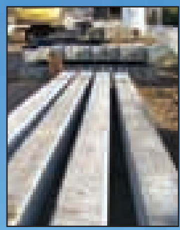
Business sizzles for Gulf South Piling and Construction Inc.

page 26

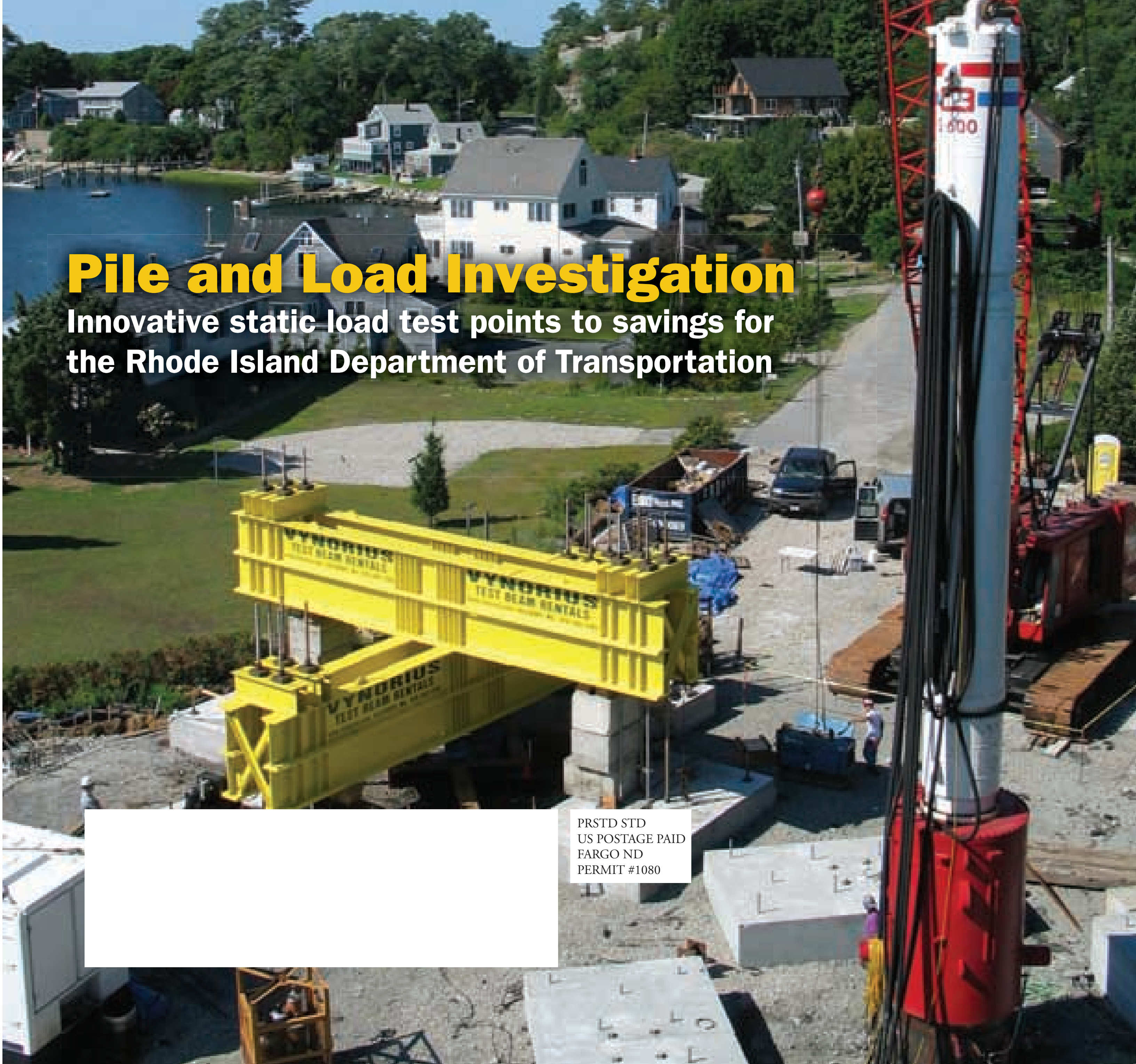


The Rantowles Creek Bridge and Wallace River Bridge are re-designed using driven piles

page 50

PILEDRIVER

The Official Publication of The Pile Driving Contractors Association | Q1 2008 Vol. 5, No. 1



Pile and Load Investigation

Innovative static load test points to savings for the Rhode Island Department of Transportation

PRSTD STD
US POSTAGE PAID
FARGO ND
PERMIT #1080


Berminghammer
the clean hammer.
Easy-start
Free-standing
Hydraulic Trip
Low Emissions
Ground Fueling
Remote Throttle
Sheet Pile Adapter
Impact Energy Monitor
Berminghammer
FOUNDATION EQUIPMENT
BERMINGHAM
FOUNDATION SOLUTIONS
SINCE 1897
www.berminghammer.com

PILE DRIVING CONTRACTORS ASSOCIATION
P.O. Box 66208
Orange Park, Florida 32065
Phone: 904-215-4771
Toll-free phone: 888-311-PDCA (7322)
Fax: 904-264-9531
www.piledrivers.org
e-mail: execdir@piledrivers.org

Published by:
Lester Publications, LLC
2131 NW 40th Terrace - Suite A
Gainesville, Florida 32605
Phone: 352-338-2700
Toll-free phone: 877-387-2700
Fax: 352-338-2702
Toll-free fax: 877-557-2702
www.lesterpublications.com

President
Jeff Lester

Sales Director
Sean Davis

Editor
Jeanne Fronda

Design and Layout
Jody Dundas, Jennifer Karton

Advertising Executives
Kristin Bedard, Ryan Huston, Mike Mechaney, Louise Peterson

Visit the PDCA Web site at www.piledrivers.org

For reprint information, contact
Lester Publications, LLC at 877-387-2700
For a media kit, visit www.piledrivers.org

Individual articles can be provided upon request to the PDCA office. Requests should be submitted to the PDCA via e-mail at execdir@piledrivers.org or by calling 888-311-PDCA (7322).

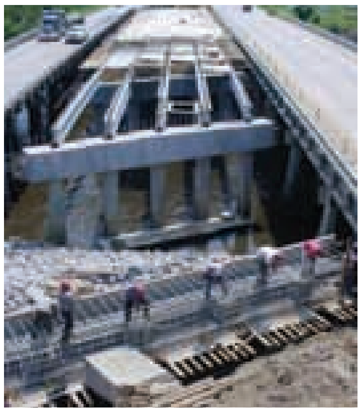
Piledriver is published quarterly.
Please contact us by mail at
P.O. Box 66208, Orange Park, FL 32065
Phone: 904-215-4771 | Fax: 904-264-9531
or by e-mail at membership@piledrivers.org

Printed in Canada.
Please recycle where facilities exist.

PILEDRIVER

The Official Publication of The Pile Driving Contractors Association | Q1 2008 Vol. 5, No. 1

Contents



On the Cover: Sakonnet River Bridge job load test site

Photo provided by Vynorius Piledriving

Passing the Torch

PDCA has a prosperous year, and 2008 plans to be even better

By Mark Weisz, P.E.

It's hard to believe how fast the time has gone, but this will be my final President's message. Our next president, Van Hogan, will begin his term at the upcoming Annual Meeting this coming February in Phoenix. I would like to welcome Van and the new members to the board of directors.

During 2007, the PDCA continued to have many successes in promoting the driven pile. This summer, the 4th Professors' Driven Pile Institute was held again in Logan, Utah. With the help of Utah State University, the PDCA was able to attract another 20 civil engineering college professors from top universities across the United States. For the first time ever, that successful event was 100 percent funded by your volunteer donations. Recently, the Education Committee and the Mid-Atlantic Chapter worked together and delivered a strong Design and Installation of Cost-Effective Pile Program (DICEP) in Ellicott City, Md. The two groups jointly promoted the event and the high attendance numbers supported their efforts. The Technical Committee has continued with its ongoing work with AASHTO. Their latest task has been to review and make comments to the LRFD Design Specification on Driven Piles. Chairman Dale Biggers and his committee deserve a big thanks for all that they have done in remaining focused on working on the specification. The Membership Committee worked non-stop to recruit new members and set a new contractor membership record. With Chairman John King at the reigns, this committee smashed its goal and grew the contractor membership nearly 30 percent over the previous year! Lastly, the Communications Committee did an incredible job with this magazine and with the *Piledriver* editorial content. Along with the magazine, this committee continues to work on making the Web site another tool for its members.

The successes over the past year weren't an accident. Our Executive Director, Steve Hall, has played a key role in the success. Steve has been very busy promoting the driven pile on the national level along with being active in supporting the four local PDCA chapters. I enjoyed working together with Steve. I would like to thank Steve, and I appreciate all that he's done to assist me throughout my term.

I'd like to thank Past President Harry Robbins, treasurer Trey Ford and director Warren Waite for all they have done during their terms on the board. Their unselfish service has been appreciated and their guidance will be missed. I'd also like to thank all PDCA Committee Chairmen and the members of those committees. With too many individuals on the committees to thank, all I can say is that I appreciate your efforts and willingness to work together to improve the PDCA.

Finally, thank you to entire PDCA membership for affording me the opportunity to proudly represent this organization. It was my honor to have been able to serve over the last year. Due to the hard work of the previous leaders, we were able harness that existing momentum and successfully accomplish our goals during 2007. I encourage you to welcome our next President, Van Hogan, by making an effort to attend the 12th Annual Conference in Phoenix this February.

And remember, a "Driven pile is a tested pile!" ▼

Consolidated Pipe & Supply Co., Inc.

- Domestic and import.
- New and used.
- 2-3/8˝ through 72˝ and 2-3/8˝ through 48˝ in stock.
- $30,000,000 of Structural and API Line Pipe in inventory.
- We can cut, bevel, and splice to exact lengths.
- Conical points and plates available.
- In-house Specialty Coatings Division (O.D. & I.D.).
- Stock in Birmingham, Ala., Chicago, Ill., Houston, Texas, Lonestar, Texas, Morrisville, Pa.
- Quick ship service available.
- Rail service available.

CPS

4180 Halls Mill Road • Mobile, AL 36693
Phone: 800-699-6691 • Fax: 251-666-5311
e-mail: wshirah@consolidatedpipe.com

A look Ahead

Exciting possibilities for 2008

By Stevan A. Hall

As we proceed into 2008, I want to wish all of you prosperity, health and peace throughout the New Year. I hope everyone is optimistic and excited about the possibilities 2008 holds for each of us and in 12 months you can say all of your dreams and visions for the year were realized.

The beginning of 2008 is also a time to pause and reflect on 2007. Did we accomplish all that was expected of us? Did we reach our personal and business goals? And how can we use the answers to these questions to make a greater impact in 2008? As in every year, it is important for the PDCA to analyze 2007 and identify areas where we excelled and brought true value to our members; and just as importantly, to identify areas where we fell short of your expectations and our objectives. The answers to these questions will help forge the goals for PDCA in 2008. "The future is an unknown, but a somewhat predictable unknown. To look to the future we must first look back upon the past. That is where the seeds of the future were planted."

The PDCA included a list of accomplishments titled, "Working On Your Behalf" when we distributed the 2008 PDCA dues invoices. This list included a compilation of distinct accomplishments or benefits/services achieved or provided by the PDCA in 2007. One of the most significant accomplishments included ending 2007 with 132 Contractor members, a 30 percent increase over 2006. The PDCA also increased its associate membership by 29 percent. PDCA of California joined national as our fourth chapter and the Mid-Atlantic chapter held a very successful Design and Installation of Cost-Efficient Piles conference. The Technical Committee continued its meetings with AASHTO and had the PDCA's revisions to the LRFD Bridge Installation Specifications, Section 4, Driven Foundation Piles accepted by AASHTO's T-15 Committee and presented revisions to the Design Specifications to them in December 2007. The Environmental Committee continues to work with The Citadel on the Vibration and Noise database and the Market Development and Education Committees brought you the annual conference that attracted more participants and exhibitors than any other PDCA conference; and through the generous support of our members, the PDCA raised over $50,000 towards the 4th Professors' Driven Pile Institute, which educated professors from all over the U.S. about driven piles so they can teach future engineers about our industry.

Where does the PDCA go in 2008? It is hard to be successful without goals and it's hard to reach goals without objectives, so the PDCA Board of Directors is preparing to conduct a strategic planning session that will establish our goals for the next two to three years. The PDCA will strategically identify selected goals through a precise, narrowly defined and tangible set of objectives. The first step will be to conduct a survey that will provide a baseline of information about the PDCA to help eliminate prejudicial thinking on the part of those conducting the strategic plan. In part, the success of the plan will be dependent upon everyone responding to the survey, so please help the PDCA help you by completing and returning the survey.

The PDCA has also begun planning our traditional events in 2008. The annual conference will be held at the Arizona Grand Resort, in Phoenix, Ariz. from February 20 to 23. This year's conference will feature some exceptional educational programs featuring case studies on pile driving projects utilizing value engineering, compressed construction schedules to meet demanding owner requirements, LEED goal projects, overcoming challenges associated with difficult driving environments, advanced techniques in driving sheet pile in difficult soil conditions; and other programs designed to offer you insight to the advantages and practices of driven pile for deep foundations and earth retention systems. The PDCA has also planned for more exhibitors this year than in any other year — and as of early December, over half of the booths had been reserved.

You can read more about the annual conference and special programs in this edition of *Piledriver* or by visiting the PDCA Web site, www.piledrivers.org for a full brochure and registration information.

The PDCA, in cooperation with the Geotechnical Society of Edmonton, will offer the Pile Driving Inspector Certification course in Edmonton, Alberta, Canada and it is tentatively scheduled for January 28. This is the first time the PDCA has conducted a program outside the U.S., but it is an example of our commitment to growth, as well as strengthening our role as an international association.

The PDCA will also work closely with the PDCA of the Gulf Coast Chapter to conduct the 9th Annual Design and Installation of Cost-Efficient Piles conference in New Orleans, La. This program is expected to be held sometime in September and specific plans will be announced in the near future.

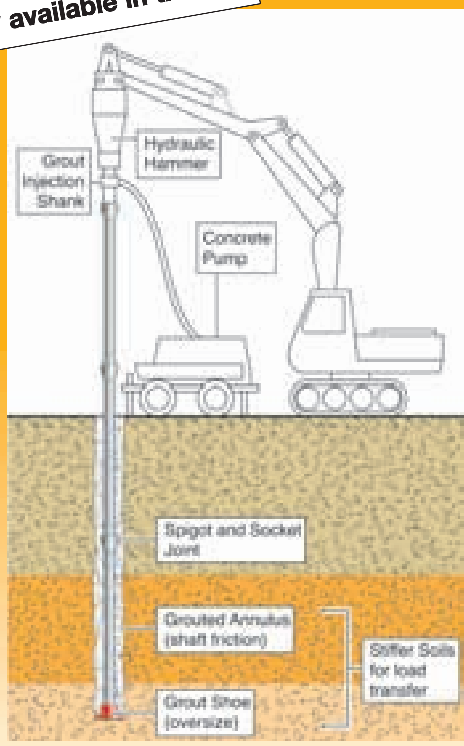
Based on 2007's accomplishments and 2008's plans, there is no doubt the PDCA is on the move as a growing organization — relevant to the deep foundations industry and your business. The momentum the PDCA has developed will continue if two important factors are met. One, the PDCA must stay committed to providing its members with the very best service and benefits possible, and we must continue to represent our industry with unparalleled passion and professionalism.

The second factor is our members must stay committed to the PDCA. PDCA members will have the advantage of profitability, growth and improvement through membership. Your association will be stronger, your industry will be stronger and your business will be stronger through your participation. In 2008, the PDCA encourages you to participate at the annual conference, in educational programs, on a committee, writing an article or letting us hear from you.

I want to thank all of the PDCA members for making 2007 a tremendous year. I want to thank the Executive Committee and Board of Directors for their involvement, support and leadership, and I want to thank the PDCA Committee Chairs and members for all the work you did. You are the backbone of the PDCA and your work is instrumental to our success.

