2010/2011 ABCD-Susquehanna Chapter Awards Program

Competition Results

Categories

Outstanding New Short Span(s) Bridge
Single span or simple span structure of any length, or multi-span structure less than 200' total length, constructed on substructure units that are new or substantially reconstructed.

Outstanding New Multi-Span Bridge
Multi-span structure greater than 200' total length constructed on substructure units that are new or substantially reconstructed.

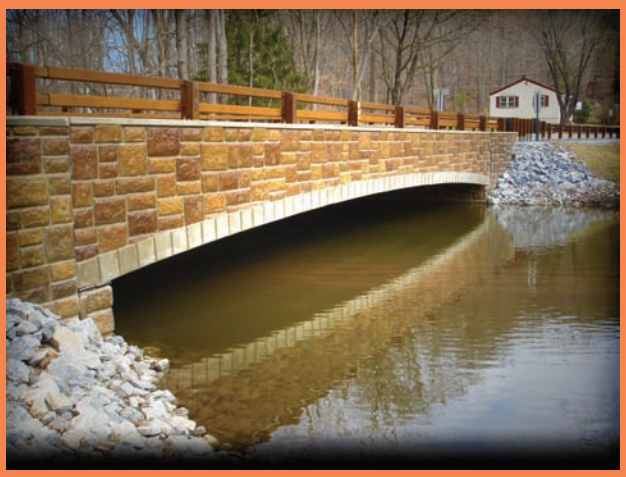
Outstanding Rehabilitated Bridge
Main load carrying members must be retained; either modified, strengthened, or made redundant, but may not be new. Substructure units must be retained but can be modified.

Outstanding CSS Bridge Design
To be eligible for this award, the bridge project must meet the requirements of one of the other 3 categories. The award winner will be the project that best exemplifies context sensitive solution (CSS) design concepts.

Outstanding New Short Span(s) Bridge

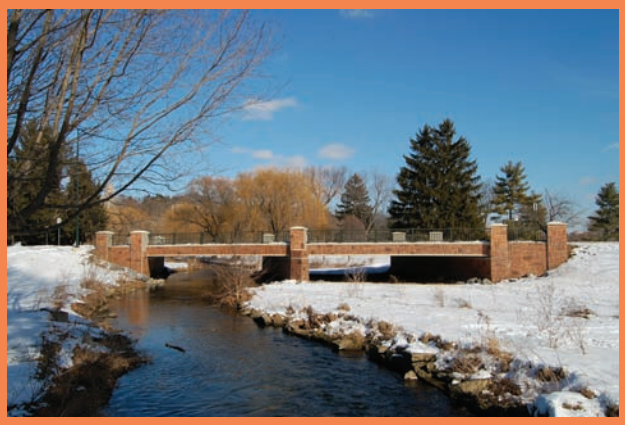
SR 4018 over French Creek, Chester County, PA

JMT provided environmental, roadway, traffic control, right-of-way, and structural design services for the replacement of SR 4017 over French Creek in Harmonyville, Chester County, PA. The bridge was a contributing element to the historic district in which it is located. The challenge was to design a wider replacement structure that met current load criteria while preserving the district's historic integrity and minimizing impacts to the exceptional value (EV) creek and adjacent wetlands. JMT met this challenge by designing a safer, stronger bridge that eliminated the need for posted weight restrictions while fitting within the historic context of the area.



