



CONNECTIONS

Spring 2017 - Issue #1006

BRIDGING THE BIG MUDDY

How innovation in design-build
delivered the U.S. 69 Missouri
River Bridge ahead of schedule

CARVING THE FUTURE OF AMERICAN BRIDGE

New CEO Paul Boechler

Cover: U.S. 69 Missouri River Bridge | Platte County, Missouri

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CONTENTS

AMERICAN
BRIDGE
CONNECTIONS
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Bridging the Big Muddy: How innovation in design-build delivered the
U.S. 69 Missouri River Bridge ahead of schedule **FEATURE** - 4

Carving the Future of American Bridge: New CEO Brings
Strategic, Artful Approach to Leadership **FEATURE** - 16

Katherine Quillin **FEATURED EMPLOYEE** - 20

Bob Wind and Roger Northern **RETIREES** - 22

NEW EMPLOYEES - 26

NEWS + ACHIEVEMENTS - 26

CURRENT CONTRACTS + PROJECT WINS - 27

St. Johns (Suspension) Bridge Approach Spans,
Girard Point Bridge, and more **FLASHBACKS** - 28

A Diamond Anniversary:
75 Year Old Bridge Still in Use Today **EXTENDED FLASHBACK** - 30

2016 Marks Exceptional Safety Year at AB **BRIDGE TO SAFETY** - 32





BRIDGING THE BIG MUDDY

HOW INNOVATION IN DESIGN-BUILD
DELIVERED THE U.S. 69 MISSOURI
RIVER BRIDGE AHEAD OF SCHEDULE

As the U.S. 69 Missouri River Bridge Project winds down and comes to a close ahead of schedule, it marks yet another successful feat for American Bridge.

Photo credit: P-Tn.com

U.S. 69 is a highway that extends from Minnesota all the way down to Texas. A small portion of it spanning the Missouri River was in desperate need of replacement. The two parallel truss bridges making up the crossing were functionally obsolete and structurally deficient. The Fairfax Bridge, carrying U.S. 69 southbound, was built 82 years ago in 1935, and the Platte Purchase Bridge which carried U.S. 69 northbound, was built 60 years ago in 1957. Because of their age, the bridges were becoming too costly for the owner, the Missouri Department of Transportation (MoDOT), to maintain. Neither bridge was built to withstand the high ATD, and with weight limits, narrow lanes, no shoulders, and substandard vertical clearance, it was evident that they were no longer fully functional.

PROCUREMENT AND AWARD PROCESS

American Bridge pursues projects that benefit from innovation and value engineering. The U.S. 69 Project fit the bill from the outset. The two-step design-build process gave AB and our designer, Garver Engineering, the opportunity to work together to optimize design and construction. From a wide pool of eight teams to submit qualifications, AB was among the five selected to submit a proposal. The AB/Garver team received a perfect score on the proposal—the first ever on a MoDOT design-build. The overall score was based on project durability and definition, price, maintenance of traffic, and safety.

AB presented several innovative features during the proposal phase that garnered MoDOT's attention. The innovation that contributed most to achieving the maximum allowable points was an adjustment to the overall length of the bridge. The reduction was a major competitive advantage in the bid. AB's solution incorporated abutments on mechanically stabilized earth (MSE) walls to substantially shorten the structure. For this plan to work, a low traffic city street had to be permanently closed on the Kansas side. On the Missouri side, the bridge was shortened by extending an existing embankment and building on top of an existing levee.

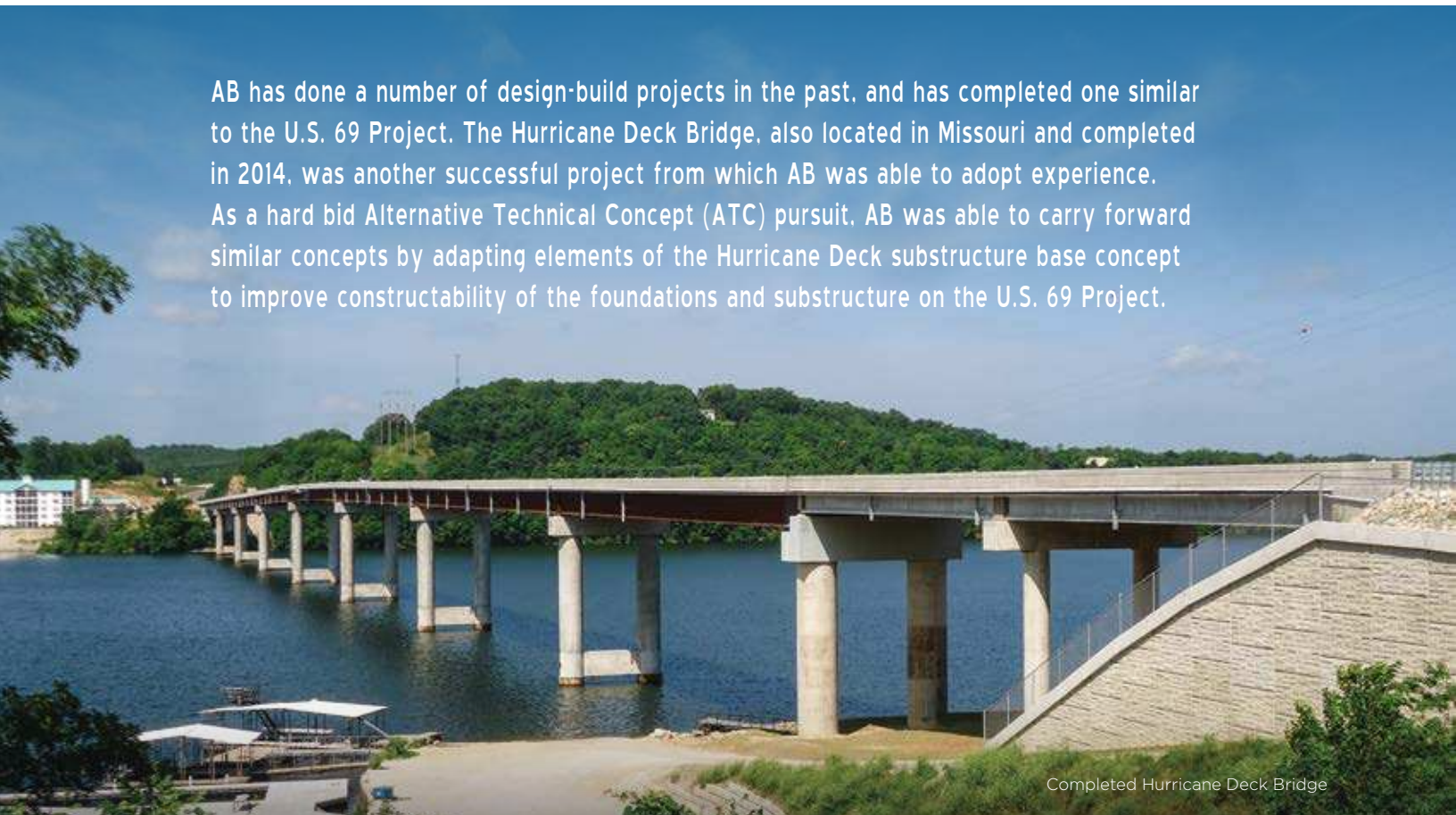
This resulted in a net reduction of the bridge length by about 450 feet.

