



ExactRail's 72' Deck Plate Girder Bridge (Early & Late Version) Undecorated Instructions

Thank you for purchasing an ExactRail 72' Plate Girder Bridge Undecorated Kit. We value your business and hope these instructions help make the assembly of your model enjoyable. For more ExactRail Products, please visit us at www.ExactRail.com

Contents:

EE-9700 (simplified) Undecorated 72' Plate Girder Bridge Kit consists of the following:

- (2) Plate Girders
- (2) Upper Web Truss
- (2) Lower Web Truss
- (7) Cross or X Braces
- (1) Tie Assembly

EE-9800 (Early Version) Undecorated 72' Plate Girder Bridge Kit consists of the following:

- (2) Plate Girders
- (2) Upper Web Truss
- (2) Lower Web Truss
- (7) Cross or X Braces
- (1) Tie Assembly
- (2) Planked Walkway
- (1) Left Railing
- (1) Right Railing
- (11) Railing Support Beams
- (10) Walkway Support Beams

EE-9900 (Late Version) Undecorated 72' Plate Girder Bridge Kit consists of the following:

- (2) Plate Girders
- (2) Upper Web Truss
- (2) Lower Web Truss
- (7) Cross or X Braces
- (1) Tie Assembly
- (2) Etched Metal Walkway
- (33) Posts
- (1) Cable Handrail
- (11) Railing Support Beams
- (10) Walkway Support Beams

Step 1: Plate Girder Box (Applies to EE-9700, EE-9800 & EE-9900)

Locate the two plate girders. Both are identical pieces, however close attention is required because there is a top and bottom. On the inside of the plate girders, there are four small tabs that interlock into the upper and lower web trusses. The tab on the top of the plate girder is 5/8" from the end of the plate girder and the bottom tab is located 3/4" from the end. **(See Photo A & B)**

- a) Clean any flash that may exist off the two plate girders as well as the seven cross braces. A needle file will make quick work of the flash, as well as minimize any damage that could occur to the parts.
- b) Test fit the cross braces into both of the plate girders. Along the inside of the plate girders are slots that will receive the tabs on the cross braces. The cross braces should fit snugly; do not force a part in as you risk damaging it. If needed, gently file any stubborn tabs to fit. Refer to **Photo C** for the proper orientation of the cross braces.
- c) Attach the seven cross braces into one of the plate girders. Be sure to keep the cross braces perpendicular to the plate girder as the cement cures. We recommend using plastic cement that is applied with a small brush or applicator (Ambroid Pro-Weld and Tamyia Extra Thin Cement both work very well). Add the cement when the parts are together; capillary action will distribute it evenly and "weld" the two parts together.
- d) After the cross braces have had ample time to cure, proceed to attach the opposite plate girder. Be aware of the location of the tabs at the inside ends of the plate girders. Starting at one end of the plate girder, begin inserting the cross bracing tabs into the slots. Work your way down until you have mated all seven of the cross braces. Add cement to all joints and allow all to cure. **(See Photo D)** It is possible for the plate girder assembly to twist slightly. As the cement is curing, set the assembly on a perfectly flat surface with the top facing up and gently set a heavy object on top.

Upper and Lower Web Trusses

To complete the plate girder box we will add the upper and lower web trusses to the plate girder assembly. There are a total of four parts, two upper and two lower. The lower web trusses are easily identified by having cover plates and rivet detail on one surface. The two are identical to each other and one forms the left side and the other the right, and both can be interchanged. The same applies to the upper.

- e) Before the lower web trusses can be added to the plate girder assembly, a very slight modification needs to be done. Where the tab on the inside of the plate girder attaches to the lower web truss on both ends, one of the portions of the web needs to have about a 1/16" removed. This can be done very easily with a hobby knife **(Photo E)** Check the fit to ensure the plate girder and the lower web truss mate snugly; repeat for the second piece.
- f) Remove any flash if needed; work slowly to ensure that no damage is done.
- g) Cement one of the two webs into place on the bottom of the plate girder. Ensure that the tabs on the inside of the plate girders fit snugly against the corresponding tabs on the web truss **(See photo F)** If the end of the flange and the plate girder are not flush with each other, chances are you have the plate girder assembly oriented incorrectly. To lower risk of an issue on the exterior, apply the cement on the inside of the plate girder. Proceed to add the corresponding web into place, if needed file the ends that butt into the already cemented piece to fit. Allow the cemented pieces to cure as per required with the cement that is being used. Use of pressure is recommended to get a clean bond along the entire length. **(See photo G)**

- h) Add the upper web trusses in a similar manner as the lower, however no notching of any parts is required

Bridge Deck (Simplified Version EE-9700)

For the simplified version of the Deck Plate Girder Bridge, to complete your kit the addition of the tie assembly is all that is required.

- a) Remove any flash if needed; work slowly to ensure that no damage is done. A few passes with a needle file will make quick work of any minor flash.

Depending on what prototype you're modeling or how you desire to paint the bridge, it would be recommended to paint the bridge deck and plate girder prior to final assembly.

- b) Attach the bridge deck to the plate girder. The deck of the bridge has 10 tabs on the underside of the ties. The tabs are aides to help position the deck so it is centered with the plate girder. **(See Photo H & I)** (Prior to cementing the deck on the plate girder, locate the end of the deck that the two parallel stringers end flush with the tie.) Cement the deck with this end flush with the plate girders. **(See Photo J for completed bridge)**

Bridge Deck (Early Version EE-9800)

The deck on the early version includes a planked walkway, as well as wooden railings. Multiple beams will be added to the ties to support the walkway and railings. The deck will then be added to the plate girder to finish the bridge.

- a) Remove any flash if needed on the tie assembly; work slowly to ensure that no damage is done. A few passes with a needle file will make quick work of any minor flash.
- b) Lay the tie assembly with the top or the face with the tie plates facing down. Locate the end of the tie assembly where the stringers overhang the last tie by about .050". **(See Photo H)**

There are two different sizes of beams included in the kit. First, are longer railing support beams that on one face are rivet details and on the opposite are two slots that the railing fits into. The other beams are shorter and support the walkway.

- c) Check for flash on all beams; carefully remove if necessary.
- d) At this end, add a railing support beam, the rivets need to face out and the side with the slots needs to face down the length of the deck. The two grooves lock into a molded ridge that is on the underside of the stringers. Apply some cement to the beam to fix it in place. **(See Photo K)**
- e) The rest of the beams alternate between the shorter walkway support beams and the longer railing support beams. Each beam is placed after every third tie. All railing support beams must be oriented in the same direction. The beams will not be flush with the top of the ties, they will sit about .010" below. Once all beams are in place, fix them in place with cement and allow them time to cure. **(See Photo L)**

There are two planked walkways identical to each other; there is no preference for the placement. The underside of the walkway is molded at varying heights; the thicker portion rests upon the beams that were cemented in on the previous step. The thinner portion will rest upon the ties and the placement of the deck should be snug against the stringers.

- f) Clean off any flash on the planked walkway, use care to not cut into the mold.
- g) Position the walkway against the stringer and flush with both ends. Starting at one end, begin adding cement to the underside of the walkway until you reach the other end. **(See Photo M)**
- h) Once the walkway has cured, repeat step f & g for the opposing planked walkway.

Adding the railings to the railing support beams can be tricky. With care and patience, they can be easily applied. There is a left and a right railing, the parallel planks face the inside of the bridge with the posts on the outside. At the bottom is a tab that corresponds to a slot on each of the railing support beams.

- i) If any flash is visible on the railings, remove now and use care to not damage the parts.
- j) At one end, insert the tab on the railing into the slot on the beam. At this point, do not worry about inserting the railing tabs into each slot. It is easier to start at one end, cement it and work your way down. Another helpful tip is to have the deck standing on end and have the railing rest on the beams. Use binder clips to clamp the railing to the beams as the cement cures. **(See Photo N)**
- k) Repeat on the opposing railing.

Attaching the Deck to the Plate Girder

Depending on what prototype you're modeling or how you desire to paint the bridge, it would be recommended to paint the bridge deck and plate girder prior to final assembly.

- l) Attach the bridge deck to the plate girder. The deck of the bridge has 10 tabs on the underside if the ties. The tabs are aides to help position the deck so it is centered with the plate girder. **(See Photo I)** Cement the deck with both ends flush with the plate girders. **(See Photo O for completed bridge)**

Bridge Deck (Late Version EE-9900)

The deck on the late version includes an etched metal walkway as well as cable railings. Multiple beams will be added to the ties to support the walkway and railings. The deck will then be added to the plate girder to finish the bridge.

- a) Remove any flash if needed on the tie assembly; work slowly to ensure that no damage is done. A few passes with a needle file will make quick work of any minor flash.
- b) Lay the tie assembly with the top or the face with the tie plates facing down. Locate the end of the tie assembly where the stringers overhang the last tie by about .050". **(See Photo H)**

There are two different sizes of beams included on the kit. First are longer railing support beams that on one face are rivet details and on the opposite are two slots that the railing fits into. The other beams are shorter and support the walkway.

- c) Check for flash on all beams, carefully remove if necessary.
- d) At this end, add a railing support beam; the rivets need to face out and the side with the slots needs to face down the length of the deck. The two grooves lock into a molded ridge that is on the underside of the stringers. Apply some cement to the beam to fix it in place. **(See Photo K)**
- e) The rest of the beams alternate between the shorter walkway support beams and the longer railing support beams. Each beam is placed after every third tie. All railing support beams must be oriented in the same direction. The beams will not be flush with the top of the ties, they will sit about .010" below. Once all beams are in place, fix them in place with cement and allow them time to cure. **(See Photo L)**
- f) Depending on the desired end result, painting the deck of the bridge would be advised now. The last items to be added are the etched walkway and railings.