Submitting Firm: Johnson, Mirmiran & Thompson, Inc. (JMT)

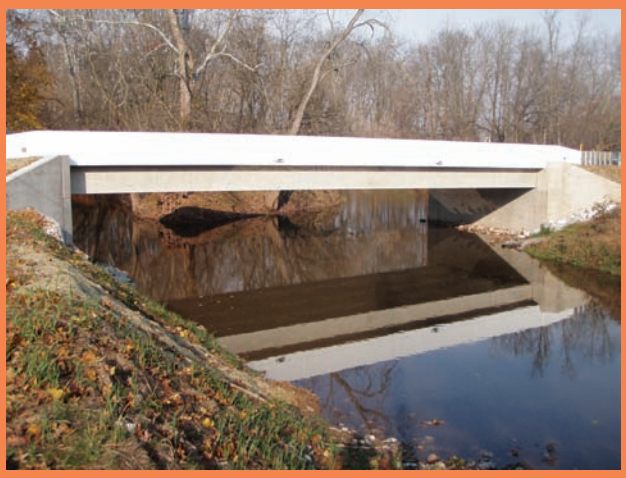
Ott Street Bridge, Lehigh County, PA



Prominently located in a park in the City of Allentown, Lehigh County, Ott Street Bridge was in need of repair. With the existing non-composite adjacent box-beam bridge's fascia beams severely deteriorated and its structural integrity greatly compromised, city officials desired a safe superstructure that was also aesthetically pleasing. RETTEW designed a continuous prestressed-concrete spread box-beam bridge that features a stone pattern on the fascia beams and abutments for architectural interest. High-strength concrete used in the beams enabled the existing hydraulic opening to be maintained, and the refurbished hand railing and capping each of the widened sidewalk columns creates visual impact.

Submitting Firm: RETTEW Associates, Inc.

York County Bridge No. 193, York County, PA

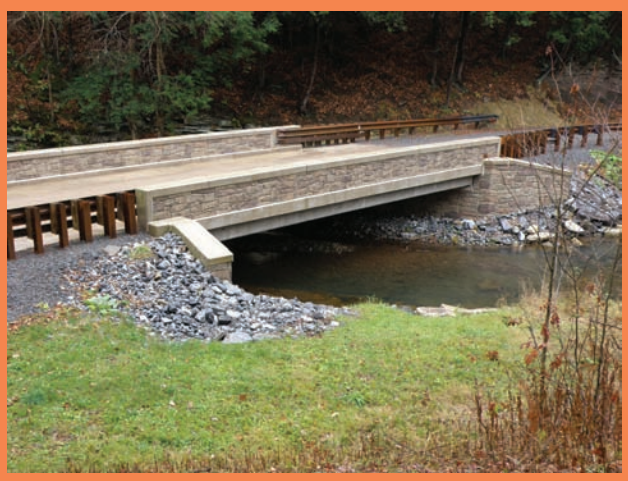


Built in 1889, York County Bridge 193 was an 86' single-span, one-lane wrought iron through-truss structure located at a "T" intersection between Conewago and East Manchester Townships, crossing Little Conewago Creek. The functionally obsolete bridge was replaced with a single-span, pre-stressed concrete spread box beam structure. The new bridge offers improved approaches, a wider deck to safely accommodate two-way traffic, and a longer 90' span to allow for improved stream flow. Demolition and removal of the through-truss and construction of the new bridge were completed in 2010 and were funded with federal, state and local monies.

Submitting Firm: C.S. Davidson, Inc.

Francis Road Bridge over Francis Branch, Tioga County, PA

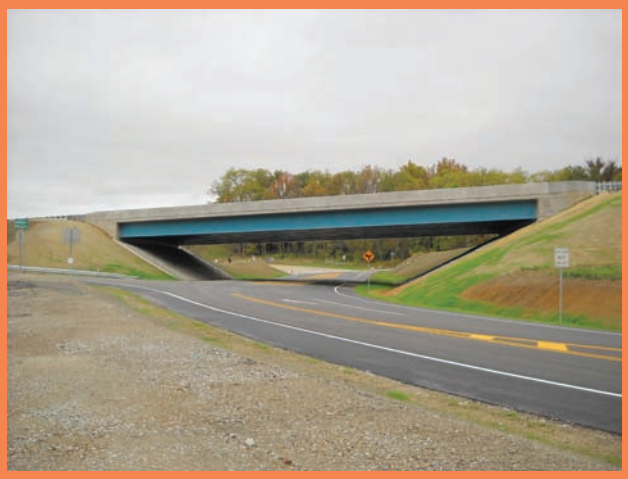
The Francis Road over Francis Branch single-lane existing bridge, originally built in 1936, in Forest District 12, Elk Township, Tioga County, is owned by the Pennsylvania Department of Conservation and Natural Resources (DCNR). The bridge, also known as DCNR Structure No. 12-0049, was replaced as part of DCNR's improvements to the state forestry system. Michael Baker Jr., Inc. (Baker) designed the prestressed concrete spread box beam replacement structure, providing two lanes of traffic with an increased hydraulic opening to improve the stream flow conditions. A random stone pattern architectural treatment was used on the faces of the wing walls, abutments and the concrete barrier for aesthetics.



