

**BANK STABILIZATION
HOUSTON, TEXAS, U.S.A.**

Slope Protection

Problem

On August 25, 2017, Hurricane Harvey slammed into the Texas coast as a Category 4 storm and left a trail of destruction in it's wake. At the height of the storm, one-third of the City of Houston was underwater after two feet of rain fell within the first 24 hours. Houston's low-elevation causes many of the creeks and bayou's to overflow with even a heavy rainstorm, so the amount of stormwater during Harvey caused Buffalo Bayou to become a raging torrent of water and debris. The fourth hole of River Oaks Country Club sits on a beautiful section of Buffalo Bayou just west of downtown Houston. River Oaks CC sought to repair this hole among others and contracted Binkley & Barfield, Inc. to help redesign and reshape the course back to it's original glory.

Solution

To repair the embankments on the fourth hole, MacMat R1 was evaluated against similar solutions and ultimately selected to serve as the best overall, cost effective solution. Garza Site Contractors was contracted to perform the install and utilized GeoSolutions, Inc. along with Maccaferri to provide on-site pre-construction training on the best methods to connect the rolls together and secure them to the slope with three-foot gripple anchors. Once the installation was completed, an organic slurry was hydraulically applied to the MacMat R to give the native sod a healthy base for which to grow deep roots. The total amount of MacMat R that was installed is close to 8,400 square-yards. After the success of the installation and aesthetics of the slopes after a short time of growth, additional courses in the Houston area have placed orders for MacMat R to repair slopes that have seen significant erosion over the years. Speaking to Garza Site Contractors, they mentioned that the installation went well for their first attempt at using this solution. The ease of maneuvering the rolls to the slope by hand without the use of heavy machinery was ideal to prevent additional damage to the course. Additionally, the poly coated, double-twist mesh allowed for a stable and secure connection point for the anchors.

Client: River Oaks Country Club

Designer / Consultant: Binkley & Barfield, Inc.

Contractor: Garza Site Development, Inc.

Products used (Qty.)

- MacMat R - Poly 8,400 sy

Date of construction: 08/2019 - 01/2020



Installation begins



Installing the anchors



Anchor grid pattern



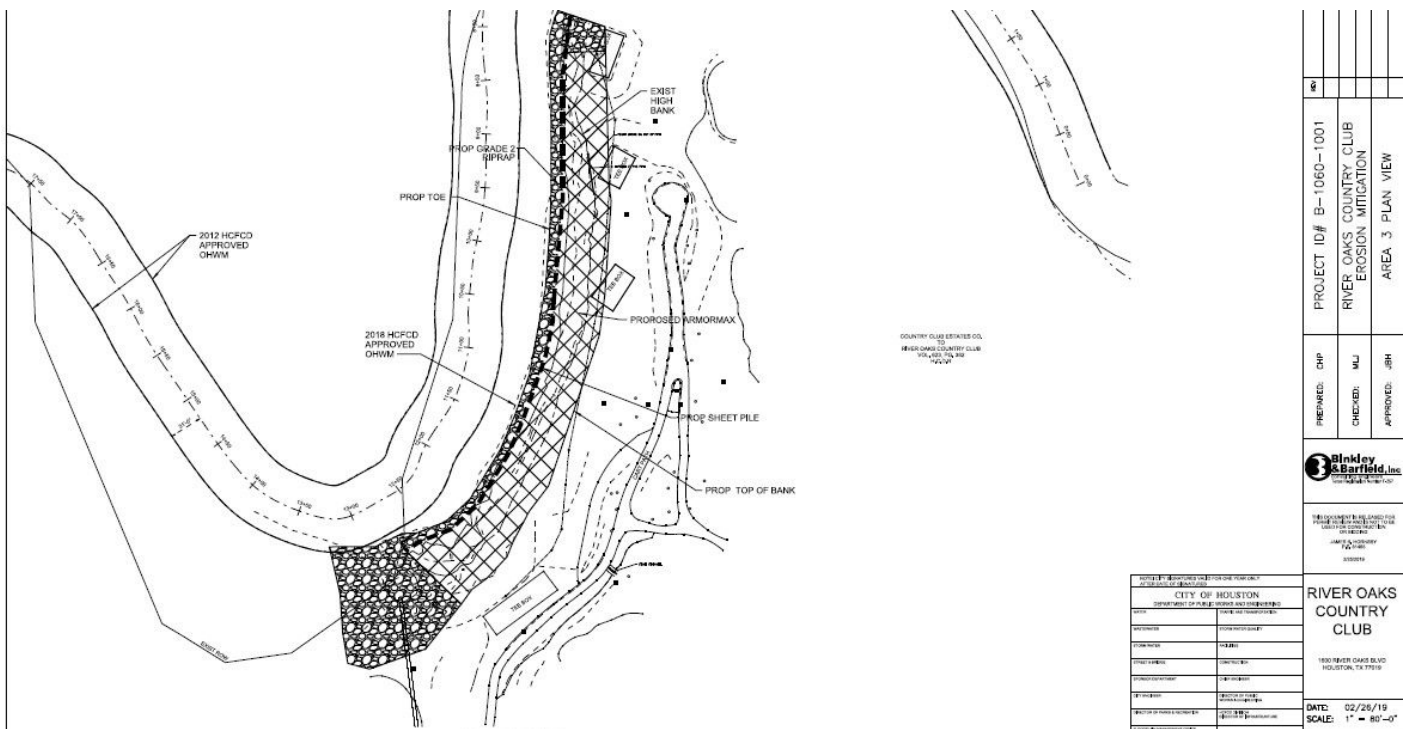
Materials on site - Ready to Begin



Beautiful winter growth after 3 months



Easy connection to gabion baskets



Plan Set Sheet