

Having completed seven other GWB contracts,
AB is experienced with the bridge's distinguishing condition
and this knowledge has proved to be quite an advantage over the years.

GEORGE WASHINGTON BRIDGE

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PAGE



Connections

SUMMER 2012

Timeline.



Built original east and west span 1935



2014 Replaced east span

San Francisco/Oakland Bay Bridge

American Bridge Company has been a leader in the construction of complex bridges and other structures for over 112 years. Our credits include the longest mainspan in the Americas (Verrazano, 1964), the longest suspended span in the Americas (Mackinac, 1957), the longest Arch Bridge in the Americas (New River Gorge, 1973), the longest concrete segmental cable stay bridge in the Americas (Sunshine Skyway, 1986), the longest mainspan in South America (Angostura, Venezuela, 1967), the largest bascule bridge in the world (Woodrow Wilson, 2008), the only stiffening truss replacement under live traffic (Lions Gate Bridge, Vancouver, BC, 2002), the only airspinning of main cables under live traffic (25th of April Bridge, Lisbon, Portugal,

1998), the 2nd longest cable stay bridge in the world (Forth Replacement Crossing, Scotland, 2016), the tallest building in the Americas (Willis Tower, 1973), the world's largest observation wheel (Vegas High Roller, Nevada, 2013), the longest back to back suspension bridge in the Americas (San Francisco/Oakland Bay Bridge West span, 1936, pictured above, left), the world's longest self-anchored-suspension bridge (San Francisco Oakland Bay Bridge, East Span, 2014, pictured above, right), and on and on and on ... We can do it!

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For more information on this and other innovative projects



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ARTBA

American Bridge Marketing Department advertisement in American Road & Transportation Builders Association Magazine, August 2012

Connections

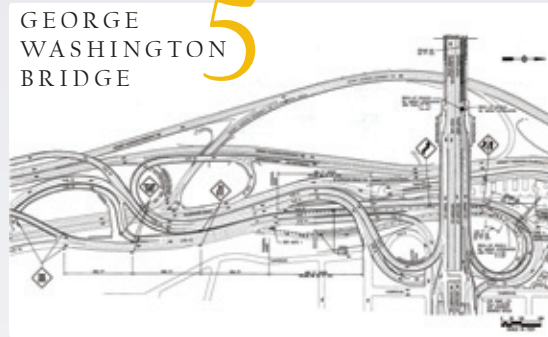
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GEORGE WASHINGTON BRIDGE

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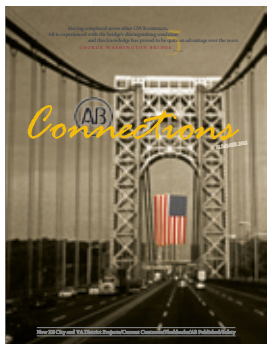
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C O V E R

The GWB is the busiest suspension bridge in the world, never allowing any permanent lane closures as typically used in bridge maintenance work. Read about AB innovations to overcome this and other challenges. The bridge also holds the record for housing the largest free-flying American flag, which is unraveled only nine times each year. See the unraveling now by visiting the video page on www.americanbridge.net.

- Largest free-flying American flag in the world; entirely hand-sewn
- Weighs 450 pounds; 60' by 90'; stripes are five feet wide and stars are four feet in diameter
- Erected on Veteran's Day 1947; in honor of WWII troops
- Unravels nine times per year on specific national holidays

THANK YOU

Much appreciation to the following individuals for their contribution to this issue:
 Chad Ford, Scott Gammon, Jonathon Hart, Josh Perry, Jody Porterfield, Scott Swamback, Zach VanLemmeren, Frank Vespaziani



Connections
 NEWSLETTER
 by Kadi Camardese
 Please contact the
 Communications and Marketing Department
 with news and inquiries:
kcamardese@americanbridge.net

American Bridge's performance results for the first half of 2012 are solid in a tough economic environment.

We are keenly focused on driving down cost and striving for innovation in bringing best value to our clients. Our contract wins over the past several months are demonstrating the relevance and sustainability of our balanced strategy and we are well positioned to take advantage of several very large projects through key strategic partner alliances."

Michael Flowers, CEO of American Bridge Company

CURRENT CONTRACTS

Manufacturing

Harold Structures, NYC
Unicorn Bridge Rehabilitation, NYC
Walt Whitman Bridge, Philadelphia, PA
P.J. McArdle Viaduct, Pittsburgh, PA
Clearfield County Plate Girder Bridge, Kylertown, PA
Shore Parkway, Queens, NY
Cochran Mills Bridge, Armstrong County, PA
Sun Valley Bridge Widening, Los Angeles, CA
4th Avenue Bridge, Johnstown, PA
Wilson Creek Bridge, Marshall, AK
George Washington Bridge Deck Replacement, NYC
Dickey Prairie Road Bridge, Clackamas County, OR
I-80 Bridges, Clarion County, PA
Trinity County Bridges, Trinity County, CA
Ocean Power Technologies (OPT) Cofferdams, Reedsport, OR
Flamingo Loading Docks, Las Vegas, NV
Mansfield Bridge Rehabilitation, Allegheny County, PA
Ambridge/Aliquippa Bridge Rehabilitation, Beaver County, PA
Blacklegs Creek Bridge, Indiana County, PA
Columbus Road Lift Bridge, Cleveland, OH
East Pine Street Bridge, Snyder County, PA
Cherry Tree Bridge, Indiana County, PA
SAS Barrier Transition, Oakland, CA
Edward A Silk Memorial Bridge, Cambria County, PA
Runk Bridge, Huntingdon, PA
East Clinton Street Bridge, Ithaca, NY
C.E. Plastics Tank Bases, Georgetown, PA
Rensselaer Street Bridge, Rensselaer Falls, NY
Fuller Road Bridge, Albany, NY
Northwest 36th Street Bridge, Malheur County, OR
Squirrel Hill Tunnel Rehabilitation, Pittsburgh, PA
OPT Floating Gravity Based Anchors Outfitting, Coos Bay, OR
Milwaukee Light Rail, Portland, OR
Bronx River Parkway, Greenburgh, NY

