Celebrating 25 Years and the Future!

This is a special year for the American Segmental Bridge Institute, as we celebrate our 25th anniversary. It is a time for reflection on all we have accomplished together. It is also an important opportunity to look towards our future and further advancements in segmental bridges.

Over the past 25 years this organization has embraced and supported the important relationships between owners, engineers, contractors, and material suppliers working together to advance the technology of segmental bridges throughout this country. This professional organization is unique in the partnerships, cooperation and single-minded purpose of our membership.

ASBI began as in idea. Eugene C. Figg Jr. envisioned opportunities for teamwork and collaboration in order to support each other in the segmental bridge industry. I will always remember the day my father called me into his office to share his ideas for a focused organization that would bring together all areas of segmental bridge interests to advance the industry together in partnership. In December 1988 ASBI was officially founded during the annual AASHTO meeting in Wichita, Kansas. ASBI founding members (pictured at right) were a cross section of interested leaders who set the framework for how the organization and industry would grow and succeed.

Jack Wilkes, former FHWA Director of Engineering, was elected as the first President. Cliff Freyermuth who was associated with the Portland Cement Association, the Prestressed Concrete Institute, and the Post-Tensioning Institute served as the first Manager and was a dedicated day-to-day leader for 20 years. Today, Randy Cox, former Bridge Division Director for TxDOT is our committed manager who continues to be passionate about our future.

In the very first ASBI News Release, Jack Wilkes laid out the purpose of the newly formed organization:

“The main purpose of the American Segmental Bridge Institute is to provide a forum where designers, contractors, material interests and owners can meet to advance the state of the art of engineering, construction, construction management, and materials involved in concrete segmental and cable-stayed bridges. Over 80 of these major concrete structures with spans up to 1300 ft. provide a proven competitive method for meeting the long span bridge and elevated highway needs of our nation’s transportation system. Now it is time to concentrate efforts on innovative development that will further refine the efficiency of the design and construction process.”

These words are as true today as they were 25 years ago. Our work together has led to industry advancements for segmental bridges that make us more efficient, allow us to set records for new concrete span lengths, and helped bridges stand strong against extreme weather events.

Today, we are building on our predecessors’ achievements, but perhaps in a more personal way: our ability to affect a community economically by using local labor and local materials, finding faster ways to get bridges built, appreciating the inherently pleasing aesthetics of our segmental shapes, continuing to build on more environmentally sensitive construction techniques, and so much more. Some of the many benefits that ASBI provides our membership are shown in the table on page two.

(Editorial continued on p.2)
New ASBI Organizational Members

We are pleased to welcome following new members to ASBI:

**Arup**
12777 West Jefferson Blvd., Suite 100
Los Angeles, CA 90066
(310) 569-5249
FAX: (310) 569-5249
e-mail: derya.thompson@arup.com
rafael.manzanarez@arup.com
www.arup.com
Derya Thompson
Rafael Manzanarez
560 Mission Street, Suite 700
San Francisco, CA 94105
(415) 957-9445
FAX: (415) 957-9096

**Brayman Precast, LLC**
2900 South Noah Drive
Saxonburg, PA 16056
(724) 352-5600
FAX: (412) 774-1504
e-mail: c_kasten@braymanprecast.com
www.braymanprecast.com

**Gianni Moor, CEO**
**Jim Hatch, Vice President**

**Omnipro Services, LLC**
1126 McKinley Avenue, NW
Canton, OH 44703-2057
(330) 454-5555
FAX: (330) 437-0393
e-mail: mswan@omniproservices.com
www.omniproservices.com
Michael Swan, Chief Executive Officer

**Washington State Department of Transportation**
PO. Box 47340
Olympia, WA 98504-7340
(360) 705-7217
FAX: (360) 705-6814
e-mail: kjahlegb@wsdot.wa.gov
gainesm@wsdot.wa.gov
aldricb@wsdot.wa.gov
mooret@wsdot.wa.gov
www.wsdot.wa.gov
Bijan Khaleghi,
State Bridge Design Engineer

