



**AB**  
*Connections*

Fourth Quarter 2013

LAS VEGAS HIGH ROLLER  
*nevada*

PAGE

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# Connections

## C O N T E N T S

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PAGE



### C O V E R

#### LAS VEGAS HIGH ROLLER

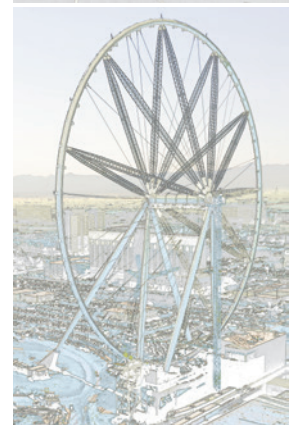
Ironworkers make a tough job look easy during the erection of the world's largest observation wheel.

*Thank you*

Much appreciation to the following individuals for their contribution to this issue:

John Callaghan, P.E.  
Michael Cegelis  
Scott Gammon, P.E., DBIA  
Richard Lamb  
Simon Laming  
Brian Petersen

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### NEW *Hires*

Donald J. Berlin, CPA, Controller, Headquarters Office, Coraopolis, PA  
Benjamin Dearing, Systems Coordinator, Headquarters Office, Coraopolis, PA  
Stanley Edwards, Marine Coordinator, Tappan Zee Bridge, Tarrytown, NY  
Tracey L. Ellis, Accounts Payable Specialist, Headquarters Office, Coraopolis, PA  
John Mochan, Survey Assistant, Forth Replacement Crossing, Edinburgh, Scotland, U.K.  
John Molloy, Senior Project Manager, Sea Terminal at Barcadera, Aruba  
Terry Poole, Chief Operating Officer, Headquarters Office, Coraopolis, PA  
Mary Slagy, Tax Accountant, Headquarters Office, Coraopolis, PA  
Frank Tipping, Health and Safety Advisor, Forth Replacement Crossing, Edinburgh, Scotland, U.K.  
Greg Zeman, Hourly Payroll Coordinator, Headquarters Office, Coraopolis, PA

### TRANSFERS *and rehires*

Joshua Ishibashi, Quality Engineer, Forth Replacement Crossing, Edinburgh, Scotland, U.K.



Connections  
NEWSLETTER  
By Kadi Camardese

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# AMERICAN BRIDGE MANUFACTURING

*shut down*


Does not affect the success, ongoing operations of the American Bridge Company, construction unit of ABHC and sister organization to ABM

Effective October 3, 2013 American Bridge Manufacturing, a unit of American Bridge Holding Company, shut down its two fabrication plants in Coraopolis, PA and Reedsport, OR. This does not affect the ongoing operations of American Bridge Company, the construction unit of American Bridge Holding Company and sister organization to ABM.

The Coraopolis, PA plant was opened in 1999 and the Reedsport, OR plant was opened in 2003 marking the re-entry of American Bridge into the fabrication business, which it had exited in the early 1980s. In recent years, American Bridge Manufacturing struggled with over-capacity issues in the steel fabrication industry as well as general economic constriction. ABM's high fixed overheads and weak margins and book of work became a drain on critical resources of ABH. The company is complying with all applicable laws in its shutdown and working to ensure the transition for all affected employees is as smooth as possible. In total there were 148 employees working for the two plants.

## Construction Units Unaffected

The construction units of ABHC, American Bridge Company and American Bridge International are not impacted by this decision. According to Michael D. Flowers, President and CEO of ABHC, "Our construction units have never been stronger, and are currently performing at, or near, record levels. The company's backlog hit a record of \$1.454 billion in 2013 with year-to-date bookings of well over \$900 million."

The American Bridge Company's current major projects include the Tappan Zee Hudson River Crossing Project in New York City, the Forth Replacement Crossing in Edinburgh, Scotland, U.K., the Horseshoe Arch Pedestrian Bridges in Dallas, TX, the Las Vegas High Roller in Las Vegas, NV and the Sea Terminal at Barcadera, Aruba. 

## CURRENT *contracts*

### Midwest

Horseshoe Arch Pedestrian Bridges, Dallas, TX  
Columbus Road Lift Bridge, Cleveland, OH  
U.S. 190 Mississippi River Bridge Repairs, Baton Rouge, LA  
Hurricane Deck Bridge, Camdenton, MO  
Coosa River Pipeline Bridge, Clanton, AL

### Western

ABFJV San Francisco/Oakland Bay Bridge, CA

### Special and International Projects

Forth Replacement Crossing, Scotland, United Kingdom  
Las Vegas High Roller Observation Wheel, NV

### New York

Walt Whitman Deck Replacement, Philadelphia, PA  
George Washington Bridge Rehabilitation, NYC  
Walt Whitman Bridge Dehumidification, Philadelphia, PA  
Tappan Zee Bridge, Nyack, NY

### Tampa

Golden Beach Bridge Replacement, Golden Beach, FL  
Port Manatee Berth 12 Wharf Extension and Container Terminal, Palmetto, FL  
Tampa Berth 227N Bulkhead Extension, Tampa, FL  
Old SR 940 Leg A (Watson Bridge) Bridge Repair Project, Big Pine Key, FL  
Main Street Ocean Outfall, North Myrtle Beach, SC  
Intermodal Container Transfer Facility Rail Bridge, Mobile, AL  
Multi Cargo Sea Terminal, Barcadera, Aruba

### Richmond

Wrightsville Beach Bridge, Wrightsville, NC  
Bridge No. 30 - U.S. 421, Wilmington, NC  
Explosives Handling Wharf No. 2, Silverdale, WA  
Bridge No. 138 on NC-150 over Lake Norman, Catawba County, NC  
Fire Protection System Repair - Pier R-3 Naval Weapons Station, Yorktown, VA

# SAN FRANCISCO/OAKLAND BAY BRIDGE

*opening*

Bay area residents ride, see and feel the years of efforts for the first time

Contribution by Brian Petersen, Project Director

As with any long distance race, runners need to pace themselves in order to finish strong as inevitably not many remember the journey but rather focus on the end. After six years of running the race, the opening of the new east span of the San Francisco Oakland Bay Bridge on September 2, 2013 demonstrated a strong finish by the American Bridge/Fluor Joint Venture (ABFJV) for the highly successful project. The opening allowed the public the first true ability to ride, see and feel all of the years of efforts placed towards completing this signature span.