Pittsburgh

Charleroi-Monessen Bridge Replacement, Charleroi, PA
Columbus Road Lift Bridge, Cleveland, OH
U.S. 190 Mississippi River Bridge Repairs, Baton Rouge, LA

Special and International Projects

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

Richmond

Pier R3 Repairs, Yorktown, VA
Wrightsville Beach Bridge, Wrightsville, NC
Bridge No. 30 - U.S. 421, Wilmington, NC
Explosives Handling Wharf No. 2, Silverdale, WA
Bonner Bridge No. 11 Scour Protection, Dare County, NC

Western

ABFJV San Francisco/Oakland Bay Bridge, CA

Tampa

Platt Street Bridge Major Repairs, Tampa, FL
Courtney Campbell Design/Build Pedestrian Bridge, Tampa, FL
Tom's Harbor Channel Bridge Repair, Duck Key, FL
Golden Beach Bridge Replacement, Golden Beach, FL
Berth 12 Wharf Extension and Container Terminal, Palmetto, FL

Kansas City

Hurricane Deck Bridge, Camdenton, MO

New York

Walt Whitman Deck Replacement, Philadelphia, PA
George Washington Bridge Rehabilitation, New York City

Manufacturing (continued)

SAS Customer Change Orders, Oakland, CA:
85 Elevator Safety Enclosures
204 Stiffener Angle Retro-fit
189 Bike Path Rail Modifications
120 Restraint Brackets
245 Hinge K. Steel Ballast
223 Split Collar Modifications
241 Hinge K. Soffit Openings

NEW HIRES

Kelsey Gooding, Communications and Marketing Assistant, Headquarters, Coraopolis, PA
Gerard Kiely, Senior Engineer, Forth Replacement Crossing, Scotland
David Mondragon, Field Engineer, Golden Beach Bridge Replacement, Tampa District
Glen Stratmann, Crane Operator, Berth 12 Wharf Extension and Container Terminal, Tampa District
Miranda VanCuren, Payroll Specialist, Headquarters, Coraopolis, PA

GWB

GEORGE WASHINGTON BRIDGE

Without the allowance of permanent lane closures, the lack of working space and the complicated MPT, AB innovates to complete another successful job for the Port Authority of NY and NJ

The George Washington Bridge's (GWB) record of the longest suspension bridge was surpassed quickly after its 1931 dedication; however it remains the busiest bridge in the world, with over 285,000 vehicles crossing it daily. This iconic suspension bridge spans the Hudson River connecting the neighborhoods of Washington Heights, NY with Fort Lee, NJ (the location of AB's New York District office).



AB's current project on the GWB involves the removal of portions of the upper level (1931, lower level added in 1962) orthotropic deck along each side of the main floor beams, to be replaced with prefabricated, prepaved 6' (2m) wide orthotropic deck panels spanning over each main floor beam at 79 panel points. All of the tasks leading up to the completion of the deck replacement in the summer of 2015 must be performed in live traffic and with literally no work space.

project team

Project Manager Jonathon Hart
Project Engineer Josh Perry
Field Engineers:
Michael Comstock
Chad Ford
Bruce Phillips
Daniel Sheehan
Scott Swamback
Zach VanLemmeren

To solve the issue of space (or lack thereof) the team utilizes the AB-designed work platforms. With the company's history of distinctive work in NYC dating back to 1900 coupled with numerous, significant contracts in recent years, it's no mystery why these AB-Blue-Bloods are experts at working in these atypical conditions. As for the traffic, not only do over 3M vehicles cross this direct link to Manhattan annually, the bridge's 14 lanes (eight upper, six lower) are the vein connecting Interstate 95, U.S. Route 1/9 and U.S. Route 46. Therefore, permanent lane closures that are normal for this complexity of construction are not an option.