**Mark Gaines,**
State Construction Engineer

**Brian Aldrich,**Concrete Specialist

**Tim Moore,** Mega Project Manager
David Goodyear, P.E., S.E., Elected to National Academy of Engineering

David Goodyear, P.E., S.E., TY. Lin International Senior Vice President and Chief Bridge Engineer, was recently elected to the National Academy of Engineering (NAE). Election to the NAE is considered among the highest and most exclusive professional distinctions that can be awarded an engineer in the United States. Goodyear, who is one of only 69 new American members elected from a highly-competitive field of over 500 nominations, was cited “for leadership in concrete segmental, cable-stayed, and hybrid bridge design and construction.” His induction into the Academy will take place October 6-7, 2013 at the 2013 NAE Annual Meeting at the National Academy of Sciences Building in Washington, DC. (Photo Courtesy of Brooke Duthie)

Joe Perreault

It is with great sadness that Watson Bowman Acme shares with you the sudden passing of our friend and colleague, Joseph C. Perreault. Joe has been part of our organization for over 35 years as a nationally known and recognized contributor to the bridge construction industry. An active member of The New York Chapter of the Associated General Contractors, participant in the Associated General Contractors of America, and numerous trade organizations and technical committees. Joe has contributed greatly to our industry and the success and growth of Watson Bowman Acme.

A veteran of the United States Navy, Joe served aboard the USS Hammerberg during the Vietnam War. He was a proud graduate of Mount Saint Mary’s University in Maryland and a member of the American Legion of Ludlow, Vermont. An avid golfer and skier, Joe was a ski ambassador at Okemo Mountain for 17 years. Joe also competed annually in the National Veterans Golden Age Games in Shot Put and Discus competition.

Mr. Perreault is survived by his devoted wife of 43 years, Mary V. “Van” (Scott) Perreault, his daughter, Marne Perreault and son, Chad Perreault.

The family requests privacy as they gather to celebrate Joe’s life. In lieu of flowers, the family has suggested donations be made in the name of Joseph C Perreault, to Black River Good Neighbors Services, 37B Main St. Ludlow, Vermont 05149, (www.brgn.org), or a charity of one’s choice.

Joe leaves behind many friends and colleagues. He will be missed by business associates and customers alike.

Thomas W. Traylor

Thomas W. Traylor, 73, of Evansville, Indiana, passed away on May 9, 2013.

Tom will be remembered as a brilliant business man, engineer, and entrepreneur. He received his BSCE from the Massachusetts Institute of Technology in 1961 and his MBA from Stanford University in 1963. He helped to catapult Traylor Bros., Inc., a company founded by his father William in 1946, into one of North America’s leaders in underground, marine, and bridge construction. A testament to his many engineering contributions, Tom was honored by The Beavers in 2008 with the prestigious Beavers Management Award and in 2010 by The Moles for his outstanding achievement in construction, both results of nominations by his colleagues. He was a member of other fraternal organizations of construction and engineering professionals such as the Moles, the Construction Industry Round Table, the National Academy of Construction, and the American Society of Civil Engineers. He also served as president of the Beavers organization.

Traylor Bros., Inc. joined ASBI in 1990 as a Contractor member and Mr. Traylor received a Leadership Award in 2000 for excellence in construction management of major segmental concrete bridge projects.

MOVED AND HAVE A NEW ADDRESS?

Please let us know if you have had an address change so we may update the information on the ASBI website as well as the mailing list. Don’t forget to include new telephone and fax numbers, as well as e-mail addresses. You may send any updates to info@asbi-assoc.org.

San Francisco Oakland Bay Skyway Bridge East Span Opens

The East span of the San Francisco Oakland Bay Skyway Bridge was opened for traffic in September 2013.
2012 ASBI Annual Convention

The 2012 ASBI Annual Convention was held on October 29-30 at the Turnberry Isle Hotel & Resort. The Convention was well attended with 350 registrants and 28 exhibitors.

(Photos Courtesy of Andy Milne Photography)
We hope you will join us in Portland, Oregon at the Marriott Downtown Waterfront on October 28-29 for the 25th Annual Convention. Please see News & Events at www.asbi-assoc.org for further information and online registration.

John Crigler presenting the 2012 Leadership Awards during the October 29th luncheon.

