THIS ISSUE

- Houston, TX US-290 Corridor
- Volkert's Wharf Solution for the Port of New Orleans
- Tennessee River Bridge Project
- Florida's Turnpike "All-Electronic" Tolling
- I-495 Capitol Beltway Design-Build Project
- Field Notes
Greetings,

Spring is the time for new beginnings and Volkert is already off to a great start in 2016, forming new partnerships and reacquainting ourselves with old friends. Our firm’s practice in Texas has matured quickly with the acquisition the construction engineering and inspection (CEI) division of Rodriguez Transportation Group. In addition to assuming the management of several ongoing contracts, Volkert has now been selected twice by TxDOT as a prime CEI provider and numerous times as a subconsultant. You can read about our CEI work on US 290, a major Houston-area corridor, on page 3.

We’ve also begun a new partnership with Florida’s Turnpike Enterprise (FTE), helping FDOT’s turnpike division convert its tolling operations to cashless, all electronic systems for convenience and mobility (page 6). Bo Sanchez, the new Senior Vice President for Volkert’s Florida Region, has a great relationship with FTE and we are excited about the opportunity to build upon that.

In Georgia, Volkert is reestablishing itself in a state where we enjoyed a great deal of success in the past. Ben Rabun (page 8), former lead Bridge and Structures Engineer for GDOT, is leading our efforts there and has already been selected as a subconsultant to provide bridge design services.

Volkert’s port practice is also experiencing a revival in the place that it began. Our firm’s very beginnings came along the waterfront at the Port of New Orleans in the 1920s. Today, we continue to serve the Port (page 4), one of the most important focal points of global trade.

Finally, I’d like to thank these and all of our clients and partners for the opportunities to help develop such vital infrastructure projects and to wish you all a happy spring and a great 2016.

Sincerely,

Perry A. Hand, PE, PLS
The city of Houston has experienced considerable growth in recent years and is now the fourth largest metropolitan area in the United States. In addition, the city’s US 290 Corridor has felt the impact of that growth which is expected to continue at approximately 72 percent between the years 2010 and 2040. With the current corridor population at 698,000 and a projected 2040 population of 1.1 million, the corridor is facing serious transportation issues.

The corridor is approximately 38 miles long, extending from the interchange area of I-10/I-610/US 290 northwest to near the Harris/Waller County line.

Volkert is providing Engineer Led Inspection Teams to manage construction on the US 290 Corridor for the Texas Department of Transportation, Houston District. The team is providing structure inspections for bridges and bridge class culverts, which includes foundations, substructure and superstructure; concrete paving inspections from the subgrade up to the pavement; and hot mix asphalt paving inspection from the subgrade up to the pavement.

“Volkert has been involved through the acquisition of RTG in June 2015,” said principal in charge Robert Siegfried. “Our team has been involved with the US 290 project since 2012, and we anticipate construction on the project to be completed by the end of 2018. As construction progresses, TxDOT will open some portions before 2018.”

TxDOT is proposing a design for the initial US 290 construction phase which includes one additional general purpose lane in each direction from I-610 to SH 6, with a one-lane reversible High Occupancy Vehicle lane in the center of US 290 from I-610 to SH 99 (Grand Parkway).

“During the current construction, the HOV lane between Beltway 8 and I-610 was narrowed and shifted to allow the contractors to set up safe work zones on the original outbound US 290 mainlane pavement for construction of the new outbound US 290 mainlane bridges,” Siegfried said. “Once construction is completed, the new reversible HOV lane will have shoulders and be wide enough for a vehicle to safely pass a stalled vehicle in the lane. The US 290 configuration does not impact the ongoing construction as it will be constructed within the right of way that has been environmentally cleared.”

Siegfried said that carpoolers and buses will benefit from an extension of the existing reversible lane to the Grand Parkway. Access to the reversible facility will be from direct connection ramps from the Northwest Transit Center, West Little York Park and Ride, Northwest Station Park and Ride and slip ramps to serve the Skinner Park and Ride. He said that TxDOT is currently working with the Metropolitan Transit Authority of Harris County (METRO) to identify other potential transit-related improvements to US 290.