work platforms

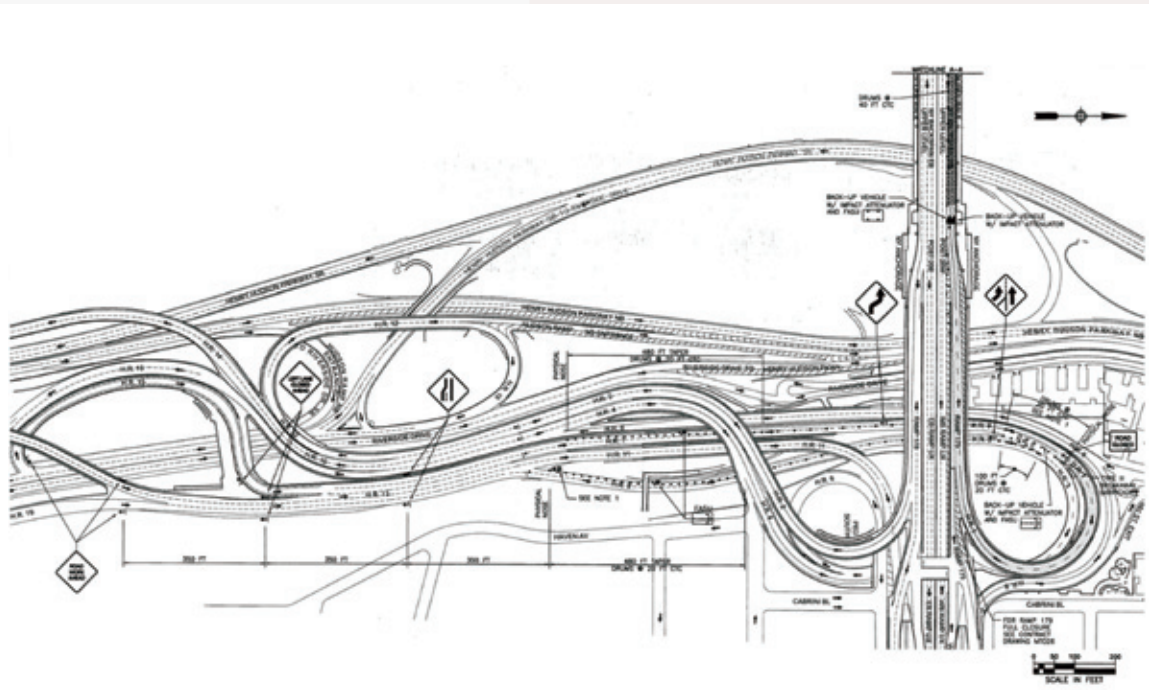
AB crews work day and night shifts, closing a limited amount of specific lanes to complete work in sections. Traffic management for these limited closures is complicated because as noted the bridge is a main artery to major U.S. highways. Therefore the elaborate and extensive roadway system detours can branch out further than one-half mile away from the project site. The night work occurs Monday through Thursday from 11 p.m. to 5 a.m. and Friday through Saturday 10 p.m. to 10 a.m. Moreover, since the entire process of replacing a section must be completed for the bridge to open for traffic the next morning, the AB team works in a high paced environment where the sequence of tasks must be scheduled to the minute. However, the first and last hour of the night work are solely dedicated to set-up and tear-down the detours including: temporary barriers and channelizing devices, signage, temporary pavement markings, and other typical devices to provide adequate protection for both workers and patrons.

The GWB remains the busiest bridge in the world, with over 285,000 vehicles crossing it daily.



MPT

Also involved is maintenance and protection of traffic (MPT), a critical part of all AB jobs as it is vital to maintaining a safe project. Each site has specially tailored traffic patterns depending on the conditions. The GWB is among the most complex considering the high volumes of traffic and with high usage comes routine maintenance. The bridge has been modified uniquely several different times and AB's contract includes the repair of corroded members, cracks and structural steel members at various locations along the bridge including replacing missing bolts and corroded rivets.

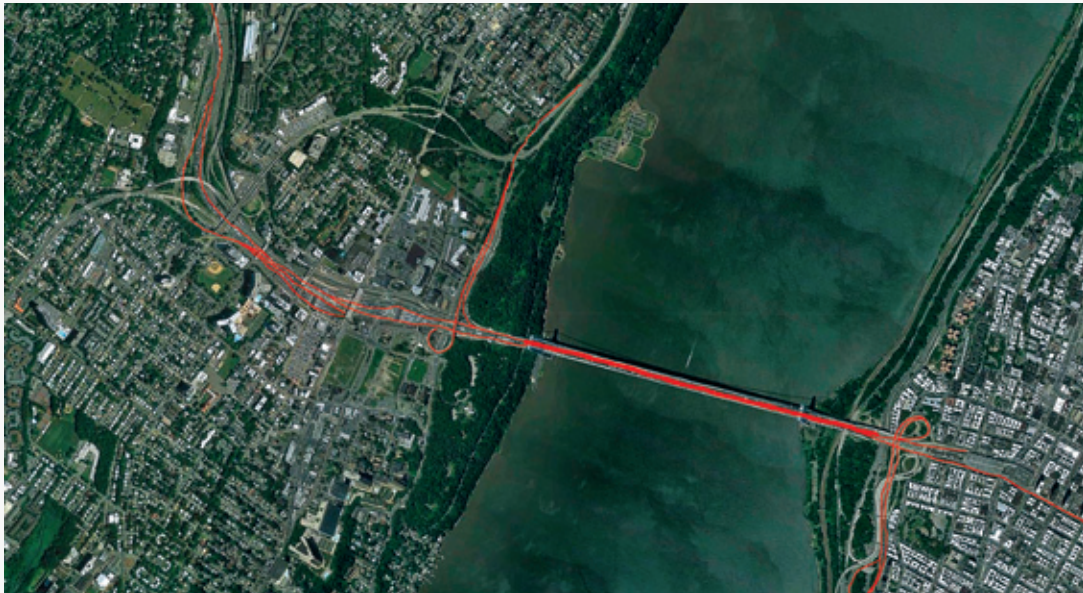


One of over 30 complicated and detailed drawings specifying approved closures which are dependent on numerous factors, especially New York City events and rush hour; the team spends at least two hours each night just for MPT; see aerial on next page



