

CASE STUDY

I-44 Meramec River Bridge

St. Louis, Missouri

HISTORY

The Meramec River is one of the longest free-flowing waterways in the state of Missouri, covering about 218 miles from the Meramec Spring near Salem to where it empties into the Mississippi River near St. Louis. The river is used commercially by tour boats and sand and gravel mining barges, as well as canoe outfitters and ferry boat excursions. The Meramec Spring, where the river begins, was declared a National Natural Landmark in October 1971, and the ruins of a historic iron works, which took advantage of the available hydropower, still sit at the spring.

PROBLEM

As a free-flowing river with no flood control dams, the Meramec River is often subject to flooding. Major floods in both December 2015 and May 2017 caused damage and shut down roadways. In addition, Karst conditions can be found throughout the region, causing sinkholes and caves under the river.

The I-44/I-270 interchanges along the Meramec River in Missouri were built in a time when traffic volumes and automobile speeds were significantly less than they are today. Many of the bridges along the I-44 corridor were built more than 50 years ago and are in need of rehabilitation or rebuilding.

SOLUTION

The project to replace both the eastbound and westbound I-44 Meramec River Bridge will be broken into several phases, with Phase I currently in progress. Phase I, which began in July 2018, consists of a new westbound bridge built between the existing east and west bridges that are now in use.



"I appreciated the responsiveness and overall customer service provided by Nucor Skyline during Phase 1 of the MoDOT I-44 Bridge Replacement over the Meramec River. Skyline proved to be an excellent vendor and partner throughout the planning and construction phases of the job."

— Tyler Wilson, Project Engineer, Case Foundation Company

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PROJECT PARTNERS

Owner

MoDOT – Jefferson City, MO

General Contractor

KCI Construction – St. Louis, MO

Drilling Contractor

Case Foundation Company – Roselle, IL

PRODUCTS

Pipe Piles: 66" OD x .500", various lengths

PROJECT TIME FRAME

July 2018 through 2021

The bridges and parts of I-44 will be raised to lift the interstate further out of the floodplain. The project will also include a shared use path over the river for bicycles and pedestrians.

Case Foundation of Roselle, IL, a deep foundations specialist, was hired as the drilling contractor for this project and reached out to Nucor Skyline, as their steel foundation supplier. Because of some difficult loose sand and gravel conditions on top of the bedrock, Skyline manufactured the rolled and welded pipe piles to 66" OD x .500" in various lengths in order to minimize shaft cave in and stabilize the overburden of the soil conditions.

One of the pipe pile shafts had to be drilled deeper into the bedrock to create a seal when Karst conditions, underground drainage system that can include sinkholes and caves, were found at the site. Another condition at the site was high water on the Meramec River due to local storms. The project is expected to take three years to complete.