With the successful completion of the load transfer process in the fall of 2012, the project team had limited time to celebrate as the race for seismic safety took many new and unanticipated routes along the way. One planned step was the wrapping of the main cable using an S-wire product manufactured by Nippon Steel, which leveraged both past experience and the vast level of engineering capabilities led by AB's technical director Kevin Smith. Using this, the SAS cable team worked with Squibb Machine from Easton, Pennsylvania to design and fabricate four sets of uphill and downhill wrapping machines that, through many successful shop and field trials, were finally ready to start the process of providing the first layer of environmental protection to the main cable. Crews first had to perform the 'messy job' of applying zinc paste to the main cables' perimeter just prior to the wrapping. Led by AB's cable works assistant project manager Adam Roebuck,

the majority of the main cable was then wrapped, secured in place using a custom developed cad-welding system and completed in approximately two months. This enabled the next step: painting.

As the calendar would have it, painting of the cable system was going to be performed during the Northern California rainy season. This, coupled with extremely tight environmental controls on the overall painting, required the ABF team to find creative and effective ways to paint even in the worst of days. An enclosure system with forced air heat allowed the painting of the main cable to proceed on schedule with minimal impacts. Scott Yeager, assistant project manager for cable works,

managed this overall process as well as the efforts of ABF's painting subcontractor.

Ongoing efforts to perform nondestructive testing and any associated repairs continued for the electroslag

*continued on next page*



Welcome to the new east span, September 2, 2013



Mike Flowers speaking on behalf of the construction community

**SAN FRANCISCO**  
*continued*

welds that join the tower shafts and shear plates. Due to the large volumetric sizes of these welds, the qualitative and quantitative evaluation of ultrasonic testing data required by the American Welding Society D1.5 Bridge Welding Code has

proven a challenge. Field engineer Eric Blue and welding quality control manager Jim Bowers are leading this meticulous process to ensure that the end product meets or exceeds the requirements of our contract and the welding code.

The path to project completion took an unexpected turn when the failure of certain three-inch diameter A354 Grade BD rods was discovered. These rods were the primary means of anchoring the main shear keys to pier E2. These shear keys protect the bridge during a seismic event. The rods were embedded into the pier E2 crossbeam some 4.5 years ago and replacing them was not a viable option. As a result, a saddle and post-tensioned concrete anchorage system was designed to replace the clamping force created by the rods. Considering the unique nature of this fabrication, AB's operations manager Bob Kick provided the guidance from past experience to select Steward Machine, Co., Inc. (SMC) from Birmingham, AL as one of the fabricators. This action allowed the saddle fabrication to be performed concurrently by two different shops, SMC and XKT Engineering, Inc. in Vallejo, CA. SMC has been able to deliver the fabricated materials ahead of schedule, while

maintaining the highest quality. Field engineer Zach Lauria worked as ABF's liaison with both fabricators. The field operations of dealing with the failed rods and the erection of the new saddle system has been managed by field engineers Adam Reeve and Levi Gatsos. Due to the limited space available, creative field engineering under the watchful

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After over 2,650 working days since our notice to proceed, representatives from American Bridge/Fluor Enterprises, Inc., A Joint Venture (ABFJV) proudly participated in the opening ceremonies for the new east span of the San Francisco-Oakland Bay Bridge. The project includes the Self Anchored Suspension Span for which the ABFJV was the general contractor. The opening ceremony was conducted in the newly removed 'Bridge Yard', for which ABFJV was the general contractor for as well.

The ceremony included speeches by Bay Area Legislators as well as Caltrans Director Malcolm Dougherty; Metropolitan Transportation Commission Executive Director, Steve Heminger; California Secretary of Transportation Brian Kelly and the Mayors of both Oakland and San Francisco.

Speaking on behalf of the construction community which participated in building the East Span was American Bridge Company CEO Michael Flowers. Also California's poet laureate, Juan Felipe Herrera, read his poem written about the bridge called "Bay Bridge Inauguration Poem, Labor Day 2013, for all bridge dreamers, bridge builders and bridge crossers".

The keynote speech was given by California's Lieutenant Governor, Gavin Newsom who also did the honors of cutting the official "chain" signifying the opening of the East Span. On hand to assist the Lt. Governor for this chain cutting was American Bridge's Jerry Kent who also provided the Lt. Governor some quick ironworker lessons on how to safely use a burning torch.



SAN FRANCISCO  
*continued*

eye of Kevin Smith has highlighted the talents that exist at all ranks within the company.

One of the last major activities completed prior to the bridge opening was the placement of an Epoxy Asphalt Concrete (EAC) surfacing. Prior to the placement of the two 25mm lifts of EAC, the steel top deck of the orthotropic box girders was blasted and re-primed with a permanent primer. A significant series of trials to ensure that this unique mix design would meet the requirements of the contract had to be performed. Bob Kick, with the support of project engineer Lisa MacDonald, led these efforts. After an arduous task, they were able to achieve an acceptable mix design. The fun didn't stop there though, as the complexities of placing this mix on the SAS required certain specialized equipment in addition to a normal paving train. A material transfer vehicle was used in an adjacent lane to transfer the EAC from the delivery trucks into the paving machine. This prevented the delivery trucks from disturbing the uncured 'bond coat', which was the adhesion binder between the deck surface and the EAC. The end product has provided a surface that will allow Bay Area residents and visitors a smooth ride as they enjoy the majestic new SAS bridge and the bay views.

As a side project, ABF also performed the renovation to the Interurban Electric Railway Bridge Yard Shop, known as the 'Bridge Yard'. This structure was originally constructed in the 1930s to provide a maintenance facility for the trains that formerly ran along the lower deck of the old east span. Led by Scott Tudor, and supported by Kelvin Chen, the Bridge Yard received the makeover of a lifetime with new interior finishes, a healthy exterior paint job and a terrace that provides future visitors to the bridge a place to relax while providing panoramic views. The Bridge Yard provided the venue for ABF's September 1 celebration attended by over 400 guests and many SAS alums from AB that worked on the project. Also, the September 2 bridge opening ceremonies were conducted at the Bridge Yard.