I look forward to working with you in 2008 on another great year for the PDCA. ▼


DSI


Grout Injection Shank
Hydraulic Hammer
Concrete Pump
Spigot and Socket Joint
Grouted Annulus (shaft friction)
Stiffer Soils for load transfer
Grout Shoe (oversize)

2008 PDCA Board of Directors & Committee Chairmen

Officers

Mark Weisz
President
CS Marine Constructors Inc.
P: 707-562-4100
F: 707-562-4106
P.O. Box 2195
Vallejo, CA 94592
mark@csmarine.com

Van Hogan
Vice President
Ed Waters and Sons Contracting Company, Inc.
P: 904-823-8817
F: 904-823-9687
3375 Agricultural Center Drive
St. Augustine, FL 32092
vhogan@edwatersandsons.com

John King
Secretary
Pile Drivers, Inc.
P: 843-763-7736
F: 843-763-7974
4530 Hwy. 1162
Charleston, SC 29449
kingpiledrive@aol.com

Trey Ford
Treasurer
Ford Pile Foundations, Inc.
P: 757-497-3593
F: 757-497-0031
4985 Euclid Road
Virginia Beach, VA 23462
fordpile@earthlink.net

Harry Robbins
Immediate Past President
Palmetto Pile Driving
P: 843-577-0545
F: 843-577-0547
P.O. Box 70986
Charleston, SC 29415
harry@palmettopiledriving.com

Stevan A. Hall
Executive Director
P: 866-311-PDCA (7322)
F: 904-264-9531
P.O. Box 66208
Orange Park, FL 32065
execdir@piledrivers.org

Directors

John Linscott
H. B. Fleming
P: 207-799-8514
F: 207-799-8538
89 Pleasant Ave.
South Portland, ME 04106
John.linscott@hbfleming.com

Rusty Signor
Signor Enterprises
P: 512-264-8300
F: 512-264-8301
8800 Madrone Ranch Trail
Austin, TX 78734
rustysignor@hotmail.com

Irv Ragsdale
Clark Foundations, LLC
P: 301-272-8241
F: 301-272-1915
7500 Old Georgetown Road
Bethesda, MD 20814-6196
Irv.ragsdale@clarkconstruction.com

Don Dolly
Foundation Constructors
P: 800-841-8740
F: 925-625-5783
P.O. Box 97
Oakley, CA 94561
ddolly@foundationpile.com

Mike Elliott
Pile Equipment, Inc.
P: 904-284-1779
F: 904-284-2588
1058 Roland Ave.
Green Cove Springs, FL 32043
melliott@pile-eqp.net

Warren Waite
Pileco, Inc.
P: 800-474-5326
F: 713-691-0089
P.O. Box 16099
Houston, TX 77222
wwaite@pileco.com

Richard Gilbert
Skyline Steel
P: 800-433-6460
F: 678-584-9778
3250 Peachtree Industrial Blvd.
Suite 203
Duluth, GA 30096
rgilbert@skylinesteel.com

Pat Hannigan
GRL Engineers, Inc.
P: 847-670-7720
F: 847-670-7008
4256 N Arlington Heights Road, #100
Arlington Heights, IL 60004
pat@pile.com

Michael Jahnigen
Sun Marine Maintenance
Mid-Atlantic Chapter Representative
P: 302-539-6756
F: 302-539-6076
Road 4 Box 217B
Frankford, DE 19945
mike@sunmarine.com

Sonny DuPre
Cape Romain Contractors
South Carolina Chapter Representative
P: 843-884-5167
F: 843-884-0516
660 Cape Romain Road
Wando, SC 29492
sonny@caperomaincontractors.com

PileDrivers_Q1-2008.indb 8 17/01/2008 9:15:51 AM

Paul Tassin
Foundation Materials
Gulf Coast Chapter Representative
P: 504-467-5648
F: 504-464-7715
601 Veterans Blvd.
Kenner, LA 70062
paul@foundationmaterials.com

Charlie Gibson
Manson Construction Company
California Chapter Representative
P: 510-232-6319
F: 510-232-4528
200 Cutting Blvd.
Richmond, CA 94804-2128
cgibson@mansonconstruction.com

Communications Committee Chairman
Van Hogan
P: 904-823-8817
F: 904-823-9687
3375 Agricultural Center Drive
St. Augustine, FL 32092
communication@piledrivers.org

Communications Committee Members
Garland Likins, Doug Scaggs,
Steve Whitty

Finance Committee Chairman
Trey Ford
P: 757-497-3593
F: 757-497-0031
4985 Euclid Road
Virginia Beach, VA 23462
finance@piledrivers.org

Finance Committee Members
Wayne Waters, Harry Robbins,
Randy Dietel, Mark Weisz

Education Committee Chairman
Michael Justason
P: 800-668-9432
F: 905-528-6187
Wellington Street Marine Terminal
600 Ferguson Ave. North
Hamilton, ON, L8L 4Z9
education@piledrivers.org

Education Committee Members
Charlie Ellis, Jim Frazier,
George Goble, Van Hogan,
Garland Likins, John Linscott,
Rusty Signor, Gerald Verbeek

Environmental Committee Chairman
John Linscott
P: 207-799-8514
F: 207-799-8538
89 Pleasant Ave.
South Portland, ME 04106
environmental@piledrivers.org

Environment Committee Members
Bud Abbott, Jim Bay, Chuck
Blakeman, Gordon Boutwell,
Ed Hajduk, Garland Likins,
Mark Miller, Mark Svinkin

Market Development Committee Chairman
Mike Elliott
P: 904-284-1779
F: 904-284-2588
1058 Roland Ave.
Green Cove Springs, FL 32043
marketdevelopment@piledrivers.org

Market Development Committee Members
Dean Abbodanza, Stan Baucum,
Cliff Bengston, Dave Harper,
Steve Macon, Dean Matthews,
Scott Whitaker, Max Williams,
Phil Wright

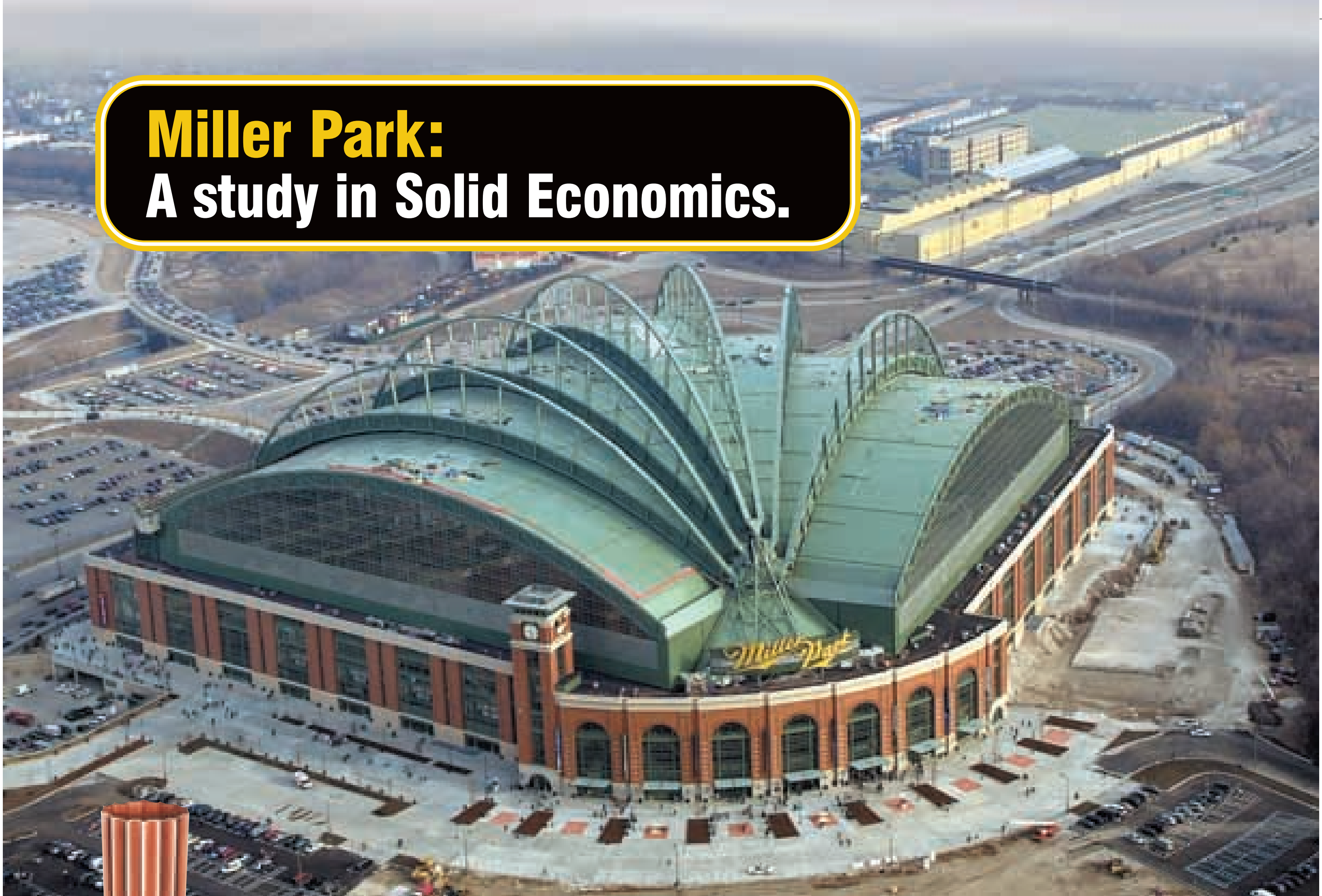
Membership Development Committee Chairman
John King
P: 843-763-7736
F: 843-763-7974
4530 Hwy. 162
Charleston, SC 29449
membership@piledrivers.org

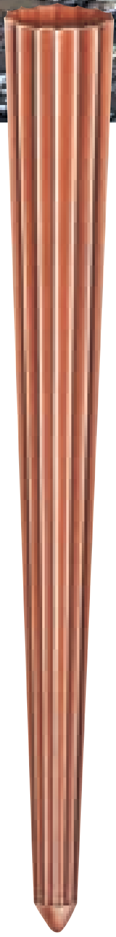
Membership Development Committee Members
Mark Weisz, Van Hogan, Trey Ford,
Harry Robbins, John Linscott,
Rusty Signor, Irv Ragsdale, Don Dolly,
Mike Elliott, Warren Waite,
Richard Gilbert, Pat Hannigan,
Michael Jahnigen, Sonny DuPre,
Paul Tassin, Charlie Gibson

Technical Committee Chairman
Dale Biggers
P: 504-821-2400
F: 504-821-0714
P.O. Drawer 53266
New Orleans, LA 70153
technical@piledrivers.org

Technical Committee Members
Dan Brown, Joe Caliendo,
Charlie Ellis, Jim Frazier,
George Goble, Van Komurka,
Garland Likins, John Linscott,
James H. Long, Dean Matthews,
Joe Phillips, D.S. "Sax" Saxena,
Gerald Verbeek, Scott Whitaker

Miller Park:
A study in Solid Economics.





Monotube® Piles saved millions in its deep foundation work.

This uniquely designed stadium represents a significant long-term investment for the greater Milwaukee region. Getting it done on budget meant looking at every cost alternative. Geotechnical engineers recommended designing and implementing a test pile program to determine the most cost-effective deep foundation pile system. Two types were selected to be tested: straight, parallel-sided steel pipe and our uniformly-tapered steel Monotube® piles.

Their summary showed the Monotube® piles to be the most economical by far. Examining the results on an ***installed cost-per-ton supported***, data showed the Monotube® achieved a 400-ton ultimate capacity at the 77-ft. range. The pipe, by comparison, required over 100-ft. embedment to obtain a 300-ton ultimate capacity. Using conventional equipment, Monotube® piles required significantly less time and hammer blows to penetrate to final design depth, thus achieving design capacity with much shorter embedment lengths.

Importantly, it was recognized that by investing a relatively small amount of money in a test pile program early on, millions could be saved in the deep foundation work designated for driven piling.

Similar levels of savings have been repeated time and again over our 80-plus years in the industry. Your heavy projects could benefit equally. Call for our free test data brochure – it's a fresh look at solid economics.

MONOTUBE® PILE CORPORATION

P.O. Box 7339 • Canton, OH 44705-0339
Ph. 330.454.6111 • Fax 330.454.1572
Email: monotube@neo.rr.com

MONOTUBE PILE CORPORATION IS A
SOLELY OWNED SUBSIDIARY OF THE DAVIDSON CORP.

General Membership Information

We are the premier association for pile-driving contractors

The PDCA was founded in 1996 to promote the 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 projects 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 complementary 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, weeklong 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.

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

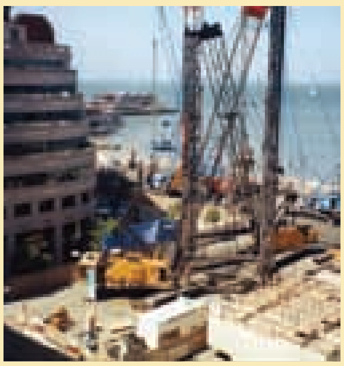
There is strength in numbers and we at the PDCA need to count your company when telling government agencies, engineers and suppliers that we are interested in keeping your business viable and in growing market share for the driven pile. We need your ideas and efforts in working together toward a common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

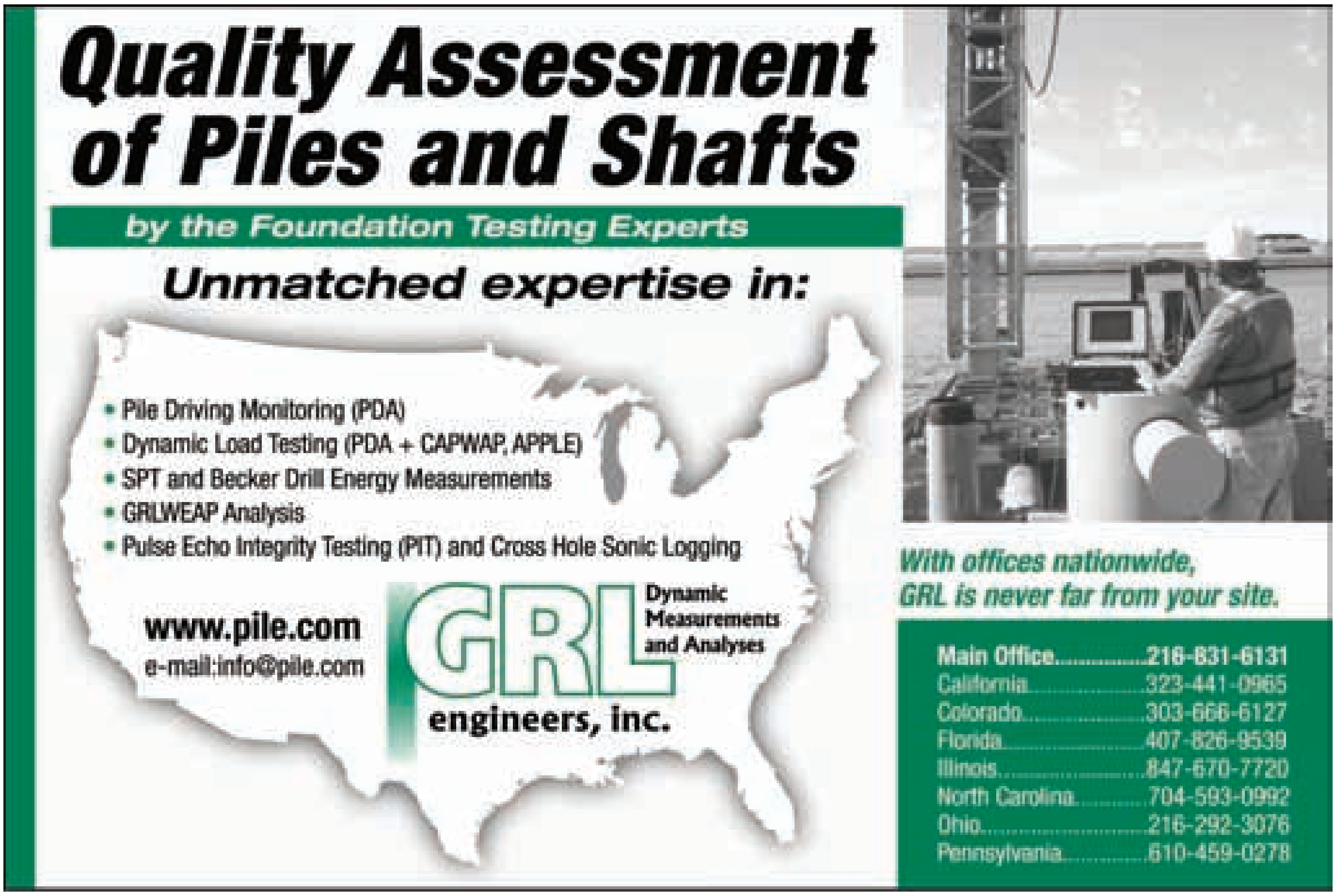
- A greater focus on safety.
- The quality of driven pile products.
- The formatting of codes and specifications for the driven pile.
- Support for a program to help educate students in the use of driven piles.

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. ▼

"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.




Quality Assessment of Piles and Shafts
by the Foundation Testing Experts
Unmatched expertise in:
• Pile Driving Monitoring (PDA)
• Dynamic Load Testing (PDA + CAPWAP, APPLE)
• SPT and Becker Drill Energy Measurements
• GRLWEAP Analysis
• Pulse Echo Integrity Testing (PIT) and Cross Hole Sonic Logging
www.pile.com
e-mail:info@pile.com
GRL Dynamic Measurements and Analyses
engineers, inc.
With offices nationwide, GRL is never far from your site.
Main Office................216-831-6131
California....................323-441-0965
Colorado.....................303-666-6127
Florida.........................407-826-9539
Illinois..........................847-670-7720
North Carolina............704-593-0992
Ohio.............................216-292-3076
Pennsylvania..............610-459-0278


SELECTION FOR PRODUCTION
• Diesel
• Vibro
• Air • Steam
206/762-3550 pacoequip.com 800/678-6379
Pileco •
HPSI •
Delmag •
Vulcan •
Parts Service
CONSTRUCTION EQUIPMENT
PACO
7400 2nd AVE. So. • SEATTLE, WASH • 206-762-3550

PDCA MEMBERSHIP APPLICATION

Step 1: Select Membership Type

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

❑ **Contractor** ❑ **(Annual Gross Sales >$2 Mill./year: $850.00/year)**
❑ **(Annual Gross Sales <$2 Mill./year: $425.00/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** ❑ **(Annual Gross Sales >$2 Mill./year: $850.00/year)**
❑ **(Annual Gross Sales <$2 Mill./year: $425.00/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 ($100.00/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 pro-rated dues amount for the subsequent year only.

I am making payment in full by

❑ Check # ______________________________

❑ Credit Card: ❑ MasterCard ❑ Visa ❑ American Express

Card Number: ______________________________ Expiration Date:______________

Name as it appears on card: ______________________ Signature:______________________

Please send this completed application to PDCA | P.O. Box 66208, Orange Park, FL 32065
Phone: 888-311-PDCA (7322) | Fax: 904-264-9531 | www.piledrivers.org

Applications Systems

❑ Aluminum Sheet Piles
❑ Coatings & Chemicals
❑ Structural Steel
❑ Synthetic Material Piles
❑ Other________________________
❑ Steel Pipe Piles
❑ Steel Sheet Piles
❑ Vinyl Sheet Piles
❑ Other Structural Materials
❑ Timber Piles/Treated Lumber & Timbers
❑ Concrete Piles
❑ Composite Piles
❑ H-Piles

Equipment

❑ Air Compressors
❑ Cranes
❑ Drill Equipment
❑ Drive Caps & Inserts
❑ Hammers
❑ Hydraulic Power Packs
❑ Leads & Spotters
❑ Pumps
❑ Specialized Rigs & Equipment
❑ Other

Services

❑ Consulting
❑ Design
❑ Freight Brokerage
❑ Geotechnical
❑ Marine Drayage
❑ Surveying
❑ Testing
❑ Trucking
❑ Vibration Monitoring__________________________
❑ Other ___________________

General

❑ Rental ❑ Sales ❑ Other ___________________ ❑ Other ___________________

C. Technical Affiliate Only (check all that apply)

❑ Analysis
❑ Geotechnical
❑ Surveying
❑ Civil & Design
❑ Materials Testing
❑ Vibration Monitoring
❑ Consulting
❑ Pile Driving Monitoring
❑ Other
❑ Educational/Association

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

(All applicants check all that apply)

❑ All States	❑ CT	❑ ID	❑ MD	❑ NE	❑ NY	❑ SD	❑ WI
❑ AK	❑ DC	❑ IL	❑ ME	❑ NC	❑ OH	❑ TN	❑ WV
❑ AL	❑ DE	❑ IN	❑ MI	❑ ND	❑ OK	❑ TX	❑ WY
❑ AR	❑ FL	❑ KS	❑ MN	❑ NH	❑ OR	❑ UT	❑ Canada
❑ AZ	❑ GA	❑ KY	❑ MO	❑ NJ	❑ PA	❑ VA	❑ Mexico
❑ CA	❑ H	❑ LA	❑ MS	❑ NM	❑ RI	❑ VT	❑ Europe
❑ CO	❑ IA	❑ MA	❑ MT	❑ NV	❑ SC	❑ WA	❑ Global

Step 5. Sponsorship: Who told you about PDCA?

