

CASE STUDY

Wellsburg Bridge

West Virginia/Ohio border

HISTORY

For over a decade, citizens of the towns of Wellsburg, WV, and Brilliant, OH, and their surrounding areas have wanted an Ohio River crossing that was more convenient to them. With the Wellsburg Bridge under construction, a local crossing is becoming a reality. It will connect the two towns and be a much-needed additional river crossing that links West Virginia's panhandle with eastern Ohio. The bridge will connect State Route 2 in West Virginia and State Route 7 in Ohio.

PROBLEM

The bridges that cross the Ohio River in this area are antiquated and have exceeded their design life. One bridge was recently demolished because it could not be modernized. With projected traffic volumes and the need for a reliable and safe river crossing for emergency responders, businesses, and commuters, the West Virginia Department of Transportation sought to build a new bridge that would meet their requirements and encourage regional business growth.

SOLUTION

Flatiron Construction Corp. proposed a tied-arch bridge that will be built downriver and floated into place on barges. Brayman Construction Corporation was awarded the subcontract by Flatiron to install the deep foundations required to support the four piers of the new bridge. The pier foundation included drilled shafts on each side of the crossing. Nucor Skyline manufactured the 98"ID x 1" and 122"ID x 1" drilled shaft casings that were used in the pier project. The drilled shaft casings, between 60 and 90 feet long, depending on the conditions at the drilling site, were assembled and shipped full-length.



CASE STUDY

Wellsburg Bridge

PROJECT PARTNERSOwner

West Virginia Department of
Transportation – Charleston, WV

General Contractor

Flatiron Construction Corp. –
Broomfield, CO

Driving Contractor

Brayman Construction Corporation –
Saxonburg, PA

PRODUCTS

Drilled shafts: 98" ID x 1" and
122" ID x 1', between 60' and 90' long

Wide flange beams: W24 x 68 beams

PROJECT TIME FRAME

December 2018 through June 2020



Nucor Skyline worked with their partner, Brayman, on the logistics of delivering the overweight casings to the site.

The new bridge is 830 feet long at its main arch span and is supported by Piers 3 and 4. The 130-foot-long span on the Ohio side of the river is supported by Piers 2 and 3, and the 188-foot-long span on the West Virginia side is supported by Piers 4 and 5. Piers 2 and 5 are supported by two of the 10' diameter drilled shafts, while Piers 3 and 4 are each supported by three of the drilled shafts.

Flatiron designed and constructed a temporary work trestle with separate sections for the drilled shaft work. The Brayman crews

constructed temporary drill templates at each pier location to allow for the precise location of each shaft's permanent casing.

Nucor Skyline supplied the double W24 wide flange beams required for the soldier pile wall that was used to retain the soil from the hill above the bridge. Initially, the project was designed with a soil nail wall to secure the hill, both for aesthetics and added structural support. When construction on this soil nail wall began, it was quickly apparent that the soils from the hill were sliding toward the river. It was decided that the only way the necessary support could be provided was with several double soldier pile walls with strand anchors.