AB's solution did, however, create a more challenging path to obtain plan approval through the two impacted levee districts. It also required the existing in-service bridge to be evaluated for the effect of placing large amounts of fill on top of its foundations to avoid potential problems of settlement. To overcome these challenges, AB worked closely with the design team and MoDOT to evaluate and monitor the existing structure during fill placement. As a precaution, a jacking plan was developed. All of the necessary equipment was procured, prefabricated, and on-site in the event that a rapid settlement of the in-service bridge occurred. This technically complex solution was key in securing the Project.

Another innovation the team provided in the proposal was the realignment of Argosy Parkway—a road adjacent to the Missouri side of the bridge. The realignment eliminated the need for a short bridge for U.S. 69 southbound, in turn simplifying maintenance of traffic on U.S. 69 north of the parkway. In order to accomplish this feat, a soil nail wall was used under an existing fly over bridge to allow enough room for the road to pass between the bridge and the existing highway.

Throughout the process, there were many challenges. Being a design-build project also meant addressing unknowns that can cause quantity growth during the design process as well as getting plan approval from numerous regulatory agencies. AB's involvement in the design process in order to understand the driving factors, and active engagement with third parties to address

AB has done a number of design-build projects in the past, and has completed one similar to the U.S. 69 Project. The Hurricane Deck Bridge, also located in Missouri and completed in 2014, was another successful project from which AB was able to adopt experience. As a hard bid Alternative Technical Concept (ATC) pursuit, AB was able to carry forward similar concepts by adapting elements of the Hurricane Deck substructure base concept to improve constructability of the foundations and substructure on the U.S. 69 Project.



Completed Hurricane Deck Bridge

concerns, expedited issue resolution and created a positive, collaborative relationship with MoDOT.

UTILITIES

Utilities were a major component on the Project. There were 91 potential utility conflicts with 15 different owners that had to be resolved over the course of the job. As the contractor, AB was responsible for the coordination and resolution of all conflicts. Many were cleared without relocations, but others needed to be removed and relocated prior to any demolition or construction activities.

There were nine utility conduits attached to the existing bridges. Five were major gas lines—two high pressure natural gas pipe lines and three liquid petroleum pipe

The U.S. 69 Missouri River Bridge is the first MoDOT design-build project that crosses two states and it is only the seventh design-build that has been awarded by the state.

lines. By boring under the river, utility owners were able to relocate new lines prior to the removal of the existing ones. There were also fiber optic lines for four companies, which also had to be replaced before the old connections could be terminated to avoid loss of service. The schedule risk for resolving all of these utility challenges rested on AB to coordinate and resolve. With a substantial effort by the team, these conflicts were addressed promptly resulting in no delays to the Project.

The black object shown in the right corner is a live 16" high pressure natural gas line during demolition of the Fairfax Bridge



Photo credit: P-Tn.com



PERMITS

When one project involves two cities, two counties, two levee districts, a railroad, and a major body of water, a lot of coordination goes into design and construction. A total of 83 permits and plan approvals were needed to construct the new bridge. Permits from the U.S. Army Corps of Engineers (USACE), the U.S. Coast Guard (USCG), the Union Pacific Railroad (UPRR), local municipalities, and state governments were obtained.

The Riverside Quindaro Bend Levee District system was located on the north side of the river, and the Fairfax Drainage District on the south side. Each had its own board of directors that oversaw the operation of the levees and a different USACE representative that reviewed submittals. Each levee had a unique construction, resulting in varying requirements for footing design, clearances over levee access roads, and work allowed in their critical zones.

Most of the permits had to be secured after the design had been approved, which could have created a strain on the work schedule. To mitigate these risks and move the Project forward, AB hired a design subcontractor that was responsible for tracking and managing all permits. There were also weekly permit meetings to keep everything on track. All 83 permits were obtained without causing any delays in construction.

CONSTRUCTION PROCESS

About four months ago, in early December 2016, all traffic lanes were opened on the new bridge creating a new connection between Riverside (Platte County), Missouri and Fairfax (Wyandotte County), Kansas. The 2,155 foot replacement consists of four, 12 foot wide lanes and a 10 foot wide shared use path. The navigational span is in the 1,350 foot continuous steel plate girder unit that also clears the adjacent levee and railroad tracks. This unit is made up of seven continuous girder lines of Grade 50 weathering steel

and HSP70W flanges with web depths from 10 to 12 feet. Span lengths are, from south to north, 315, 305, 420 (navigational span), and 310 feet. Foundations are permanently cased drilled shafts with diameters of nine to 10.5 feet with rock sockets into sandstone.

The remaining 805 feet is comprised of a pre-stressed concrete girder unit. This unit is supported by H-pile driven to rock on spread footings and two, 7.5 foot drilled shafts to avoid excavation at the toe of one of the levees on site. The superstructure of the unit consists of eight girder lines of NU-78 precast girders (78 inches tall) made continuous by integral diaphragms at the caps. The five spans range from 150 to 165 feet. The expansion abutments are supported by H-pile driven to rock.

Before any construction could begin for this new, single bridge, an erection engineering sequence had to be carefully thought out and planned. Dan Schwarz, Senior Engineer, led AB's means and methods engineering team for the steel girder erection which included a buckling analysis, falsework designs, and the design of the stiffening truss. An erection plan was also developed for the precast concrete girder erection. Both plans required extensive rigging design and crane layout. A stability analysis was also performed for all barge-mounted crawler crane pick scenarios of the 300 ton, Manitowoc M250.

Eight separate stages were planned for the erection of the main portion (steel girder unit) of the bridge and detailed on DE sheets. The majority of steel girders were erected from barges. Girders were sequentially erected on the Kansas side of the river, then on the Missouri side, and then over the navigation channel. Pier brackets were utilized at three bents to support the initial set of girder sections. AB's "Puerto Rico falsework" towers were used for support in the rail yard span and on the Kansas bank. A single falsework bent was used in the river near the Missouri bank. Counterweights provided stability and the ability to adjust girder tip elevation during the erection of later stages. The final stage was

erecting girders to Bent 5 at the north end of the steel unit. To close the 420-foot main span gap, AB employed jacks to push the erected girders from the Kansas abutments. This entire erection sequence resulted in no falsework in the navigation channel, successfully avoiding interference with marine traffic.

“Closing the 420-foot main span over the river without the use of falsework was extremely challenging. It took countless iterations in the structural model to determine the correct amount and placement of the counterweight in order to open up the girders enough to make the splices. We also had to be certain that the cranes had enough capacity to assist in lifting the girders into position. We were also challenged to place the equipment within radius on the heavier picks. The current in the river provided constant difficulty in that regard,” said Dan Schwarz, Senior Engineer.

