BOH BROS. CONSTRUCTION CO., L.L.C. SINCE 1909

BOH PICTURE

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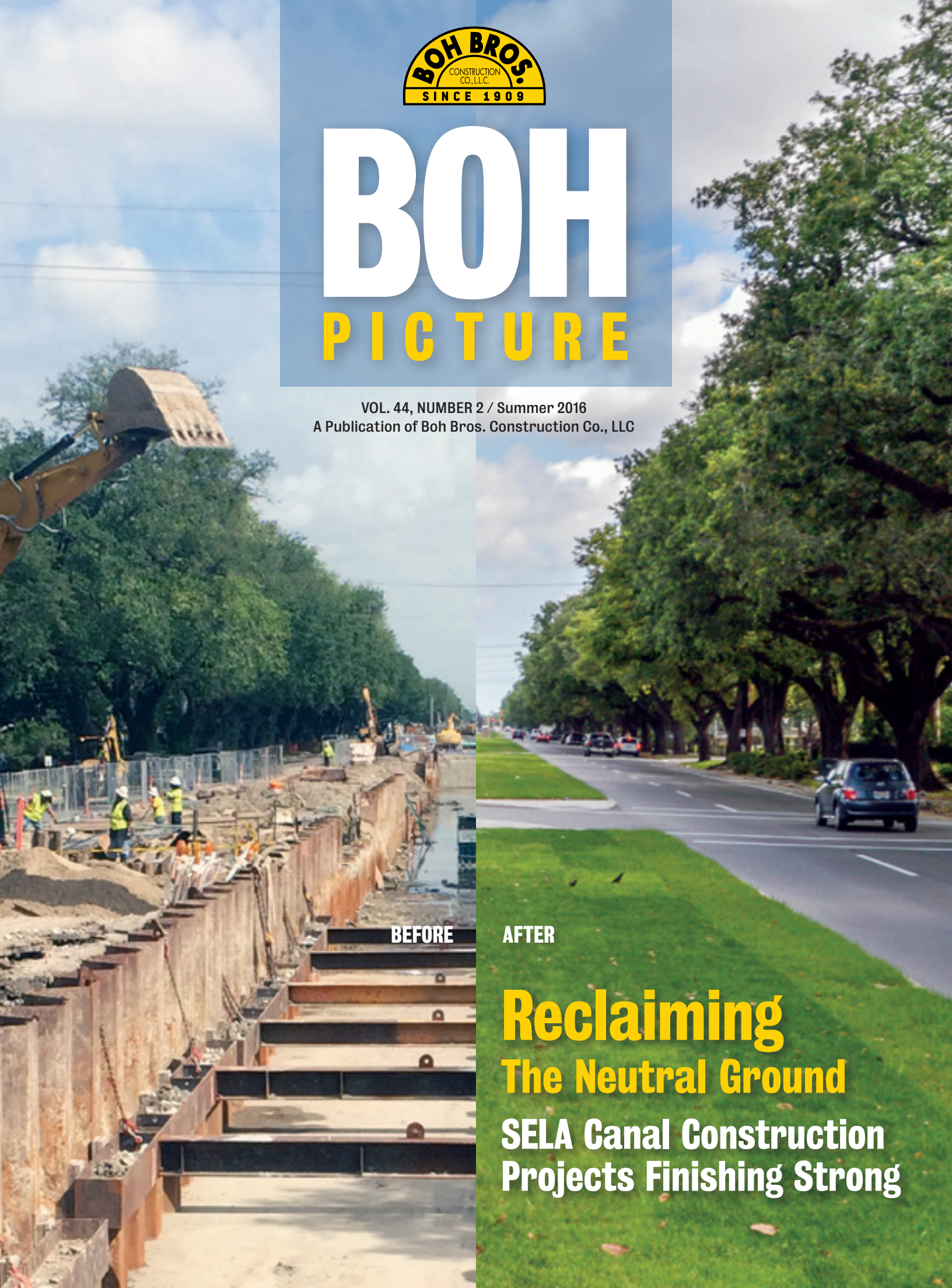

Reclaiming The Neutral Ground

SELA Canal Construction Projects Finishing Strong

BOH PICTURE
Summer 2016

President
Robert S. Boh

On the cover:
Before and after of the recently completed Napoleon Avenue Phase II project.

The BOH Picture is published for employees and friends of Boh Bros. Construction Co., LLC

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Several years ago I attended a business program hosted by an international hospitality company. In the course of the meeting, the company shared that 90% of the comments received on customer satisfaction surveys had to do with how guests felt they had been treated by the company's employees. As a result of studying the data, the company concluded that 10 positive guest interactions with a company employee were offset by one negative experience. The company placed great emphasis on how its leaders engaged and developed its entire team, knowing that customer satisfaction is the key to financial results and repeat business.

