

### I. GENERAL

- Deck girder bridges are found on railroads in every part of the country. The Micro Engineering 85 ft. Deck Girder Bridge is modeled after the plate girder type of bridge.
- Most parts in this kit are made of injection molded styrene plastic and should be glued with a styrene solvent cement (such as Testors®). Glue the Delrin® bridge track and the white metal parts with a cyanoacrylate (CA) or a rubber based cement (such as Pliobond®, #49-101 or #49-102 available from Micro Engineering).
- Read each instruction step completely before proceeding with that step.

### II. PARTS

- Before beginning assembly cut the plastic and white metal parts from their sprues and file or trim off any flash, ejector pads, and gate nibs. Use care when handling the parts as some are thin and easily broken. If a part breaks, lay it on a flat surface and cement it back together. The Micro Engineering Rail Nipper #48-102 is excellent for cutting these small parts.
- The parts and the number needed to assemble your kit are listed below and keyed to the photo. See fig. 1. Extra parts that will not be used may be included in your kit.

Parts per Kit		
	Open Deck	Ballasted Deck
① girder half	4	4
② lateral bracing	4	4
③ X-brace	9	9
④ long rivet plate	4	4
⑤ bridge shoe (not shown)	4	4
⑥ guard timber	6	-
⑦ HO-83 Bridge Flex-Trak™	2	-
⑧ concrete deck	-	2
⑨ Code 83 rail joiner (not shown)	2	-

### III. ASSEMBLY

#### 1. Cement two **girder halves** part (1) together to form a full girder.

Note that the girder halves have an overlap rivet plate at one end. Test fit two girder halves by inserting the overlap plate of one girder half into the overlap plate of another girder half with one overlap plate up and the other down. File the ends of both overlap plates as necessary to achieve a good fit. Paint cement on the back of each overlap plate and slide the two girder halves together. Be sure the two halves are pushed together tightly. Use a straight edge against the girder edge to check for proper alignment. Place a weight on the joint until the cement dries. Repeat with the other two girder halves.

#### 2. Cement the first two **lateral bracing** part (2) to the first girder.

Place a girder flat and horizontal on the work surface. Hold a lateral bracing on edge with the five rivet plates down and the rivet detail to the outside of the bridge. See fig. 2. Starting at one end of the girder, match the notches in the rivet plates with the appropriate vertical angles on the girder, along the bottom edge of the girder. Starting at the center rivet plate, cement the rivet plates against the inside edge of the girder flange. Hold the rivet plates square to the girder while the cement dries. Be sure the half rivet plate at the center of the girder is against its vertical angle. Repeat with another lateral bracing at the other end of the same girder, along the same edge.

**Tip:** To avoid breakage when cutting the lateral bracing from its runner, place it against the cutting board for better support. This can be done by hanging the thicker sprue off the edge of the cutting board.

#### 3. Cement the second two **lateral bracings** part (2) to the second girder.

Align and cement the second two lateral bracings to the second girder in the same way as the first girder in step 2.

**Note:** The second two lateral bracings must be cemented to the bottom edge of the second girder, **not** to the opposite edge of the first girder.

#### 4. Cement the **X-braces** part (3) to one of the girders.

a. Note that the girder X-braces have three angle flanges on one side (called the 'flange side') and one angle flange on

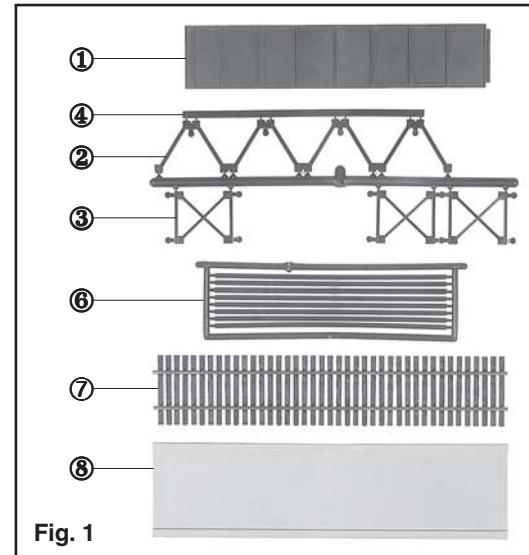
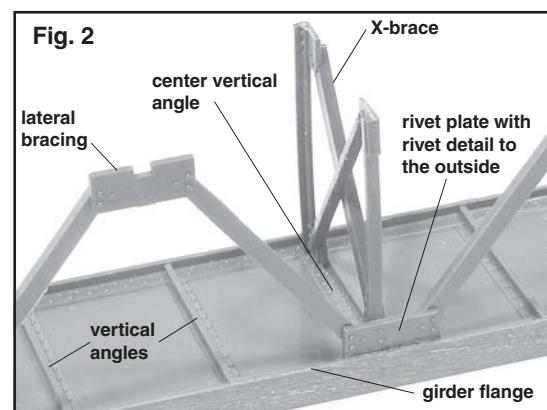


Fig. 1



the opposite side. Place an X-brace on the girder, with the flange side facing the right, positioned on the rivets on the right side of the center vertical angle. See fig. 2. Cement the X-brace against the vertical angle and against the lateral bracing rivet plate (that is cemented to the girder), holding it square while the glue dries.

**b.** Cement four X-braces to the left of the center X-brace. Locate them at the vertical angles where the lateral bracing rivet plates are cemented to the girder. Position them on the rivet side of their vertical angles with their flange side facing the center of the girder (facing away from their vertical angle).

