

TxDOT HIGHWAY US 83, STARR COUNTY

ROMA, TEXAS

EROSION CONTROL

Product: [BIOMAC CC 025.3](#)

During storm events, residents of Roma, Texas depend on the Arroyo Roma drainage channel to carry water away from their communities to the Rio Grande River. Past flood events and storms left the channel with eroded and unstable side slopes. Texas Department of Transportation was looking for an economical and environmentally friendly solution to ensure the vitality of the channel.

Problem

The Arroyo Roma, in Roma Texas, is a drainage channel that starts in proximity of State Highway US 83. Due to the topography and elevation of the area, this channel collects all the water coming during storms and flood events, making this channel the main drainage to the Rio Grande River. During heavy storm events, the volume and flow of the water collected is so high that they generate a significant amount of erosion, resulting in instability of the banks and slopes, pollution, and loss or accumulations of material in areas different from the origin.

Solution

The Texas Department of Transportation was looking for an economical and environmentally friendly solution that would protect the channel from periodic flood events. The engineering firm, S&B infrastructure, designed an extend,



Eroded channel before installation



Images following installation with vegetation growth



Close up of BioMac CC

Client:

TEXAS DEPARTMENT OF TRANSPORTATION (TXDOOT)

Main Contractor:

REIM CONSTRUCTION, INC.

Designer:

S&B INFRASTRUCTURE, LTD

Products used:

BIOMAC CC 025.3

Date of Construction:

NOVEMBER 2016 - DECEMBER 2017



Completed site following installation of BioMac Turf Reinforcement Mat

re-profiled section of the channel adding concrete lining in certain areas. Additionally, they designed a section using a revegetative flexible lining system with Class II Soil Retention Blanket requiring the application of a Permanent Turf Reinforcement Mat suitable for slopes and high flow channels.

The solution adopted by the client to protect the channel was a Maccaferri BioMac CC025.3 installed with staples. This Turf Reinforcement Mat meets the Class II requirements for soil retention on slopes and high flow channels. The mat is made with uniformly distributed 100% coconut fiber and three polypropylene nets securely sewn together with UV stabilized thread. The three geosynthetic nets work as a reinforcement, giving to the mat the tensile strength needed to resist the high volume, flow and velocity of water, while the biodegradable coconut fibers works as a protection for the soils from be eroded and washed away while encouraging the growth of local vegetation to naturally reinforce and protect the slope over time.

Click here to contact our technical department for assistance on your project.

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