

Tall Curved Trestle

Instruction Sheets

Kit #304

NOTE: -- It is a general rule in current railroad practice that no trestle built on 'piles' should be more than 30' tall. This is because a part of each pile is driven into the ground. However, exceptions have been made, and higher pile trestles have been built.

The 1948 Railway Maintenance and Engineering Cyclopedica has a table on page 594, for materials required in constructing pile trestles up to 40' from ground line to the base of the rail. If you sink the tallest Bents of this kit nine scale inches (0.1033") into the 'ground', you can meet this 40 scale foot limit.

NOTE: Changes in temperature or humidity may cause the paper to shrink or swell, making the drawings slightly out of scale. If the wood parts do not exactly fit the template, work from the top of each Bent downward and from the center out to each side.

CAUTION—Examine the parts in the kit and compare them with the instructions so as to familiarize yourself with the construction and method of assembly before starting to build the Tall Curved Trestle

SUGGESTION: Most trestles were not painted. If left unpainted they initially weather to a light brown and then if they are exposed to rain and sunshine to a light grey. To preserve the Trestles the railroad may have Creosoted the timbers in which case they look either dark brown or light black

We suggest using Light Brown Shoe Dye diluted with Isopropyl Alcohol for the Light Brown effect. We suggest Black Shoe Dye diluted with Isopropyl Alcohol for the Sun Bleached Grey and the Dark Brown Shoe Dye in smaller amounts of Alcohol for Creosote.

Dip the pieces in the solution chosen and let sit for a few minutes and then spread them out between several layers of paper towels and weight with books. This should be done before gluing because the dried glue blocks the stain and thus leaves "white" gaps around the glue line.

Assembly

1) Cut Stringers to Match Chosen Radius

5-3 5/32 x 11/32 x 5-1/2" 2 Groove Stringer

Select the radius of curvature that you need for your trestle. Cut the Stringers, using the template for the radius selected. Use a sharp razor saw and cut carefully, making sure the lengths and angles are exactly right by cutting over the template with the saw aligned with the "Bent" center lines "A". The outer Stringers are longer than the inner ones, and they are not interchangeable. Cut nine of each, using the longer Stringer pieces in the kit.

2) Position Ties Over Curved Template

Bag #1 3/32 x 3/32 x 1-3/8" 10ft HO Ties

Fasten your template sheet to a piece of soft wood, or Homosote and anchor a piece of waxed paper over it. Stick ordinary straight pins in the points marked "F" (see 18" radius template) to locate the Stringers after the Ties are in place. Fasten a piece of "Scotch" tape, sticky side up, along the length of the template. (Double-faced tape with "stickum" on both sides would be handy.) Press the Ties to the tape over their positions as shown on the template.

3) Repeat steps 2 and 3 and Add Long Barrel Ties

Bag #1 3/32 x 3/32 x 1-3/8" 10ft HO Ties
2-3 3/32 x 3/32 x 1/16" Platform Ties

Each template is one-third the length of the completed trestle, so make three Tie-Stringer assemblies. On the first, use the long Ties for the Barrel Platform at position "C" only. There is no Barrel Platform in the second section. On the third section, use the long Ties over position "D" only. At the left hand end of the first and second sections omit Tie "E" with the dotted outline. The Barrel Platform Ties can be on the inside of the curve as shown or extended to the outside if you prefer.

4) Glue Stringers Together and Ties to Stringers

When the Ties for the first section are in place, cement the Stringers to them, using the pins at "F" as guides. Each end of each Stringer falls in the middle of a Tie, as shown. Use enough cement to make sure all Ties are fastened firmly to the Stringers, and the ends of the Stringers are firmly cemented together.

5) Make Tallest Bents "N" "O" "Q"

| | | |
|-------|------------------------|--------------------------|
| Bdl#1 | 3/16" Dia x 5-3/16" | Dowels Tallest Bent Legs |
| 2-5 | 1/32 x 3/32 x 3-15/16" | Longest Sway Brace |
| 2-6 | 1/32 x 3/32 x 3-23/64" | Medium Sway Brace |
| 2-7 | 1/32 x 3/32 x 2-3/4" | Short Sway Brace |

While the cement is drying, start making up the "Bents" on Fig. 1. Easiest method is to use pins on each side of each piece to hold the parts in place while the cement dries. Start with the tallest Bents (N - O - Q). Add the Horizontal Sway Braces and the diagonal ones at "X". Wait for "Y" until the cement is dry and the Bent can be turned over. Note that there is a horizontal Sway Brace on both sides. Make three of these tallest Bents.

6) Make Bents "L" "M" "S" "R" & End Bents "K" "T"

| | | |
|-------|------------------------|------------------------|
| Bdl#2 | 3/16" Dia x 3-19/32" | Medium Tall Bent Legs |
| Bdl#3 | 3/16" Dia x 2" | Medium Short Bent Legs |
| Bdl#4 | 3/16" Dia x 1-13/64" | Shortest Bent Legs |
| 2-4 | 3/64 x 0.115 x 3-3/32" | Bulkhead Planks |

After the four Bents L - M - S - R are made in the same way, starting at the top, and with the bottoms as indicated in Fig. 1. The end Bents K - T should not be assembled until you have cut the Bulkhead planks of the scale 2 x 10's (3/64"x 0.115" x 3-3/32"). Cut them to length on the template, and make enough for both ends. Now assemble the end Bents, and cement the planks to them, starting at the bottom. Planks above the Cap are added later. There are no Sway Braces on the end Bents.

