

Reserves at Chesterfield Village Chesterfield, Missouri

Issues

- Extreme conditions with high flow potential
- Restoration to near natural conditions required
- Record precipitation in year following installation
- Previous attempts at vegetation establishment and erosion control had failed



Once vegetated the PS42 TRM is not visible but still provides significant and permanent erosion control and vegetation reinforcement.

Problem

The Reserves at Chesterfield Village is an upscale residential development bordering Chesterfield Creek. The creek and its wooded buffer are protected by the U.S. Army Corps of Engineers (CE) as an environmental mitigation area. Stringent restrictions and the limiting of discharge



Previous attempts at using unreinforced vegetation had failed on the site.

points into the creek concentrated stormwater and increased the risk of significant erosion on the site. Previous attempts at erosion control using unreinforced vegetation and rock rip rap had failed and been unsightly.



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Case Study

Reserves at Chesterfield Village Chesterfield, Missouri

Solution

A creative mix of erosion control technologies was employed on the site to meet the many conditions set by the Army Corps of Engineers for minimizing disturbances and restoring the site. These included widespread use of ECBVerdyol's PS42 Turf Reinforcement Mat (TRM), contour wattling, native vegetation, and tree preservation and replanting. Instead of piping, an existing 400 ft. natural swale was modified to conduct 16 cubic feet per second of stormwater.

The PS42 TRM was chosen for a variety of reasons. It provided immediate erosion control to the site while also promoting quick germination thanks to the component of straw fibers added to the permanent TRM structure. It also installed faster and cost significantly less than other TRM options that required complex anchoring systems or various soil filling requirements. In addition, the PS42 TRM comes in 16' width, which not only made for faster installation, but significantly decreased the number of seams required.

Results

In the months after installation the project site received record precipitation and numerous storm events. Both of the discharge areas functioned exceptionally well under extreme conditions with no erosion and continuing to vegetate successfully. The project successfully met the regulatory mandates for restoring and protecting the mitigation area. And, moreover, the natural appearance of the project area adds to the pastoral setting promoted by the developer.

In successive years the TRM reinforced vegetation is still lush and successful on the site and continues to provide excellent erosion control and aesthetics on the site.



PS42 TRM comes in a natural tan color and installs quickly and simply.



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