I recalled this experience while previewing the articles in this edition of the Boh Picture which describe our work on the SELA projects in New Orleans. These are difficult and complex projects in tight residential neighborhood surroundings, and the very nature of the tasks we must perform to complete the work is often disruptive. Closing traffic lanes for deliveries and equipment storage, turning off the water to make tie-ins of new lines, and installing jet grout foundations are just a few of the inconveniences for those along the route of these projects. It takes careful planning and a commitment from everyone working on the job to be successful while minimizing the impact to the public.

Some companies buy billboard space to advertise their services. We often say that our billboards are our projects located in neighborhoods throughout our community. The orderliness and housekeeping on our jobsites, the condition of our heavy equipment, and most importantly the way our people conduct themselves all convey much more about our company than could be accomplished with any paid advertising. We need to be mindful of how we treat our ultimate customers, the residents and traveling public, who see us in action every day.

Robert S. Boh, President

> "We often say that our billboards are our projects located in neighborhoods throughout our community."

SELA RESURGENCE

Boh Plays Vital Role in Propelling Critical Drainage Program Forward

In the early days of the Southeast Louisiana Urban Flood Control Project (SELA), federal funding was painfully slow in coming.

Authorized under a cooperative agreement between the Sewerage & Water Board of New Orleans and the U.S. Army Corps of Engineers in 1996, SELA was considered a low priority by many at the federal level, and by the early 2000s funding had virtually dried up.

This view of SELA inalterably changed in the aftermath of Hurricane Katrina, when the federal government—through tragic circumstances—recognized the interior drainage system of New Orleans and the surrounding parishes, with its innumerable canals and pump stations, as an integral part of the area's hurricane and storm protection system.

Subsequently, Congress appropriated $224.8 million in 2006 to accelerate the completion of SELA, with an additional $1.3 billion coming in 2008, shared at 65 percent federal/35 percent local. Once the trickle of funding turned into a steady flow, it didn't take long for projects to mobilize as many of the designs had been completed 10 to 15 years previously.

Ultimately, SELA seeks to reduce the risk of flood damage from heavy rain events through various projects interspersed throughout Orleans and Jefferson parishes. The improvements outlined in the program generally support the parishes' master drainage plans and provide flood risk reduction for up to a 10-year rainfall event—a storm that has a 10% annual probability of occurrence and equals 9 inches of rain over a 24-hour period.

Completion of the entirety of the SELA work in Orleans Parish is expected by 2020.

As a New Orleans mainstay, Boh Bros. has been working on SELA projects since the program's inception in the 1990s. Its portfolio of completed projects crisscross the area, and includes some of the earliest work to be funded.

Today, Boh continues to play a vital role in the program, currently working high-profile projects along Napoleon Avenue (Phases II and III), Louisiana Avenue, and Florida Avenue (Phases II and III). Each project has unique features, but the thread running through all three corridors is the construction of a canal which will more efficiently divert water off of neighboring streets.

On Napoleon Avenue Phases II and III, "there's an existing box culvert that runs in the northbound inside travel lane," said Director of Project Management Kevin Stolzenthaler. "We're building a larger box in the median to supplement the existing system, which will more than double existing drainage."

Napoleon Avenue's $56 million Phase II runs from Claiborne Avenue to Carondelet Street and requires construction of a box culvert transitioning from 28 to 18 feet wide by 10 feet tall. Phase III, costing $38 million, spans Carondelet Street to Constance Street, and consists of a box culvert transitioning from 18 feet wide by 10 feet tall down to 14 feet wide by 8 feet tall.

