

Gunite* Replacement

▼ Steel condition after Gunite removal



▲ Sandblasting the steel to achieve required surface finish

* Gunite, a dry mixture of sand and cement, is blown through a hose with high pressure air. Water is mixed at the end of the hose to form a concrete that is blown onto the surface.

▼ Hydrodemolition to remove old Gunite



Shotcrete application



The final shotcrete coating

Concrete Replacement



Concrete around the steel hangers was removed, damaged sections were plated and a new concrete encasement cast.



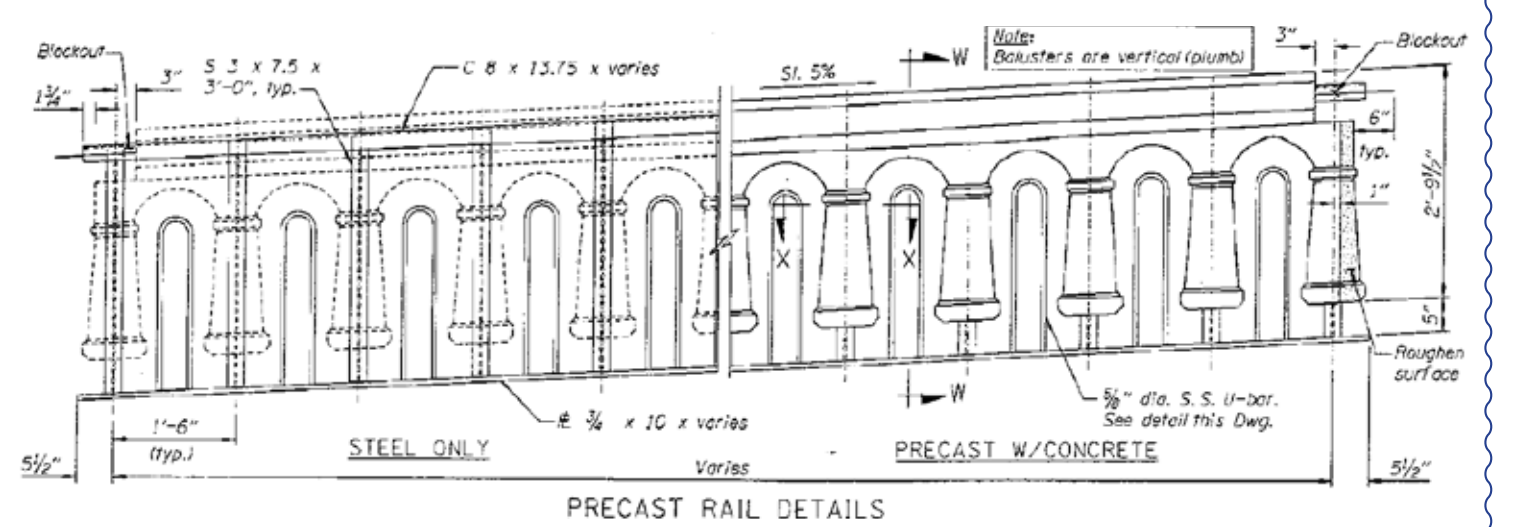
▲ Damaged floor beam extensions supporting the sidewalks were recast in new concrete.

A New Sidewalk and Railing System

▼ Condition of the original rails ▼



The replacement railing system is a replica of the original rail but designed to current safety standards. It is approved by Oregon's State Historic Preservation Office and is typically used on ODOT's historic bridge rehabilitation projects.



Saw cutting the base of the rail and removal of old sections with a backhoe



Sidewalks and rails were first removed



Sidewalk forming and precast bridge railing installation



Forming and casting the railing posts



Installing the new railing



The final railing



New Lights Match the Original



The original lights were removed from the bridge a long time ago. This is the only photo of what they looked like.



After a community-wide search, these original lights were found on a nearby church and replicated

The new lights were installed



A New Roadway Overlay Installed

Roadway preparation using hydrodemolition



Casting the concrete roadway overlay

New Paint Completes the Job



The bridge was last painted in 1983. To create a uniform color ODOT repainted the bridge, choosing a color that closely matched the concrete and the original 1922 color.

Before pictures are on the left; after pictures are on the right.