The construction phase of the Project was divided into six maintenance of traffic phases. Because MoDOT required at least one lane in each direction to be open at all times, AB put northbound and southbound traffic together on one bridge—the wider Platte Purchase Bridge. This allowed for the demolition of the Fairfax

Bridge to happen immediately, while the design work for the new bridge progressed. It also allowed more time for the utility relocations on the Platte Purchase Bridge. The demolition of the Fairfax Bridge was also strategic because it gave AB the opportunity to build the new bridge in close proximity to the Platte Purchase Bridge. This made it possible to tie the new bridge back into the existing road networks quickly, saving earthwork and paving costs.

The next several phases of construction required changes to traffic flow off the bridge while the grading, drainage, walls, paving, ramps, and intersections were constructed. These phases were key to keeping one lane of traffic open in each direction. The final phase of construction was the completion of the tie-in work for the pedestrian path to local streets. Mike Smith, AB’s Roadway Superintendent for this portion of work, provided several innovative ideas to accelerate the schedule which greatly contributed to the team’s ability to completing the job ahead of schedule.

AB was also required to maintain traffic on Argosy Parkway and other side roads throughout the duration of the Project. Because Argosy Parkway was a new



The Platte Purchase Bridge was still active while the new U.S. 69 Missouri River Bridge was being constructed directly adjacent to it.

Falsework from the Puerto Rico Convention Center in use in 2004



AB utilized the "Puerto Rico falsework" again on the U.S. 69 project



Girder erection



Girder erection utilizing a two crane pick over the navigation span





M250 barge mounted crane picking up pieces of the demolished Fairfax Bridge



High speed photograph captures the ignition of the demolition shot on the Fairfax Bridge navigation span



The navigation span of the Fairfax Bridge as it descends into the river

alignment, it was built without traffic on it while the community continued to use the old alignment under the bridges that were being replaced. AB was also responsible for the replacement of mainline pavement, as well as improving two intersections and portions of four city streets.

The demolition of the existing truss bridges bookended the entire construction sequence. Each one was removed by four separate explosive demolition shots. Prior to demolition, the deck and stringers were removed along with some utility conduits to reduce the weight of the pieces that would need to be removed from the river. Prior to placing charges, pre-cuts were made in the truss sections and wind ties were removed from the upper and lower chords. Linear shape charges were used to cut the truss sections into pieces small enough to be picked mainly by the M250 barge-mounted crane. There was also a 275 ton, Manitowoc 999 crane on the shore to help with the process. Once picked, truss sections were then placed on barges and transported to the Kansas bank where they were off-loaded and processed for scrap. Truss sections demolished over the navigation span were successfully removed within 24 hours per the USCG permit.

Once the new bridge was completed, there were a few final steps until the whole project could be marked off as complete and join AB's long list of successful jobs. AB finished a pedestrian path and removed the second of the two now-inactive bridges that were replaced by the new bridge.

WORK ENVIRONMENT

The Missouri River starts in the Rocky Mountains and picks up drainage from ten states and two Canadian Provinces before reaching the Project site. Lacking a lock and dam system like many other large rivers, the Missouri can be unpredictable. Coupled with common high rain events across the Great Plains in the spring and summer, low to high water elevation

Despite a few unexpected challenges, AB adjusted and overcame obstacles in order to keep everything on schedule. "Once during substructure construction, we had to re-sequence AB's and our subcontractor's bridge work to get the Project back on schedule. The second time was during steel erection when a material barge sank. The revised plan required AB and the subcontractors to accelerate the bridge and roadway work to meet the Project schedule."

—LANNY MILLER, PROJECT MANAGER

during the Project was approximately 25 feet with rapid changes as much as 10 to 12 feet in as few as eight hours. Fallen trees from previous floods would make regular appearances through the Project site. Winters also brought large amounts of ice down the River as temperatures dropped and snow fell on the Plains. Managing the fleet of marine equipment was a top priority for risk mitigation.

"Along with rising waters there is also the added hazards of floating debris building up on barges. With all of our floating equipment on the upstream side of the old and new structures, Lanny Miller (Project Manager), JD Jungles-Norris (Carpenter General Foreman), and I had many sleepless nights battling these conditions," said General Superintendent Andy Kerr.


Not only did the seasons bring on changes in working conditions, but the changing seasons also created additional environmental concerns. There were cyclical restrictions for clearing of trees and bridge demolition that could potentially impact endangered bats, fish, and birds. AB was also responsible for avoiding a small wetland area adjacent to the site. Weekly erosion control inspections were performed along with additional inspections following any rain event.

"American Bridge brought together a multidiscipline team that worked seamlessly together with MoDOT to provide a quality product that was on time and on budget. The team's design and delivery method utilized weekly collaborative and problem solving meetings that focused on managing delivery of the Project, addressing any issues and maintaining the overall goals of the Project. The weekly focus groups helped direct bridge and roadway design, manage utility relocations and kept our environmental permits on track. Overall, MoDOT believes the strong partnership that we had with the team and the commitment to quality and safety American Bridge had, allowed this Project to meet its goals."

—LISA STUPPS, MoDOT PROJECT DIRECTOR

SAFETY

AB developed new concepts and initiatives to show the true dedication to safety on the U.S. 69 Missouri River Bridge Project by adapting the Safety Program and creating the Safety Scorecard. This was a method in which AB evaluated safety performance on a monthly basis and committed to a self-imposed fine if the program was not complied with. The program saw significant success in communicating the importance of a focused safety culture on the Project from the craft level up. In fact, it was so successful that AB now utilizes the scorecard system on all projects. The fundamental aspect of the scorecard system is that the focus is on leading indicators for safety performance, instead of lagging indicators which are traditionally used in the construction industry.

Safety, quality, third party interactions such as permitting and utility coordination, and coordinating with the public made this a project with many diverse challenges. However, this comprehensive view of the Project and the common goals shared by all team members is what defined success for MoDOT, and ultimately AB. 

FACTS & FIGURES

3.1M POUNDS OF REBAR
164,000 SQUARE FEET OF BRIDGE DECK
8.2M POUNDS OF STRUCTURAL STEEL
12,200 CUBIC YARDS OF BRIDGE CONCRETE
190,000 CUBIC YARDS OF EARTHWORK

Completed U.S. 69 Missouri River Bridge
Photo credit: P-Tn.com



CARVING THE FUTURE OF AMERICAN BRIDGE

New CEO Brings
Strategic, Artful
Approach to
Leadership



IN 2016, American Bridge introduced Paul Boechler as the new President and CEO of the company, following the retirement of Michael Flowers. Savvy in business and accomplished as a leader, Paul takes the reins of a company poised for growth. His objective is to drive growth and retain the essence of American Bridge: engineering excellence, unwavering dedication to safety, and commitment to employees.

Paul is a man of many interests. Chief among them is growing American Bridge and preserving what has made the Company great for so long: its people. When you toss in a combination of financial savvy, over 30 years of experience in the construction and engineering world, and creativity, a highly-efficient mix of hardline business and ingenuity emerges. Paul has long been interested

in the way things are built. Be it mechanical, sculptural, or structural, there is an innate fascination with the “how.” And although his career path has taken him down the business road, he’s never lost that interest.