When looking back at seven years and all of the engineering feats and tireless effort placed by everyone who worked on the SAS, personal and corporate pride will shine through as this accomplishment may never be replicated again. (AB)



View of the new east span and the west span (completed by AB in 1936)



Motorcycle group waits to cross the new span



New east span SAS

# LAS VEGAS HIGH ROLLER

*ironworkers*

Ironworker's skill and performance impresses those most experienced in the civil engineering industry

Contribution by John Callaghan, P.E., Project Manager and Michael Cegelis, Senior Vice President  
Images by Simon Laming, Field Engineer

For the past year ironworkers from Local 433 Las Vegas, Nevada have been hard at work erecting the world's largest observation wheel, the Las Vegas High Roller in Las Vegas, Nevada. The 550' tall structure is located behind the Flamingo Hotel and is the focal point of Caesars Entertainment's \$550M LINQ Project. Towering over the nearby hotels and casinos, the wheel is orientated from north to south, parallel to Las Vegas Boulevard. When completed, the attraction will provide spectacular views of Las Vegas and the surrounding valley.

The High Roller structure consists of a rim, a hub and spindle, four support legs and one braced leg. The rim is 469' in diameter and assembled from 28 segments that are bolted together. The rim is connected to the hub by 112 cable spokes made from 75mm diameter locked coil cables. The tension in these cables forces the rim to maintain its shape and keep the entire circular steel structure in compression. The rim and hub rotate around a fixed spindle on two main wheel bearings. The spindle is at elevation 290' above the ground and it is mounted at each end to a pair of support legs. The east end of the spindle is also supported by a braced leg which stiffens the structure in the transverse direction.

*continued on next page*



Overview





Liebherr 1750 lifts 60-ton leg section into position



One of eight temporary stabilization trusses is installed between legs



Local 433 ironworkers wait in position in upper legs as east 'pant' section is raised to elevation



Temporary hub and spindle transfer truss is installed at the top of the support legs 180' above ground

## LAS VEGAS HIGH ROLLER *continued*

### Planning and Construction Engineering

This unique project required a massive amount of construction engineering and procedure development. By project completion over 300 drawing sheets will have been prepared by American Bridge's corporate engineering department and AB's jobsite engineers. Procedures and temporary works designs were developed in an integrated team incorporating chief engineer Nicola Greco, P.E. and his corporate engineering team; project managers John Callaghan, P.E. and Daniel Schwarz, P.E.; field engineers Jeremiah Beiter, E.I.T., James DiPasquale, P.E., Simon Laming and Tim Popham, E.I.T.; general superintendent Ugo Del Costello; and senior vice president Michael Cegelis. The temporary works designs were checked and sometimes completed by Zieman Engineering, LLC.

### Support Leg Erection

Led by long term American Bridge General Superintendent Ugo Del Costello, ironworkers from Local 433, Las Vegas, Nevada made short work of erecting the support legs and associated temporary iron. The first four support leg picks were made up on the ground into three piece units weighing 96 tons each including rigging. The built-up units were picked and precisely stabbed through the previously erected wheel platform structure, and landed accurately on the anchor bolts and shear keys. The ironworkers successfully made these picks using a Liebherr 1750 crawler crane with 367' of boom and a 440-ton counterweight cart which was provided and manned by Dielco Crane Service of Las Vegas, Nevada. A Manitowoc 2250 crawler crane with 200' of boom and 160' of luffing jib provided man basket access to the work for unhooking the rigging. Temporary trusses were erected between the legs at several elevations.

The second elevation support leg pick was 106 tons and the third was 55 tons. This work culminated with the two pants pieces (so named 'pants' by the designer, ARUP), at 43 tons. The leg segments were bolted together with 1.5" diameter A325 bolts. This bolted connection is made with an internal bolting flange that is similar to the typical windmill tower detail. The 43-ton pants pieces each tie a pair of support legs together. The pants provide the connection from each pair of legs



to the ends of the hub and spindle system. Once the pants were erected, a temporary hub-spindle transfer truss was erected between the two pairs of support legs. This 100-ton truss served the primary function of supporting the erection of the hub and spindle system. It also provided the structure with stability and additional geometry control.

### Hub and Spindle Erection

The hub and spindle system is composed of two hub ends, two spindle ends, a hub middle, a spindle middle, two spindle seats, two tapered collars and two main wheel bearings. The spindle seat castings sit on top of the pants and cradle the ball shaped spindle ends.

The entire hub and spindle system weighs 555 tons. The Liebherr 1750 could not lift this weight at the required radius for a one piece pick. The solution was to erect the hub and spindle system in several pieces.

The hub and spindle iron was delivered to the site in late December 2012 and early January 2013 by Heavy Transport on dual lane trailers. The components were quickly unloaded in Las Vegas by American Bridge ironworkers. On the ground the AB ironworkers first hung the hub and spindle ends on temporary stands. Then the AB ironworkers made quick work of mounting the massive 2.6m diameter main wheel bearings using sixteen 60-ton hydraulic rams to pull in a tapered collar between the bearing outer race and the hub. The main wheel bearings are two of the largest spherical roller bearings ever manufactured by SKF, the bearing supplier. The careful, deliberate and precise work by the ironworkers of Local 433 enabled these massive bearings to be easily mounted inside the hub and spindle ends well within specification. The bearings were locked into place with precision machined chocks. Each hub and spindle end unit weighed 171 tons with the bearing and collar installed.

The Local 433 ironworkers picked and set the west hub and spindle end unit on a cart mounted on the temporary hub-spindle transfer truss at elevation 290'. Once the piece was made safe on the cart and unhooked, it was rolled west along the truss away from the Liebherr 1750 and blocked. Then the 129-ton, 14'-9" diameter, 78' long hub

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Liebherr 1750 hoists 172-ton upper section of brace leg into position while a lattice boom truck crane suspends the 52-ton lower section



At over 14' diameter, 77' long and 116-ton in weight, the hub mid-section arrives in Las Vegas from Port of Long Beach



One of 12-ton main bearings, some of the biggest in the world, are unpackaged and 'tripped' upright ahead of installation onto spindle



Installing first bearing onto spindle



The 134-ton hub is installed over outer collar of bearing



East and west hub and spindle assemblies await installation



Liebherr 1750 hoists east hub and spindle assembly to elevation 280' above ground



The 177-ton assembly is carefully lowered onto end casting before making inner splice

## LAS VEGAS HIGH ROLLER *continued*

middle pipe was picked and set with the Liebherr 1750 on the truss, made to the hub end at the bolted splice and blocked. Next, working 290' in the air, the ironworkers slid the 82-ton spindle middle pipe into the hub middle pipe and made the spindle middle to the spindle end connection at the west bolted splice. Finally, the ironworkers used the Liebherr 1750 to pick and set the east hub and spindle end unit on the truss and made both the hub and spindle bolted splices. There were a total of 3,904 1.5" diameter A325 bolts in the hub and spindle splices, and these bolts were made with very little heavy pinning. Once the hub and spindle were erected, the temporary transfer truss was removed and a temporary chain fall platform with a trolley beam was hung from the hub. The Local 433 ironworkers ran the tool of the trade air powered chain falls for all of the rim and cabin erection activities.

