

# BUILDING RAISED PLANTING BEDS

## GOAL

TO LEARN HOW TO BUILD DURABLE AND ATTRACTIVE RAISED PLANTING BEDS BY CORRECTLY CUTTING, DRILLING, LEVELING, TOENAILING, RE-BARRING, AND SPIKING .

## TOOLS

**Cutting and Drilling:** saw horses, multi-plug adapter, tape measure, carpenter's square, sharp pencils, beam cutter, extension cord, chain oil

**Leveling:** spray paint, mattock (pick axe), spade, breaker bar, level, tape measure, sledge hammer, hatchet (small axe)

**Toenailing, Re-barring and Spiking:** hammer, sledge hammer, nail set, spade, breaker bar

## PLAN OF ACTION

Separate the crew into two teams. Both tasks can be completed at the same time.

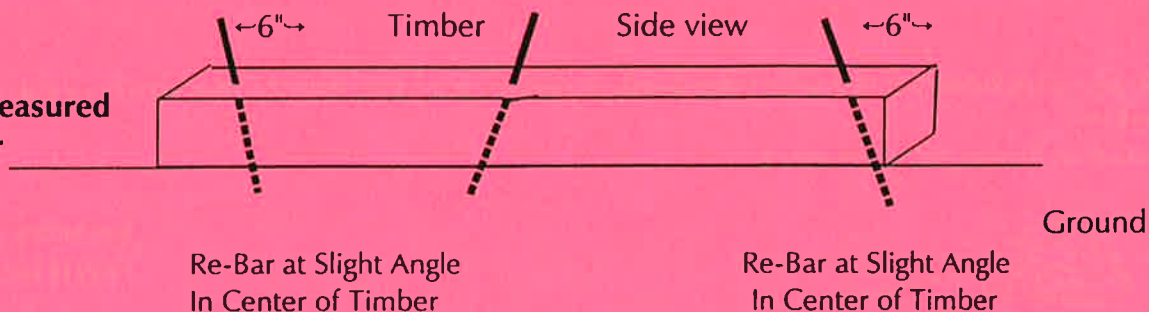
**Rotate team members at different sites to be sure that all crew members master all tasks.**

1. The cutting and drilling team will use power tools without the assistance of volunteers.
2. The leveling team should use volunteers to assist in moving, placing and leveling timbers.

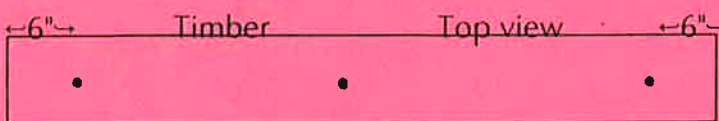
## CUTTING AND DRILLING

1. Use instructions from the project horticulturist for the exact measurements of the bed design.
2. Cut the timbers to the **exact specifications**. Timbers are sold in 8' lengths but may actually vary by as much as 2". It is important that you measure every timber to be sure that lengths are equal.
3. The first layer at ground level will be secured with re-bar. Holes for re-bar must be pre-drilled. If possible, drill the holes for re-bar before placing the timbers on the ground. Use a 1/2" or 7/16" bit. Drill all holes in the center of the wood at a slight angle towards either end. **SEE DIAGRAMS BELOW FOR CORRECT DRILLING ANGLES.**

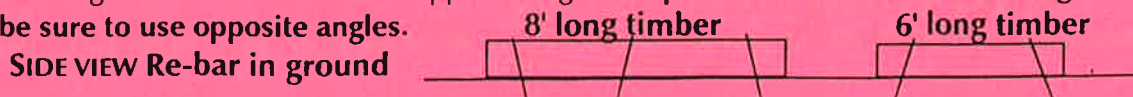
**Proper Re-Bar Placement in Measured And Cut Timber**  
SIDE VIEW



**Proper Re-Bar Placement in Measured and Cut Timber**  
TOP VIEW



4. For timbers over 6' long, drill three holes at alternating directions - one in the center and one on each end. For timbers under 6' long drill one at each end at opposite angles. **To prevent the timbers from being lifted out of the ground, be sure to use opposite angles.**