2012 ASBI Biennial Leadership Awards

The 2012 biennial Leadership Awards went to:

John R. Crigler — Outstanding Leadership as ASBI President for 2011-2012

Thomas A. DeHaven — Outstanding Career Contributions to Owners, Contractors, and Designers for the Advancement of Successful Concrete Segmental Bridges

Gérard Sauvageot — Outstanding Leadership as a Pioneer of Segmental Bridges, and for Significant Contributions to the Advancement of Segmental Construction

Leo Spaans — Outstanding Leadership and Vision in Design and Construction Engineering of Segmental Bridges

Teddy Theryo — Exceptional Expertise and Contributions to the Segmental Concrete Industry and as an Active Member of the ASBI Grouting Committee

2012 Convention Sponsors

ASBI would like to thank the following organizational members for their sponsorship of the 24th annual Convention held in Miami:

Thank You Convention Sponsors

Silver

Bronze

Parsons Brinckerhoff

Transportation Infrastructure Group

We hope you will join us in Portland, Oregon at the Marriott Downtown Waterfront on October 28-29 for the 25th Annual Convention. Please see News & Events at www.asbi-assoc.org for further information and online registration.
2012 ASBI Convention Bridge Tour – Palmetto Expressway Project

The Florida Department of Transportation – District 6 initiated efforts to improve mobility on the Palmetto and the Dolphin Expressway Interchanges through this $558 million design-build-finance project. The Palmetto Section 5 project is the largest project funded through the American Recovery and Reinvestment Act of 2009 (ARRA) in the State of Florida. The project, which many participants say is the biggest and most complex of their careers, is the last and largest of the 12-section reconstruction of the Palmetto Expressway.

The project involves the construction of an Interchange between SR 826 and SR 836, two limited access facilities, as well as the reconstruction of SR 826 at Flagler Street and SR 836 at NW 72nd Avenue interchanges. Capacity improvements include the reconstruction and widening along both SR 826 and SR 836, and the construction of 46 bridges. The project will provide new direct connector ramps for major improvements and collector-distributor ramps to eliminate existing geometric and operational deficiencies.

Section 5 entails the construction of a four-level interchange at SR 826 and SR 836, as well as the reconstruction and modification of two existing interchanges. This section carries great regional importance because the Dolphin Expressway is a major route to Miami International Airport. More than 430,000 motorists use the interchange daily. Four complex precast segmental bridge ramps – bridges 9, 11, 15 and 19 – will traverse the core of the interchange. These four bridges are 46 feet wide and range in length from 1,100 feet to 2,450 feet. Total deck area is 360,718 square feet, with 7,764 linear feet of bridge. The longest span is 266 feet, the tallest pier is 81 feet and there are 775 total segments.

Owner: Florida Department of Transportation
Prime Design Consultant: BCC Engineering, Inc.
Segmental Bridge Design and Construction Engineer: FINLEY Engineering Group, Inc.
Contractor: Community Asphalt Corporation, Condotte America, Inc., the De Moya Group, Inc., JV, LLP
Overhead Gantry and Casting Machines: Deal
Bearings and Expansion Joints: The D.S. Brown Company
Casting and Erecting Segments: Rizzani de Eccher

(Photos Courtesy of ASBI)
Monongahela River Bridge - Southwestern Pennsylvania’s Pathway to the Future, Brownsville, Pennsylvania

High above the Monongahela River Valley, the new concrete segmental Monongahela River Bridge (Fig. 1) for the Pennsylvania Turnpike Commission provides a new link for commerce in the Keystone state. The bridge is the state’s third vehicular concrete segmental bridge, and was bid as an alternate design before the bid, saving the owner $8.5 million over the as-designed steel structure.

The concrete segmental design eliminated two piers and moved two others, resulting in long, open spans. Balanced cantilever construction from above was used to protect the environment as well as to allow river, rail and vehicular traffic below the bridge to keep moving during construction. The main span across the river is 518’ long to provide a 425’ navigation clearance and rises 200’ above the valley. At the dedication event on August 2, 2012, the state’s Senator called the bridge a “pathway to the future.”

The Pennsylvania Turnpike Commission’s bridge was built by Walsh Construction with bridge design by FIGG. The bridge opened to traffic July 16, 2012.

