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PILEDRIVER

The Official Publication of The Pile Driving Contractors Association | Q2 2007 Vol. 4, No. 2

Project Spotlight: Penobscot Narrows Bridge

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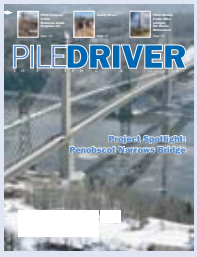

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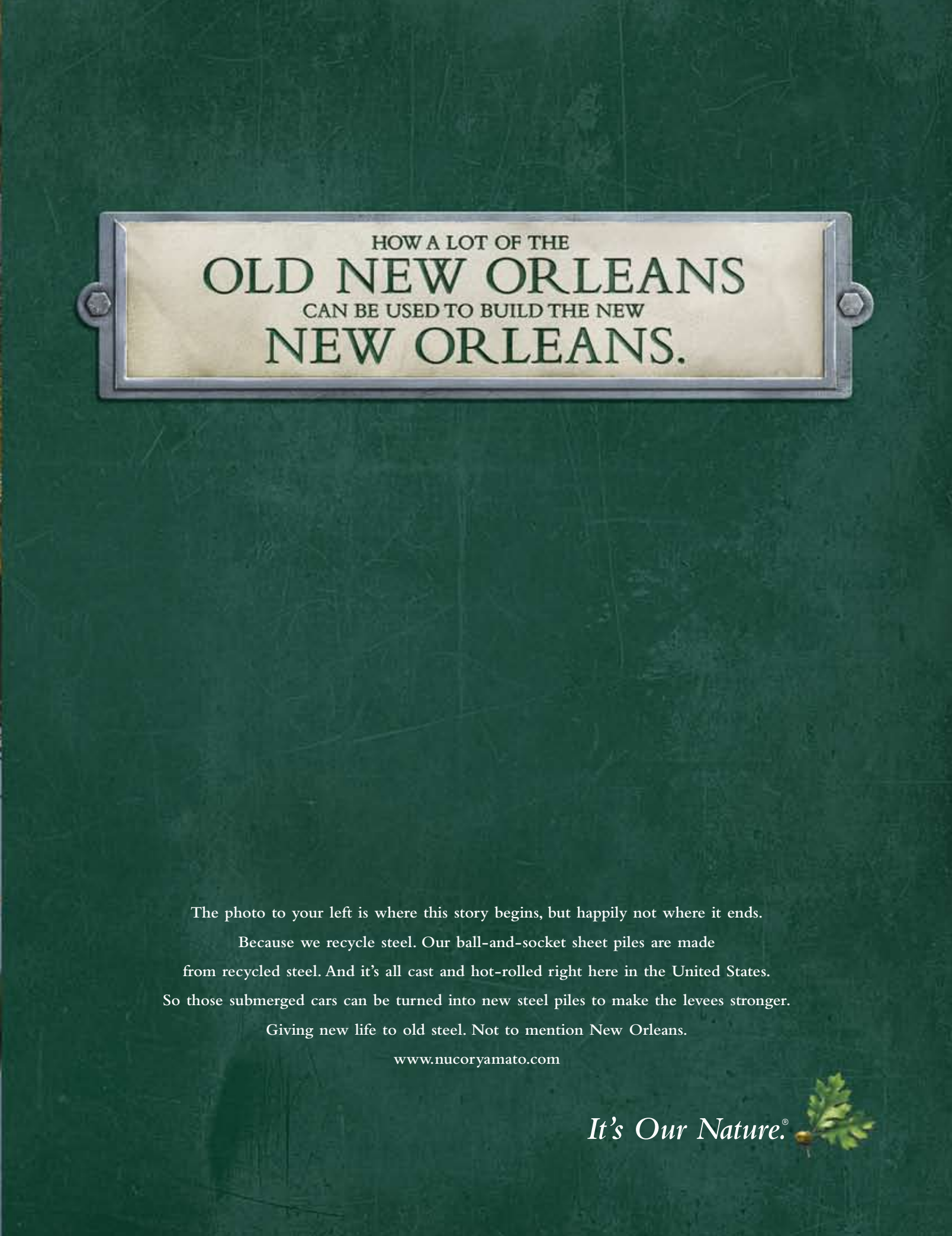
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Meet Your PDCA President

By Mark Weisz, P.E.

I must start off by thanking our Past President Harry Robbins and Immediate Past President Randy Dietel for all of the hard work they've put in over the years. They've always been there providing outstanding leadership and insight to the PDCA. Thank you, Harry and Randy.

I'd also like to thank the membership for electing me as the next president of the PDCA. As a board member for the past five years, I've had the honor to sit beside and work with some of the true living legends in this industry. At times, those experiences have been humbling. The PDCA has been able to attract a number of dedicated people that unselfishly give a great amount of their time and energy for the betterment of the driven pile industry. These people are true professionals, and we welcome more of you to join us in our promotion of the driven pile.

In the event that we've never met before, I'd like to briefly introduce myself. I'm the father of three kids and have been married to my wife, Amy, for the last 15 years. When I'm not at home playing dad, I work as a project engineer/estimator for a marine construction company located in Northern California. CS Marine Constructors, Inc. was established about 30 years ago. CS Marine specializes in driving all types of piles throughout the San Francisco Bay Area. Even though a marine pile driver's challenges may be different than that of a land pile driver, my company believes it's important to keep up with the latest trends in the pile driving industry. Being an active member of the PDCA provides us with that opportunity.

Times are good for the PDCA. When I first joined the board, the PDCA was transitioning from being a rather new organization to a legitimate professional association. Five years ago, the PDCA members wanted to see results and not just hear about lofty goals. Soon the talk of having local chapters across the country became a reality with the first chapter starting in South Carolina. Thanks to Harry Robbins, last year he pushed the PDCA to cultivate more local chapters. I credit Harry and many others with helping organize three additional local chapters, including the most recent local chapter in Northern California. I am proud to say that the PDCA is no longer ignored or rejected at the national events within the Geo-Community. I can attest that only five years ago we were still striving for mutual respect. The PDCA is now recognized as an association that is here to stay and they are listening. More contractor involvement can only bring more of these successes to the driven pile industry.

I'd like to discuss the PDCA's fourth Biennial Professors' Driven Pile Institute that will take place this June 18 to 22 at Utah State University in Logan, Utah. The PDCA expects to "educate" another 25 college professors that teach the deep foundation curriculum to future civil engineers. The Professors' Driven Pile Institute is funded solely by donations from PDCA members. The only cost to the professors is their travel expenses. The five-day course provides the professors with the teaching materials, handouts, and the knowledge to teach the basic understanding of driven pile foundations to their graduate and undergraduate students.

As in previous years, Build, Inc., (a PDCA contractor member), will graciously provide the labor and equipment to conduct a live pile driving demonstration and load test for these professors. Recently, professor Joe Caliendo of Utah State University had asked the PDCA to provide the materials for a permanent load test frame on the campus grounds. As expected, the PDCA came through with the materials. And again, Build, Inc. stepped up and has offered to assemble the frame. This new load test frame wouldn't be possible if not for generous PDCA members. I'd like to thank Trey and Woody Ford of Ford Pile for donating the frame's large steel beams. And thank you to Skyline Steel for donating the remaining steel components and paying to ship all materials from Virginia to Utah. In rough numbers, the Professors' Driven Pile Institute has reached out to somewhere between 2,500 and 4,000 civil engineering students across the country who normally would have little or no instruction in driven pile foundation design. I firmly believe that this is the PDCA's most important educational program. By the time this article reaches you, the program's final preparations will be nearly complete. To all members that have provided financial support, I thank you.

As you've read, the PDCA is fully dedicated to continuing the promotion of the driven pile, and many members have been working very hard on your behalf. But the PDCA can use even more pile driving contractors to help share the load — more work remains. If you are not already a member, or you haven't been involved in a while, please consider the opportunities that the PDCA offers. I am a good example that you don't need to be an owner of a company or belong to a large corporation to help make a difference. I can promise you that if you get involved, the benefits you and your company will reap will exceed your expectations.

And finally, a driven pile is a tested pile. ▼

Thanks for **the Fun Time**

By Stevan Hall, PDCA Executive Director

The 11th Annual Pile Driving Contractors Association International Conference and Exposition has come and gone. Personally, I had a great time and I hope that everyone who attended feels the same way about their experience at the conference, the Gaylord Opryland Resort and Conference Center, and the City of Nashville.

The Gaylord Opryland Resort and Conference Center proved to be an excellent venue for the conference, providing plenty of room for our programs, exhibitors, receptions, dinner, and breaks. The ambiance of the Gaylord added a special uniqueness to our event, as did the lush gardens, waterfalls, Delta River, shops, and restaurants.

This year, the PDCA, under the leadership of Education Committee Chair Mike Elliott, who was the frontrunner for helping establish the conference format, decided that "fun is a good thing." With that in mind, Mike, president of the Green Cove Springs, Florida-based company Pile Equipment, Inc., set out to make this year's conference just that — FUN; he had plenty of support from his committee members and the Board of Directors.

Several fun events come to mind, including the PDCA 1st Annual Golf Tournament. With 48 players, first place low net and gross were up for grabs. So the entire field left the clubhouse in their carts, with clubs in hand, and focused on taking care of business; this turned out to be mostly at the beverage cart and is shown in the pictures taken by Richard Gilbert with Skyline Steel Co., which is based in Atlanta, Georgia.

Again with fun in mind, the PDCA made this the central theme for the ladies attending the PDCA Companion's Program, beginning with the presentation of the PDCA Charm to each lady. PDCA owes a debt of gratitude to PDCA First Lady Cyndi Robbins, (who resides in Charleston, South Carolina), for hosting the ladies breakfast each morning in the President's Suite and for making sure everyone stayed on schedule and on time for the bus. As part of the Companion's Program, the ladies toured the Ryman Auditorium, visited the Wild Horse Salon for lunch and line dancing, and cruised down the Cumberland River aboard the General Jackson Showboat.

The Annual Dinner's western theme was a big success with a great dinner, excellent music and — at Mike Elliott's insistence — a "short" business program. Not only did everyone come dressed in the proper attire, but when the band, Justin Barrett and the Usual Suspects, played it seemed like everyone knew the two-step, the boot-scootin' boogie or some variation of a country dance and was not afraid to get up on the dance floor and shake a tail feather. After two and a half hours of music, the band finally had to call it quits to the disappointment of those who were ready to go well into the night and keep the "fun" alive.

Finally, PDCA President Harry Robbins, (President of the Charleston, South Carolina-based company Palmetto Pile Driving), said, "You can't go to Nashville without visiting the Grand Ole Opry." So we did! Once again fun was the theme and 120 PDCA members, spouses, and guests got to see a great show in the legendary auditorium of the Grand Ole Opry.

Throughout the conference we did manage to get some work done — imagine that! PDCA had speakers from Washington, D.C.; Portland, Maine; Luxembourg City, Luxembourg; Cedarburg, Wisconsin; Cleveland, Ohio; Austin, Texas; Houston, Texas; Chann-elview, Texas; and Charleston, South Carolina present interesting, provocative, constructive educational programs that were enjoyed by all attendees. PDCA also conducted a roundtable discussion on "Evolving Specifications and Design Criteria and their Impact on Driven Pile Costs." A special PDCA thanks to Ed Wasserman, Tennessee DOT and Jerry DiMaggio, USDOT, FHWA, a panelist on the roundtable, along with Wayne Waters, Ed Waters and Sons Contracting; Dale Biggers, Boh Brothers; Garland Likins, PDI; and George Goble, George Goble Consulting and Engineering.

During the Annual Dinner, Harry Robbins presented George Goble with the PDCA "Presidential Award for Distinguished Service." George was selected to win the award as a result of his long-time commitment to the pile driving industry and to the PDCA. George's accomplishments as an engineer, consultant, and educator have made a distinctive mark on the pile driving industry. The PDCA would like to congratulate George for being selected to receive this prestigious PDCA award and thanks him for his contributions and support to the PDCA.

During the PDCA board meeting, 2007-2008 President Mark Weisz, (who is with the Vallejo, California-based company CS Marine), signed the "Memorandum of Understanding and Association," which officially signified the acceptance by both the California PDCA and the national PDCA to have the California PDCA become the PDCA's fourth local chapter. The PDCA wants to thank Charlie Gibson with Richmond, California-based business Manson Construction Company and Don Dolly with Oakley, California-based business Foundation Constructors for their support and participation throughout the progression of successful events that led to California PDCA's affiliation with the national group.

PDCA would like to acknowledge our exhibitors and sponsors. This year, the PDCA was limited by space to 39 exhibitors, and I am proud to say we had companies in every booth. I want all exhibitors to know that your participation and support helped make this conference a success. I also want you to know that we heard your comments and listened to your suggestions on how to make next year's conference a better place for you to exhibit — we know what you want and are committed to attracting end-users of your products and services to the conference in 2008. We look forward to having all of you back again in Scottsdale, Arizona, in 2008.

The PDCA is also grateful for our sponsors and their contributions, which played an important role in the success of the conference. A PDCA "thanks" to American Piledriving Equipment and Foundation Constructors for being this year's Platinum Sponsors. Your generosity and continued support of the PDCA is gratefully appreciated.