The proposed improvements are part of TxDOT’s long-range vision for the US 290 corridor, which also includes construction of the Hempstead Tollway from I-610 to SH 99 (Grand Parkway) with two lanes in each direction, and a 50-foot reserve for future high-capacity transit.

Volkert team members include: Siegfried, PIC; James Kelley, project manager; Billy Jacobs, Jr., inspector II; Frederick Lerma, structural inspector; Henry Norris, inspector II; Gideon Anyanwu, inspector II; Paul Remlinger, structural inspector; James Villagomez, inspector II; Sean Moody, inspector III; Doug Blaine, inspector III; Daniel Garcia, structural inspector.
Improving Infrastructure at the Port of New Orleans

When the Port of New Orleans finalized a lease allowing Boh Bros. Construction to build a new $8.8 million asphalt plant at its France Road Terminal, there was just one problem: the existing wharf was needed for the transport of equipment, and stockpile was unusable due to its substructure.

To remedy the situation, the Port and Boh Bros. turned to Volkert for site assessment, design, and construction inspection services.

The site assessment consisted of a visual inspection and a repair type classification of 636 foundation piles located below 725 feet of Berth No. 4 wharf structure, 19 foundation piles located below the south ramp, and 30 piles below the north ramp.

The assessment also included a visual inspection of the existing mooring bits and fendering system. A dive inspection of the piles below the water line was not necessary since Volkert had performed this task for the port previously.

Design services consisted of the development of construction plans and specifications to facilitate the rehabilitation efforts. Volkert provided a design which included HDPE jackets. The existing bituminous wraps contained asbestos and were to be removed. However, during the startup of the project, it became apparent that removal of the below-water wraps was an issue. The plan was modified to implement an economical design that filled the pilings with concrete from above.

Volkert’s structural staff provided a detailed model of the wharf to ensure the proposed solution would carry the loads the contractor anticipated to place on the wharf. The HDPE jackets, which were pre-ordered before the change of plan, were utilized to cover the void in the steel piling and contain the concrete that was pumped in.

The plan was an environmentally friendly solution because the asbestos wraps were not removed, and it provided a cost savings to both the contractor and the port with an accelerated project completion schedule. The plan also served as an economical solution for use on other wharfs exhibiting the same issues.
Building a New Bridge at an Old Crossing over the Tennessee River

In November 2014, 90-year-old Madge Boggild led a procession of dignitaries across the new US 41 bridge over the Tennessee River at Haletown, Tennessee, as part of the official opening of the new structure. Boggild’s drive came 85 years after she and her family were the first to drive across the original 1929 truss bridge which had been closed in January 2012.

Volkert’s Chattanooga office provided Construction Engineering and Inspection services for the Tennessee Department of Transportation bridge replacement, roadway upgrades, and re-alignment. Project manager Andrew Horstman said building the new one-mile-long bridge, which features two 12-foot lanes and full 10-foot shoulders, presented several distinct challenges.

"Unforeseen geotechnical issues with rock beneath the river at the site of the new bridge pier foundations resulted in significant design and construction changes," he said. "We had substantial involvement coordinating with geotechnical experts due to the concerns.

"Design changes increased the scope of the CEI staff’s erosion protection and sediment control, as well as environmental inspection and coordination of the contractor’s operations due to material considerations."

Horstman said the design changes added more than a year of additional work to the project and forced the closure of the existing bridge, which was just 20 feet from the new structure and was originally scheduled to remain open until completion of the new bridge.

Other challenges included the installation of a long steel girder which spans over the main channel of the river, as well as the foundation and pier construction in water depths exceeding 80 feet.

Volkert provided project management and administration services, all aspects of construction inspection, materials testing, project documentation, utility coordination, erosion control and permit compliance, and traffic control inspection and documentation.

Demolition of the original bridge was recently completed.
Florida's Turnpike Enterprise Goes "All-Electronic"

With nearly two million motorists per day, Florida's Turnpike Enterprise is continually striving for more efficient methods to collect tolls and improve customer service. In 2011, the southern 47 miles of the turnpike were converted to "All-Electronic, No-Cash" tolling where drivers use a SunPass transponder or are billed via Toll-By-Plate.