Evidence of this can be seen in his unique hobby of wood animal carvings. These time consuming pieces can stand several feet tall, and are often covered in intricate painting. He reads constantly, and on a wide variety of subjects. A child of a blue-collar family, Paul worked underground in the mines of northern Canada. His progression from there to CEO is a combination of hard work, determination, perseverance, and a good sense of humor.

As we push further into 2017, Paul reflects on his first months on the job, and where he plans on taking American Bridge in the future.

How did your background prepare you for your new role as President and CEO of American Bridge?

My background is in oil and gas. I moved from the client side of the construction industry, to being a constructor, and then to the consultancy side of engineering. Over the course of my career, the companies I've worked for have been acquired a number of times, meaning that I moved constantly. In going from President of Construction in the U.S. to Chief Financial Officer (CFO) and then Chief Operating Officer (COO) of a design and environmental engineering group, I certainly learned a lot. I learned how to adapt to change and how to work through challenges in order to find solutions. I learned it's not necessary to know the answer to start the process. What works is breaking down issues into practicable parts and trusting the team around you to find the right answers.

How is your new position similar and/or different from your previous position of Executive Vice President and Chief Operating Officer at an engineering firm?

The biggest difference is the size of the company and the impact a single project can have on the results at American Bridge. In my last position, the company was so large it was hard to move the needle up or down by individual project success.

The greatest similarity is the application of technical specialist in problem solving for our customers. In consulting I had more scientists to complement the engineers, and here the technical expertise is focused on engineering and construction. However, the results are the same—our customers are looking for technically-based solutions to meet their needs.

What was the transition to American Bridge like?

The first hurdle I faced was earning the trust and loyalty of the very dedicated American Bridge employees. Most of them have only known CEOs that rose up the ranks from within. I came in from the outside, which was quite different. The second major change for me was the transition to a project-based approach to operations, and working geographically or in specializations to foster a team approach.

What have you learned about American Bridge in the first six months?

The most important things I've learned so far are centered on our people. We have some of the most innovative minds here, and the dedication to the culture and excellence in project execution is pretty amazing. I've also learned how American Bridge develops interns, and the capabilities of our field staff. It's really exciting to see the combination of people and engineering to do something unique for each project.

What is your outlook for 2017?

2017 will prove to be a foundation year. The opportunity is there to set the foundation of backlog and projects for the next few years. We cannot achieve the career goals and business plan of the company with what we bid this year, but we can set a revenue and employee base that protects American Bridge and allows us to confidently take on additional projects over the next four years.

What are some of your goals for the year? Next 5 years? Next 10 years?

This year my goals are focused in two areas. One is to improve earnings to stabilize and protect the future of the company. A consistent profit allows for greater investment in people through training, experience, and career opportunities. The second is the regional model which I think was well thought out at implementation. It needs support to mature into a routinely successful machine. At this point, it is still evolving in consistent execution and prospect development, but it has the right framework and approach to provide the underlying foundation of long-term success for American Bridge.

I think it is hard to plan out the next five to 10 years. We have projects that will be bid in 2017 and 2018 that will take five to six years to complete. Therefore, the goal must be to establish a



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2017 will prove to be a foundation year for American Bridge.

successful project from the start, one with good relations with the client, an adaptable execution plan that will deal with the changes during the life of the project, and measureable goals. This will drive success with ever-changing people and situations.

What are some potential challenges you foresee?

Our markets are constantly changing. We need to continue to adapt from a “project focus” to a “company focus.” Our customers use all the same media and systems we use and expect to see similar processes across our job. The individualism of a project manager is in the approach to problem solving, but not the safety, quality, and execution. Individual goals and results must be tied to the company goals.

What’s the best part about working at American Bridge?


The people and the joy they have in coming to work at American Bridge each day. I like that American Bridge has provided an environment that allows people to do what they love while simultaneously achieving their personal goals.

What do you see in American Bridge’s future?

When I think about future, I am not thinking about the current projects and challenges but about the next 25 years. American Bridge was an important part in the development of infrastructure, both in North America and globally. I believe American Bridge will continue to play an important role in the next 25 years, as the aging

infrastructure gets replaced to adapt to the future.

What do you like to do in your spare time/for fun?

Two things come to mind. The first is travel. My wife and I have tried to cover some of the more exotic places, like Antarctica, the Amazon, and the mountains gorillas in Rwanda. The second is carving carousel animals which I have been doing since the 90’s. I am working on my 12th animal—a tiger about four feet from nose to tail. I also carved some birds for competition but I really enjoy carving the larger animals. I carve in the traditional manner with a gouge and a mallet, enjoying the process of creating. In my job success is based on getting to finish line, but in my carving it is about the process. 



KATHERINE QUILLIN

HEAD OF SECTION - QUEENSFERRY CROSSING



Meet Katherine. She is a seasoned veteran of high-profile American Bridge projects since her start with the company in 2008. She is wrapping up her assignment as Head of Section on the Queensferry Crossing in Scotland, and spent some time with Connections discussing her experiences on two world record-breaking structures.

How did you become interested in the construction industry?

I grew up on a farm where I always had a chore list that had to be completed before playtime could begin. Hard work was at the core of my upbringing and I never shied away from difficult outdoor tasks. But when I wasn't out on the farm I was inside building new worlds with my Legos.

In school I excelled at math and science. In eighth grade, a civil engineer visited my algebra class to tell us about what engineers do for a living. When I decided to go to Purdue University, I was convinced I wanted to be a civil engineer. But at a summer "Women in Engineering Day" event, I learned about a different degree that was offered; Construction Engineering and Management. I found out I could be outside with "the guys" building stuff rather than inside designing all day long. I was hooked—and I've only wanted to build complex structures from that point on.

How did your time at the San Francisco-Oakland Bay Bridge Self-Anchored Suspension Superstructure project prepare you for your role at the Queensferry Crossing?

SFOBB was complex and challenging in so many ways. That project truly gave me the respect I have for listening to the folks in the field and gathering ideas to solve complex problems not from just upper management but from the ironworkers and laborers who will actually have to perform the work. I learned that it is not always best to go with the first option presented and that it's ok to question and push for other—possibly simpler and cheaper—solutions. And above all I learned to trust the team you have around you because it is only through their help will you accomplish your goals.

It is these core ideas that have prepared me to overcome the many challenges we have experienced on the Queensferry Crossing. These are valuable lessons that I will carry onto other American Bridge projects in the future.

What is it like working overseas, compared to working in the U.S.?

For my first meeting on site I needed a notebook to write down all the new terminology. Everyone in the meeting was speaking English... but I had no idea what

anyone was saying! As I expanded my vocabulary (i.e. seahorse = whitecap) things got easier.

Besides language barriers, there were new safety regulations to learn as well as significant cultural differences. We were working with Scottish, English, Irish, Spanish, French, German, Czech, Polish... the list goes on and on. To all of them we were the crazy, brash, loud Americans, which was an issue in itself to overcome. But no matter where you go, people are always people and the quickest way to gain respect is being open to other's ideas as well as showing your own capabilities.