2009 - 2012

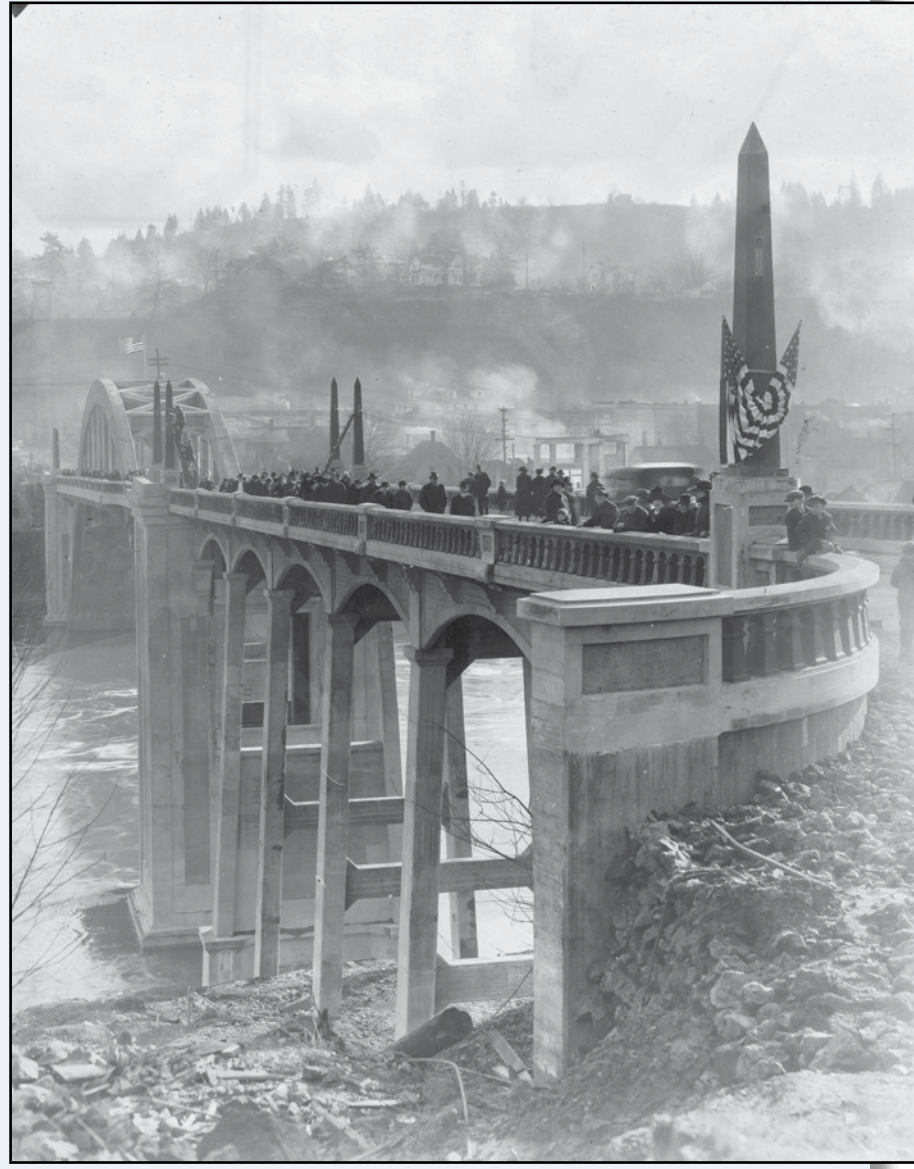
The historic Oregon City/West Linn Arch Bridge is ready to reopen. After being closed for 22 months, the restoration project has brought the bridge back to its original condition, strength and beauty.

You'll see a new roadway, sidewalks, railings, pylons and replica historic lights, as well as the new Shotcrete coating and a coat of light grey paint. What you are not able to see are all the repairs made to the steel that was under the original Gunite coating. These repairs give the bridge its strength and extends its life span so it can serve the community for years to come.

The overall goals were to restore the original beauty of the bridge and bring it up to modern safety standards. This had to be done in a limited time frame so that the bridge could be opened to traffic as quickly as possible. These goals have been achieved. Thank you for your patience and understanding during this long closure.

ODOT is proud to restore this community icon for the citizens of Oregon City, West Linn and the State of Oregon.

These photo boards show some of the elements of the restoration project.



Bridge Rehabilitation Constraints

- ▶ The bridge is an historic structure listed on the National Register of Historic Places
- ▶ It cannot be widened
- ▶ All debris must be fully contained
- ▶ There are hazardous materials issues
- ▶ The bridge supports important utilities
- ▶ The maximum closure to traffic is 2 years
- ▶ It is highly used:
 - Daily vehicle use over 14,000
 - Bicycle and pedestrian use 200-300 daily



Access was a Challenge



Access was a big issue so a temporary scaffolding, the Safeco QuikDeck Scaffolding system, was installed during utility relocation in 2010.



Barges were used for work below the QuikDeck Scaffolding

Corroded Components Needed Repairing or Replacing



Damaged sidewalk bearing supports were rebuilt



Eight stringers with excessive damage were replaced



The First Step . . .



Before any major construction started, ODOT required the inspection and repair of all main span column connections to the arch ribs



Main span column concrete base removal

Bolted steel plates were used for the connection repairs



▶ Recasting the concrete base ▶