Owner: Pennsylvania Turnpike Commission
Owner’s Engineers: Gannett Fleming and FINLEY Engineering Group, Inc.
Designer: FIGG
Alternate Design Team: Walsh Construction Company/FIGG
Contractor: Walsh Construction Company
Construction Engineering Services: FIGG
Construction Engineering Inspection: SAI Consulting Engineers
FINLEY Engineering Group, Inc.
Formwork for Piers and Cast-in-Place Segments: EFCO
Form Travelers for Cast-in-Place Segments: Schwager Davis, Inc.
Post-Tensioning Materials: Schwager Davis, Inc.
Bearings: The D.S. Brown Company
Expansion Joints: Watson Bowman Acme – A BASF Company
Prepackaged Grout: Sika Corporation

Figure 1 – Monongahela River Bridge – Pennsylvania’s newest concrete segmental bridge provides an important link in the Pennsylvania Turnpike Commission’s transportation system. The bridge’s long open spans create an economical and aesthetically pleasing bridge high above the river valley. (Photo Courtesy of FIGG)
Manhattan West Platform, New York City, New York

The Manhattan West Platform project (Fig. 2) is the first phase of Brookfield Properties’ Manhattan West development project, comprising 5.4 million square feet of premier office, mixed-use and public space.

In order for the Manhattan West development to become a possibility, the Owner determined that a platform to segregate and safely separate the tower construction from the active rail yard was necessary. This active rail yard consists of 15 tracks operated by Amtrak, Long Island Rail Road (LIRR), and NJ Transit that carry roughly 1,400 trains daily from Penn Station throughout the northeast. This constraint required a solution to erect some type of ‘protection shield’ that can span approximately 240’ across these 15 tracks over an area approximately 480’ wide. Between 2010 and 2012, a solution was developed that changed the construction strategy from a multi-span steel platform with numerous footings and intermediate bents located between active train tracks to a precast segmental bridge concept that could span roughly 240’ over the entire yard while minimizing track level work.

The platform consists of 612 precast segments, each averaging 55 US Tons. The platform is broken down into 16 spans, 10 of which are composed of 39 segments, and 6 of which are composed of 37 segments, in order to accommodate the core for the future NE tower. Constraints for the segments mainly included a weight restriction of 58 US Tons in order to truck them from the precast yard to the jobsite in midtown-Manhattan. The average span is 30’ wide and contains 20ea 37x.6” strand bonded tendons and 14ea 31x.6” strand bonded tendons, with provisions for 4ea additional 31x.6” strand future tendons. Each span contains nearly 100T of PT and once fully assembled, weighs on average 2,400 US Tons.

In order to fabricate, assemble and erect these 16 spans, Brookfield hired Rizzani de Eccher, USA Inc. (RdE USA), a General Contractor that specializes in match cast precasting and erection of precast segmental bridges.

To cast the 612 segments required for the project, RdE USA combined their expertise and equipment with Jersey Precast, a local precast facility in New Jersey. RdE USA purchased 5 moulds from Deal, a member of the de Eccher Group that specializes in the design, engineering, and fabrication of customized bridge erection equipment. There are 3 typical moulds that will be used to cast 452 segments, 1 variable mould used to cast 128 segments with varying web thicknesses, and 1 pier segment mould used to cast the 32 pier segments. The first segment was cast on January 8, 2013.

The span-by-span launching equipment has also been designed and engineered by Deal. The equipment is currently being fabricated in the company’s native Italy. The LG is designed to transport and set the individual segments, utilizing an overhead winch gantry, across a Temporary Protection Platform (TPP) that consists of a steel girder bridge with two intermediate bents that are founded between the active rail road.