Member Name____

PDCA
PILE DRIVING CONTRACTORS ASSOCIATION

JOIN TODAY!

Please send this completed application to:
PDCA P.O. Box 66208, Orange Park, FL 32065

888-311-PDCA (7322)

Fax: 904-264-9531

www.piledrivers.org

Committee Corner

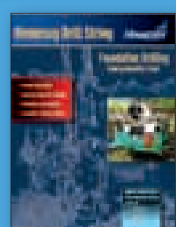
Committee corner is a department in Piledriver in which we profile the chairs of various PDCA committees. In this issue, we highlight the work of Michael Justason who is the chairman of the PDCA Education Committee.

I was honored to recently take over the position of Education Committee Chair, and I hope to live up to the expectations of the very diligent committee members and PDCA directors. Our committee has lined-up some great presenters for the upcoming annual meeting in Phoenix — I'm sure you'll find the program entertaining and informative. We have also be working with the Geotechnical Society of Edmonton in Alberta, Canada to organize an educational seminar for pile-driving inspectors and engineers involved in the tremendous construction boom (including lots of piles!) currently underway in Northern Alberta's oil-sands. Pat Hannigan and I will be the instructors for this one-day course scheduled for Jan. 28, 2008. Many thanks to Steve Hall for his assistance in all of our committee's endeavors.

I've worked for Bermingham for 13 years, with my original duties centering around Bermingham's invention — Statnamic pile load testing. I was very fortunate to travel to over 30 countries performing these tests on many high-profile construction projects. In recent years my duties have shifted more into the development and promotion of products manufactured by Bermingham, mainly pile hammers, lead systems and custom equipment for pile driving contractors. With 110 years of pile-driving and marine construction experience, Bermingham has been a great place to learn about the business of driving piles.

I am originally from Saint John, N.B., which is on the East Coast of Canada, but I now live near Hamilton, Ont. with my wife Nancy and my two boys Eric, 7, and Scott, 6. I am a registered professional engineer in the province of Ontario, and I have a degree in civil engineering and management from McMaster University, as well as a master's degree in earthquake engineering, which I also earned from McMaster. Before working at Bermingham I worked for two different geotechnical consultants: one in Saint John and the other in Vancouver, B.C. Just to make sure there is never a dull moment, I also teach a night class in geotechnical engineering at my old university where you can bet I spend more class time than I really should talking about piles! ▼


casagrande



Did You Know?

In this department the PDCA asks "Did you know…?" and provides quick facts and tips of use to members.

Driven piles easily adapt to variable site conditions to achieve uniform minimum capacity with high reliability.


Sun Piledriving Equipment L.L.C.
Sun Piledriving Equipment L.L.C
Authorized Dealer of Juntan & Emeca
Now Available in Stock!!!
PM 25HLC Hydraulic Pile Driving Rig
PM 20L Hydraulic Pile Driving Rig
12 Inch and 14 Inch Pile Joints
12 Inch and 14 Inch Rock Points
Sun Piledriving Equipment
Is an authorized dealer of both
EMECA OY
JUNTTAN
35322 Bayard Road
Frankford DE 19945
(302)539-7187
www.spe-usa.net

PDCA Chapters update

The pile installation process is explained. USC engineering students by Greg Canivan of S&ME Inc.

PDCA of South Carolina conducts driven pile demonstration

On Nov. 14, 2007, PDCA of South Carolina Immediate Past President John King, Estimator of Pile Drivers Inc. and Board Member and S&ME Inc. Senior Engineer Greg Canivan put on a driven pile field demonstration for about 50 engineering students and about 10 SCDOT employees on the University of South Carolina campus. Sarah L. Gassman, an associate professor in the Civil and Environmental Engineering Department and a 2002 graduate of the PDCA Professors' Driven Pile Institute that was held in Logan, Utah, helped set up the field demonstrations along with fellow professor Ron Baus.

Pile Drivers Inc. is driving approximately 300 HP12 x 53 steel piles supplied by PDCA member Skyline Steel for the university's new Band Hall and Dance Facility, which is sited on an old landfill. S&ME Inc. performed the geotechnical exploration and high-strain dynamic testing during the test pile programs. During the field demonstration, Canivan explained the uses and design of driven piles and showed the students how to obtain dynamic test measurements using PDCA member Pile Dynamics Inc. Pile Driving Analyzer (PDA). Since the first few production piles driven two days earlier had not achieved the proposed driving criteria for the 70-ton design load, Canivan actually had to do some work. The dynamic test data obtained during the field demonstration restrikes was used to confirm that the first two production piles had gained capacity via pile setup and surpassed the ultimate pile bearing resistance requirement.

Using its brand new Junttan HHK 3/4AS hydraulic hammer, Pile Drivers Inc. continued to pre-auger pilot holes and install production piles so that students could see the entire installation process. King explained the QA/QC processes in steel pile production — as well as that in the prestressed concrete and wood pile production — and pointed out the mill manufacturer's stickers, which state the company's name and the heat number from which the pile was produced. A "heat" is a batch of steel produced at a mill and labeled with a unique number that allows for complete traceability of the grade, chemical and physical properties of that batch. King also drove home the point that you can see the finished product before it goes into the ground and you don't have to worry about the "if this and if that" of other deep foundation products. As King went over the

pile driving records with the students, he stressed that "Every driven pile is a tested pile" and that no other deep foundation product comes with as much QA/QC.

This was the second time Pile Drivers Inc, S&ME Inc. and Skyline Steel teamed up for a field demonstration for engineering students (See the Summer 2004 issue of *Piledriver* for the demonstration held at The Citadel). S&ME Inc. and Pile Drivers Inc. are also working with Ali Akbar Elidorani with South Carolina State University and a 2005 graduate of the Professors' Driven Pile Institute regarding a field demonstration.

PDCA of South Carolina Chapter presents its first scholarship

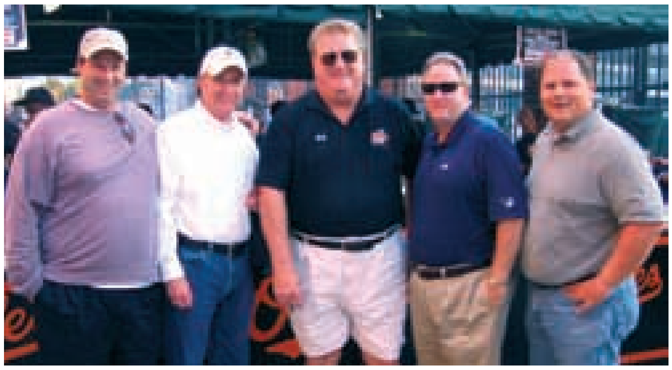
Scott Nigels, Mac Nigels' son, presents the scholarship to Cadet Rodgers.

A Citadel cadet, Caleb P. Rodgers, was honored as the first recipient of the Mac Nigels scholarship at the quarterly meeting of the Pile Driving Contractors Association of South Carolina on Dec. 4, 2007. Cadet Rodgers, a native of St. Stevens, South Carolina, was selected from his class of first semester sophomores by the faculty of the Civil and Environmental Engineering Department at The Citadel based on his personal qualities and scholastic performance.

The PDCA SC Board of Directors initiated this annual scholarship to honor the life and accomplishments of one of its prominent members, McLeod "Mac" Nigels, a 1955 graduate of The Citadel and one of the most respected engineers in the United States. Mac Nigels was a structural engineer and a true champion of the pile driving industry. He is remembered by many people as an engineer among engineers, a counselor and a friend. Now, Mac Nigels is remembered by a scholarship that encourages its recipient to "Study to show thyself approved."

PDCA of South Carolina

PDCA of South Carolina Chapter held its dinner meeting on Tuesday, Dec. 4, 2007. The Chapter held its 2008 officer and director elections during the meeting. 2008 Chapter Officers include John Parker, President (Parker Marine),



After our recent DICEP Conference in Ellicott City, Md., PDCA members (from left to right) John King, Harry Robbins, Steve Hall and Trey Ford enjoy a Baltimore Orioles' game with former major leaguer, Boog Powell (center)

Sonny DuPre, President-Elect (Cape Romain Contractors), Andrea Edwards, Secretary/Treasurer (Carolina Pole, Inc.), John King, Immediate Past President (Pile Drivers, Inc.). Directors include Richard Gilbert, Skyline Steel, Keith Plemmons, The Citadel, Greg Canivan, S&ME, Derrick Bellamy, SC State Ports Authority.

South Carolina 3rd Driven Pile Seminar will be held March 27, 2008 at the Riverview Room on The Citadel Campus.

PDCA of South Carolina 2nd Annual Oyster Roast tentatively scheduled for Friday, Jan. 25, 2008, at Pile Drivers Inc.

PDCA of the Gulf Coast Chapter

The PDCA of the Gulf Coast Chapter held a chapter meeting on Dec. 17, 2007, primarily for the purpose of electing officers for the coming year and to report to the chapter membership on the plans and activities of the leadership.

PDCA of the Mid-Atlantic Chapter

The PDCA of the Mid-Atlantic Chapter held its fourth quarterly meeting on Nov. 8, 2007, at Paul's on the South River, Riva, Md. The meeting began with a social at 4:00 p.m., followed by dinner and an industry presentation. Fernando Garcia, chief engineer with Hillis-Carnes Engineering Associates, presented Soil Exploration and Pile Design.

PDCA of California Chapter

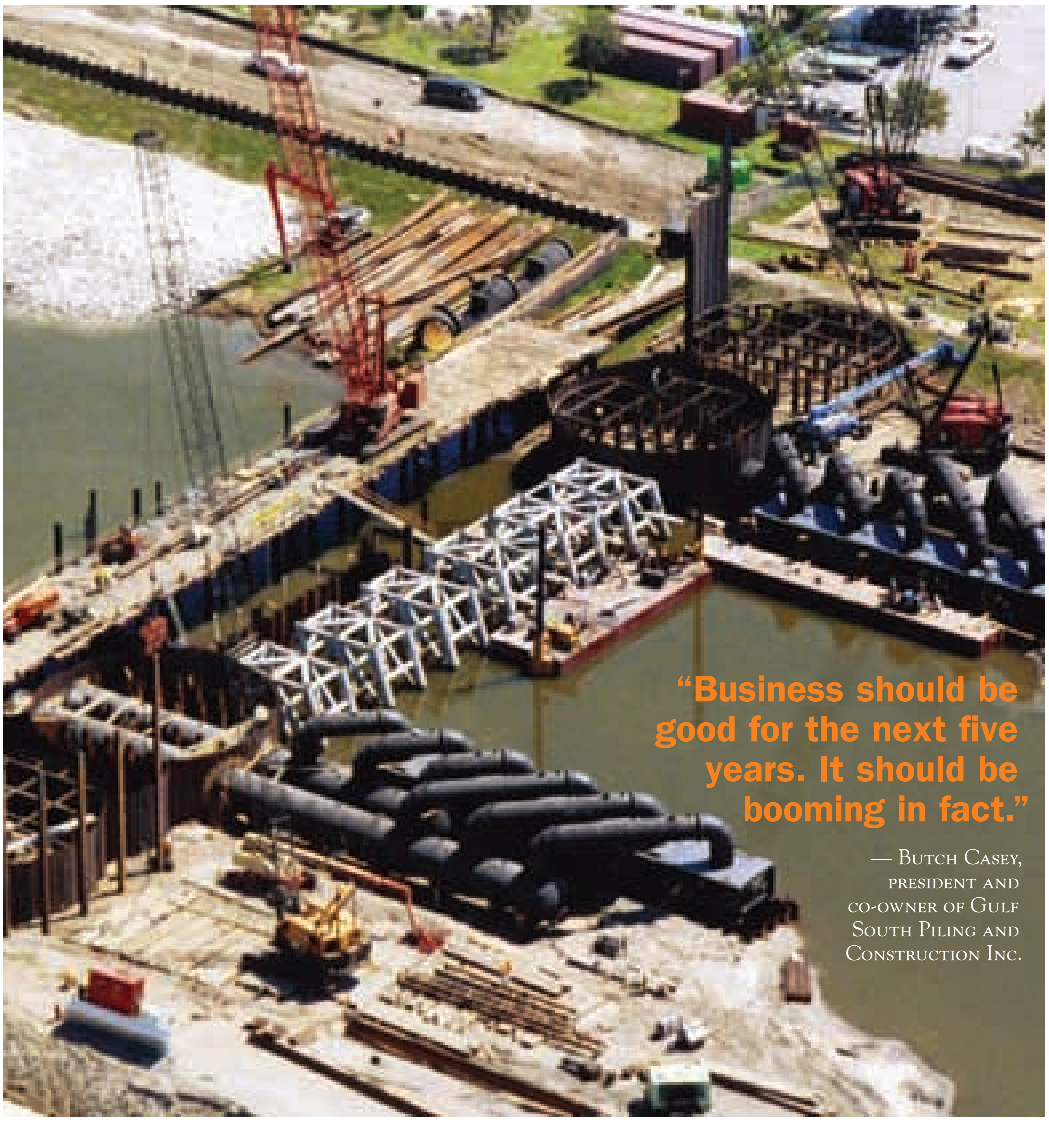
The PDCA of California Chapter held its Annual Luncheon on Friday, Nov. 30, 2007 at the Hotel Mac, Point Richmond, Calif. Charlie Gibson, President (Manson Construction) presided over the meeting, which began at 11:30 a.m. with a social followed by a buffet luncheon. Upon completion of the luncheon, Gibson presented a short summary of the chapter activities including an update on the financial status of their scholarship fund. During the meeting several PDCA of California member companies pledged contributions of $1,000 to the fund, which is used to provide scholarships to engineering students. During the luncheon Stevan Hall, PDCA Executive Director announced that the PDCA would make a $1,000 contribution to the California PDCA Scholarship Fund. ▼


PZC

Business Sizzles for Gulf South

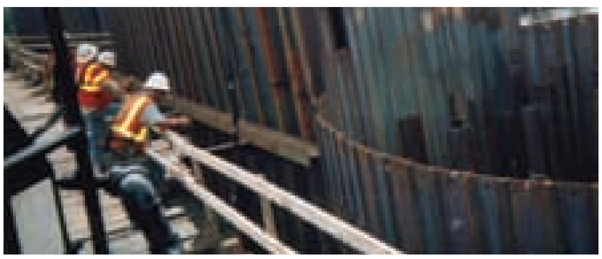
Post-Katrina contracts and a hot construction market make the right ingredients for mid-sized Louisiana company Gulf South Piling and Construction Inc.

By Moira MacDonald



"Business should be good for the next five years. It should be booming in fact."

— Butch Casey, president and co-owner of Gulf South Piling and Construction Inc.



America's Gulf Coast is terrain that is not only ripe for driven piles as the foundation of choice — it demands them.

Add to that the devastation left behind by Hurricane Katrina, a healthy oil and gas industry, and you've got a recipe for a non-stop construction market that's as hot as southern gumbo.

A company with a 27-year history and a solid reputation for handling contracts big and small, Gulf South Piling and Construction Inc. has been an important player in that mix. The company has 35 staff members and is based in Metairie, La., a New Orleans suburb. Annual earnings of nearly $22 million make it a busy, mid-sized enterprise.

"We've continued to exist while other piledrivers have gone by the way side," says Butch Casey, the company's president and co-owner, and a native of New Orleans. "We give a good product in a timely manner."

Casey got started in construction right out of high school, but quickly took his skills overseas during the Vietnam War as a member of the Seabees, a U.S. Navy construction battalion. Working as a crane operator under fire on two separate tours — including helping to build the runway at the famous Khe Sanh military base — taught him a few things about challenging conditions. On discharge in 1968, Casey went on to work for New Orleans-area construction companies, first as an equipment operator and later as an assistant superintendent. In 1977, he moved on to work as an assistant branch manager for a local pile driving supply house, but Casey longed for more challenge and the ability to be hands-on with projects. In 1980, he

Cofferdam and circular cell installation for London Avenue Canal Flood Protection Corps

Timber composite piles being driven for Wal-Mart Super Store in Harvey, La.

Precast bridge installation at subdivision entrance in Chalmette, La.

found himself a business partner and Gulf South was started. The partners went their separate ways about two years later and Casey carried on Gulf South with his wife Mary Ann as co-owner.

"A big job doesn't scare us"

The company started off performing sub-contracts for other companies. That remains a significant part of Gulf South's business along with contracts for residential jobs, small pumping stations, bridges, industrial plants, and levee work. Gulf South takes on a wide range of jobs, from work costing several thousand dollars to multi-million-dollar projects. Marine work is the only type of work not part of its operations.

"A big job doesn't scare us," says Casey. "Our foundation expertise goes from small wood pilings all the way up to long, large concrete or pipe pilings. There are still contractors in New Orleans who drive their own pilings but we're probably in the top three of the sub-contracted-type pile drivers. If it's pile driving, we want to do it."