The two included etched walkways will be attached to the deck of the bridge next. There is a top and bottom to the etched walkway. On the top surface there are details that have been etched into the surface of the metal. On the bottom, the etched detail does not exist, other than the detail that has been etched through.

- g) The etched walkways, as mentioned above, have a top and a bottom. You will also notice the walkways panels line up with the railing support beams. At the one end of the walkway, you have about and 1/8" of a panel, this lines up with the end beam that is in by one tie. To attach the walkway add a fine bead of CA glue to the tops of the ties. Carefully add the etched walkway and then clamp it to the ties with a few binder clips. As long as an excess amount of glue was applied, there will be no issues of the clips sticking to the walkway. **(See Photo P)**

There are 22 posts that will be attached to the railing support beams, however there will be extras included on the sprues. The posts have a tab on the bottom that insert into a slot on the railing support beams. If you have previously painted the bridge deck, use CA glue to attach the posts, as plastic cement could possibly damage the paint.

- h) Remove the posts from the sprues, to reduce the risk of damage, cut from the ends first and then the middle, a hobby knife works well. **(See Photo Q)**
- i) Clean off the flashing left from the sprue with a file or hobby knife.
- j) Apply a small amount of CA glue to the tab on each post. Insert into the corresponding slot on the railing support beams. Position the post so it is facing vertical. Allow the glue to set up and then repeat on the other 21 posts. **(See Photo R)**

On the late version of the Deck Plate Girder Bridge, a single strand of a cable railing is included. This will supply you with enough cable to string four railings, two on each side. The cable is about 3" longer than what is needed; this gives you a little room for error when cutting the cable railings.

- k) Acquire the length of cable that will be used for the railings. Cut the cable into four equal lengths of about 10.25". This gives you a little extra that can be trimmed off later. A pair of scissors works well to cut the cable; wire cutters tend to mash the ends.
- l) In all of the posts, there are two molded holes that have a diameter large enough to easily accept the cable railings. If any of the holes have become obstructed by flash, run a #79 drill bit through it to clean it out.

- m) Feed one of the strands through the lower holes first. It is also less difficult to feed the cables from the flat face of the posts versus the channel face.
- n) Once the first cable railing is in all required posts, pull it through the last post with the channel facing out and add a small drop of CA glue to the end of the cable. Then, very gently pull the cable back into the post with about .020" protruding through. Allow the glue to cure and then repeat this step on the other three cable railings.
- o) After the four railings have cured, add a drop of CA glue to the other end of the cable railings to fix them in place. Leave the cable railing loose in all other posts. Once the glue sets up, trim the cable so it only protrudes by about .020" from the post. **(See Photo R for example, and Photo S for completed bridge)**

Adding Rail (Applies to EE-9700, EE-9800 & EE-9900)

As the bridge does not include rail on the ties, this will need to be added. Average flex track works very easily and can be added with good all-purpose cement. We recommend Barge Cement. It can be found at Ace Hardware or other hardware stores.

- a) Take a piece of flex track and lay it on top of the bridge deck; mark the ties on each end. On the underside of the flex track, you have ribs that attach each of the ties together. Cut the rib, where the ties will end and where the bridge begins. With a pair of pliers, begin breaking the ties away from the rail carefully as to not end the rail. **(See Photo T)**
- b) With a tooth pick, add an even layer of Barge Cement to the tops of the tie plates. Apply an equal layer to the underside of the rail. As per the instructions on the glue, allow the two layers to dry and then mate the two surfaces, creating a very strong bond. **(See Photo U)**

This completes your ExactRail 72' Deck Plate Girder Bridge. Thank you again for having purchased an ExactRail product. We hope the assembly of this model was a pleasure. Please look forward to all the latest ExactRail products and announcements by visiting us online at www.ExactRail.com.

For any questions or concerns, please contact us at info@exactrail.com or by calling us at **1-866-945-1701**.