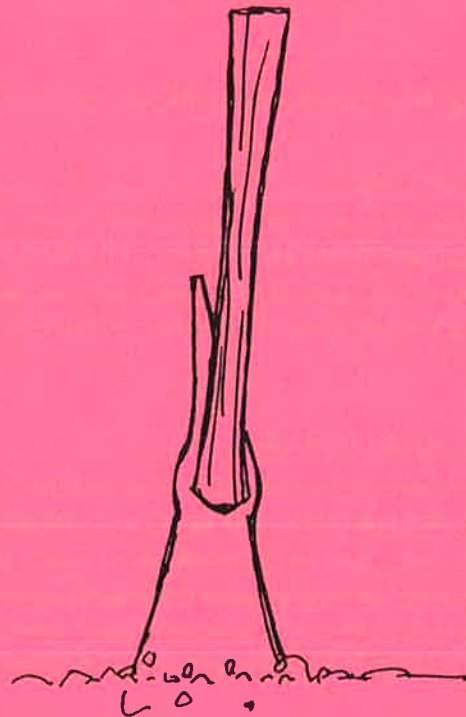
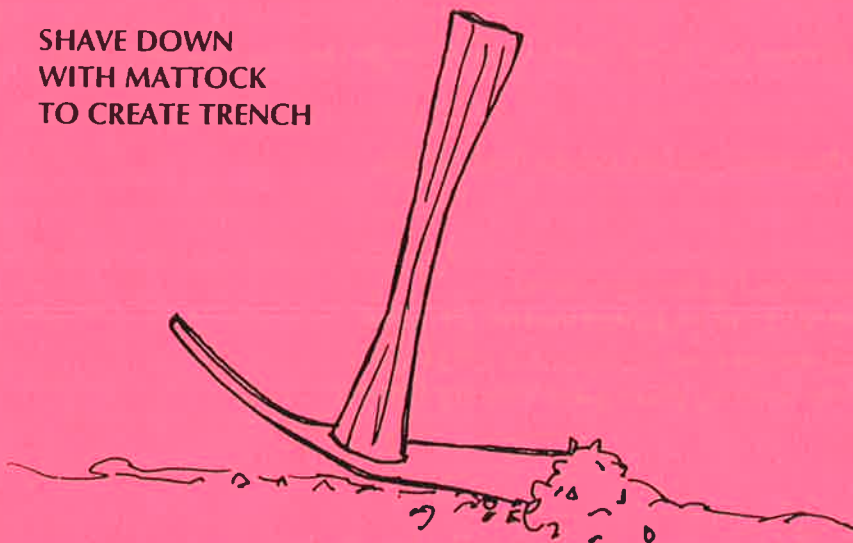


# BUILDING RAISED PLANTING BEDS

## LEVELING

1. Draw bed on ground with spray paint. Re-check measurements with project horticulturist.
2. Remove any sod or debris from entire bed area. Use a sod cutter, if possible. Recheck measurements.
3. Check the flatness of the ground with level.
  - ◆ If ground is level, trench down one inch.
  - ◆ If ground is not level, you will level it by trenching down from the highest point.
4. Use the flat end of the mattock with a shallow shaving motion to create a trench 1' (one foot) wide and 1" (one inch) deep.

## SHAVE DOWN WITH MATTOCK TO CREATE TRENCH



5. After the soil is loosened, use a flat edge spade to remove the loose soil. **Dig the trench as flat and smooth as possible.**
6. Check level before placing timbers.



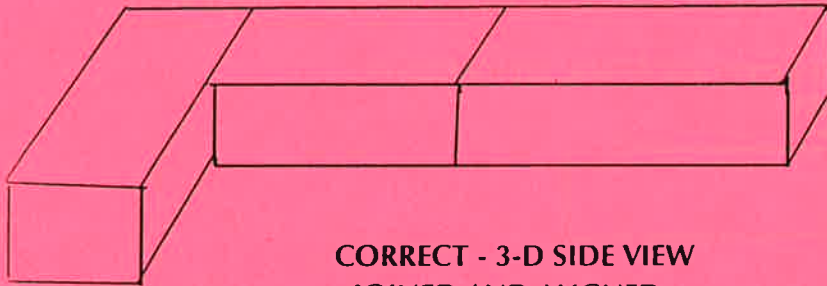
## REMOVE LOOSE SOIL WITH SPADE

7. Place timbers in trench. Use the **Two-Point System** for checking the level of the timbers.
  - ◆ Use the 1' level across the width of the timber.
  - ◆ Use the 4' level along the length of the timber.
8. If the timber is not level, hit the timber every foot along its length with a sledge hammer to create an indentation.

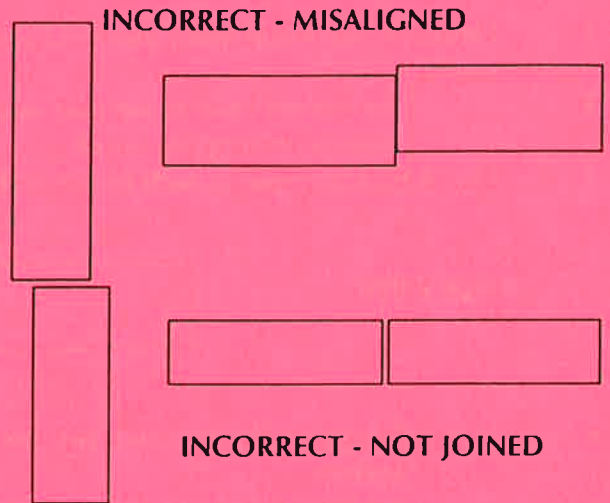
## LEVELING continued

9. Remove the timber and look for the indented or compressed areas in the soil. These are the high spots. Remove them with the flat spade.
10. Reset the timber, and recheck the level.
11. When the timber is level, fill the gaps between the timber and the ground with soil, making sure to completely fill every gap. **DO NOT** use wood chips, weeds, compost, sod, soil/compost mix or other expensive and/or easily degradable material.
12. Hit the timber every foot along its length with a sledge hammer to secure it in the soil.
  - ◆ If the timber rocks back and forth or from side to side, you must refill the gaps between the timber and the ground until it is stable. Stand on it to check for stability.
13. Recheck the level, repeat steps 8 through 12, if necessary.