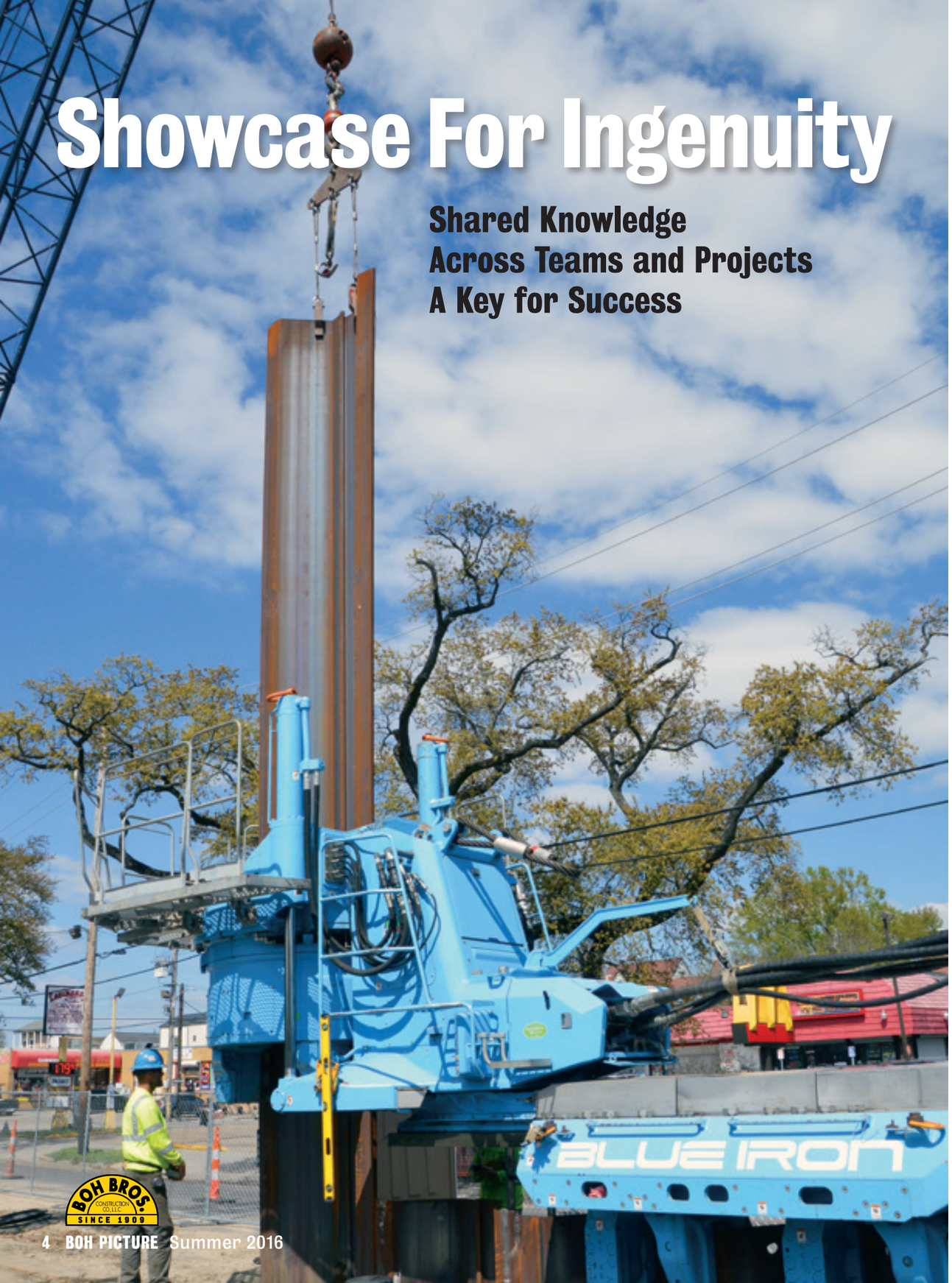
The Louisiana Avenue project at $83 million, stretching from Constance Street to South Claiborne Avenue, requires construction of a concrete box culvert in the neutral ground that gradually increases in size until it ultimately ties into the South Claiborne Avenue Manifold Canal. Similar to Napoleon Avenue, this culvert will provide the neighborhood with a new and improved route for storm water flow.

Lastly, the $119 million Florida Avenue project, a combination of two phases into a single contract, requires that Boh widen the open canal from St. Ferdinand to Piety streets (Phase III) and from Piety to Mazant streets (Phase II) as it journeys toward Pump Station 19. Once complete, the reinforced concrete canal will have a 43.5-foot-wide open flume. Additional drainage modifications are being made on Montegut St. and Desire St. in the neighborhoods to the south side of Florida Avenue to aid in getting flow to the canal.

Construction on Napoleon will finish later this year, with Louisiana and Florida aiming to be completed by the end of 2018.

Showcase For Ingenuity

Shared Knowledge Across Teams and Projects A Key for Success



Box culvert construction in the median of Napoleon Avenue has become a proving ground of sorts for Boh Bros., enabling the contractor to showcase its resourcefulness in the midst of ever-changing soil conditions, altered specifications and unexpected delays.

To support the construction of the box, Boh pile drivers installed 9,000 wall feet of sheeting for the Temporary Retaining Structure (TRS), along with 304,590 feet of pre-drilled timber piles for Napoleon II. The "pressed in method" for sheet pile installation is being used to construct the TRS on all current SELA work, thereby minimizing the impact to the surrounding environment.

