

KEYSYSTEM™ I

RETAINING WALL SYSTEM

A high performance Mechanically Stabilized Earth Retaining Wall System for highway and heavy applications using inextensible reinforcing. Evaluated by HITEC, in accordance with AASHTO specifications.

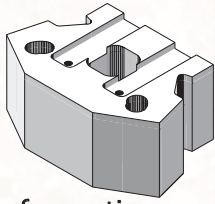
- TRANSPORTATION
- GOVERNMENT
- COMMERCIAL
- INDUSTRIAL
- INSTITUTIONAL



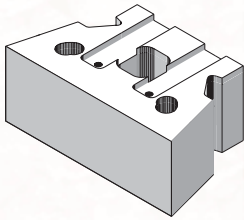
A CONTECH COMPANY

SYSTEM

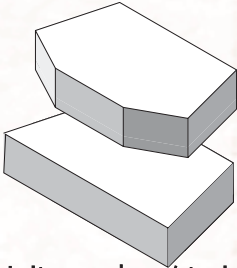
KEYSYSTEM I UNIT



3-plane face option
8" h X 18" w X 12" d (203 X 457 X 305 mm)



Straightface option
8" h X 18" w X 12" d (203 X 457 X 305 mm)



Cap Units - 3-plane/straight
4" h X 18" w X 10-1/2" d (102 X 457 X 267 mm)



Fiberglass Alignment Pins
1/2" X 5-1/4"
(12.7 X 133mm)

Steel Connection Pins
9/16" X 8" (14.3 X 203 mm) (Galvanized)

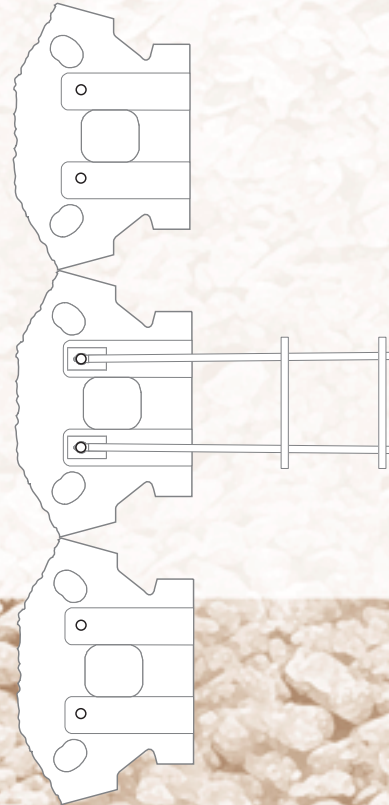
KeySystem™ I is a structural retaining wall system that is marketed, designed, manufactured and serviced by Keystone Retaining Wall Systems, Inc. and its network of over 125 Licensed manufacturer/representatives worldwide.

The KeySystem™ I is specifically designed for use in the highway and heavy construction industries using the patented Keystone modular concrete units and inextensible steel soil reinforcement to develop a durable, aesthetically appealing, and cost effective retaining wall structure.

The result of this combination is Keystone's proven performance working to the highest quality standards of the professional design and construction industries.

Features & Benefits

- Durable Components
75 year design life
- Aesthetic Appeal
Options of colors, textures, patterns
- Design Flexibility
Curves, corners, unique geometries
- Ease of Construction
Quick, easy, no cranes required
- Cost Effective Results
Competitive to all MSE structures



Fort Bragg Base HQ, North Carolina
First KeySystem I wall - 1994



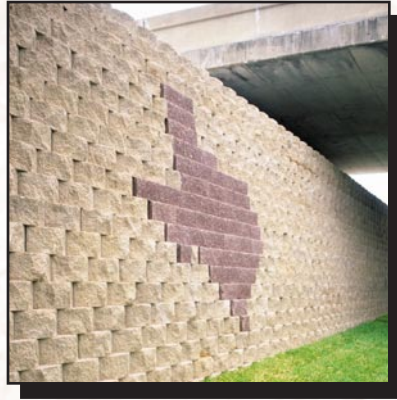
Alport, New Zealand bridge support and
approach walls