Night MPT; the AB team is closing off the lower level, New Jersey bound traffic (arrow on the right side of the photo) and traffic has been redirected to the upper level of the bridge

Aerial of MPT; there are over 30 drawings just to specify lane closure locations and times which extend more than one-half mile from the project site



shop drawing and field measurements

Maintaining 'good condition' on a structure of this age requires the Owner to consistently seek solutions in prolonging the life of this iconic NYC bridge; after numerous restoration projects the American Bridge team is handling many unique panel points. However having completed seven other GW contracts, AB is

Having completed seven other GWB contracts, AB is experienced with the bridge's distinguishing condition and this knowledge has proved quite an advantage.

experienced with the bridge's distinguishing condition. This knowledge has proved quite an advantage. Since the contract commenced in early 2011 AB engineers and choice detailers have worked scrupulously to provide detailed/accurate shop drawings and field measurements. AB accommodates the Owner's specifications while verifying field work to the contract drawings and completing the work as effectively and quickly as possible.

armor bars and curb angles

Armor bars are being installed at 79 joint locations on the bridge. To execute this process AB first removes the asphalt exposing the current deck. Next the exact armor bar location is pinpointed, which is predicated

to the existing structure. One hundred percent of the holes are drilled but only 50 percent are bolted-up, in anticipation of the deck section placement later in the contract.

To assist in better water drainage AB is modifying the existing curbs on the far left and right sides of the roadway by cutting away

existing asphalt and installing curb angles on the existing orthotropic deck. This section of the project is 95 percent complete.



Welding the newly installed curb angles on the existing deck using beam clamps (shown in the median) to change the elevation of the angle, as the back side of the angle is floating on air until it is welded

Wire-wheeling the deck to ensure the armor bar and splash zone adhere to the deck properly



One of the first steps in armor bar installation - setting, laying out and punching the hole locations; next, armor bar locations will be made using magnetic drills; then, bolts will be installed on the road deck, while workers underneath tighten them from the access platforms



Placing Rosphalt on westbound deck roadway in three lanes with a total of four lanes closed



Previously installed armor bar with temporary bolts; in this image 50 percent of the connection is made because the shelf angles that will connect to the new deck panel still need to be bolted to these armor bars that are not ready to be installed at this time; the gaps are excess asphalt that was removed to allow for the magnetic drills to fit in; temporary asphalt is installed to produce a smooth surface



Final product of the installed armor bar and an installed curb angle matching the same plane on the vertical legs of the armor bar and the curb angle; note that area of asphalt awaiting compaction corresponds to the deck that will be replaced



Using a crane to set the curb angles prior to welding, showing the operation in full with a 15-ton crane and a 50' trailer where the angles are trucked in before the shift and then installed directly from the deck and placed onto the roadway deck



peening



The project also includes ultrasonic impact peening (UIP) of welds to prolong the life of the existing orthotropic deck

to secondary floorbeam connection.

The existing welds are treated using a device that impacts the weld with short, needle-like pins at a high frequency (20-25kHz), which imparts a residual

compressive stress in the treated area of the weld, prolonging the fatigue life, and preventing cracking of the welds. The peening is performed along the entire length of the bridge, on the orthotropic deck ribs that see the highest traffic-related stresses and fatigue cycles. In total, there are over 11,000 welds to be cleaned, treated and inspected.

In total, there are over 11,000 welds to be cleaned, treated and inspected.



Peening gun similar to the one that will be used on the job which is light weight similar to a rivet-buster

Peening is a process that strengthens already welded materials.

The machine runs over the toes of the welds, compacting them, and therefore, making them stronger. These treatments are being done on the ribs of the bridge all the way across and over the heavy traffic lanes.

secondary floor beams

AB is installing almost 1,500 new secondary floorbeam sections using over 250,000 bolts to splice and connect them to the existing structure above and below.

Project Engineer Josh Perry explains, “When the floorbeam installation commenced in the spring of 2012, we started what we consider to be the ‘second phase’ of the job. This is the bulk of the work and the preparation for the orthotropic deck to be placed later in the contract.”

The floorbeams are raised between the stringers from the lower level of the bridge, just under the upper level roadway. The team works at night erecting the floorbeams through an AB-designed conveyor system (falsework with rollers). Twenty beams are installed at the same location, at each of 79 panel




Secondary floorbeam jacking system to raise the beam to make the connection to the existing deck

This is the bulk of the work and the preparation for the orthotropic deck to be placed later in the contract.

points. The AB team raises one beam after another using a trolley, continually dragging the beams in until all 20 are in place. There are two 100' lines of ten sections each. How the conveyor works – the new floorbeams are going between the existing floorbeams so each beam is raised to its final location, then a channel clamped to the two existing beams is used to span where the new beam will be placed. They are spaced every 6' to 8' creating a platform to land the new beam upon and drag it all the way across with a winch. Project Manager Jon Hart explains, “In summary, we raise a section, drag it, raise the next section from the same location and then drag it another 10' (about the length of the beam) and repeat this process until it is entirely erected as one beam.”