Submitting Firm: Michael Baker Jr., Inc.

Zediker Bridge, Washington County, PA - *WINNER!*

This project resulted in the construction of the longest single-span Integral Abutment Bridge in Pennsylvania. The project requirement was to design a cost-effective replacement bridge for a functionally obsolete grade separation structures on a now substandard Interstate Highway with high traffic demands and limited right-of-way availability (Interstate 70, near Washington, Pennsylvania). The application of this bridge type maximized the contractor's ability to phase his excavation, which reduced the amount of temporary sheeting for the project, and allowed PennDOT, District 12-0 to maintain four lanes of traffic without either a temporary bridge or an over-widened replacement bridge.



Submitting Firm: Century Engineering, Inc.

Sumneytown Pike Bridge, Montgomery County, PA - *WINNER!*

In 1991 a partnership between Upper Gwynedd Township and Merck & Co, Inc. to alleviate traffic congestion. In 2010 this relationship culminated in the replacement of the Stony Creek Branch railroad bridge over Sumneytown Pike. This simple span railroad structure utilized a two-part prefabricated steel super structure, and high early strength concrete to facilitate a unique and accelerated construction schedule allowing the demolition of the existing structure and construction of the new bridge to occur with less than 6 weeks of outage time. The final product demonstrates what can be accomplished through partnering and project "right-sizing."

Submitting Firm: AECOM USA

Outstanding New Multi-Span Bridges

Ridge View Road Bridge over I-83, York County, PA

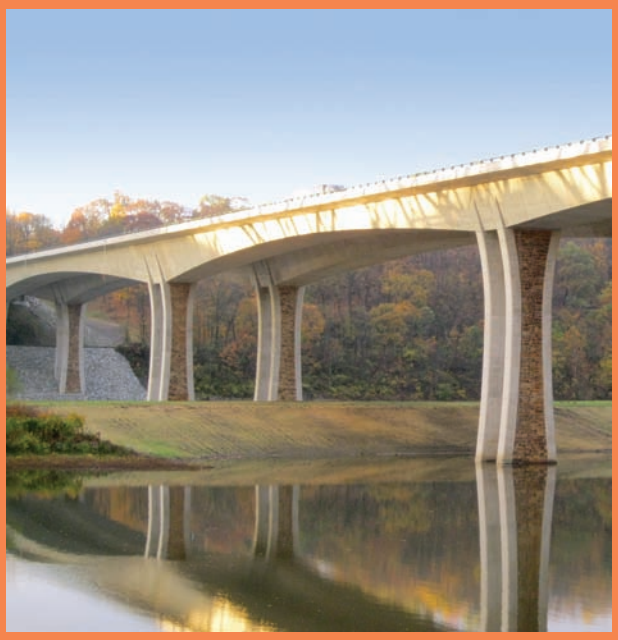
The Ridge View Road Bridge Replacement project greatly improved the safety of the motoring public along the I-83 corridor. The new bridge provides adequate vertical clearance for the trucks and large vehicles that regularly travel between Harrisburg, PA and Baltimore, MD. The use of 3R design criteria permitted a new bridge and roadway to be built to closely resemble the existing terrain. The criteria coupled with innovative design techniques and materials such as rock fill slopes and Class AAAP concrete allowed for a sustainable project that will meet the requirements of interstate travel while minimizing impacts to the local community.