The company has nine cranes ranging from 35 to 150 tons and works with Vulcan air hammers, Sullair compressors and ICE and Delmag diesel hammers. Most of its work has been in the southeast, with some jobs in Kansas, Texas, Mississippi and Alabama.

Casey leaves it to his colleague Michael Kelly to do the main estimating on the company's bids but the two work together and often both do the estimating on large jobs. Kelly is also vice-president of the PDCA's newly established Gulf Coast chapter. Along with Kelly and Casey, the company operates with three others in its office, between 20 and 25 staff out on the field and another six working as mechanics and driving the company's trucks.

Katrina heartbreak – and opportunity

Gulf South was among many companies involved in the rebuilding of New Orleans' damaged levees following

Hurricane Katrina in September 2005. The company sub-contracted with M.R. Pittman Group to do a complicated set of sheet pilings and H-pilings over more than three months in the spring of 2006 for a new pumping structure for the breached London Ave. Canal.

"We started out working six days a week 10 hours a day and wound up working seven days a week, 12 hours a day," Casey says. Gulf South did 70-foot, Z-style sheet pilings for large coffer dams, four circular cells with 70-foot flat-web sheets as well as H-pilings.

"From a resident's standpoint, it's very disheartening to see this tragedy first-hand," says Casey. "We lost material things, we were flooded, my daughter's house was flooded . . . [and] it's disheartening that New Orleans is not coming back as fast as it should.

But, he says, "from a business standpoint, we've got a lot of business out of it. We'd rather not have a lot of business because of it, but the business is there, and we're glad to have it."

Gulf South has weathered its own storms, like the downturn in the Gulf Coast oil industry in the 1980s, which cut the amount of work available. Better times have their own challenges and Gulf South has more recently had to deal with the same shortage of qualified labor everybody else in the industry has faced.

"We're lucky we've got a core group of people that have been working for us, some of them 25 years with us. We're proud of that," says Casey, adding that the company has benefited from the return of workers who moved away after Katrina but are coming back to the area.

The company has also felt the industry pinch of a shortage of large cranes. Gulf South has been looking for an additional 150-ton crane for a year, but has so far come up empty-handed.

In the last two years Gulf South's jobs have included driving about 800, 114-foot, 14-square-inch concrete pilings in one piece for the west expansion of Louisiana State University's famed Tiger Stadium in Baton Rouge. The company's largest job was last August for Valero Oil Co. in Norco, La., using 90-foot pipe pilings. Most of the $11.5-million job involved driving 20-inch casings in such a way that no mud would remain in the casing when the mandrill was removed. This was required because the soil was contaminated and needed to be left as undisturbed as possible. To do that, Gulf South put a pointed tip on the mandrill and used that to displace the soil while it was driving the casing. The casing was filled with a 14-inch pile and mixed fill to seal the casing off.

A bill recently passed by the U.S. Congress for the building of more levees, pumping stations and other water management projects promises to add even more jobs in the future. The bill contains at least $7 billion in money for Louisiana coastal restoration and flood protection work. It is exactly the work Gulf South is keen on and ready to do.

"Business should be good for the next five years," says Casey. "It should be booming in fact." ▼

THE SHAPE *OF THE FUTURE*

Project-proven Tapertube™ is a dramatic leap forward in on-the-job pile performance. Superior design and robust construction mean these remarkable tools deliver big advantages over conventional piles or other tapered piles. Tapertube piles are available in an array of shapes and sizes to meet your soil and capacity requirements.

TAPERTUBE ADVANTAGES

- High capacities for shorter driven lengths
- Conventional equipment and installation methods
- Reduces concrete volume requirements
- Factory attached cast steel points
- Standard pipe extensions that match Tapertube diameters
- Directly driven... no mandrel or butt reinforcement required
- Full-butt welded splices for direct bearing of pipe extension on Tapertube
- Drive-fit DFP S-1800 sleeves may be used instead of welding to extend piles
- Heavier thickness provides greater drivability, eliminates need for coating and reinforcement

TAPERTUBE INSTALLATIONS

JFK Airport NYC

• British Airways Terminal • International Arrivals Bldg. • Terminal Four Roadways • Light Rail System • Cargo Bldg. Eight • Cargo Bldg. Nine • American Airlines Landside • Bus Gate International Arrivals • Jamaica Station • Jet Blue Garage

NYC Mass Transit Authority

• Revenue Center Brooklyn NY • Grand Avenue Bus Garage • Corona Subway Car Repair Shop

Long Island RR Bridge	Mineola NY
NYDOT Belt Parkway Bridge	Brooklyn NY
MASSDOT Cole Ave. Bridge	Williamstown MA
Chlorination Facility	Richmond NY
Water Treatment Plant	East Greenwich CT
50 Bayard Street	Brooklyn NY
PENNDOT Sr 1056 Section 001	Bradford County PA
Queens Center Garage	Queens NY
J.C. Penny	Queens NY
Schaefer Development	Brooklyn NY
Sterling Glen	Roslyn NY
Macmillan Pier	Provincetown MA
La Farge Cement Plant	Brooklyn NY
The Kalahari	New York City
164 Kent Ave	Brooklyn NY
270 Greenwich Street	New York City
East Harlem School	New York City
Diamond State Port Reconstruction of Berth 4	Wilmington DE
Kent Ave. Phase Two	Brooklyn NY
Rego Park Development	Queens NY
Croton-Harmon Yard Phase 1 Rail Truing	Croton NY
Croton-Harmon Yard Phase 3	Croton NY
The Edge Development	Brooklyn NY
Homeless Shelter	Hackensack NJ

DFP Foundation Products, LLC

PO Box 688 • Franklin Lakes, NJ 07417-0688
201-337-5748 • fax: 201-337-9022 • www.pileline.com

DAILY AGENDA

WEDNESDAY, FEBRUARY 20

1:00 p.m.	Registration Opens
3:00 p.m.	Exhibitor Set-Up Opens
6:00 p.m.	Opening Reception – Exhibit Hall
7:30 p.m.	Board of Directors, Committee Chairs and Spouses Dinner

THURSDAY, FEBRUARY 21

7:00 a.m.	Continental Breakfast – Exhibit Hall Annual Conference Registration – Open all day
8:00 a.m.	Committee Meetings 8:00 a.m. – 9:30 a.m. – Education 8:00 a.m. – 9:30 a.m. – Communications
9:00 a.m.	Companion's Program – Continental Breakfast 8:45 a.m. – Meet in Registration Lower Lobby for escort to Presidential Suite
9:30 a.m.	Conference Presentation 9:30 a.m. – 10:30 a.m.
9:45 a.m.	Companion's Program Transportation – Main Lobby Entrance
10:00 a.m.	Companion's Tour-Consanti Tour, Paradise Valley, Ariz.
10:45 a.m.	Conference Morning Break – Exhibit Hall
11:00 a.m.	Conference Presentation 11:00 a.m. – 12:00 noon
12:00 noon	Companion's Lunch – Quilted Bear Conference Lunch – East Terrace
1:30 p.m.	Conference Presentation 1:30 p.m. – 2:30 p.m. Companion's Program – Shopping Old Town Scottsdale
2:30 p.m.	Conference Afternoon Break – Exhibit Hall
3:00 p.m.	Conference Presentations 3:00 p.m. – 4:00 p.m. 4:00 p.m. – 5:00 p.m.
6:00 p.m.	Evening Reception – Exhibit Hall

FRIDAY, FEBRUARY 22

7:00 a.m.	Continental Breakfast – Exhibit Hall
8:00 a.m	Committee Meetings 8:00 a.m. – 9:30 a.m. – Technical 8:00 a.m. – 9:30 a.m. – Environmental
9:00 a.m.	Companion's Program – Continental Breakfast 8:45 a.m. – Meet in Registration Lower Lobby for escort to Presidential Suite
9:30 a.m.	Conference Presentations 9:30 a.m. – 10:30 a.m. 10:30 a.m. – 11:30 a.m.
9:45 a.m.	Companion's Program Transportation – Main Lobby Entrance
10:00 a.m.	Companion's Program – Botanical Gardens Desert Discovery Tour
12:00 noon	Golf and Tennis Tournament Players Luncheon
7:00 p.m.	Evening Reception – Exhibit Hall

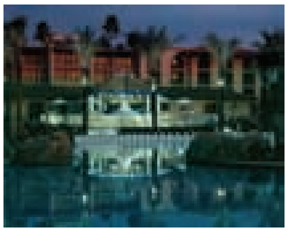
SATURDAY, FEBRUARY 23

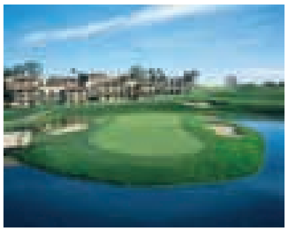
7:00 a.m.	Continental Breakfast – Exhibit Hall
8:00 a.m.	Committee Meetings 8:00 a.m. – 9:30 a.m. – Market development 8:00 a.m. – 9:30 a.m. – Safety
9:00 a.m.	Companion's Program – Ladies Tea Breakfast and Spa
9:30 a.m.	Conference Presentations 9:30 a.m. – 10:30 a.m. 10:30 a.m. – 11:30 – Roundtable Discussion – Challenges Facing the Pile Driving Contractor
12:00 noon	PDCA Awards Luncheon
1:00 p.m.	Exhibit Hall Closes
1:30 p.m.	PDCA Board of Directors Meeting
6:30 p.m.	PDCA Annual Dinner – Harley-Davidson Dress Theme, Young Country Band, Casino Night

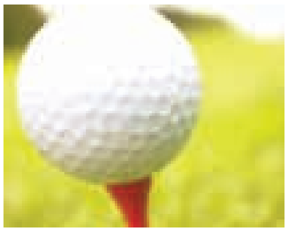
REGISTRATION and SPONSOR INFORMATION
Early Bird Registration Deadline: January 23, 2008

Conference Registration PDCA Members, ASCE Members, FHWA and State DOT Employees	**$ 725**
Conference Registration – Early Bird PDCA Members, ASCE Members, FHWA and State DOT Employees	**$ 675**
Conference Registration - All Others	**$ 825**
Conference Registration – Early Bird – All Others	**$ 775**
Companion's Program	**$ 300**
Companion's Program – Early Bird	**$ 250**
Students Enrolled in Engineering Programs	**$ 150**
Children (under the age of 18)	**Free**
Exhibitors (Includes One Conference Registration) PDCA Members, ASCE Members, FHWA and State DOT Employees	**$ 1,200**
Exhibitors – (Includes One Conference Registration) All Others	**$ 1,600**
Golf Tournament – Phantom Horse Golf Club – Friday, February 22	**$ 225**
Tennis Tournament	**$ 45**

ARIZONA GRAND
RESORT







REGISTRATION INFORMATION

Registration forms must be completed and submitted to the Pile Driving Contractors Association, P.O. Box 66208, Orange Park, FL. 32065, with a check or credit card information before registration can be completed. Registration can be made via fax to the PDCA office at 904-264-9531, providing all registration and payment information included on the registration form.

All inquires should be addressed to the PDCA office, toll-free at 1-888-311-PDCA (7322).

Please print clearly or type all information on the registration form. If submitting credit card information, all information on the registration form must be filled out clearly and completely for PDCA to process your registration. Incomplete information will delay registration.

REGISTRATION FORM

SECTION I: Company Information:

Company Name ______________________________

Address ______________________________

City, State, Zip ______________________________

E-mail ______________________________ Phone ______________________________

SECTION II: Registration Information

Conference Registration:

Conference Registration	________	X	$725	________
Early Bird Registration	________	X	$675	________
Conference Registration – All Others	________	X	$825	________
Early Bird Registration – All Others	________	X	$775	________
Companion's Program	________	X	$300	________
Companion's Program Early Bird	________	X	$250	________
Student Conference Registration	________	X	$150	________

TOTAL ________

Name ______________________________ Name ______________________________

Name ______________________________ Name ______________________________

SECTION III: Exhibitor Information (Includes One Conference Registration)

Exhibitor __________ X $1,200 __________

Exhibitor – ***All Others*** __________ X $1,600 __________

TOTAL [ ]

Exhibitor Company Name ____________________

Exhibitor's Representative ____________________

SECTION IV: Golf Registration

Player I ____________________ Player II ____________________

Player III ____________________ Player IV ____________________

Player's Hdcp: I ______ II ______ III ______ IV ______ Rental Clubs – RH _____ LH _____

Golf Registration __________ X $225 __________

TOTAL [ ]

Yes, we will contribute to the Goodie Bag (Item): ____________________

SECTION V: Tennis Registration

Player I ____________________ Player II ____________________

Player III ____________________ Player IV ____________________

Tennis Registration __________ X $ 45

TOTAL

Yes, we will contribute to the Goodie Bag (Item): ____________________

SECTION VI: Sponsors

______ Platinum – $2,500	______ Gold – $1,500
______ Companion's Program – $1,500	______ Casino Night – $1,000
______ Annual Dinner and Band – $1,000	______ Receptions – $1,000
______ Golf – $1,000	______ Name Badges – $1,000
______ Continental Breakfast – $750	______ a.m. and p.m. breaks – $500
______ Golf Hole – $200	

TOTAL ____________

SECTION VII: Payment Information:

Payment Method ____ Check (Enclosed) ____ Visa ____ MC ____ AMX

Exp. Date ________ CVV Code # ______________________________

Card Number ______________________________

Statement Billing Address ______________________________

City, State, Zip Code ______________________________

Name on card ______________________ Signature ______________________

GRAND TOTAL FROM ALL SECTIONS ____________

RETURN THE COMPLETED REGISTRATION FORM AND YOUR PAYMENT TO PDCA, P.O. BOX 66208, ORANGE PARK, FLORIDA 32065
OR FAX REGISTRATION FORM AND PAYMENT INFORMATION TO 904-264-9531

PileDrivers_Q1-2008.indd 35 17/01/2008 8:55:35 AM

PilePro®

The world leader in sheet piling connections

PilePro.com
(866) 666-7453

For PZ and PZC
(Ball + Socket)

PZ 90	Corner (~50° to ~130°)
PZ Tee	Tee Corner (~50° to ~130°)
Joker	Tee Corner (~50° to ~130°)
Bullhead	Tee Corner (~50° to ~130°)
CBF	Tee Corner (~50° to ~130°)
Colt	Corner (~25° to ~65°)
Cobra	Corner (~115° to ~155°)
PBS-M **PBS-F**	PZ / PZC + Peiner Beam
BBS-M **BBS-F**	PZ / PZC + Domestic Beam
WOM **WOF**	PZ / PZC + Pile Pipe Weld-on
LBM **LBF**	Transition Profiles

For all AZ (U-Pile/Larssen)
Hoesch 1706, 1806, 1856, 1906, 2506, 2606, 2706

V 20	Corner (~30° to ~150°)
VTS	Tee Corner (~45° to ~135°) Circular driving
VT	Tee Corner (~45° to ~135°) Omega corner
Omega 12	Omega corner Jagged U-Walls
V 22	Larssen Interlock + Pipe Pile Weld-on
PL	U-Pile + Peiner Beam
PLZ I **PLZ II**	Peiner Beam + Larssen-Z Piles
LBM **LBF**	Transition Profiles

For Hoesch-Z
with a width of 22.64 inches or 575 mm

HZ 90	Corner (~45° to ~135°)
HZT	Tee Corner (~45° to ~135°)
HZ	Variable weld-on
PZL **PZR**	Hoesch-Z + Peiner Beam

For Hoesch-Z
with a width of 30.15 inches or 675 mm

HZn 90	Corner (~45° to ~135°)
HZTn	Tee Corner (~45° to ~135°)
HZn Knob	Weld-on
HZn	Variable weld-on

For PS-Flat Sheet

SWC 120	120° Wye Pile
SWC 90 A	90° Tee Pile
SWC 90 B	90° Tee Pile
SWC 60 A	60° Wye Pile
SWC 60 B	60° Wye Pile
SWC 30 A	30° Wye Pile
SWC 30 B	30° Wye Pile
SWC	Weld-on

Sealing of sheet pile walls

WADIT®	Non-toxic hot cast interlock sealant impervious to weather

To place your order direct from PilePro or for more information dial toll free nationwide: (866) 666 7453 from 8 am to 4 pm CST Monday thru Friday

For PZ and PZC
(Ball and Socket)

Joker

PilePro.com

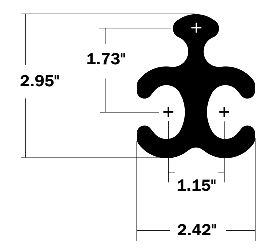
Tee, Corner (~50° to ~130°)

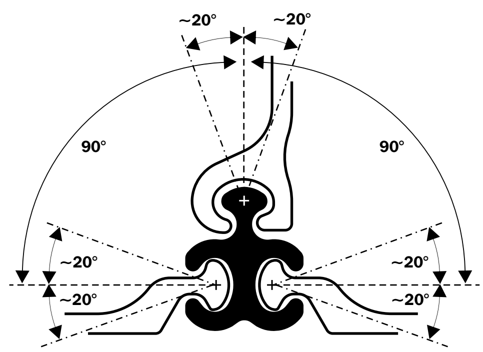
Applications:
Connecting three sheet piling walls.

