

Case Study

application	Segmental Retaining Wall
location	Woodstock, GA- Wal-Mart
product	Miragrid® 3XT, 5XT, 8XT & 10XT

job owner	Wal-Mart
engineer	VEA, Inc. & Wolvertoon & Assoc.
contractor	Retaining Walls Company

TenCate™ develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

THE CHALLENGE

Wal-Mart needed to create more space for the building pad. Several challenges existed on the jobsite. A naturally high water table existed on site, and a detention pond was at the base of the wall. The building pad itself was going to be a factor in designing the wall. The proposed wall was approximately 30 feet tall and 300 feet long.

THE DESIGN

The design called for the use of Miragrid® 10XT at the base and 8XT, 5XT and 3XT as the wall progressed upward. The Keystone Compac II block was chosen to be used with the Miragrid® because of the connection strengths and the Long Term Design Strength available with that system.

THE CONSTRUCTION

Because the water table was so high and the detention pond could produce water height surges, the design required a 1 foot blanket drain of 57 stone and perforated pipe to allow sufficient drainage of water behind the wall. A 2:1 slope existed below the wall to help contain the water in the detention pond, which served as a minor obstacle in the design. The actual storage facility was several feet away from the wall, but had to be considered in the overall design. Soil conditions existing on site proved to be a factor in the design because of the clay that was present and used for backfill. Typical embedment lengths varied, but the maximum embedment length required was about 35 feet.

THE PERFORMANCE

The design engineers and the contractors installing the retaining wall are very familiar with the Miragrid® product and have used it many times in wall designs. There were several significant rain events that stained the wall due to a rise in the water level in the detention pond. However, no failures have

been indicated since the completion of the wall, which was in August 2003. Given the nature of the project and several obstacles in the design, the wall installation was very important to aid in the aesthetic value as well as the structural integrity of the system.



The base of this segmental retaining wall was reinforced with Miragrid® 10XT. Miragrid® 8XT, 5XT, and 3XT were used as the wall progressed upward.



A one foot blanket drain, stone, and perforated pipe was placed behind the wall to allow sufficient drainage.



The completed wall was 30 feet tall and 300 feet long.

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