Photo A: Plate Girder

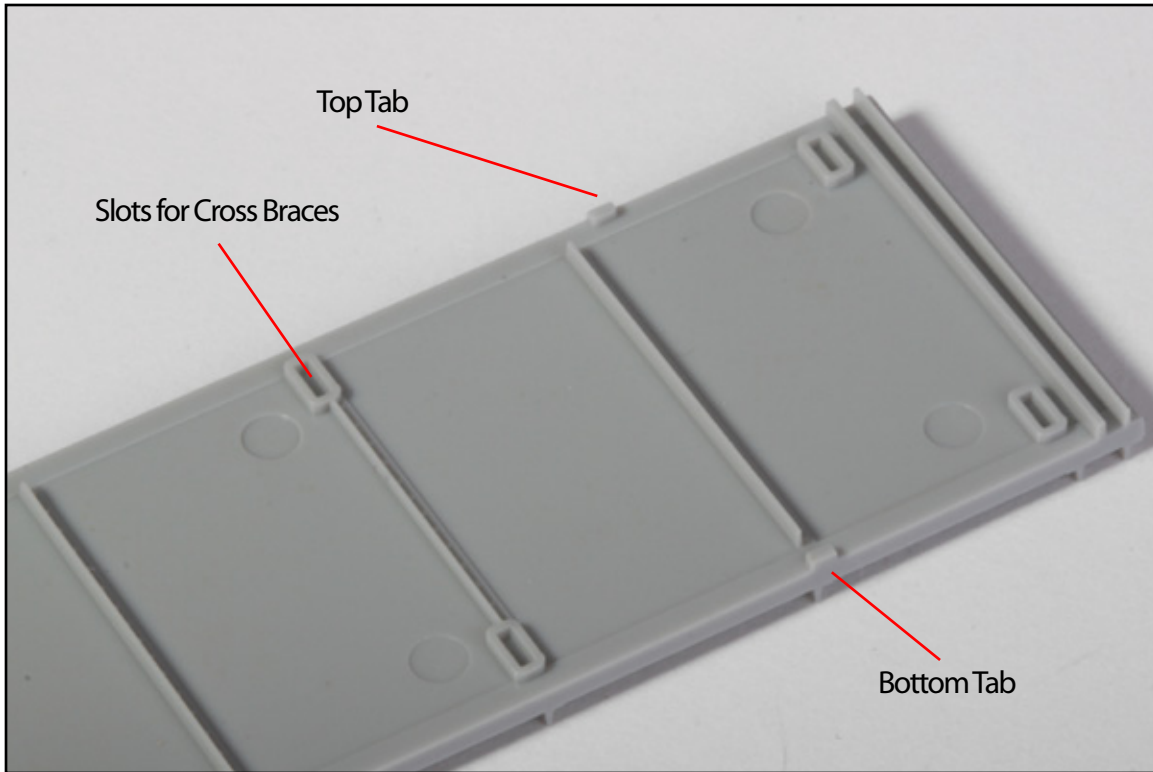


Photo B: Plate Girder Orientation

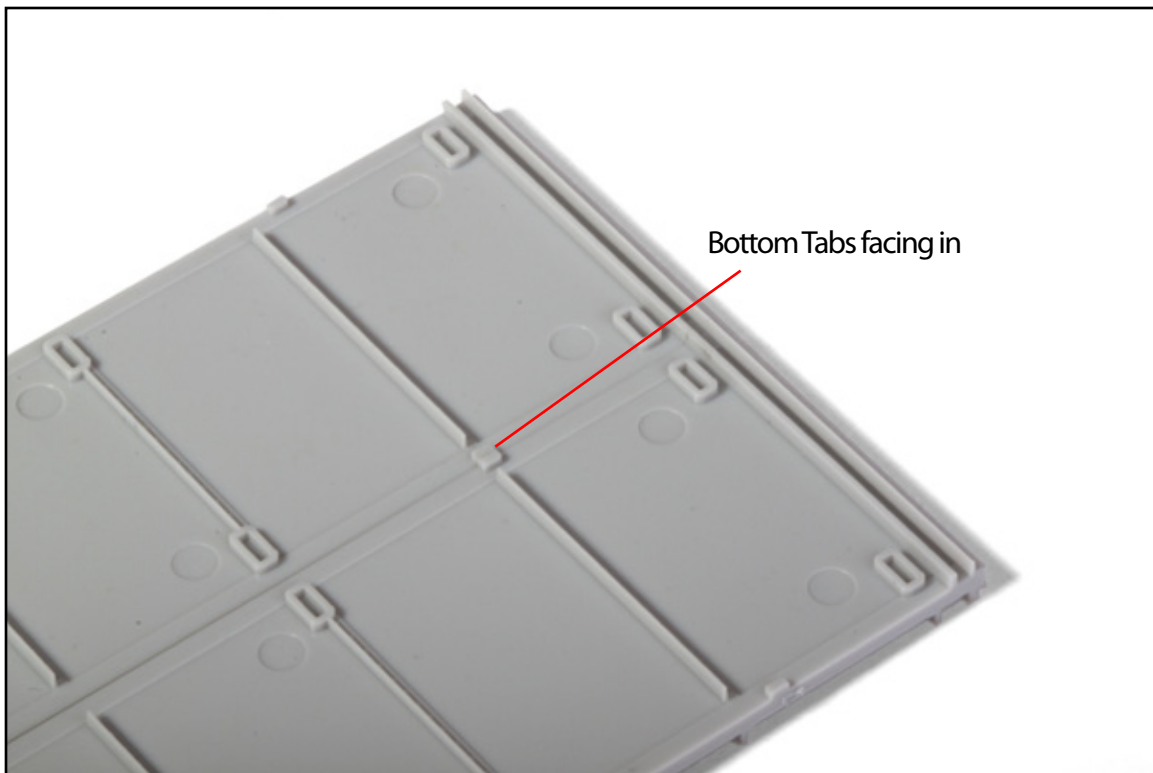


Photo C: Cross Brace Orientation

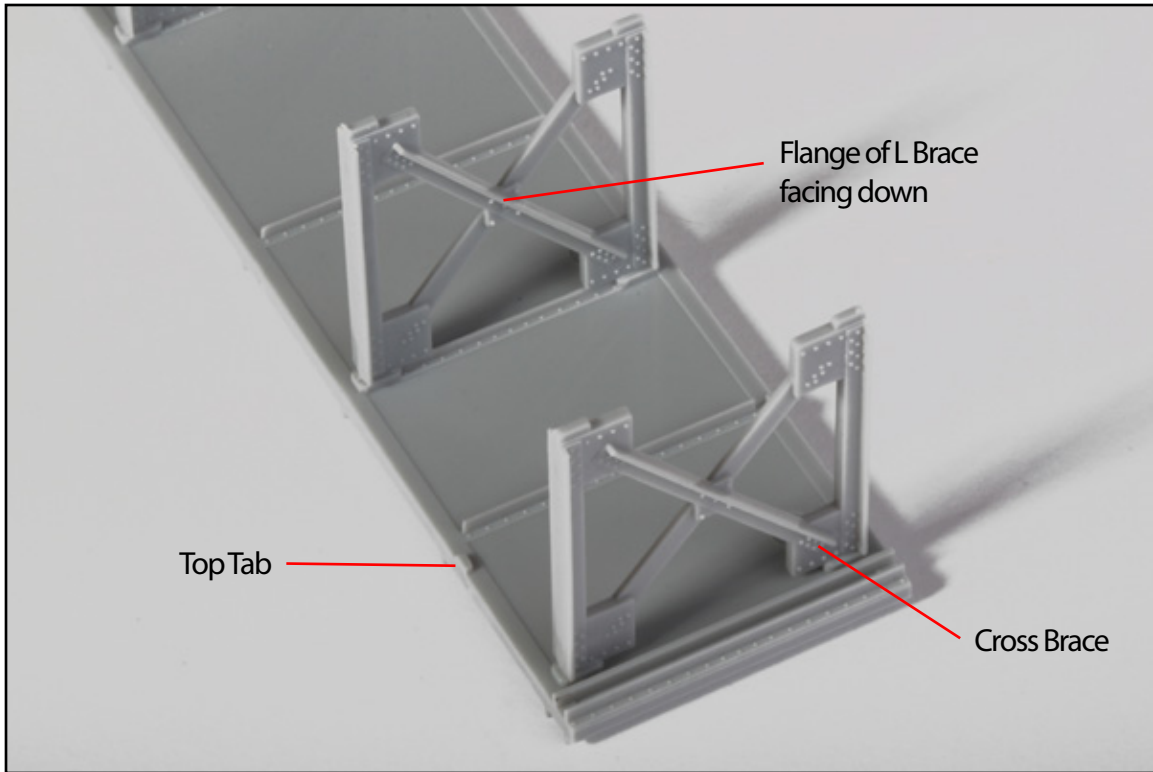


Photo D: Plate Girder Assembly

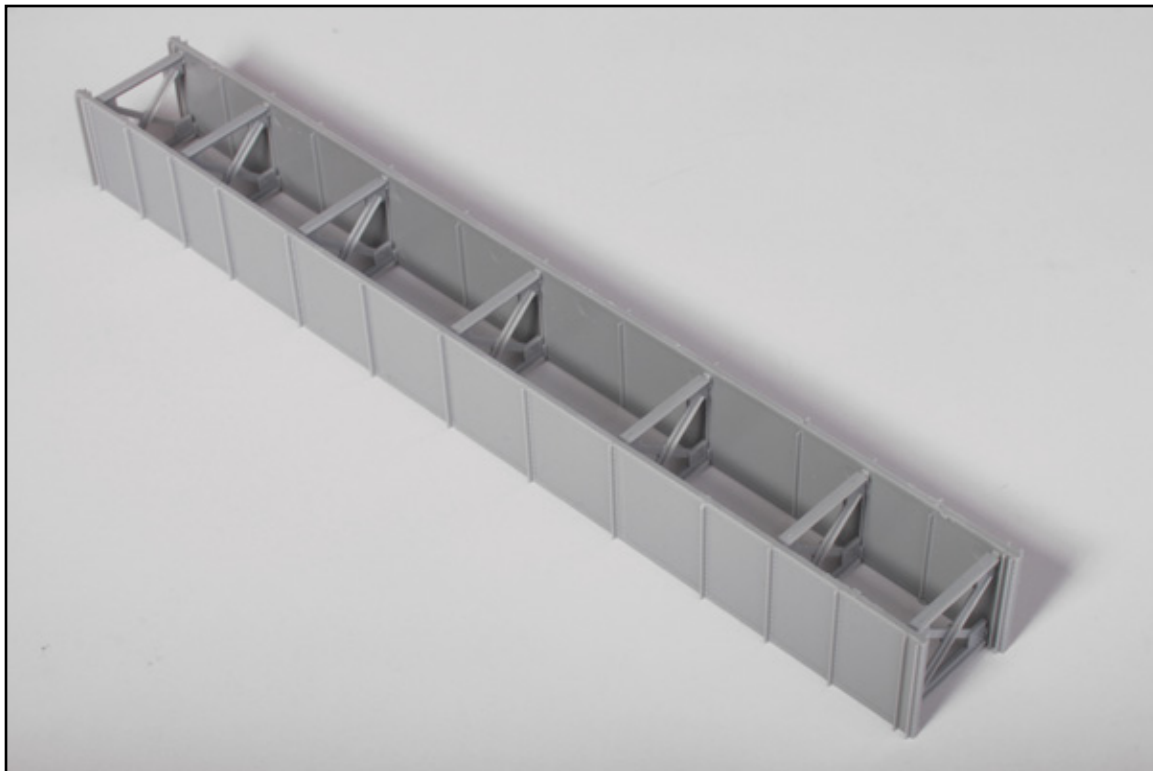


Photo E: Before & After of Web Modification