Submitting Firm: Michael Baker, Jr., Inc.

I-76 Allegheny River Bridge, Pittsburgh, PA - ***WINNER!***

The Pennsylvania Turnpike Commission's new I-76 Allegheny River Bridge is a sustainable bridge that will serve the Pittsburgh area for many years. Economy, aesthetics and eco-friendly features were key elements during design. Built from the top down to keep rail, vehicular and marine traffic flowing, the long, sweeping spans deliver a modern design that preserves the sensitive river environment. As Pennsylvania's first balanced cantilever bridge, it boasts a record-breaking 532' concrete main span across the Allegheny River. The twin, 2,350' concrete segmental bridges provide expanded travel lanes and wide shoulders to provide Turnpike customers with increased safety and enhanced mobility.

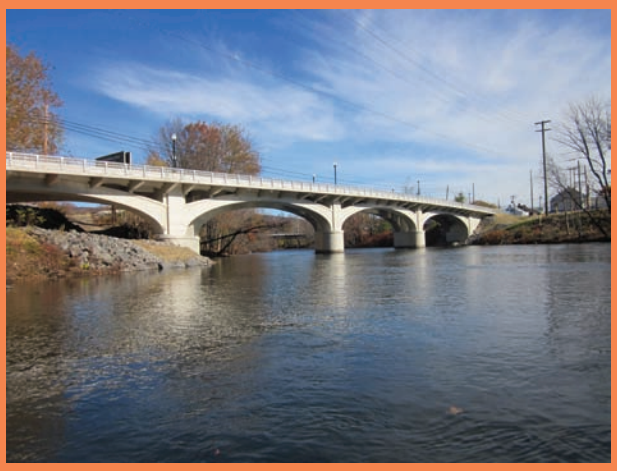
Submitting Firm: FIGG Bridge Engineers, Inc.



Outstanding Rehabilitated Bridges

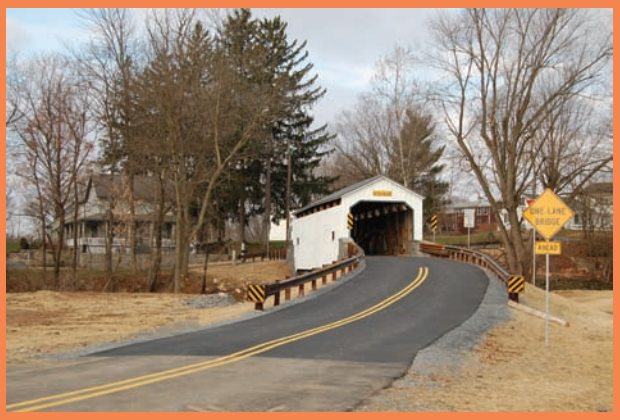
State Street Bridge, Berks County, PA

The State Street Bridge carrying SR 4028 over the Schuylkill River in Hamburg Borough, Berks County provides an important transportation link between the Borough and Tilden Township. The existing bridge, built in 1927, consists of four main spans of open spandrel reinforced concrete arches and two cellular abutment approach spans for an overall length of 529 feet. Innovation was utilized to reduce the bridge length by approximately 120 feet. This project was unique for the extent of cast-in-place concrete work required to complete the project and to maintain the historic character of the structure utilizing modern materials.



Submitting Firm: WBCM / TranSystems Inc.

