

# HOW TO BUILD & USE T-FRAMES

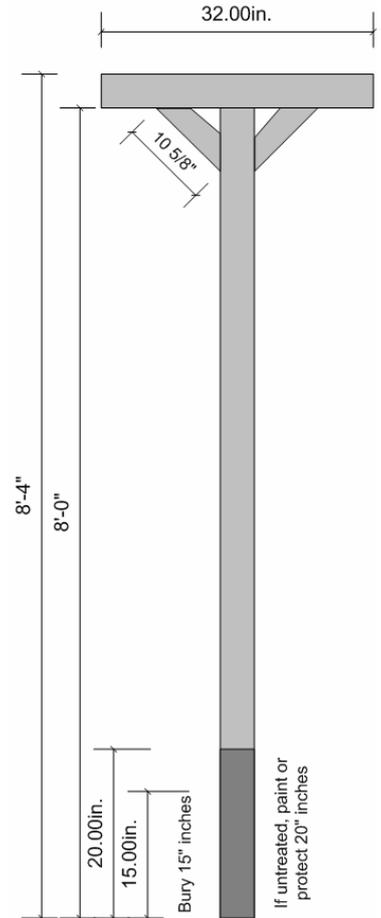
Recommended for the Mittleider Method of Vertical Growing

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## Supplies

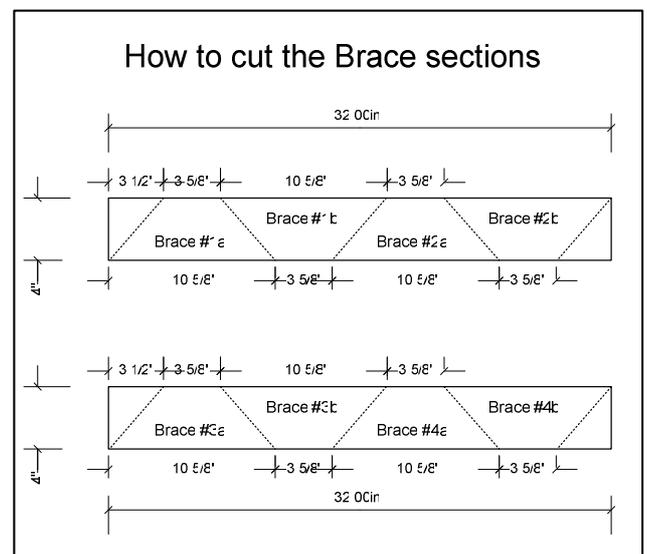
The quantities below are required to build 4 T-Frames.  
This is enough for one 30 foot-long grow bed

Quantity	Item / Description
6	<b>8 foot-long Treated 4x4</b> 4 of these will be used for the 4 post. The other two will be cut into sections for crossbars and support braces
8	<b>6 inch-long nails (spikes)</b> These are to attach the crossbar to the post
32	<b>3 inch-long nails or screws</b> These will be used to attach the support braces to the crossbar and the main post.



## Construction

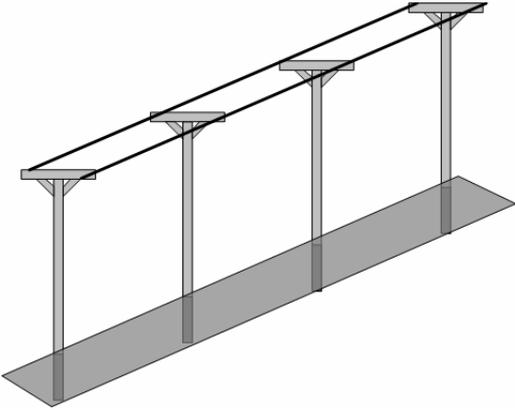
- Set four of the 4x4's aside. They will be the main posts
- Cut the other two 4x4's into equal lengths of 32 inches long.
  - Four of these 32 inch pieces will be the top cross bar of the T-Frames
- Mark two of the 32 inch long 4x4's as follows (see the diagram below for more detail)
  - On the bottom of the 4x4, mark at the following locations – from left to right.
    - 10 5/8", then 3 5/8", then 10 5/8", then 3 5/8"
  - On the top of the 4x4, mark at the following locations – from left to right.
    - 3 1/2", then 3 5/8", then 10 5/8", then 3 5/8"
  - Draw lines between these marks, then, using a table, circular or hand saw, cut on the lines.
- Pre-drill through the top center of the 32" tops, then use a 6" spike to nail into the 8' post.
- Screw or nail the braces to the top and post.
- If you feel like your wood could use more treatment where it will be placed in the ground, paint or cover the bottom 20 inches with exterior paint or roofing tar



Your T-Frame should look like the diagram above.

