

Sommet at Big Bend

Miracle Design Build, Inc., Kirkwood, Missouri

The Sommet at Big Bend is an 11 acre development for custom Villa homes. Miracle Design Build, a United States Green Building Council member firm owned by Architect Jim Holtzman, had heard about the rain garden concept and wanted to apply that style of stormwater conservation to this development. Controlling the time of concentration for stormwater runoff after development on the steeply sloped site with rocky clay soils was the challenge of this project.



We knew that the only way to imitate predevelopment hydrology was focus the design on delaying runoff over the greatest surface area possible, thereby allowing infiltration, natural runoff rates and delayed time of concentration.



The system includes twenty-eight small, interconnected micro-detention basins throughout the development along the paths of natural drainage. The basins are connected with underground sand drains and overflow pipes. A series of small waterfalls, pools and dry stream channels facilitated overland flow and enhanced site aesthetics. The system is designed to retain water for no more than 48 hours. The plant pallet for each basin includes native flowering wet prairie and wet mesic prairie plants. The prairie plants maximize infiltration and evapotranspiration to improve site hydrology while also providing desirable wildlife habitat and a pleasing landscape.



We were able to eliminate all the proposed enclosed roadway drainage pipes and curb inlets, which offered substantial cost savings to Miracle Design Build, Inc. The result is a developed site that is hydrologically functional and beautifully landscaped.