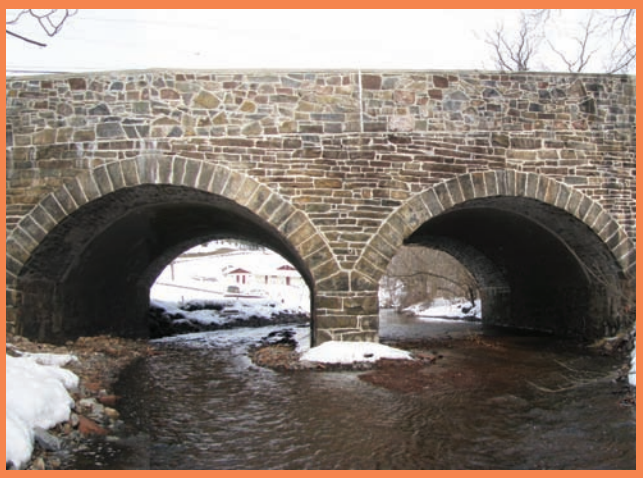
Keller's Covered Bridge, Lancaster County, PA



Listed on the National Register of Historic Places since 1980, Keller's Covered Bridge was built in 1873 on Rettew Mill Road in Ephrata Township, Lancaster County. In 2006, local officials called for the bridge's replacement with a structure that could better withstand modern-day traffic demands. To preserve Keller's Covered Bridge, state agency and local officials reached an agreement, the first ever of its kind in Pennsylvania, whereby the covered bridge was disassembled, stored off site and reconstructed on Middle Creek Road. Relocating the structure preserves the bridge's legacy and allows it to maintain its National Register listing.

Submitting Firm: RETTEW Associates, Inc.

East High Street over Sanatoga Creek Bridge, Montgomery County, PA

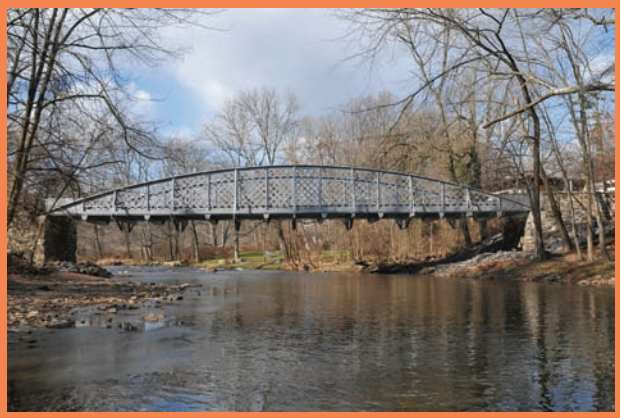


The East High Street Bridge over Sanatoga Creek was rehabilitated in 2010 by Traffic Planning and Design, Inc. for PennDOT District 6-0 to ensure that this heavily traveled arterial could continue to serve as a vital link in Montgomery County. The existing structure consisted of a two-span stone arch bridge that was constructed in 1850. The bridge exhibited various failures over the years requiring numerous repairs, with the most recent resulting in extensive closure in 2004. The rehabilitation provided an improved structure that meets current criteria for safety, while maintaining the historic nature of this bridge for the community.

Submitting Firm: Traffic Planning and Design, Inc.

Hares Hill Road Bridge, Chester County, PA

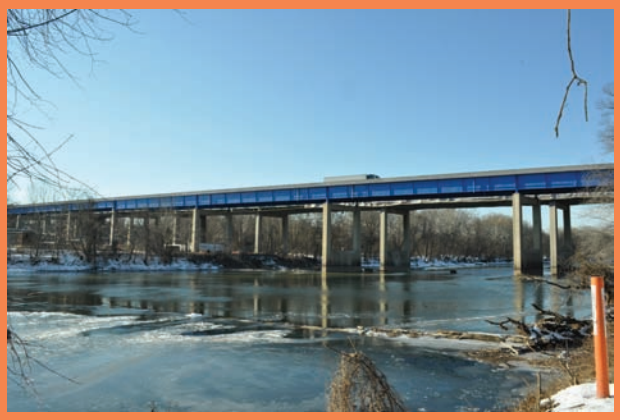
The Hares Hill Road Bridge is a unique structure built in 1869 by Thomas William Moseley. It is the last known surviving example of his "Wrought-Iron Lattice Girder Bridge" design and is listed on the National Register of Historic Places. The project involved the in-depth inspection, load testing, structural analysis, and rehabilitation of the 103-foot, single-span bridge over French Creek in East Pikeland Township, Chester County. The rehabilitation of this bridge enabled the posted load limits to be increased from 7 tons to 15 tons without impacting the historic features of the bridge.



