

# RETAINING FOCUS

Quarterly Publication for the Customers of KEYSTONE Retaining Wall Systems, Inc. • Volume 2.1 • 2005

## DRILLED, BLASTED, BETTER THAN EVER

Because success is so dependent on good planning, builders place a large amount of importance on their site surveys. Unfortunately, it's not always possible to know exactly what you will find on a job site until you start digging. This was the case with the construction of a three-story, \$30 million facility in York, Pennsylvania.

In the middle of installing an extensive Keystone retaining wall, crews encountered rock deposits that required drilling and blasting to remove. But, instead of scrambling to change the project designs, the project contractors combined their efforts effectively to deliver the completed wall in the timeframe promised. "The flexibility of the Keystone product was central to making this project work," said Phil Ferro of Keystone supplier York Building Products, Co. "The wall builders were able to

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*Retaining Excellence™*

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### Keystone Retaining Wall Systems, Inc.



After nearly 20 years at the forefront of the industry, Keystone Retaining Wall Systems, Inc. continues to set the standard for excellence and innovation within the segmental retaining wall industry. Keystone represents the global benchmark in soil retention, erosion control and landscape systems. Holding over 50 patents, Keystone symbolizes cutting-edge design, performance and aesthetics.

Keystone partners with the best network of product developers, engineers, sales professionals and manufacturers in the business. Together, we ensure that Keystone offers the best in site solutions for residential, commercial, recreational, industrial and government applications. In 1999, Keystone was acquired by Contech Construction Products, Inc. Contech is a leader in the construction products industry and offers the resources, tools and advantages that accompany their strong brand recognition in the marketplace.

To learn more about the quality and value in Keystone Retaining Wall Systems products and services, please visit us on the web at [www.keystonewalls.com](http://www.keystonewalls.com) or call 800-747-8971.



## New Keystone KapStones™

### *Provide the Finishing Touch!*



Keystone Kapstones™, the column caps that have the natural beauty and durability of cut or rough hewn stone, but without the heavy weight or the high cost of true stone, will soon be available.

All exposed edges have the characteristics of real stone, with ridges, clefting, and the rough textures of granite, limestone, or flagstone. The cap fits over a variety of Keystone products, actually hiding the joining with a recessed ledge. The 24"x24" Keystone KapStone will fit over the 20"x20" Keystone Country Manor System as well as the 20"x20" Stacker column made using the 8" main Stacker unit and the Stacker 90 degree corner unit. Contact your Keystone Regional Manager today for further information on pricing and availability.

Several new Keystone products are slated for a Spring 2005 launch. Please contact a Keystone Regional Manager at (952) 897-1040 as soon as possible to learn more.

# Keystone Website Benefits You More Than Ever



The Keystone website is constantly improving to meet the needs of our wide customer base.

Recent updates include the addition of a new web movie detailing Keystone KapStones. In addition, specific information about Keystone KapStones can now be found on all three web portals.

Because your time is valuable, [www.keystonewalls.com](http://www.keystonewalls.com) is divided into three specific portals, providing focused content for designers, contractors and homeowners respectively.

The designer portal features Keystone's comprehensive engineering and design services. Resources you will find on the site include: CAD™ Details and software, product specifications, design charts, technical notes and more.

The contractor portal provides access to installation instructions, a photo library containing a wide variety of project types and a full listing of Keystone products.

Residential contractors can put the Keystone website to work! Simply direct clients to the homeowner portal for a virtual showroom of Keystone products. Homeowners can also view design ideas and a large photo library of beautiful Keystone walls and completed projects.

Also visit [www.keystonewalls.com](http://www.keystonewalls.com) for new product information, case studies, downloadable product literature and more.

**New**

## On-Site Quotes Made Easy with KeyCALC™ PDA Keystone Estimating Software

With KeyCALC™, you'll be able to estimate Keystone walls in the car, at the airport, or standing in a customer's backyard.

KeyCALC™ PDA for Palm® is a program to help you quickly access information needed to estimate the costs involved in the construction of small to medium-sized Keystone retaining walls. Because it operates on the Palm operating system, you have immediate access to this information without carrying the printed reference material and a laptop or calculator.

KeyCALC™ takes data from published Keystone Standard Design Charts and combines it with pricing information that the user inputs and other unit specific data to perform its calculations.

For more information on KeyCALC™, its operation, or how to obtain copies for you sales staff, contact Scott Klemetson at (952) 897-1040 or [sklemetson@keystonewalls.com](mailto:sklemetson@keystonewalls.com).



## Another Hill Tamed by Keystone: Anderson, Indiana

The homeowners loved their new lake home but feared the rickety wooden staircase that led down a steep hill to the shore. Something needed to be done quickly, and it had to look great. Contractor Bob Milam of Midstate Landscaping & Construction had a time-tested solution in mind- a Keystone retaining wall.