"The hydraulic equipment creates significantly less vibration," Boh's chief engineer Neil Hickok said. "It just walks along the top, presses in a pile, walks forward, then presses the next one. Essentially, it travels on the sheeting that's already driven." The use of the pressed-in sheeting has become commonplace on many SELA jobs, although it can be more expensive and potentially slower than other methods.

Despite the benefits of the press in method, alterations to the TRS were needed in various locations along projects to accommodate site specific conditions. For example, Boh was forced to make significant changes to the design of the TRS at Napoleon II—during construction—to accommodate new Corps specifications aimed at reducing settlement.

"The Corps said the wales and struts could only have 3 feet freestanding down from existing grade, and required us to raise our upper brace, which was already installed, to comply," said project manager Vincent Saladino. "Subsequently, we had to redesign it, submit it to the Corps and go through the entire approval process again. Then, we had to fabricate all of the braces that we were going to need that weren't in the original scope of the project."

> "The hydraulic equipment creates significantly less vibration. It just walks along the top, presses in the pile, walks forward, then presses the next one."
>
> **Neil Hickok**
> *Boh's Chief Engineer*

After working through the necessary changes to the TRS system, construction of the box culvert could begin. While the Napoleon II project was supported by traditional timber piling, the Napoleon III job utilized a jet-grouted, soilcrete foundation that was constructed for the box culvert.

The jet-grouted base will help reduce water seepage or uplift, which is especially important as the culvert approaches the Mississippi River. "The sand layers come up and you're susceptible to very pervious layers that are connected to the river," Stolzenthaler said. "Subsequently, if you have high river levels, you'll have high pressures in the sand. If you find yourself working in that, you're going to have up-flow of water and, sometimes, materials."

During the jet grouting process, Boh's subcontractor utilizes a specialized drill to erode the soil, then replaced it with grout. "They perform that operation from the surface, and basically inject grout in a certain diameter," Stolzenthaler commented. A geometry of overlapping circles, ranging from 11 to 15 feet in diameter and extending more than 20 feet below the box culvert, eventually provides the foundation. More than 600 grout columns were ultimately constructed for Napoleon III.

Commenting on Louisiana Avenue's jet-grouted, soilcrete-supported box culvert foundation, Hickok said, "The jet grouting acts as a plug so we don't have to draw down the water to stabilize the

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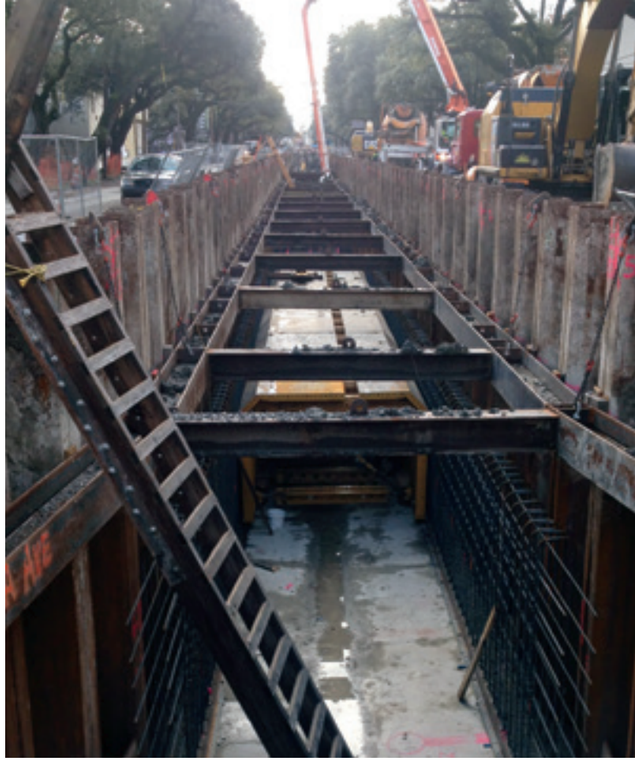


excavation site," he added. "Therefore, we don't have to put in wells to suck down the water." Throughout the jet grouting application on Louisiana Avenue, the project team utilized certain lessons learned from the nearby Napoleon Avenue III project—such as the handling of spoils and certain process efficiencies.

Complementing these innovative efforts was Boh's newly expanded Almonaster fabrication facility, which played a critical role in helping the Napoleon and Louisiana crews meet a stringent three-month window in summer 2015 for crossing the St. Charles Avenue streetcar tracks. "They gave us a 90-day window to take the streetcar out, build the box culvert, re-pave, put the streetcar tracks back in and open it back up," Boh project manager Cameron Johnson said. "We had to work Saturdays, Sundays and late hours to get it done."