Submitting Firm: Mackin Engineering Company

I-476 Bridge over the Schuylkill River, Montgomery County, PA - ***WINNER!***

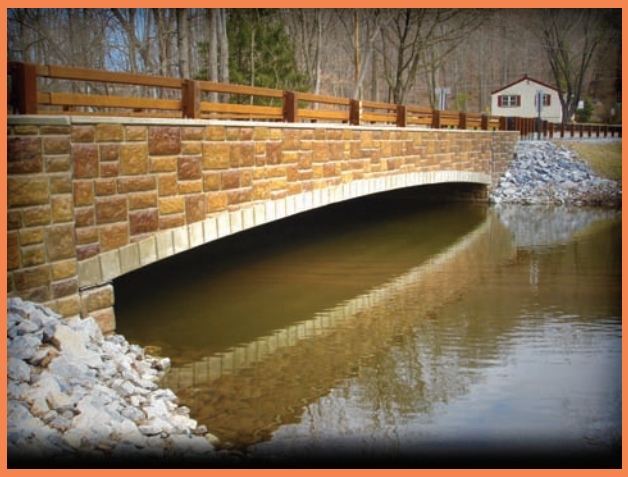
In 2008 construction began to rehabilitate the I-476 Schuylkill River Bridge, a top priority among PennDOT structurally deficient bridges. With construction substantially complete in 2010, bridge re-decking provided the opportunity to extend the life of the bridge through the reduction of joint deck joints, the main source of past deterioration. The elimination of deck joints was accomplished through innovative design, including the conversion of existing steel simple spans to continuous spans, a first for Pennsylvania. An innovative express-lane traffic control scheme was also implemented, providing a cost and schedule-efficient means for extending the life of this critical PennDOT structure.



Submitting Firm: AECOM USA

Outstanding CSS Bridge Design

SR 4018 over French Creek, Chester County, PA



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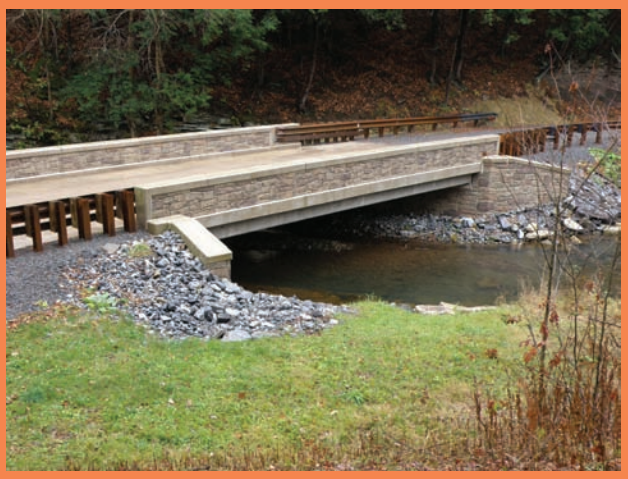

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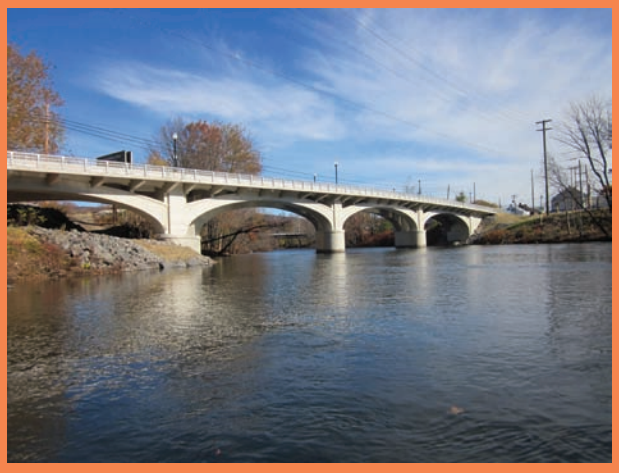

