

# RETAINING FOCUS

Quarterly Publication for the Customers of KEYSTONE Retaining Wall Systems, Inc. • Volume 1.2 • 2004

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Keystone Retaining Wall Systems, Inc.

## Where Excellence is the Standard!

For almost two decades, Keystone Retaining Wall Systems has raised the bar for excellence, innovation, and technology within the industry. Keystone represents the worldwide standard in soil retention, erosion control, and landscape systems. Offering a wide range and variety of products, Keystone leads the marketplace in segmental retaining wall performance and aesthetics.

As the industry leader, Keystone has always been a product of the energy, passion, and focus of the people that promote it. Keystone works with the best network of manufacturers, product developers, engineers, and sales professionals in

the business. They ensure that Keystone offers only the best in site solutions for residential, commercial, recreational, industrial, and government applications on the market.

If you are not already familiar with the quality and value in Keystone products and services, please visit us on the web at [www.keystonewalls.com](http://www.keystonewalls.com), or call 800-747-8971. We would be happy to connect you with a local sales representative or distributor. 

## Have You Seen Our New Web Site?

Save time, effort, and resources by quickly finding everything you need to know about Keystone products and services – always easy and available 24 hours a day, 7 days a week – right at your fingertips.

We've redesigned our site to be your best resource for obtaining all the tools and information you need when specifying or installing Keystone products.

{ [www.keystonewalls.com](http://www.keystonewalls.com) } - continued on pg. 3



*Retaining Excellence*

A Contech Company

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## Keystone Recreates Look And Feel of Byzantine Period in *Orthodox Church Amphitheater*

Although many buildings across the country have tried to reproduce the architectural style of the Byzantine Period, not many come as close to the true structural stylings of the 8th century as the Holy Transfiguration Greek Orthodox Church and Amphitheater in Marietta, GA. The Holy Transfiguration Leadership Team had the grand vision to construct a church and surrounding grounds that were reminiscent of the same building style, design, materials, and craftsmanship found in the ancient cities of Asia Minor (now Turkey). Keystone Country Manor was selected for its distinctive random-pattern look of hand-masoned stone, which fit perfectly with the church's theme.

"We were passionate about creating an authentic amphitheater structure reflective of the roots of Greek theater-in-the-round during its golden time," commented Alex Miltiades, Holy Transfiguration Church Construction Committee Chair.

It was imperative to the church leadership team that the materials selected for the 600-seat amphitheater also remain true to the Byzantine design and style of the church, without sacrificing structural integrity and necessary durability. This outdoor


amphitheater was expected to withstand years of direct public contact, plus extreme weather conditions including heat, humidity, and acid rain. With these requirements in mind, the final product solution, meeting both the stringent aesthetic demands and the necessary performance, was a Keystone Country Manor retaining wall system.

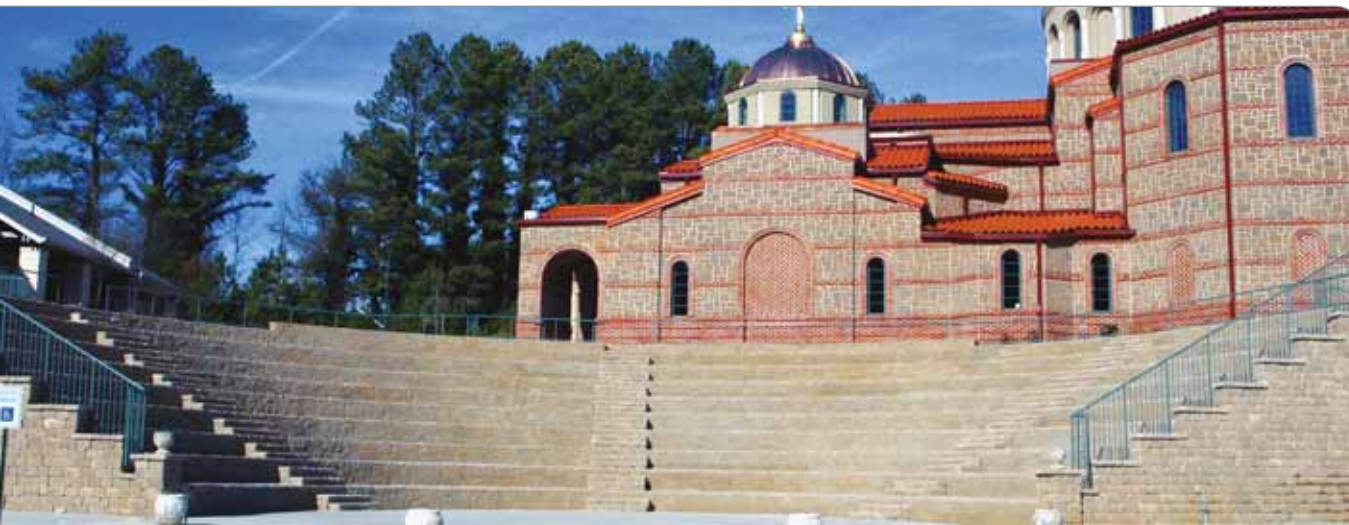
Project contractor, ECM Modular Walls, Inc., out of Marietta GA, had used Keystone Country Manor in a number of other amphitheater applications and showed the church committee some local examples. "We instantly fell in love with the look and feel of Keystone Country Manor when we visited another local amphitheater that used the material," noted Miltiades.