Critical to completing the work at St. Charles was an innovative pre-fabricated brace system, designed by Boh for use on SELA work. "In the past, we would field cut and field weld everything, full penetration," he said. "It would take forever and require a lot of manpower. With our increased fabrication capacity, we were able to design a connection that was entirely prefabricated."

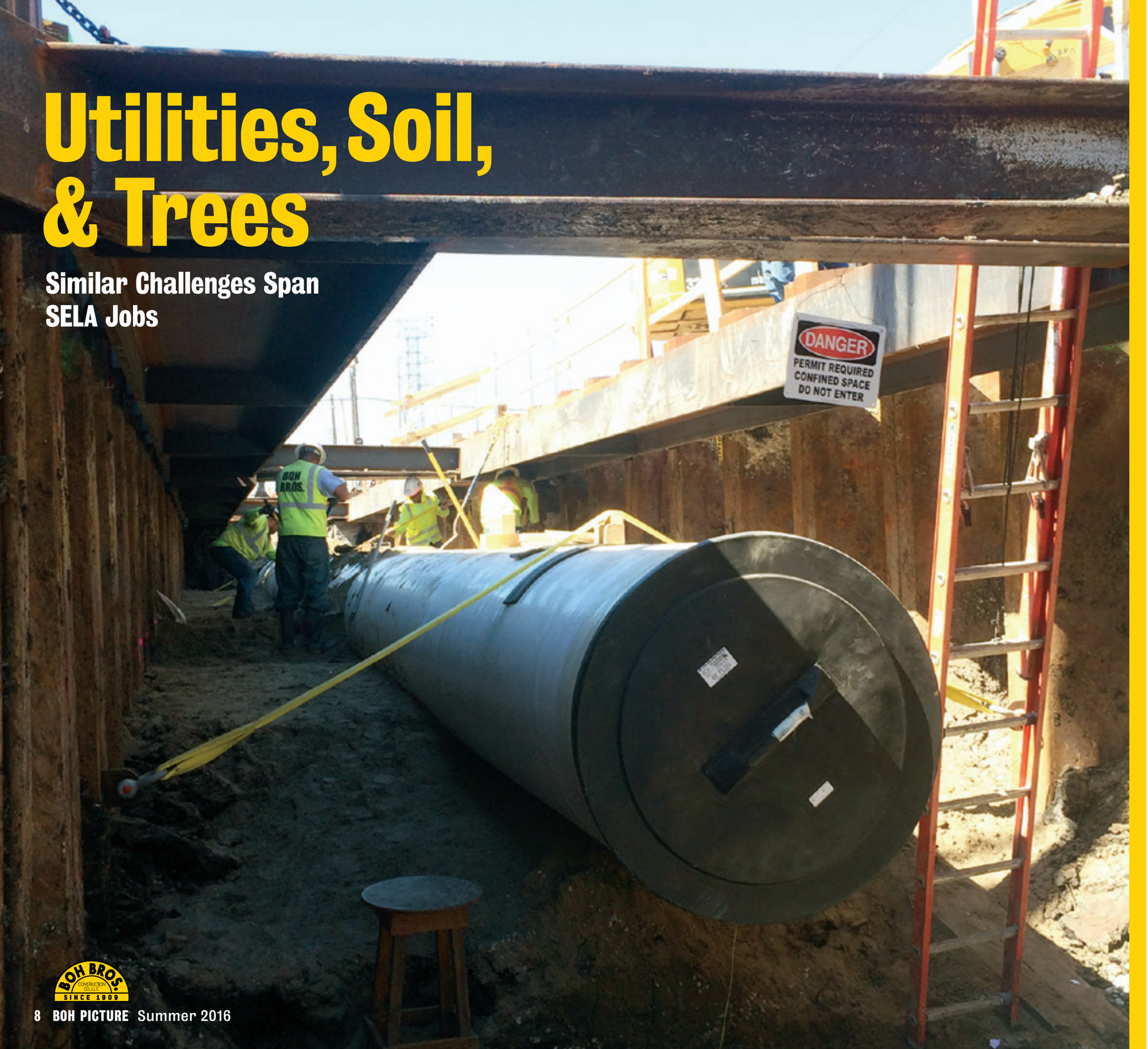
"They gave us a 90-day window to take the streetcar out, build the box culvert, re-pave, put the streetcar tracks back in and open it back up."

Cameron Johnson, *Boh project manager*

The process reduced installation time from days to mere hours, with the assistance of the Almonaster yard. An AISC (American Institute of Steel Construction) certified fabricator, Boh has developed an internal procedure for the design and fabrication of materials for the field. "At the yard, we have two dedicated engineers, a dedicated detailer, and a dedicated welding foreman," said Hickok. "For further support, there's up to 100 welders depending upon the volume of work. It's a significant staff."

