GeoStorage™ Underground Stormwater Detention System

The Next Generation in Stormwater Management Technology!

Commercial Property * Residential Property * Infrastructure * Industrial Development
Airports * Schools * Sports Facilities
Pipes and pipe arches comprise most traditional underground stormwater detention systems. Flexible plastic and metal pipes require a compacted structural backfill above, below and around the pipe, and manifolds, resulting in high costs and large footprints.
The GeoStorage Underground Stormwater Detention System creates a large storage chamber utilizing geosynthetic reinforced stone walls and piers and concrete slabs.

The efficiency of GeoStorage reduces costs and excavation. The large open chamber that this patented system provides enables easy access for inspection and maintenance.
Benefits & Project Advantages:

- **Material and installation Cost:** Installs faster and provides substantial savings over traditional detention and retention systems.
- **Size:** Requires smaller footprint than traditional systems.
- **Durability:** Constructed with a reinforced concrete roof, stone and geosynthetic products that have been tested to withstand landfill leachate.
- **Stormwater Quality:** Allows for cost effective inclusion of a sand filter within the system. Does not increase metal loading in stormwater.
- **Maintenance:** Large open chambers allow for easy access and maintenance.
- **Flexibility:** Capacity is a function of column placement and height, parameters that can be adjusted to fit the required depth and footprint.
- **Load Capacity:** Designed for a HS-20 highway loading. Passenger vehicle or other loading conditions offer significant savings.
A geotextile or geomembrane liner system is installed within the excavation.
Pipe “boots” and clamps are used to prevent migration of fines into the system or leakage from the system in containment or “harvesting” applications.
Walls are created around the perimeter of the excavation, constructed with geosynthetic reinforcement and open graded stone, creating a large underground chamber.
Inlet and outlet pipes extend through the perimeter liner system and wall face into the open chamber.

Reinforced walls and piers are constructed with open graded stone to eliminate pore pressures and provide additional storage capacity.
A reinforced concrete roof, designed to AASHTO HS-20 bridge standards, is installed over the open chamber and supported by the perimeter abutments/walls.

GeoStorage allows property owners and municipalities to save money on their stormwater detention and treatment systems.
Completed GeoStorage Chamber

Total GeoStorage System is Encapsulated with Geotextile or Geomembrance
On larger systems, interior reinforced stone piers can be installed within an expanded chamber to increase the width and storage capacity of the system.

The large open chamber of the geosynthetic based system enables personnel to inspect and maintain the underground system. As stormwater regulations become more stringent and enforcement more routine, the ability to inspect and remove sediment from underground detention systems will become more important.