



Project Profile



Super•Cor Bridges angle in on budget to support double track load

When a new rail spur had to cross a protected southern Indiana stream to deliver coal to a thermal generating plant, minimum structural depth, a skewed alignment and heavy storm flows were the critical constraints. The project team had looked at various solutions — precast beams, steel beams and precast arches — but they were unable to get the designs to work efficiently within the constraints.

Heavy loads, minimal structure depth, (15.2 m) 50' span, 40° skew
They opted for an engineered Super•Cor Bridge Structure from AIL Mining. Super•Cor's low profile and wide span met the minimal structure depth and satisfied the Indiana DNR's requirements for hydraulic flow. The capacity of the 4.5 m (15') x 1.7 m (5.5') sections allowed for spans of 15.2 m (50') while maintaining a superstructure depth of just over 91 cm (36') under heavy rail loading conditions. Super•Cor's ability to be fabricated with a 40° skew also helped limit the overall site impact of the new stream crossings.

Project at a glance:

Project Name: Edwardsport IGCC Rail Spur Project

Location: Edwardsport, Indiana

Consultant: Burns McDonnell

Contractor: W.B. Koester Construction

Type of Product/Application: Stream Crossings for Rail Spur

Dimensions: Pollard - 15.8 m (52') Span x 6.7 m (22') Rise and Singer - 15.2 m (50') Span x 5.1 m (17') Rise



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Versatile Super•Cor fits the bill perfectly

Other systems initially considered would have required more superstructure depth and would not have met the flood prevention requirements. Initial beam designs needed much larger spans due to the rail loading and hydraulic flow requirements. Super•Cor Bridge Structures are evaluated hydraulically as culverts and, because of their shape, they convey more flow at lower flood elevations than traditional bridges with trapezoidal channels.

The double track alignment required the structures to have a 40° skew — not a problem for Super•Cor. Traditional bridge spans could meet the skewed alignment but, through hydraulic modelling, they couldn't meet the flow requirements. Precast arch culverts also couldn't meet the alignment or the minimal superstructure depth requirements.

Collaborating on a customized solution

AIL Mining worked extensively with the owner's design team to integrate the skewed structures with the cast-in-place headwall design. Several backfill options were also considered to help keep the project on time and on budget. The overall project construction budget was improved by the reduced site impact to the project and the accelerated fabrication process of the Super•Cor bridge structures. The structures were produced and shipped in half the time compared to the other solutions initially considered.

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