Owner: Brookfield Properties 9th Avenue LLC.
Substructure Designer: Entuitive Corporation
Platform Designer: McNary Bergeron & Associates
Construction Manager: Turner Construction Company, Flaitron Construction Corporation
General Contractor: Rizzani de Eccher, USA Inc.
Construction Manager: Turner Construction Company, Flaitron Construction Corporation
Steel/Equipment/Segment Erector: Metropolitan Walters LLC
Construction Engineering Services: McNary Bergeron & Associates
Precast Producer: Jersey Precast
Formwork for Precast Segments: Deal
Erection Equipment: Deal
Post-Tensioning Materials: Tensaccial
Bearings: mageba
tracks. Once the 39 or 37 segments are stressed and the span is self supporting, the overhead gantry will lift the span and travel transversely to set the span in its final position over the rail road. Moving the span over the open rail yard is scheduled to occur during a two hour window on Sunday mornings, due to the de-energizing requirements as well as the large train volume through this area. Once the spans are erected in their final position, a 6” slab will be cast over the entire platform. This space will serve as an outdoor plaza and will provide pedestrian access to the Manhattan West Development upon completion.
Deciding to go against the norm and build the back spans using falsework for the Ironton-Russell replacement bridge (Figs. 3, 4, 5 and 6) didn’t come easy. But that bold decision, which permitted land access to build the main span, along with the first use in the USA of precast stay anchor blocks are what it took to get this long-awaited project built.

Brayman Construction Corporation’s bid, utilizing a combination of Brayman and FINLEY Engineering Group’s design and construction method changes, was 4% below the state’s final estimate of $84.6 million. When Rich Blankenship became the mayor of the city of Ironton, he made it a priority to get this critical infrastructure project under way by working diligently with the Ohio Department of Transportation (ODOT) and former Governor Ted Strickland and now Ohio Governor John R. Kasich.

“We’ve been working on this bridge for years, and it has finally becoming a reality. The innovative design changes sped up construction and reduced the overall cost of the project,” Blankenship said.

Opened in 1922, the original Ironton-Russell Bridge was the first highway bridge along the Ohio River between Parkersburg and Cincinnati. The cantilever bridge was retrofitted in 1970s, and later posted with restrictions, having become inefficient for today’s traffic and economically impractical to maintain. In 2000, ODOT recommended full replacement.

URS was selected in January 2006 to redesign the replacement bridge after ODOT rejected the bids of the initial single-tower, two-span cable stayed design, which came in well over construction estimates. The new cable-stayed replacement bridge is a three-span, two-tower design with two 12-foot travel lanes.

The 2,616-ft-long bridge is comprised of a 900-ft cable-stayed main span and two 370-ft cable-stayed side spans, two 315-foot tall towers and two anchor piers on the river’s edge. The entire structure is cast-in-place with 22,500 cy of reinforced (5.8 million lbs. of rebar) concrete, utilizing the cable stays to construct the bridge by the balanced cantilever methodology. Foundation units consist of 53 large-diameter drilled shafts ranging in size from 42 to 96 inches.

ODOT asked URS to oversee the revised portions of the design and construction that the Brayman-FINLEY team proposed. “The changes uphold the integrity of the original design, and, since some members were designed to support heavy construction equipment, the bridge has more robust side spans,” said Steve Stroh, Ph.D., P.E., URS’ Project Manager.

EARLY TEAM EFFORT IN PRE-BID PHASE

“Our early collaboration with FINLEY and VSL enabled us to work out alternative construction sequence solutions that ultimately saved ODOT $15.2 million over the next closest bidder,” stated Stephen M. Muck, Brayman’s CEO.

Craig Finley, Jr., PE, managing Principal of FINLEY, explained, “There are several key modifications to the means and methods and design, most notably the first known use in the USA of precast stay anchor blocks and the casting of the back spans in place using specially designed falsework.”

This, along with precast concrete girders for floor beams on side spans, allowed Brayman to have land access to build the main span area. This saved costs and time, as well as presented a much safer work environment.

“The falsework was designed as a modular system, allowing it to be used for both the Kentucky and Ohio approaches and reducing the number travelers from two to one,” continued Finley. “The use of precast stay anchor blocks allowed Brayman to immediately install the cable...
stay and simplified the traveler design, reducing the pouring cycle by a week.”

Brayman decided to use precast concrete cofferdams rather than the typical sheet pile style to speed up the construction process and save on costs. “The use of precast cofferdams allowed us to greatly reduce the amount of tremie concrete required, as well as provide a sacrificial form for the tower footing,” explained Muck.