"Keystone Country Manor exudes the kind of style that you would think to find in the theaters of ancient Greece." Mike Heer of the Keystone Group in Marietta, GA., helped supply the Keystone Country Manor product, and worked closely with ECM's installation crew. "I've worked with ECM's manager, Bill Johnson, on a number of Keystone Country Manor amphitheaters. Bill likes the product because it's easy to handle and installation is a snap due to the unique pin method that assures Keystone Country Manor unit alignment," notes Heer.



EMC's Bill Johnson adds that having three sides textured makes Keystone Country Manor different from a lot of other products on the market today. "It is an easy product to use in building corners, and its design makes it easy to end a wall because you're not left with a non-textured unit side glaring at you. We've used it in a lot of projects and have always been extremely pleased with the installation and the outcome," Johnson concludes. Johnson also said he installs Keystone Country Manor in many amphitheater projects because his customers are impressed with its appearance and ultimate durability.

Whether for castle, cathedral, or home, Keystone Country Manor provides an old-world charm and handcrafted appearance in any application. With the ultimate design flexibility it offers, Keystone Country Manor can build graceful curves, monumental corners, freestanding parapets, and more. For more information on Keystone Country Manor, along with the full line of Keystone products and services, please visit us on the web at [www.keystonewalls.com](http://www.keystonewalls.com). 



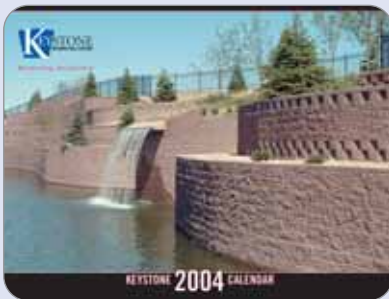
## Showcase Your Project in the Annual Keystone Calendar!

Our annual Keystone Project Photo Calendar is the perfect way to get free publicity for the Keystone work you do. Each year, we review all submitted project images and make selections for each of the upcoming calendar's monthly layouts based on project scope and scale, regional sites and themes, and unique applications.

Our photo calendar is a great sales and marketing tool for your business and for the Keystone brand. Your project images might also be used in our marketing literature, on our web site, or in our national advertising.

If you would like to submit project photos for calendar consideration, contact Sean Rustad by phone or email ([srustad@keystonewalls.com](mailto:srustad@keystonewalls.com)). He will discuss the details and requirements for submitting project images.

Project images must be submitted with negatives and digital images must be high-resolution, print-production quality (300 dpi or higher).



## New Product Focus: Keystone Century Wall

### *Old-world Charm on a Grander Scale*

Crafted specifically for taller wall structures and heavy-loading conditions, Keystone Century Wall brings the distinctive appearance and character of an old-world, random-pattern, natural stone wall.

Keystone Century Wall is perfect for large commercial applications, government and DOT jobs, and even extensive residential projects. Keystone Century Wall offers comparable strength and performance to our Keystone Compac with the aesthetic appeal and design freedom of our Keystone Country Manor product line. With this product, your customers won't have to give up style and character for the structural performance their large-scale projects demand.