I want to thank Randy Dietel (Piling, Inc.) and Garland Likins (PDI) for their leadership and commitment to serve the PDCA through the Board of Directors. Both Randy and Garland completed their terms as board members and have stepped down but not after serving the PDCA with integrity and dedication for many years. They accepted their obligation as board members with passion and consistency and have left an example for others to aspire.

Finally, I want to thank Harry Robbins for the great work he did as president. Harry stayed committed to the PDCA throughout his presidency and helped accomplish significant milestones for the PDCA, including his original goal of increasing the number of local chapters affiliated with the PDCA. I look forward to continuing to work with Harry as the immediate past president. I also want to welcome Mark Weisz as the 2007-2008 President of the PDCA, along with his Board of Directors. Mark is a capable and qualified individual, who will make his mark on the PDCA. Mark has challenged the board to have 125 Contractor Member firms in the PDCA by the end of 2007. This goal can be accomplished with the commitment of the board, but I want to challenge you, the PDCA member, to take up this goal as well. Make it your personal goal in 2007 to better your association by adding one new member to its ranks. If you do this, you will have made a tremendous difference in your association and your industry. ▼

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Committee Corner

Committee Corner is a new department in *Piledriver*, in which we will profile the chairs of various PDCA committees. In this issue, we highlight the work of Van Hogan of Ed Waters and Sons Contracting Co., Inc. in St. Augustine, Florida, who is the PDCA vice president and chair of the Communications Committee.

I joined Ed Waters and Sons Contracting Co., Inc. in 1980 not long after graduating from the University of Florida's School of Building Construction. Ed Waters and Sons undertakes a variety of projects ranging from foundation piles to cofferdams to marine structures. Our range of operations is primarily in Florida and southeast Georgia.

I attended my first PDCA meeting in 1998. The PDCA has provided me with the opportunity to meet piledrivers from across the country and around the world. Although we work in different markets and face different issues, we have a lot in common.

I became more involved in PDCA activities in 2001 and was asked to chair the Communications Committee. Our primary committee responsibilities are Piledriver magazine and the PDCA Web site. I have been very fortunate to work with committee members Garland Likins, Doug Scaggs, and Steve Whitty since the committee's inception. Their dedication has been outstanding.

This year I also have the privilege of serving as your vice president. The directors and officers are looking forward to a good year, and we are anxious to continue the work of promoting our industry.

In closing, I would like to thank Wayne Waters, president of Ed Waters and Sons Contracting Co., Inc. and past president of PDCA, for allowing me the opportunity to serve the PDCA. His commitment to our industry and our organization is exemplary.

That's a Wrap!

The PDCA 11th Annual International Conference and Exposition: March 28 to 31, 2007

By Stevan Hall, PDCA Executive Director

The PDCA 11th Annual International Conference and Exposition has come to an end! But before we go any further, the PDCA wants to thank everyone involved: exhibitors, sponsors, registrants, spouses, and presenters. The PDCA is especially grateful to our Education Committee, which was under the leadership of the Committee Chair, Mike Elliott, who is the president of Pile Equipment, Inc.; they put together an exciting program for this year's participants. With the collective support of everyone, this year's annual conference was a tremendous success.

This year's conference ranks atop the best that we have ever produced. The PDCA sold all its exhibitor booths and had close to a 70 percent increase over the total booths sold last year; the PDCA had a 25 percent increase in attendance over 2006; the PDCA exceeded its sponsor revenue budget with contributions from PDCA members by 55 percent; and finally we exceeded the overall conference revenue budget by 8.5 percent. The PDCA is grateful to all who made the conference so successful.

Enough about the financial side — did we have fun or what? Yep, Mike Elliott and the Education Committee had a theme for this year's conference: HAVE FUN! And they did everything within their power to make that happen. How did they do that? They organized the PDCA 1st Annual Golf Tournament. Forty-eight PDCA members got out their clubs, dusted them off, and set out across the Gaylord Springs Golf Links to see who would bring home the trophies. Congratulations to the 1st Place Low Gross Team that consisted of Rob Waudby, Bobby Speight, Chris Harwell and Ken Colbert (Skyline Steel) that scored a 59 and to the 1st Place Low Net Team that consisted of Wayne Waters (Ed Waters and Sons Contracting Co, Inc.), Greg Edmonds (Ellis & Associates), Randy Dietel (Piling, Inc.) and Gary Johnson (Piling Products, Inc.) that scored a 46. Special recognition goes to Gary Johnson, Ken Colbert, Garland Likins, and Wayne Chadbourne for winning Closest-to-the-Hole and J.D. Tucker and Mark Weisz for Longest Drives.

Next, the PDCA had a western-themed annual dinner, which included a short business program and great southwestern fare for dinner. The dinner was finished off with dancing to Justin Barrett and the Usual Suspects. PDCA members danced well into the night showing that line dancing and the two-step is well entrenched across America, not just in Nashville or the South. During the annual dinner, some business was conducted, including the induction of the 2007-08 Board of Directors.

Harry Robbins presented George Goble with the PDCA Presidential Award for Distinguished Service. George received the award for his long-time commitment and support of the pile driving industry and the PDCA.

Harry Robbins was presented with a "Certificate of Recognition" from the governor of South Carolina for his contribution in advancing the driven pile industry in South Carolina and across the nation. Thanks, Harry, for keeping the PDCA and our industry in our state and country's spotlight, and congratulations on a well-deserved award.

The ladies who participated in the Companion's Program probably had more fun than anyone. They all met in the President's Suite for breakfast and a little socializing each morning. They departed the Gaylord on bus and toured the Ryman Auditorium, (which is the original Grand Ole Opry Building), followed by lunch and line dance instructions at the Wild Horse Saloon on their first day. On day two, they cruised down the Cumberland River on the 300-foot-long paddle wheeler, General Jackson Showboat, where they were entertained by Tim Watson, a comic, musician, singer, and overall great entertainer.

The PDCA sent almost the entire crew to the Grand Ole Opry on Friday night. The evening featured great songs, including bluegrass, gospel, and down-home country music by various artists.

Each event was preceded by a reception in the exhibitors' area with plenty of food and an open bar, which allowed additional time for socializing, marketing, and renewing new and old acquaintances.

The PDCA did conduct business on a day-to-day basis, despite the emphasis on having fun. The educational programs were interesting, informative, and well presented. The PDCA wants to thank all our presenters for taking the time to help make this portion of the annual conference a success. The PDCA also conducted a round table discussion on "Evolving

Harry Robbins accepts a "Certificate of Recognition" that was presented by the Governor of South Carolina (From l to r: John King, PDCA of South Carolina Chapter President, PDCA Immediate Past President Harry Robbins, and PDCA President Mark Weisz)

Specifications and Design Criteria and Their Impact on Driven Pile Costs." Thanks to a great panel, facilitated by Randy Dietel (Piling, Inc.); this program presented some interesting points and thoughtful ideas for future practices.

Even though it was business, the PDCA had a fun time with the Hammer Manufacturers Forum, which allowed each hammer manufacturer an opportunity to discuss the attributes of its products. The program, which presented some very interesting points about each manufacturer's product, was facilitated by George Goble. PDCA is proud to announce that all manufacturers conducted themselves professionally and with a great deal of humility — going so far as to compliment each other on their advances in research and hammer design that has positively impacted hammers in the pile driving industry.

Hammer manufacturers who participated in the forum included American Piledriving Equipment, Pileco, Inc., Pile Hammer Equipment, Junttan Oy, Hammer & Steel, Inc., Bermingham, Jennings Equipment, and International Construction Equipment.

The PDCA wants you to mark your calendar now for next year's conference in Scottsdale, Arizona. The venue and dates have not been confirmed, but the PDCA is in the process of finalizing these aspects of the conference and will notify everyone so you can plan accordingly. ▼

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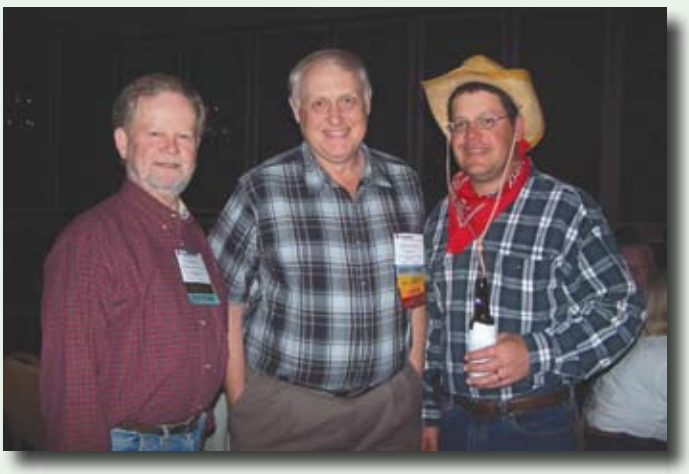

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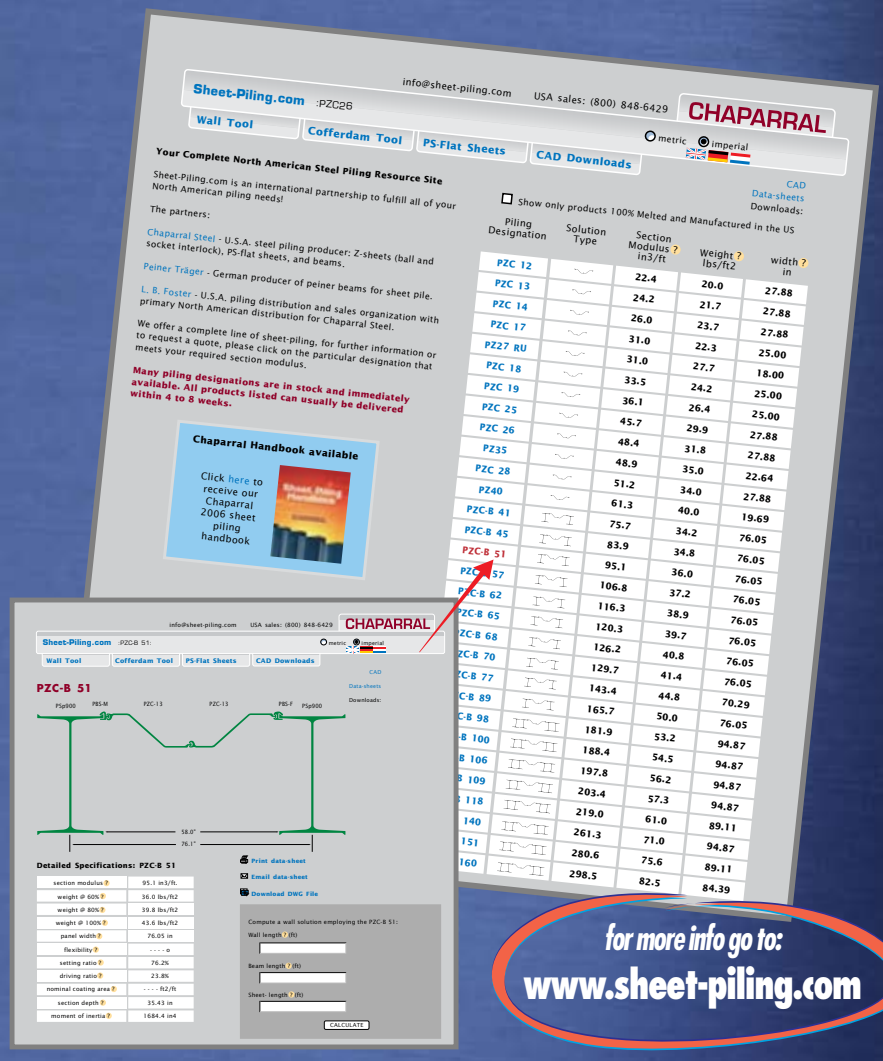

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CHAPARRAL

Transforming Ordinary Materials into Extraordinary Solutions

PDCA Sponsors Professors' Driven Pile Institute

By Stevan Hall, PDCA Executive Director

The operating principles of a pile hammer are explained

The PDCA is in the process of planning its fourth Professors' Driven Pile Institute at Utah State University from June 18 to 22, 2007. The Professors' Driven Pile Institute has been held at Utah State University in Logan, Utah, since 2002, with three courses over the years.

The Professors' Driven Pile Institute is an intensive weeklong program designed to instruct engineering educators in all aspects of driven pile installation, design, and quality control. The program blends practical, real work construction knowledge with academics. The Professors' Driven Pile Institute has been attended by more than 60 university and college representatives who teach driven pile applications in an academic environment since the program first began.

This program is extremely important to the pile driving industry. To quote a PDCA member, "This may be the single most important program PDCA offers!" Why? Because this program reaches professors and educators who teach driven pile advantages and benefits to those students who eventually turn into the engineers who decide which deep foundation system will be used on a project. The more educators know about the driven pile industry, the more they can adequately convey its attributes to the students.