“I didn’t want to have the standard look of the staircase running up the center of the terraced slope,” Milam said. “In addition, the homeowners were adamant that some of their older guests be able to access the lakeshore without too much exertion. My idea was to build three separate staircases, running perpendicular to the hillside. At the top of each landing, the



terrace is wide enough for deck furniture and landscaping. This design allows people to ‘take a break’ on their way up or down.”

The three wall, three staircase structure is about 30 feet in total height, 120 feet wide and took over 4000 square feet of Keystone Standard Straightface units to complete. “The Keystone Standard unit was a perfect fit for this job,” said Rob

*“At the top of each landing, the terrace is wide enough for deck furniture and landscaping.*

*This design allows people to ‘take a break’ on their way up or down.” -Bob Milam*

“There were more problems than just those old steps,” Milam said. “The property had lost about ten feet of lakeshore to erosion and the lower level of whatever structure I would build there was going to be wet. I needed a total site solution. Keystone Standard units offered me the stable base I needed to get the job done.”

After driving sheet-metal piling along the shoreline to address wave erosion problems, Milam and his crew poured four-foot wide reinforced concrete footings to support the weight of the wall nearest the lake. He then started building a unique switch-back staircase design that is almost invisible from the lake below.



**Project:** Ives Lake Home

**Location:** Anderson, Indiana

**Keystone Product:** Keystone Standard Units

**Wall Area:** 4,000 sq. ft.

**Contractor/Designer:** Midstate Landscaping & Construction  
Bob Milam

**Project Supplier:** Schuester’s Building Products,  
Indianapolis, IN

Johnstone of product supplier, Schuester's Building Products. "The fiberglass pin system, the color and size of the product, along with its outstanding structural integrity were exactly what was needed on the wall. And, Bob Milam's clean, continuous wall and stair system looks great."



The staircases are 54 inches wide, comprised of three Keystone Standard Units placed side-by-side. The stair treads are made out of Standard unit caps produced by Schuster's. Geogrid reinforcement material is laid across each stair tread, making the walls on each side of the stairs one cohesive structure.

The Keystone Standard unit is an industry-leader and one of the most installed segmental retaining wall products in the world. Its trend-setting design has been the preferred choice for tall walls and critical structures for almost 20 years. For more information on this project, the Keystone Standard unit or other innovative Keystone products, please visit [www.keystonewalls.com](http://www.keystonewalls.com) or call (800) 747-8971. 



## Would You Like to Have Your Project Become a Featured Case Study?

If you have a unique Keystone wall project, let us know! Our marketing team will take your project details and observations, and turn them into a great marketing tool - a Keystone Case Study. Contact Dan Bensman ([dbensman@keystonewalls.com](mailto:dbensman@keystonewalls.com)) for more information.

## KEYSTONE SEMINAR SPOTLIGHT

*-From simple design and installation seminars to AIA and NCMA accredited seminars, Keystone offers a unique variety of seminars to meet the diverse needs of our customers. Our seminars are offered nationwide in a number of different formats – on-site, off-site, Spanish language, homeowner, box-lunch seminars and more.*

### Contractor Seminars

Quality installation practices are essential for continued growth and success of our industry. Training for new and existing contractors on proper installation procedures promotes the quality that Keystone customers have come to expect.

These seminars are also a great opportunity to see new products that are being introduced to the marketplace, and be the first to meet the challenge and demand for the installation of innovative new landscaping applications.

### National Concrete Masonry Association Certification (NCMA) Seminars

In October of 2003, NCMA introduced a new certification program for individuals who primarily install retaining walls. Keystone was one of the first to offer the NCMA Certified Installer Program course. We will continue to offer this full day course across the country, as needed.

### The American Institute of Architecture (AIA) Seminars

Keystone Retaining Wall Systems is an American Institute of Architects (AIA) accredited provider of Continuing Education Credits (CEUs).

Throughout the United States, we offer training seminars that can help architects understand and solve site issues. These seminars are filled with useful information for the engineer and general contractor as well.

### Engineering seminars

Keystone's Structural Wall Specialists have over 60 years of segmental retaining wall and MSE design experience. Educating design professionals in the marketplace is their expertise and specialty. From state highway and government agencies to local consulting and geotechnical firms, our Structural Wall Specialists are sure to give you the needed support to use Keystone structural products.

*To get more information on Keystone seminars call 800-747-8971 or contact your local sales representative.*

-continued from cover



stop where they encountered the rock, blast and excavate, then re-assemble the wall- right where they left off. Also, the speed of installation made it possible to make up time on the assembly end of the project.”

