

BOB 230KV SWITCHYARD
BOULDER CITY, NEVADA, U.S.A.

Channelling Works

Problem

Gridliance West Transco planned to expand its 230KV transmission system in Boulder Nevada. A Hydraulic Channel was needed to divert and protect from the rainstorm water coming from the Sloan Canyon Mountains. The Channel had to circumvent the expansion pad that stores the new power station. Several options were considered such as concrete, soil cement and rip rap. Due to steep differences in elevation, The channel required three vertical grade control structures up to 13 feet high, retaining walls up to 21 feet in height and 39 feet wide. With the channel length close to 950 ft, the flows were approximately 900 cubic feet per second, and the presence of corrosive soils was noted.

Solution

Maccaferri worked in coordination with Power Engineers to develop a proposal that included drawings, calculations and specifications for the channel and mass gravity walls. The materials specified included 12-inch-thick Reno Mattresses for the bottom of the channel as an erosion control measure and Gabions for the Mass Gravity Walls with the purpose to provide stability to the channel banks and the vertical weirs. Further considerations for this project involved using Galvanized & PVC Coated Gabions to prevent the steel from corrosion caused by corrosive soils in the area. A Filter Fabric was needed to provide the separation from the soil and the Gabions. Maccaferri MacTex N47.1 was specified to prevent loss of fines in the bottom of the structure. The structure required 4" to 8" rock that was readily available within the Area, providing substantial savings when compared to Concrete, soil cement and big rip rap.

Client: Gridliance West Transco
Designer / Consultant: Power Engineers
Contractor: Aggregate Industries
Products used (Qty.)
 - Gabion 3539
Date of construction: 01/2019 - 10/2019



Drone View 1



Drone View 2



Drone View 3



Jobsite 1



Jobsite 2



Jobsite 3