

CASE STUDY

CASEY'S GENERAL STORES

Underground Stormwater Detention System

1 Joplin Missouri after tornadoes in 2011.



Project	Underground Stormwater Detention at 2 Casey's Stores
Location	Joplin & Duquesne, MO
Date	March 2013
Engineer	Archer - Elgin, Rolla, MO
Salesperson	ASP Enterprises
Owner	Casey's General Stores
Contractor	Williams Construction, Springfield, MO

THE CHALLENGE

Installation of an Underground Stormwater Detention System below the parking lot of two new Casey's General Stores in the area that were destroyed by tornadoes in 2011. The underground detention allows the owner to expand their parking area and do away with a standard detention basin.

3 Duquesne project using preassembled tanks.



2 Joplin project start up.



THE SOLUTION

Modular tanks wrapped in Mirafi 180N geotextile and encased in a 45 mil Firestone EPDM Geomembrane with a Mirafi BXG 110 Geogrid reinforcement grid above the detention cells.

THE PRODUCTS



Product: Mirafi 180N Geotextile and BXG 110 Geogrid

Manufacturer: TC Mirafi

Product: Firestone 45 mil EPDM Geomembrane Liner

Manufacturer: Firestone

Product: Modular Detention Tanks

5 Connecting inflow pipe from the water quality unit.



4 Modular tanks can be configured into unusual shapes.



6 Backfilling and compacting the aggregate.



7 Completed detention system preparing for pavement.



THE RESULTS

This system was successfully installed at two brand new Casey's General Stores in a matter of only a few days. The underground detention allows for more parking, cleaner stormwater and less maintenance as well as satisfying all stormwater runoff volume reduction requirements.

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