

Storm Water Detention Installed at Upscale Development

Oldcastle Precast's Stormwater Solutions Group supplied a 17,000-cu-ft storm water detention/sand filter system at the Cottages on Providence, a new upscale townhome development by Wendy Field Consulting in Charlotte, N.C.

Site designer Orsborn Engineering Group of Charlotte needed a combination storm water detention and sand filter system to control and remove pollutants from post-construction runoff for this dense urban development. Oldcastle manufactured and delivered its Storm Capture module system to provide the large storage capacity and small footprint required for the integrated detention and treatment system.

Orsborn incorporated the sand filter and detention chamber into a single storm water management system using 27 Storm Capture modules. The system, installed under the driveway between two rows of townhomes, includes a detention chamber comprising 19 5-ft modules; a sand filter, created using six 9-ft modules; and two sedimentation forebay chambers comprising two 9-ft modules. The forebay chambers trap large sediment and floatables, while the sand filter uses sand media to filter smaller particles and other pollutants. The detention chamber will store runoff and allow sufficient time for treatment through the sand filter. Discharge from the system is controlled by an orifice plate at the outlet pipe. The system is designed to meet AASHTO HS-20-44 for traffic loads and has multiple manways for future maintenance access.

The storm water management system receives water from site storm drains and downspout collection pipes, as well as from a grate directly over the top of one of the forebay modules. Water will pass through the Storm Capture system and then out to the storm drains.

Charlotte-based Siteworks LLC installed the Storm Capture system in three days in June 2014 for general contractor HR Construction. The base sections of the sand filter, detention and forebay modules were installed on the



first day. On day two, the modular nature of the system provided the contractor with an opportunity to easily install all of the internal sand filter components (under-drain piping, stone and sand media) while the system was still open. On day three, the tops of the modules were installed and backfilling operations began. The Cottages project is scheduled to have townhomes available for occupancy in January 2015.

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