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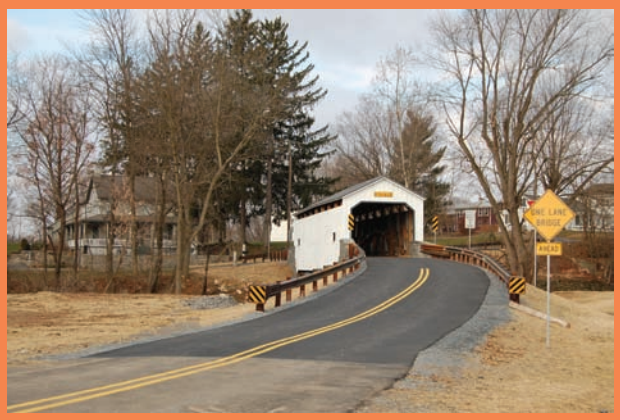

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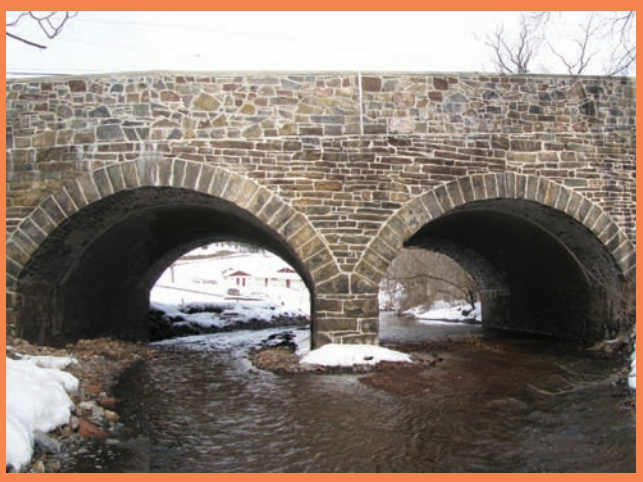

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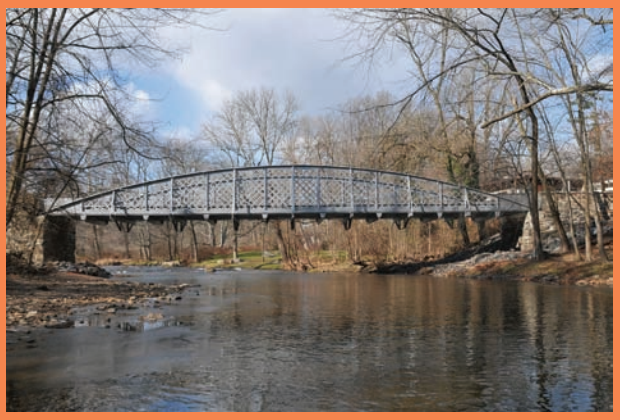
Hares Hill Road Bridge, Chester County, PA - ***WINNER!***



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Submitting Firm: Mackin Engineering Company

Nomination Criteria

The bridge must have been designed, fabricated, constructed, or owned by a member, in good standing, of the ABCD-Susquehanna Chapter (PA and out-of-state projects are eligible).

The bridge project must be substantially completed within the 2009 or 2010 construction seasons.

Previous ABCD award-winning projects are not eligible; however, non-winning bridge projects submitted last year are eligible for resubmission in this year's contest, as long as the project meets all other Nomination Criteria.

Judging Criteria

Technical Merit - 35%

Innovation - 20%

Aesthetics - 10%

Constructability - 35%