With a quaint, hand-crafted feel and superior performance, Keystone Century Walls can rise to heights greater than 40 feet, with proper soil reinforcement.

If you would like information on Keystone Century Wall visit us on the web at [www.keystonewalls.com](http://www.keystonewalls.com). To find your regional Keystone dealer, please call 800-747-8971.



*...continued, from cover*

### Have you seen our *New Web Site*?

#### Our New Web Site Features:

- Individual portals for contractors, designers, and homeowners.
- PDFs of all our technical literature – design guidelines, installation information, and more.
- PDFs of all our marketing and product literature.
- CAD® Details.
- Photos, photos, and more photos of commercial, residential, DOT, specialty applications, and more.
- Case studies on unique projects and applications.
- New product information.
- And much more!

Our new site is also easy to navigate. We now offer separate portals for contractors, designers, and homeowners. Each portal will quickly connect you directly to the Keystone product information and images that you need in your line of work.

Contractors can easily find installation manuals to download, while designers can simply navigate to CAD® Details to download directly to their computer's CAD® software. You can steer your homeowner clients to their own Keystone web site portal for many product ideas in our residential photo library.

Please visit our new site at [www.keystonewalls.com](http://www.keystonewalls.com). 

## Westview High School, *San Diego, California*

As metropolitan populations expand, it becomes difficult to create space for the commercial and government construction that usually accompanies residential growth. In a San Diego, CA, suburb, two small, wooded canyons were the only space available for construction of the new Westview High School.



<b>Project:</b>	<i>Poway Unified School District Westview High School San Diego, CA</i>
<b>Location:</b>	<i>San Diego, CA</i>
<b>Keystone Product Supplier:</b>	<i>RCP Block &amp; Brick</i>
<b>Keystone Product Used:</b>	<i>8" Keystone Standard – Natural 8" Keystone Compac – Mission 8" Keystone Plantable – Mission 8" Keystone Standard – Mission</i>
<b>Total Square Footage of Keystone Product:</b>	<i>20,000 sq. ft.</i>
<b>Contractor/Installer:</b>	<i>Geogrid Retaining Wall Systems, Inc. Vista, CA</i>
<b>Civil Engineers:</b>	<i>Bemenent Dainwood &amp; Sturgeon San Diego, CA</i>
<b>Architect:</b>	<i>NTD Architects San Diego, CA</i>
<b>Grading Contractor:</b>	<i>Sierra Pacific West, Inc. Encinitas, CA</i>
<b>Wall Designer:</b>	<i>Landmark Engineering San Diego, CA</i>

A solution was needed to turn this undeveloped and seemingly unusable land into a large school campus. That solution was a geogrid reinforced Keystone retaining wall.

RCP Block & Brick of San Diego supplied the Keystone product used in the retaining wall structure. They have been producing Keystone products since 1992. Almost 20,000 square feet of Keystone units were used at the site – a combination of Keystone Standard, Compac, and Planter units – to deal with the substantial grade and soil retention issues. But before a Keystone unit was placed in this project, the excavation challenges at the site needed to be tackled.

The monumental task of excavating the site began with the cutting away, filling, and grading of the two canyons until only a buildable site existed. Some of the most extensive cuts into the soil were approximately 60-70 feet deep, and the fill area was 40-50 feet high.

Mike Stevenson of Geogrid Retaining Wall Systems, Inc., and his team consulted on the excavation in preparation for their work of installing the segmental retaining walls. Those Keystone

walls became the key to soil stability on this newly-created building site. “A huge challenge for the excavators was the significant soil concretions found as they cut away at the canyon walls,” Stevenson said. Concretions occur over time in the natural formation of soil due to the varying amounts of pressure exerted by the building and evolving top soil.

These concretions were cemented zones of soil that the excavators could not break with even the large D-9 dozers,” added Chad Sheridan of Sierra Pacific West, Inc., the project grading contractor. “These zones had to be cleared of the useable soils surrounding them and then moved to a central area to be handled by a 10,000 pound breaking machine. This broke them into pieces that could be handled by a 980 loader for placement into a crusher.” Sheridan concluded that the crusher then brought the size of the concretions to a usable form that met the required specifications for fill at the site.

