CASE STUDY
OMAHA STORMWATER INFILTRATION

Underground Stormwater Detention System

1 Modular tanks are placed in the hole lined up square.

Project	South Omaha Industrial Area Pump Station
Location	Omaha, NE
Date	July 2012
Contractor	Eriksen Construction
Salesperson	Brian Williams
Owner	City of Omaha
Engineer	Wade Trim - Jeffrey Ray, PE

THE CHALLENGE

Create a green solution to handle the storm runoff at the new pump station. With limited space, a bio-retention pond could not handle the required detention which would have necessitated a move of the building adding considerable cost and removed valuable storage for the City of Omaha's Street Maintenance Facility.

2 Concrete pipe was connected to the tanks through a hole.

3 The lightweight modular tanks are easy to maneuver and install.

THE SOLUTION

Three underground solutions were evaluated, a concrete tank, piping (CMP or HDPE) or a permeable tank. The permeable tank appeared to be the most cost effective and flexible for positioning. After a percolation test was completed it was determined the site was a good fit for this system. This site is in an area of combined sewers and by letting the storm water seep into the soil it reduces storm water volume treated at the wastewater plant, which made it a green and more economical solution than standard detention tanks.

THE PRODUCTS

TENCATE

Product: 160N Fabric
Manufacturer: TC Mirafi
Product: Modular Tanks

4 The geotextile completely wraps the tanks.

5 Geotextile was glued together to ensure no soil could migrate into the tanks.

6 Inspection ports (white) were installed to check for sediment and remove if necessary.

7 Sides are backfilled & compacted to 95% proctor.

THE RESULTS

The tanks were installed with no problems and after numerous rain events the tanks can be seen holding the storm water immediately after an event and within a week the system is essentially empty. So they appear to be working as designed.

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