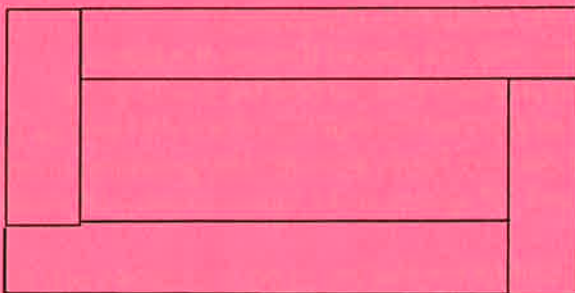
## MAKE SURE ALL JOINTS ARE FLUSH FROM ALL ANGLES



**CORRECT - 3-D SIDE VIEW  
JOINED AND ALIGNED**



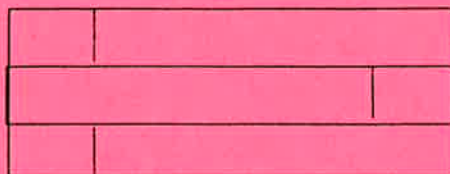
14. When laying down timbers for a bed, alternate the corners placing the end of one timber against the side of the next, so that each timber has only one end exposed. SEE DIAGRAM BELOW



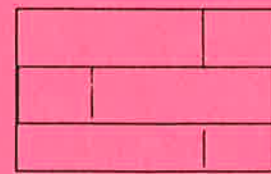
**TIMBER ALIGNMENT  
TOP VIEW**

15. When building beds with more than one layer, alternate pattern from diagram above to make sure all corners are stable. SEE DIAGRAM BELOW.

**SIDE VIEW**



**END VIEW**

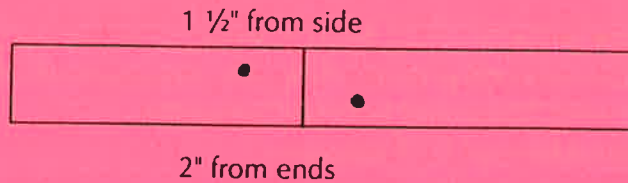


## TOENAILING AND RE-BARRING

**TOENAILING** - Before anchoring the first layer of timbers to the ground with re-bar, attach the timbers to each other using 5" and 6" ringshank nails.

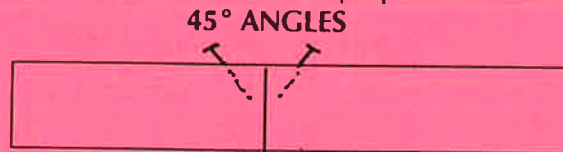
1. Starting on the top side of the timber, 2" from the end and 1 1/2" from the side, tilt a nail at 45° angle. Stagger nails from one timber to the other. SEE DIAGRAM.

**TOP VIEW  
NAIL PLACEMENT**



2. Drive the nail in and make sure the nailhead is completely "sunk" - embedded into the surface of the wood.
  - ◆ For the top layer of any bed, use a nail set to sink the nails. A nail set will help you to sink the nails without marring the wood.
3. Use at least one nail on each timber end to ensure proper attachment. SEE DIAGRAM.

**SIDE VIEW**



- ◆ Be sure to double check that the timbers are not knocked out of level or that no gaps form between the timbers.
- ◆ It is helpful to have someone stabilize the end of the timber you toenailing by pushing with their feet or using leverage with the breaker bar.
- ◆ If one timber goes out of level with the other, you can first toenail from the side of the timber and then toenail from the top.

**RE-BARRING** - It takes at least two people to re-bar - one to stand on the timber to stabilize it while pounding in the re-bar and one to stand back and make sure the timbers are not shifting out of alignment.

1. Pound the re-bar into the pre-drilled holes and down into the ground through the timber.
  - ◆ If the re-bar bends, cut it off with a hacksaw and drill another hole for a new piece.
2. After the first layer is re-barrred, set all the timbers for the next level on top of the first layer as in diagrams on the previous page . Toenail all the timbers together for the next layer, following the guidelines in step 1.
3. Secure the second layer to the first, alternating 8" and 10" spikes. Make sure you use a 10" spike in the middle hole of the 8' timbers.
  - ◆ If the timbers don't line up exactly, use a spade or breaker bar to pry the timber so it lines up correctly, then set it with a spike.
4. If you are building beds 16' or longer and are using more than 2 layers of wood, you should use cross ties. Check with your horticulturist to see if cross ties are necessary.