After all of the appropriate excavation was complete, the school site was 30 feet above the site for the athletic field. “Because every acre of buildable land was needed to complete the campus, it was impossible to consider a slope for this condition,”





stated Stevenson. “A 2:1 slope with a 30-foot rise in elevation would mean the loss of 60 feet back and across the line where elevation began. Every inch of that valuable space was needed to build the athletic field,” he noted. All issues indicated one solution – a near vertical, Keystone segmental retaining wall.

As the wall installation evolved, other challenges arose that called for creative measures. Because deep footings were required for the large light posts, it was necessary to build the footings using Sonotubes® in the fill area. Soil was compacted around the tubes as the crew added fill. There was also a 6-foot masonry fence parapet to be built on top of the segmental retaining wall. Construction design had to be coordinated so the footing for the fence was on top of the topmost retaining wall block and cantilevered back into the fill. This design meant the installation crew had to ensure that the geogrid was low enough to accommodate the footings.

The wall also features a distinctive “W” design, which was built using contrasting blue Keystone units. “The “W” in the wall

was a last minute thing,” Stevenson concludes. “The idea came up late into the design. They asked me for my opinion on how it could be accomplished, so I took a set of plans and colored in the appropriate blocks.” Keystone versatility and freedom in design made it easy to provide the blue “W” to boost school spirit. 🗣️

## 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 Marybeth Reed (mreed@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 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.*

## Village of Port Chester *Marina Redevelopment*

A textured Keystone Compac retaining wall was the answer to all of the major challenges that were presented as part of the Village of Port Chester \$100 million redevelopment project. When this New York town decided to enlarge their small waterfront area, Keystone helped maximize space and create open areas for more retail and entertainment attractions.

One major problem stood in the way of expansion – there was no useable land immediately available for further development. The marina boundaries created by the Byram River and existing commercial and residential buildings of the Port Chester down-

town district made it impossible to simply expand outward. A long, tall, and steep hillside was the only vacant area available, but the slope made the land unsuitable for building purposes.

In order to create usable land, the hillside would have to be cut away. It became clear that a retaining wall was necessary. The textured Keystone Compac wall provided the ultimate solution for the site challenges while offering a natural stone look and feel to complement the existing environment. The Keystone Compac wall was also less expensive than a poured-in-place wall and more durable than a timber wall.

“This project took months of design consideration before construction could begin,” notes Joe Pillari of the project’s installation contractor and landscape architecture firm, Pillari Bros., Inc., out of Howell, NJ. “Once cut-away began on the hillside, we were presented with a variety of less-than-perfect soil conditions and issues.” In most areas along the cut, upper profiles of orange-brown sand covered underlying layers of severely weathered rock and a bedrock of gray schist or gray gneiss heavy with fractures and soil seams. However, in some portions of the cut, crews encountered less weathered ground, necessitating that blasting be performed. “In a nutshell, we were working with highly variable and unstable soils, and the Keystone Compac retaining wall design was really put to the test here,” Pillari adds.


Al Cheney, with Keystone Engineering in Minneapolis, MN, pointed out that the final design maximized the structural competency of the rock immediately behind the wall and this minimized the amount of geogrid and reinforced soil required to build the wall.

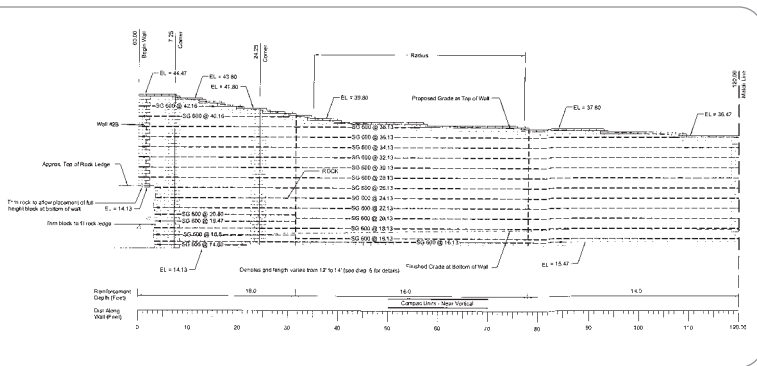
Because of existing buildings already on the small marina site, the project provided a number of space challenges for the installation phase of the planned retaining wall. Large work crews and heavy equipment were not feasible at the site, so it was important that the near-vertical retaining wall be easy to install

within a cramped and restrictive work area. “The Keystone Compac units were easy to handle and their pinning method made alignment even easier as we worked in this tight area,” Pillari concludes. “The Keystone Compac wall really stood up to the many tests we had on this project, and it passed in every circumstance with flying colors.”

