### **CASE STUDY**

# N-12° Fits Shopping Center's Footprint

# Hagerstown, MD

#### **OWNER**

Ahold Delhaize, Zaandam, Netherlands

#### **ENGINEER**

J. Michael Brill & Associates, Mechanicsburg, PA

#### **CONSTRUCTION MANAGER**

Kinsley Construction, Inc., Hagerstown, MD

## **INSTALLATION DATE**

February 2008

#### **PRODUCTS**

6,200' (1890 m) of N-12 solid pipe

#### **DESCRIPTION**

During the remodel of a shopping center, a new stormwater detention system needed to be built in order to handle the expanded site's stormwater runoff. The site's karst topography presented a challenge because of sinkhole prevalence that limits infiltration and the underground system's depth.

Because of the challenges, open bottom or perforated systems could not be utilized on the site. N-12 pipe, made of high-density polyethylene, was used to solve the problem of a small footprint (the detention system was built under the parking lot), an increase in water volume and the area's challenging topography.

The detention system, which can handle a 100-year storm event, would normally use larger diameter pipe but because of the topography, 48" (1200 mm) pipe was used. This required extra laterals to be built to handle the water volume required.

The N-12 pipe not only served the needs of the project, but saved money over concrete pipe as the installation was easier and because less truck loads were needed to deliver pipe to the site.





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