**c.** Cement four X-braces to the right of the center X-brace. Locate and position them in the same manner as above. Five of the X-braces will have their flange side facing right and four will have their flange side facing left.

**5. Cement the two girder assemblies together.**

**a.** Place one of the girders on edge with the lateral bracing down. Place the other girder on edge with the lateral bracing up and slide the two assemblies together. See fig. 3. Starting at one end, position the bracing as described in steps 2 and 4 and use rubber bands to hold the span assembly together as you work from one end to the other.

**b.** Cement the X-braces to the opposite girder.

**c.** It is important that the two girders are assembled square and as with a prototype bridge, the lateral bracing holds them square. Remove the rubber bands and place the girder assembly in a square as shown in fig. 4. Cement the lateral bracing while holding the girders against the square.

**Tip:** Assemble the span in one work session, cementing the lateral bracing immediately after cementing the X-braces so it is easier to square up the span.

**6. After the cement has dried sufficiently, place the span assemblies on a sanding block and sand off the draft angle and parting line from the top and bottom edges of the girders. See fig. 5.**

**7. Cement two long rivet plates part (4) to the bottom edge of each girder, locating them so their ends butt together at the center of the girder. Cement the bridge shoes part (5) on the bottom edge and at the ends of each girder.**

**8. Open Deck Bridge Only - Cement the guard timbers part (6) to the top of the Bridge Flex-Trak ties part (7).**

Adjust the position of the ties, if necessary, so they are spaced evenly. Starting at one end, position the guard timbers with the bolt head detail up, two scale inches (.023") in from the tie ends and cement in place. See fig. 6.

**9. Open Deck Bridge Only - Cement guard rails (not included) to the Bridge Flex-Trak.**

On prototype bridges lighter rail than that used for the running rails was usually used for guard rails. See fig. 6. Extend the guard rails 20 to 40 scale feet (2 3/4" - 5 1/2") off the ends of the bridge, onto the regular track. Using CA or Pliobond, cement the guard rails between the rows of guard rail spikes molded on the Bridge Flex-Trak. Form the easement at the guard rail ends by curving the last 1" to 2" of the guard rails in toward the track center until the rail ends almost touch.

**10. Paint and weather the bridge and Bridge Flex-Trak or concrete deck.**

Prototype deck girder bridges are usually a flat black or silver color. Weather some of the metal structure with areas of rust color. After the paint has dried, remove paint with emery cloth or a file from those areas where cement will be applied.

**11. Open Deck Bridge Only - Cement the Bridge Flex-Trak part (7) to the top of the bridge.**

Lay the bridge track up-side-down on a flat surface. Apply Pliobond cement to the top edges of the girders and center the bridge on the track. Place weights on the bridge until the cement dries.

**12. Ballasted Deck Bridge Only - Cement the concrete decks part (8) to the bridge.**

Cut one of the concrete decks to length so the two concrete decks placed end to end are the same length as the bridge. Cement the two concrete decks together. Use a straight edge against the deck edge to check for proper alignment. Place a weight on the joint until the cement dries. Lay the concrete deck up-side-down on a flat surface. Apply cement to the top edges of the girders and center the bridge on the concrete deck. Place weights on the bridge until the cement dries. Since ballasted deck bridges do not use bridge track, cement your normal track and ballast across the concrete deck once the bridge is installed on your layout.

**13. Install the bridge on your layout.**

Be sure the bridge is supported at each end with an abutment or pier. When installing multiple span bridges, do not locate a support in the center of a span and never leave a juncture of two spans unsupported.

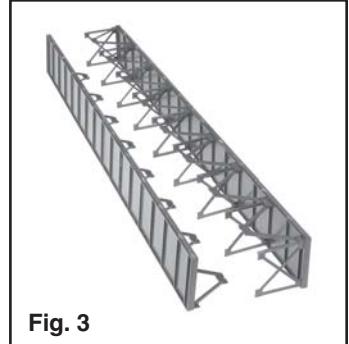


Fig. 3

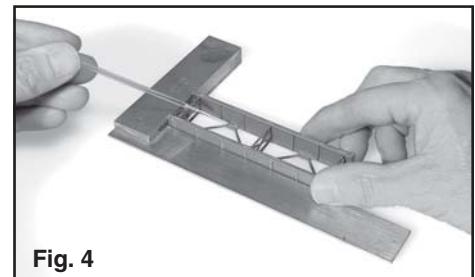


Fig. 4

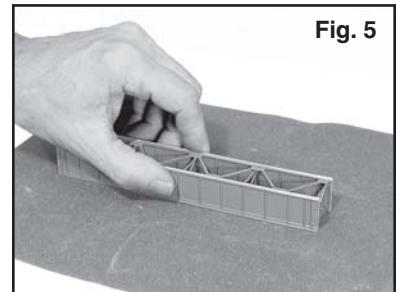


Fig. 5

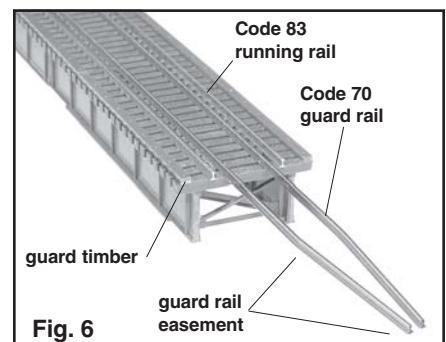


Fig. 6