# Put in the garden

- Bury the T-Frame 15" in the ground at 10 foot (or shorter) intervals. T-Frames should be placed on the same side as your single-row of plants. The outside edge of the post should be lined up with the top of the soil-bed ridge.
- Install the wire/pipe between the "T"s on the outside edges. Some options are:
  - Use 2 X 4's on edge (or other strong supports you can find for a good price), or
  - Use #9 gage wire and eyebolts between the outside T-Frames (this is very heavy gage wire – do not use smaller wire). Braces must be used on the outside "T"s to keep them from being pulled together by the weight of the fruit, or
  - Use 1/2" galvanized pipe held in place by two nails (you may be able to find this at "junk/scrap" metal places), or
  - Use 1/2" rebar.
- Attach a tie-wire (holds rebar together) or #17 gauge aluminum wire from Electric Fence section to the inside edge of the "T"s at ground level – the tie-wire will follow the ridge. Nail 1 1/2 inch nails to the inside edge of the "T" and wrap tie-wire around the nail. Tightly stretch the tie-wire to the next "T" and wrap around that nail. Do this with each "T" until the end of the bed.



**NOTE:** The weight on the support wire/pipe becomes very heavy as the plants grow. These supports need to be very strong to support that weight.

## How to use

- Cut 10 foot lengths (or a little longer) of bailing twine for each plant. Tie a knot on each end of the twine so they do not unravel. This way you can re-use them next year.
- Tie the bailing twine with a slip knot to the wire/pipe at the top of the "T". Alternate sides for each plant – left, right, left, right, etc. This creates an alternating "V" that allows the maximum sunlight in.
- Attach bailing twine from both sides of the wire/pipe at the top of the "T" down to single tie-wire near the base of the plants.
- As the plants grow, guide them up the bailing twine, alternating sides for each plant.
- Remember to remove and prune suckers. (See Mittleider Gardening Course, Chapter 15 for details)

**NOTE:** If you want to **extend the growing season**, use 2 X 4's on edge at the top of the "T", and make an arched canopy with 3/4" PVC and 45 degree Slip fittings every 2 feet, then cover in early Spring and late Fall with 6 mil clear plastic. And for those in **hot climates** place 25-30% shade cloth on top of the arched canopy only sufficient to give partial shade during the hottest 4 hours of the day. This can help your tomatoes, etc. continue fruiting in the heat of summer.

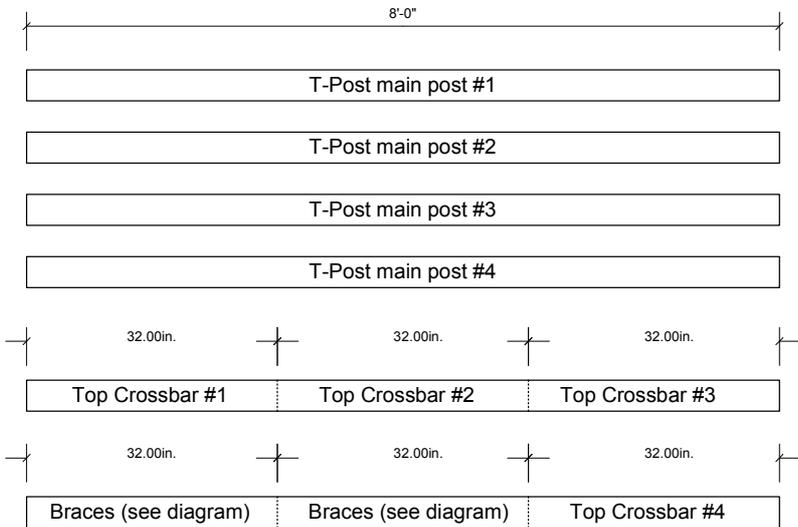
## Cutting Details

The diagram to the right shows the major cuts used for the six 4x4 posts.

Four posts kept un-cut at the full 8 feet.

Two posts are cut in three equal lengths of 32 inches. Four of these sections are used for the top crossbars.

The remaining two sections of 32 inches are cut for the supporting braces. (See diagram above)



# The big picture!