Aligning the beams to the existing bridge is done during the day from AB-designed platforms. The platform design was first utilized on an AB project with similar working conditions – South Grand Island Bridge near Buffalo, NY - where space was also limited and work completed in live traffic, yet the volume of traffic incomparable to the GWB. Nonetheless, the platform design is just one of many examples of how American Bridge continues a tradition dating back to its incorporation in 1900 of erecting custom equipment to increase efficiency and lower overall cost.

The temporary floorbeams are approximately 25 percent erected and will be 100 percent bolted before the next phase begins. When complete, AB will start on saw-cutting the old deck, removing it and then placing the new, pre-paved, orthotropic decking. 

HR/WELLNESS



Coming Months

As of July, we are at the half-way point for the 2012 Wellness Program and so far participation is the same as it was this time last year. We already had a few employees obtain 200 points and receive an extra vacation day. It cannot be stressed enough to get out there and participate. Many of the items to be completed are things you are doing anyway, such as preventative screenings, physicals, dental appointments and vision exams. All you have to do is take a wellness certificate with you, have it signed and turn it in to the Human Resources Department (HR) to receive points for the completed task.

Anyone who participated in the *10,000 Step Challenge* should be completing it very soon. Do not forget that you will not earn points unless you submit your log book.

A very important part of the program is the completion of the Wellness Profile found on the Highmark Blue Cross/Blue Shield website. If you need to know how to access the profile, please contact HR.

Here is what you can look forward to over the next months:

AUGUST – We will be doing another walking campaign, *Strides for Health*, which is designed to help you develop a regular commitment to walking for fitness. HR will send out correspondence and take enrollment for this program at the beginning of August.

SEPTEMBER – The focus will be CPR and first aid training. You can contact your local American Red Cross to find out about training classes near you. The easiest way to find your local Red Cross is to visit www.redcross.org and enter your zip code. If you do not have access to a computer, you can call 1-800-REDCROSS. American Bridge will reimburse you for the cost of the training up to a total of \$75.

OCTOBER – This is the beginning of the flu season and it is very important to stay healthy, which is why American Bridge will reimburse you if you receive a flu shot. To receive points you must turn your signed wellness certificate in to HR with a copy of the receipt for reimbursement.

Highmark Blue Cross/Blue Shield


As of May 25, Highmark implemented major improvements to the provider directory, one of the valuable online tools available on their member website. You can use this directory to find the right doctor or hospital when you need care. The directory lets you see important information on the providers you're considering so you can make informed choices and get the most from your health care plan. You can visit their site at www.highmarkbcbs.com for more information or contact HR. Among the enhancements are:

- An updated “look and feel”
- More information fields available about providers, such as web addresses, side-by-side comparisons of up to three physicians, ability to save favorite physicians, and physician photos, in addition to educational background, plans accepted, location and directions, parking, hours and languages spoken
- Plan-specific results - your search results will clearly indicate facilities and providers that are within your plan network
- A new star-based Patient Experience Review feature that lets you see how other people rate providers, and write reviews on your own experiences

Beneficiary Forms

It is important to ensure that your beneficiary information for life insurance and/or 401K is up-to-date. You can find both beneficiary forms on the American Bridge Access site under HR Forms or you can contact the HR Department to provide you with them. If you are unsure of your current beneficiary election, contact HR at 412-631-1000.

Reminder: Change of Dental Carrier

The Human Resources Department has received many calls regarding the new dental provider. As of January 1, 2012, the Company's provider has changed to Delta Dental. The new plan is very similar to the old one, but it has several more enhanced benefits. If you did not receive your cards, please contact HR. If you need to locate a providing dentist, go to www.deltadentalins.com. Please be sure to inform your dentist of the change in providers so they can submit to the correct plan. 

PROJECT UPDATE

American Bridge innovation wins Hurricane Deck Bridge project
Contribution by Scott Gammon, P.E., Vice President, Kansas City District

The Kansas City District has orchestrated an accelerated start to the Hurricane Deck Bridge in Camden County, Missouri. The 2,260' long bridge carries Missouri Route 5 over the Lake of the Ozarks near Sunrise Beach. The Missouri Department of Transportation (MoDOT) project replaces an aging cantilever deck truss bridge that was completed in 1936. The existing bridge has load restrictions and a deck width of only 28', rendering it both structurally deficient and functionally obsolete.

American Bridge Company was awarded the project in January 2012 after submitting a bid using MoDOT's Alternative Technical Concept (ATC) process. The ATC process allows contractors competing for a project to either submit a bid on a baseline design or on an approved confidential design alternative that modifies certain features of the baseline design. If an ATC design alternative is approved by MoDOT, the contractor is permitted to develop their alternate concept and submit a bid utilizing the confidential ATC. This mechanism incentivizes contractors to leverage their innovation by allowing submission of a lower cost proposal, and MoDOT reaps the benefit through a lower project price tag. If an ATC bid is ultimately successful, the design is completed in parallel with the construction effort, in a fashion similar to design-build procurement.