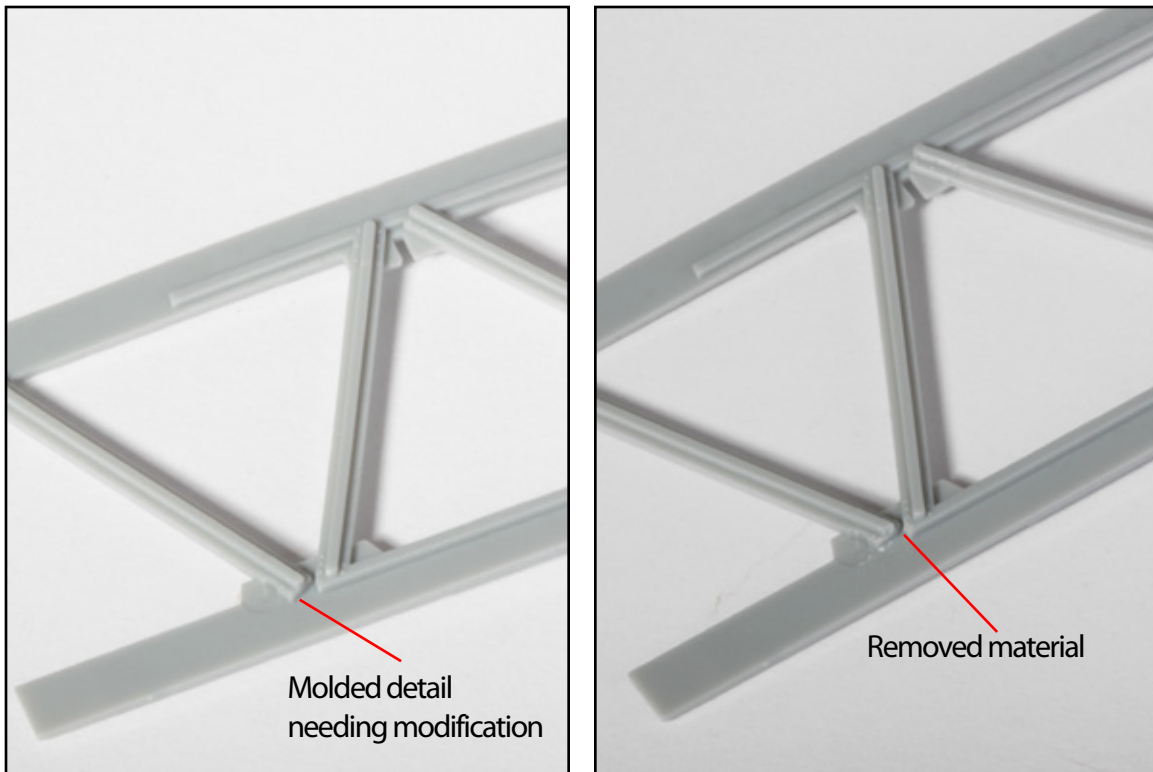


Photo F: Attaching Lower Web Truss

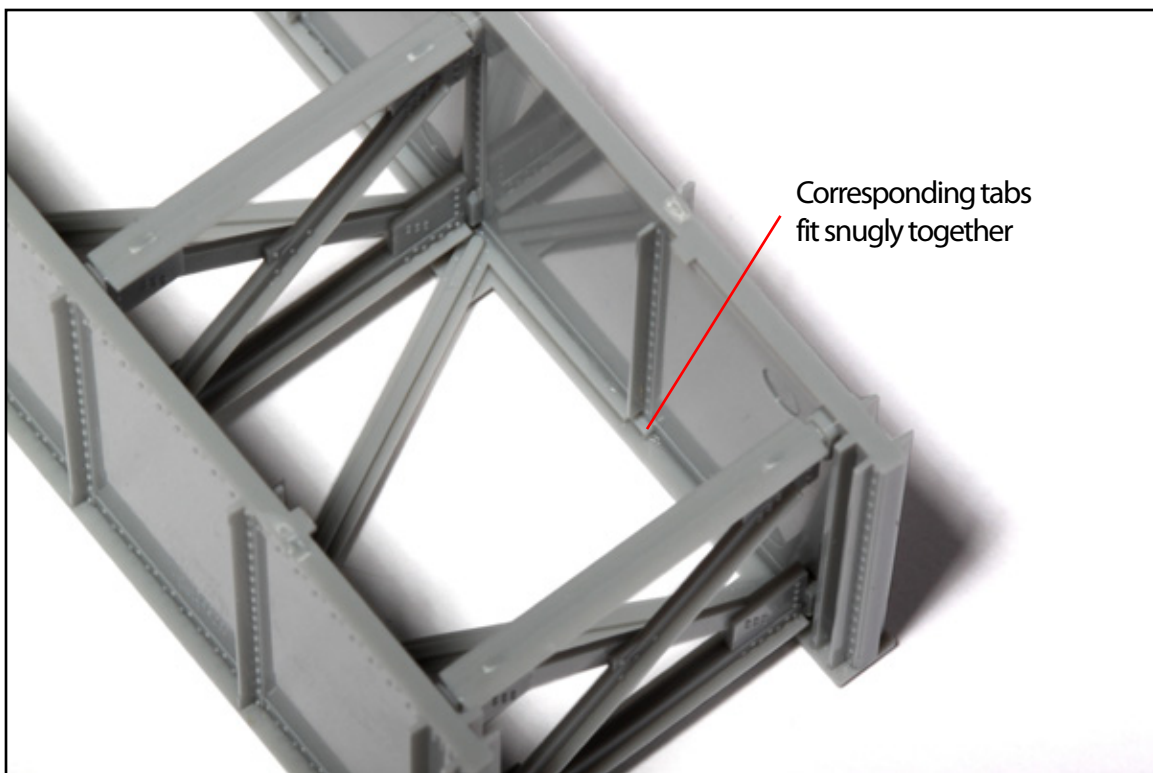


Photo G: Placement of First Lower Web Truss

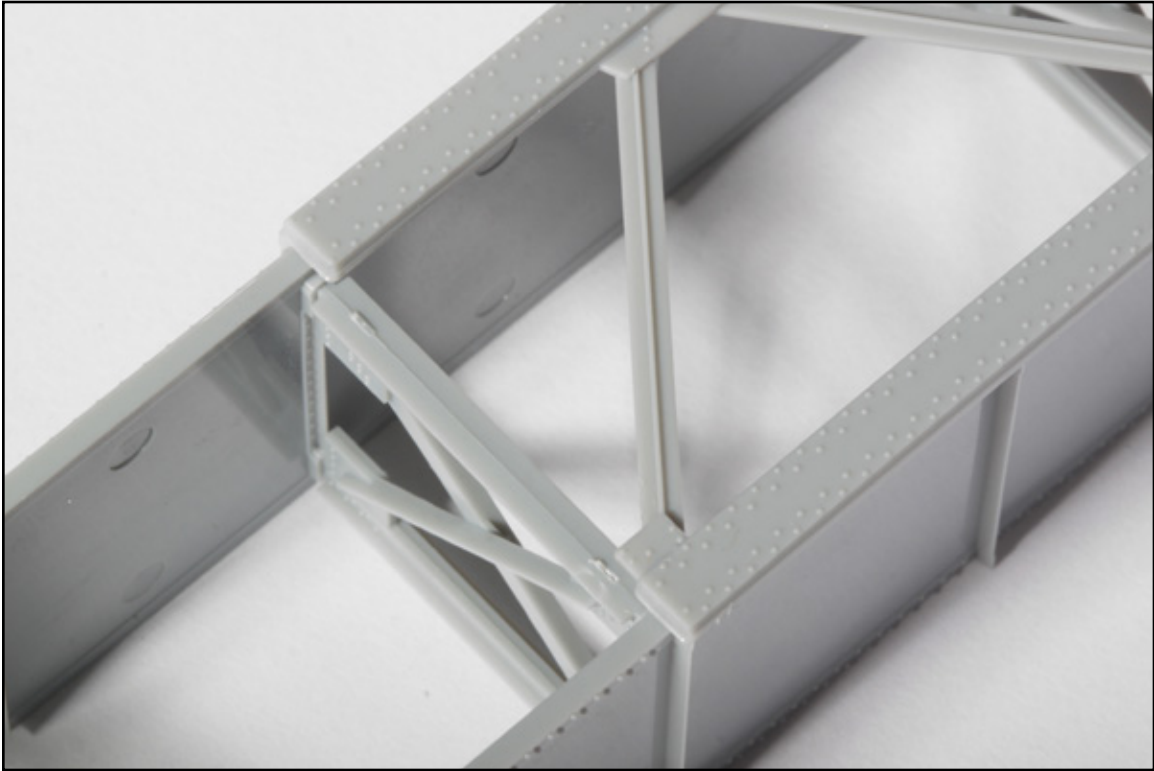


Photo H: Bridge Deck Detail

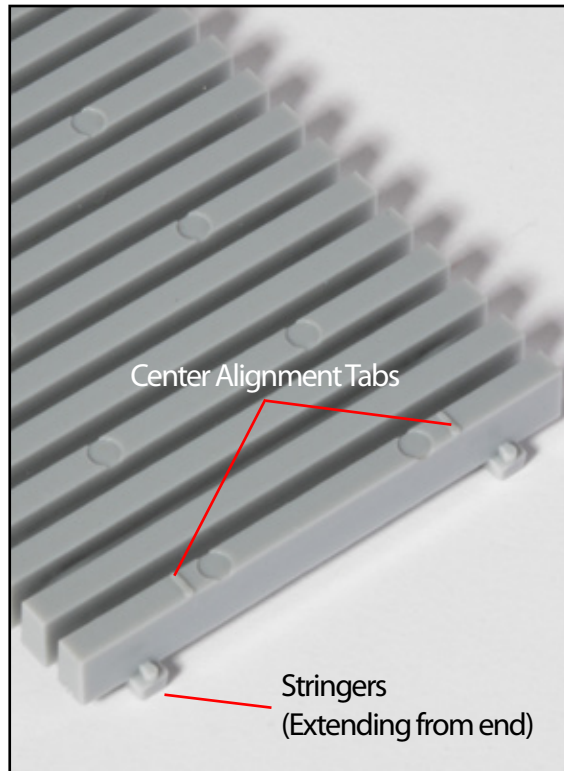
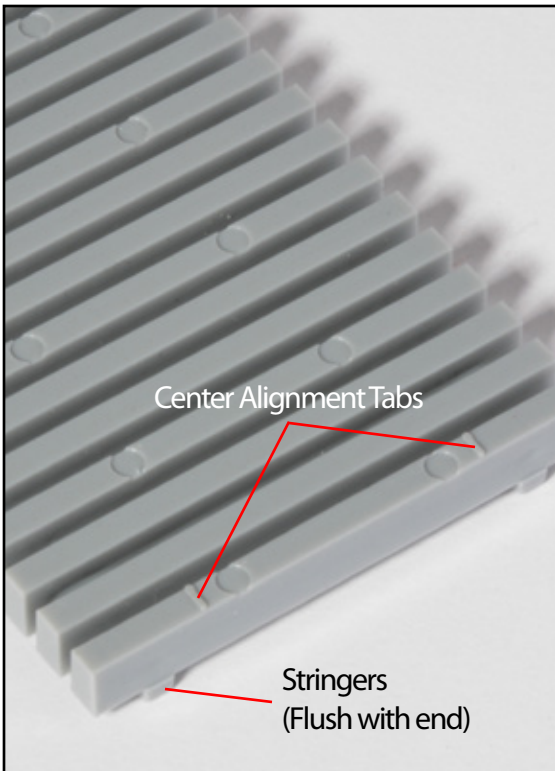