How has being a woman in construction changed since you've been in the industry?

I had my first internship in the summer of 1999 where I was placed on a jobsite with a female project manager. She set a wonderful example of toughness combined with caring when it came to her team—something I have tried to emulate as I have progressed through the industry. I have always maintained a give respect/get respect mentality when dealing with anyone, especially the guys in the field, and I believe that has carried me far with the way I am treated onsite.

When I was younger and more naïve, I would let the “cat calls” go and just pretend they didn't happen. Now the culture has shifted as there are more and more women onsite. No one would dare to do that to me or any woman that works on the project, because they know there would be zero tolerance for that kind of behavior. I try to teach the young women I work with to be kind but firm and establish themselves as a respected member of the crew. I believe gaining respect from your coworkers will carry you far no matter if you are male or female. Plus, it always is helpful to have a gang of gruff ironworkers in your corner!

What is your favorite project you have worked on so far at AB?

I have had an interesting experience in my career with American Bridge as I have only worked on two, albeit major, projects during my eight year tenure. My favorite has been working on the SFOBB, where I developed great working relationships and was able to work

directly for the man I now consider my second father, Jerry Kent. Also, on SFOBB the project teams truly trusted and had confidence in each other which allowed us to easily come together to solve complex problems.


However some wonderful things can also be said about the Queensferry Crossing. Besides building an incredibly complex and demanding bridge, it was here that I met my fiancé and the soon-to-be father of our child. (Editor's note: Katherine and her fiancé welcomed a beautiful, healthy baby girl since this interview.)

What is a typical day like for you?

No day is truly ever the same but they are always interesting and full of challenges. One thing I learned early on in my career is that your best asset for a successful project lies with your team in the field. Every day I meet with my general foremen and review the plans for the day, have constant discussions with my field engineering staff to deal with changes or problems that may arise as the day progresses, as well as have discussions with the general superintendent on anything I am questioning or am concerned about.

Early on in the Queensferry project I was in the field a lot more, however as my role onsite has shifted, I am required to spend a lot more time in my office reviewing plans, costs, and dealing with designers. I also attend meetings with personnel from other areas of the project to discuss schedule and ensure congruity throughout our work. Now as the head American Bridge person on the project, I also deal daily with issues related to American Bridge International which can be anything from costs to expat housing.

What are some of your interests outside of work?

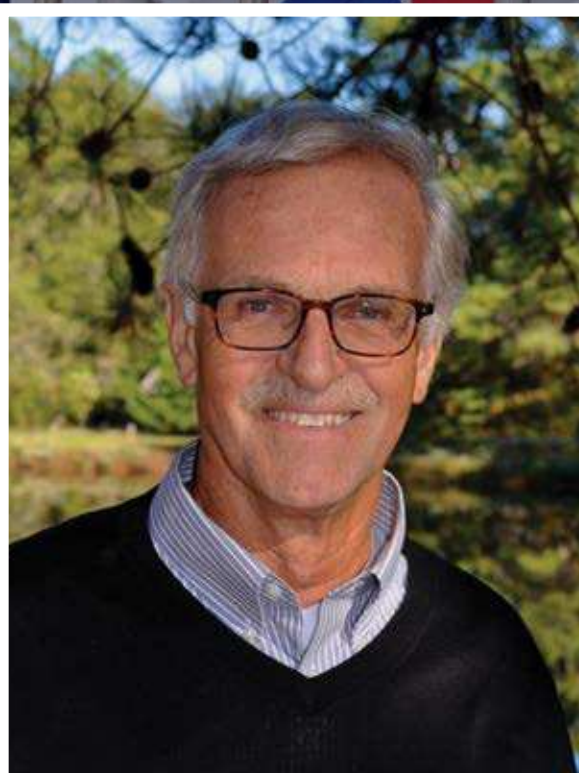
I enjoy exploring the world around me and learning new things. While living in the UK, I've had the opportunity to travel to over 20 countries and experience the different cultures and beauty of those nations. I love to spend time with my fiancé at the movies, hiking, traveling, or at any new science exhibit. And of course any time I am able to be back in the U.S., I can't help but dote over my three adorable nephews. 

A CAREER ACROSS NATIONS

Bob reflects on his journey around the world—which ultimately led him to AB

While Bob's whole career wasn't spent at American Bridge, it was the last and final stop on his fulfilling journey through the construction industry and around the world. 44 years ago, Bob Wind left college with a degree in civil engineering; a degree that would prepare him for a career that would take him far and wide. Whether it be engineering, estimating, or construction, Bob gained a wide range of experience throughout the years, and has no regrets following this path from the very beginning.

Naturally, as a native of the Netherlands, that is where Bob's career began. He started working at an engineering firm where he was primarily involved with design work for airports. When he was 24 he was assigned to be an inspector on a project in Nigeria. It was at this project that Bob realized he had a preference and passion for working at a construction firm. Being directly involved with construction held more interest for him—he was motivated by the goal-oriented nature of the industry—so Bob followed his



passion and stuck with field work. This took him all over the world working on international projects, much to his satisfaction.

It wasn't until 30 years later that Bob felt he needed a change in his professional life. Bob had a connection with Dick Kermode, Vice President of AB at the time, from working with him at a previous employer. When he was offered a position, he jumped at it. He joined AB's young Orlando office, then known as AB Facilities, and assisted Dick in starting the marine construction specialty. Bob, as the Manager of Estimating and