This year's Professors' Driven Pile Institute will be similar to past programs. First and foremost, the PDCA will take on the responsibility of assuming all the costs of the program, which will come close to $40,000 this year. PDCA covers all course materials, lodging for instructors and students, meals, and all additional costs arising from the program, such as honorariums and salaries. The only expense to the students will be their travel to and from the program.

This year's program will include studies in Driven Pile Design Process, Geotechnical Considerations, Pile Types, Static Analysis of Pile Groups, Axial and Lateral Static Load Testing, Design Parameters from Load Testing, Pile Driving Equipment, Wave Mechanics, Wave Equation Background, Modeling and Applications, Special Design Considerations, Driven versus Drilled Deep Foundations, Dynamic Measurements, Site Characterizations, SPT Energy Measurements, Pile Driving Induced Vibrations, CAPWAP, Support Cost Components of Driven Pile Foundations, along with several computer workshops and field demonstrations.

The PDCA would like to acknowledge Build, Inc., who once again will be present at the Professors' Institute, contributing its field crew, hammers, piles and enthusiasm to the program.

PDCA is grateful for the assistance of Joe Caliendo, Associate Professor, Civil and Environmental Engineering Department, College of Engineering, Utah State University. Joe helps organize the entire program with PDCA, as well as arranging the lodging, classroom, field demonstrations and meals for the attendees.

When the PDCA and Utah State University (USU) started planning this year's event, Joe Caliendo requested PDCA try and find several different steel beams for use in the practical exercises during the Professors' Institute. USU needed one WF36x280 (25' long), two WF36x150 (25' long) and two WF12x22 (25' long) and they need them delivered to Logan, Utah.

PDCA went out on the Internet highway to our members seeking these beams. It wasn't long before Ford Pile Foundations (Woody and Trey Ford) got back to the PDCA and said they had just the right material in their yard and could contribute it to the Professors' Institute. Shortly after that, PDCA got a call from Richard Gilbert with Skyline Steel indicating Skyline Steel would provide the transportation of the material from Virginia Beach, Virginia to Logan, Utah at no cost. A very big "THANKS!" goes out to Ford Pile Foundation and Skyline Steel for their support and contribution. ▼

Professors inspect a load test reaction stand

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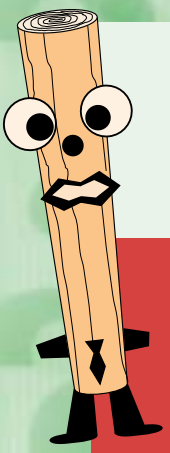
If you or your firm would like to make a contribution to the Professors' Driven Pile Institute, please contact the PDCA by phone at 1-888-311-PDCA (7322), or send your contribution to PDCA, P.O. Box 66208, Orange Park, Florida 32065.



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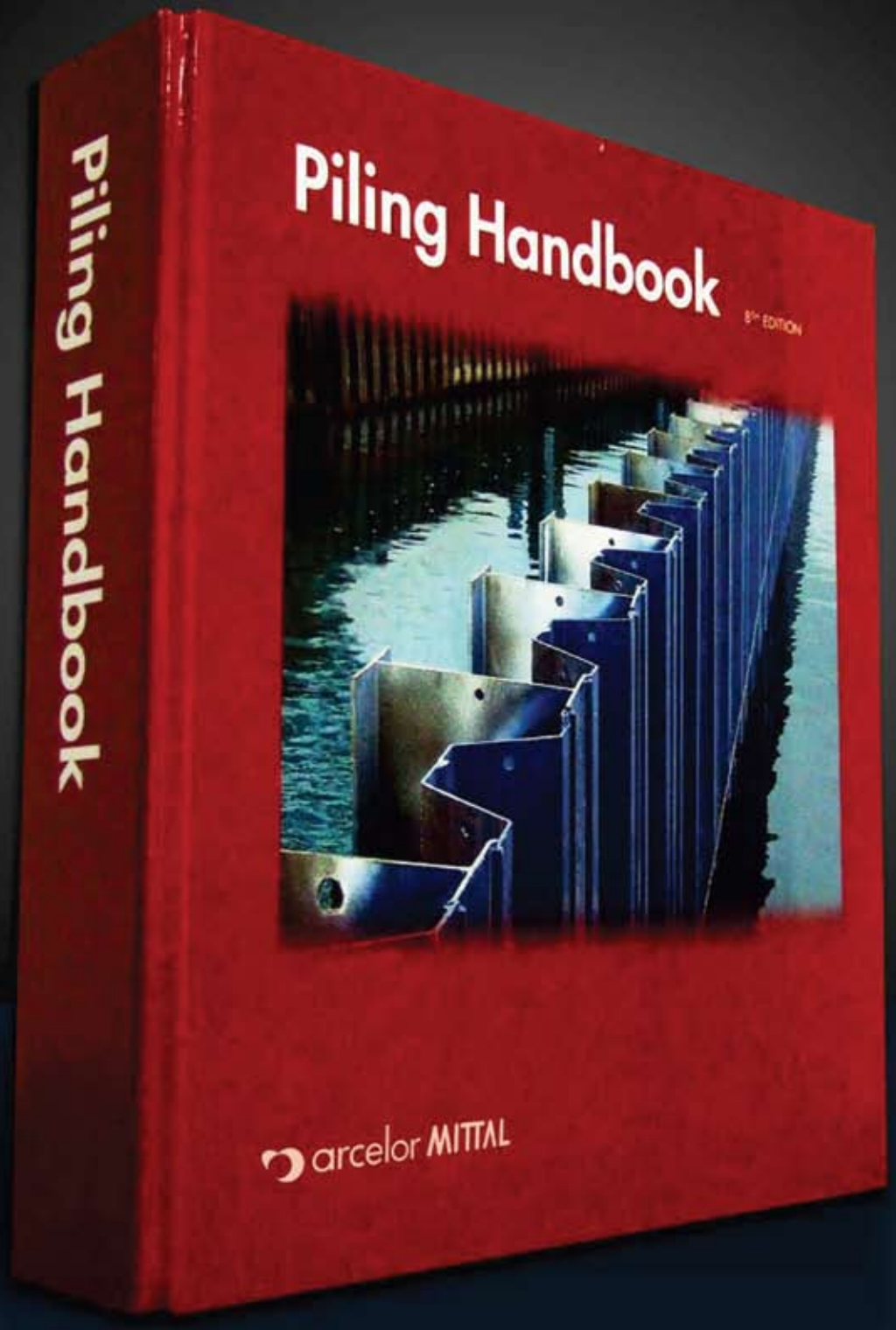

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Blakeslee Arpaia Chapman, Inc.

Blakeslee Arpaia Chapman, Inc., founded in 1844 and once named C.W. Blakeslee and Sons, has now grown to be one of the oldest and most successful heavy and marine contractors in the USA

By Katrina Detrick

Blakeslee Arpaia Chapman, Inc. is one of the oldest heavy and marine contractors in the country. The company, which specializes in providing general, marine, utility and industrial construction services, prides itself with over 160 years of experience. Blakeslee continuously proves itself a successful company because of its emphasis on safety, job efficiency, customer satisfaction, and employee loyalty. On average, an employee's tenure is 25 years, which exemplifies Blakeslee's dedication to its employees, clients and industry.

Blakeslee Arpaia Chapman, Inc. was founded in 1844 by Charles Wells Blakeslee and was operated under its original name, C.W. Blakeslee and Sons, until 1969. The firm performed utility, industrial, heavy foundation and marine construction in Connecticut and adjoining states. Blakeslee was then purchased by the Westinghouse Electric Corporation in 1969 and continued to operate on the same principles as when it was founded. In 1976, Roger Chapman and Vincent Arpaia bought the construction arm from Westinghouse and gave the company its present name. Many of the employees from Westinghouse are still part of the Blakeslee legacy today.

Blakeslee has a strong background in heavy and marine construction, but because of its ongoing success at adapting to a changing industry, it has evolved into a major specialized construction company. Blakeslee prides itself on innovative problem solving and employee loyalty and safety.

"The safety and health of all our employees continues to be the first consideration of this business," says company President Roger Chapman, P.E.

There is an independent Foremen's Club that holds monthly meetings to discuss important safety issues relevant to each job,

and the superintendents, general managers and vice presidents work out both scheduling and safety before each job.

At the end of each workday, Blakeslee Arpaia does its utmost to continue with the values the original owner, C.W. Blakeslee, who once proclaimed, "It is my creed to build for the future, to build quality and permanence."

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Blakeslee Arpaia Chapman, Inc. has approximately 125 employees, including five professional engineers. The company operates approximately 75 highway vehicles and 175 other pieces of construction equipment. The Marine Division, which is in charge of both the Magellan Terminal and Mystic Seaport, accumulate on average 35 percent of work coming into the company. It has a fleet of four crane barges ranging from 60 to 150-ton capacity, three tugboats and eight service barges. Blakeslee provides a full range of marine construction services, including diving.

The Marine Division has recently been awarded two contracts that require extensive pile driving. First, Magellan Midstream Partners LP of New Haven, Connecticut hired Blakeslee Arpaia Chapman, Inc. to construct a new 150-foot diameter fuel storage tank foundation. The project included the demolition and disposal of existing concrete structures, adjacent excavation and site work, furnishing and driving 320 HP14 x 89 steel H-piles driven to rock, and the furnishing and placing of 1600 cubic yards of reinforced concrete. Two hundred of the piles required field splices to reach required depths. Blakeslee Arpaia Chapman, Inc. utilized a 100-ton Liebherr Model LR853 crane with fixed leads equipped with a hydraulic impact hammer to complete the pile driving operations.

The location of the job created challenges because the work was being done in an active gasoline and oil tank farm. Welding and burning operations had to be monitored closely for safety purposes. A high volume of tanker trucks were present in the work area. Coordination and scheduling of equipment and material deliveries needed to be continuously adjusted to avoid interference with Magellan's business operations and keep Blakeslee's construction operations on schedule.

Blakeslee's Marine Division was also awarded a second contract. Mystic Seaport Museum of Mystic, Connecticut hired Blakeslee Arpaia Chapman, Inc. to complete the replacement of their existing lift dock. The new lift dock was designed by Rolls Royce and McClaren Engineering Group. This project included the demolition of the existing

lift dock system including the removal of all existing pipe piles and timber piles. New steel piles were installed for the bulkhead and the bulkhead tie back system. The new concrete filled pipe piles were 120 feet long, and were driven to refusal to support the reinforced precast concrete caps and winch foundations. New timber piles were installed to provide a fender system for mooring various types of vessels. The new structural steel platform will soon be delivered by barge and set into place using two heavy lift cranes. Eight large winches will be installed and synchronized to raise and lower the massive platform. The capacity of the platform is 600 tons. The platform will be used to remove large antique ships from the water for repairs. Blakeslee Arpaia Chapman utilized a 150-ton 3950 Manitowoc crawler crane on a 50 by 150 foot barge and pile driving equipment to complete the project. Various sized Vulcan pile hammers including single acting, double acting and vibratory were utilized to complete this interesting project. The project had many challenges including shallow water for marine equipment to operate, limited space for material laydown, and coordinating construction operations to limit interference with Museum Daily Events.

Membership in the PDCA has been very beneficial to Blakeslee. It has provided exposure to firms seeking our services and has been an excellent source of technical information on the art and science of pile driving. ▼

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George Goble Honored

Engineer George Goble is the 2007 Terzaghi Lecturer

By Stevan Hall, PDCA Executive Director

One of the highest honors in geotechnical engineering, the Terzaghi Lecture is an annual lecture given by and honoring a distinguished engineer. In 2007, George Goble was selected to present the Terzaghi Lecture at the ASCE, GeoInstitute's GeoDenver in Denver, Colorado, on Tuesday, February 20.

George's lecture was entitled, "Applications of Dynamic Methods to the Design and Installation of Driven Piles." George Goble has been a lifelong advocate and champion of driven piles and a true friend to the PDCA. On February 20, George once again placed the driven pile industry in the limelight.

George G. Goble, Ph.D., PE received a B.Sc. degree in civil engineering from the University of Idaho in 1951 and a master's degree and Ph.D. in civil engineering specializing in structures from the University of Washington, Seattle. He studied at the Technical University of Stuttgart (Germany) as a Fulbright Student.

George worked as a Structural Inspector for the Oregon DOT and as a Structural Designer for Marshall Barr and Associates of Seattle, WA. In 1961, he joined the faculty of Case Institute of Technology (now Case Western Reserve University), Cleveland, Ohio. During the next 15 years, he taught structures and mechanics courses there and was active in research on the dynamics of pile driving, structural optimization, bridge testing, and experimental structural behavior. He was Chairman of the Civil Engineering Department from 1975 to 1977. He joined the faculty of the University of Colorado, Boulder as Department Chairman of Civil and Environmental Engineering, and he retired from the University in of Colorado in 1992.

continuation of the consulting he had been doing beginning with his arrival at Case. Goble and Associates became Goble Rausche Likins and Associates, Inc. and currently is known as GRL Engineers, Inc. After extensive field testing experience, he founded Bridge Diagnostics, Inc. in 1988 to commercialize the concepts that were developed.

He received the ASCE Collingwood Prize in 1965, the fifth Award of the Lincoln Arc Welding Foundation Professional Structures Design Competition of 1966, and the ASCE Martin S. Kapp Foundation Engineering Award of 1988.