Utilities, Soil, & Trees

Similar Challenges Span SELA Jobs



As with most SELA work, utility relocation is necessary along the entire stretch of the corridor. New Orleans, a city boasting a nearly 300-year history, has centuries worth of undocumented or poorly documented underground utility work, requiring present-day crews to devise solutions to confront the hidden obstacles that they will undoubtedly encounter during the course of work.

"On Louisiana Avenue, just getting the water lines out of the way was about a year and half process," said Johnson. "Building a box down the existing median neutral ground causes you to contend with all the utilities there. We have to adjust as needed since the location of some of the utilities is completely unknown before digging. It has been an ever present challenge to deal with." An abundance of overhead electrical lines, located in the median, are also being relocated.

In other work, the Boh crew is installing sewer siphons beneath the culvert to accommodate active sewer lines that cross the jobsite. "Every once in a while you come up to these intersections that have sewer lines that have to remain active," Johnson said. "It has been a time-consuming process getting that done."

At the Florida Avenue project, as an example of an early complication, a 48-inch-diameter water line running in close proximity to the canal's footprint had to be shifted to another location. As a result, approximately 2,100 linear feet of new water line is being placed down the middle of Florida Avenue to make way for the expansion.

Boh will tie in the new line section in early summer. "That will allow us to take out the old line that falls in the footprint of the sheeting," Stolzenthaler said. Additionally, two side streets (Montegut and Desire) will be converted from

"We have to adjust as needed since the location of some of the utilities is completely unknown before digging. It has been an ever present challenge to deal with."

Cameron Johnson
Boh project manager

conventional drainage to a small box culvert in order to more efficiently divert flows into the newly widened canal. The new box culverts will be supported by a jet-grouted foundation.

Other utility issues were dealt with on both Napoleon jobs as well. “At Napoleon III, communication lines were supposed to have been moved outside the footprint of the culvert prior to construction, but instead we have to contend with those utilities in place,” Stolzenthaler said. “This challenge resulted in gaps in the sheeting and slowed operations through these areas.”

On the Napoleon II project, Boh was challenged with numerous utility installations and relocations from Claiborne to Carondelet—the most difficult involved lowering an existing 42-inch sewer that crossed beneath the existing box culvert, but would have been in conflict with the new, lower culvert.

It was a critical process, since it was all performed in front of the Emergency Room entrance to Ochsner Baptist Medical Center. “The relocation work was done while the sewer line remained in service,” Saladino said. “Since the new sewer line had to be installed directly beneath the existing line (to avoid the existing box culvert’s piles), a bypass system was designed and installed to re-route the waste 24 hours a day, seven days a week.”

Boh and its subcontractor utilized the closed-face micro tunneling method to install the 60-inch casing necessary to accept the new 42-inch sewer line. The need for this technique was the result of one of the projects’ other significant challenges: soil conditions.

“The soils can be entirely different from one site to the next,” Stolzenthaler said. “On Napoleon III alone, we’re currently building boxes in two

Oak trees are a hallmark on many of the neighborhood streets where SELA jobs are taking place, and their preservation is a high priority.

locations. On the southern end, we’re contending with water coming through the sheets, because we’re approaching the river. On the northern end, we’ve got a perfectly dry hole. Basically, we’re building the same exact thing and we have two entirely different conditions.”

This scenario is nothing new for Boh Bros. “That’s one of the criteria that the Corps uses to select a contractor—familiarity with local underground conditions,” he said.

An abundance of live oak trees along the corridor is yet another challenge. Throughout the process, the protection of the trees’ root systems has been a primary objective. “Anytime we get into a scenario where the root system might be jeopardized, we bring in a certified arborist to work with us to prune, trim or repair,” Stolzenthaler said. “That’s part of the contract and it’s something that is unique to this jobsite. That makes some of the underground work a little slower going.”

But protection of the trees doesn’t stop below the ground. Per contractual requirements, Boh Bros. is required to trim any trees that overhang the median. Throughout the job, project crews have had to think through how to strategically place cranes and other equipment on the site in order not to harm the overhanging canopy. Oak trees are a hallmark on many of the neighborhood streets where SELA jobs are taking place, and their preservation is a high priority.

HONORABLY SERVING

Boh Seeks to Minimize Impact to Neighborhoods

Throughout its current SELA work, Boh always seeks to be mindful of the effect its work has on those who live in the neighborhood. Many of its workers and supervisors are New Orleans residents, themselves, so they understand concerns about traffic congestion, dust or potholes.

