Water Retention Case Study

TRITON™ STORMWATER SOLUTIONS

Metro Transit Bus Stop Gains More Usable Space

The Situation

The Starlite Metro Transit Bus Stop in the Brooklyn Park, Minnesota commercial retail shopping center was in great need of improvement. The bus stop is located in a small triangular section of a fully developed mall parking lot that was still unpaved and serviced by a storm water pond. Metro Transit wanted to gain more usable space for this small area to serve the busses that pulled in and out all day by replacing the pond with an underground storm water system.

The Solution

Through its association with Royal Environmental, a Triton stormwater retention system was selected to meet the unique design challenges of the site.

In addition to fitting an extremely small and triangular shaped area, the Triton system had to tie into existing main inlet and outlet pipes which were at different elevations.

"One benefit of the Triton system that came into play on this project is its flexible and modular design," explains Joe Miskovich, President, Triton Stormwater Solutions, in Brighton, Michigan "We were able to match the invert height with the preexisting pipes so as not to move pipes or tear up the entire parking lot."

The Installation

The installation was complicated due to the triangular site that was surrounded by roadway on two sides and a parking lot on the third—all which had to remain open during construction, explains Lance Hoff, water resource engineer, Royal Environmental, part of Royal Enterprises. "It was a very confined site, and it definitely was a balancing act getting the system in and working around the stockpiled materials."

The Triton Main Header Row is assembled on the sediment base in a very confined site. The system's flexible and modular design were key benefits of the installation.

Hoff explains that the team worked closely during the initial phasing of the Triton installation to painstakingly ensure that all the chambers met the design and installation challenges before installation began.

First, the crew dug down to elevation and put down a six inch base layer of stone. Next, the chambers were put in and the walls of the trench were lined with a class 2 non woven geo fabric. The site was backfilled with stone up to six inches past the crown of the chambers and the geo fabric was folded back and backfilled with material to the desired elevation, with Triton needing to be placed under only 16" of cover.

The Triton system needed to be placed underneath the entire triangular parcel in order to obtain the necessary space for the required storage volume. The site footprint of 14,000 square feet provides approximately 40,000 cubic feet of storage volume.

From start to finish, including digging the hole, stockpiling materials, installing the chambers and backfilling with rock, the installation took nine days.

"It was a big system and a complicated installation," says Hoff. "But that still comes to 90 chambers installed per day as well as excavation and backfill."

The installation was complicated due to the triangular site that was surrounded by roadway on two sides and a parking lot on the third—all which had to remain open during construction, explains Lance Hoff.

With a site footprint of 14,000 square feet, the complete system, including the Main Header Row and distribution rows provide approximately 40,000 cubic feet of storage volume.

Summary

Now up and running, the Triton System is supporting steady bus traffic from early morning into evening.

"That is a testament to its strength," says Hoff, who adds that the modular design of the Triton chambers allowed them to really pack them underneath the entire site. "We could take the chambers all the way to the edge of each row even though they were different lengths."

Miskovich enjoyed collaborating with Metro Transit. "The Metro Transit people understood it was quite a challenge to fit an underground storage volume in the constraints of that shape," says Miskovich. "They were very supportive of the Triton System."

Triton Stormwater Solutions is the proven, comprehensive solution to stormwater management challenges. On your next project, turn to Triton Stormwater Solutions, the stronger, lighter, larger, greener, easier-to-install, cost-effective stormwater solution. Triton gives you Power Over Water.

TRITON™ STORMWATER SOLUTIONS

9864 E. Grand River • Suite 110 –176
Brighton, Michigan 48116
Phone: 810-222-7652 • www.tritonsws.com

Power Over Water™