### Braced Leg Erection

The fifth leg of the wheel structure is known as the braced leg. This 315' long and 225-ton member provides the structure with capacity against transverse wind loads.

The braced leg provided a challenge. The member is massive, the ground conditions included a buried culvert of unknown parentage, and it had to fit exactly between the four previously erected support legs with hub and spindle system and a concrete foundation poured by others. The braced leg was connected at the top with a stainless steel pin pulled in with a 60-ton ram, and had to be fit over anchor bolts and a shear key at the bottom. A complicated temporary grillage and support tower system had been designed to bridge the culvert and temporarily support the braced leg. This grillage would have blocked a road that traverses the middle of the congested construction site. An ironworker from Local 433 realized that there was a better way to erect the braced leg. Drawing on his experience, he suggested a three crane pick that would eliminate the need for temporary grillages. Using the Manitowoc 2250 for the man basket and relying on the Liebherr 1750 for the heavy lifting and a truck crane brought in by Dielco for the base piece, the ironworkers from Local 433 erected the entire 225-ton braced leg in a quick couple of hours on the morning of February 15, 2013.



### Platform Structure Tie-In

The wheel platform structure is a building that is located at the base of the wheel. It was furnished and erected by ironworkers working for SME, a Utah based fabricator/erector under a separate contract with Caesars. The wheel platform structure provides the access for passenger loading and unloading, and it also houses the permanent wheel turning (or drive) equipment. The permanent drive equipment was manufactured by ENERPAC and provided by SDI to Caesars under a separate contract. Ironworkers installed the drive equipment for SDI.

### Rim Erection

After the support legs, hub and spindle and braced leg iron were successfully erected, the next job was the rim. The 28 rim pieces make a wheel that is 469' in diameter. Each rim piece weighs 45 tons.

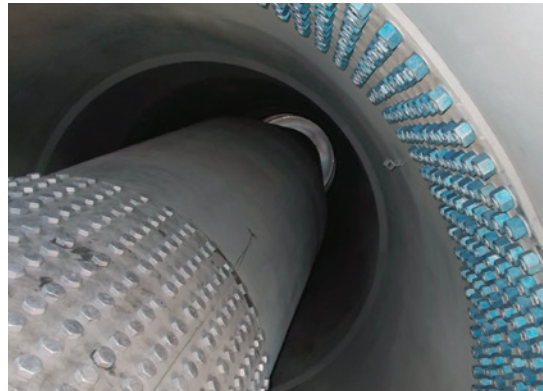
Preparations for the rim construction included erecting a 71' tall temporary holdback tower just north of the platform structure and installing and commissioning a hydraulic rotating mechanism (HRM) on that tower. The HRM was used to turn the rim while it was being constructed and safely hold it in place during construction.

The first rim pieces arrived on the job in early July 2013. The ironworkers quickly unloaded the sections and then the electricians went to work installing conduits, boxes and the Wampfler Conductix power rail system. AB ironworkers hung permanent cables and temporary radial struts from the hub to support the first rim sections. As soon as the electricians had completed their work, the AB ironworkers erected the rim sections into the wheel. The sections were rolled into the ground floor of the platform structure on dollies and positioned at bottom dead center. The air powered chain falls and the Liebherr 1750 were used to erect the first three rims. The HRM was attached to the north end of the three units, and slowly the rim was pushed up and north and the wheel began to take shape. The ironworkers running the HRM needed steady hands and cool heads. The normal erection sequence included rotation of the rim using the HRM, erection of temporary radial strut pairs using the air chain falls, erection of the cable spokes using winches, roll-in of the next rim section into the platform

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Ironworker shows the ease of using TN33 electric torque wrenches which enable increased production and reduce noise inside spindle



The 1.5" diameter A325 bolts that make up the east connection - 1,280 in hub splice and 672 in spindle splice



Local 433 ironworkers await perched 265' above Las Vegas on temporary dunnage beams ready to guide chain fall platform into position



Two of the 55-ton capacity air hoist chain falls lower 40-ton east section of transfer truss out of structure



First 40-ton temporary radial strut is hoisted to the hub



First of 45-ton rim segment is rolled into position directly under legs as hub mounted chain fall is rigged for lifting



One of eight temporary hydraulic gripper-boxes is mounted onto first rim segment



Ironworkers connect lower gripper-box to link arm as the temporary hydraulic rotating mechanism comes together

## LAS VEGAS HIGH ROLLER *continued*

structure building on the dollies, and finally erection of the rim using the air powered chain falls. The ironworkers made this difficult work look easy.

By August 20, 2013 half of the rim had been erected and the wheel became a dramatic site on the Las Vegas skyline. Half of a wheel stood tall over the surrounding hotels and casinos; no doubt many people wandering the famous Las Vegas Strip wondered how it could stand up and who was building it. The ironworkers continued to work efficiently. As soon as rims arrived on the job and the electricians were finished, the ironworkers erected the rims into the wheel.

The locked coil cable erection was difficult work that the ironworkers easily conquered. Each cable was picked from a swift located on the drive platform with a winch and hoisted along a Skinner line until it was in the correct position at the hub. The cable end was first made at the hub and then hydraulic equipment was used to make the cable end at the rim.

The final piece of the rim was erected on Tuesday, September 10, 2013. By the end of the day on Monday, the ironworkers from Local 433 had made the necessary preparations to erect the last piece, rim 28. The surveyor, Bryant Survey, took shots that afternoon and again the next morning. Rim 28 would be a tight fit. On Tuesday morning, the AB ironworkers used the 50-ton air powered chain falls to carefully lift the last piece into the wheel and complete the bolted connection, finishing the work before lunch. Closing the wheel was safely and successfully completed in one day.

After the rim was closed, there was plenty more work to be completed. The nine pairs of temporary radial struts were removed and the remaining permanent cable spokes were installed. The HRM system was removed and the temporary hold back tower was demolished.

### Cabin Erection

The cabins are scheduled to be erected by American Bridge Company with the work starting before Thanksgiving. There are 28 cabins, each weighing 25 tons and measuring 20' in diameter. They are shipped to the job fully outfitted with HVAC systems, emergency batteries, all finishes and in-cabin entertainment systems. The cabins are attached to the rim by a 'W-Frame'. Each



40-person spherical cabin rides inside a slewing bearing that is carried by the W-Frame.