The major SELA stakeholders also realize the importance of an informed public, especially in light of what many are calling "infrastructure fatigue." In spring 2015, the City of New Orleans launched a new online tool to track the progress of infrastructure improvements in the city. In addition to SELA, the comprehensive website (www.roadwork.nola.gov) provides ongoing updates on other projects by other government agencies.

The site updates projects monthly, thereby providing residents with the most accurate view of infrastructure improvements occurring across New Orleans, and is a collaboration between the Department of Public Works and the Sewerage & Water Board under the city's Integrated Infrastructure Management System.

During the spring, Boh's commitment to serving the community is visibly evident on the Napoleon Avenue projects. Every year, the entire site is shut down for nearly two weeks to accommodate the Carnival season. "At Mardi Gras, we shut down major operations and focus on cleanup and minimizing our presence," said Stolzenthaler. "We consolidate equipment and materials, and shrink our footprint by pulling the fence into the median to ensure that there are places for people to stand along the parade route and that nothing impedes the flow of the floats."

"Mardi Gras is an important time of year for our city, and we don't want to do anything to impact that," he adds. "We are part of this community, so we understand." Additionally, Boh crews work to maintain intersections for pedestrian crossings, and construct walking paths in designated areas to provide safe cross points for foot traffic.

With a few years remaining in the SELA program, the importance of continuing to honorably serve the community has never been more important for Boh. Though asphalt and paving crews recently put the finishing touches on the roadway and sidewalk restorations for the Napoleon II job, years of construction in the area have brought both fatigue and frustration for many residents. Easing those pains as much as possible is a high priority.

While at times the construction has felt like an inconvenience, the neighborhoods are already benefitting in many ways, even with the projects only partially completed. "Early into the project on Napoleon II, we tied drainage from the catch basins along the northbound lanes into the existing box under the travel lanes," said Stolzenthaler. "A few months later, during the first tropical storm of the season, the southbound lanes of Napoleon were filled with water while the northbound lanes remained dry because of the improved drainage system."

This occurrence is just one example that illustrates the great need that New Orleans has for the SELA program. The completion of these projects is an exciting time for the city—not only because the streets will be free of construction. The canals on Napoleon, Louisiana, and Florida Avenues, along with other places throughout Orleans and Jefferson Parishes, will help keep residents safer in both small rain storms and severe weather events such as Hurricane Katrina for many years to come.

BOH EMPLOYEE SPOTLIGHT

Joe Doyle

Joe Doyle began his career at Boh Bros. in 1973 when he was just 17 years old. Today, 43 years later, Joe is a foreman in the piling department—a title also held by his father—working on both projects in the field as well as at the Almonaster yard. For the SELA project on Napoleon II, Joe's crew drove 304,590 feet of pre-drilled timber piles as well as installed the sheet piles for the temporary retaining structures on Napoleon Phase II, Napoleon Phase III, and Louisiana. One of the most memorable projects he has ever worked on was the interim closure structure and pump station at the 17th Street Canal after Hurricane Katrina. Outside of work, he loves to hunt and fish, as well as watch his grandson play baseball. Joe says that the thing that makes him love coming to work every day is taking on projects that are challenging. "I like trying to figure out how to drive the pile that no one else can," he says. It's Joe's sense of determination that has made him such an asset to Boh for almost a half century.

Brad Daigle

Brad Daigle is a foreman in the utilities department at Boh. Fourteen years ago, he began as an apprentice operator and quickly learned how to operate a wide variety of equipment. "Dozers, cranes, backhoes… you name it, I can operate it," Brad said. One of the most challenging aspects of all four SELA projects for Boh has been contending with the underground utilities; because of this challenge, Brad and his crew have been a vital part of the success on Napoleon II and III, Louisiana, and Florida. Having finished his portion of the work on these jobs, he is transitioning his team to begin working on utilities at the new North Terminal of the Louis Armstrong Airport. Apart from work, Brad enjoys fishing, spending time with his family, and is even the coach of his daughter's softball team. His favorite part about working with Boh is figuring out how to overcome the challenges on any given project.

Brian Westbrook

Brian Westbrook works as a labor foreman for the heavy construction department. He began his career at Boh 17 years ago as a laborer. Currently, Brian and his team are working on the construction of the new Florida Avenue canal, as part of the SELA program. When asked what his favorite project to work on has been during his time at Boh, Brian says, "Probably working on the Causeway. It was a busy project and challenging. It was the first project that I was a labor foreman on so I learned a lot." Brian has 4 children and enjoys spending as much time as he can with them when he is not at work during the day. He also loves to play basketball and shoot pool. Brian's favorite part about working for Boh is the people that he works with. He considers them to be his family away from home.