The PDCA would like to acknowledge George Goble and his contribution to the pile driving industry and congratulate him as the Terzaghi Lecturer. ▼

Gage installation in the 1970s

He has published extensively in the areas of structural optimization, structural laboratory testing, dynamics and field testing of pile driving, field testing of bridges, determination of soil properties from dynamic measurements, geotechnical centrifuge testing, and safety evaluation of foundation and structures using probability analysis.

George first began field testing bridges in 1972 in a research project funded by the Ohio DOT. In 1972, he founded Pile Dynamics, Inc. and in the early 1970s, Goble and Associates, Inc. was incorporated. This firm was a formal

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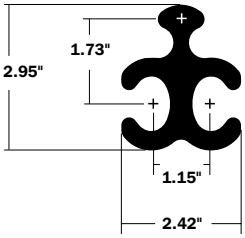
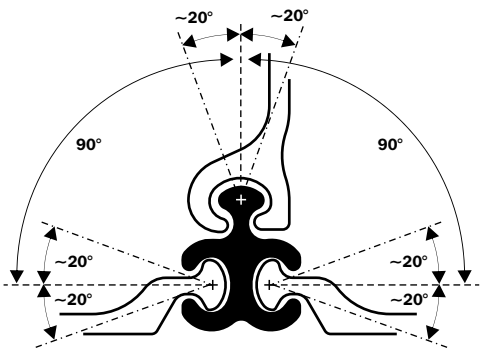
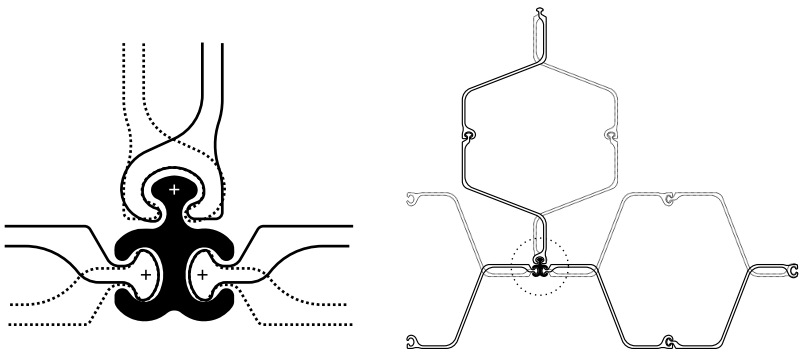




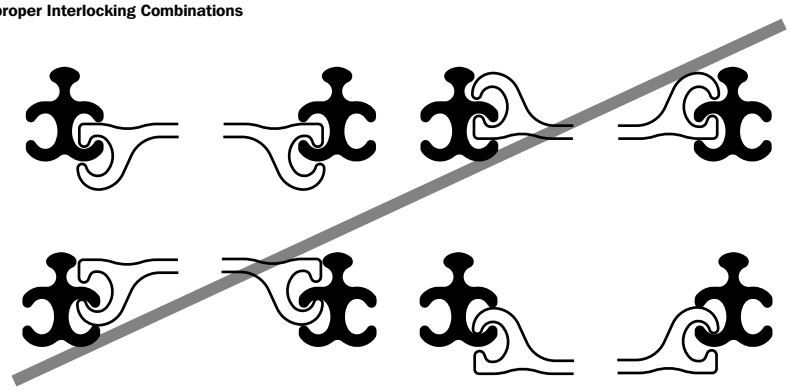
Installation Guidelines

1. General interlocking guidelines call for a ball-to-socket or a socket-to-ball connection. Please review the proper interlocking examples listed.
2. Thread the connector into the interlock while the sheet pile is out of the ground.
3. Adjust the connector to the appropriate position.
4. Tack or spot-weld the connector in place (typically a 10" weld attaching the connector to the sheet pile at the top is sufficient).
5. Drive/extract the sheet (with the connector attached) as you would normally.

Proper Interlocking Examples



Improper Interlocking Combinations



Please note:

1. Swing or rotation stated are typical but can vary by 10° or more due to rolling tolerances found in sheet pile interlocks.
2. PilePro® connectors are protected by patents.

Changing **Some History**

By James Weaver, P.E.

Photo provided by Figg Bridge Engineers

Penobscot Narrows Bridge and Observatory replaces historic Waldo-Hancock bridge in Maine

Since 1931, all traffic heading up US Route 1 along the coast of Maine has crossed the historic Waldo-Hancock suspension bridge to access the colorful Down East Maine communities of Bar Harbor, Blue Hill, Castine, and Eastport. The deck of the narrow, two-lane, steel bridge soared over the Penobscot River, providing views of the Civil War-era Fort Knox and the town of Bucksport to the north, and Penobscot Bay to the south.

During the spring of 2003, the idyllic scene from the bridge was interrupted by engineers and contractors checking the condition of the main suspension cables. They found that the 75-year-old cables were far more severely deteriorated than believed, jeopardizing the integrity and safety of the bridge. The bridge was posted and access was denied for vehicles weighing over 24,000 pounds until viable stabilization and remedial repair options could be provided. An immediate decision was made to replace the bridge with a new, modern structure while a stabilization contract was undertaken to strengthen the main cables until a new bridge would be completed.

The Maine Department of Transportation (MaineDOT) selected Figg Bridge Engineers (FIGG) to design the replacement bridge. The time that it would take to design and build a replacement bridge was critical, since structural analyses indicated that the cable stabilization measures undertaken in 2003 would have a limited service life. The location of the new bridge is parallel to and immediately downstream of the existing bridge, and it was decided that the new bridge foundations would be located outside the limits of the Penobscot River to eliminate time-consuming permitting issues.

"Initially, we were concerned about the installed integrity and capacity of a large pile group. Difficult driving was anticipated due to the presence of cobbles and boulders, and there was uncertainty as to whether dynamic pile testing would detect damage at the pile toe," says Laura Krusinski, P.E., senior geotechnical engineer in MaineDOT's Bridge Program.

Photo provided by Cianbro

During the spring of 2003 , the idyllic scene from the bridge was interrupted by engineers and contractors checking the condition of the main suspension cables. They found that the 75-year-old cables were far more severely deteriorated than believed, jeopardizing the integrity and safety of the bridge.

The Project Begins

To replace the aging Waldo-Hancock Bridge, the design MaineDOT selected was a 2,120-foot long, cable-stayed, concrete structure supported by two obelisk-shaped pylons and abutments. "Since a new structure was quickly needed, a unique 'Owner Facilitated Design-Build' method of contract execution was tendered," says Christopher Burgess, P.E., S.E., Principal Bridge Engineer for FIGG. FIGG, headquartered in Tallahassee, Florida, designed the bridge, and also provided construction engineering services, and on-site technical assistance. A Maine-based joint venture of Cianbro/Reed&Reed, LLC was hired to build the bridge, bringing a combined work force with the resources, expertise and will to work collaboratively with the department and the design team.

Project Concerns

The Portland, Maine office of Haley & Aldrich served as the geotechnical consultant for the design team to address the variable and complex subsurface conditions along the bridge alignment. Bedrock is at and near the ground surface on the western side of the Penobscot River in Prospect, but extends to depths on the order of 100 feet on the eastern side on Verona Island, requiring a combination of foundations. The Prospect Pylon is supported on a reinforced concrete mat foundation bearing directly on a prepared bedrock surface, and the Verona Island Pylon needed deep foundations to support the bridge loads.

The Verona Island Pylon was originally designed to be supported on six foot-diameter, drilled shafts socketed 15 feet into bedrock. However, the Cianbro/Reed&Reed team proposed to support the pylon on high-capacity, steel H-section piles driven through dense glacial till soils to bearing in/on the underlying bedrock. They believed that the work could be done more quickly and more cost effectively with piles verses drilled shafts. Furthermore, Cianbro/Reed&Reed could do the work using their own experienced pile drivers.

MaineDOT and the design team had concerns regarding the practica-

bility of driving 60 to 80-foot-long, closely spaced piles though dense granular soils containing cobbles and boulders up to three feet in diameter. "Initially, we were concerned about the installed integrity and capacity of a large pile group," says Laura Krusinski, P.E., senior geotechnical engineer in MaineDOT's Bridge Program. "Difficult driving was anticipated due to the presence of cobbles and boulders, and there was uncertainty as to whether dynamic pile testing would detect damage at the pile toe. This would be complicated by densification if the pile spacing dropped to 2.5D, as was planned. Furthermore, obstructions could twist and deflect piles to the path of least resistance, and this type of damage would be undetectable. Ultimately, we determined the risks to be within acceptable limits once a prudent design approach and a rigorous pile testing and quality control program were developed."

Creating a new design

In a supplemental engineering analysis, MaineDOT, the design team and contractor, devised a pile foundation design that would help assure installation of a safe and stable pile foundation. The new design called for the installation of 288 HP14X117 steel H-section piles fitted with cast steel tips and having a design capacity of 215 tons (430 kips). Before the start of production pile driving, 12 piles were dynamically tested, including restrike and CAPWAP. Cianbro/Reed&Reed hired GRL Engineers, Inc. to conduct the dynamic pile testing, and MaineDOT provided full-time pile installation monitoring. No static load tests were conducted as the results of the dynamic load testing demonstrated that the piles could be installed to the required capacity without overstress.

Pile driving began in December 2003, with piles driven with a Delmag D62-22 single-acting diesel hammer with a maximum rated energy of 164,600 foot-pounds. The driving records for the production piles were consistent with the records of the test piles. During design it was estimated that the driven pile lengths would be on the order of 70 to 110 feet for a total estimate of 24,900 linear feet, and that the piles would be driven to practicable refusal in/on bedrock. The actual driven pile lengths ranged from 59 to 100 feet with an aggregate pile length of 20,700 linear feet. Based on the driving records, it was apparent that the piles developed the minimum ultimate capacity (950 kips at the required penetration resistance of six to nine blows per inch) in the glacial till.

Approximately four percent of the piles, distributed throughout the plan area of the foundation limits, were judged to have been damaged or impacted by the presence of cobbles or boulders in the glacial till. In the post-pile installation evaluation, FIGG concluded that the damaged/impacted piles did not affect the overall capacity of the foundation, and therefore no replacement piles were required.

Pile installation at the Verona Pylon was completed in March 2004, and the bridge superstructure was completed in the fall of 2006 at a construction cost of about $68.8 million. The timely installation of the pile foundation supporting the Verona Island Pylon was a critical element in allowing the replacement bridge to be designed and constructed in less than three and a half years. The aesthetically dramatic Penobscot Narrows Bridge and Observatory was opened to traffic in December 2006. ▼

Photo provided by Kevin Bennett

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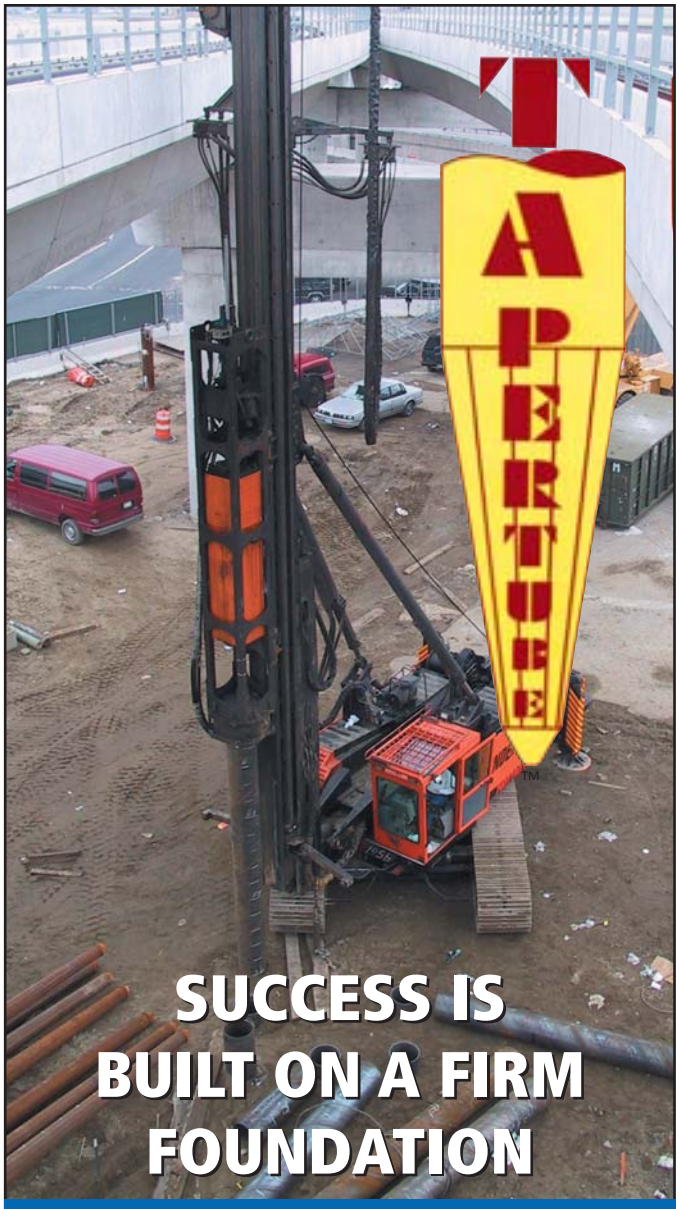

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A group from the South Carolina PDCA Chapter inspects timber piles prior to treatment

Quality Driven

Quality Control and Quality Assurance for treated timber, Precast/Prestressed Concrete Piles, and Steel Piles

Introduction to the Quality Control and Quality Assurance of the Manufacturing Process for Driven Piles

The slogan for the Pile Driving Contractors Association is "A Driven Pile is a Tested Pile." Unlike some competing products that are produced entirely on the job site, driven piles are made and tested before they reach the job site, and then on-site quality controlled driving procedures assure that the manufactured pile is installed properly.