Photo I: Simplified Bridge End Detail

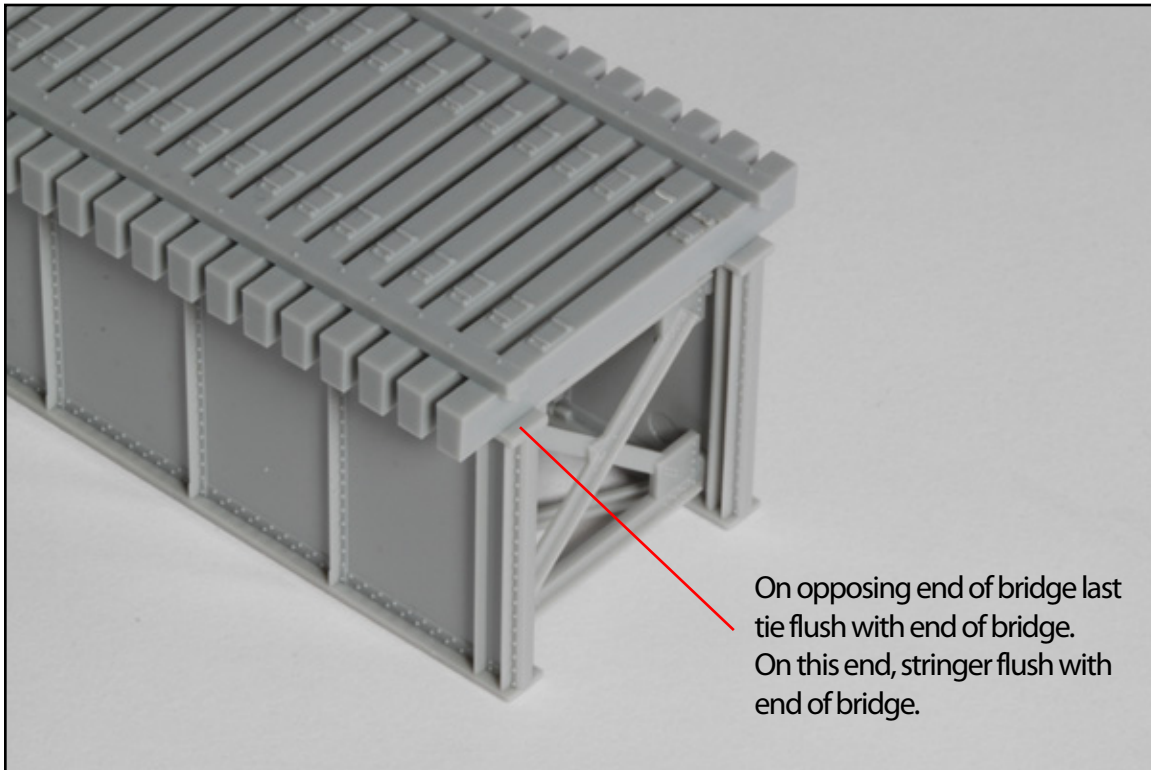


Photo J: Completed Simplified Bridge

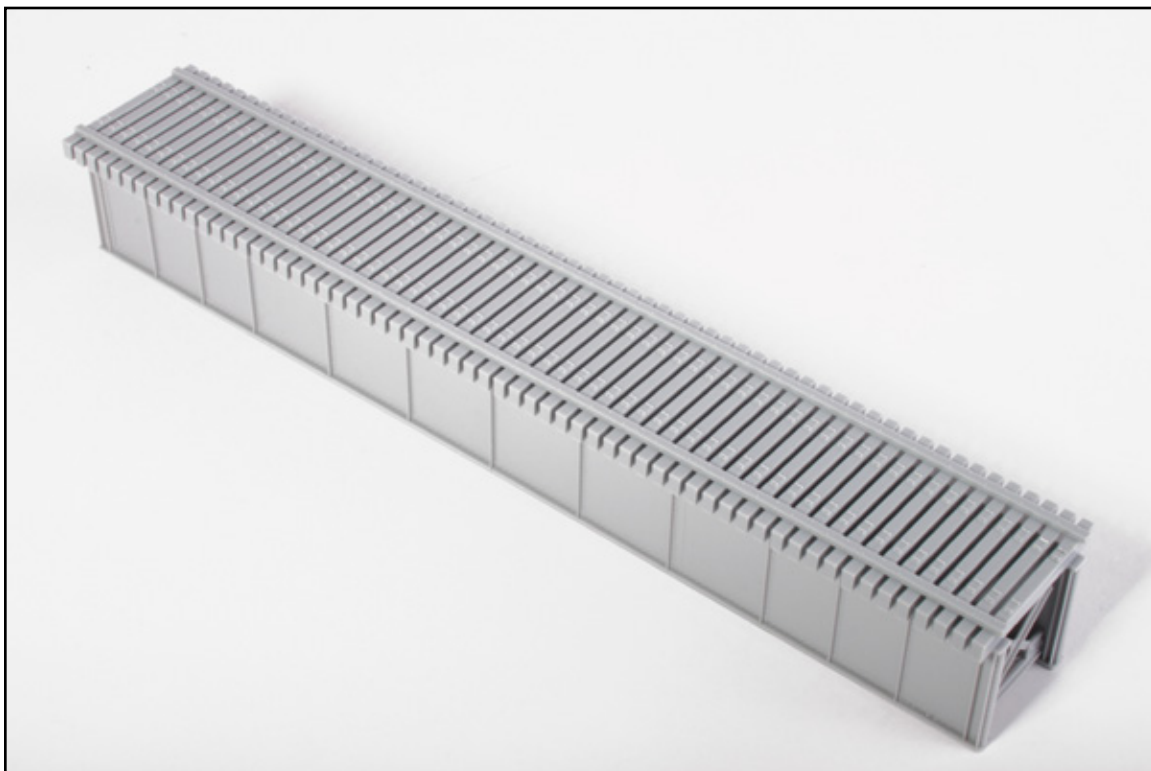


Photo K: Beam Orientation Detail

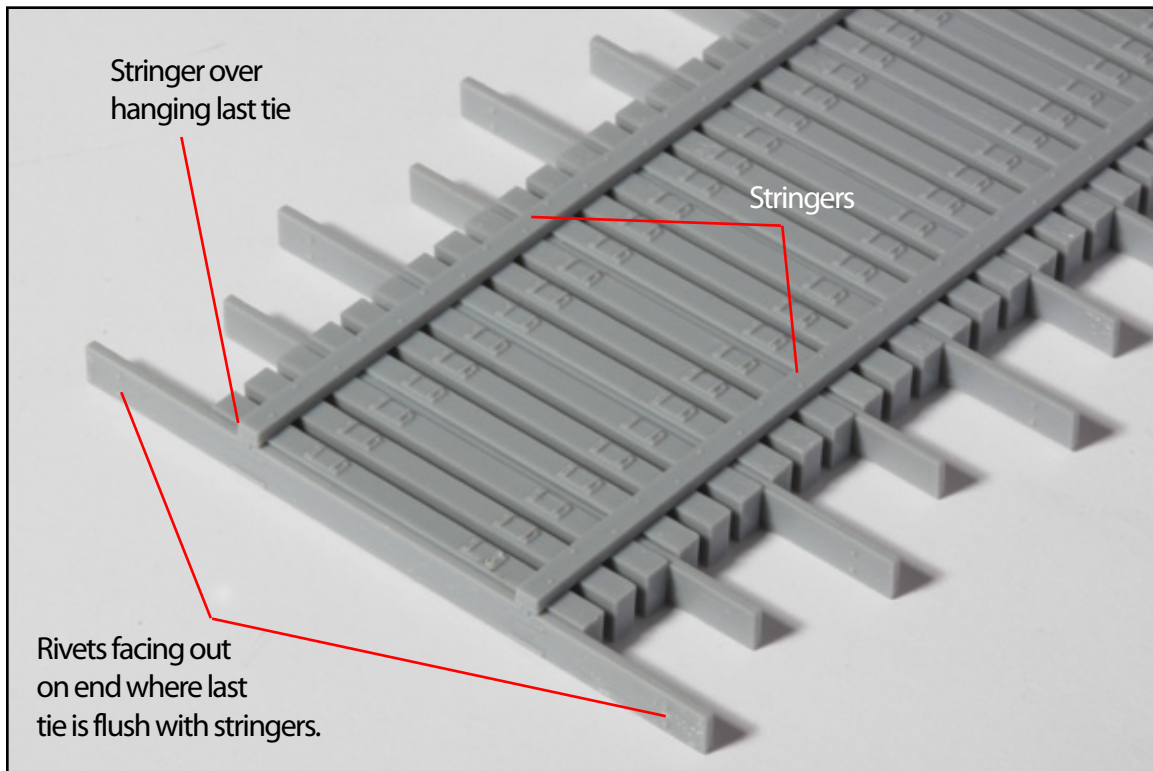
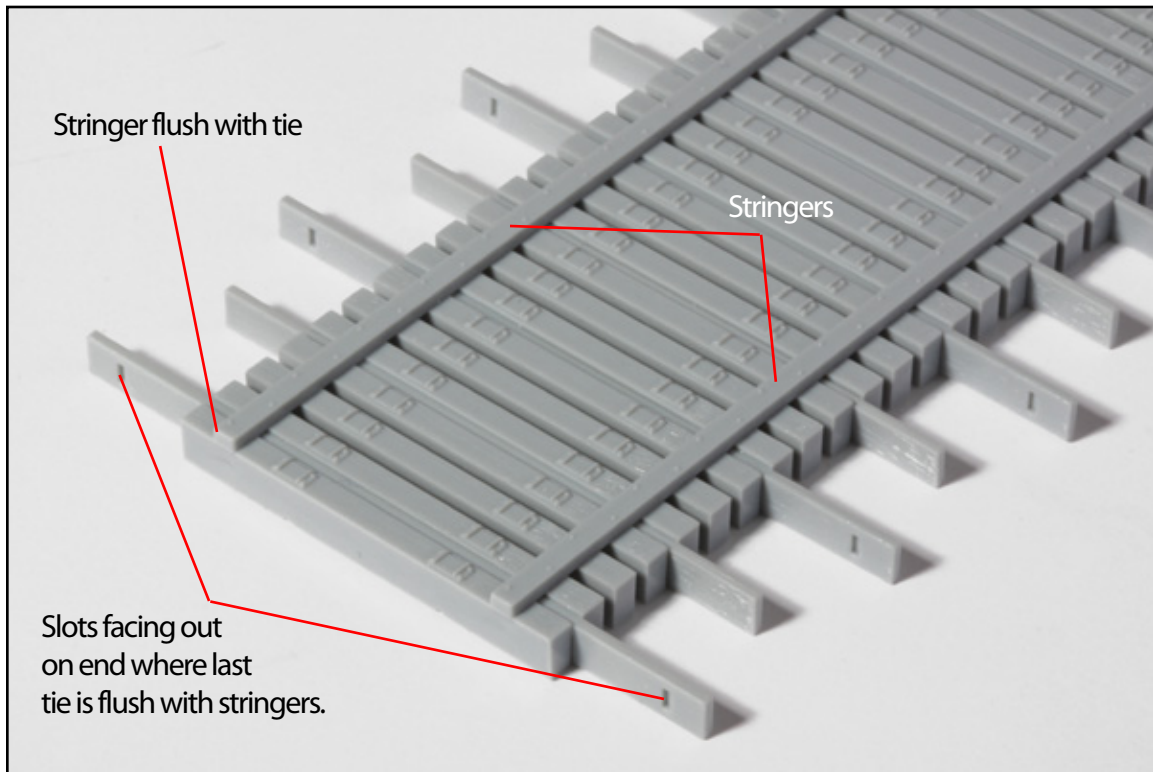


