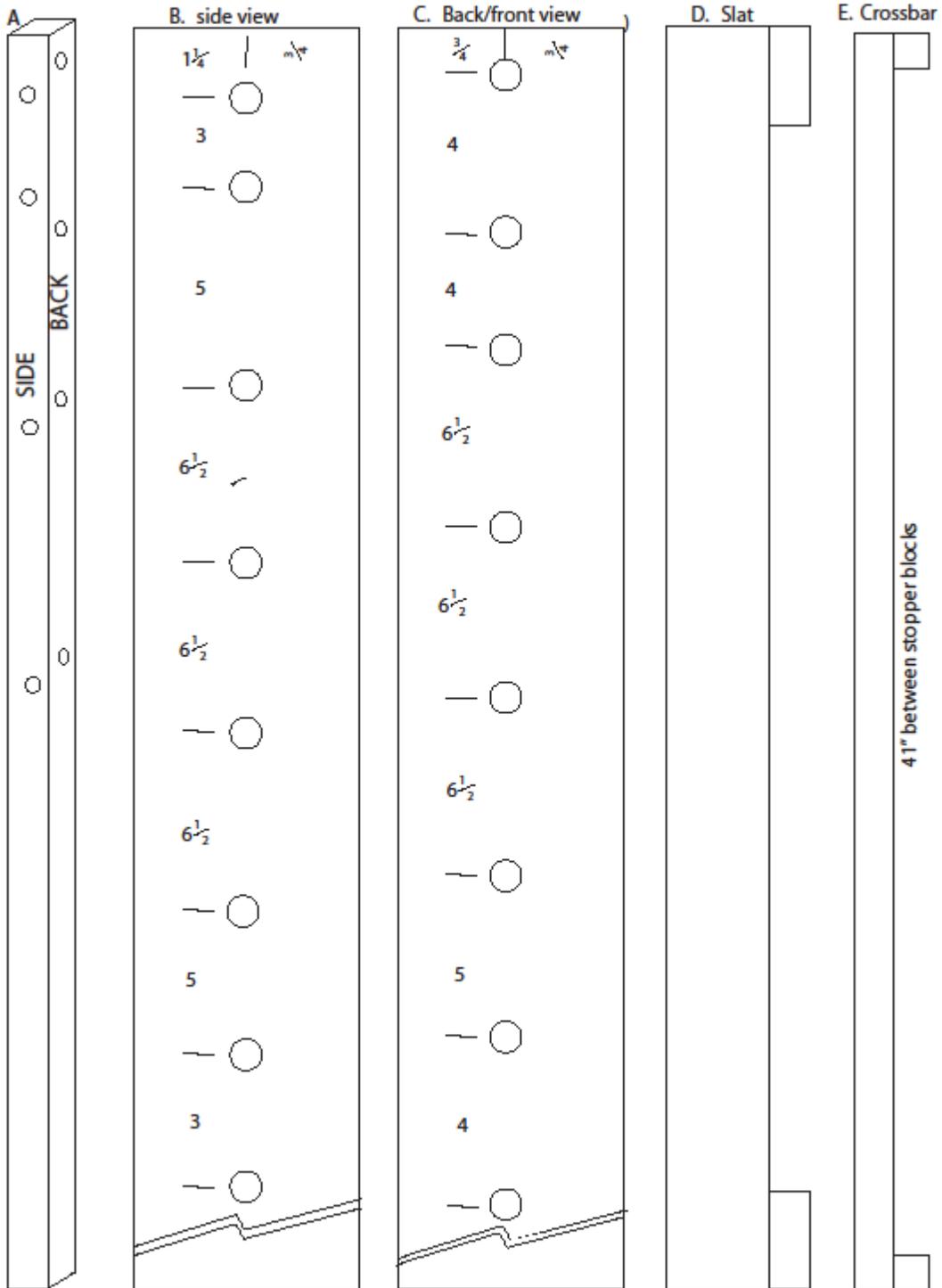




Photo 1. The completed compost bin showing the removable slats held within a slot formed by two upright 2x2's. The cross bar prevents the sides from bowing out when the bin is being filled. In this case the bin is sited on concrete pavers and the lower portion of the 2x2's were sawn off to leave a 1 inch space beneath the lowermost row of planks



Photo 2. Upper back corner showing the side plank that overlaps the back plank. The photo shows the offset of the bolts that allows the bolts to pass through the 2x2 without interference.. Also visible is the cupping of the plank. Care has to be taken not to overtighten the bolts during assembly to prevent splitting the plank.



Photo 3. The centre planks below those of Photo 2. The centre boards are only attached by a single bolt. The bolt on the side plank (right) is centred but the one on the back plank (left) is offset upwards; again to allow clearance of the two bolts as they pass through the 2x2.



Photo 4. Detail of an inside back corner. The offset of the bolts to allow clearance through the post is quite evident. The side is on the right of the post and the back is to the left.



Photo 5. shows a slat partly removed and resting on its spacer. Behind it is the crossbar.



Photo 6. Detail of slot for the removable slats. Note that the inner post that forms the slot is held in place only by two bolts at top and bottom. The crossbar is seen in its proper location towards the front of the bin.