While the original design specified the use of two form travelers, the modifications allow the main span to be cast in place in a segmental, one-directional cantilever method. The specially designed traveler is currently being produced by VSL, which also is providing 209,000 lf of post-tensioning strand and 12,200 lf of post-tensioning bar. VSL is furnishing and installing the VSL Stay Cable System, which includes the anchorages, strand, stay pipe and dampers. “Integrating the traveler design and fabrication along with the stay supply and installation will ensure successful completion of the main span,” said John Crigler, President of VSL.

“Brayman, VSL and FINLEY were able to capitalize on the strong relationship, trust, and experience that we gained in working together on the $83 million I-64 crossing of the Kanawha River in West Virginia,” said Finley.

PROJECT STATUS UPDATE

As of the beginning of February 2013, “The project is about 20 percent complete,” reported Tom M. Hesmond, P.E., Brayman Construction’s on-site project manager. “All foundation elements have been driven or cast and the piers are coming up on the Ironton side. We’re on target to complete the project in 2015.”

From ODOT’s perspective, David Bame, PE, Project Engineer, said “We took a close look at the changes proposed by the contractor to ensure that the bid met our requirements. The changes were very innovative, kept to our high standards, and resulted in less cost to our taxpayers. Preliminary approval was provided in 2 months, with final approvals complete in 6 months. After years of hard work, patience and diligence, the residents of Ironton and Russell and other travelers will soon enjoy a reliable, safe crossing to enhance commerce and quality of life in the area.”
The new Jeremiah Morrow Bridge is a cast-in-place segmental concrete bridge on Interstate 71 north of Cincinnati (Figs. 7, 8 and 9). The new twin bridges will replace the existing truss structures, which were built in mid-1960s.

HNTB Corporation is the engineer-of-record for the project, and also providing on-going construction services to the Owner, ODOT.

The first of the two structures is being constructed between the existing bridges by Kokosing Construction Company, and scheduled to be open to traffic at the end of 2013. Upon completion of the first bridge the existing northbound structure will be demolished and the second bridge structure will be built in its place.

The new bridge is 2,252 feet long with 440 feet main spans. Each of the single cell boxes is carrying 55 feet wide roadway. The variable depth superstructure is 25 feet deep at piers and 12 feet deep at mid-span. The new bridges will be the tallest bridge in Ohio at 239 feet above ground when the $88 million project completed in May 2016.

The substructure of the new Jeremiah Morrow Bridge consists of cast-in-place twin wall piers resting on footings that are supported on either drilled shafts or driven.
steel piles. The abutments will be on small-diameter drilled shafts.

Typical span lengths are dictated by 16 feet segment lengths and balanced cantilever construction methods. The 40 feet long pier segment is constructed on falsework, accommodating two form travelers back to back. The thickness of web is 1'-6" at typical segment and bottom slab thickness varies from 9½" at mid-span to 3'-8" near the pier segment. The high-performance-concrete box girder is longitudinally and transversely post-tensioned to meet zero tension requirements at top slab for superior durability.

The 6-span bridge superstructure is integral with the twin wall piers except at Pier 5. Horizontal jacking will be employed to camber piers against the effects of creep, shrinkage and thermal effects so that the joint-free design can work for such a long bridge. The flexible twin wall piers are designed to dissipate creep and shrinkage effects, and thermal movements while providing adequate capacity for external loads. The absence of bearings and expansion joints except at abutments will reduce the long term maintenance costs significantly.

Segmental construction by balanced cantilever method is a good fit for this project given the structure’s height over the river and the steep embankments that compose the valley. Also, these techniques require minimal lifting operations by large cranes or heavy equipment positioned at the valley floor, thereby enhancing safety during construction and eliminating the need to restrict access to the Little Miami River’s scenic waterway, and the Recreational Trail for extended periods. This results in significant equipment savings and has the added benefit of minimizing impacts to the environment.