The project plans called for the excavation crews to work with the retaining wall crews to provide backfill from the site for each of the two large terraced wall levels. Because rock was encountered at the base level, wall crews had to slow the retaining wall installation to match the capabilities of the site contractor to supply backfill. Although the project took longer than anticipat-

ed, all parties involved felt it worked as smoothly as possible due to the heavy rock excavation.

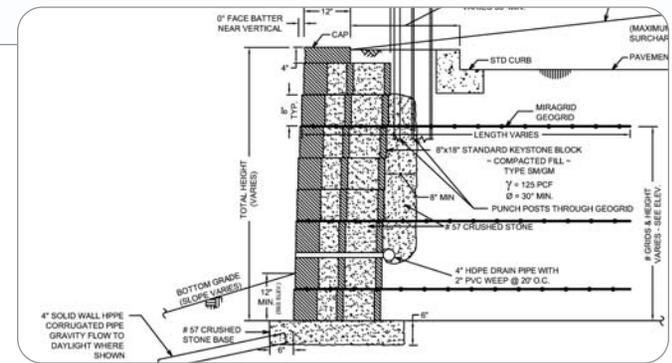
“It was through a series of tailgate meetings that the process was developed,” said Daryl Griffith, president of wall contractor Griffith Brothers Landscaping, Inc. “The rock would be blasted on one day and used for backfill on the next. Even with the added difficulty, we were able to keep up with everyone else.”

In addition to the rocky conditions, at approximately the five-foot level of backfill, excessive water penetrated the existing slope, interfering with the geogrid backfill. Hillis-Carnes Engineers, the project engineers, designed a gravel and geogrid back drain system to intercept this water and drain it through the face of the wall using a 6” PVC pipe. The lowest two walls required a little extra care due to the 24” diameter PVC drain pipes connecting the storm water management drain that ran perpendicular to the wall. “Exceptional caution was used during the installation of geogrid and backfill in these areas,” said Ferro.

“I think the site geotechnical investigation was as good as it could have been,” said wall engineer, Dick Sturtevant of Hillis-Carnes Engineering Associates, Inc. “We knew ahead of time that there might be some challenges with the taller walls on the site. We simply did a field fix for the groundwater and bedrock situations.”

The three-wall, two-tier retaining wall for the Orthopedic and Spine Specialists site required 38,000 square feet of Keystone Standard Units. In addition to extensive earthmoving on site, 3600 tons of #57 stone, supplied by York Building Products Co., were trucked in for footings and backfill- 42,000 cubic yards of backfill were spread and compacted. In total, 14,000 square yards of geogrid was used. The wall structure required 2700 man-hours at an average rate of 14 square feet per man per hour. Each of the walls in each tier were over 22 feet tall with some single tier wall areas topping 46 feet.

Cooperation of the different teams was vital to the smooth completion of the job. At all times, many different operations were



going on simultaneously from hauling rock that was blasted, drilling rock to be blasted, pushing backfill behind the walls and compacting. This contractor cooperation, in concert with the speed of installation and flexibility of the Keystone product, combined to deliver great results on this project.

From excavation to completion, the wall structure took just over three months time. Upon completion, the Orthopedic and Spine Specialists facility will include an emergency treatment center, a rehabilitation center, day and outpatient surgery facilities.

For more information on Keystone Retaining Wall Systems products and services, please visit [www.keystonewalls.com](http://www.keystonewalls.com), or call 800-747-8971. 



- Project:** Orthopedic and Spine Specialists
- Location:** York, Pennsylvania
- Keystone Product Supplier:** York Building Products, Co., York, PA
- Keystone Product Used:** Keystone Standard Units
- Wall Area:** 38,000 sq. ft.
- General Contractor:** The Whiting-Turner Contracting Co., Baltimore, MD
- Wall Installer:** Griffith Brothers Landscaping, Inc., Fallston, MD
- Site Contractor:** Stewart and Tate Co., York, PA
- Engineers:** Hillis-Carnes Engineering Associates, Inc., Annapolis, MD

# Keystone Directory

## Alabama

Superock Block  
205-970-7676

## Alaska

Polar Supply Co.  
907-563-5000

## Arizona

Superlite Block  
800-366-7877

## Arkansas

Keystone Group  
800-545-0754  
—  
Nattinger Materials  
800-299-2594

## California

Angelus Block Co.  
909-328-9115  
—  
Basalite Concrete Products  
800-350-5866  
—  
RCP Block & Brick  
800-732-7425

## Colorado

Best Block Company  
303-791-3334

## Connecticut

Anchor Concrete Products  
800-682-5625

## Delaware

Anchor Concrete Products  
800-682-5625

## Florida

Keystone Group  
800-545-0754  
—

Superock Block  
205-970-7676

## Georgia

Keystone Group  
800-545-0754

## Hawaii

Tileco  
808-682-5737

## Idaho

Amcor Masonry Products  
208-522-6150  
—

Basalite Concrete Products  
208-888-4050

## Illinois

Best Block Company  
800-782-7708  
—  
King's Material  
888-290-6950  
—

## Indiana

Kirchner Block  
618-254-7660  
—  
Rockford Cement Products  
815-965-0537  
—  
Aggregate Industries  
800-841-5466  
—  
Schuster's Building  
Products  
800-424-0190