The baseline design concept for the Hurricane Deck Bridge was construction of a 463' span delta frame plate girder structure. The baseline design scheme constructed the delta frame superstructure on temporary foundations adjacent to the existing bridge. The baseline scheme utilized the new bridge on these temporary foundations as a detour route, allowing demolition of the existing bridge. After demolition, the new bridge was to be rolled onto the rehabilitated existing foundations for the final configuration. MoDOT's desire to pursue an on-alignment solution was a result of concerns with the purchase of additional real estate to accommodate a parallel alignment, and the potential cost savings associated with re-use of the existing foundations.

After a thorough analysis of the project, American Bridge elected to propose a bold ATC. AB's ATC not only modified the baseline design, but abandoned the concept entirely in favor of a more cost effective 265' span, parallel flange plate girder bridge. AB's ATC proposed to construct the new bridge on a permanent parallel alignment. Using this concept, AB was able to employ a fully integrated design and construction plan to eliminate the need for additional right of way. With an entirely new bridge, AB was



Wind chime reinforcing cage rigging

also able to fully optimize the design of every element of the structure from foundations to superstructure to provide a cost efficient design solution. In addition to delivery of a completely new bridge, AB's concept does not require any closures, thereby eliminating a 40 mile detour that was required during the roll-in process of the baseline design. The benefit of AB's innovative approach is demonstrated in the structural steel quantity required for the project.

MoDOT's baseline design employed over 8.5 million pounds of fabricated structural steel plate girders, whereas AB's ATC utilized just 4.3 million pounds, a savings of nearly 50 percent. When bids were opened, AB was the low bidder with a bid of \$32.3M, \$8.1M below the lowest bid on MoDOT's unmodified baseline design.

AB has employed a number of innovative construction engineering solutions to address these challenges, such as the development and design of a wind chime reinforcing cage installation method.



Project overview



Drilled shaft installation



Drilled shaft pour

A total of five bids were received by MoDOT, including two other ATC bids. This outcome supports the value and effectiveness of MoDOT's flexible ATC process.

All design packages are now complete with the exception of the earthwork-paving and roadway package which is anticipated in August. AB commenced mobilization to the site in mid-February, and the team is currently underway constructing foundations and substructure. The project presents a number of construction challenges as a result of the large drilled shafts (up to 9.5' in diameter) and the depth of the lake (up to 85'). AB has employed a number of innovative construction engineering solutions to address these challenges, such as the development and design of a wind chime reinforcing cage installation method. The wind chime approach, developed in collaboration with the reinforcing steel subcontractor, allows AB to install the large drilled shaft reinforcing cage full-length (up to 120' and 44 tons) without the need for a tailing crane and the complexities associated with righting a pre-tied cage of this size. Due to the ineffectiveness of spudded templates at the water depths and geotechnical conditions present at the project site, AB also designed a unique floating drilled shaft template system using sectional barges and modified AB F-2 falsework cages. Working with the drilling subcontractor, the project team is nearing the half-way mark of completion of the fourteen drilled shafts within the lake.

Through the hard work and innovation of the project team, the Hurricane Deck Bridge project is currently on budget and on schedule for completion by the contract completion date of May 1, 2014. 

AB project team:

Project Manager Lanny Miller, P.E.
General Superintendent Andy Kerr
Project Engineer Peter Balwant
Field Engineer Kevin Lynch
Carpenter Foreman Robert Yohn
Carpenter Foreman Scott Brother

Supporting office staff:

Estimating Manager Rick Zimmerman, performing project controls, Kansas City District Office
Safety Manager Jody Porterfield, Headquarters, Coraopolis, PA
Nick Greco, P.E., Carl Schwarz, P.E. and Win Patchell, P.E., AB Engineering Department

AB PUBLISHED

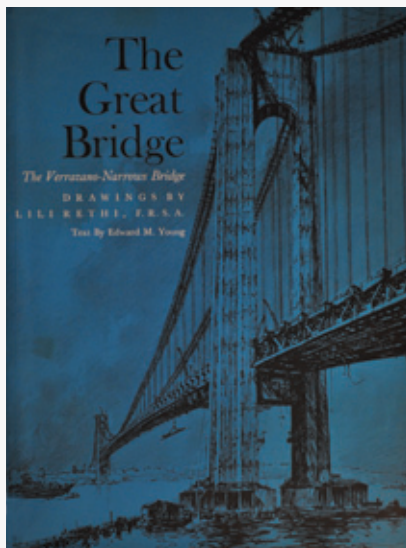
AB performs the most complex, dangerous and romantic phase of this iconic suspension bridge

Contribution by Frank Vespaziani, a proud American Bridge employee from 1965 to 1980

The Great Bridge takes a different look at the construction of the Verrazano-Narrows than any other book written about the bridge.

The author, Edward M. Young, was an associate editor of ENR and wrote many articles for the magazine concerning the Verrazano-Narrows Bridge during its construction. His story starts with a little history on bridge-building and the designers. He discusses the site selection, tower foundation caissons, tower fabrication/erection, cable spinning, deck truss off-site assembly/hoisting in place, and lastly the final placement of concrete on the roadway surface.