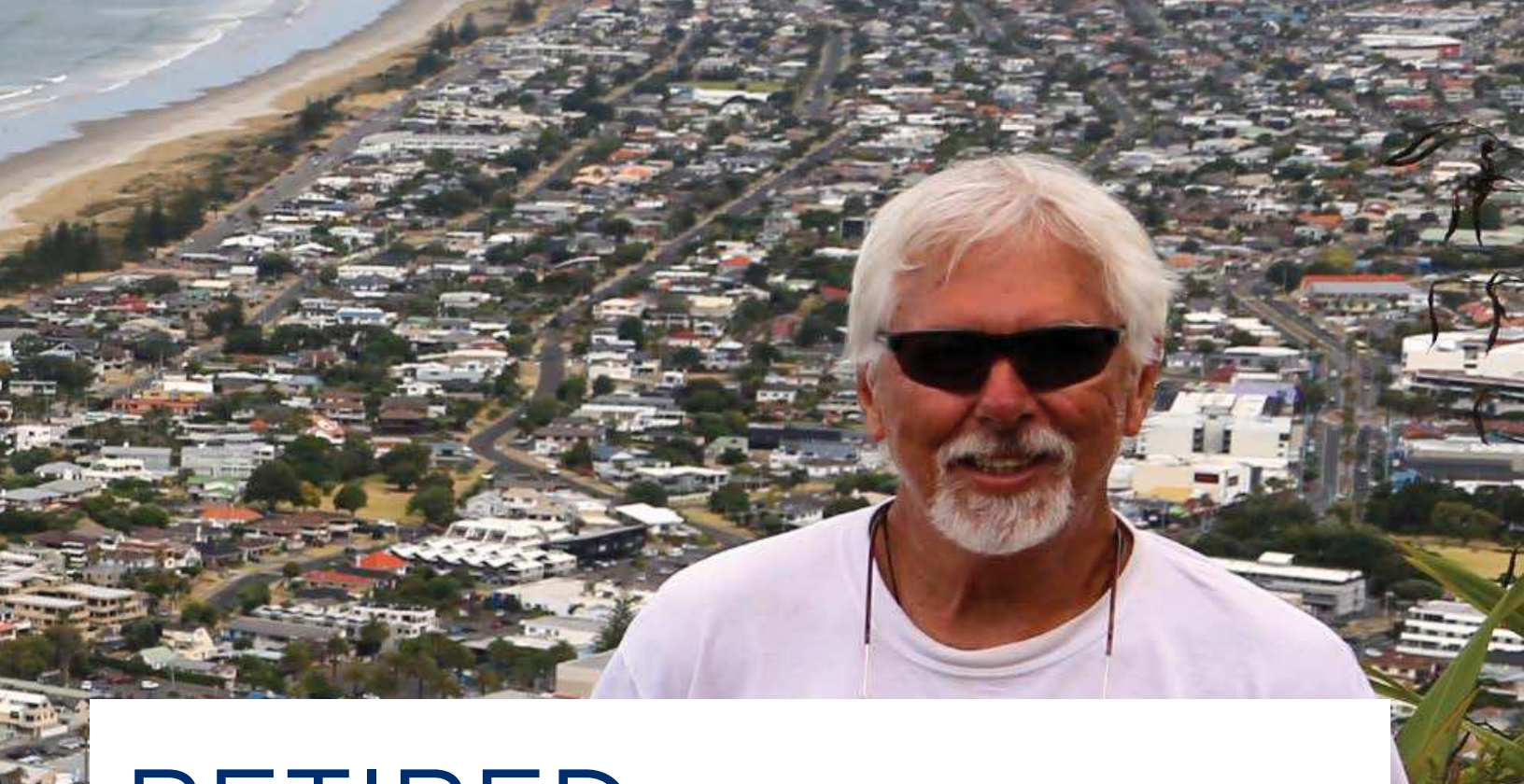


Preconstruction, worked closely with Dick to expand AB's capabilities and resume in complex marine construction. He became a fixture of the Company's pursuits, and still feels proud that he formed one of the building blocks.

One of the things Bob feels gave him an advantage was his 25 years of hands-on heavy civil project work. "Having field experience was indispensable in being an effective and successful estimator" says Bob. Prior to AB, he spent much of his time working internationally, in Europe, Africa, and the Middle East. His background enabled him to play a key role in the Sea Terminal at Barcadera project. Because Aruba is part of the Dutch Antilles, and with Bob a native of the Netherlands, he took over as Operations Manager on the project. Bob established a trusted relationship with the owner and the local subcontractors due to their Dutch background. While he performed this role alongside his job as Manager of Estimating, he enjoyed the opportunity to be closer to the field operations again. "This was my favorite project with AB," says Bob.

Bob considers himself lucky to have found his place at AB 14 years ago. When asked about his favorite memory at AB, he found it hard to pinpoint a single thing—"with 14 years comes a lot of stories." However, he did feel that AB brought out the best in him because the culture offered him room to approach his work how he felt best. And one more thing, something commonly heard from reitrees, is that the people are the best part about AB. Bob always found support and loyalty from his colleagues during his time with the company.

Now that Bob is retired, he and his wife plan to move a little bit north to be closer to family, including their two grandsons. They also plan to do a lot of bike riding, traveling, sailing, and hiking. And although the doors are closing on his career, the people he met on his great journey across the world will always be around. He looks forward to having friends, old and new, visit him. They will be a constant reminder of his passion for the industry and the unforgettable path his career led him on. ♦



RETIRED— BUT NOT DONE

With a career full of adventure, Roger isn't ready to settle down just yet

Some people just become fixtures at a company. While most are established over many years of service, Roger managed to do so after just seven.

Roger's construction career officially began when he decided to study Civil Engineering at the College of San Mateo in California. However, things took a minor turn. As a requirement for the curriculum, he had to take an entry level surveying course. During the course, he

was drawn to the mixture of physical outdoor work and the requirement for technical expertise. It was then that he changed the focus of his education to concentrate on surveying. He stuck with that and never looked back.

Adventure was never something Roger shied away from. Prior to AB, Roger primarily worked on private and commercial land development in California and Nevada. But when he got the opportunity

to go to Shanghai, working for AB on the fabrication for the San Francisco-Oakland Bay Bridge, "it was too exotic to pass up" he says. Shanghai was just the beginning of all of his adventures—working for AB gave Roger and his wife the opportunity to travel the world, mostly in support of his work assignments.

With Roger's expertise, he became a major contributor to the success of the geometric control programs of the San

Francisco-Oakland Bay Bridge, the Las Vegas High Roller, and the Queensferry Crossing. When Roger was working on the Las Vegas High Roller, he took some techniques from the fabrication work he did in Shanghai for the Bay Bridge, and applied some of those same techniques to the project.

Roger was able to figure out methods to ensure that two pieces of steel would fit together, in a manner that ultimately allowed all of the pieces of steel to come together and meet the tolerance requirements on the High Roller. In essence, he and his team built the entire structure digitally in the horizontal position as it was being fabricated. Once the last segment was “fit-up”, they performed a complicated coordinated transformation which “flipped” the theoretical structure into the vertical position. From there, they passed key target coordinates to the surveyors in Las Vegas for field erection. These advancements


led to significant savings. Prior to his advancements, it would have been normal to pre-assemble the entire wheel on the ground in the fabrication shop.

Even though Roger’s career with AB didn’t start until later in life, the good memories are certainly not few and far between. He calls his experiences in China “life-changing” and ones he won’t soon forget. But he will also never forget the dinner parties he hosted for AB staff at his house in Scotland while working on the Queensferry Crossing (and neither will the attendees!) He will also miss being part of a close-knit team. Most of his career was spent as a sole proprietor, but the past seven years gave him the opportunity to engage in and enjoy the camaraderie of the AB family.

So, what is next for a man who has thrived on adventure? Well, Roger isn’t completely ready to let go. What comes with retirement is usually relaxation

and fully embracing the free time—but Roger isn’t ready for that to consume his days just yet. He still enjoys the buzz of big time civil projects. Although he has retired, he still plans to work for AB on a consulting basis. AB will utilize him in special geometry control functions as the need presents itself.

But as down time comes along, and in between work assignments, you will probably find Roger on the beach in New Zealand, where his wife is from. Or you might find him riding his Vespa, playing golf or the drums, or perfecting his photography and cooking skills, all while trying to stay fit.

Roger has a lot of plans for the future, and for him it is all enjoyment—even the work part. AB was, and still is, glad to have had Roger become a part of the AB family when he did. His hard work and dedication to the job is something AB will always be thankful for. 