Common driven pile types are timber, precast/prestressed concrete and steel. Each of these is made in a controlled manufacturing environment to strict industry standards. In the paragraphs that follow, we will review quality control procedures for the manufacture of these driven pile types.

Treated Timber Quality Control and Quality Assurance

Treated timber piles are subject to a minimum of 10 different quality inspections prior to delivery of the material to the job site. This assures the pile driver, the design group, and the owner of a product will consistently meet the design requirements established by the latest edition of the ASTM D25 standard.

The initial quality control inspection is done while the tree is still standing in the woods. Each tree is viewed individually for straightness and any surface imperfections that would eliminate it for use as a treated pile.

Once the tree has been selected for harvest it is marked, felled, and delivered to a facility designed to remove the bark. As the trees are being unloaded, the loader operator is inspecting the load for straightness, surface condition, and natural taper from butt to tip. Any problems found at this point result in the piles being re-loaded on the truck and sent back to the producer.

After acceptance at the peeling facility, the piles are machine peeled. As the bark is being removed the peeler operator is inspecting the surface of the pile for any scars or other imperfections that may have been hidden by the bark.

When the bark has been removed, the pile will be measured for size and length. The grader, or inspector, has the responsibility to inspect for adequate size and taper of each individual pile. Anything that is too small or that has too much taper will be cut back to a shorter length, or will be made into another product. At this point, the piling is identified and inventoried by size and length.

Framing is the next inspection step. At this point, piles of like size and length are sorted for straightness. The straighter piles are selected for house piling that will typically have an exposed section above the ground. The less straight piles are used as foundation piling that will be driven to grade. As the piles are being sorted they are also being cleaned and hand-peeled of any bark remaining after the machine peeling.

As the framing is completed the piles are loaded onto kiln trams for

Steel piles are manufactured in a variety of shapes and sizes

kiln drying. Drying is necessary to remove the naturally occurring moisture from the wood to allow for the introduction of the treating solution. The time associated with the cycle varies according to size, but it is generally completed in approximately 72 hours. Once the drying cycle is complete another inspection is made to determine moisture content. Moisture content of between 25 and 29 percent is required to allow proper penetration and retention of the preservative.

Following kiln drying, the piles are treated by a pressure process designed to impregnate the piles with a wood preservative to protect against naturally occurring conditions and organisms that attack wood. Inspection at this point is done to determine that the required penetration and retention specifications are met; taking core samples from each charge treated, testing for penetration, and running an assay for retention achieves this.

Upon passing inspection for penetration and retention, the piles are offloaded and placed into inventory. As this is being done the loader operators inspect for any mechanical damage that may have occurred during the drying/treating process.

Shipments are made from inventory as orders are received. The piles are once again inspected for mechanical damage as they are being loaded for delivery. Final inspection occurs as the piles are delivered to the job site. Most piles are off-loaded by mechanical means to reduce the chance of breakage. Boom operators provide one last inspection for any damage that may have occurred during loading, transport, or unloading. If damage is found, the piles are re-loaded and returned to the treatment facility.

Based on the 10 different quality control steps outlined above, treated timber piling does in fact provide quality assurance and give credence to the PDCA mantra that a driven pile is a tested pile. Treated timber piling can be specified and driven with the knowledge that they have been thoroughly tested and inspected to meet the design requirements.

Precast/Prestressed Concrete Piles Quality Control and Quality Assurance

Precast/Prestressed Concrete Piles (PSC) are made in a controlled manufacturing environment with strict quality control procedures. A primary source of quality control procedures for this product is the Precast/Prestressed Concrete Institute (PCI). PCI outlines every step of the pile manufacturing process from beginning to end. Pile manufacturing plants model their quality control procedures in accordance with the PCI "Manual for Quality Control." Many plants choose to participate in PCI's plant certification program. Others may set up quality control standards in accordance with the PCI model and have the quality control procedures reviewed by an independent professional engineering firm at regular intervals during production. Specifications typically reference PCI along with American Concrete Institute (ACI) and American Society for Testing and Materials (ASTM) standards for all of the raw material components of PSC piles. For discussion purposes, we will review the process for manufacturing prestressed concrete piles.

Smooth, straight, and clean forms are used in the casting process. The forms are normally made of steel of sufficient strength to resist deflection during the prestressing process. Before the reinforcing steel is placed, the casting beds are inspected.

Reinforcing steel (prestressing strands and spiral wire) is precisely placed, tensioned, and tied in accordance with the approved shop drawings. Templates referred to as headers ensure that the longitudinal reinforcing (prestressing strands) are precisely placed. Lateral reinforcing encases the prestressing strands and is tied at precise pitch or spacing. Proper concrete coverage of the steel reinforcing is a critical component of a pile that is assured with a prestressed concrete pile.

Redi-mixed concrete is supplied from an approved source, using a tested and approved mix design. Before the concrete is placed in the forms, slump measurements are made to make certain it is within tolerance. The concrete is placed in the prepared forms, properly

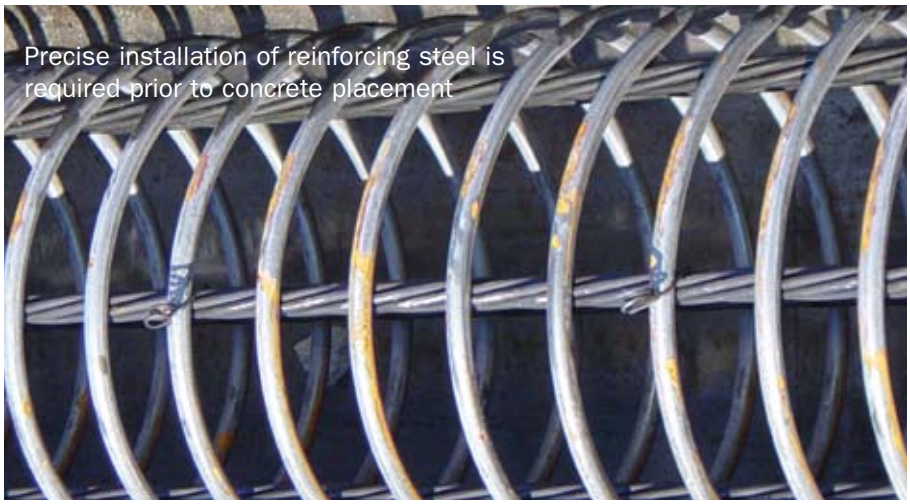
consolidated (vibrated), and finished. Concrete samples are taken as test cylinders to be cured in the same environment as the piles.

Piles are allowed to cure in place until a specified strength is reached prior to allowing detensioning of the prestressing strands. This strength is verified by breaking concrete test cylinders in accordance with ACI standards. The piles will not be detensioned until the specified strength is reached. The piles are then removed from the forms using lift points precisely placed during the casting process in order to maintain the pile in perfect alignment as it is handled. They are then stored at the manufacturing plant until the specified strength for transport and installation is reached — again verified by breaking of concrete cylinders.

Once concrete strength is achieved, the piles are visually inspected then loaded onto a barge or flat trailer of sufficient length to enable the pile to be properly supported for delivery to the job site. At the job site, they are unloaded in a similar manner and inspected again. The piles are then ready to be driven. Once installed, structural integrity of a prestressed concrete pile can be easily verified through dynamic pile testing. There is no guesswork with a driven prestressed concrete pile.

Steel Pile Quality Control and Quality Assurance

Steel piles (H-piles, sheet piles, and pipe piles) are also made in a controlled environment and meet rigid ASTM standards. Depending on the desired application, steel H-piles and sheet piles are manufactured to meet one or more of several ASTM specifications. The most common standard for sheet piles in previous years was ASTM A-328, Fy = 39 ksi. This standard met most needs and many piles manufactured to this specification are still in use. Today, most sheet piles and H-piles are manufactured to meet ASTM A-572-Grade 50, Fy = 50 ksi, which provides additional strength, allowing for potentially higher geotechnical capacity. A572 steel can also be manufactured in Grade 60 and Grade 65, Fy = 60 ksi and 65 ksi, respectively. Also available are steel piles that meet the ASTM A-588 to provide for improved atmospheric weathering and steel piles that meet the ASTM A-690 for increased corrosion resistance in marine environments, both of which have a yield stress of 50 ksi.


Precise installation of reinforcing steel is required prior to concrete placement

The American Institute of Steel Construction (AISC) awards fabricator certifications for steel manufacturers. Companies that earn these certifications are evaluated by AISC and subject to an annual inspection to ensure that their level of quality meets their stringent standards.

In the manufacture of steel H-piles and steel sheet piles, molten steel is poured via continuous caster into a mold and drawn downward through water-cooled walls of the mold. This molten steel, derived from either iron ore or scrap steel, is closely monitored to ensure the proper chemical composition to meet the desired specification and grade. By the time the steel is extruded from the caster it has solidified into a semi-finished product, or blank, which is used to form the finished product. The blank is then further processed via a set of specific rollers into the various structural H and sheet sections, which are then cut to the desired lengths. They are precisely manufactured to meet specified tolerances to ensure consistency and uniformity of size and shape.

Most steel pipe that is utilized for piling conforms to another ASTM specification, A-252, which includes three grades: 1 – Fy = 30 ksi, 2 – Fy = 35 ksi and 3 – Fy = 46 ksi. There are three primary methods of manufacture for steel pipe used as piling: Seamless, Electric Resistance Weld (ERW), and Double Submerged Arc Weld (DSAW).

In addition to pipe meeting the standard ASTM A-252, pipe manufactured for high-strength applications, such as oil well casings, can also be utilized as piles. As an option to the typical cylindrical shape, steel pipe piles can also manufactured in a tapered shape, similar in form to a timber pile.

Steel piles are manufactured in a variety of shapes, sizes, and lengths. When combined with the variety of available material specifications and grades, the designer and contractor are provided with a great deal of flexibility. Steel piles can be selected to meet a wide range of environmental and loading conditions. Shop-applied coatings can also enhance the service life and appearance of steel piles.

Summary

One of the great benefits of driven piles is that they are manufactured to meet specified criteria, and the manufacturing process is open and available for inspection throughout. Material test reports are also available for review. A final visual inspection can be made just prior to installation and, through the use of dynamic and integrity testing, the end user can be assured that each pile is properly installed and capable of performing as desired. No other deep foundation solution is so thoroughly tested during manufacture and installation. A driven pile truly is a tested pile. ▼

Don Surrency of Cox Industries, Harry Robbins of Palmetto Piledriving, Gerry McShane of Skyline Steel and Bill Buckland of Mandal Pipe Company all contributed to this article.