Photo L: Beam Layout

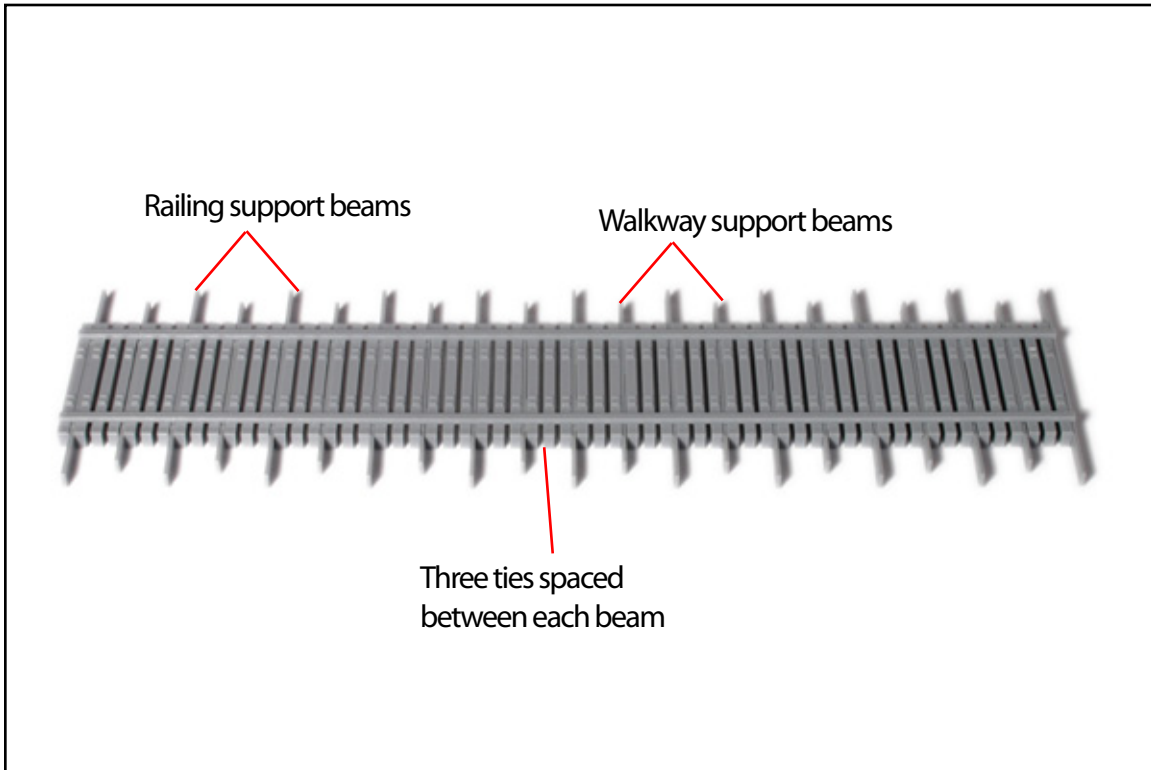


Photo M: Planked Walkway Placement

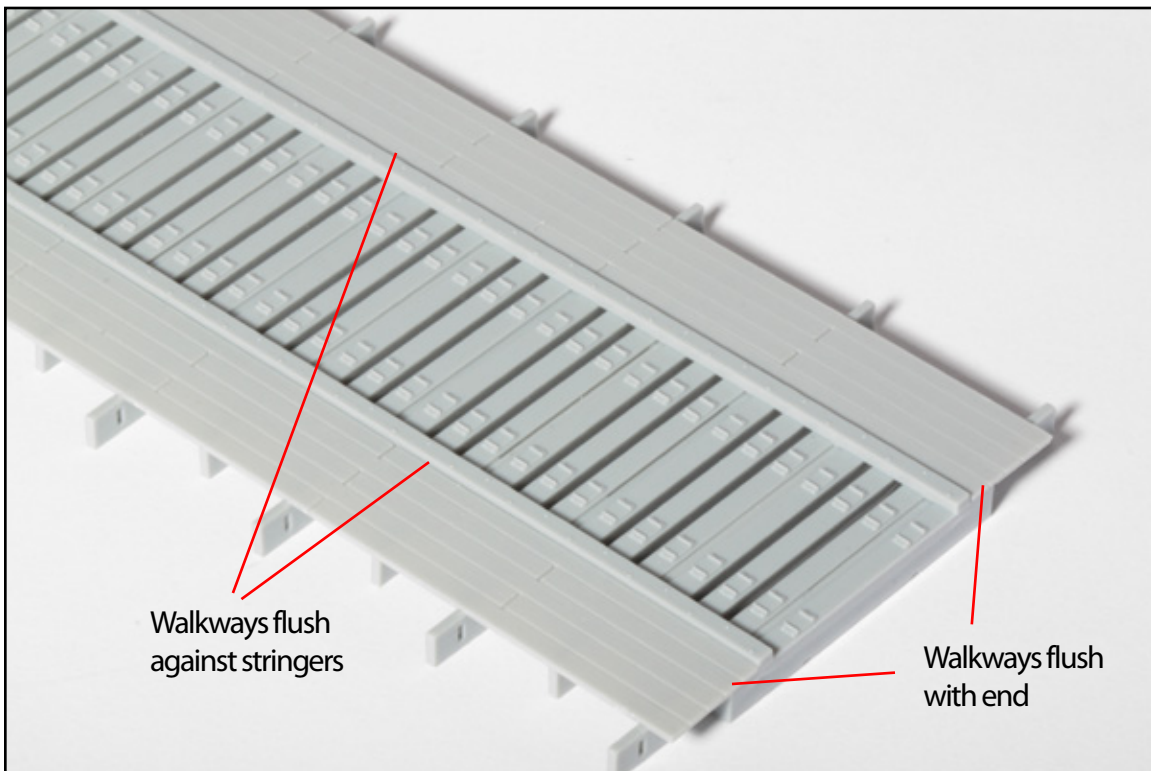


Photo N: Bridge Deck & Railing Assembly

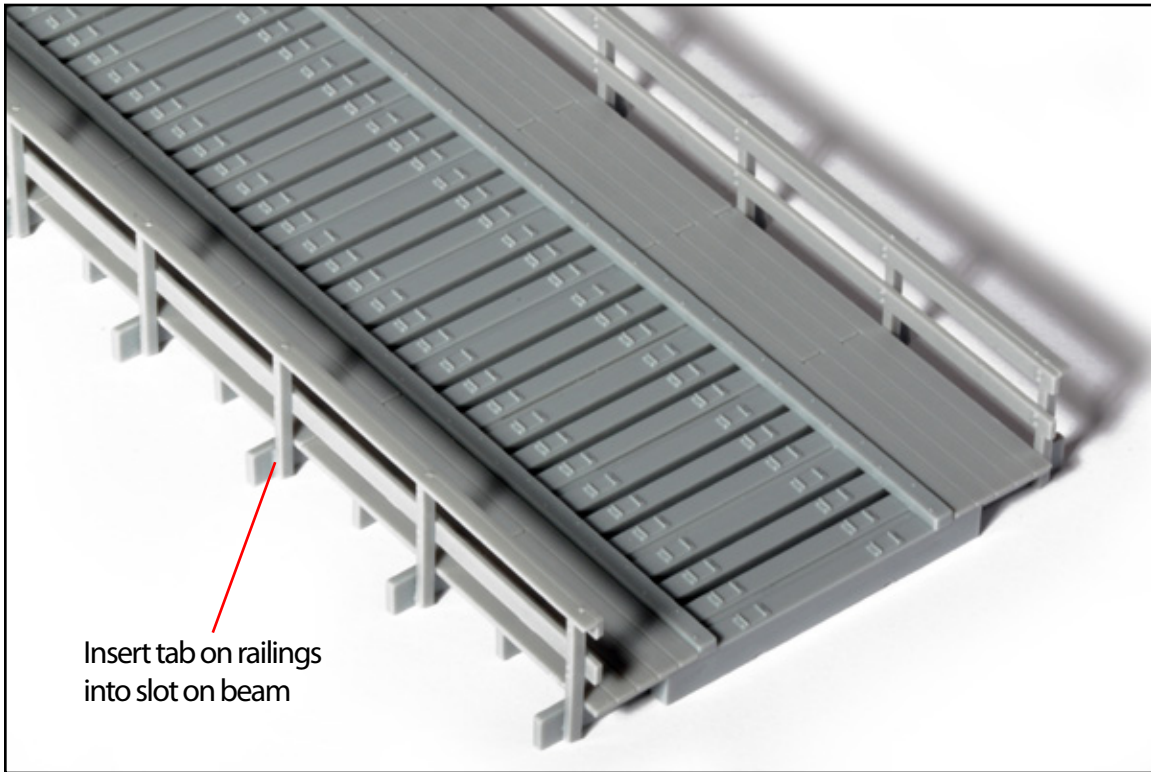