First, AB will hoist the cabin's W-Frame through the building and connect it to the rim. Then each cabin will be gently hoisted through the building with the air powered chain falls and then the cabin will be connected to the W-Frame. This precision work must be carried out with caution because of the delicate nature of the cabins and W-Frame. During this work, the wheel will be rotated using the permanent drive system.

### Credit Where Credit is Due

The comprehensiveness and excellence of the planning and construction engineering effort has been instrumental to the stunning efficiency with which the erection has been undertaken. The integrated engineering/execution team ensured that the plan was properly transmitted to the field effort. General superintendent Ugo Del Costello made daily work plans for general foreman Bruce Bartkovich and the AB ironworkers after careful study of the work procedures. Ugo's own extensive ironworking experience, combined with vision and field leadership and knowledge of AB's equipment, ensured that the daily work plan took maximum advantage of the skilled work crews' prodigious capabilities and capacity. AB's field engineering crew made sure that materials were provided lockstep with the work, and that the specialized and unique temporary works and equipment was assembled and operated correctly from the start.

American Bridge Company applauds the efforts of the ironworkers from Local 433, Las Vegas, Nevada. Ironworker general foreman Bruce Bartkovich and ironworker foremen Rob Fitz, Bob Horton and Josh Horn have provided safe and decisive leadership for their craftsmen throughout this project. These highly skilled men and women have made this tough job look easy. AB thanks the ironworkers of Local 433 for their dedication to their craft, their attention to safety and their hard work on this difficult job. These ironworkers are true professionals and a credit to their trade.

AB's Shanghai based project quality team was led by Gene Rosamilia and Steve Lawton and included Soon on Low, Levi Li, Larry Luo and

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First three rim segments protrude from 750-ton capacity temporary hydraulic rotating mechanism



Ironworkers use 100-ton jacking frames to attach 3" diameter locked coil cable spokes to partially completed rim



An 80' tall temporary holdback tower with 2.5" stay cables is used to resist eccentric load of partially erected wheel rim



Hydraulic rotating mechanism pushes leading edge of rim upwards as new segments are added at the bottom



Looking upward at array of temporary radial struts that hold rim in position as it is pushed up and over the hub



Partially completed rim with Las Vegas Strip in backdrop



Rim 78 percent erected



Final rim segment installed and wheel rim is officially closed


## LAS VEGAS HIGH ROLLER *continued*

Helen Xue. The Q-team worked cohesively with the site team, and was crucial in ensuring that the supply items from China, Japan, Italy, the Netherlands, Germany, Sweden and the United States met the schedule and exacting tolerances, specifications and other quality requirements for the project.

Site safety manager Jason Faltinowski provided expert hands on execution of the American Bridge Corporate Safety and Site Safety Plan's, and managed the safety aspects of the complex interface of AB's work with the myriad of other prime contractors on site. Project administrator Lori Nichols and intern Brandon Fitz kept the paperwork flowing smoothly and streamlined communications on the project. Lori's cheerful disposition has been an attitude enhancer throughout the project.

AB has been the beneficiary of an excellent owner management team on the project. This team has consistently made tough decisions on a timely basis, and their leadership and positive action have played a large part in assuring the project's success. Though the Caesars management team has been unrelenting in their insistence on maintaining the project schedule and quality, they have simultaneously supported the contractor and cleared the path for progress. AB sincerely thanks Caesars Entertainment and their other LINQ contractors for their cooperation.

Wheel design engineer Arup has been a highly competent and supportive presence on the project on three continents. Their skilled specialist engineers and managers have made timely decisions and have helped solve problems in innovative ways that have contributed immeasurably to the success of the work. While looking first and foremost to ensure the interests of their client and preserve the design intent, they are also a cooperative team player intent on solutions and progress.

Last but certainly not least, AB thanks all the many suppliers, subcontractors, vendors and consultants who have worked with us to make this project a success. On top of it all, the team had fun together and can now revel in an outstanding accomplishment. 



## CHIEF OPERATING OFFICER

*Serry Poole*

AB welcomes and introduces its newest corporate team member

What do you think is so exciting about AB?

I can tell you that AB is respected by all of the construction industry out there. Although I have never had the opportunity to joint venture with AB in my past, I know that when it was announced they were going to be on the short-list, we had our

I can tell you that AB is respected by all of the construction industry out there.

work cut out for us to try and beat them. The magnitude of the projects and the manner in which they have been executed by AB is legendary within the heavy civil ranks. I couldn't wait to get my new career started over here as that type of approach to construction is what we live for in this business! I also know when working with AB that one of their objectives is to grow its people and let them innovate and be leaders in the industry. The 'gadgets' and execution work plans that have been forged by AB are the envy of many heavy civil construction companies. It is important to have certain systems and procedures in place in order to get certain standardizations across the business units but at the same time, there must be some level of flexibility and not just "Here are the rules and here's the handbook, follow it and don't deviate from it." We must not lose our creativity and our ability to be an industry leader in progressive, innovative thinking and approaches to the work. I believe it is important to 'step a little differently than a lot of the industry'.

Being dropped off in a helicopter with a tent and maybe five or six guys—those were some challenging parts of managing.

Do you remember the first time you started managing someone?

I was younger in those days. I did a lot of camp jobs, a few in particular were up above the Arctic Circle. Being dropped off in a helicopter with a tent and maybe five or six guys—those were some challenging parts of managing.

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## CHIEF OPERATING OFFICER

*continued*

**What are the most important leadership lessons you've learned?**

My personal approach to leadership is basically what I have learned through a whole lot of lessons that have framed my management and leadership style throughout the years, and mostly through the school of 'hard knocks'. A few tools I keep handy to remind me every day of how to remain an effective leader is the management circle, or what I call 'Management-101'. I keep a copy of this hanging on my wall every place I go and find myself continuously referring to it when planning a job, activity, or speaking to staff. It speaks for itself in how to lay out for a successful project or run a business. Also I like to lead by example. I've been in the field for a long time and I didn't expect anybody else to do anything I wouldn't do.

I like to lead by example. I've been in the field for a long time and I didn't expect anybody else to do anything I wouldn't do.