Typical Properties:
Steel grade: ASTM A572 Grade 50 (S 355 GP)
Weight per linear foot: 10.9 pounds

CAD-Service
Downloads of data sheets and CAD files are available at PilePro.com

Certificate:

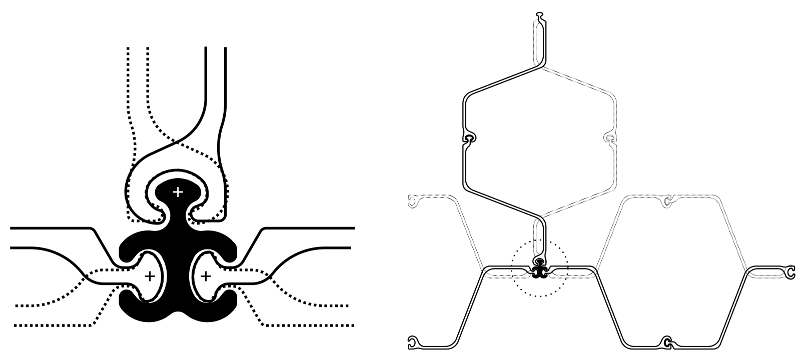




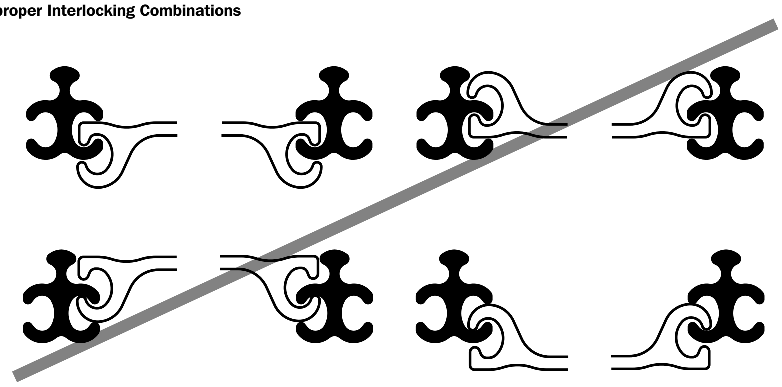
Installation Guidelines

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.

To place your order direct from PilePro or for more information dial toll free nationwide: (866) 666 7453 from 8 am to 4 pm CST Monday thru Friday

Innovative Design and Analysis

Wagner Komurka Geotechnical Group Inc.: specializing in designing and testing cost-effective driven pile foundation systems

Van E. Komurka, P.E. received a bachelor's degree in civil engineering from the University of Wisconsin-Platteville and a master's degree in civil engineering from Colorado State University. He has 22 years' experience as a geotechnical engineer, predominately in the Milwaukee, Wis. area. Immediately after graduation, he worked for four years in the geotechnical engineering group of Milwaukee's $2.3-billion deep tunnel project. This work included his first exposure to driven pile design.

In 1994, he co-founded Wagner Komurka Geotechnical Group, Inc. ("WKG2"), a firm that specializes in designing and testing cost-effective driven pile foundation systems. Participating in pile test programs is Komurka's favorite part of its practice.

"Pile test programs are unique within civil engineering design," he says. "We get to make our best design estimate (required pile depth for a given capacity); install a full-scale driven pile using production equipment; instrument it to determine behavior under load; test it to geotechnical (plunging) failure; and then refine the final design based on the results. What other design discipline gets to do all that?"

Use of such comprehensive pile test program results has resulted in WKG2's pile design practice incorporating a number of innovative approaches.

"Among other things, our testing programs have evolved toward providing proper characterization of soil/pile set-up," Komurka says.

Set-up can provide a significant contribution to long-term pile capacity. WKG2 has documented the capacity contribution from set-up to be as much as 80 percent (i.e., a pile with an initial capacity of 150 tons when installed will have a capacity of 750 tons a month or two later). Incorporating set-up into design and installation can result in achieving higher allowable pile loads, using smaller pile sections, terminating piles shallower, and/or using smaller installation equipment (cranes and hammers).

"Another fairly unique approach we take is to match allowable pile loads used on a project to structure loads," he says. "Piles are below-grade extensions of a structure, and their design should be integrated with the above-grade structure and its load support requirements. To this end, we work closely with the structural engineer to obtain the loads to be resisted and the minimum number of piles required by location."

WKG2 then determines the most-appropriate allowable pile load(s) for the project, often using more than one allowable load and/or pile section when structure loads dictate.

"In this way, the ineffectiveness of a 'one-size-fits-all' approach to allowable pile load selection is avoided," he says.

Both incorporating set-up and load matching have resulted in WKG2's use of higher allowable pile loads on their projects.

"We've used allowable loads as high as 250 tons on a 13-3/8-inch closed-end pipe pile," Komurka says. "In another case, we were prepared to use 350 tons allowable on a 16-inch closed-end pipe pile, but the project was put on hold. You can't achieve those kinds of allowable loads on those sections installed with conventional, readily available equipment without significant contribution from set-up."

To evaluate the cost-effectiveness of various foundation alternatives, WKG2 utilizes the concept of support cost. Pile support cost is the cost of the installed pile divided by its allowable load (expressed in dollars per allowable ton).

"Our cost studies have shown that in general, higher allowable pile loads result in lower pile support costs," Komurka says. "When structure loads warrant, higher-allowable-load piles are doubly cost-efficient because they result in smaller, less-expensive pile caps. The benefits of this approach can be significant, with documented savings of hundreds of thousands of dollars on projects with just a few hundred piles. We've been told it's uncommon for geotechnical engineers to quantitatively incorporate cost as a decision parameter the way we do."

Van and his business partner, Al Wagner, have published and presented on new approaches to characterizing soil/pile set-up, and incorporating it into design and installation, as well as on value engineering using the concept of support cost. One paper they prepared on a case history of a pile-supported building that settled up to approximately 20 inches refined their understanding of downdrag, dragload,

and its incorporation into pile design. In this case, relatively short low-capacity piles installed in the 1950s to barely extend through consolidating deposits, combined with area-wide increased floor loads, demonstrated that downdrag needs to be properly accounted for, and that pile design needs to address both capacity and settlement.

Komurka is an instructor for NHI's Driven Pile Foundations course, and that has helped his understanding of pile design a lot.

"Virtually everything I know about piles I learned after graduation, so I have a lot of colleagues to thank, particularly Al Wagner and Pat Hannigan of GRL Engineers," he says. "It's true that you never have to learn something so well as when you have to teach it. There's always more to learn. I tell clients, if a geotechnical engineer tells you that they know everything there is to know about piles, show them the door. The one who says it seems there's always more to know is the one to hire.

"We've been blessed with some large, challenging projects. Miller Park baseball stadium and the $810-million Marquette Interchange have been two of the most-interesting."

Miller Park used 16-inch Monotube® piles, each with an allowable load of 200 tons, which was the highest ever used for that section. For the Marquette Interchange, allowable loads of up to 250 tons are being used, which was the highest ever used by the Wisconsin Department of Transportation.

"It's also satisfying to value engineer an existing design and save the owner money," he says. "With a conventional design already in place for comparison, the value of our approach can be demonstrated. On a couple of recent power plant projects we were hired simply to perform the static load tests called for in the specifications. By entering into a dialogue with the design team, we modified the test program to provide the information necessary for a slight redesign, saving each project over $1 million."

In his limited spare time, Komurka enjoys spending time with his family that includes his wife, Paula, and sons Andrew, 15, and Joel, 11.

His hobbies include wrenching on cars and motorcycles. He also plays piano in his church's contemporary worship team and is a 22-gallon blood donor. Anyone who has met Komurka might say that his most distinguishing physical feature is his height.

"Once I was to meet a contact on a large project site, and we were discussing how we would find and recognize each other," he says. "He said, 'When you get there just look for the tallest guy.' He was a little taken aback when I said, 'When I get there, I'll look for the second tallest guy.' Sometimes when I first meet someone, I'll say, 'You're probably surprised because I sounded shorter on the phone.'" ▼

Pile and Load Investigation

By Jeanne Fronda, Sam Paikowsky and Christopher Roy

Innovative static load test points to savings for the Rhode Island Department of Transportation

The Sakonnet River Bridge is in Tiverton, R.I. Built in 1956 as a replacement for the Stone Bridge, the four-lane truss structure stretches across the Sakonnet River Bridge and supports I-24 and I-138 between the communities of Tiverton and Portsmouth, R.I. By the late 1990s, the bridge's design was obsolete, so it needed improvement. The bridge is scheduled to be replaced using a modern design, with construction work scheduled to start in 2008 and finish in 2015.

Introduction

Given the soil conditions at the new Sakonnet River Bridge site, the Rhode Island Department of Transportation (RIDOT) chose a deep foundation solution for the bridge replacement through a series of test programs. The first test program was performed by Vynorius Piledriving who was a subcontractor of Barletta Engineering. This initial test program consisted of an H-Pile, a 42" pipe pile and a drilled caisson. Favourable results where not achieved with any of these options precipitating the need for a second test program. As the company contracted to conduct the second test program, Cardi Corporation again chose Vynorius Piledriving to perform the majority of the work needed to complete the contract. The successful second test program resulted in the largest static load test ever conducted in New England.

Soil Conditions

The main obstacle for this site is the Rhode Island area glacier deposits that contain a generous amount of silt. Since the bedrock is deep and there is no bearing soil, a very deep foundation would be required.

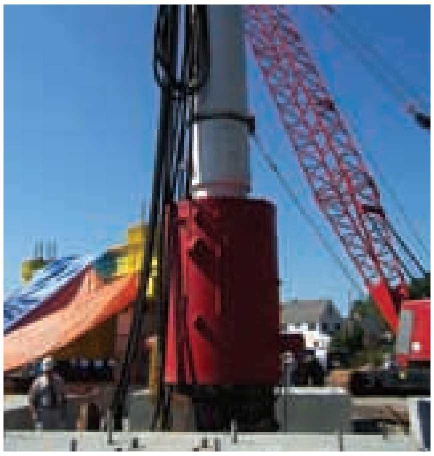
Samuel Paikowsky, a geotechnical engineering consultant with Geosciences Testing and Research and a professor at the University of Massachusetts at Lowell, was hired by Haley & Aldrich Inc. of Boston to design an economical deep foundation solution for the soil conditions encountered at this site.

"This is an extremely interesting project, because you had a difficult combination," says Paikowsky. "You had a large bridge, which resulted with heavy loads to carry combined with soils, which are very problematic. The challenge is to find a solution that can be constructed economically knowing that in the past there were major failures."

Paikowsky designed an innovative variation to the common open-ended pipe pile. Given the current cost of steel, pipe piles are very expensive. The longer or larger in diameter the pipe piles are the more expensive the project will be. Paikowsky developed a design to artificially plug an open-ended pipe pile, which would increase its static capacity and shorten the penetration required to achieve the desired design capacity, saving this project a significant amount of money. The manager of the project was Heather Scranton, and engineers Jean Louis Locsin and Michael Capraro with Haley & Aldrich Inc. were also involved with the testing.

Test Design

The second test program was comprised of two stages. During the first phase two 72" diameter pipe piles were



"I think it's the way we should move in the future. If we want to save the state money, we have to try and look for more innovative solutions. I'm extremely happy. I had the opportunity to offer it, to test it and now to implement if for construction."

— Samuel Paikowsky, geotechnical engineering consultant with Geosciences Testing and Research

driven to a depth of 133 feet. The first pile was a standard open-ended pipe pile; the second had a prefabricated plate installed acting as a "plug." The plug was installed 40 feet from the pile tip and was comprised of a 2" thick plate with a 14" hole in the center. The design was aimed for the soil to create a plug at a desirable depth while providing sufficient penetration to resist lateral loads. The piles where driven with an IHC S-600 hydraulic impact hammer with a maximum rated energy of 443,000-foot pounds. A static test was then performed on both piles. The open-ended pile failed at a capacity of 2,500 kips and the plugged pile achieved a sustainable load of 4,500 kips. During the second phase of the testing program, the open-ended pile was extended and driven to a depth of 235 feet, the "annulus" pile was driven to a depth of 187 feet. Both piles were again statically tested. The open ended pile achieved a load of 5,500 kips and the annulus pile showed no sign of failure under the desired load of 6,000 kips, the maximum possible applied load.

Designed by Richard Pizzi of Geotechnical Consultants Inc., the 6,000-kip reaction frame involved two 1,500-ton reaction beams, four 17 x 10 foot concrete pile caps and forty 150-kip tie-downs. The tie-downs were installed in four groups of 10. Each tie-down group was cast into a 17-foot x 10-foot concrete cap. Each cap had 2.5" diameter Williams rods extending from the pile cap up to the reaction beams. The reaction beams were set one atop the other to form an "X." Four 1,800-kip jacks were utilized to create the 6,000 kips load needed for the test.

As mentioned, the silty soil conditions were problematic, making standard H-beams ineffective to anchor the frame. Tie-down anchors where thought to be the better option. There

were still concerns about whether or not the tie-downs could hold such a large capacity and how they would react in that soil condition. Two tie-downs were installed and tested to the desired load. Production installation was monitored such that the tie-downs were installed using uniform or consistent grout volumes and water pressures.

"We were proud to have the opportunity to complete the largest load test in New England," says Christopher Roy, the estimator with Vynorius Piledriving Inc.

Material and Machinery Used

A Manitowoc 4100 Series 2 crane was used onsite and an IHC S-600 hydraulic impact hammer, with a maximum rated energy of 443,000 foot pounds and a hanging weight of 100 metric tons, was used to drive the piles.

The hydraulic jacking system used, which consisted of four 1,800 kip double acting hydraulic jacks, was designed and provided by WB Equipment Service Company Inc.

The tie-down materials were provided by Williams Form Engineering and were installed by Terra Drilling. A Casagrande hydraulic track mounted drill rig was used to drill the holes for the tie-downs. A double drum mixer with a Moyno pump was used to site-batch the grout that filled the holes.

Logistical Problems

The site selected for testing was rather small, as it was at the edge of the river adjacent to the existing Sakonnet River Bridge. So access into that area included some narrow roadways that were near a residential area. The load frame had to be transported in pieces and trucked in so it could be assembled onsite. As many standard pieces as possible were used along with multiple W36 wide flange sections. In total, eight different components were used to build the modular frame.

"It was very interesting and challenging. It's a large public works project with a lot of people reviewing it, a

lot of different engineers, and it's always a challenge to please them," says frame designer Richard Pizzi with Geotechnical Consultants Inc., Vynorius' design engineer.

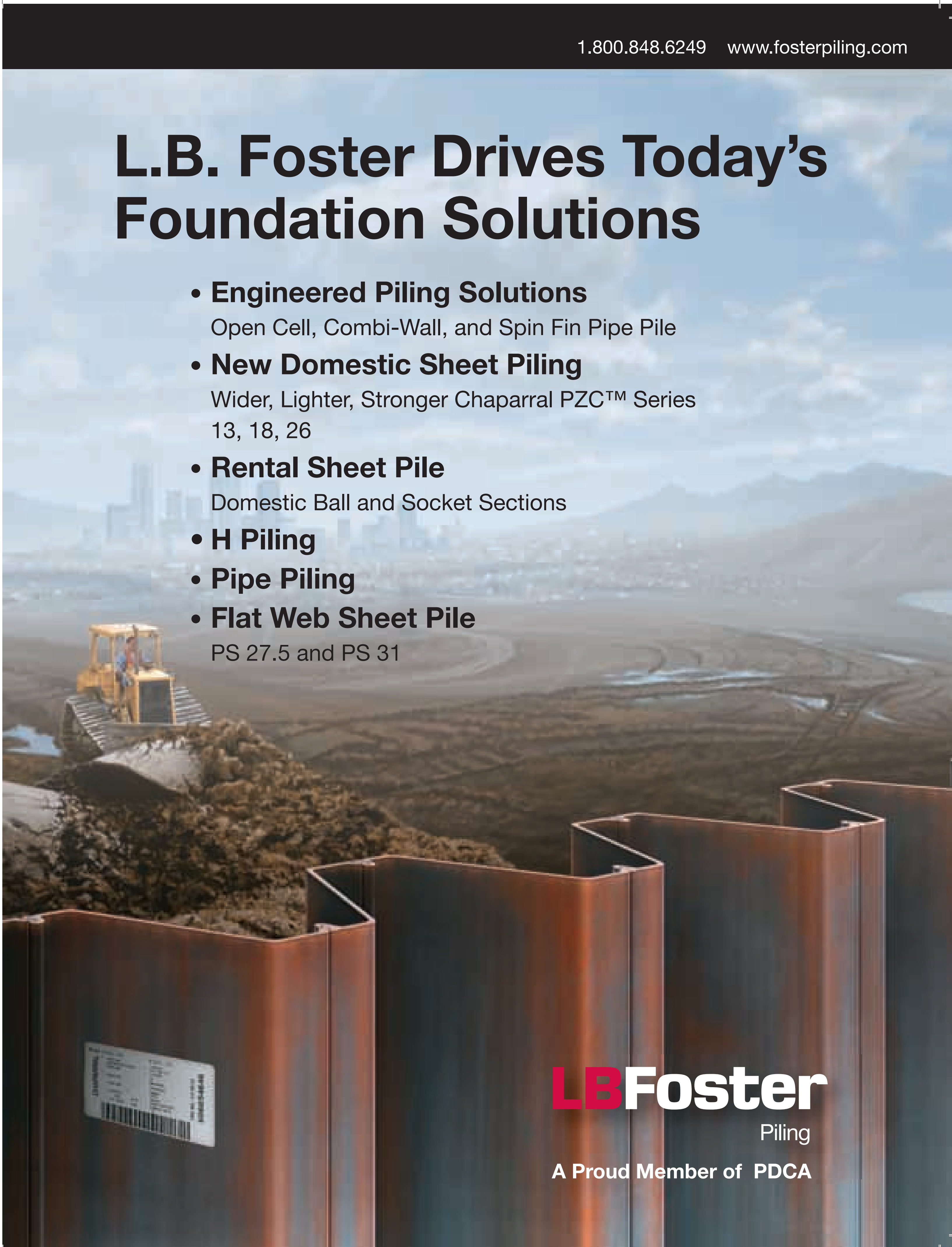
"This is the way foundations should be designed. Years ago when we started we really didn't have the sophisticated tools that we have for predicting pile capacities, so we always did a load test at the beginning of a project and used the results of that load test to then prepare the foundation design. This is reverting back to the way we used to design piles, and in the long run it's a much more efficient, much more equitable way of designing the piles than has become customary for most projects that we do.

"This test program is certainly successful and certainly in my opinion, the right way of going about designing a difficult and costly foundation to ensure that we get the most and best information that we can."

Paikowsky agrees that those in the industry should seek cutting-edge foundation solutions.

"I am very proud of this project," he says. "I think it's the way we should move in the future. If we want to save the state money, we have to try and look for more innovative solutions. I'm extremely happy. I had the opportunity to offer it, to test it and now to implement it for construction."