Photo O: Completed 'Early' Bridge

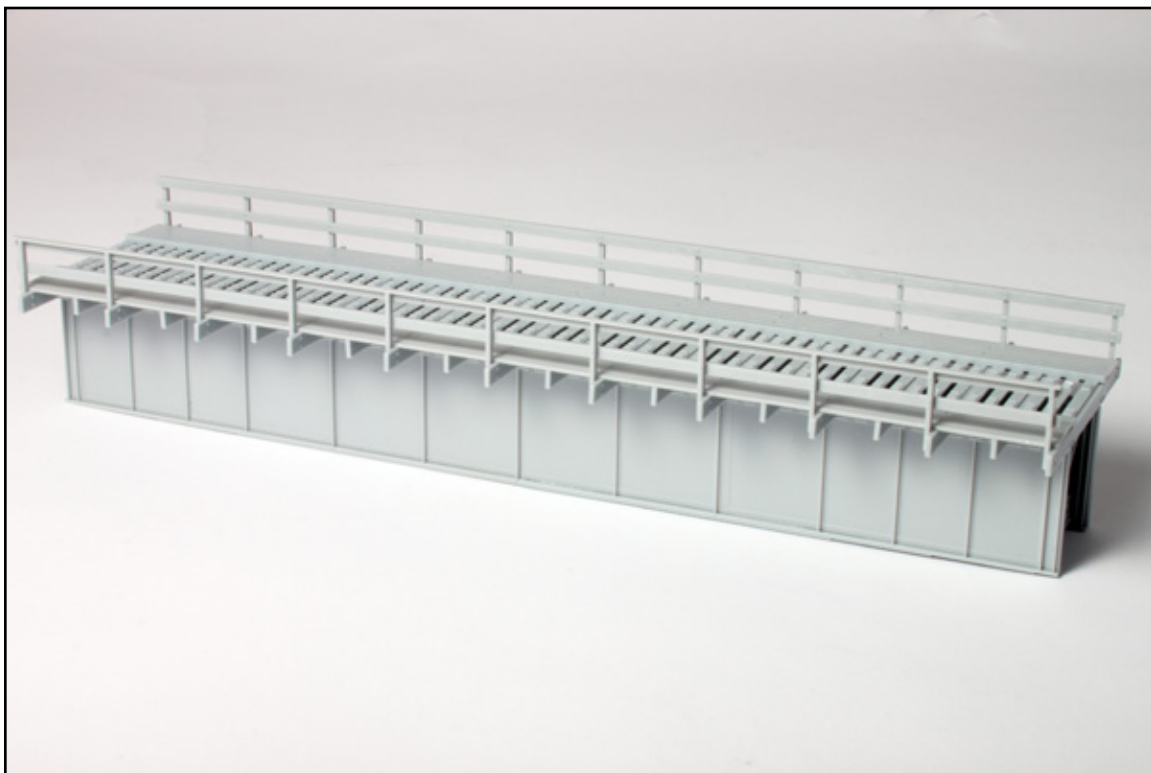


Photo P: Etched Walkway Detail

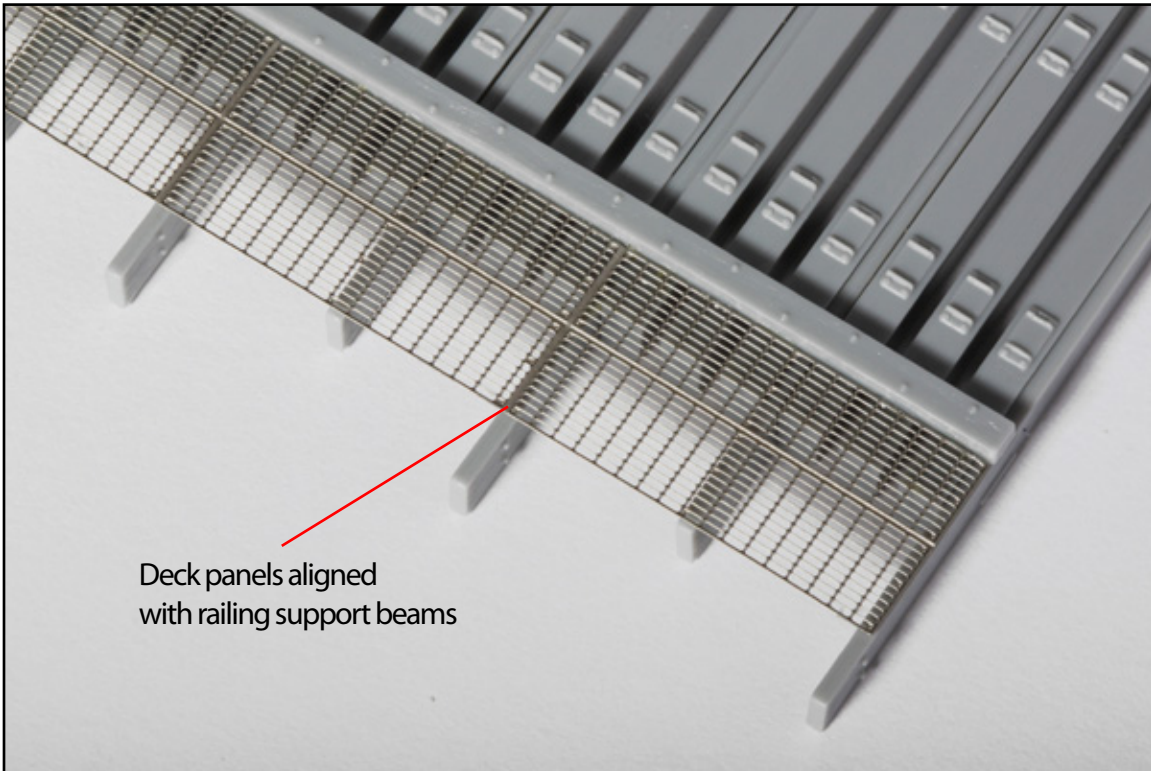


Photo Q: Post Cutting Diagram

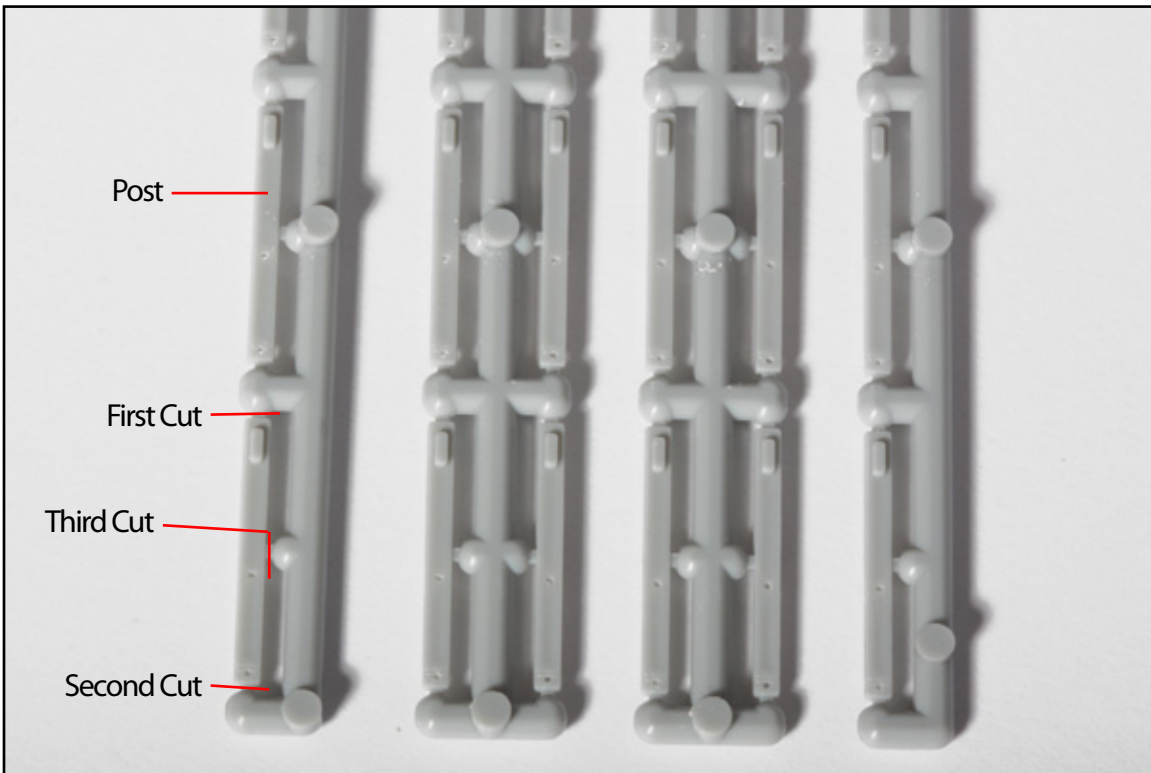


Photo R: Post & Cable Detail