**How did you develop this outlook?**

It was always in me to be a hard worker. I was never the best on the team, but I always worked as hard as, or more than others, and I think I got that approach by playing competitive sports my whole life. Plus, I like being in construction. I've always done it, and I just really enjoy it. As Mike Flowers put it, "I'm a constructor". I like the camaraderie of the guys. It's like being on a team. I also think it is extremely important for a leader to be enthusiastic, and constantly optimistic. I think that's infectious to the group when you exhibit those characteristics.



**So if you're hiring a senior person, what are you looking for?**

I'm looking for somebody who can rally people around him; after all, it's always about people especially in this business. I'm not necessarily looking for the smartest segmental bridge expert out there, so one of the things I try to do is understand if the individual I am talking to has a following. I always try to ask them, "What about your lead superintendents? Do you think they'd come?" And if they don't have a following, that's a red flag for me. That is important to me because I believe it isn't about the number of people you have; it's about having the 'right people' that are on your team, and that will define your success in this business. Especially in the face of adversity, when it's going good, it's easy, and it's fun, but it's hardly ever like that out there. There are problems every day, and it is in the face of that adversity that the real leaders rise to the top and the people around them all rally to the cause.

I believe it isn't about the number of people you have; it's about having the 'right people' that are on your team, and that will define your success in this business.

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**Best career advice?**

Like what you do. I know everybody says that and it sounds cliché, but it is true because this is such a tough business, it really is. It's hard on your personal life, wherein rewards can be there, but there are some sacrifices that have to go along with it.

One other thing that easily comes to mind, is to watch each other's back. By that, I mean support your team member first, and don't keep looking over the fence for the next advancement. Finish what you have here first. Get your reputation established by being a team member and finish what you started, taking things from A to Z. The really good people can do it from cradle to grave.


**Colin Powell said it best: leadership is lonely, and you've got to be able to accept that.**

**How would you say your leadership style has changed over the years?**

You've got to be patient, and you've got to be able to coach and mentor more. You have to make the tough decisions on everything – personnel, subs, schedule, what jobs to pick – and you're going to make certain parties mad and others happy, and you can't worry about that. You're not going to please everybody. Colin Powell said it best: leadership is lonely, and you've got to be able to accept that.

**Support your team member first, and don't keep looking over the fence for the next advancement.**

**Thoughts on failure?**

It should be stricken from our vocabulary. I mean, it's the same thing with 'waiting' – it's not an activity we put on the schedule. I believe that if you plan properly, you cannot fail. Don't get me wrong, there are some things where the odds are just stacked up against you. I mean, if the Mississippi River rises to a 500-year event and you're flooded out for six months; that's one thing, but failure can be downplayed and/or completely avoided if you plan properly. I believe AB is one of the best for planning, looking ahead and troubleshooting and that is one of the things that stands us apart from many of the others out there! 

**Get your reputation established by being a team member and finish what you started, taking things from A to Z. The really good people can do it from cradle to grave.**



Terry above the Arctic Circle

## EMPLOYEE *profile*

Complex bridge erection and design expert reveals his experiences working for AB

### **Richard H. Lamb**

Richard Lamb has been in the construction industry since 1988 and with American Bridge since 2011. Throughout his career, he has become an expert in the erection and design of complex bridge structures and has held the roles of principal engineer, production engineer, project coordinator and international consultant, temporary works designer, design engineer and project engineer. His experience includes a long list of bridges, buildings/structures, industrial and maritime/fresh-waterways projects in which he has worked on the design, construction, strengthening and refurbishment. Richard holds an Honors Degree in Civil Engineering from the University of Manchester and a Masters in Architecture and Urbanism from the Federal University of Santa Catarina.



#### **What are the most rewarding and unique aspects of your current job?**

On the Forth Replacement Crossing in Scotland, I am responsible for the production of temporary works designs and ensuring that they are made and used correctly for the construction of the cable-stayed bridge. This scope encompasses the changes and additions to the bridge deck from its delivery to site from the fab shop through all of the storage and concrete deck-casting operations, load out onto barges and lifting and connecting into the completed bridge. This includes all of the structures and equipment necessary to carry out these operations. We carry out designs ourselves as well as procuring and managing sub-contracted designers, so the variety and intensity of the work that my team and I are involved with is an enormous challenge. Some of the temporary works is more run-of-the-mill, but the majority is unique and in some cases departs from convention. This combination requires a broad knowledge, from general civil engineering construction through to advanced

structural engineering. The challenges are everywhere and especially due to the diversity of the scope of work, every member of the team can make a useful contribution, sometimes in the most surprising context.

#### **What do you enjoy most about working for American Bridge?**

Program and budget constraints as well as technical complexity find their way into every aspect of my role. Every day is different and even stressful, and my learning curve as well as that of others in my team is steep and probably won't flatten off for some time yet. In short, it is painful but rewarding.

The same level of challenge doesn't occur with such abundance on many projects, really only the type that American Bridge specializes in, so just being able to participate in this type of work is the most rewarding aspect of being with AB.

#### **How did your background/previous work prepare you for your current role?**

I started my career working in the U.K. designing and detailing steel buildings,

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“The same level of challenge doesn’t occur with such abundance on many projects, really only the type that American Bridge specializes in, so just being able to participate in this type of work is the most rewarding aspect of being with AB.”

including some of the first of the U.K.’s skyscrapers. I also worked in marine geotechnics, reclaimed land and sea defences principally. These were my specialist areas for my degree. In my twenties I started to learn foreign languages, more as a hobby than anything else, but later found that this was a useful, if uncommon, skill in the U.K. I found that total immersion in a culture helps with language acquisition.

The joint venture executing the Forth Replacement Crossing is multinational and multicultural, going far beyond the nationalities of the JV (joint venture) member companies alone. On a project of this size and complexity we need to employ and contract with individuals and organizations from all parts of the world. It would be fair to say that a little bit of anthropology goes a long way.