Under its Continuing AET Services agreement, Volkert has been chosen to advance cashless tolling in other areas of the turnpike, continuing the work they began in the design and construction of the original Turnpike Mainline.

Many of the original toll plazas were designed by Volkert in the early 2000s, when the FTE made the decision to rapidly convert numerous toll plaza lanes to SunPass tolling. Volkert was one of three firms chosen to prepare the conversion plans.

Through the current agreement, Volkert will evaluate, analyze, design, and prepare a complete set of construction plans and special provisions to modify toll plazas in order to accommodate All Electronic Tolling movements and equipment.

In addition, the contract includes the evaluation of existing infrastructure, analysis of AET implementation options, as well as upstream and downstream impacts related to accommodating the General Tolling Requirements and the Turnpike Plans Preparation and Practices Handbook criteria.

"We understand the need to advance cashless tolling," said Volkert senior vice president Bo Sanchez. "We also understand the need to address the cash-toll equipment maintenance issues, the operational challenges related to matching video transactions, and the development of a clear plan for system/limit conversions. All of these factors will be considered while addressing the roadway and civil/site impacts at each location."

In order to complete the AET conversion, Volkert will rely on its Mobile LiDar System to provide a fast and economical method to collect existing site conditions, while accommodating additional concept and design phases without making multiple site visits.

The second step will consist of the analysis of conversion options, followed by conceptual engineering and preliminary design.

"Volkert's depth of experienced and quality staff assigned to this project know and understand continuing services task work order assignments, much like program management assignments, and these types of assignments require proactive project management and continuous coordination," Sanchez said. “The complexity of the anticipated assignments will require proactive and frequent coordination with the assigned FTE project manager, design staff, tolls staff, and others. It is our experience and willingness to work as a true extension of FTE's staff that will contribute to the success of the project and meet all of the client's project goals."
A major source of gridlock in our nation’s capital, the I-495 Capitol Beltway hosts between 93,000 and 113,000 vehicles per day and faced significant congestion, accidents and motorist delays.

Particularly troubling was a 1.5-mile stretch between several key traffic arteries which is also the departure point from Virginia across the American Legion Bridge over the Potomac River into Maryland.

Volkert’s Mid-Atlantic division served as the lead designer on a recent Virginia Department of Transportation project on the Fort Myer Construction Design Build Team, providing civil and traffic engineering, as well as Quality Assurance Management services during both the design and construction phases. The Design-Build project converted the inside shoulder of the northbound general purpose lanes to a travel lane between Old Dominion Drive and George Washington Memorial Parkway.

Civil design improvements included cross-slope correction to meet the 70 mph design speed, static signage, pavement markings, as well as mill and overlay. The design also included pavement joint repairs, pier protection upgrades at overpasses, median barrier modifications for increased safety, and drainage upgrades.

Traffic engineering staff developed the most stringent Type C, Category V Traffic Management Plan to maintain traffic on all lanes during the three phases of construction, as well as provide for Maintenance of Traffic.

Additional design elements included the development of Intelligent Transportation System (ITS) architecture to connect with existing VDOT infrastructure and communicate with the client’s Transportation Management Center (TMC). This included overhead signals with variable lane control indicators: green “open” arrows, amber “merge” arrows, and red “closed” Xs to direct motorists. CCTV cameras were installed to monitor the shoulder lane, along with several pan-tilt cameras that monitor the entire highway section, looking for obstructions and incidents that allow the TMC dispatch responders to be alerted. Likewise, dynamic messages signs have been installed to alert motorists of any traffic incidents or delays.

The Quality Assurance Management team faced several challenges including the increasing of the super elevation up to one foot across five lanes, often one lane at a time due to nighttime work restrictions. Interfacing new technology with old was also a concern. The CCTV cameras required the installation of fiber optic cabling back to VDOT’s TMC in Fairfax in order to supply the desired real-time communication.