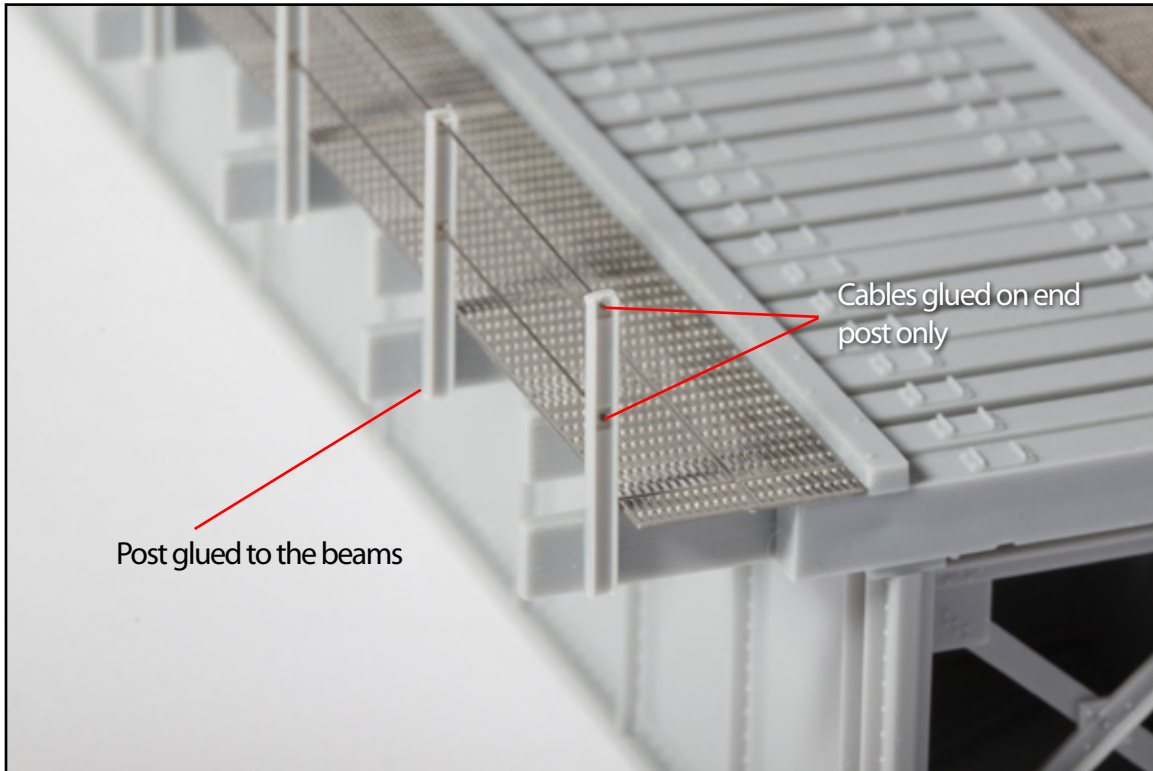


Photo S: Completed 'Late' Bridge

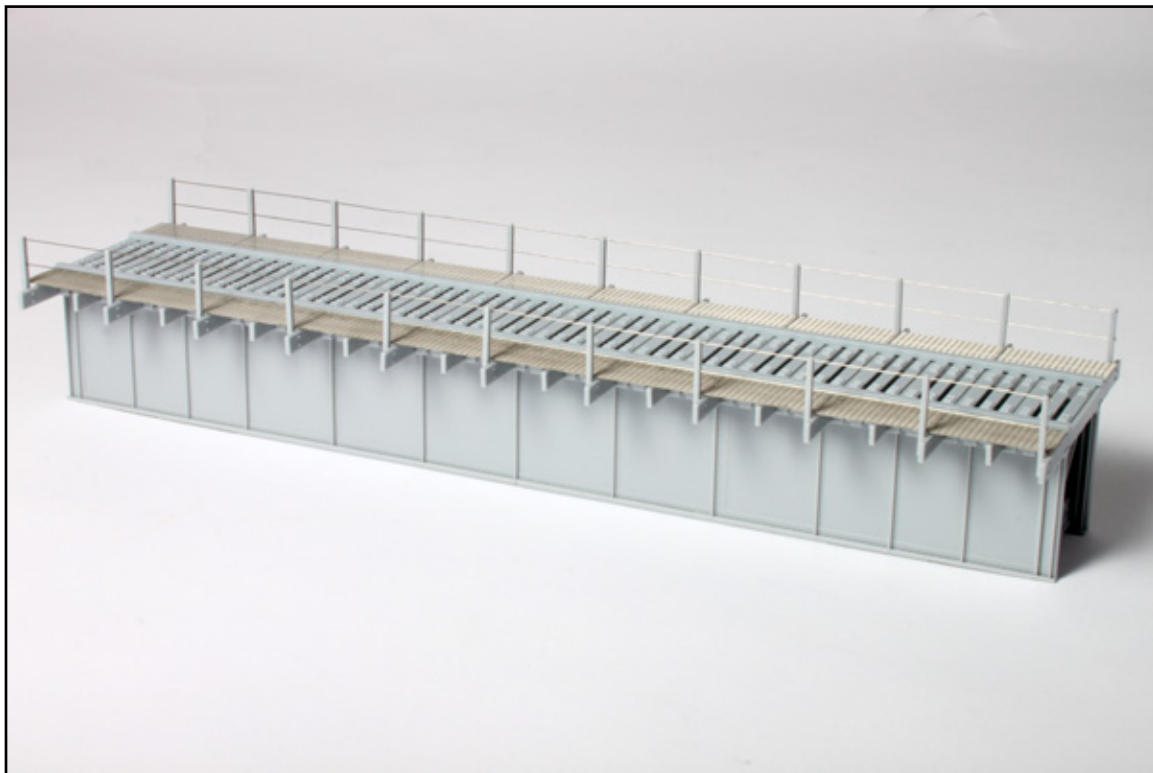


Photo T: FlexTrack Modification

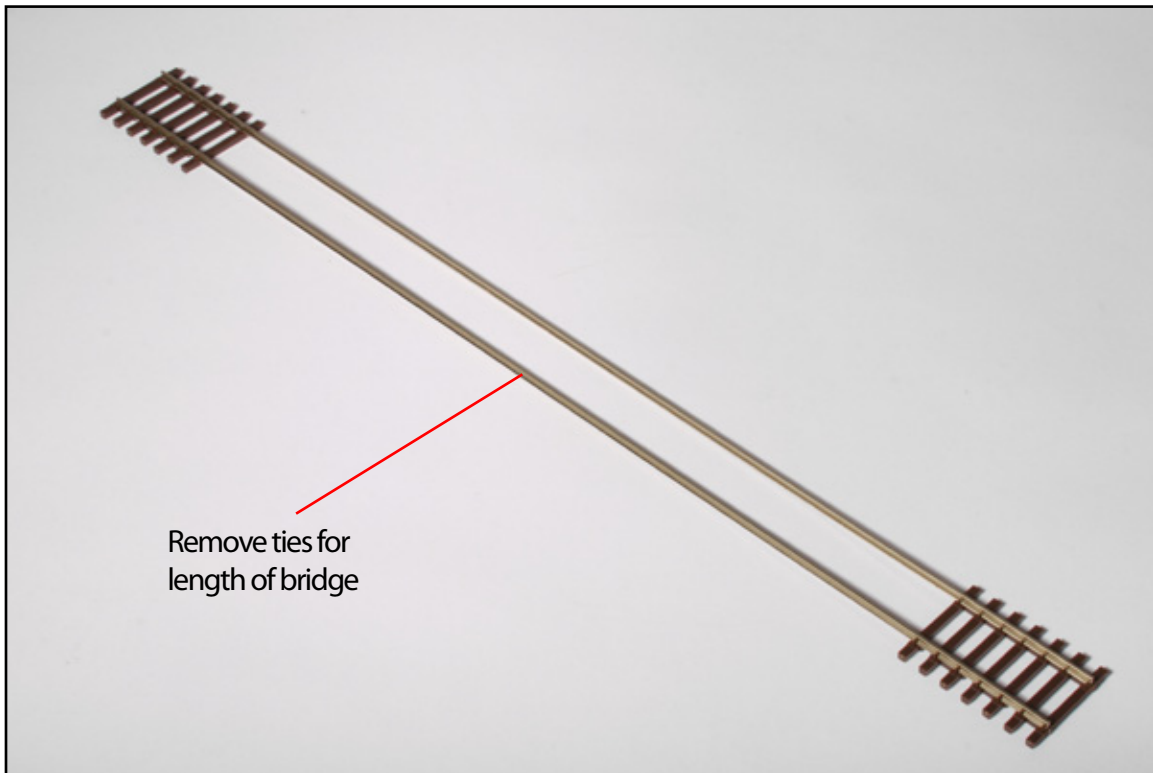


Photo U: Rail Added to Bridge