Supplied by Anchor Concrete Products, of Manasquan, NJ, the textured Keystone Compac wall units matched the early-American charm of the area, while their strength and structural capacity allowed the heavy-load bearing wall to reach heights up to 30 feet.

For continuity throughout the entire marina site, Keystone units were also used to create parking lot transition areas, a plaza area with retail kiosks, and access points to the waterfront docks.

The Port Chester Marina project clearly shows that Keystone walls provide solutions to difficult site conditions while adding aesthetic appeal. Keystone systems are engineered for performance, as well as visual appeal, making them perfect for any commercial, government, and residential application. They are the preferred choice of Pillari Bros., Inc., as well as architects, engineers, contractors, and homeowners world-wide. 



<b>Project:</b>	<i>Marina Redevelopment</i>
<b>Location:</b>	<i>Port Chester, NY</i>
<b>Developer:</b>	<i>G&amp;S Investors, Inc., Port Chester NY</i>
<b>Product:</b>	<i>Keystone Compac</i>
<b>Square Feet:</b>	<i>Approximately 17,000 square feet</i>
<b>General Contractor:</b>	<i>Pillari Bros., Inc., Howell, NJ</i>
<b>Engineers:</b>	<i>Langan Engineering, Elmwood Park, NJ</i> <i>Keystone Engineering, Minneapolis, MN</i>
<b>Architect/Designer:</b>	<i>Juan Montoya Design Corp.</i> <i>New York, NY</i>
<b>Keystone Supplier:</b>	<i>Anchor Concrete Products, Inc.,</i> <i>Manasquan, NJ</i>



# 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  
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## 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  
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Kirchner Block  
618-245-7660

Rockford Cement Products  
815-965-0537

## Indiana

Aggregate Industries  
800-841-5466

Schuster's Building  
Products  
800-424-0190

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Concrete Products  
800-352-4644

King's Material  
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Zeidler Concrete Products  
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Capitol Concrete  
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Nattinger Materials  
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## Montana

Kanta Products  
406-285-3261

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Concrete Products  
712-252-4251

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775-358-1200

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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

Dakota Block  
605-342-6070

## Ohio

Akron Brick & Block  
330-628-2603

Wilson Concrete  
937-885-3711

## Oklahoma

Dolse Bros. Co.  
800-335-9626

## Oregon

Basalite Concrete Products  
800-596-3844

Pennsylvania  
Lockcrete Bauer Company  
724.297.3200

Domine Builders Supply  
800-444-2103

York Building Products  
800-673-2408

## Puerto Rico

Bloques Carmelo  
787.251.9474

## Rhode Island

Keystone Northeast  
888-447-1157

## South Carolina

Keystone Group  
800-545-5080

## South Dakota

Concrete Products  
800-352-4644

Dakota Block  
605-342-6070

## Tennessee

Keystone Group  
800-545-0754

Superock Block  
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## Texas

Eagle-Cordell Concrete  
Products  
713-691-0022

Jewell Concrete Products  
254-772-3440

## Utah

Amcor Masonry Products  
801-936-7628

## Vermont

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*Note: Keystone also has over 35 international distributors.*

## Keystone Resource Corner

### On-Line Resources

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

### Engineering & Design Services

- Preliminary Design & Estimating
- Final Stamped Plans - Registered in 48 States
- Design & Technical Assistance
- Design Software and Support
- Design & Construction Literature
- CADD Details
- Specifications
- Education and Training Courses for Design of Segmental Retaining Walls
- Seminars Available with Continuing Education Credits
- Periodic On-site Representation

### Local Representation

Contact Keystone to have a local representative provide you with updated technical binders and product information.

### HOW TO CONTACT US

<i>Customer Service</i> .....	<i>1-800-747-8971</i>
<i>International Service</i> .....	<i>952-897-1040</i>
<i>Facsimile</i> .....	<i>952-897-3858</i>
<i>Internet</i> .....	<i>www.keystonewalls.com</i>



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***www.keystonewalls.com***