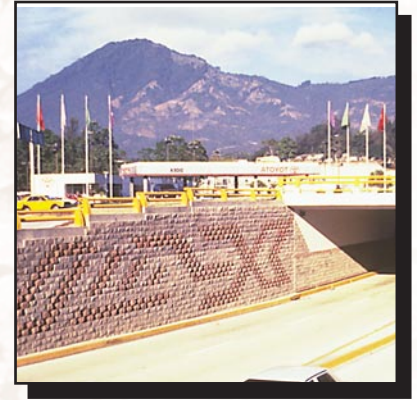
Harlan, Kentucky - flood wall protect-
ing highway and rail lines



Texture or color variations



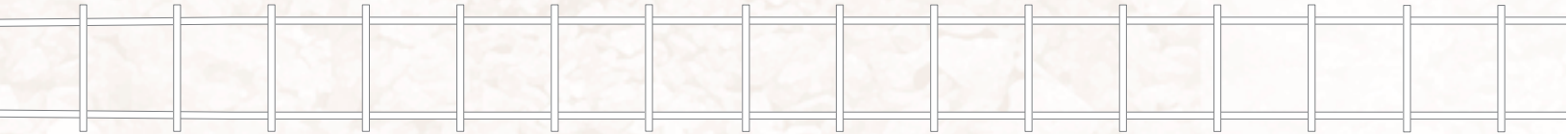
Logos and symbols



Geometric patterns

Keystone's 1.0 sq. ft. modules allow for minimal equipment needs and provides maximum flexibility to respond to site variations. Aesthetic options allow for a wide range of completed wall appearances without the high cost of customization. Color options, texture options and geometric patterns are a natural for Keystone. The KeySystem I concrete module concept allows for the manufacture and inventory of components before final drawing approval, reducing valuable construction lead time.

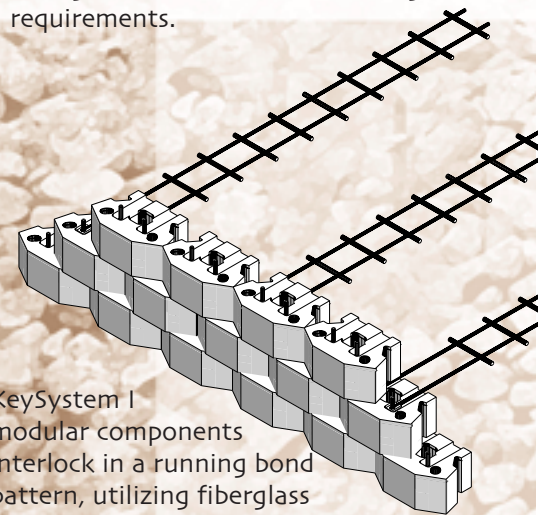
The Keystone Retaining Wall System was introduced in 1985 as an alternative to conventional landscape and structural retaining walls. KeySystem I utilizes design methodology and material components that comply with the standards for inextensible reinforcement as outlined in the current AASHTO Standard Specifications for Highway Bridges.



Steel ladder grids are designed and fabricated to specific lengths and strengths to meet site and design requirements.



Terminal 5 - Seattle, Washington project



KeySystem I modular components interlock in a running bond pattern, utilizing fiberglass alignment pins and galvanized steel connection pins.

STRENGTH

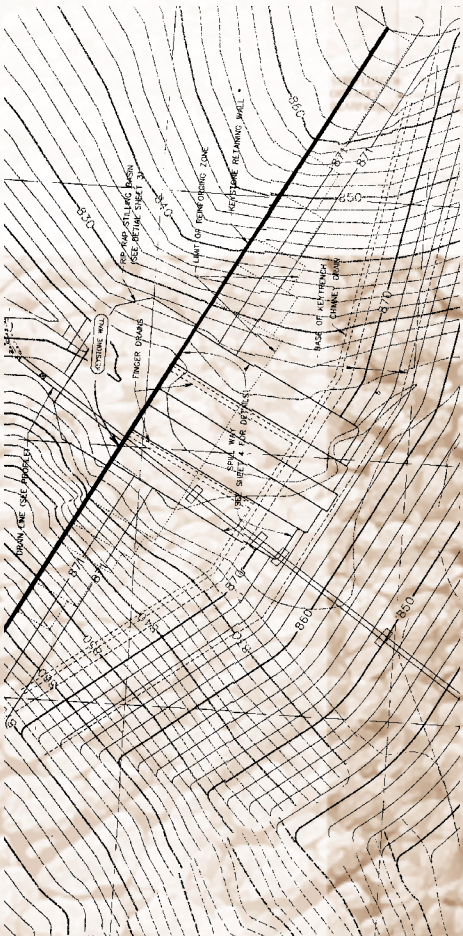
Keystone's patented concrete units are manufactured to a minimum compressive strength of 4000 psi. The units are dry stacked (without mortar), but are interlocked vertically and horizontally using high-strength fiberglass pins and galvanized steel pins. This provides for a strong, interlocked facing system.

