

ERODED RETENTION POND DRAINAGE OUTFALL AT SENIOR CENTER REHABILITATED WITH SMARTDITCH

Problem

A senior citizen center, located in Lake Mary Florida, housed a large stormwater retention pond that received stormwater runoff from the surrounding area. Over time, the constant effect of high volumes of stormwater pouring into the retention pond, created an expanding erosion cavity at the outfall's exit pipe.



Pond's drainage inlet before SmartDitch

Erosion Cavity Becomes a Maintenance Concern:

Owned and maintained by the City of Lake Mary, Florida, the maintenance crew would periodically fill the cavity with 10" grade rip rap and recycled concrete to fill the void because the rip rap continued to fail. Therefore, the erosion continued and cavity ultimately grew to an overwhelming size.

Concerned about the continued cost of maintenance and toll it was taking on the retention area, Lake Mary officials solicited Joshua Cockayne of Florida Source, Inc., SmartDitch's Florida representative, to recommend a better solution.

Solution

Less than 50 Feet of SmartDitch Solves a Big Erosion Problem: Florida Source, Inc. proposed a design to replace the rip rap by utilizing 50' of 24" trapezoidal SmartDitch. The product's ability to control and channel the run-off would resolve the erosion problem. By attaching the SmartDitch to the headwall, where most of the erosion was occurring, future water run-off will now be carried further into the pond area, dissipating most of the water's energy and minimizing the erosion.

Contractor Provides Innovative Installation Technique: To accomplish this task, the installation contractor, All Terrain Tractor Services, removed several tons of rip rap and concrete, re-excavated the disturbed area and created a berm to cradle the SmartDitch. Four sections of SmartDitch were installed and securely anchored into the berm. For this installation, extra anchors were recommended because of the fresh soil conditions of the man-made berm. Finally, SmartDitch flared-end section, further displacing the water's energy, was attached to the downstream end of the channel. Edge protection was also specified to ensure no undermining occurred along the length of each side of the SmartDitch. To complete the installation, some of the old rip rap was re-used to help secure the edge protection.



The SmartDitch flared-end section and edge protection further ensure improved drainage and minimal erosion will occur in the future.



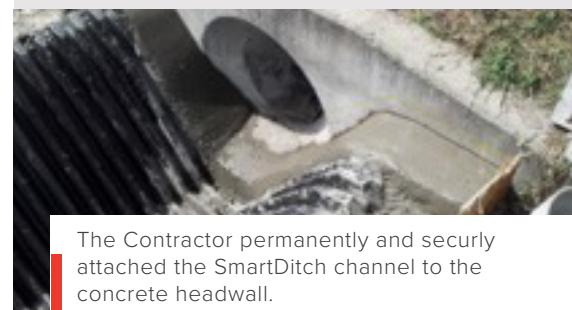
Once the pond's cavity was repaired and properly excavated, SmartDitch was installed in one day.

Quick Facts

- ◆ **PROJECT:** Lake Mary Senior Center Retention Pond
- ◆ **SMARTDITCH REPRESENTATIVE:** Joshua Cockayne & Mike Otway, Florida Source, Inc.
- ◆ **PROBLEM:** Exit pipe from drainage inlet causing severe erosion
- ◆ **SOLUTION:** 50' of 24" SmartDitch installed to bring stormwater under control and eliminate erosion
- ◆ **INSTALLATION CONTRACTOR:** All Terrain Tractor Services Orange City, FL
- ◆ **DESIGN ENGINEER:** SmartDitch Civil Engineer Mark Maederer, P.E



Retention Pond after SmartDitch was installed. Stormwater flow is under control and erosion has been eliminated.



The Contractor permanently and securely attached the SmartDitch channel to the concrete headwall.

SmartDitch is manufactured in the USA. It is a safe, economical, long-lasting, and environmentally sound irrigation channel lining solution. For more information on the SmartDitch and the MegaDitch HDPE Channel Lining Systems contact:



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