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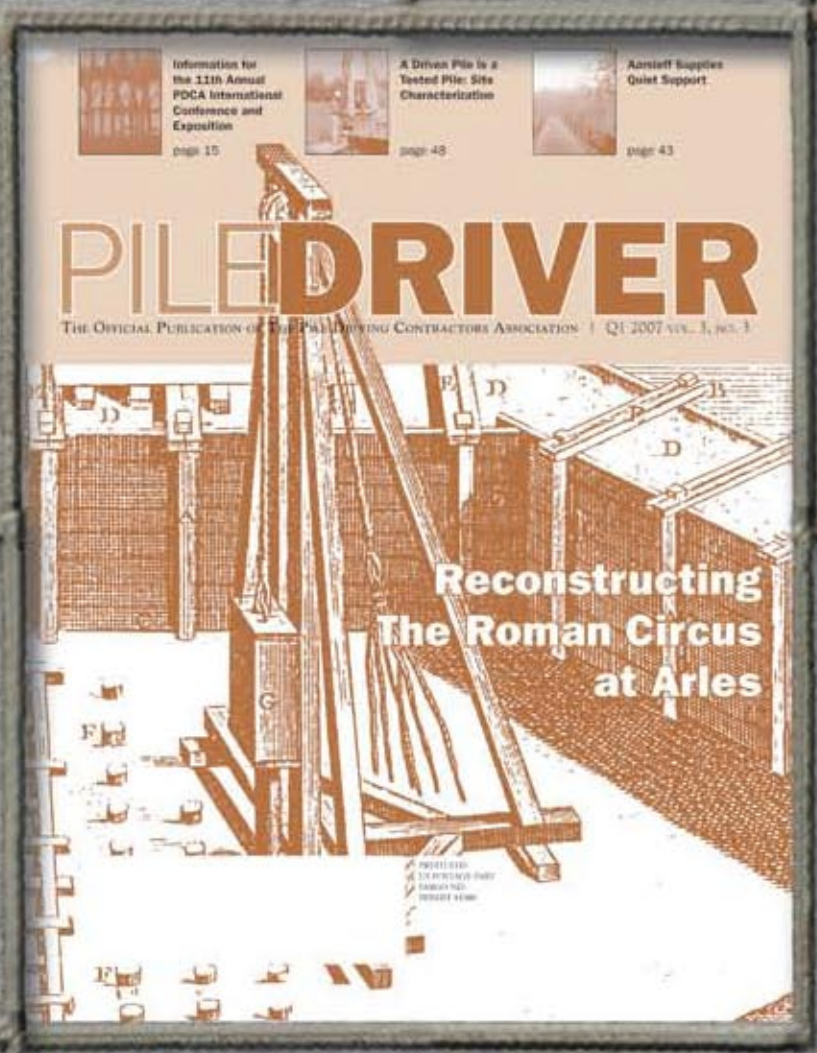

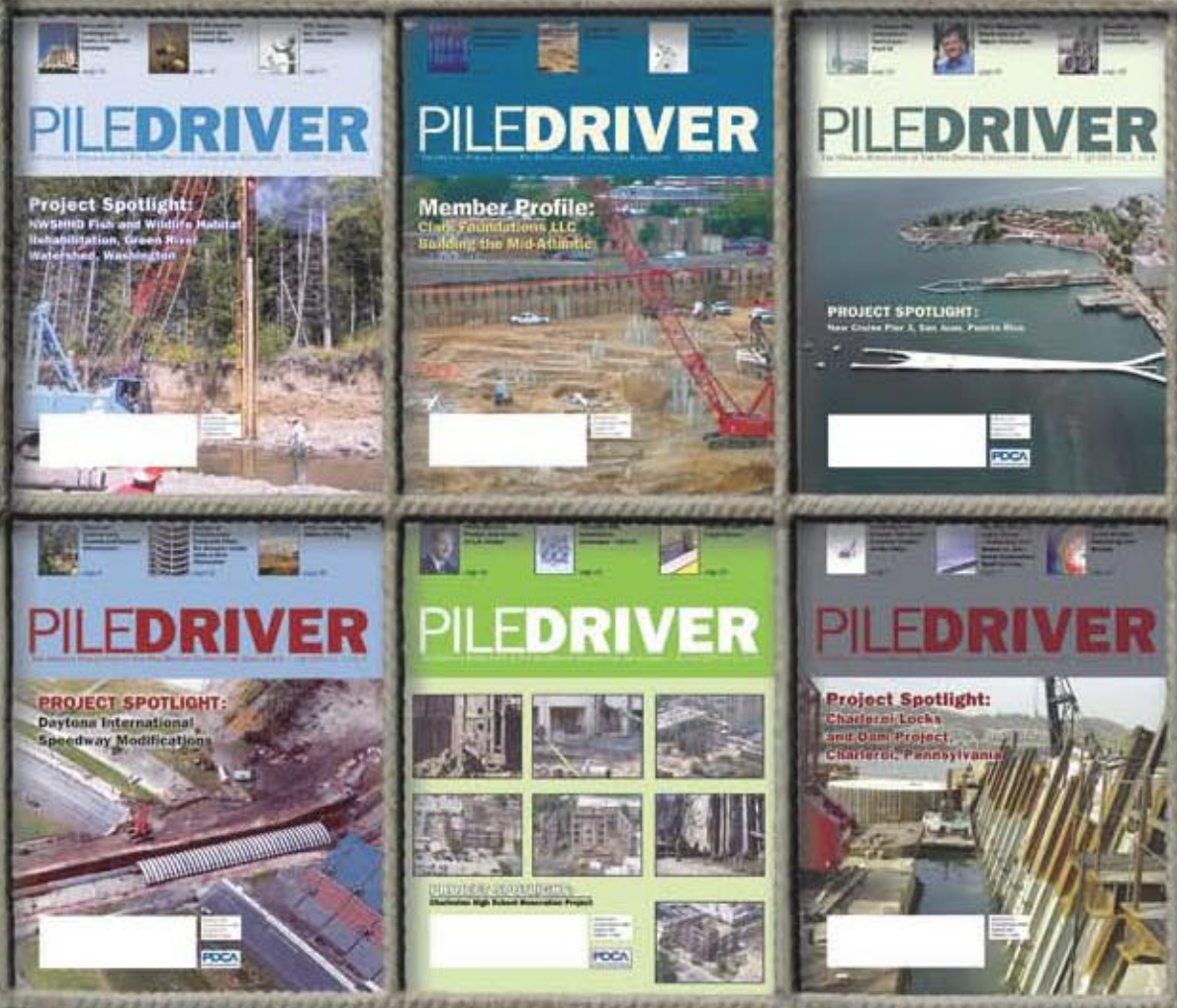

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The Driven Pile **and a Driven Man**

Sun Marine Maintenance, Inc.

Prestressed concrete pile installation

Sun Marine Maintenance, Inc. was founded in 1974 by Michael R. Jahnigen. The company enjoys moderate success as a regional pile driving firm along the Delmarva Peninsula. Its current success can be attributed to its fleet of modern equipment: the Junttan self-erecting pile driving rigs. Its past success was due in no small part to its continuing quest for utilizing state-of-the-art equipment.

The company started as a marine construction and pile driving company with its revenues split almost evenly between the two operations in any given year. Sun Marine's resume includes marinas, ocean jetties, hotels, condominiums, bridges, residential projects, state-owned boat launch facilities, and outfall pipes accompanied by pile driving jobs for wastewater treatment plants.

With extensive experience in driving wood, steel, and concrete precast, the company conducts a considerable amount of value engineering in order to put the right-driven-pile into each project. Recently, Sun Marine has regionally introduced 12" concrete precast into the 100 and 125 ton market with so much success that in 2005, it ceased its marine construction division in order to focus solely on the pile driving foundation industry.

So now what about the driven man behind the driven pile? Well, there are three things people notice about Michael, or Mike, as his friends call him: he is bald (he says he lost it naturally, yeah right); he loves to drive piles and tell people about pile driving (just ask his employees); and he is constantly driven by the search for "modern equipment."

This third item bears some explanation. Mike was born in 1953 — no, not in a log cabin — and was the middle child of William and Valgene Jahnigen. His parents say he was the by-product of the Chesapeake Bay Bridge project on which his dad worked as a pile driver and a carpenter. His dad started driving piles with the old skid rigs and Marions. So when Pops, which is what Mike calls his dad, started his pile driving business in 1958, Mike was bound to be an indentured servant.

When Mike was eight years old he worked in the family marina, and then at the age of 10 he started on Pops' water rig by cranking hand winches, coiling rope, handing bolts, and using the clubs to hold the piles in the leads. Yes, no follower or cap, just a 2,000-pound drop hammer, a single drum winch, and a cat head. One day Mike would have "modern equipment," such as a two-drum winch and a follower cap. Pops taught his boys to be thankful for "modern equipment" like two sets of logging hooks


Installation of timber piles

to carry pile or a 90-pound jack hammer that could be used instead of a 6" x 6" x 5' oak battering ram to help drive two and three-inch bulkhead sheeting — now that was "modern equipment." Then in 1964, Pops bought a 1936 Lorain shovel. The boom was borrowed, the flatheads were hand-made and it was powered by a hand-cranked Walkashaw engine with a magneto that would shoot a spark six inches. At the ripe old age of 12, Mike was running "modern equipment" even if he had to stand up to press the brakes and pull the levers to drag line.

Well, with all of this experience and his drive for "modern equipment," Mike left home at the age of 16 to work for other pile driving companies. In 1971, he married Debbie, who he's been married to for the past 35 years, and started his business in 1974. He built his first barge in 1976 with 40 feet of leads, a double drum winch, and a follower — what "modern equipment!"

In 1978, he bought his first crane, which was a 1953 20-ton Michigan Truck crane with hand blocked outriggers and 60 feet of 8" spud with a 3,000-pound drop hammer. Mike was driving eight piles in eight hours with his "modern equipment." In 1979, he bought his first crawler crane, which was a 1955 1020A unit crane with independent boom and power load lowering. An MKT diesel hammer was purchased and at one point that was modern equipment — until one day when they drove 15 piles and washed 20 cars!

In 1984, a new 50-ton Northwest was purchased — third drum and all — outfitted with 65 feet of fixed leads, a hydraulic spotter, and a 1,200 CFM air compressor mounted on the back; with a crew of five they were driving 80 piles a day — "modern equipment."

In 1990, a 30-ton Link Belt was purchased with every option and a light weight set of F.E.C. type leads with a 9B3 air hammer and they were setting up in 30 minutes and driving 35 piles a day — "modern equipment."

In 1992, Mike went to the Bauma show in Munich, Germany and saw his first self-erecting, hydraulic pile driving rig. Not being one to make a fast decision, Mike waited 10 full years and in 2002 purchased his first Junttan rig, which was a new PM 16 with a 3-ton hammer — "modern equipment."

The rigs now can mobilize with one truck and can be ready to drive with one man within five minutes! Production is way up, while fuel and labor costs are way down. So now the question begs, "What does the future hold for modern equipment?" How about pile rigs with one man, shoulder pack remote controls, or rigs with GPS units to layout and do "as builts"? Or PDA units mounted on the rig with data transmitted directly to the engineer? Or low cost concrete pile joints so two men can drive a 100-foot pile? Or . . .

The character of Sun Marine Maintenance, Inc. is best summed up in its mission statement: "Be true to yourself and family. Provide some jobs. Make some money."

Sun Marine Maintenance, Inc. is also powered by its optimistic motto: "We don't make things difficult — we do difficult things."

Mike has enjoyed the "new" modern equipment so much that he and his son Zach have opened the world's only stocking Junttan dealership. To discuss the past, or to talk more about modern equipment, please feel free to call Mike on his cell phone at 302-245-1421. ▼


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Attendees at a meeting of the South Carolina Chapter of PDCA.

PDCA Chapters Update

Many exciting things are happening for the Pile Driving Contractors Association (PDCA). The Gulf Coast, South Carolina, and Mid-Atlantic PDCA chapters have been engrossed with meetings, conferences, tours, or presentations. In addition, the PDCA has gained a new chapter in California.

The PDCA of the Gulf Coast

The Gulf Coast Chapter of PDCA, which was established in June 2006, held its first annual Winter Meeting on March 1 at a local restaurant in Metairie, Louisiana, which is a suburb of New Orleans. In attendance were 42 contractors, engineers, and suppliers from south Louisiana and south Mississippi. A social hour preceded the meeting at an adjacent tavern. PDCA national member L.B. Foster, a steel piling and accessory supplier, hosted the social hour and the meeting.

A slide show presentation by Phil Wright with Foster highlighted the company's product lines with an emphasis on Foster's involvement with local contractors in levee repair and restoration in the New Orleans areas that were affected by Hurricane Katrina. Phil's slides highlighted some previously unseen scenes showing the extent of the damages and the repair work ongoing in the New Orleans area.

Following Foster's presentation, Stevan Hall PDCA Executive Director addressed the group, citing the benefits of membership in both the national organization and the local chapter. Steve also pointed out the PDCA 11th Annual International Conference and Exposition, which was held between March 28 and 31.