Owner: Ohio Department of Transportation
Designer: HNTB Corporation
Contractor: Kokosing Construction Company, Inc.
Construction Engineering Services: Corven Engineering, Inc.
Constructability Review/Estimating Services: Corven Engineering, Inc.
Construction Engineering Inspection: Omnipro Services LLC
Owner’s Engineer: T.Y. Lin International and HNTB Corporation
Erection Equipment: Kokosing Construction Company, Inc.
Post-Tensioning Materials: Schwager Davis, Inc.
Bearings: R.J. Watson, Inc.
Expansion Joints: The D.S. Brown Company
Epoxy Supplier: Sika Corporation

Figure 8 – Jeremiah Morrow Bridge reconstruction. (Photo Courtesy of HNTB Corporation)
When completed, the US 281 Colorado River Bridge (Figs. 10, 11, 12 and 13) will become the eleventh segmental bridge in the Texas Department of Transportation’s (TxDOT) inventory, continuing a history of successful segmental implementation in Texas that began in 1973. TxDOT awarded the contract to Archer Western Contractors. Construction of the northbound structure commenced on December 6, 2010.

The twin structures replace a deck truss built in 1935 and widened in 1975. The existing bridge, with 4 narrow traffic lanes and one sidewalk, is functionally obsolete. Each new bridge will provide 2 standard traffic lanes in one direction, shoulders, and a 6 ft. sidewalk. The bridges are single cell boxes with spans of 274 ft., 410 ft., and 274 ft., built using the cast-in-place balanced cantilever method.

Lake Marble Falls, and its namesake community, are in the Texas Hill Country, a region of rolling hills that is popular for tourism and outdoor recreation. As such, the visual appeal of the new bridge was paramount. The bridges have flaring, hexagonal piers that seamlessly transition into the boat-hull shaped segmental superstructure. Lighting beneath the segment wings will illuminate the full length of the superstructure, providing a stunning evening view.

At the contractor’s option, the bridge was redesigned by FINLEY, using shorter segment lengths that accommodated form travelers on hand. The redesign modified the longitudinal and transverse post-tensioning layout, but maintained the cross-section of the segmental superstructure. As a result, the contractor saw savings in erection equipment and post-tensioning installation.

The northbound bridge was completed on December 20, 2012 and opened to two-way traffic. Current work is focused on demolition of the deck truss. Following demolition, the southbound structure will be constructed in the footprint of the old bridge.

Owner: Texas Dept. of Transportation  
Designer: Texas Dept. of Transportation, Bridge Division  
Contractor: Archer Western Contractors  
Construction Engineering Services: FINLEY Engineering Group, Inc.  
Constructability Review/Estimating Services: Archer Western Contractors  
Construction Engineering Inspection: Texas Dept. of Transportation  
Form Travelers for Cast-in-Place Segments: VStructural  
Post-Tensioning Materials: VStructural  
Bearings: Dynamic Rubber  
Expansion Joints: CMC Capital City Steel  
Prepackaged Grout: Masterflow 1205  
Roadway and Hydraulic Design: Jacobs Engineering Group, Inc.
Figs. 12 and 13 – US 281 Colorado River Bridge over Lake Marble Falls. (Photo Courtesy of Archer Western Contractors)
The new South Norfolk Jordan Bridge (Figs. 14 and 15) opened to traffic on October 29, 2012, restoring a vital link across the southern branch of the Elizabeth River between Chesapeake and Portsmouth, Virginia, and improving commute times and emergency access. This new, modern bridge was built in less than two years and was funded privately. The bridge features precast segmental superstructure and precast piers all cast adjacent to the bridge site.

The mile long bridge features a 385’ long span across the navigation channel with 145’ of vertical clearance. The bridge carries two lanes of traffic and a pedestrian pathway. Approach spans are typically 150’. Piers range in height from 19’ to 145’.

This bridge for the community was accomplished by FIGG Bridge Builders, The Lane Construction Corporation, McLean Contracting Company, Atlantic Metrocast Inc., and many other local subcontractors. FIGG Bridge Engineers was the bridge designer. Financing was provided by American Infrastructure MLP Funds.

Owner: South Norfolk Jordan Bridge, LLC
Owner’s Engineers: FIGG
Designer: FIGG
Contractor: FIGG Bridge Builders, The Lane Construction Corporation, McLean Contracting Company
Construction Engineering Inspection: FIGG Bridge Inspection
Precast Producer: Atlantic Metrocast
Formwork for Precast Segments: Southern Forms, Inc.
Post-Tensioning Materials: VSL
Bearings: The D.S. Brown Company
Expansion Joints: The D.S. Brown Company
Epoxy Supplier: Pilgrim
Prepackaged Grout: Euclid