Miami County Reline

Miami County, Kansas

Project Team Members:

Owner:
Kansas Department of Transportation

Engineer:
Kansas Department of Transportation

Contractor:
Wildcat Construction

Technical Description:

- Span: 27 ft - 6 in
- Rise: 17 ft - 2 in
- Length: 130 ft
- Product: MULTI-PLATE®
- Installation Date: April 2008

Due to horizontal cracking of a 30' reinforced cast-in-place concrete arch over South Wea Creek, the Kansas Department of Transportation needed to replace the bridge immediately.

"Detouring traffic on alternate routes was not feasible, so replacement of the structure would require utilizing phased construction or the construction of a shoofly detour," said Terry Fleck, Senior Squad Leader of the KDOT Bridge Section. "Replacing the structure under either option significantly exceeded the funds budgeted for the project."

In order to stay within budget, alternative rehabilitation options were considered. It was determined that a MULTI-PLATE® arch would provide the structural integrity desired with a minimal decrease in hydraulic capacity. By lining the existing concrete arch, the MULTI-PLATE structure provided the same anticipated service life as a replacement structure.

Installation began with extended footings outside of the existing bridge. A ring of plates was erected and construction equipment was used to pull the rings inside the concrete arch. This process was repeated until the entire MULTI-PLATE was inside the existing structure. Grout was used to fill the void between the two structures.

The placement of the arch was accomplished within existing right of way while maintaining normal two lane traffic on the roadway above, keeping the cost of the reline substantially less than complete replacement.

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