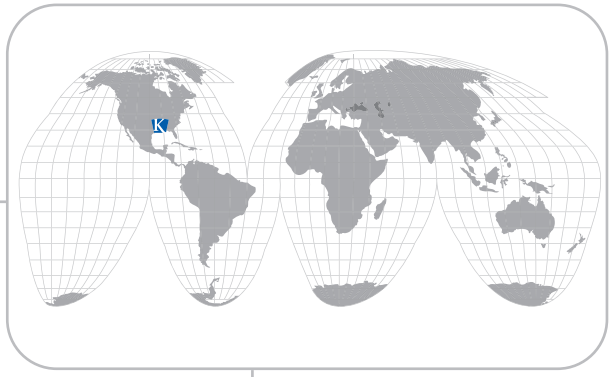
KEYSTONE® RETAINING WALL SYSTEMS
A CONTECH COMPANY

Retaining Excellence™

CASE STUDY

Picardy Avenue

Baton Rouge, Louisiana



Project:	*Picardy Avenue*
Location:	*Baton Rouge, Louisiana*
Keystone Product:	*Keystone KeySystem I™*
Keystone Supplier:	*Premier Concrete Products, Inc.*
Square Feet:	*213,236 sq. ft.*
Wall Contractor:	*James Construction Group, LLC* *ABS Services, Inc.*
Engineer:	*ABMB Engineers, Inc.*

Massive Keystone KeySystem I™ Wall Overcomes Poor Conditions

The Keystone KeySystem I™ wall under construction in Baton Rouge, Louisiana will be one of the largest segmental retaining wall structures ever built. The one-mile long, 40 to 100-foot-wide wall, is part of Baton Rouge's larger Picardy Lane / I-10 highway improvement project. When completed, the wall is designed to ease congestion on the interchange and improve access to the neighboring Mall of Louisiana.

The KeySystem I walls are supported on two foot wide, one foot thick leveling pads that run parallel along the length of the 213,000-square-foot wall, provided by Keystone supplier, Premier Concrete Products, Inc.

During the design development phase, the project's geotechnical consultant discovered low bearing capacity soils in the areas where retaining wall construction was necessary. It was determined, through analysis of the existing soil conditions, that the critical wall height was approximately 22 feet. This finding meant that retaining walls taller than 22 feet and constructed using normal weight backfill (around 115 pcf) would produce excessive stress on the low bearing capacity soils, which would lead to unacceptable settlements. Since the proposed retaining walls approached heights of 40 feet in some locations, a cost-effective solution needed to be

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GOVERNMENT APPLICATION

found that addressed these circumstances. KeySystem I was selected for its ability to deliver an economic and extremely strong structural solution for tall walls and extreme loading conditions.

"KeySystem I was especially suited for the marginal site conditions and the Louisiana DOT specifications at the Picardy Avenue site," said Joe Friederichs, P.E., Keystone Structural Wall Specialist. "KeySystem I was designed for transportation projects, heavy loading conditions, or any project that requires AASHTO compliance. All of these factors were in play on this job, and the high-performing KeySystem I package performed well."

It was also determined that lightweight fill would be an efficient and cost effective solution to the marginal soil conditions and its use was recommended to the LaDOT's engineering firm, ABMB Engineers, Inc. of Baton Rouge. The material's low unit weight (around 45 pcf) and high internal stability (phi angle of at least 40 degrees) provided the perfect fill material to use behind the Keystone KeySystem I retaining wall without costly ground improvements.

The taller portions are backfilled with lightweight expanded clay aggregate (LWA) produced by Big River Industries, a material produced by firing clay under high temperatures in a rotary kiln. LWA weighs one-third of its equivalent in sand — a key characteristic to prevent settling and associated road cracking. The Picardy Avenue retaining wall specified 20,000 yards of sand fill and 160,000 yards of LWA, the largest-ever single utilization of LWA fill in the world.

"The steel from the KeySystem I requires a lot of good coordination and a large laydown area," said Tony Bertas, President of wall contractor, ABS Services, Inc. "We designed a color coordinating system to help us place the right sized steel lengths on the wall and help those inspecting our work with their jobs. And, once the set-up is complete, the KeySystem I walls install pretty quickly."

According to Bertas, you have to be prepared for the unexpected on a project of this size. Even with the challenges, there were some things he did to maximize his time including the modification of some of his equipment to handle the large, but lightweight volumes of fill required behind the projects walls.

The intricate $41 million Picardy Avenue interchange is still under construction. The new interchange will add frontage roads, realign existing ramps, widen I-10 and replace the pavement from Bluebonnet Boulevard to Siegen Lane.

Keystone KeySystem I is a world-class structural retaining wall system, specifically designed for use with highways and heavy construction. KeySystem I combines patented Keystone modular concrete units and inextensible steel soil reinforcement to develop an extremely stable, aesthetically appealing and cost effective retaining wall structure.

For more information on Keystone KeySystem I or the other innovative Keystone products, please visit **www.keystonewalls.com** or call (800)-747-8971. Keystone Retaining Wall Systems, Inc. is a subsidiary of CONTECH Earth Stabilization Solutions Inc. (**www.contechess.com**).

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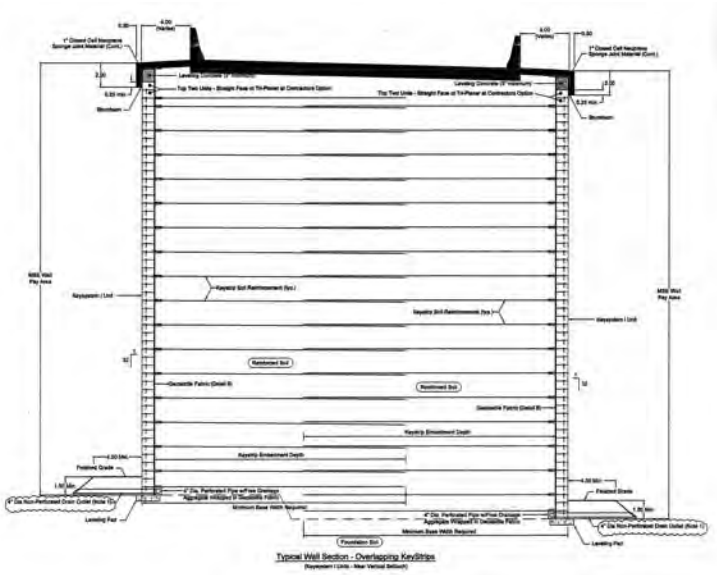

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