While his writing is loaded with detail, it won't overwhelm the true suspension bridge

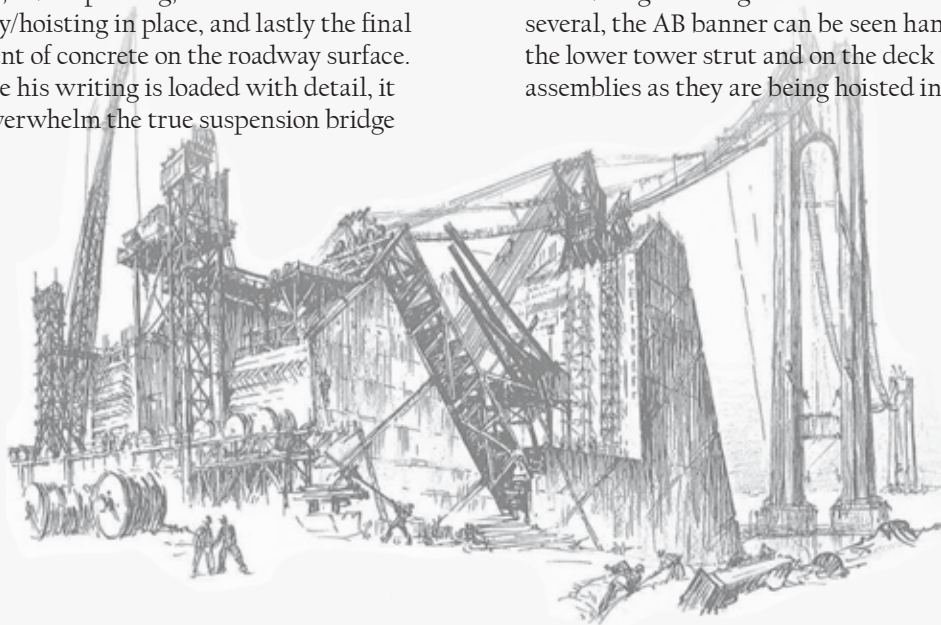


* Young, Edward M. *The Great Bridge: The Verrazano-Narrows Bridge*. Toronto: Ambassador Books, Ltd., 1965. Print.

enthusiast. Young also notes that this was one of the first American suspension bridges on which the deck truss assemblies were erected from the center on the main span back to the towers and from the anchorages to the towers.

Previously, the erection sequence went out from the towers in both directions. The writing is enhanced by more than forty-five finely detailed pencil sketches by Lili Rethi. These sketches start with the cofferdam construction of the Brooklyn

tower and end with a completed profile view of the bridge looking north to Manhattan. On several, the AB banner can be seen hanging off the lower tower strut and on the deck truss assemblies as they are being hoisted into place.



“One of the most complex, most dangerous, and most romantic phases of the construction of any suspension bridge is the spinning of the great cables that drape over the towers and stretch from anchorage to anchorage to carry the bridge superstructure. On the Verrazano-Narrows Bridge the cable spinning was particularly awe-inspiring; and at 56.9M dollars it was also the most expensive single job on the bridge.”*



Lifting attachments being connected to the last key unit; Brooklyn side, looking west, 1964




Cable band being lowered into position, Brooklyn Belt Parkway below, 1963



Four-hundred-ton center span roadway unit near Brooklyn tower, 1964

Other facts:

- TBTA (Triborough Bridge and Tunnel Authority) Chairman Robert Moses wanted to name the bridge, ‘The Staten Island Bridge’; however, to gain the support (or potential votes) of the Italian Historical Society of America and the large Brooklyn Bay Ridge Italian population, he agreed to name the bridge after the first person to sail through the Narrows in 1524 - Giovanni de Verrazano.
- Cable spinning started on March 4, 1963 and was completed 145,000 miles later on August 22 the same year.
- Deck truss hoisting began in late October, 1963 and was completed in March, 1964; the heaviest lift was 400 tons. 

FLASHBACKS

Impacting the nations infrastructure from the east to the west since 1900, AB built the first and largest retractable roof arena in the company's hometown of Pittsburgh

Civic Arena
Pittsburgh, Pennsylvania
AB Order No.: V-2477-82

51 years ago

When American Bridge completed Pittsburgh's Civic Arena in 1961 it was the first and largest structure with a retractable roof in the world, using over 3,000 tons of Pittsburgh steel and covering 170,000SF. The arena was equipped with a 409' diameter dome roof with six movable leaves and two fixed leaves which were supported by a cantilever space frame.



It was the home of many professional sports teams, most notably the Pittsburgh Penguins, and was the oldest arena in the NHL (National Hockey League) when it was closed down in 2010. After five decades of service the Civic Arena was demolished on March 31, 2012. Holding such nostalgic significance to the city and its residents, the Christmas ornaments made out of the retractable steel roof and sold during the demolition were quite a success.

Throughout its lifetime the arena was also used as a filming location for several major Hollywood films and many types of events: major concerts starring legends such as Elvis Presley, Michael Jackson and the Beatles, professional basketball games and WWF (World Wrestling Federation) shows.