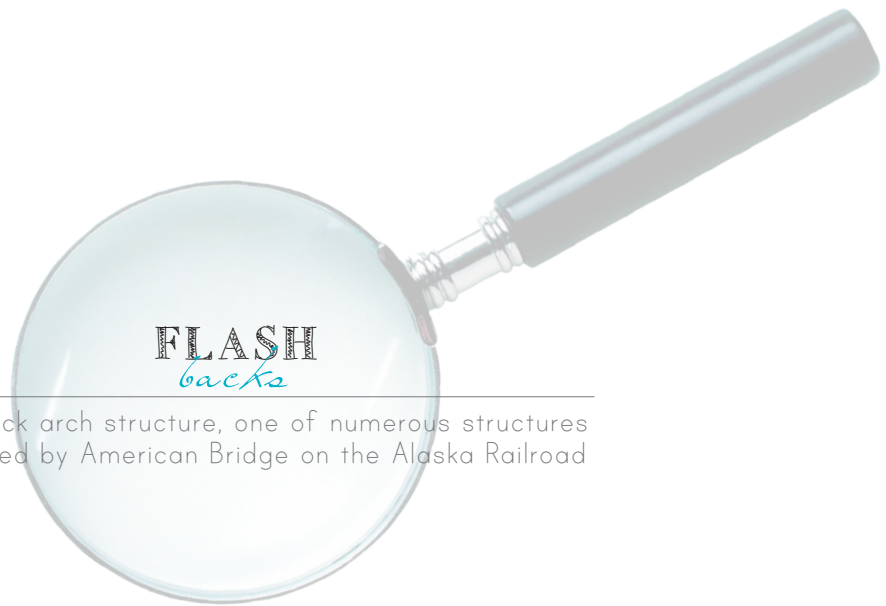
**What advice can you offer to those seeking a career similar to yours at American Bridge?**

Engineering, particularly in the realm of big bridges and similar cutting edge, almost radical projects, is always new and unique. A career in this area will never be routine so we should try to enjoy the unknown, unpredictable nature of this profession. We should also respect the fact that this area of engineering is a vast, dynamic field of knowledge, and as professionals we must be humble and continue to study and learn. No one knows it all. It has to be a team effort.

**What are the most dynamic aspects of the design work within the FRC project and how are they driving cost advantage? Please explain.**

FRC is a design and build project. The permanent works designer was engaged during the tender period, and only now, almost two-and-a-half years after contract award, is completing the design of the deck and ancillaries. The challenging and unique concept has led us to confront and solve many difficult technical issues, but all of this has taken time. As a consequence, the finalization of construction methods and temporary works almost follows a just-in-time delivery program. This is particularly difficult for items with long lead-in periods. We have specified over four-thousand metric tonnes of temporary works steel for the cable-stayed deck erection alone, which would be a substantial project in its own right. In this context, our focus has had to be on planning and engineering the designs and operations to a very high level of detail, and for good reason. An old adage states that the design may cost less than 10 percent of the project price, yet influences over 90 percent of the construction cost. If we invest time in the engineering, design, detailing and planning, we can solve operational problems before they occur and significantly reduce risk for the construction phase. I suppose that’s why we call them engineering projects. <sup>AB</sup>





## FLASH *backs*

A 918' deck arch structure, one of numerous structures constructed by American Bridge on the Alaska Railroad

### Macombs Dam Bridge

New York, NY

AB Order No.: 490410



AB Employees: Jake Bidosky, New York District Vice President; Daniel Edwards, P.E., Estimator; Michael Flowers, Executive Vice President Structures Group; Lanny Frisco, Senior Vice President - Estimating; Robert Kick, Project Engineer; Robert Luffy, President and CEO; Josh Perry, Field Engineer; Daniel Radu, P.E., Estimating Manager; George Terrance, Ironworker Foreman; James Thornton, Project Engineer

The rehabilitation of the Macombs Dam Bridge was completed just under 10 years ago in 2004. It is the fifth oldest bridge in New York City, connecting the boroughs of Manhattan and the Bronx right near Yankee Stadium. It is a 52-span bridge that consists of five major structure types. Proceeding from west to east, the structure contains the 35-span, 482m west approach viaduct over the tip of Manhattan; the two-span, 125m swingspan over the river; two 30m deck truss spans over the Bronx bank of the river; a 67m camelback truss span over a busy four-track rail corridor; a six-span, 75m overpass of the Major Deegan Expressway plus four access/exit ramps; and six more of the 30m deck truss spans over the parking lot for the stadium.



The majority of construction for the rehabilitation took place during three five to six month periods in the winter months (October to March). Because of the bridge's proximity to Yankee Stadium, long term lane closures were limited to the baseball offseason. There were large penalties if the bridge was not reopened by April 1 of each year. Two of the four lanes of traffic remained open at all times during the winter stages, while all four lanes and all pedestrian walkways remained operational during the summer stages. Because of the limited access to the bridge during the four summer month stages, Schiavone (American Bridge's partner for the project) and American Bridge developed innovative techniques that allowed substantial preparatory work to be done during this time. This work included installing the new transverse floor joists in the 155th Street Viaduct without removing the concrete Ts, by cutting through the fascia of the deck and sliding the rolled steel shapes between the T-webs. In addition to reducing the in-season construction tasks, this facilitated demolition of the T-deck by providing a platform for staging that operation. Other off-season tasks included lead abatement, wheelbase replacement, painting and operating machinery replacement. In 2008, the average daily traffic was 38,897 vehicles.



Because of the limited access to the bridge during the four summer month stages, innovative techniques that allowed substantial preparatory work to be done during this time were developed.

### Clay Wade Bailey Bridge (U.S. Routes 42 and 127) Cincinnati, OH

AB order No.: K-4954-67

39

The Clay Wade Bailey is a cantilever bridge crossing the Ohio River connecting Cincinnati, OH and Covington, KY. It has nine spans with a main span of 675'. Of the bridge's three lanes, the center is reversible allowing the direction of travel to change according to the time of the day. The bridge was named after a prominent Kentucky Post newspaper reporter with the last name of Bailey, which is often confused with a 'bailey' bridge (a temporary bridge build for rapid construction).



### Burro Creek Bridge Wikieup, AZ

AB Order No.: V-8681-86

47

Construction for the two-lane Burro Creek Bridge, crossing the Burro Creek gorge along Highway 93, started in 1963 and was completed 47 years ago in 1966. American Bridge fabricated and erected the structural steel and performed all temporary works engineering. Erection was via a specially designed aerial cableway between fixed towers that also served as tieback mechanisms for restraining the uncompleted arch. It is a 960' double truss chord deck arch bridge with a pin-to-pin dimension of 680' and a 370' vertical clearance. A second similar, parallel bridge was added in 2005. The bridge contains 1,670 tons of structural steel.



### C and D Canal Bridge (Chesapeake City Bridge) Chesapeake City, MD

AB Order No.: J-5167-71

64


The Chesapeake and Delaware Canal Bridge, also known as the Chesapeake City Bridge, was completed in October of 1949. This 4,106', two-lane bridge has 35 spans, a 539' tied arch and a box chord main span with a 93' vertical rise. The width is 33.5', the clearance is 135' and the total weight of structural steel is 4,956 tons. The average daily traffic on this bridge is 14,350 vehicles.