Walls have been constructed to over 50 ft. (15 m) under a variety of loading conditions.

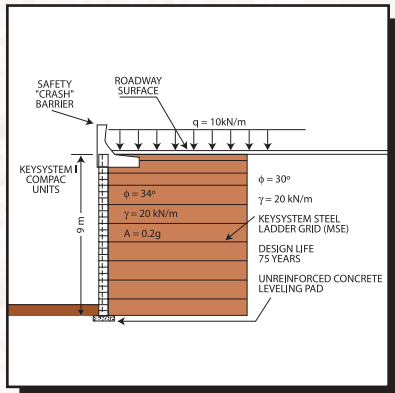
The KeySystem I steel soil reinforcement offers an economical and extremely strong structural solution for tall walls and situations where extreme loading and support is critical.



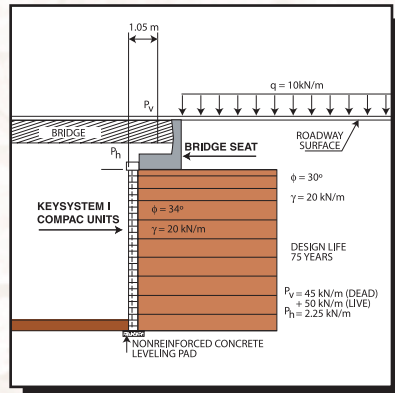
KeySystem I provides heavy load support capability



Wickenburg, Arizona - highway wall over drainage structure box culvert



KeySystem I handles all structures with heavy loads & crash barriers



KeySystem I - supports bridge loads and approach walls

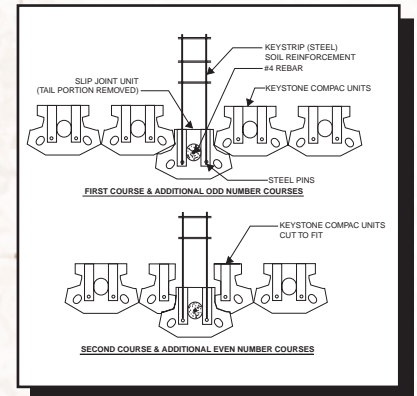
Integration of specialty site construction items is achieved within the normal design and installation framework of KeySystem I.

Copings, crash barriers, railing options, construction slip joints, curves and corners, are all standard design elements in the KeySystem I package, without the need for specialized molding and custom fabrication.

Seismic design loads can be factored into the KeySystem I design analysis. The semi flexible (MSE) system is capable of handling seismic events better than more rigid systems. Keystone Retaining Wall Systems, Inc. has observed the results of earthquakes acting on the Keystone wall system in seismic prone, Pacific rim and west coast USA areas without failure or significant detrimental effects to the Keystone wall structures.



Bridge support and slip joint



Slip joint detail



Large wall structures, 50' (15 m) plus!



Geometric patterns



Coping/rail details

SUPPORT

Keystone has the large project experience necessary to set your project in motion and carefully guide it through every stage to a successful completion.



Solutions for highway loads and barrier details

When KeySystem I is specified, a complete retaining wall system is engineered and supplied to meet site specific conditions. Keystone's engineering department provides the design package and coordination with local licensed manufacturers to ensure a completed project that meets the demands of critical structure requirements and timely arrival and sequencing of materials for construction.

KeySystem I provides quality products and service from the leader in modular concrete retaining walls...Keystone!