CTA Orange Line 'El'
Chicago, Illinois
AB Order No.: C-806NB

23

AB Employees: Project Manager John Schober and Estimator Ed Jones

In 1989 the CTA (Chicago Transit Authority) Orange Line 'El' (elevated line) was built to provide train service on Chicago's southwest side to the Midway Airport. The project consisted of a new 28-span, two-track, precast concrete and steel elevated transit line, a 3,300' structure consisting of 14 spans of AASHTO beams and 14 spans of steel plate girder structures. About half of the steel plate girders were curved, and were erected in pairs with balance beams. Located between rail lines and commercial buildings, access for a typical crane was impossible, so American Bridge used one of the old AB locomotive cranes to set the precast beams. As one of the busiest rail transit systems in the U.S., the 'El' is an integral part to the Chicago city life; specifically, the Orange Line is one part of the 'El' that serves many points of interest including the Art Institute of Chicago, Chicago Cultural Center and Soldier Field, the home of the Chicago Bears.



14

Wheeling Bridge Rehabilitation

Wheeling, West Virginia

AB Order No.: 481210

AB Employees: Surveyor Peter Balwant, Project Manager Ronald Crockett, Superintendent Ugo DeCostello, Field Engineer Scott Tudor

The Wheeling Bridge was the longest bridge in the world when construction completed in 1849. This 1,010' suspension bridge crossing the Ohio River in West Virginia connects downtown Wheeling with Wheeling Island. In 1975, it became the first bridge to be designated as a U.S. National Historic Landmark. In 1998 American Bridge was awarded a restoration contract including the rehabilitation of the original bridge railing and replacement of the open steel grid deck with a 20,000SF new steel grid deck. The contract also involved the rewinding of each of the four 1,361' cables, a total of 5,444'.



73

Widening of Cross Bay Parkway Viaduct

New York City

AB Order No.: H-1693

AB Employees: Field Engineer F. Metzger and Superintendent/Foreman O. Schultz

In 1939 when the City of New York planned to transform the Jamaica Bay industrial area into residential properties, they contracted American Bridge to rebuild and widen the location's main artery. The Cross Bay Parkway Viaduct is a bascule bridge spanning the Jamaica Bay to connect the Rockaway Peninsula and Queens. The project focused on improvements to the existing viaduct and extensions to the steelwork on the railing. The steel was erected by a tractor crane and operated on the existing roadway. There were 70 spans, averaging 48' long, carried on concrete pile bents, with a total length of 3,300'. The structure also consisted of a new five foot wall and 33' roadway, making the entire structure 88' wide with six lanes for traffic. The bridge has since been replaced and renamed the Cross Bay Veterans Memorial Bridge.




86

Burnside Bridge

Portland, Oregon

AB Order No.: E-6859-63

It has been almost a century since AB was hired to replace the Burnside Bridge, spanning the Willamette River in Portland, OR. This double leaf Strauss bascule bridge has a main span of 257'. Its concrete deck is unusual for a moveable bridge and designates it as one of the heaviest bascule bridges in the U.S. Since the bridge was built in 1926, it has undergone many rehabilitations. In the mid-1990s the bridge became an official emergency transportation route and one of the six lanes was converted to a bike lane. In 2002, the bridge became the first operated by Multnomah County to receive earthquake protection updates. 



Connections
NEWSLETTER
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SAFETY

Roll-out of the new AB Safety Program

Meeting
locations and
instructors:

New York District
Safety and Health
Manager Jody Porterfield,
Operations Manager
Daniel Bell, Safety
Engineer Nathan Flowers
and Safety Manager Peter
Bereza

Tampa District
Safety and Health
Manager Jody Porterfield
and Operations Manager
Jack Chenneville
Headquarters,
Coraopolis, PA
Director of Safety
Henry Mykich, Senior
Estimator and Project
Manager Barry Bender
and Operations Manager
William Felker

Richmond District and
Virginia Beach Office
Operations Manager
Kenneth Farrelly and
Safety Manager Joseph
Corvello

Kansas City District
Safety and Health
Manager Jody Porterfield,
Vice President of KS City
District Scott Gammon
and Operations Manager
William Felker
Forth Replacement
Crossing, Scotland
Director of Safety Henry
Mykich

As promised in the winter 2012 edition of *AB Connections*, the roll-out of the new safety program is complete. The program isn't just another typical protocol document, rather the committee revamped its processes and verbiage to address training requirements, field observations, root cause analysis, and craft feedback; and made sure the initial presentation was personal and included all project management personnel through meetings at the project sites or the district offices to introduce the new initiatives.

Safety and Health Manager Jody Porterfield, explains, "We didn't just rewrite the program, distribute it through a mass email, and then expect each employee to comply. Members of the committee, whether a district vice president or a manager, showed support by presenting the new plan at each project site and district office. Safety affects the entire company, and at AB we believe it is



AB employees signing pledge banner

most effective to involve everyone in the roll-out."

Since late spring of 2011 the committee has met regularly to discuss improvements that would benefit AB. Part of the plan was to craft the program for those who use it daily to make it as effective as possible, while exceeding

industry standards. Already having an excellent culture for safety at American Bridge, field personnel participation was high when asked for suggestions for the program. Porterfield explains, "We wanted involvement from the field to be part of the process, since they will be the ones instituting and enforcing the policies." With contribution from the field, the committee's passion to improve safety and CEO Mike Flowers' consistent involvement and support American Bridge is confident that these changes will enable the company to meet the goal of a zero incident workplace. 

Working together to protect the health, safety and welfare of each other through the achievement of a zero incident workplace.

 **Bridge to SAFETY excellence**