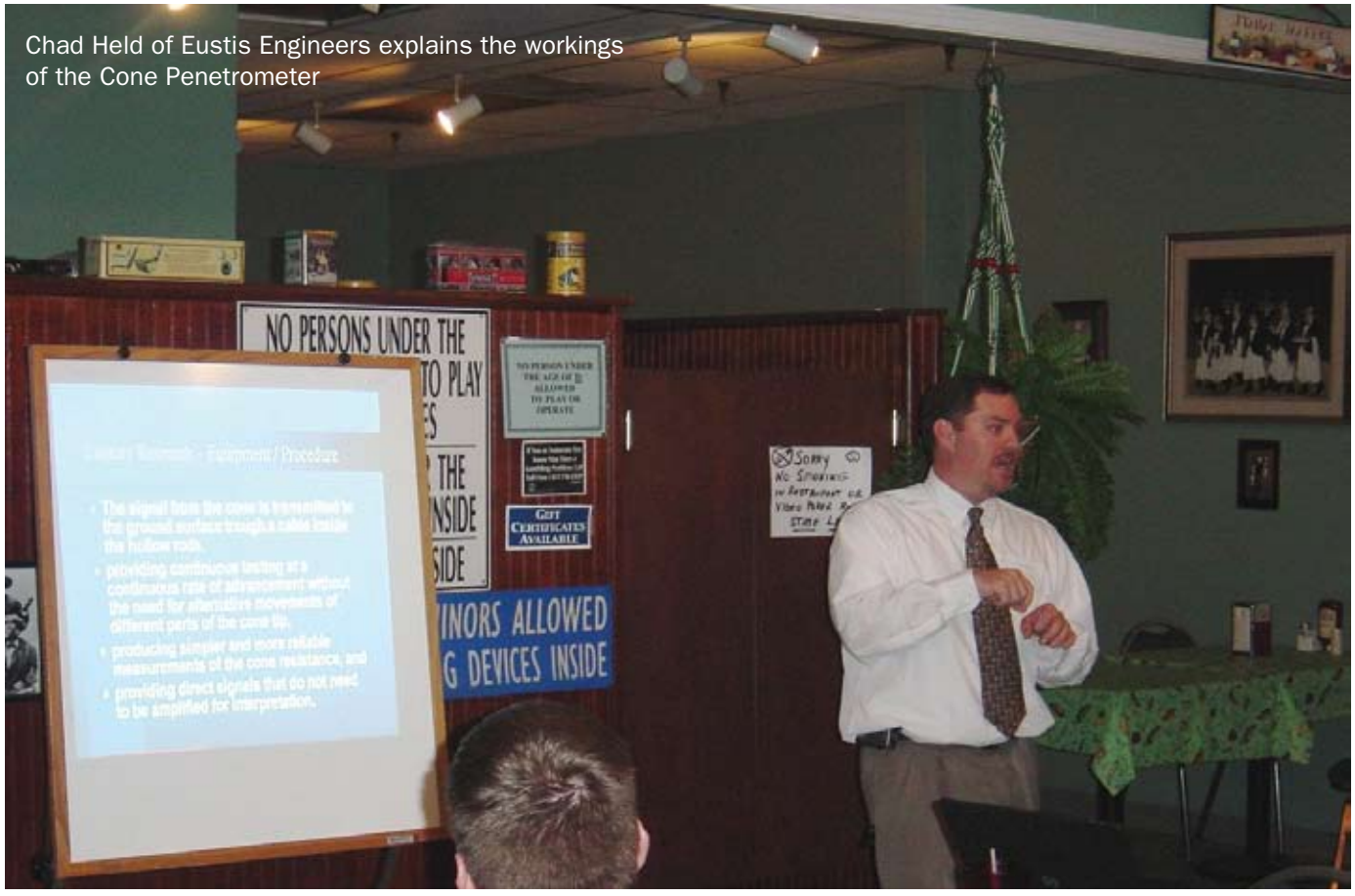
The annual conference offered something for everyone involved in pile foundations. The program offered many educational benefits, while the conference provided ample opportunity for networking with other contractors, suppliers, and engineering and testing firms from throughout the industry and from both national and international firms.

Following Stevan's talk, Chad Held with Eustis Engineers, a prominent local geotechnical engineering and testing company, made a presentation. Chad spoke about Cone Penetrometers, with a description of what they are, how they work, and their application to soils analysis as it applies to deep foundations.

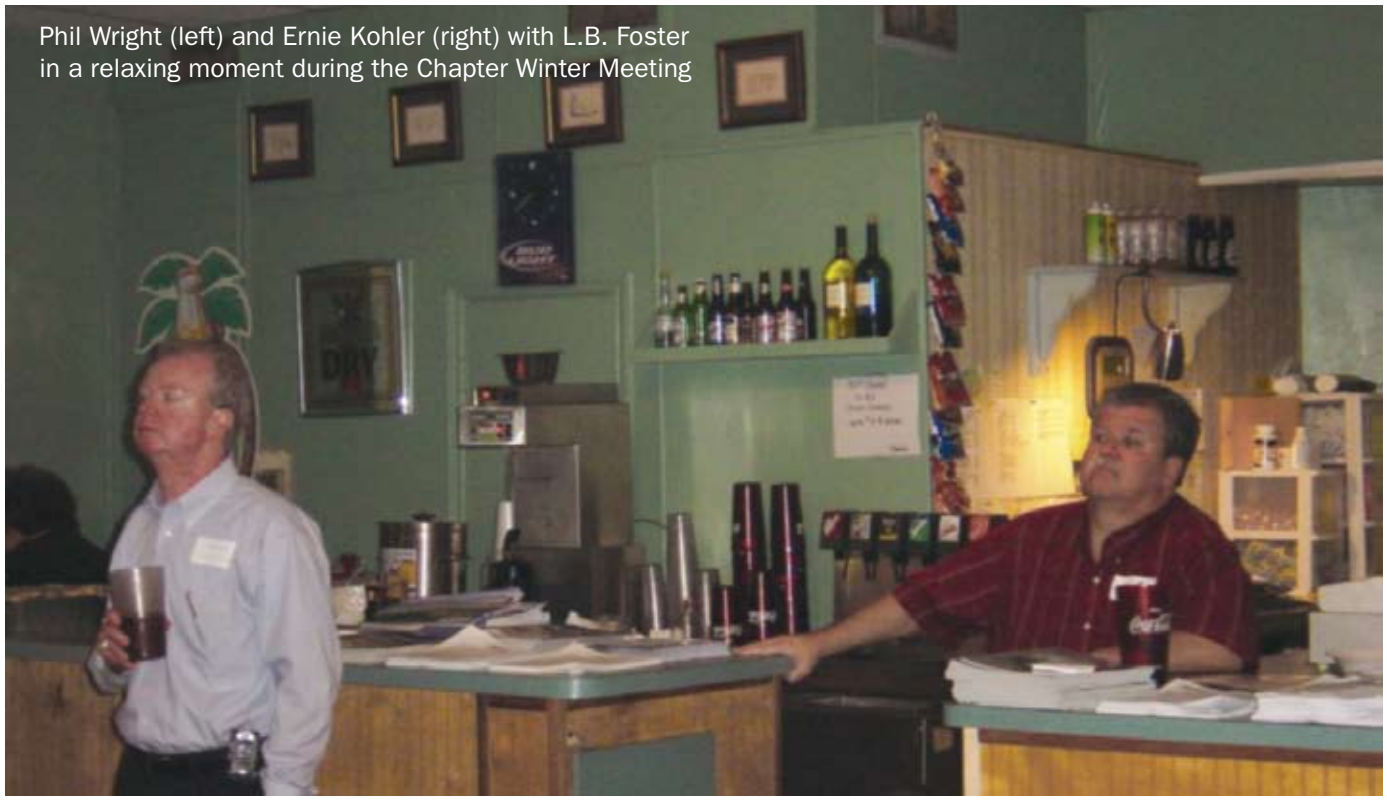
The meeting was closed after several local chapter committee chairs made brief remarks about activities and plans for future meetings as well as goals and local activities.

The Gulf Coast chapter members have been active in the area in highlighting the benefits and competitive advantages of driven piles. Showing early success in their efforts, several members were able to change a

Steve Hall, PDCA Executive Director, addressing the meeting



Chad Held of Eustis Engineers explains the workings of the Cone Penetrometer



Phil Wright (left) and Ernie Kohler (right) with L.B. Foster in a relaxing moment during the Chapter Winter Meeting

major project from auger-cast to driven piles, with substantial savings to a local school district. More information will be provided on this project as details are finalized and additional savings are shown after the test pile results.

The PDCA of South Carolina

The South Carolina Chapter of PDCA entered its fourth year. It ended 2006 with 38 contractors, suppliers, and engineering firms as members.

Back on November 28, 71 engineers and piledrivers attend a tour of current PDCA President Harry Robbins' prestress yard. Scott Nigels with Palmetto Pile Driving led the tour to show off the "start to finish" quality control and quality assurance built into every pile. National member Jenny Bass of Essve Tech Inc. was on hand to answer questions related to the metal tubing used for cast-in-place dowels inserts.

On December 5, the PDCA of South Carolina held its 15th quarterly meeting with Tommy Parker with Parker Marine, who taught attendees about the last 50 years of pile driving in and around Charleston. One of the National PDCA founding members, Skyline Steel hosted the social hour with 71 contractors, engineers and suppliers in attendance.

On January 26, South Carolina board member Andrea Edwards with Cox Industries opened Cox's Eutawville plant for a tour of their timber pile facility. Roger Atkins and Don Surrency, both with Cox, led us on the tour from the drying kiln to the C.C.A. treatment cylinders and explained the different classifications of wood piles.

On February 2, Parker Marine and Pile Drivers, Inc. sponsored the First Annual SCPDCA Oyster Roast with over 125 members and guests attending.

On March 1, Skyline Steel along with another PDCA member, Nucor-Yamato Steel, led members on a tour of Nucor-Yamato's facility in Huger, South Carolina. Skyline Steel was led by Greg Jarrett, Richard Gilbert, (who is both a national and South Carolina board member), and Jim Challenger. After a brief safety meeting, attendees were split up into groups of 10 and given a tour of the entire plant, and again the employees of Nucor-Yamato stressed the quality control and assurance built in at every stage of the fabrication process.

The PDCA of the Mid-Atlantic

The Mid-Atlantic Chapter of the PDCA held its first quarterly meeting of 2007 last January. Mike Jahnigen with Sun Marine Maintenance reported that the meeting had 19 participants. The theme for its 2007 meetings is "Pile Types." In January, Dean Matthews, who is with the Timber Piling Council, was the guest speaker and made a presentation on timber piles. On April 27, Dave Harper with Atlantic Metrocast, was scheduled to talk about prestressed concrete piles and in June, Skyline Steel will present a program on steel pipe and H-piles.

The Mid-Atlantic PDCA will host the annual Design and Installation of Cost-Efficient Piles (DICEP) Conference in the Baltimore/Washington area on September 21 or 27. The meeting's location will be announced at a later date.

The newest local chapter of PDCA: California

Welcome to the newest local chapter of PDCA! At our recent Annual Meeting in Nashville an agreement was finalized with the California Pile Driving Contractors Association and they became our newest chapter. The California Chapter provides us with a stronger presence on the West Coast. We look forward to working with them to educate and inform the public about our industry and promote the driven pile. ▼

2007 New PDCA Members

The following is a list of all members who have joined the PDCA in 2007. The association would like to welcome everyone on the list!

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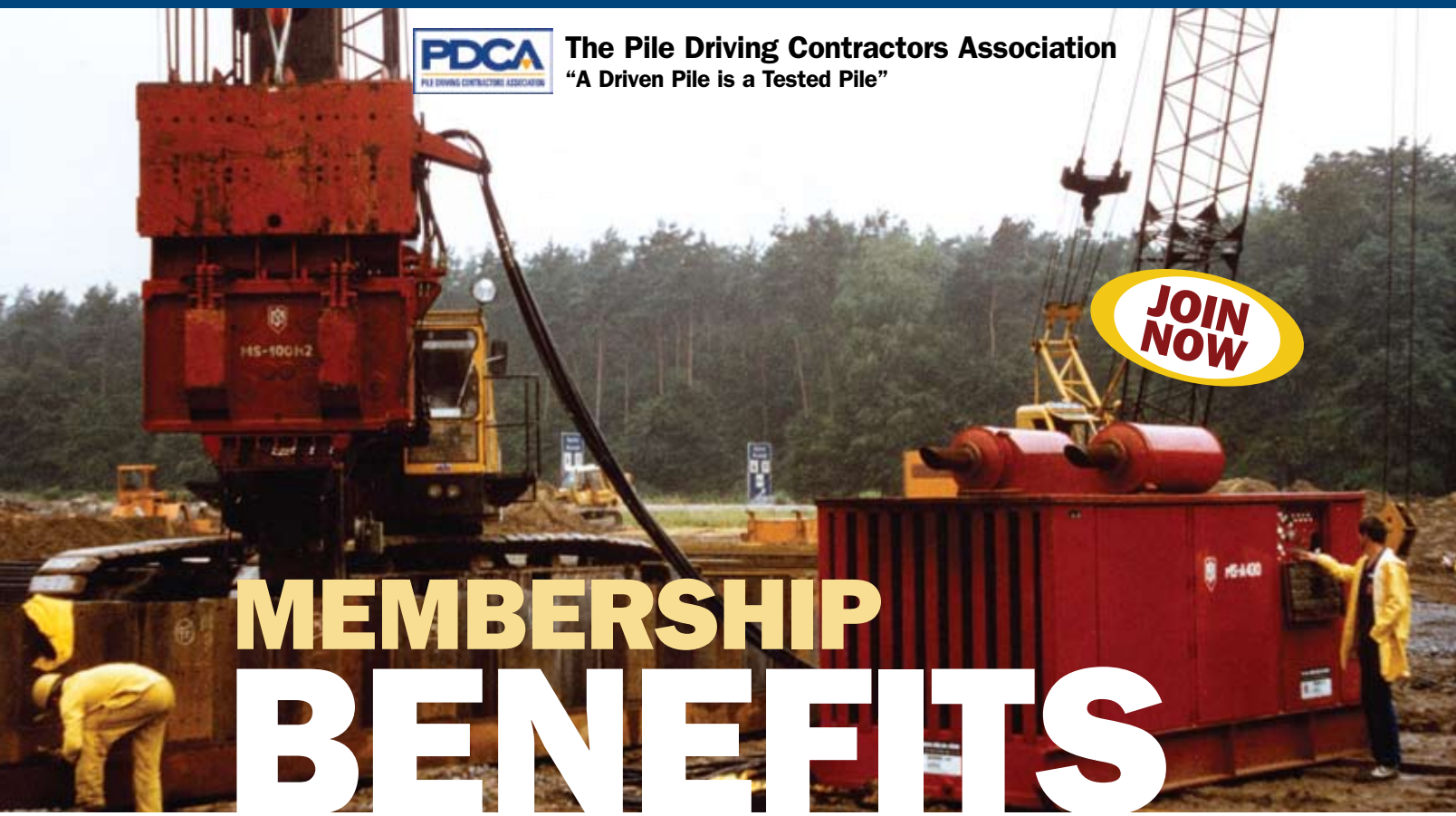

The Pile Driving Contractors Association
"A Driven Pile is a Tested Pile"

MEMBERSHIP BENEFITS

General Membership Information

We are the premier association for pile-driving contractors

The PDCA was founded in 1996 to promote use of driven-pile solutions in all cases where they are effective. We strive to build and maintain working relationships among end users, manufacturers, government agencies, educational institutions, engineers and others involved in the design, installation and quality control of the driven pile.

