



PROJECT OVERVIEW

PRODUCTS:

HydroTurf® &
HPTRM

ENGINEER:

Ferguson

CONTRACTOR:

Maldonado

CHALLENGE:

The existing earthen channel was under-designed based on the current drainage needs. The limitation on space required upgrading this channel to a concrete-lined channel. HydroTurf® proved to be an option that would provide a hard armor solution capable of dealing with the increased hydraulics while providing an excellent aesthetic look for the neighborhood. The competitive cost and low maintenance of a concrete solution needed to be realized.

SOLUTION:

The successful installation of HydroTurf® resulted in channel armoring, blended into the natural environment. Farther up the side slopes, the HydroTurf® transitioned into a reinforced, vegetated solution via the utilization of a high performance turf reinforcement mat. This area required a different roughness value, and rather than leaving the upper end of the channel undone, a vegetated HPTRM was installed to protect the top of the channel against future storm events, while allowing the City to remain within budget.

PROJECT GOALS:

The goal was to provide a low-maintenance, flexible concrete channel solution that is aesthetically pleasing.

SITE CONDITIONS:

The existing channel was either under-designed, or it became under-designed due to recent variable storm events and new developments, which changed how the area drained. With the capacity of the channel being underestimated, water was coming up the slopes and wasn't staying in the channel. The channel's volume capability needed to be more profound, and the side slopes/channels needed to be reinforced.

CONSTRAINTS:

Limited site access in an existing neighborhood and limitations to expanding the width of the channel both contributed to a challenging pilot project for the City of San Antonio.

INNOVATIONS:

This project called for a combination of technologies to meet the customer's needs. We were able to utilize the HydroTurf as a hard armor for the primary footprint of the channel where the lion's share of high flow velocities would need to be endured.

A high-performance turf reinforcement mat was installed along the perimeter of the channel, where the client needed to maintain green aesthetics while providing adequate reinforcement for the occasional heavy storm event where drastic changes in stormwater elevation could threaten the side slopes.

A concrete toe was poured at the transition between materials within the channel to prevent a high-flow event from undermining the hydroturf system and along the side slope transitions. The slopes are expected to face low flow topping and runoff, both minor concerns to the high-performance capabilities of the HPTRM. This medley of solutions produced a long-term, high-performance channel while allowing the client to stay within budget.

For more information, ask an expert: infogeo@ferguson.com

OPTIMIZATION HIGHLIGHTS:

Quick construction, minimized excavation, and no need for heavy equipment eliminated the need for rework after storms.

TESTIMONIAL:

“Numerous engineers have visited the site and have been blown away at how natural it looks. They can’t believe it’s concrete, and now they want to figure out where they want to use it/how they want to use it on their projects.”

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