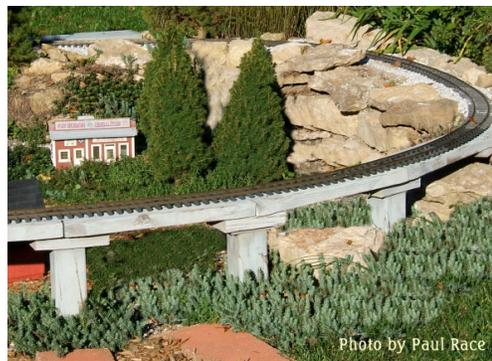


Building a Simple Raised Railroad

by Paul D. Race

A properly built raised garden railroad is more fun to watch and easier to maintain. Most raised railroads are built with 2x6" stringers (horizontal pieces) and 4x4" posts sunk into the ground like fenceposts. Although the results are rewarding, this project requires little more skill or tools than installing a few feet of wooden fence. For the sake of this article, we are assuming that you plan to use preformed track curves (the kind that come already curved in a box).



You'll need all of the items on the "Building a Simple Ground Railroad" Fact Sheet, except you can go on the "low side" on your crushed gravel requirement. You'll also need:

- A post hole digger
- Concrete if you wish to use it for "footers"
- A hack saw and flat file in case you need to "adjust" any rail lengths.
- A small package of aftermarket rail joiners (sometimes called rail clamps)
- Power screwdriver or reversible electric drill with screwdriver bits
- Circular saw with a blade appropriate for pressure-treated lumber
- Measuring tape
- Carpenter's pencil, grease pencil, or other marker to measure boards, and to label the bottom of each cut piece.
- Carpenter's square
- Yard stick
- Levels, including at least one with a "sideways" bubble for checking your posts
- Lumber:
 - 2x6" Pressure-treated lumber - 125% of the length of your railroad
 - 1x6" Pressure-treated lumber - One 10"-12" pieces per piece of track, plus a "fudge factor"
 - 4x4" Pressure-treated posts - For this method most folks use one post per every 18" to 24" of track, with a maximum of 32" for really broad curves or 48" for straight pieces
- 2" Deck Screws - You will need about 6 per piece of track for small radius track, 10 per piece of track for large radius track
- 4" or 5" Deck Screws - You will need about 2 per piece of track.
- Concrete Mix - if desired
- Cheap white spray paint for marking your post hole locations before you dig

Cut and Install Your Posts

- Doublecheck your track plan - if you're using preformed curves, lay them out to make certain they fit where you want them too, etc.,
- Mark the post holes - Put a stick a stick or stake in the ground every place you think there should be a post, usually at each track joint. After you take the track up, spray-paint big Xs at each spot.
- Dig the post holes - this task can also be done while someone else is cutting the post holes or the roadbed.
- Cut the posts - Add the depth of the frost line to the height you want your roadbed to be elevated, plus a few inches to compensate for uneven ground. Make 90 degree cuts, not pointed cuts.
- Set the posts - pour concrete mix or pack gravel and soil into the hole to keep them straight. If you use concrete, pour a gallon or so of water in to get it started setting up. Use a 2x2 to tamp the backfill in as firmly as you can.



Measure and cut the 2x6 stringers

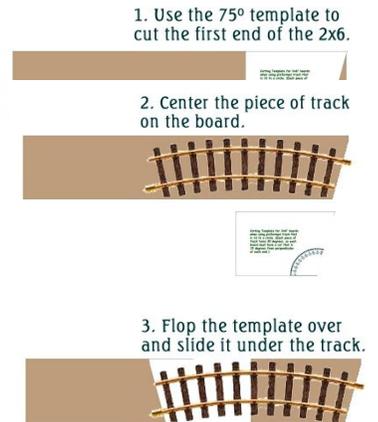
- Once you have your track pieces, determine whether you have the track that goes 12 to a circle (most common) or 16 to a circle. You can print a template for track that goes 12 to a circle by going to:

http://www.btcomm.com/trains/primer/fence_posts/75_degrees_6in.gif

You can print a template for track that goes 16 to a circle by going to:

http://www.btcomm.com/trains/primer/fence_posts/78pt75degrees_6in.gif

- Measure and cut the horizontal pieces you need from the 2x6s. The examples shown here use the smallest curved track pieces, which make 48" circles. However the principle applies to any track circle you buy, as long as you are using the correct template.
- Align the piece of track you are cutting for along the 2x6 as evenly as you can, lining one end up with the end that you cut.
- Flop the template over, slide it underneath the track, and use the template to measure the other end of the board.
- Cut the other end of the board appropriately. Cut two more. To check your work, lay the three pieces you have cut so far together and fasten three pieces of track together on top of them. You want the curves to be reasonably centered on all three pieces. Continue until you're done
- Cut one 10" "plate for every piece of roadbed you have cut so far (I like to use 12" plates for track diameters 10' or more).



Create Subassemblies

- Fasten 2-3 pieces together at a time, using the stringers to create subassemblies. Screw the stringers to the plates using five screws in an "X" pattern on each end.
- Test your subassembly by setting it onto the cut posts where it is supposed to go.
- Level the post tops - figure out which post is "shortest," then get out your laser level and mark all the other posts to the same level (unless you are planning on a grade of some kind).
- Screw the subassemblies to the posts - beginning with the section closest to the most common viewing position. Fasten things loosely at first in case you have to make adjustments later.
- Fasten the track together and lay it in position on the roadbed
- If you need to cut a piece to make the whole thing fit:
 - Use the hacksaw to cut the rail at right angles.
 - Use the file to make certain that to top and inside surface of the track is smooth.
- Slide the ties where they need to be, cutting the tie strip apart if necessary.
- Use the rail clamp to fasten the cut ends of the rails to the rest of the track.
- You may fasten the track LOOSELY to the roadbed if you want to.
- Wipe the track clean, put on a locomotive, and let it go slowly around the track. Look for places where voltage seems to drop, or the locomotive seems to jerk or struggle. You may find yourself running jumper cables to get maximum voltage to the far end of the track.
- Using your circular saw, whack off the ragged corners that stick out.
- Fill the gap between the track and the ground with bridges, retaining walls, rockgardens, or whatever you like.
- Ballast the track, especially if you raise the "ground level" around the track. This involves pouring small crushed gravel over the track and using a broom to level out the "ballast" in between the rails so it isn't high enough to derail a train.
- After a few months (or a few weeks of really hot dry weather) you may paint or stain any lumber that is still exposed, if you would like.
- Maintenance will involve occasionally cleaning the track and checking the track after bad weather to make certain it is still more or less centered over the roadbed.

