



Glossary of Terms

The following common engineering terms apply to the construction process of the new St. Croix Crossing bridge deck.

Abutment – A substructure element that supports each end of a bridge.

Approach Spans – The spans connecting the abutment with the main river bridge spans.

Cable – Part of a suspension or extradosed bridge extending from an anchorage in the towers and down to the deck anchorage.

Cast-In-Place – Concrete poured within a form at final location to create a final structure.

Casting Yard – Location where crews make the pre-cast segments. The St. Croix Crossing project has two—on-site near the Hwy 36/Hwy 95 interchange and at Grey Cloud Island in Cottage Grove.

Deck – The roadway portion of a bridge that directly supports vehicle and pedestrian traffic.

Duct – Hollow plastic tubing placed inside a form before the concrete pour to leave space for installing the post-tensioned steel strands.

Footing – The lower portion of a substructure that distributes the load either to the earth or the supporting piling.

Form/Casting Bed – Location where crews pour concrete to create a segment. At the St. Croix Crossing onsite casting yard, these are yellow steel structures.

Match Casting – A type of casting method where a new segment's fresh concrete is cast against the hardened concrete of a previously produced segment.

Pier – A vertical substructure that supports the spans of the superstructure, including the bridge deck.

Post-Tensioning – A method to reinforcing (strengthening) concrete with high-strength steel strands or bars, typically called tendons.

Pre-Cast – Built at another location and then transported to the final location to be placed on a structure.

Rebar Jig – The location where crews fabricate the rebar cage, which is an element of the segment.

Reinforcement Bar (Rebar) – Steel bar used to strengthen and hold the concrete in tension.

Reinforced Concrete – Concrete with steel reinforcing bars placed within the structure to supply increased strength and durability.

Segment – An element of the bridge made of concrete and steel. Many segments placed next to one another create the bridge driving surface.

Span – The distance between piers, towers or abutments.

Steel – A material made up of iron and carbon that provides strength.

Strand – Pre-stressed steel that is made of seven wires bound/twisted together.

Substructure – The parts of the bridge that are below the driving surface. Abutments, pier columns and foundations are part of the substructure.

Superstructure – The parts of the bridge that are above the piers columns, including the bridge deck, pier towers and cables.

Tendon – Complete assembly of anchorages, pre-stressed steel strand, duct and grout.

Wire – Steel drawn out into the form of a thin flexible thread or rod.