Queensferry Crossing



San Francisco-Oakland Bay Bridge Self-Anchored Suspension Superstructure

NEW EMPLOYEES

Robert Adams Field Engineer,
U.S. 69 Missouri River Bridge

Wade Barie Field Engineer

Thomas Cline Field Engineer

Dora Gouveia Executive Assistant

Keith Haven Superintendent - Tampa

Adam Levine ECM Application Developer

Jason McDonald Procurement Manager

Colby McNichol Field Engineer,
Peace Bridge Rehabilitation

Robert Patterson Accounting Manager I

Timothy Pernsteiner Senior Project Manager,
St. Thomas, U.S. Virgin Islands

Benjamin San Martin Superintendent, Edmonton, Alberta

Darryl Schriener Operations Manager

Khrissy Tiano Help Desk Technician

Brant Wietasch HSE Coordinator

NEWS + ACHIEVEMENTS

- ◆ American Bridge recently unveiled a brand new website. With an updated look, you can find more out about our history, our projects, job opportunities, and more! Visit americanbridge.net to see it all.
- ◆ Mike Flowers, past President and CEO of AB, was elected to the Berea College Board of Trustees in January. He was appointed to a six year term, beginning immediately.
- ◆ The Guinness Book of World Records recognized the center span of the three-towered Queensferry Crossing in Scotland as the longest freestanding balanced cantilever structure ever built, at 644m long. Although the record was broken, the center span wasn't freestanding for long. It is now connected to its neighboring spans to the immediate north and south forming the final superstructure which will be open to traffic later this year. However, once complete, the Queensferry Crossing will still break records as the tallest bridge in the United Kingdom and the longest bridge of its type in the world.
- ◆ Bill Batzel was nominated for Outstanding Engineering in Construction by the Westchester/Putnam Chapter of the New York State Society of Professional Engineers (NYSSPE).
- ◆ Ironworker Foreman Steve Barnes received the Governor General Award of Commendation for his courageous actions in rescuing a tugboat captain from the fast-moving waters of the St. Lawrence River. The captain's foot became stuck in a tug housing window as it began to sink. Without hesitation, Steve leapt into action, using a pry bar to free the captain's foot and bring him to safety. Steve is a member of Ironworkers Local 765 and a 41 year veteran of the construction industry. Thanks to his selfless actions, he is also a hero.

CURRENT CONTRACTS

- ◆ **Explosives Handling Wharf #2** Silverdale, Washington
- ◆ **Horseshoe Arch Pedestrian Bridge** Dallas, Texas
- ◆ **U.S. 69 Missouri River Bridge** Riverside, Missouri
- ◆ **Blount Island Marine Terminal Wharf Reconstruction** Jacksonville, Florida
- ◆ **Portageville Bridge Replacement** Portageville, New York
- ◆ **Queensferry Crossing** Edinburgh, Scotland, United Kingdom
- ◆ **Angus L. Macdonald Bridge Suspended Spans Deck Replacement** Halifax, Nova Scotia, Canada
- ◆ **The New NY Bridge (Tappan Zee)** Tarrytown, New York
- ◆ **Delaware Memorial Bridge First and Second Structures - Dehumidification of Main Cables and Anchorages** Wilmington, Delaware
- ◆ **Inner Berth Bulkhead Improvements and Bollard Replacement** St. Thomas, U.S. Virgin Islands
- ◆ **BNSF Truss Bridge Over I-235** Oklahoma City, Oklahoma
- ◆ **WV Corridor H - Kerens to U.S. 219** Tucker/Randolph Counties, West Virginia
- ◆ **Peace Bridge Rehabilitation** Ft. Erie, Ontario, Canada
- ◆ **Edmonton Valley Light Rail Tawatina Bridge** Edmonton, Alberta, Canada
- ◆ **Tacony-Palmyra Bridge Mechanical Rehabilitation** Palmyra, New Jersey
- ◆ **Coco Cay Pier Development** Little Stirrup Cay, Bahamas
- ◆ **Crown Bay - Mooring Dolphin** St. Thomas, U.S. Virgin Islands
- ◆ **10th Street Bridge Rehabilitation and Cable Dehumidification** Pittsburgh, Pennsylvania



PROJECT WINS

COCO CAY PIER DEVELOPMENT

Little Stirrup Cay, Bahamas

CROWN BAY - MOORING DOLPHIN

St. Thomas, U.S. Virgin Islands

10TH STREET BRIDGE REHABILITATION & CABLE DEHUMIDIFICATION

Pittsburgh, Pennsylvania

FLASHBACKS



ST. JOHNS (SUSPENSION) BRIDGE APPROACH SPANS

Location: Portland, Oregon

Completion Date: 12/30/1930

AB Order #: G-331



GIRARD POINT BRIDGE

Location: Philadelphia, Pennsylvania

Completion Date: 01/01/1972

AB Order #: K-3702-21

The St. Johns (Suspension) Bridge Approach Spans project in Portland, Oregon was completed 86 years ago. AB fabricated and erected the ten spans of deck truss approaches of this crossing of the Willamette River. Three of the spans were 108', four spans were 144' and the last three were 180', totaling 1,440'. The trusses were erected using a Jinniwink deck traveler and a cableway was used for the movement of falsework bents that supported the 144' and 180' spans. This suspension bridge is now a Portland Historic Landmark.

44 years ago, just over two years after the project began, AB completed the Girard Point Bridge. AB was the general contractor for this 9,324', two-level steel truss bridge over the Schuylkill River in Philadelphia, Pennsylvania. The bridge was erected using the balanced cantilever method. The weight of the structural steel, which was fabricated by AB, was 31,348 tons.



CLEARWATER BEACH PEDESTRIAN BRIDGE

Location: Clearwater, Florida

Completion Date: 08/09/2008

AB Order #: 475710

AB was the general contractor for the Clearwater Beach Pedestrian Bridge eight years ago. The project involved the construction of a pile-supported, 320' long and 16' wide concrete pedestrian bridge over the Mandalay Channel in Clearwater, Florida. The project also involved associated upland site work, including modifications to an existing parking lot, and two three-pile cluster dolphins for a neighboring dinner cruise vessel ship.




MENOMINEE BRIDGE

Location: Marinette, Wisconsin

Completion Date: 04/01/1972

AB Order #: K-4779-83

45 years ago, AB completed the construction of the Menominee Bridge which crosses state lines and connects Marinette, Wisconsin and Menominee, Michigan. This double-leaf trunnion bascule carries four lanes over the Menominee River and has a 132' main span and a total length of 143'. A crawler crane on a barge and a crawler crane on the work pier were used to lift girders into position. 

A DIAMOND ANNIVERSARY

75 YEAR OLD BRIDGE STILL IN USE TODAY

PIT RIVER BRIDGE **Location:** Redding, California **Completion Date:** 07/31/1942 **AB Order #:** G-7860-65

American Bridge is no stranger to the Golden State. AB has completed a number of projects in California, most recently the San Francisco-Oakland Bay Bridge Self-Anchored Suspension Superstructure. But AB's history in California dates all the way back to 1913 and has been steady since then. 75 years ago in 1942, AB built a unique structure—a double-deck bridge

carrying a road and a railway. It was the tallest combination road and rail bridge in the U.S. at the time of completion.