The first test contract ended approximately in October 2006, while the second test began in April 2007 and testing was completed in November 2007. The new bridge replacement is estimated to begin in summer 2008 using the shortened annulus fitted pile that provides high resistance in a shallower depth compared to the simple open-ended pile. ▼


1.800.848.6249 www.fosterpiling.com
L.B. Foster Drives Today's Foundation Solutions
• Engineered Piling Solutions
Open Cell, Combi-Wall, and Spin Fin Pipe Pile
• New Domestic Sheet Piling
Wider, Lighter, Stronger Chaparral PZC™ Series 13, 18, 26
• Rental Sheet Pile
Domestic Ball and Socket Sections
• H Piling
• Pipe Piling
• Flat Web Sheet Pile
PS 27.5 and PS 31
LBFoster
Piling
A Proud Member of PDCA

Value Engineering at its Best

The Rantowles Creek Bridge and Wallace River Bridge are re-designed using driven piles

By Zane W. Abernathy, Jeanne Fronda and Michael S. Miller

The Rantowles Creek Bridge and the Wallace River Bridge are in Charleston, South Carolina. The Rantowles was constructed in 1969 and the Wallace in 1942. They are part of U.S. Highway 17, which is one of the state's major evacuation routes, so these high-importance classification bridges must always be accessible to traffic in the case of a seismic event in the area.

Project Introduction

The Wallace's north and south bridge approach embankment areas and the Rantowles' south approach embankment needed significant ground modification improvements to meet seismic performance requirements. Originally, vibro-replacement stone columns were planned for ground improvements at the U.S. Hwy 17 northbound lane replacement bridge over the Wallace River site and at the south bridge approach embankment of U.S. Hwy 17 over Rantowles Creek. In addition, stone columns were originally planned for slope stability during seismic events. The negative environmental impact caused to the surrounding waterways and adjoining marsh areas from spoils and sediments produced during stone column placements called for a new proposal.

The entire bridge project cost $12.2 million, and the pile driving contract was worth $1.25 million. The bridge improvements and replacements started in January 2006 and were completed in September 2007. Using the value engineered pile-supported embankment and driven pile slope stabilization produced a $250,000 savings to the SCDOT, compared to the initial design involving stone columns.

As a solution, a new value engineering design involving the use of driven piles was introduced. This would result in a pile-supported embankment and pile slope stabilization; in addition, both uses of the driven pile would mitigate soil liquefaction and settlement.

Design

As the general contractor, Cape Romain Contractors Inc. along with FM&E Consultants designed the value engineering substitute for the South Carolina Department of Transportation (SCDOT). In addition, S&ME was involved with the original design of the bridges and with the review and approval of the value engineering design.

The value engineering design required the installation of 12-inch square pre-stressed concrete piles on an eight-foot pile center-to-center triangular spacing. At the Rantowles Creek south embankment approach area, the installed pre-stressed concrete piles would support a below grade structural concrete slab that would act as a platform to eliminate liquefaction induced settlements at the asphalt roadway surface following the seismic events. The actual structural design of the below-grade slab was created by Triplett-King & Associates.

The proposed ground modification included additional pre-stressed concrete piles to be installed at the south embankment approach to the replacement bridge over Rantowles Creek, outside and below the above described pile supported slab, and at both Wallace River North Bound Lane bridge approach embankments to provide lateral/shearing resistance to possible embankment side and end slope failures during the design seismic events. In addition, driven pile installation for the purposes of densification was required at the south bridge approach area of the Wallace River North Bound Lane embankment in order to reduce post liquefaction-induced settlements.

"The uniqueness of the project to me was minimizing environmental impact."
— Michael Miller, a geotechnical engineer with F&ME Consultants

Environmental Issues

There were no unusual environmental issues or noise concerns during the project using driven piles. As mentioned, the main concern was to find an alternative method to the stone columns, one that would not cause spoils and sediments produced during stone column placements. Using the vibratory stone column design is a messy procedure, as it is a wet method where water and mud would run into the banks and salt water marshes of the tidal creeks immediately adjacent to the project site. In addition, the new design had to minimize settlements due to liquefaction at the bridge approach ends. In other words, the design had to ensure that the roadway would not settle excessively after an earthquake, which would cause bumps or unevenness in the road.

Using driven piles also abolished the concerns of causing damage to existing roadways with the stone column installation vibrations. It also removed the concern of feeding stone into columns at high elevations immediately adjacent to existing roadways.

"The uniqueness of the project to me was minimizing environmental impact," says Michael Miller, a geotechnical engineer with F&ME Consultants.

Construction Obstacles

Staged construction was one concern during the project, as it required three separate steps for each bridge. This involved partial building of a replacement bridge off to the side of the existing bridge, shifting traffic onto the new bridge and then demolition of the existing bridge. Following demolition, the final replacement bridge was constructed over the old bridge alignment. In addition, the site involved a four-lane divided highway, so all four lanes had to be running simultaneously during construction.

Logistical Concerns

One of the major logical issues with the original stone column design is that there would be a lot of problems to get an out-of-town contractor to do a multiple-stage job. But because the design changed to one that involved driven piles, Cape

Romain Contractors Inc. was able to self-perform; this meant the company did not have to worry about multiple mobilizations of a specialty geotechnical subcontractor to install the stone columns. The new design also meant the project could be scheduled so that traffic flowed smoothly and more efficiently during the bridge alterations.

Pile Driving

Square pre-stressed concrete piles were installed by Cape Romain Contractors Inc. on this project. It is the first time that a pile-supported concrete slab has been installed to mitigate both liquefaction and settlement on an SCDOT project, so it was the first time that pre-stressed concrete piles acted as shear pins to resist slope failure for a project in the state of South Carolina.

"Everything went very well," says Sonny DuPre, chief executive officer with Cape Romain Contractors Inc. "To our knowledge it's the first time driven piles were used in this application.

"We're in out 61st year of business, and I'm the third generation owner, and we have a good longstanding relationship with the DOT and these different geotechnical engineers. Our good reputation and our good relationship with them were instrumental in getting this value engineering through."

> **"Our good reputation and our good relationship with the DOT were instrumental in getting this value engineering through."**
>
> — Sonny DuPre, chief executive officer with Cape Romain Contractors Inc.

Driven pre-stressed concrete piles were used at one location to mitigate settlements due to liquefaction of soils located below the bridge approach embankment. These piles were driven below the potentially liquefiable soils and provided support of a constructed sub-grade bridge deck. Following a seismic event and predicted liquefaction, any settlement that happened would occur below the below-grade slab. The seismic design requirement for this bridge is that the bridge was to be considered essential and/or critical. This means that emergency vehicles will need to have access across the bridge without any delay immediately following a seismic event (i.e., no time for repairs and, as such, minimum amounts of settlement/damage would be allowed in design performance requirements).

Materials and Machinery Used

The Rantowles Bridge included 136 driven piles, and on the Wallace River Bridge 123 driven piles were used. Ranging in length between 30 to 55 feet, each square pre-stressed pile was 12 inches square. The piles were purchased from Tekna, a company based in Charleston, South Carolina.

Equipment used on the project included a D19 Delmag diesel hammer that was used to drive the piles, and a 7250 American Crawler crane.▼


PILECO
D62-2
SUPPORT IS ON THE WAY
What ever the requirement the right hammer is on the way. You need the proper support to complete your project.
Pileco supports the industry with 15 specially designed hammers, complete with accessories, parts, 24/7 service and engineering.
When it counts... Call the Pileco support team.
PILECO
Pileco, Inc
P.O. Box 16099, Houston, Texas 77222
111 Berry Road, Houston, Texas 77022
Toll Free:1-800-474-5326
PH: 713-691-3000
FX: 713-691-0089
E-mail: pileco@pileco.com
1-800-474-5326
www.pileco.com
PILECO THE PERFORMANCE MINDED COMPANY

Benefits of Driven Piles

A driven pile is a relatively long and slender column, provided to offer support or resist forces, made of preformed material having a predetermined shape and size that can be physically inspected prior to and during installation. It can installed by impact hammering, vibrating or pushing into the earth.

Quality

Driven piles are a total engineering solution. The design, installation and quality assurance, that are a part of each driven pile, combine to eliminate guesswork and produce a known, reliable and cost-effective product that can accommodate a wide variety of subsurface conditions.

Driven piles consist of natural materials or pre-manufactured structural shapes built to precise tolerances utilizing high strength materials and reliable quality control. All driven piles conform to ASTM standards. Their quality is consistent from the first pile to the last and can be seen and verified prior to installation.

Driven piles maintain their shape during installation. They do not bulge in soft-soil conditions and are typically not susceptible to damage from the installation of subsequent piles. Many hollow-section piles can be visually inspected after installation to assure integrity. Most solid-section piles are uniform in section and can be dynamically inspected to verify integrity.

The pile-driving process can be easily modeled prior to installation to determine adequate and economic equipment selection. Static or dynamic testing can confirm load-carrying capacities of installed piles. Dynamic testing can easily confirm proper hammer performance and its effect on the pile. Many modern hammers have impact velocity measurement devices permanently installed, providing a very high level of quality control.

Cost effective

Driven piles are usually the most cost-effective deep-foundation solution. You pay for only what you need. There are no hidden extra costs or added expenses for site clean-up. The wide variety of materials and shapes available for driven piles can be easily fabricated or specified for high structural strength, allowing them to be driven by modern hammers to increased working loads, thus requiring fewer piles per project, resulting in substantial savings in foundation costs.

Pile capacity is easily verified by either static or dynamic pile testing. Capacity per pile or pile length can be easily optimized to provide exactly the required capacity (including safety factors) to minimize foundation costs. Testing also eliminates the uncertainty of bearing capacity estimates based on static analysis. There is no need to be overly conservative and thus wasteful to protect against failure.

As an additional benefit, driven piles often gain capacity after installation. Shaft soil strength usually increases with time after pile installation is complete to provide additional load capacity. This phenomenon, called “setup,” can result in substantial foundation cost savings when considered in the design and confirmed by testing. The incorporation of setup into the foundation design results in fewer piles and/or shorter piles driven with lighter equipment. The reduction in time, labor and materials provide substantial cost savings to the owner.

Driven piles can be

- Steel
- H-Pile
- Pipe (open-end or closed-end)
- Tapered
- Shell (mandrel driven)
- Sheet Pile
- Concrete
- Square
- Octagonal
- Cylinder
- Sheet Pile
- Timber
- Composite piles that combine pile types (i.e., a concrete pile with a steel tip extension).

Adaptability

Driven piles are installed to accommodate compression, tension or lateral loads. Piles can be selected to meet the specific needs of the structure, site conditions and budget. You can select from a variety of materials and shapes that best meet your needs.

Driven piles easily adapt to variable site conditions to achieve uniform minimum capacity with high reliability, thus eliminating uncertainty due to site variability. Driven piles are usually installed to established criteria (i.e., minimum blow count per unit penetration, sometimes with a minimum penetration). Because they are normally driven to a blow count to assure the desired minimum capacity, pile lengths may vary when subsurface conditions are not uniform. Driven piles may either be cut-off to shorten their length or spliced to extend their length. Splice designs usually meet or exceed the strength of the pile itself. Pile shoes or "points" can be added to assist penetration requirements and provide very reliable contact with rock. The optimum length is used for each pile which accommodates all site conditions.

Driven piles adapt well to unique site conditions and restrictions. They are ideally suited for marine and other near-shore applications. There are no special casings required and there are no delays related to the curing of concrete. Piles driven through water can be used immediately, allowing construction to proceed in a timely manner. For bridges or piers, driven piles can be quickly incorporated into a bent structure allowing the bridge or pier itself to be used as the work platform for succeeding piles in top-down construction.

To minimize disturbance in wetlands or allow work over water, driven piles can be used to construct temporary trestles. Piles installed to meet any temporary construction need can be extracted when the need is ended.

In earthquake prone regions, large diameter driven piles are well suited to resist seismic forces. Non-displacement pile sections (i.e., H-piles) can be utilized to minimize vibration effects on nearby existing structures. In corrosive environments, coatings and/or additives can be used to mitigate the effects of corrosion thereby lengthening the service life of a structure. Coatings can also be used to mitigate the effects of negative skin friction.

Reliable and available

Pile-driving contractors can be found all over the country. The equipment and installation methods are time-tested and well proven. Advances in materials, equipment, methods, and testing continually combine to improve the efficiency of driven piles.

Recording the blow count versus depth during pile driving easily documents successful pile installation. You know what you have at the completion of driving. Because driven piles are usually driven to a blow count criterion, they will have a measurable capacity providing assurance that they meet the project requirements. Piles can be easily driven through upper soft soil layers regardless of the soil type and groundwater conditions.

Driven piles have vastly superior structural strength. Driven piles almost never fail structurally during static testing or static loading. They have high lateral and bending resistance for their entire length making them ideal to resist wind, berthing and seismic loading conditions. Driven piles can tolerate moderate eccentricity in the application of superstructure loads due to their full-length strength. Piles can be driven either vertically or at various angles of inclination to increase support for lateral loads. In special cases, piles can even be driven horizontally.

Residual benefits

Pile driving is relatively easy in many soils. Since the soil at the toe is in a compacted condition for displacement piles, end bearing can often carry a substantial load. There are no "soft bottom" soil conditions, so large settlements for end bearing piles are eliminated.

Driven piles displace and compact the soil. Other deep-foundation options can require the removal of soil and considerable subsidence, which can undermine the support of adjacent structures and cause excessive deformations, both of which can result in structural problems. Drilling for cast-in-place piles relieves soil pressures and reduces unit shaft resistances. In groups of drilled piles, the removal of soil generally loosens and weakens the soil structure, reducing the capacity of previously installed piles. Groups of driven production piles densify the soil, improving the capacity of previously driven piles. In groups, driven-production piles usually have a higher capacity than the test pile, while drilled production piles often have a lower capacity than the test pile. Thus, driven piles generally have higher capacities than other pile types of the same diameter and length.

Driven piles require no curing time and can be driven in natural sequence rather than skipping alternate piles, thus minimizing the moving of the equipment and speeding installation.

Environmentally friendly

Driven-pile installations usually produce no spoils for removal and therefore no exposure to, or costly disposal of, potentially hazardous or contaminated materials. The site is left clean and ready for the next construction activity.

Alternate uses

The most common use of the driven pile is in deep foundations. Driven piles can also be utilized in other applications such as pile-supported embankments, sound wall barriers, retaining walls, bulkheads, mooring structures, anchorage structures and cofferdams. ▼

Aren't specs terms supposed to be plain?

Moving toward a more uniform terminology

By Bengt H. Fellenius and Mohamad H. Hussein

Technical contract specifications are supposed to reflect good and proper design, and many do. Far too many, however, are bewildering due to the use of ambiguous terminology. Piling lingo, in general, contains an astonishing array of confusing vocabulary and nomenclature. The carefree vernacular of the job site includes slang, jargon and colorful phraseology. For example, a disinterested person may be amused by hearing the upper end of the pile referred to as the "butt." However, not so disinterested persons, such as design engineers, contractors and inspectors, are adversely affected by ambiguous terms and absurd definitions that abound in project specifications, contract documents and job reports. Lack of precise language and uniform terminology causes confusion, creates problems and is often the root of disputes and costly claims.

The February 2002 International Deep Foundations Congress organized by the Geo-Institute of the American Society of Civil Engineers (ASCE), Orlando, Fla., gathered more than 500 piling practitioners from across the United States and around the world. More than 100 papers were presented on the current state of the art and practice in deep foundations. A review of the 1,566-page, two-volume conference proceedings reveals that the terms used to communicate, qualify or quantify the related — but not identical — concepts of pile "capacity" and "resistance," resulted in more than 20 different definitions, descriptions, expressions and terms. Sometimes the terms were used interchangeably. The terms ranged from precise, vague and ambiguous, to outright careless. Some of the more nebulous expressions to quote from the papers include: foundation ground resistance, safe working load capacity, total allowable resistance, effective total pile resistance, useful capacity, dynamic capacity, pile resistance, and design safe working load.

Actually, the parade of confused and confusing phrases is, no wonder, considering that specialized engineering textbooks employ a similarly lax — if not directly erroneous and misleading — vernacular.

The following example taken from actual contract specifications demonstrates the desirability of devoting more thought toward terms and expressions used in the specs: A design engineer, in an area where the piles would normally be installed to a 200-ton capacity, was faced with the problem of the piles potentially reaching into a boulder layer existing at depth at a site. To avoid potential pile damage, the engineer reduced capacity per pile to only 100 tons, so that the piles would be correspondingly shorter and not reach into the boulder zone. Someone — it was never determined who — thought that plain "capacity" sounded too casual and added the adjective "load" to the phrase "100-ton pile capacity" used in the designer's draft specs so it read "100-ton pile load capacity." At the outset of pile driving, the contractor asked what loads he was to drive to and was told that the specs indicated the pile loads were 100 tons. So, naturally, he drove to a capacity of twice the 100-ton load, which meant that the piles had to be longer and, as the designer had feared and wanted to avoid, the piles were driven into the boulder layers. The results were much breakage, problems, delays and cost overruns. The contractor's claim for extra length of piles and prolonged driving was $300,000, or $75,000 per letter of the misleading adjective.

Incidentally, of all terms, capacity is most often misused. A recent DOT specs text required the contractor to achieve an "intimate capacity," probably a misspelling of the phrase ultimate capacity. Capacity simply means ultimate resistance and adding the adjective ultimate is redundant, because the term does not require an adjective (other than axial as opposed to lateral, for example).

Similar to the usage of capacity, load is often combined with adjectives that can result in confusion. Combinations such as allowable load, factored load, dead load, live load, permanent load, transient load, etc. are well defined and, therefore, unmistakable. Some people, however, find different meaning between design load and working load, and some believe the two to be synonymous. If both are used in the same specifications, a judge, at least, will take them to have different meaning if not so, then only one should have been used in the specs but, same or different, what do the terms mean? The phrase "design load" is usually taken to mean the maximum load acting on the foundation (the pile) from the structure. It could be equal to the allowable load, but it cannot be larger. The phrase "working load" does not work very well and is best not used. Adding the word "safe" to either phrase, or to any phrase, increases the potential for confusion.

