

Home Depot, Mesa, Arizona

The Mesa Riverview development in Mesa, Arizona, includes an auto mall, office park, hotel, movie theatres, and retail and dining facilities. The construction of a new Home Depot took place during the second phase of the project. When research and planning began for the optimal stormwater management solution for the site, it was discovered that the soil had a low percolation, or infiltration, rating.



When soil has a poor percolation rating, water cannot enter the ground unimpeded during a rainfall; it either ponds on the surface or runs off the land. Run-off can carry soil particles and other contaminants to streams and lakes, increase the chance of local flooding of streams and rivers, and result in accelerated soil erosion. In a hot and dry climate such as Arizona, a bad percolation rating may cause stormwater to evaporate, instead of being returned to the ground or used for irrigation.

Several stormwater options were considered, including metal culvert pipes, and a CULTEC underground system was selected to manage the run-off in the poor percolation conditions. According to the system design, the chambers would detain stormwater and send it to an aquifer, an underground bed that yields water. An impervious liner covered the bed underneath the plastic chambers to prevent stormwater from infiltrating into the ground and to direct it into the aquifer for storage and future use.

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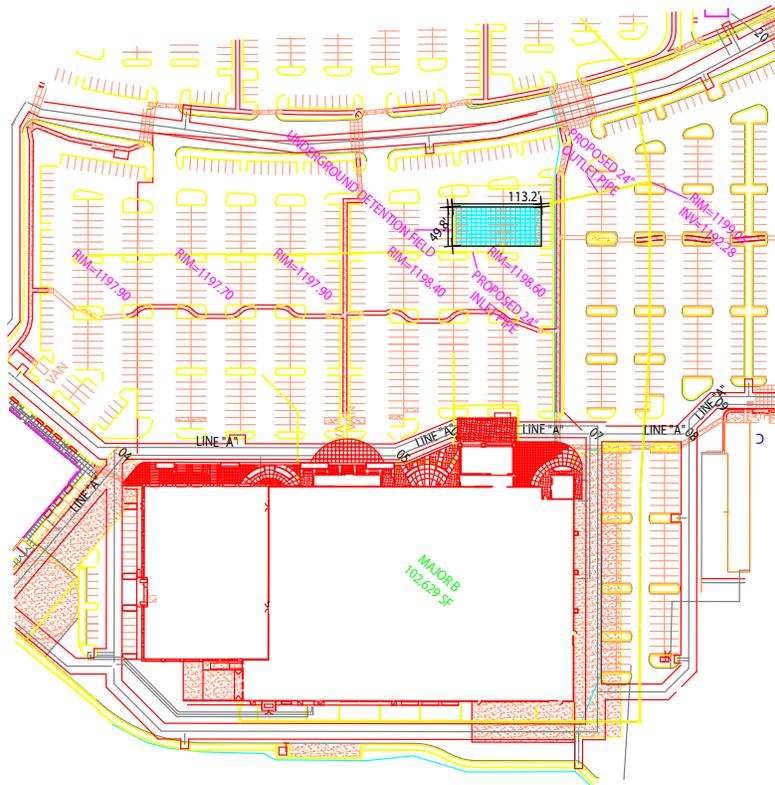
CASE STUDY

Home Depot

One hundred sixty eight CULTEC Recharger 330 chambers were specified for the project, providing 12,480 cubic feet of storage. The single-layer system occupied 52,846 sq. ft. and was installed in a single rectangular bed. According to Bill Argeros, CULTEC representative at Southwest Operations in Phoenix, Arizona, the company's chambers were selected because of the system's cost-effectiveness, ease of installation and decreased labor and equipment use.

"In addition to being cost-effective, CULTEC chambers are lightweight and require less equipment and manpower to install them," said Argeros. "The chambers also have the potential to achieve more than just recharging stormwater. In this application they work together with the aquifer to recreate a natural infiltration process and preserve water as well."

There are many benefits to using a subsurface system, including minimized land disturbance, reduced maintenance costs compared to above-ground systems, and design flexibility that allows the chambers to be installed in separate beds or multiple layers. Specific to The Home Depot development in Mesa, CULTEC chambers also exhibited the potential to aid to the natural infiltration process in addition to their primary purpose of capturing and recharging stormwater run-off.



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Protected by one or more of the following patents: U.S. Patent No. 5,087,151, U.S. Patent No. 5,419,838, U.S. Patent No. 6,129,482, U.S. Patent No. 6,322,288 B1. Other U.S. and Foreign patents. Other U.S. patents pending. RECHARGER®, CONTACTOR®, HVLV™ and STORMFILTER® are trade names of CULTEC, Inc.

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