The bridge was built to replace the original Pit River Bridge, an arch span that slowly became engulfed by the lake it crossed. Today, the height of the water underneath the new bridge fluctuates depending

on droughts in the area, having a direct effect on the bridge's elevation over the water.

The 3,588 foot long bridge carries Interstate 5 and the Union Pacific Railway over the Pit River Arm branch of Shasta Lake. The lower deck holds a double track railroad and the upper deck carries the highway and two 2'6" sidewalks.



In just over a year and a half, AB constructed the cantilevered truss, double deck bridge. During the falsework procedure, seven bents were used, two of which were made of bridge stringers and rested on mud sills. The other five bents were made up of truss members and bracing from the suspended span and set on the concrete foundations. Special shoes and jacking devices were made for use with all bents. Bents one and four were 45 feet, bent two was 149 feet, bent three was 280 feet, bent five was 76 feet, bent six was 121 feet, and bent seven was 238 feet. Bents three and seven have "back legs" so that the lower portions of the bents are braced. The concrete piers for the bents ranged from 35 feet to 102 feet deep and the total weight of steel in the seven bents was 1,997 tons.

During the erection procedure, the main steel truss spans were erected by an S2 derrick traveler. A Jinniwick traveler erected the highway deck behind the main traveler and the girder spans were erected by locomotive cranes. Two 60 ton cranes and one 150 ton crane were utilized on the job.

Steel erection started on the south end of the bridge and proceeded to within one panel of the center of the suspended span. The equipment was then moved to the north end of the bridge and steel erection commenced. The truss spans were erected from the northern end to close at the center. The girder spans at each end of the bridge were the last spans erected in the operations from the two ends.

Today, this bridge is an important fixture in Redding. It is a heavily-traveled and vital link for the area, connecting freight and passenger rail service to major shipping ports in the state and carries one of the highest volume truck corridors in California. The bridge also serves as an important reminder of the men and women of California who served their country. In dedication to them, the bridge is also commonly referred to as the Veterans of Foreign Wars Memorial Bridge. 



2016 MARKS EXCEPTIONAL SAFETY YEAR AT AB

While safety is always the number one priority at AB, last year AB really hit the mark and has some awards to prove it.

Safety has always been the number one priority at AB—we want to make sure everyone goes home at the end of each day. This past year was no exception. Over the course of 2016, while having 15 active project sites, AB was not only named one of the safest companies in America by **EHS Today**, but it was also the first year that an exception was made and the AB Henry Mykich Safety Award was presented to two people, rather than the traditional single recipient.

HENRY MYKICH SAFETY AWARD

Every year, AB holds an annual meeting during a weekend in September for all employees of the company. Fun and lighthearted awards are given out to employees who won golf or bowling tournaments, or employees who are celebrating milestone anniversaries with the company. But arguably the most distinguished accolade is the Henry Mykich Safety Award. Named after the late Health and Safety Director, nominees are put forth by co-workers who recognize an outstanding

From Left to Right: David Meche, David Geesaman, Paul Boechler, Joe Corvello



dedication to a safe workplace. The award goes to someone who shows leadership in protecting our greatest asset—our employees—and someone who enhances AB's reputation for safety leadership.

In the past, there have always been many nominees, but only one received the award. This year, due to exceptional safety efforts and because all 13 nominees showcased praiseworthy leadership, it was impossible to choose just one, so an exception was made. The awards were presented to David Meche, General Superintendent, and David Geesaman, Area Superintendent, both stationed at the Tappan Zee Hudson River Crossing project.

David Meche has been with AB since 2009. At the Tappan Zee Hudson River Crossing project, he has been responsible for 85 pre-assembled girder picks. He is known to have zero tolerance for Personal Protective Equipment (PPE) violations, and because of that Meche has been able to go more than 100,000 person hours with no recordable incidents—an amazing accomplishment that we are proud to recognize.

David Geesaman was with AB from 2003 to 2008, took a hiatus, and then rejoined the company in 2011. On Tappan Zee, Geesaman has responsibility for the cast-in-place substructure and deck, an area that covers most of the 3.2 mile job site. In the nomination form, Geesaman was called a leader and a teacher, since he is known for sharing his observations and experiences with others to help others learn.

The Tappan Zee Hudson River Crossing project is lucky to have these two men working on site. Both nominees showed exemplary leadership in safety on the jobsite and AB was pleased to award these two deserving nominees with the Henry Mykich Safety Award.

EHS TODAY'S AMERICA'S SAFEST COMPANIES


Because of the unwavering commitment to safety of AB employees, like that of David Meche and David Geesaman, AB was also named one of EHS Today's America's Safest Companies in 2016. Ten different



companies representing diverse industries, from heavy construction to food manufacturing, from all across America, were named to the list.

Founded in 2002, this award recognizes companies who have achieved innovative and strategic safety goals and companies who have injury and illness rates significantly lower than the average for their industry, among many other criteria. The application process allows any company who wishes to submit their qualifications for the award. All ten companies were honored on September 20, 2016 at the Heinz History Center in Pittsburgh, Pennsylvania during EHS Today's Safety Leadership Conference.

AB is proud of this achievement as we strive to carry the best safety record possible while building some of the world's most iconic structures.

For more information visit: <http://ehstoday.com/americas-safest-companies-awards/america-s-safest-companies-2016-american-bridge-company>. 

REHABBING AMERICANBRIDGE.NET

It's not just bridges and piers that need some rehabilitation. After exceeding its service life, American Bridge's website was in desperate need of repair. So, we fixed it from the foundation up, and are thrilled to announce that it is live! Some of our favorite features include stunning photography, an easy-to-navigate layout, and a searchable archive for history buffs. We're proud to show it off, so please visit www.americanbridge.net to see our new home on the web.





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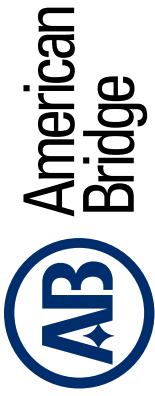
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INSIDE THIS ISSUE **Spring 2017 - Issue #1006**

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- 4 - **FEATURE** Bridging the Big Muddy: How innovation in design-build delivered the U.S. 69 Missouri River Bridge ahead of schedule
- 16 - **FEATURE** Born a Builder: Carving the Future of American Bridge: New CEO Brings Strategic, Artful Approach to Leadership
- 20 - **FEATURED EMPLOYEE** Katherine Quillin
- 22 - **RETIRES** Bob Wind and Roger Northern
- 26 - **NEW EMPLOYEES**
- 26 - **NEWS + ACHIEVEMENTS**
- 27 - **CURRENT CONTRACTS + PROJECT WINS**
- 28 - **FLASHBACKS** St. Johns (Suspension) Bridge Approach Spans, Girard Point Bridge and more
- 30 - **EXTENDED FLASHBACK** A Diamond Anniversary: 75 Year Old Bridge Still in Use Today
- 32 - **BRIDGE TO SAFETY** 2016 Marks Exceptional Safety Year at AB