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Limestone walls give Indiana bridge authentic look

When an Indiana county needed to restore this historic bridge, the project was no simple task.

The bridge was a four-span, closed-spandrel concrete arch bridge over the Tippecanoe River in Tippecanoe County, Ind. It was originally built in 1925, then rehabilitated in 1977. The total length of the bridge measured 378.8 ft, and the largest span was 97.1 ft.

H. Stewart Kline & Associates was the design firm for the project. Stewart Kline explained why the county chose Redi-Rock for the project:

"We've used [gravity walls] previously in some historic situations when we were tying into limestone abutments. Since this project was an arch rehabilitation, the idea was to try to do something that would aesthetically keep with the character of the bridge, which has been an area landmark for generations. We were trying to use something that looked like it fit in and complemented the bridge," he said.

Redi-Rock's limestone texture mimics the look of natural cut limestone and has been used in historic projects across the country. The massive 1-ton size of each block gives walls a scale to match large-scale projects such as this, along with the ability to build tall gravity walls that often require no reinforcement.

The construction project's goal was not only to restore the bridge, but to widen the roadway as well. "The old road was very steep; it had over a 9% grade, so we had to cut our way through the valley with a wall to shallow the grade and widen the road," Kline explained.

On the other end of the bridge, gravity walls served as fill walls to widen the roadway. As the walls approached the arch, they curve behind the old wing walls all the way to the base, "basically relieving pressure off the old wing walls as the road widened," Kline said.

In total, 10,757 sq ft of gravity walls were specified for the project. More square footage was added as the project progressed due to the soil situation.

Almost all of the walls in the project were specified as gravity walls. Kline utilized the Redi-Rock 9-in. Setback blocks throughout the project to increase the setback of the walls and allow taller gravity walls to be built. In some sections, the design alternated between 41-in. blocks and 9-in. Setback blocks to vary the batter.

The cut walls were slated for winter installation, and the job is scheduled to be completed in June 2011. "It's turning out really well," Kline said, "and it's certainly one of our more photogenic projects." **R&B**

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