On the topic of using jargon: the word "set" is not a synonym for blowcount (the blows counted for a certain penetration distance). Set is the net penetration for one blow or possibly for a series of blows. Its origin is an abbreviation of settlement, meaning the net penetration, usually for one blow. The following is an example of what the use of set can cause: Specifications for a project stated that piles were to be driven to depths indicated by the plans and drawings and added "the piles will be driven to a very small set and the contractor is cautioned not to overdrive the piles." Of course, the contractor took care not to damage the piles by driving them too hard, which is what overdriving means, and which can occur when the penetration per blow is very small. The driving turned out to be very easy and, in the contractor's search for the very-small-set termination criterion, he drove the piles much deeper than the plans and drawings indicated. Unfortunately, in writing the quoted sentence, the spec writer meant to warn the contractor that the penetration per blow was expected to be very large and that the piles, therefore, could easily drive deeper than desired. Talk about diametrically opposed interpretations! And predictable surprises. In this case, the engineers insisted that their intended interpretation was the right one and a costly claim and litigation ensued. Because the industry has a vague understanding of the proper meaning of the term "set," avoid using it in any context. Use "penetration resistance".

The word set is also frequently misconstrued to be a synonym for termination criterion, which incidentally, is not the same as "refusal," and the jargon confusion does not get any better by shifting from set to refusal. Although most people have a qualitative understanding of what is addressed, one person's refusal is another person's promise. Refusal is an absolute term; it implies that one just cannot drive the piles deeper after having exhausted all means to do so. Then, specifications suggesting a refusal of six blows per foot sounds not only silly, but implies a spec writer with a poor command of language. Instead, termination criterion should be used. It is a neutral term that states exactly what is meant. What about battered? It is a term that really separates the men from the boys, or people experienced in — or at least exposed to — piling from people who are not. The latter group includes lawyers, judges and jury members. A case in point is the true story, experienced by the first author, of a contractor appearing in court to argue a claim. And did he ever have an uphill battle once the judge realized that he had battered his piles. The judge had experience with battered spouses and children, but he had no knowledge and little appreciation of the term and its discrete meaning for piling people. When the matter was made clear to him, he was quite annoyed that a group of professionals would use a jargon term that had a perfectly suitable everyday English term available, i.e., inclined. Please, stop using batter. Alas, a cry in the wilderness. It is getting worse rather than better. Recently a paper used the "batter" term to characterize a leaning structure!

There is more to the matter than a poor choice of terms and definitions. You may enjoy the following direct quotes from real life contract specifications:

1. Piles shall be driven to reach the design bearing pressures.
2. The minimum allowable pile penetration under any circumstance shall be 17 feet.
3. The contracting officer will determine what procedure should be followed if driving refusal occurs.
4. The hammer shall have a capacity equal to the weight of the pile and the character of the subsurface material to be encountered.
5. The hammer energy in footpounds shall be three times the weight of the pile in pounds.
6. Inefficient diesel, air, or steam hammers shall not be used.
7. Each pile shall be driven until the bearing power is equal to the design piles pressure.
8. All piles incorrectly driven as to be unsuitable as determined by the contracting officer shall be pulled and no payment will be made for furnishing, driving, or pulling such piles.

9. All piles determined to be unsuitable by the contracting officer shall be replaced by and at the expense of the contractor.
10. The driving shall continue, using hammer falls of 150 mm to 200 mm in a series of 20 blows until penetration of the pile has stopped. The height of the fall shall then be doubled and the pile again driven to refusal. This procedure shall be continued until the design load of the pile has been achieved.
11. The pile design load is defined as one-and-a-half times the working load. The design load will be deemed to have been achieved when the pile exhibits zero residual (= net?) set under 10 successive blows of the hammer, where each blow has a sufficient energy to cause elastic deformation of the pile at the ground level equal to the static shortening of the pile at design load, as calculated by Hooke's Law.
12. Inclined head to be used for batter piles.
13. Cut off portions of pile, which are battered, split, warped, buckled, damaged, or imperfect.
14. Where unwatering is required, the contractor shall effect a dewatering scheme.
15. When the hammer performance is requested to be verified, all costs associated with this work will be included in the contract price when the energy delivered is less than 90 percent of the stated potential energy specified in the submission. When the energy is greater than 90 percent of the potential energy stated in the required submission, the costs will be paid as extra work.
16. Pile shall be accepted if . . . the pile reaches refusal at a load, which would give a working load equal to, or greater than, the design capacity.
17. The piles will be driven to a factored design load of 630 kN (71 tons) which is about three times the estimated required bearing capacity.

As a contractor, would you want to have these requirements imposed on you? As an inspector, would you want to be the one enforcing these specs? And, as an engineer, how do you feel about your professional association with such nonsense?

Surprises occur frequently during construction projects. The surprises take many forms, but one aspect is shared amongst them: they invariably result in difficulties at the site and, more often than not, in disputes between the parties involved. When the unexpected occurs at a site, costs escalate, and delays develop, the contractor feels justified to submit a claim that the owner may see little reason to accept. Well-written specifications can resolve disputes and avoid claims. However, when the parties turn to the technical specifications for the rules of the contract, these often fuel the dispute instead of mitigating it, because the specifications are vague, unclear, unbalanced, and containing ambiguous language and weasel clauses that help nobody in resolving the conflict.

The piling practice differs with geologic conditions and geographic locations. It would be difficult to come up with a set of master specifications that would fit all projects. We should, however, be able to agree on a common usage of the terms and definitions involved in our industry. Maybe a list of well-defined terms could be a task for the PDCA, in order to move toward a more uniform terminology. ▼

Jinnings Pile Driving Equipment

- Equipment Sales
- Equipment Rentals
- Parts and Services

- Hydraulic Piling Hammers
- BSP SL Models
- BSP CX Models

- Side Grip Vibrating Hammers
- BSP SCV Models
- Power Sources

› For more information on products, availability, or pricing, contact us at:
Toll Free: 877-546-6464 | Fax: (260) 447-4363 | E-mail: info@jinnings.com

› **Jinnings Equipment, LLC** | 4434 Allen Martin Drive | Fort Wayne, IN 46806

www.jinnings.com

Safety first

The basics of safe crane operation

By Patrick Collins

This entire article could be dedicated to the basic principles and rules of safe crane operation. After all, everyone involved in pile driving needs all the crane lift training possible. Cranes used in pile driving applications probably aren't the most glamorous machines on the job site. They often don't have long booms, they don't have jibs, they don't place loads at dizzying heights and they don't pick up objects people "ooh" and "aah" about. But even if they aren't glamorous, pile driving cranes are, in most cases, the real workhorses. They must do their job before other construction can begin.

Unfortunately, because of their pile driving attachments and, in many cases, their age, some people view these cranes as older, "well-used" machines that no longer require strict adherence to the manufacturer's maintenance recommendations. Few statements are further from the truth.

First, some facts. In most cases, cranes equipped with pile driving attachments are under load most of the time, either from having fixed leads hanging off the boom or from vibrations from the pile driving operation itself. Many times, because the application requires "single part" high line pull on its drum winches, it tests the entire hoist system, from the hook or cable end to the cable itself, to the sheaves, to the boom, to the dead ends of the wire ropes, to the brake band linkage, all the way to the foot pedal and foot clip, which, in the end, holds the load in the air on many older mechanical cranes working on bridges, overpasses and foundation sites.

Next, we should consider the undercarriage and travel system. These machines — one on the job site — travel with leads and load in place. A machine's travel system supports not only the weight of the crane, but also the weight of the attachment. Often not evenly balanced, the machine may be "up on its toes," putting strain and causing uneven wear on the undercarriage. Also, most of the time, these machines travel on unprepared sites where conditions are less than ideal. Add to this the additional hardware a pile driving attachment brings with it the leads, the spotter, the hammer controls and various auxiliary equipment, such as power units. This added hardware mounted on the crane could make access difficult for routine maintenance. It's obvious that crawler cranes used in pile driving applications deserve more attention in regard to routine maintenance, adjustment and inspection. Operation training also is important; most people would agree that you can't get enough of it. This is certainly true in traditional crane operation. But let's consider crawler cranes, how they relate to pile driving and the training operators receive.

First of all, many of the units in use are older mechanical cranes, which means you must train new operators on older machines that in many cases are not equipped with any operator aide devices such as load indicators and anti-two block. This is difficult enough when training for conventional crane operation, but put on top of that the responsibilities of pile driving, and it becomes quite a challenge for even a sharp new operator.

It's no wonder pile driving contractors across America view their operators as the centerpiece of their operation. Not only does the operator perform the crane and pile driving functions, he is also ultimately responsible for keeping trucks and materials flowing and, hence, for keeping everyone busy and doing their job. Some of this pressure has been reduced by the new hydraulic crawler cranes that are fast replacing many of the older mechanical cranes. Hydraulic controls with automatic brakes, selectable free fall, hydraulic swing and hydraulic travel with automatic brakes, and easy assembly/disassembly can make this learning process much easier.

Let's address crane travel operation, an area where some operators get into trouble. When the crane is driving pile, many times the leads are stabilized on the ground or on a supporting surface. The crane is really the positioner for the leads, and controls hammer and pile. A problem arises when we move the machine. Since the lead length often requires a high-boom angle, an operator will move the machine with the boom at a high angle and the leads in the vertical position. On a firm, level supporting surface, this can be done safely and without problems


Experience the progress.
The NEW range of LB-Series Drilling Rigs. Made of reliable Liebherr standard components. Massive design for long lifetime. Advanced Technologies are our Business.
LIEBHERR
LB28
REWE

as long as the total load is within chart. Problems occur, however, when moving the machine onto mats or onto an incline. When the operator moves forward uphill, the leads tend to tilt back, and the boom might fall into the backstops. We assume most of the time, the backstops hold the boom and the leads and that the operator is able to stop, change his travel plans and proceed safely.

This isn't always the case, however. If the boom backstops fail, everything falls over backward, possibly causing property damage and injury to the operator and people around the crane.

Another scenario is that the boom stays in position but the leads, if freely suspended, act as a pendulum and can find their way around the face of the boom to the side of the machine. The leads can come into contact with the cab, causing damage to equipment and injury to the operator and others. Another possibility is that the unit, unable to maintain its position "over the end" because of the side loading of the leads, could overturn.

It's obvious that great care should be taken when traveling a crane in pile driving applications. You should plan the route on which the crane is to travel and ask some important questions. Is the ground firm and level? What is the machine's ultimate destination? Does it have to traverse an uphill grade? If it is too steep a grade, it must be reduced by whatever means necessary. "Try it and see what happens" is not acceptable.

Another item that must be considered by everyone who works with cranes is electrocution. Cranes with attachments working at high boom angles with leads up in the air are a conduit for electricity. A contractor must do whatever is necessary to keep a safe distance from a power source. I have heard people who have compromised safety for convenience say, "Well, we have to get there. We have to do the job." This is not an acceptable attitude. All risk must be eliminated in this area of crane safety. There should be no compromise. Many manufacturers recommend a minimum distance of 15 feet from any power line at all times. Many cities and states also have established a minimum distance from power lines. Lines must be shut off or re-routed and a full-time signalman, as well as a crane safety director, must monitor the job site 100 percent of the time.

An operator should have support from someone on the ground, such as a signalman, to make sure no other personnel are near the crane while it's driving pile. Workers should vacate the area while the machine is traveling, and a trained signalman should be giving clear instructions to the operator.

Crawler cranes and pile drivers have been together a long time. Those in the industry agree it's the best way to drive pile; that is not going to change. What's changing is the increased focus and attention to safety on cranes. If these efforts continue, we all will have a safer place to work.

Collins is a link-belt veteran. He has served as a district service representative internal sales manager and telescopic boom crane product manager. ▼

A critical safety issue

There are many safety issues to be considered in pile driving, one of which is the lifting of a pile (also known as hoisting a pile or lofting a pile) into the leads. It is one of the most frequent activities of pile driving, and it can be dangerous.

Piling comes in many sizes, shapes and weights and a variety of materials. A heavy pile usually causes the greatest concern when raising it from a horizontal to a vertical position. A long pile has its own hoisting problems, but a pile that is both heavy and long provides the most taxing of safety issues.

Pile location and placement on the ground prior to hoisting it into the leads is critical. There are many approaches and concepts about where a pile is best placed in relation to the crane. It varies from company to company and from crew to crew and usually is based on past practices that have worked safely.

Sometimes available space – or laydown area – is not ideal. When this is the case, it is important that a planned hoisting procedure be developed and discussed with the entire crew.

Whatever method a crew uses to hoist up a pile, it is always wise for all crewmembers around the leads to be alert and to watch out for one another.

Source:
Randy Dietel, Piling Inc.


skylinesteel
the sky's the limit

2008 New PDCA Members

The following is a list of all members who have joined the PDCA in 2008. The association would like to welcome everyone on the list!

Contractors

Amco, LLC
Anthony Clark
12 Delta Drive
Londonberry, NH 03053
P: 603-434-8900
F: 603-434-8996
acinternet1@aol.com
www.amcollc-nh.com
Structural steel, Steel sheet pile, H-Pile
CT, MA, ME, NJ, NY, RI, VT

Austin Bridge & Road, LP
Bill Kingrey
6330 Commerce Drive, Suite 150
Irving, TX 75063
P: 214-596-7300
F: 215-596-7397
www.austin-ind.com
bkingrey@austin-ind.com
Bridge Building, Bulkheads, Deep excavation, Docks and wharfs, Earth retention, General contracting, Highway and Heavy civil, Marine, Pile driving
AL, AR, AZ, FL, GA, KY, LA, MS, NC, NM, SC, TN, TX

Balfour Beatty Infrastructure, Inc.
Crandel Bates
2333 Courage Drive, Suite C
Fairfield, CA 94533
P: 707-427-8900
F: 707-427-8901
www.bbciusa.com
crandall.bates@bbinfrastructureinc.com
Bridge building, Deep excavation, Earth retention, Highway and heavy civil, Marine, Pile driving
CA, CT, FL, NC, OH, OR, PA, SC, TX, WA, WV

Bergerson Construction
Dennis A. Bjork
P.O. Box 387
Astoria, OR 97103
P: 503-325-7130
F: 503-325-0174
www.bergerson-const.com
dbjork@bergerson-const.com
Structural steel, Steel pile piles, Steel sheet piles, Vinyl sheet pile, Timber piles, Concrete piles, H-piles, Design
OR, WA

Brayman Construction Corporation
Stephen Macon
1000 John Roebling Way
Saxonburg, PA 16056
P: 724-443-1533
F: 724-443-8733
www.braymanconstruction.com
s_macon@braymanconstruction.com
Bridge building, Bulkheads, Dock and wharfs, General contracting, Highway and heavy civil, Marine, Pile driving, Earth retention
AL, DC, DE, FL, GA, ID, IN, KY, MD, MI, MO, MS, NC, NJ, NY, OH, OK, PA, SC, TN, VA, WV

C. A. Hull Co., Inc.
Michael Malloure
8177 Goldie Road
Walled Lake, MI 48374
248-363-3813
248-363-2399
www.cahull.com
mmalloure@cahull.com
Bridge building, General contracting, Highway and heavy civil, Pile driving
IN, MI, OH

Corman-Imbach Marine, Inc.
Eamonn McGeady
6121 Pennington Ave.
Baltimore, MD 21226
P: 410-355-6121
F: 410-354-2747
www.cormanconstruction.com
emcgeady@cicmarine.com
Bridge building, Bulkheads, Dock and wharfs, General contracting, Highway and heavy civil, Marine, Pile driving
DE, MD, PA, VA, WV

Correia Construction Co. Ltd.
Dennis Correia
3 Meadow Lane
Devonshire
P: 441-236-4373
F: 441-236-2544
www.corieaconstruction
dcorreia@correia.bm
Bridge building, Bulkheads, Deep dynamic compaction, Deep excavation, Docks and wharfs, Earth retention, General contracting, Highway and heavy civil, Marine, Pile driving
Bermuda

Dmitri Pile Driving
Dmitri Drezins
P.O. Box 904
Chalmette, LA 70044
504-277-8444
504-277-8442
www.dmitripiledriving.com
dmitri@dmitripiledriving.com
Pile driving
MS, LA

Halverson Construction Co., Inc.
Vern Halverson
P.O. Box 6039
Springfield, IL 62702
P: 217-753-0027
F: 217-753-1904
Chief Estimator
www.halversonconstruction.com
vhalver@aol.com
Pile driving, Bridge builder
IA, IN, IL, KY, MO

Ingenieria Continental, S.A.
Franklin A. Marciaga
P.O. Box 02-5275
Miami, FL 33102-5275
P: 507-302-1466
F: 507-301-1683
www.iconsanet.com
fmarciaga@consanet.com
Bridge building, Deep dynamic compaction, Deep excavation, Docks and wharfs, Earth retention, General contracting, Highway and heavy civil, Marine, Pile driving

J. T. Cleary
James T. Cleary
23 S. Kinderkamack Road
Montvale, NJ 07645
P: 201-930-1001
F: 201-930-1022
www.clearymarine.com
jimcleary@jtcleary.com
Bulkheads, Docks and wharfs, General contracting, Marine, Pile driving, Dredging, Fender systems
NJ, NY

Manson Construction Company
Charlie Gibson
200 Cutting Blvd.
Richmond, CA 94804-2128
P: 510-232-6319
F: 510-232-4528
cgibson@mansonconstruction.com
Pile driving
CA

R. E. Burns & Sons, Inc.
Kevin Burns
P.O. Box 7168
Statesville, NC 28687
P: 704-924-8646
F: 704-924-8607
www.reburns.com
kcburns@i-america.net
Bridge building, Earth retention, Highway and heavy civil, Pile driving
NC, SC, NY

R. Kremer & Son Marine Contractor, LLC
Richard Kremer
321 Mantoloking Road, Suite 2-D
Brick, NJ 08723
P: 732-477-8012
F: 732-477-9224
kremermarine@comcast.net
www.kremermarine.com
Aluminum Sheet pile, Steel sheet pile, Steel pipe pile, Vinyl sheet pile, Timber piles, Treated lumber and timbers, Composite piles, and H-Piles
NJ

Underpinning & Foundation/ Skanska
Susan Borger
46 - 36 54th Road
Maspeth, NY 11378
P: 718-786-6557
F: 718-389-7829
susan.borger@skanska.com