## Iowa

Concrete Products  
800-352-4644  
—

King's Material  
319-363-0233  
—

Zeidler Concrete Products  
641-357-2176

## Kansas

Capitol Concrete  
785-233-3271  
—

Miller Material  
800-289-2244

## Kentucky

Lee Brick & Block  
800-718-8884

## Louisiana

Premier Concrete  
800-818-1069

## Maine

Gagne & Son  
800-339-3313

## Maryland

Betco Block Company  
800-486-4011  
—  
York Building Products  
800-673-2408

## Massachusetts

A.Jandris & Sons  
978-632-0089  
—

Foster's Southeastern  
800-462-2225  
—

Hiway Concrete  
508-295-0834  
—

Keystone Northeast  
888-447-1157

## Michigan

Fendt Builders Supply  
888-706-9975

## Minnesota

Aggregate Industries  
800-338-0016

## Mississippi

Premier Concrete  
800-818-1069

## Missouri

Kirchner Block & Brick  
800-346-9502  
—

Miller Material  
800-289-2244  
—

Nattinger Materials  
800-299-2594

## Montana

Kanta Products  
406-285-3261

## Nebraska

Concrete Products  
712-252-4251

## Nevada

Basalite Concrete Products  
775-358-1200  
—

Superlite Block  
800-366-7877

## New Hampshire

Keystone Northeast  
207-871-1185

## New Jersey

Anchor Concrete Products  
800-682-5625

## New Mexico

Southwest Block  
505-892-5858

## New York

Anchor Concrete Products  
800-682-5625  
—  
Domine Builders Supply  
(upstate NY)  
800-444-2103

## North Carolina

Keystone Group  
800-545-5080

## North Dakota

Aggregate Industries  
800-426-8162  
—  
Dakota Block  
605-342-6070

## Ohio

Akron Brick & Block  
330-628-2603  
—

Wilson Concrete  
937-885-3711

## Oklahoma

Dolese Bros. Co.  
800-335-9626

## Oregon

Basalite Concrete Products  
800-596-3844

## Pennsylvania

Domine Builders Supply  
800-444-2103  
—

Lockcrete Bauer Company  
724-297-5084  
—

York Building Products  
800-673-2408

## Puerto Rico

Carmelo  
787-251-9474

## Rhode Island

Keystone Northeast  
888-447-1157

## South Carolina

Keystone Group  
800-545-5080

## South Dakota

Aggregate Industries  
800-426-8162  
—

Concrete Products  
800-352-4644  
—

Dakota Block  
605-342-6070

## Tennessee

Keystone Group  
800-545-0754  
—

Superock Block  
800-828-8093

## Texas

Eagle-Cordell Concrete  
Products  
713-691-0022  
—  
Jewell Concrete Products  
254-772-3440

## Utah

Amcor Masonry Products  
801-936-7628

## Vermont

Keystone Northeast  
888-447-1157

## Virginia

Betco Block & Product  
800-486-4011

## Washington

Basalite Concrete Products  
800-596-3844

## West Virginia

Betco Block & Product  
800-486-4011  
—

Central Supply Company  
304-592-5577

## Wisconsin

Best Block Company  
800-782-7708  
—

Winger Concrete Products  
715-356-9429

## Wyoming

Amcor Precast  
208-522-6150  
—

Best Block Company  
303-791-3334  
—

Dakota Block  
605-342-6070

## Canada

Basalite Concrete Products  
800-596-3844  
—  
Permacon  
514-355-4666

Note: Keystone also has over 35 international manufacturers.

## Keystone Resource Corner

### On-Line Resources

- Worldwide Distribution Network
- Product Information
- Technical Notes
- Design Charts
- Construction Details
- Specifications
- CAD™ Details
- Installation
- Literature
- Photo Library
- Much More!

### Engineering & Design Services

- Design & Technical Assistance
- Design Software and Support
- Design & Construction Literature
- CAD™ Details
- Specifications
- Education and Training Courses for Design of Segmental Retaining Walls
- Seminars Available with Continuing Education Credits

### Local Representation

Contact Keystone to have a local representative provide you with an updated Technical CD or product information.

### HOW TO CONTACT US

*Customer Service* ..... **1-800-747-8971**

*International Service* ..... **952-897-1040**

*Facsimile* ..... **952-897-3858**

*Internet* ..... **[www.keystonewalls.com](http://www.keystonewalls.com)**



*Retaining Excellence™*

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