### Hurricane Gulch Arch Bridge Hurricane Gulch, AK

AB Order No.: D-9411-19

92

The Hurricane Gulch Arch Bridge is one of numerous structures constructed by American Bridge on the Alaska Railroad. Located at milepost 284, AB had responsibility for design, fabrication and erection of this 918' deck arch structure. It was erected by the cantilever method using derrick cars. The bridge also included two 120' deck truss spans, one 50' plate girder span and a 240' viaduct. Track level is 297' above the gorge bottom. The bridge was opened on August 18, 1921. 



## WELLNESS program

Last quarter of the 2013 Wellness Program

We are now in the last quarter of the Wellness Program, but it is not too late to start participating. If you forgot to turn in wellness certificates from prior appointments, etc., you can still do so. The Human Resources (HR) Department will also accept an Explanation of Benefits from the insurance company showing the item completed. Please have all 2013 Wellness Goal Completion Certificates turned into the HR Department no later than January 10, 2014. The grand prize raffle will be held on Monday, January 13, 2014.

If you have any questions about point totals or items completed, do not hesitate to contact the HR Department to go over your list. Do not forget that 250 points gets you placed in the raffle to win up to a \$2,500 vacation!

We are beginning to look at new ideas for the program for next year. If you have any suggestions for new items for 2014, please let the HR Department know.

Here is what you can look forward to over the next couple of months with the Wellness Program:

november

Two items will be the focus for November. The first will be Real Food 101, which is a five week newsletter campaign. This will teach individuals about the basics of how to tell if food is 'real' and healthy. Tips and resources will be included within the newsletter. HR will be sending out correspondence and taking enrollment in early November.

The second focus for November will be the Smoking Cessation Program. The program begins November 1 and will run through January 31, 2014. Any employee with at least one year of consecutive service is eligible to participate in the program as well as spouses of the qualifying employees. You can be reimbursed up to a total of \$120 per person (typical cost for three months of cessation products) by simply sending your name, original receipt and UPC symbol from your smoking/tobacco cessation product to the HR Department. Upon receipt, we will reimburse you for your cost and the employee will receive 15 wellness points.

december

The focus for the month of December will be the Home Safety Inspection. This is a checklist of items in your home that you go through to make sure everything is in working order and safe. To obtain the points, you must complete the items on the list, sign the form and send it back. (M)

## HUMAN resources

Take control of your retirement funds easily  
with Mainspring Managed

### Annual Open Enrollment

The time to make any changes to your benefits without a qualifying event is during annual open enrollment. This year's open enrollment period will begin mid-November and end mid-December. Changes during open enrollment will go into effect for January 1, 2014. Look for notices from HR over the next month for more details.

### High Deductible Health Savings Medical Plan

Correspondence was sent out recently regarding the possibility of adding a High Deductible medical plan as another choice alongside the existing PPO plan. The PPO plan already offered will not change for 2014. Rates for the upcoming year will be included with the annual open enrollment documents. Keep in mind there will be meetings and webinars coming up to obtain information and ask questions regarding the High Deductible Health Savings Plan.

### 401k – Mainspring Managed

If you participate in the Standard's Mainspring Managed program, a program that manages your funds for a monthly fee of \$10, then you need to start looking in your mail for the annual deferral increase letter. It appears like junk mail, but is very important. The letter will state what the Standard suggests as an increase to your deferral percentage to go into effect for the beginning of 2014. If you do not wish to change your deferral, you must either respond to the letter or inform the HR Department you would like to keep your deferral the same. Otherwise, your deferral will change to the suggested amount. If you have any questions, please contact the HR Department. (M)



# HURRICANE DECK BRIDGE

*ribbon cutting*

Bridge opens early due to AB's ATC used to deliver the project

Thanks to the hard work and dedication of the American Bridge project team, the new Hurricane Deck Bridge carrying Missouri Route 5 over the Lake of the Ozarks was opened to traffic three months ahead of schedule. A public

dedication ceremony held on Saturday, September 7 marked the noteworthy milestone on this Missouri Department of Transportation (MoDOT) project. The new bridge was cordoned off and opened to pedestrians all morning to allow local residents an opportunity to walk the bridge before it opened to vehicular traffic. Several hundred people turned out at the event. Dignitaries representing various public agencies and private organizations

spoke at the event, including senior MoDOT leaders, two Missouri State Representatives, AB Vice President Scott Gammon, Parsons Corporation Senior Vice President TAG Goodwin and various other local political dignitaries. David Nichols, Director of MoDOT praised American Bridge Company for their innovative Alternative Technical Concept (ATC) used to deliver the project. Nichols also commended AB for completion of the project both on-budget and three months early. Scott Gammon's remarks included recognition of AB's key management team including Lanny Miller, Andy Kerr, Kevin Lynch and Robert Yohn and expressed gratitude to the local residents and businesses that showed so much hospitality to AB and its



Ribbon cutting ceremony

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Left to right: Kevin Lynch, AB Field Engineer, Scott Gammon, P.E., DBIA, AB Vice President; J.D. Jungles-Norris III, AB Carpenter; Troy Steelman, AB Operating Engineer



Left to right: Dave Nichols, MoDOT Director; Scott Gammon, P.E., DBIA, AB Vice President; Gregg Smith, MHTC Commissioner



Left to right: Andy Kerr, AB General Superintendent; Scott Gammon, P.E., DBIA, AB Vice President; Robert Yohn, AB Carpenter Superintendent

**AB**  
*Connections*  
NEWSLETTER  
*By Kati Camardese*  
Please contact the  
Communications and Marketing Department  
with news and inquiries:  
[kcamardese@americanbridge.net](mailto:kcamardese@americanbridge.net)




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### HURRICANE DECK BRIDGE *continued from page 23*

employees. The ceremony concluded with a moving, extemporaneous singing of God Bless America by the entire crowd.

American Bridge Company was awarded this \$32.3M project in January of 2011 after submitting a bold and innovative ATC to deliver the project. AB's ATC proposal was \$8.1M below the lowest bid on the unmodified design and eliminated closure of the existing bridge required under the baseline design. With the new structure now complete and open to traffic, AB has commenced the difficult work of removing the existing 1930s era deck truss bridge. Final completion of the project is anticipated in the spring of 2014. 



Overview of bridge