

PROJECT PROFILE



ShoreMax & VMax TRM

- Permanent • Culvert/Outlet Protection
- Flexible Revetment with Vegetation

Bastrop Culvert Protection



PROBLEM



SOLUTION



RESULT

In Bastrop, Texas storms can produce large amounts of discharge that can create extensive erosion when soils are not stabilized. On this project the challenge was that channelized water would need to transition through a large box culvert, and then immediately flow down a steep channel bed grade, then meander through a wooded buffer strip and empty into a river. To add to the instability, loose, sandy gravel soils were present, creating more erosion control potential if left unprotected. To tackle this project the design engineers at Carlson, Brigance & Doering worked with the erosion control specialists at Ferguson to design a geosynthetically reinforced vegetated system to stabilize the project site.

A combination of turf reinforcement mats and the ShoreMax transition mat were selected. Together, the ShoreMax and TRM system provide a soft armoring technique for highly erosive applications. On this project site, the main erosive factor was the extreme discharge transitioning out of the culvert, down a slope, and across the property. To combat the erosion, the transition mat would be installed over the turf reinforcement mat along with seeding, to allow for a vegetated, maintainable long-term design.

The design of the project consisted of the SC250, a straw/coconut fiber matrix permanent TRM, to be placed along the channel bottom, starting from the concrete culvert and extending to the edge of the property. The UV-stabilized ShoreMax rubber transition mat was placed atop of the TRM and secured with 12" long 3/8 J-shaped rebar staples. P550 a poly-fiber filled TRM was installed along the side slopes and secured. The area was pre-seeded with a turfgrass seed blend, selected for the site specific conditions. Within weeks the vegetation began to establish through the permanent erosion control system. As the vegetation established over the course of a few months, the total performance of the system increased to provide similar protection to comparable hard armored systems such as rock.

PRODUCT HIGHLIGHTS



- ShoreMax installed over permanent TRMs provided turbidity dissipation on the steep, meandering culvert channel.
- The soft, green armored system allowed the site to remain vegetated in place of hard armor such as rock.
- The extended longevity of the product allows for erosion protection, while the vegetation established.