SPILLWAY STRUCTURE & CHANNEL LINING

Products: Gabions, Gabion Mattresses

Problem

El Paso, Texas which is normally a hot, dusty town in far West Texas can become a wet, swampy area during the late summer monsoon season. This became very apparent in 2006 during the 8 days from July 27th through August 4th when the airport in El Paso measured 15 inches of rain for that period. Other parts of the city experienced over 30 inches of rain. Average yearly rainfall for El Paso is 9 inches. Roughly 300 homes were destroyed by flood water and total damage to the city was estimated at $100 million dollars by the El Paso City Manager who called the flood a once in a 500 year event. The Rio Grande River which flows through the city overflowed at the highest level since 1912. Needless to say, the many natural channels (arroyos) flowing through town from the nearby mountains to the river experienced extreme soil erosion. The RV Channel, which had been concreted many years ago, with exception to the last 500 yards ending at the I-10 access road next to the main thoroughfare, experienced severe erosion and the Texas Department of Transportation was concerned about the effects the erosion would have on the highway.

Solution

Fortunately the American Recovery and Reinvestment Act was instituted by the government which granted the Texas Water Board a $1.6 million stimulus loan to reconstruct the dilapidated stormwater channel. They, in turn, gave the design and construction authority to the El Paso Water Utility board which designed a spillway structure and channel lining using the Maccaferri software programs MACRA 2 and MACRA 1 respectively to validate their design. The project went to open bid on November 24, 2009 for 1,633 cubic yards of gabions for the spillway and floor and approximately 7,500 cubic yards of 18 inch deep gabion mattresses for the channel lining.

Client
EL PASO WATER UTILITY BOARD

Main Contractor
ST. CLOUD MINING COMPANY OF TRUTH OR CONSEQUENCES, NM

Designer
EL PASO WATER UTILITY BOARD

Products Used
GABIONS, GABION MATTRESSES

Date of Construction
MARCH 2010