2007 New Contractors II Members

Intercoastal Diving, Inc.
Stanley Budd
6710 Market St.
Wilmington, NC 28405
P: 910-395-5211
F: 910-395-4837
stan@intercoastaldiving.com
Pile driving, Marine
GA, NC, SC, VA

Island Pile Driving, Inc.
Kena Yoke
1750 J & C Blvd. #2
Naples, FL 34109
P: 239-592-7211
F: 239-592-5394
www.islandpiliing.com
islandpili@aol.com
Pile driving
FL

Keith J. Tassin Pile Driving
Keith Tassin
9713 Gloxinia Circle
River Ridge, LA 70123
P: 504-737-2178
F: 504-738-0335
ktassin1@cox.net
Bridge building, Bulkheads, Docks and wharfs, General contracting, Highway and heavy civil, Pile driving
LA

Marine One, Ltd.
Larry Rekowski
49090 Jefferson Ave.
Chesterfield, MI 48047
P: 586-725-2467
F: 586-725-7993
www.marineoneconstruction.com
marines@comcast.net
Bridge building, Bulkheads, Dock and wharfs, Deep excavation, Earth retention, Marine, Pile driving, Dredging
MI

Mobile Crane Service
Al Gregory
P.O. Box 734
Hollywood, SC 29449
P: 843-747-4828
F: 843-556-6477
mobile_crane_service@yahoo.com
Steel sheet piles, Cranes, Hammers, Hydraulic power packs
SC

Simcoe Marine Construction Ltd.
Jamie Archer
P.O. Box 7130
Innisfil, ON L9S 1A9
Canada
P: 705-456-0777
F: 705-456-0888
www.simcoemarineconstruction.com
simcoe.marine@yahoo.ca
Dock and wharfs, Earth retention, General contracting, Marine, Pile driving
Canada

Western Piling & Caisson, Inc.
Gordon R. Buford
P.O. Box 2052
Grand Junction, CO 81503
P: 970-243-8938
F: 970-243-0242
Earth retention, Pile driving
CO

Associates

Applied Foundation Testing
Don Robertson
4015 J. Lewis Drive
Green Cove Springs, FL 32043
P: 904-284-1337
F: 904-284-1339
www.testpile.com
drobertson@testpile.com

BriteStar Holdings, LLC
Brad Winn
214 Woodridge Court
Leesville, SC 29070
P: 803-604-8191
F: 803-604-8429
bradleyv@sc.rr.com
Trucking, Frieght brokerage
All States

Cappco
Thomas P. Connor
650 Sentry Parkway, Suite 1
Blue Bell, PA 19422
USA
P: 610-941-2156
F: 610-941-2155
cappcotc@aol.com
Pipe, Steel pipe piles
All states and Canada

Carpenter's Pole & Piling
Preston Carpenter
P.O. Box 748
Wiggins, MS 39577
P: 601-928-7400
F: 601-928-4604
polepile@aol.com
Timber piles, Treated lumber - Creosote and CCA

Crestwood Tubulars, Inc.*
Tom Ferguson
P.O. Box 6950
St. Louis, MO 63123
P: 314-842-8604
F: 314-842-9064
tomf@crestwoodtubulars.com
www.crestwoodtubulars.com
Steel pipe pile

DYWIDAG Systems International USA
Mike Kelley
320 Marmon Drive
Bolingbrook, IL 60440
P: 630-739-1100
F: 630-739-5517
www.dywidag-systems.com
dsiamerica@dsiamerica.com
Steel pipe piles

Essve Tech, Inc.
Jenny Bass
13955 Highway 9, Suite C
Alpharetta, GA 30004
P: 770-740-0498
F: 770-740-0369
www.essvetech.com
jenny.bass@essvetech.com
Corrugated steel tubes for concrete piles
All States, Canada and Mexico

GeoQuip, Inc.
Gary Terwilliger
1111 Cavalier Blvd.
Chesapeake, VA 23323
P: 757-485-2500
gary@geoquip.biz
Cutter heads and drill bits, Hammer cushions, Air compressors and pumps, Cranes, Drill equipment, Drive caps and inserts, Hammers, Hydraulic PP, Leads and spotters, Marine equip, Specialized rigs and equipment
NC, SC, VA

Glenn Lee Trucking, Inc.
Joe C. Sikes
456 Bourne Ave.
Savannah, GA 31408
P: 912-964-6972
F: 912-964-5499
jsikes@glenn-leetrucking.com
Trucking

Hercules Machinery Corp.
Justin Reed
3101 New Haven Ave.
Ft. Wayne, IN 46803
P: 260-424-0405
F: 560-422-2040
www.hmc-us.com
jreed@hmc-us.com

J.D. Fields & Co., Inc.
J. Patrick Burk
55 Waugh Drive, Suite 1250
Houston, TX 77007
P: 281-558-7199
F: 281-870-9918
pburk@jdfields.com
H-Pile, Steel pipe pile, Steel sheet pile, Structural steel
All States, Mexico, Europe, Canada, South America

Jinnings Equipment LLC
Scott Jinnings
11515 Richard Road
Churubusco, IN 46723
P: 260-447-4343
F: 260-447-4363
www.jinnings.com
scott@jinnings.com
Cutter heads and drill bits, Hammer cushions, Hose and fittings, Lubrication and grease, Pile cushions, Drive caps and inserts, Hammers, Hydraulic PP, Drill equip, Leads and spotters, Rental, Sales
All states and Canada

Lally Pipe & Tube
James Mocker
534 Lowellville Road
Struthers, OH 44471
P: 800-291-7782
F: 330-750-1535
www.lallypipe.com
jimmocker@lallypipe.com
Distributor of steel pipe pile
All States, Canada

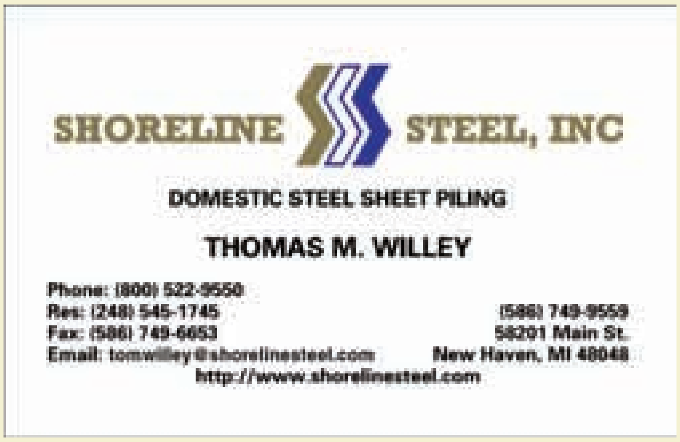
Lodge Lumber Company, Inc.
Daren Franks
P.O. Box 96589
Houston, TX 77213
P: 713-672-6679
F: 713-672-5135
www.lodgelumber.com
daren.franks@lodgelumber.com
Hammer cushions, Pile cushions, Timber piles, Treated lumber, Hardwood
All States, Canada, Mexico, Europe

Martin Piling & Lumber Co.
Robert Gourlay
251 Monroe Ave.
Kenilworth, NJ 07033
P: 800-354-1080
F: 908-2767585
martin.piling@verizon.net
Dock and marine supplies, Composite piles, Timber piles
CT, DE, MD, ME, NH, NJ, NY, PA, RI, VT

McDonough Marine Service
John Stevenson Jr.
17500 Market St.
Channelview, TX 77530
P: 281-452-5887
F: 281-452-9682
www.mcdonoughmarine.com
jstevenson@marmac.net
Barge leasing, marine transportation
AK, AL, AR, CA, DE, FL, GA, Il, IN, KS, KY, LA, MA, MD, ME, MI, MN, MO, MS, NC, NJ, NY, OH, OK, RI, SC, TN, TX, VA, WA, WV, Canada, Europe, Mexico

Midgulf Forest Products, Inc.
Ed Funchess
P.O. Box 7222
McComb, MS 39649
P: 601-684-3809
F: 601-684-3850
midgulf@bellsouth.net
Timber pile, Treated lumber
All States

Standard Concrete Products
Brian Penn, P.E.
7600 Mitsubishi Lane
Theodore, AL 36582
P: 251-443-1113
F: 251-443-1162
brianpenn@standardconcrete.org
Dock and marine supplies, Concrete piles, Concrete sheet piles, Precast concrete
AL, AR, FL, GA, IL, KY, LA, MD, MS, NC, SC, TN, TX, VA



Sun Pile Driving Equipment, LLC
Michael R. Jahnigen
35322 Bayard Road
Frankford, DE 19945
P: 302-539-7187
F: 302-539-4443
www.spe-usa.net
mike@sunmarinemaint.com
Hammers, Hydraulic power packs, Specialized rigs and equipment
DE, FL, GA, KS, LA, MD, NC, NJ, PA, SC, TN

T. R. Miller Mill Co., Inc.
Terry Presler
P.O. Box 708
Brewton, AL 36247
P: 850-206-9650
F: 251-867-2579
www.trmiller.com
tpresler@trmillermill.com
Timber pile, Treated timber

Turecki Pipe & Steel, Ltd.
Darren Turecki
2796 - West 37th Ave.
Vancouver, BC
Canada
P: 604-676-1600
F: 604-676-1900
www.oildirectory.com
dturecki@telus.net
Pile points and splicers, H-Piles, Steel pipe piles, Steel sheet piles, Structural steel, Freight brokerage, Sales
Canada, Europe, Mexico

United Wood Treating Company
Wayne Comtois
1121 Delta Road
Whitmire, SC 29178
P: 803-694-3668
F: 803-694-3976
wcomtois@unitedwood.com
www.unitedwood.com
Crane mats, Timber piles, Treated lumber
FL, GA, MD, NC, SC, VA

Technical

Consolidated Engineers & Material Test
Taunya Ernst
P.O. Box 4098
Gillette, WY 82717
P: 307-686-6409
F: 307-686-6801
ternst@cemt.biz
www.cemt.biz
Analysis, Consulting, Geotechnical, Material testing
CO, MT, SD, UT, WY

Earth Exploration, Inc.
Scott J. Ludlow
7770 W. New York St.
Indianapolis, IN 46214
P: 317-273-1690
F: 317-273-2250
www.earthengr.com
sludlow@earthengr.com
Geotechnical, Material testing, Pile driving monitoring

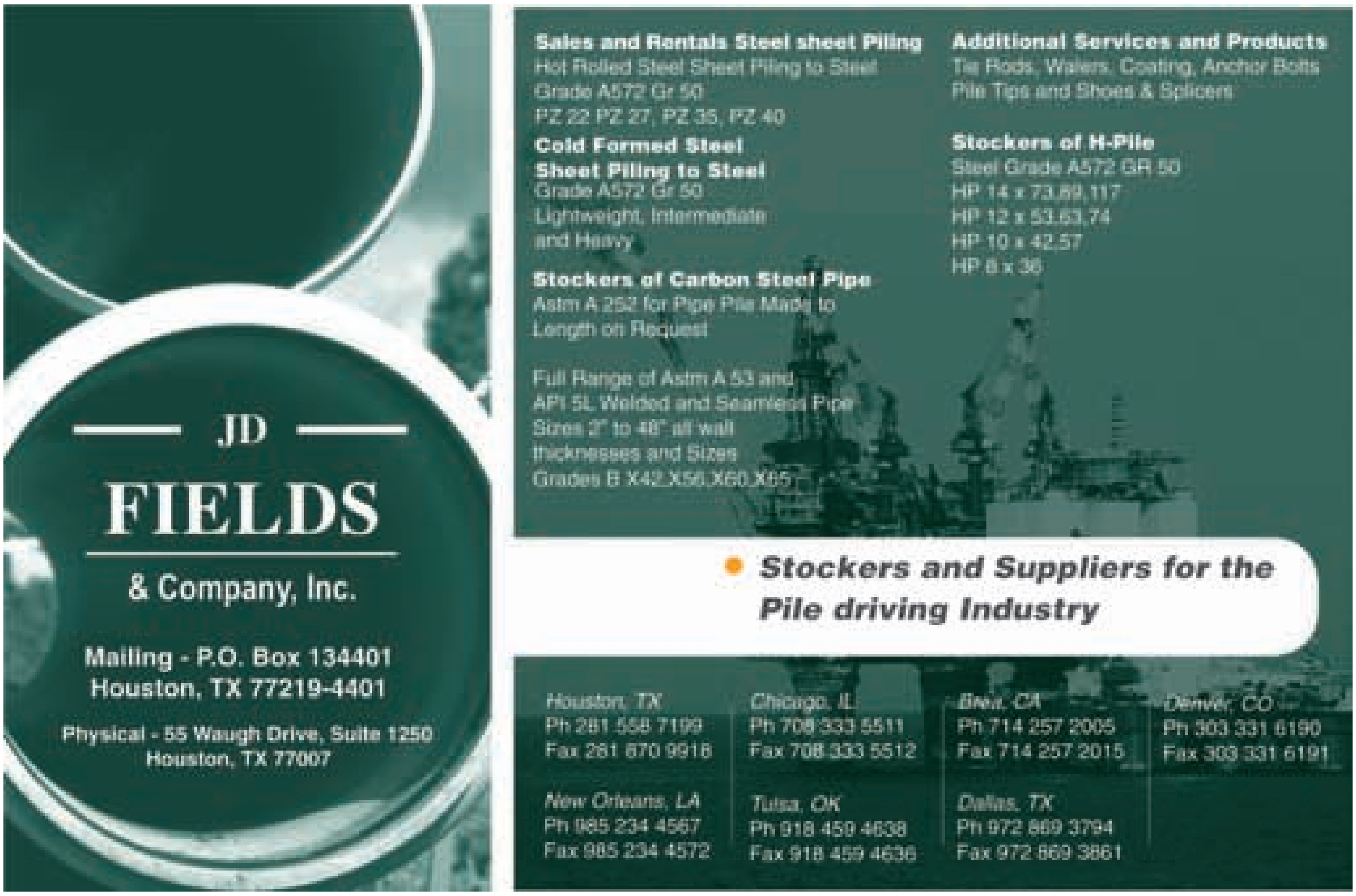
Froehling & Robertson, Inc.
Michael A Pais
833 Professional Place W.
Chesapeake, VA 23320
P: 757-436-1111
F: 757-436-1675
www.fandr.com
mpais@fandr.com
Consulting, Geotechnical, Materials testing, Pile driving, Monitoring, Vibration monitoring and PDA
MD, NC, VA, SC

GZA GeoEnvironmental Inc.
Rebecca Burnham
380 Harvey Road
Manchester, NH 03103
P: 603-623-3600
F: 603-624-9463
www.gza.com
rburnham@gza.com
Analysis, Civil design, Consulting, Geotechnical, PDA, Vibration monitoring
MA, ME, NH, VT

Jacques Whitford LTD.
Anthony Urquhart
3 Spectacle Lake Drive
Dartmouth, NS B3B 1W8
Canada
P: 902-468-7777
F: 902-468-9009
urquhart@jacqueswhitford.com
Analysis, Consulting, Geotechnical, Material testing, Pile driving monitoring, Vibration monitoring
IL, MA, ME, NH, NY, PA, RI, Canada

Stantec Consulting Services, Inc.
Eddie Porcher
990 Morrison Drive
Charleston, SC 29403
USA
P: 843-577-4926
F: 843-723-0440
eddie.porcher@stantec.com
Geotechnical

**Member Correction: The following member had incorrect information listed in Piledriver. PDCA apologies for the error.*


JD
FIELDS
& Company, Inc.
Mailing - P.O. Box 134401
Houston, TX 77219-4401
Physical - 55 Waugh Drive, Suite 1250
Houston, TX 77007
Sales and Rentals Steel sheet Piling
Hot Rolled Steel Sheet Piling to Steel
Grade A572 Gr 50
PZ 22 PZ 27, PZ 35, PZ 40
Cold Formed Steel
Sheet Piling to Steel
Grade A572 Gr 50
Lightweight, Intermediate
and Heavy
Stockers of Carbon Steel Pipe
Astm A 252 for Pipe Pile Made to
Length on Request
Full Range of Astm A 53 and
API 5L Welded and Seamless Pipe
Sizes 2" to 48" all wall
thicknesses and Sizes
Grades B X42,X56,X60,X65
Additional Services and Products
Tie Rods, Walers, Coating, Anchor Bolts
Pile Tips and Shoes & Splicers
Stockers of H-Pile
Steel Grade A572 GR 50
HP 14 x 73,89,117
HP 12 x 53,63,74
HP 10 x 42,57
HP 8 x 36
Stockers and Suppliers for the
Pile driving Industry
Houston, TX
Ph 281 558 7199
Fax 281 870 9916
Chicago, IL
Ph 708 333 5511
Fax 708 333 5512
Brea, CA
Ph 714 257 2005
Fax 714 257 2015
Denver, CO
Ph 303 331 6190
Fax 303 331 6191
New Orleans, LA
Ph 985 234 4567
Fax 985 234 4572
Tulsa, OK
Ph 918 459 4638
Fax 918 459 4636
Dallas, TX
Ph 972 869 3794
Fax 972 869 3861


DuraPine®
by Cox
Durapine Posts, Poles & Piling
For Projects That Last
Durapine® post, poles and piling pressure-treated by Cox Industries, Inc. offer long-lasting solutions to diverse construction needs. In business since 1954, Cox is still family owned and operated and is one of the nation's largest producers of treated wood products for almost any outdoor application or project.
Our products are available in a variety of sizes, treatment retention levels, and truckload mixtures. Treating wood with Wolman® copper azole and Wolman® CCA, Cox provides products under the Durapine® trademark.
For additional product information and availability, please contact Cox Industries, Inc., Industrial Products Group at (803) 492-7728. For your dimensional lumber needs please visit us online at www.coxwood.com to find a local dealer.

Index to **Advertisers**

Size Matters

http://www.apevibro.com
http://www.jandm-usa.com
(800) 248-8498

<u>GUARANTEED</u>
Cost Effective SIZE
Most Efficient SIZE
Not Over SIZE
Not Under SIZE
Low Headroom SIZE
Low Velocity SIZE
Most Flexible SIZE
Ultra Reliable SIZE
Most Powerful SIZE
Service for Every SIZE

Only APE/J&M has the *Right Size* for Every Job

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