We are dedicated to advancing the driven pile

As the only organization solely dedicated to pile-driving contractors, we know that you understand the superiority of the driven pile in most applications. We are the only association addressing the intrusion of non-driven solutions that take away business from the driven-pile contractor. The PDCA understands that to survive in today's competitive marketplace, a pile-driving contractor must strive to stay abreast of the latest trends and technologies in the industry. That is why we maintain close ties with the world's leading suppliers to the industry. It's why we provide a broad range of educational programs for university professors, practicing engineers and contractors. And, it's why more and more contractors, engineers and suppliers are realizing that the PDCA significantly increases their value in the marketplace.

We are a direct link to decision makers

Major manufacturers take an active role supporting the PDCA. At our conferences, we bring together the world's leading design manufacturers and technical application experts to assist you in advancing the driven pile as a superior product.

The PDCA works closely with the technical community to format design codes and installation practices. We offer seminars throughout the country for engineers and educators on the capabilities and advantages of the driven pile. We also work with agencies, such as the Federal Highway Administration and state DOTs, which develop specifications for highway building and other infrastructure project that use driven piles.

We offer timely, valuable services

The PDCA improves your company's bottom line, as well as your stature in the construction industry, through a variety of programs and services:

Job Referrals

We are the only organization that provides contractor referrals to end users of driven piles. You tell us where you will drive piles and we will refer you to end-users. We also provide referrals to our supplier and technical members.

Peer-to-Peer Opportunities

With more than 100 contractor members, the PDCA offers many networking opportunities. Whether at our Winter Roundtable, our regional seminars or by just picking up the phone, you'll develop long-lasting professional relationships and friendships in the industry.

Annual Membership Directory

As a member, you'll receive PDCA's annual membership directory of our contractor, supplier and technical members. Your company is listed along with the piling solutions you employ and states in which you work. This directory is provided throughout the year to construction users on a complimentary basis.

Educational Conferences and Meetings

The PDCA offers cutting-edge education for contractors, engineers, geotechs and anyone else interested in the driven pile and its applications at two major conferences annually. Members receive discounts on exhibit and registration fees.

- The Annual Conference, held in early Spring since 1997, is a nationally recognized conference that brings together leading technical experts, suppliers to the piling industry and contractors. This conference focuses on the key issues faced by pile-driving contractors and features discussions and presentations as well as an extensive exhibit area.

- The Design and Installation of Cost-Efficient Driven Piles Conference (DICEP), held each September since 2000, is a nationally recognized two-day conference that brings together geotechnical and design engineers, college professors and contractors to discuss the latest trends in understanding, analyzing and controlling piling costs.

Industry Development

The PDCA continually strives to expand market share for the driven pile. The PDCA sponsors the Professors' Driven Pile Institute, held at Utah State University in Logan, Utah. Up to 25 professors, from major engineering schools, are invited to participate in an intensive, week-long program that presents them with the latest concepts in driven-pile design, installation and quality control. Some of the leading faculty in the deep foundation field has attended the institute to date. The program supplies the educators with the tools and knowledge to be able to teach their students about the advantages of the driven pile. It promises to have a long-term impact on market share for the driven pile.

Publications and Reference Materials

As a PDCA member, you will receive our quarterly publication, "*Piledriver*," which presents articles on issues and trends of interest to our industry. As a member, you'll receive discounts on advertising in the magazine.

"Through its programs and services, PDCA has presented our company with numerous opportunities to continue our business success. It is certainly a cornerstone for growth in a very competitive business."

D.R. Jordan, President and CEO, Jordan Pile Driving, Inc.

All PDCA members receive a complimentary copy of the PDCA's codebook, "*Recommended Design Specifications for Driven Bearing Piles*," now in its third edition. This book covers all required guidelines for driven piles and includes a suggested bid and payment schedule.

PDCA also offers the "*Installation Specifications for Driven Pile-PDCA Specification 102-07*" as a CD to all new members at no charge.

The PDCA also sells "*Driven Pile Foundations, Volume I&II*," an FHWA manual on the design and construction of driven piles.

Connect Worldwide at www.piledrivers.org

The PDCA's newly redesigned Web site at www.piledrivers.org lets you research the latest trends in the industry and find direct links to manufacturers, suppliers, engineers and others. PDCA members receive a free listing in our member search area, which is being used by an increasing number of end users to find pile driving contractors and services. Our forums area makes it easy for you to connect with others to discuss issues and problems.

Leadership Opportunities

Membership in the PDCA provides opportunities for recognition and leadership. Positions are available on the PDCA board of directors and various committees that impact the industry. The PDCA recognizes noteworthy contributions to the industry with our "Driven Pile Project of the Year" award, giving opportunities for high profile recognition.

Membership is available to you

There is strength in numbers and we at the PDCA need to count your company when telling government agencies, engineers and suppliers that we are interesting in keeping your business viable and in growing market share for the driven pile. We need your ideas and efforts in working together toward a common goal: the use of driven-pile solutions. You can contribute your expertise and assist the Association in developing:

- A greater focus on safety
- The quality of driven pile products
- The formatting of codes and specifications for the driven pile
- Support for a program to help educate students in the use of driven piles

Join today. Be part of a growing and vibrant organization that will play a key role in the future of deep foundations. Support your industry by completing the membership application in this issue. You will immediately begin to enjoy benefits of membership. ▼

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MEMBERSHIP APPLICATION

Step 1: Select Membership Type

I wish to apply for the following membership status (check one):

❑ **Contractor** ❑ **(Annual Gross Sales >$1 Mil./year: $725/year).**
❑ **(Annual Gross Sales <$1 Mil./year: $350/year)**

A Contractor Member is defined as a specialty subcontractor or general contractor who commonly installs driven piles for foundations and earth retention systems. Includes one primary membership. Secondary memberships are $75 each.

❑ **Associate ($725/year)**

Associate Members of the Association shall consist of firms or corporations engaged in the manufacture and/or supply of equipment, materials, testing or other services to the pile driving industry. Secondary memberships are $75 each.

❑ **Technical Affiliate ($95/year)**

Technical Affiliate Members of the Association shall consist of individuals who are involved with the design and installation of driven piles or in teaching the art and science of pile design and installation. They may be employed engineers, architects, government agencies, or universities. Employees of contractors are not eligible to become Technical Affiliate Members. Note: Technical Affiliate Membership category is for individuals only. For a company listing in the directory and on the Web site, you must join as an Associate Member.

❑ **Retired Industry Member ($50/year)**

A Retired Member shall be defined as any individual who has reached retirement age as defined by U.S. law, who has left active employment and who wishes to remain a member.

I am retiring as a: ❑ Contractor ❑ Associate ❑ Technical Affiliate

Step 2: Demographic Information

Company Name _____ Phone _____

Your Name _____ Fax _____

Address _____ e-mail _____

City/State/Zip _____ Home Page _____

Step 3. Method of Payment

Attached is my payment of $_____ for annual dues.

❑ I understand that dues are due annually on December 31 and, that if I joined PDCA after March 31, I may be entitled to a prorated dues amount for the subsequent year only.

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C. Technical Affiliate Only (check all that apply)

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❑ Surveying
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Step 4. Geographic Areas Where Contracting, Products and Services Available

(All applicants check all that apply)

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Step 5. Sponsorship: Who told you about PDCA?

Member Name_____

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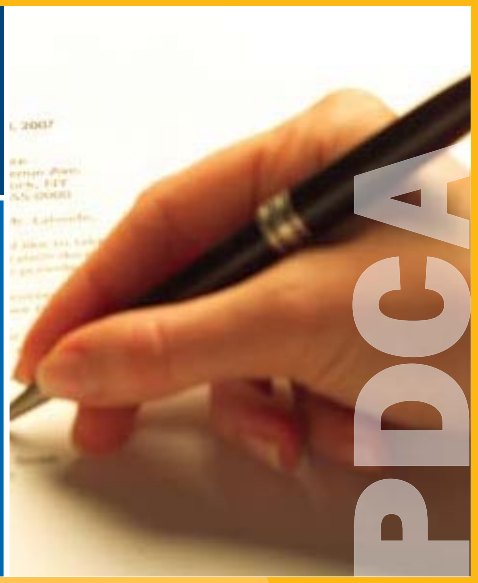

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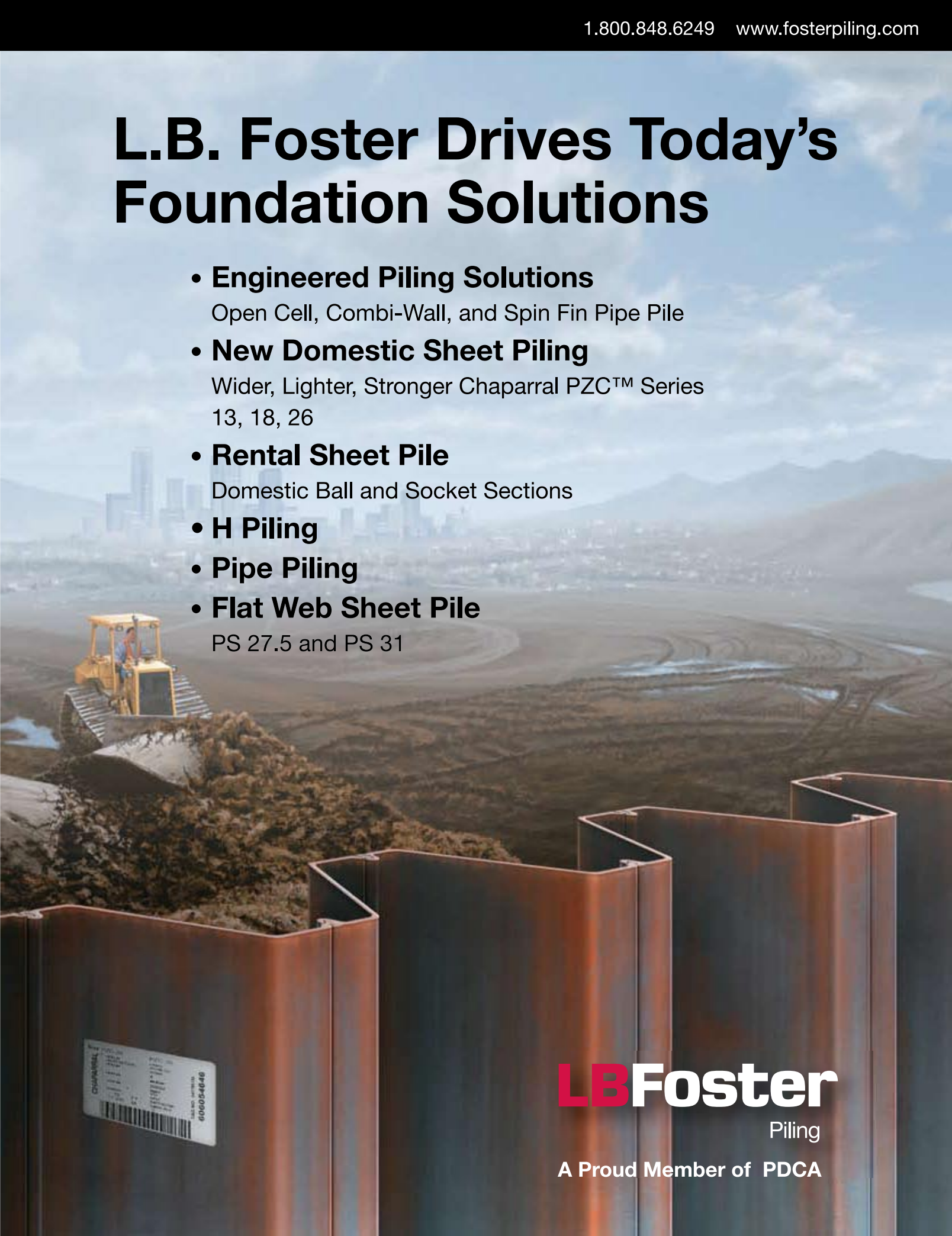

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The fusion of APE and J&M has created the broadest foundation equipment product line, with the most models, of any other company in the industry. Now there is no need to settle for piling equipment that is “close enough” when APE/J&M can supply the correct size for your job, regardless of how big or small.

The most sizes of:

HYDRAULIC HAMMERS, VIBRATORY DRIVERS, DIESEL HAMMERS, EARTH AUGERS, PILING ACCESSORIES