Other key challenges included fitting the shoulder use lane within the existing right-of-way. This was achieved by reducing the width of the general purpose lanes and reconstructing the outside shoulder to full-depth pavement and using part of the right shoulder as part of the outermost travel lane.

During construction, Volkert’s CEI department provided 24-hour service with most lane closures occurring at night.

The $20 million project, constructed by Fort Myer Construction, began in June 2014 and was completed in the summer of 2015.

Keith Weakley, PE, DBIA, served as design manager. Other team members included Michael Glickman, PE, PTOE, as lead traffic engineer; Rohit Ajmera, PE (MOT); Rakesh Nune, PE (ITS); Hari Thaker, PE (ITS); Jennifer Neary, EIT (MOT); Manuel Richardson, PE, PTOE, sign & paving marking; Perry Oates, PE, civil engineer; Jason Pisani, PE, civil engineer; Julie Pike, PE, hydraulic engineer; and Ben Lineberry, PE, quality assurance manager.
Ben Rabun, PE
Mr. Rabun joined Volkert in 2015 in the Atlanta office with over 25 years of experience with GDOT as Bridge Inspection Engineer, Bridge Maintenance Engineer and Bridge and Structures Engineer. Mr. Rabun was responsible for the policies and procedures related to design, inspection and load-rating, and the inspection and QC/QA for over 14,600 structures within the state.

Danny Garcia, PE
Danny Garcia came to Volkert on June 1, 2015, through the acquisition of Rodriguez Transportation Group. He is a leader of our Texas team for staff development, project records, QC/QA, and overall CEI business development. Mr. Garcia is also a County Commissioner in Victoria County, TX.

Greg Dutton, PE
Greg Dutton, PE, joins Volkert Corporation as a Vice President and Florida Region CEI Leader based in our Maitland office. With over 23 years of construction experience, Greg adds a vast knowledge of construction, engineering, and inspection management, construction scheduling, claim avoidance and analysis, constructability plan reviews, and utility coordination to Volkert’s current CEI team, which will be invaluable to the growth of the company in the coming years.

James Kelley, PE
James Kelley, PE, is a CEI Manager for the central Texas area who joined Volkert as part of the RTG acquisition. James is a retired TxDOT Area Engineer and brings more than 30 years of construction oversight experience to the Volkert Texas team. James is a licensed PE in the State of Texas and in addition to serving as a PM, he leads many marketing efforts for the Texas CEI Silo.

John Smith, PE, PMP
John R. Smith, PE, has rejoined Volkert as the Manager of the Alabama Design Group, Gulf Design Region. John began his engineering career in Volkert’s Birmingham office in 1997 where he served as a Project Manager. In 2004, he was hired by Barge Waggoner Sumner and Cannon to help create the Civil/Water Services Group in Alabama, he was then promoted to Vice President and the Birmingham Office Manager in 2011 where he worked with clients throughout Alabama.

Jennifer Brandenburg, PE
Volkert’s Raleigh, NC, office welcomes new managing engineer Jennifer Brandenburg, PE. Ms. Brandenburg retired in 2015 after 29 years with NCDOT, where she held various positions, starting as an engineer-in-training and eventually becoming State Asset Manager. She holds a bachelor’s degree in civil engineering from North Carolina State University.

Clark Bailey, PE
Clark Bailey, PE, has joined Volkert to lead the Gulf Design Region’s Traffic service line. He has over eight years of traffic engineering and planning experience. He has extensive experience with arterial improvement projects including innovative intersection projects, access management studies, developing and implementing coordinated signal timings, and experience with adaptive signal systems. In addition, Mr. Bailey had been involved in numerous traffic impact, parking, transit and pedestrian studies.

Gerald Bolden, PE
Gerald Bolden, PE, PTOE, recently joined Volkert’s Nashville, TN office as the Transportation Design Manager for Tennessee. Mr. Bolden has 19 years of transportation experience including traffic signal design, traffic signal timing optimization, road safety audits (RSA), ITS planning and design, geometric design, interstate system access (i.e. interchange justification/modification reports), and CEI for traffic and ITS.