7) Glue Deck Assemblies Together & Sand Ties Flat

After the Deck Assemblies have been built up, cement them end to end. The space left for the Tie "E" is taken by the end Tie of the next section. Guide lines at the right end of each template can aid in lining up the sections. When the cement is thoroughly dry, turn the whole Deck over and sand the Ties lightly to form a smooth surface for the rails.

8) Mount Rails & Guard Timbers

| | | |
|-----|----------------------|---------------|
| 5-5 | 3/32 x 3/32 x 5-1/2" | Guard Timbers |
|-----|----------------------|---------------|

Cut the scale 8 x 8 (3/32" x 3/32" x 5-1/2" - Part 5-5) Guard Timbers to fit between the Bent center lines, and 1/32" in from the ends of the Ties, as shown by the dotted lines on the templates. Spike the rails in place. You may need to drill small holes first to keep from splitting the Ties. Leave several inches of rail extending beyond each end of the Trestle Deck.

9) Make Bents "U" "V" & "P" & Glue to Pass Through Stringer "W"

| | | |
|-------|------------------------|---------------------------|
| 2-1 | 9/64 x 3/16 x 2-13/64" | Short Caps |
| 2-2 | 9/64 x 3/16 x 2-3/4" | Longer Caps |
| Bdl#4 | 3/16" Dia. x 1-13/64" | Shortest Bent Legs |
| 5-4 | 5/32 x 11/32 x 3-1/2" | Shorter 2 Groove Stringer |

Make the two inside Bents for the Pass-Through (U - V) as you did the other Bents. For these use longer Caps, and place them in position "Z" on Fig. 1. These two Bents, although shorter, must be as broad at the bottom as the tallest ones. Make Bent P which fits over the Pass-Through. This is the same height as the end Bents, but of course does not have the Bulkhead Planks. Instead it will have two Sway Braces — /one on each side (not shown). In addition it will need a "Footing" made of the same size material as the Caps, but cemented to the bottoms of the Piles.

10) Cement Bents to Stringers & Upper Bulkhead Planks

| | | |
|-----|------------------------|-----------------|
| 2-4 | 3/64 x 0.115 x 3-3/32" | Bulkhead Planks |
|-----|------------------------|-----------------|

Cement the Bents to the Stringers, one Bent under each joint. Line them up with the Ties. The Caps of the end Bents should be flush with the ends of the Stringers. Cement the upper Bulkhead planks in place. One may have to be split to fit under the end Tie.

11) Make Pass Thru "U" "V" "P" & "W"

| | | |
|-----|-----------------------|---------------|
| 5-4 | 5/32 x 11/32 x 3-1/2" | "W" Stringers |
|-----|-----------------------|---------------|

Check the height of Bents U & V. There should just be space for the Pass-Through Stringers W between the Caps and the Footing of Bent P. If necessary, the Bents can be shimmed up. Cut the four Stringers W to fit between Bents O & Q, and cement to the Footing. Cement Bents U & V to Bents O & Q and to the Stringers W.

12) Install "Girts" & "Side "X" Braces"

| | | |
|-----|----------------------|-------------|
| 5-6 | 1/32 x 3/32 x 5-1/2" | Girts |
| 2-7 | 1/32 x 3/32 x 2-3/4" | Sway Braces |

The horizontal pieces that tie the Bents together are called "Girts". These are made of scale 2 x 8's which cement to the outer sides of the center and middle piles of each Bent. Install them just above the Horizontal Sway Braces. See Figs. 1 & 2, and the photo.

Trestles of this height will also normally have Side "X" Braces as shown in Fig. 2. They are 2 x 8's cemented to the outer piles of each Bent. It is proper to put Side "X" Braces in every second bay or span and in every span over a Pass-Through. Fig. 2 and photo.

13) Build Barrel Platforms

| | | |
|-----|-----------------------|-------------------------------|
| 5-1 | 3/64 x 3/64 x 5-1/2" | Fire Barrel Platform Uprights |
| 5-2 | 0.023 x 3/64 x 5-1/2" | Fire Barrel Platform Railings |
| 2-8 | #249 Red Wood | Fire Barrels |
| 2-7 | 1/32 x 3/32 x 2-3/4" | Platform Planks |

Build the Barrel Platforms as in Fig. 1. Use 2 x 8 planks for the Decks. The long Ties are not parallel, so cut the planks to fit. Uprights are 4 x 4s and Railings are 2 x 4s.

14) Consider Possible Double Track Pass-Through

With two kits you can provide a double-track Pass-Through. In effect you build two Pass-Throughs side by side, with a common tall Bent between. The tracks will have to be separated a bit to avoid the center Bent. See Fig. 3 for this arrangement.

15) Consider "S" Track Trestle

A trestle on an "S" curve looks interesting, yet can be bad for operation. If you do build one (two kits needed), be sure to put a straight section between the curves, at least two spans long, as in Fig. 4.

16) Touch-Up Stain, Paint & Mount Fire Barrels, Install Trestle

To stain your trestle use very dirty thinner, or any dark stain. We suggest the use of the "Shoe Dye & Isopropyl Solution" used to stain the parts at the start of construction. Paint the Fire Barrels red (Styrene paint). Cement the barrels well back from the rails to clear cars and locos. To install the trestle, spike the rails extending from each end in place and build a support under each Bent before working the scenery around them.

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