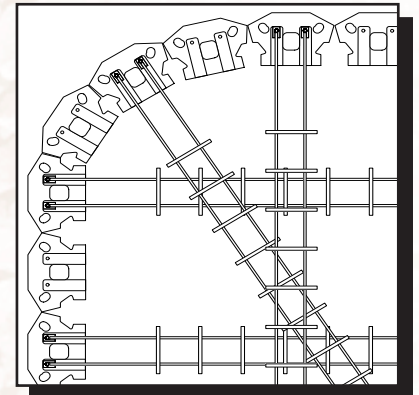
KeySystem I installation is rapid, minimizes heavy equipment requirements and is cost competitive with all forms of AASHTO specified MSE Structures!



Alpine Hoback Highway, Southwest Wyoming

KeySystem I Support Program

- Professional design and engineering
- Keystone provides evaluation materials and submission packages to State and Local Departments of Transportation for review and approval. Basis for submission is AASHTO and HITEC Review, August 2000.
- On-site technical assistance
- Keystone history of 15 years and over 200 million sq. ft. (20 million m²) of installed retaining walls.
- Local manufacturing and supply of concrete units (125 sites worldwide)
- Quality assurance for system components
- Steel components meet ASTM and AASHTO Standards for steel, fabrication and galvanizing to achieve a 75 year design life.

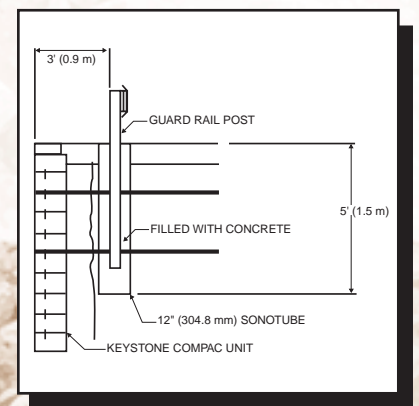
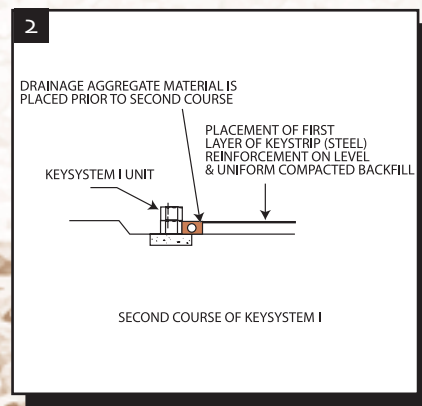
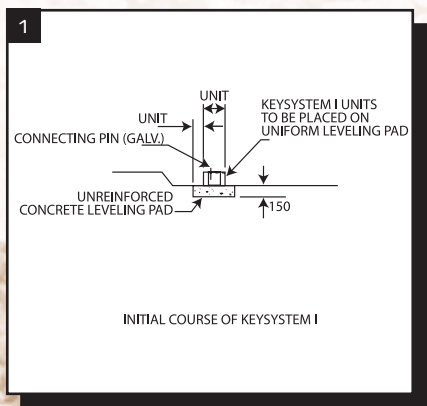


Typical steel layout plan for curves and straight wall construction

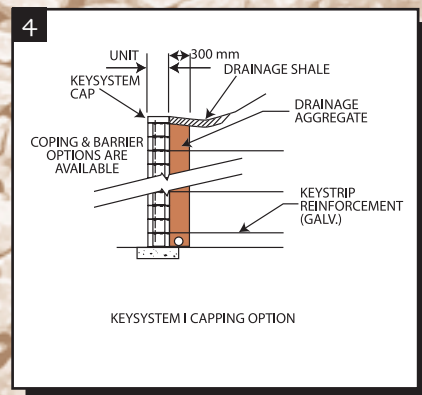
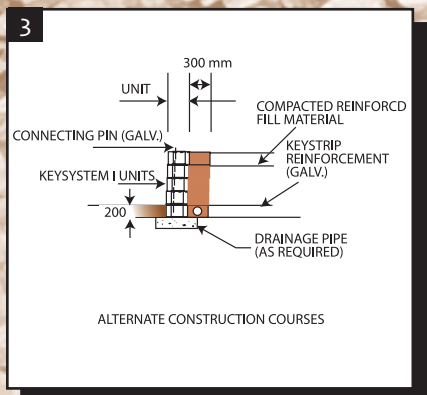


90° corner detail at support pier

CONSTRUCTION SEQUENCE



Typical guardrail/barrier detail





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W O R L D W I D E



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D I S T R I B U T E D B Y :