Darren Burgess

Darren Burgess is a labor foreman in the heavy construction department who has been with Boh for the last 15 years. He and his team are currently working to finish Napoleon Avenue Phase III as it is coming to a close in the next few months. Previous to Napoleon III, Darren worked on a variety of jobs including Napoleon II and, his favorite job that he has gotten to do with Boh, the Harvey Canal Sector Gates. "I liked that job because it was a lot of different kinds of work, and it was different than what I was used to doing," Darren said. That job, taking place in the aftermath of Hurricane Katrina, was also when Darren transitioned from the role of operator to the role of foreman. Outside of work he enjoys fishing, hunting, and working in his shop fixing up various four wheel drive vehicles. Darren's favorite part about working for Boh is the abundance of good work and the well-maintained equipment used to complete it.

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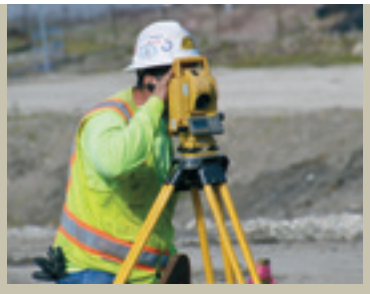
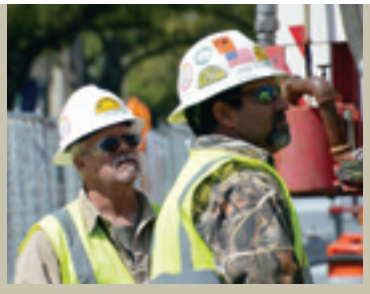
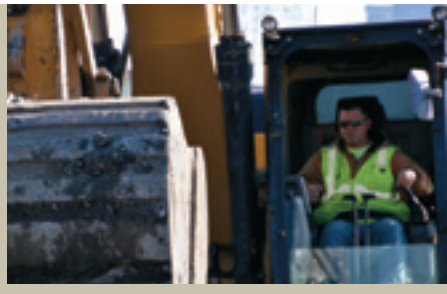

Spring / Summer Anniversaries

50 YEARS
Charles O. Freeman

45 YEARS
Keith R. Guillot

40 YEARS
Norwood L. Ballon, Jr.
Louis F. Bauer
Donald J. Taylor

35 YEARS
Robert S. Boh
Philip P. Levatino
Leonard P. Orth
Michael J. Tregre

30 YEARS
Carlo Carollo, Jr.

25 YEARS
Allen C. Anders
Richard J. Lind
Corey M. Newton
Billy G. Serpas
Michael C. Watson

20 YEARS
Brent J. Denais
Ted M. Landry

15 YEARS
Darren Burgess
Troy M. Bush
Robert W. Ehrlich
Michael L. Fossee
Larry Gilbert
Jason C. Grab
Mark J. Graffato
Sandra A. Graves
Charles R. Grosh, Jr.
Jerritt D. Johnson
Jermaine F. Kelley
Carmen L. Knost
Charles J. McKey
Peter J. Meyer
Bryant L. Parker
Marcus D. Robinson
Anthony J. Saladino
Jude M. Sanchez
Jeffery G. Sylvester
Victor J. Taranto III
David E. Varnado
Eric A. Weaver
Bryant K. Woodson

10 YEARS
Kenton K. Bailey
Marcel C. Carmouche
Cesar M. Cortes
Michael W. Coston
Anthony Escobar
Maria A. Fernandez
Albert J. Galloway
Christopher R. Galloway
Robert G. Gauf
Tommy C. Gray
Nelson J. Harris
Timothy C. Hunt
Allen W. Hunt I
Lloyd A. Jackson, Jr.
Bobby G. Jones, Jr.
Norris Labrie
Patricia A. Ludwig
Justin T. Morel
Charlie Muse, Jr.
Guillermo C. Pedroza
Joseph B. Perrault III
Bryan G. Poole
Anthony Rainey
Brenda Ransom
Stewart J. Rush
Steven A. Smith
John M. Songy
William A. St John III
Michael E. Thornton, Jr.
Darren T. Torres

5 YEARS
Keith P. Barras
Keith A. Blondeau, Jr.
Bernard E. Brown
Cory J. Caranna
Troy Conklin
Patricia A. Delucca
David Hampton, Sr.
Delvin A. Harris
Joshua N. Menier
Stephen M. Miller
Chris A. Newton
John E. Norton
Arthur V. Robertson
Louis J. Rome
Nathaniel R. Rome
Jessica A. Russo
John Washington, Jr.
Justin M. Wheat

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