

CONCRETECLOTH™

Geosynthetic Cementitious Composite Mat (GCCM)



STRUCTURAL STRENGTHENING

CASE STUDY:

Wellington, CO Irrigation Collection

PROJECT OVERVIEW

The North Poudre Irrigation Company has installed and maintained irrigation water collection and distribution structures for nearly 100 years. These structures are quite common in the western United States, and serve to collect irrigation water inflows then redirect them into local irrigation ditches for distribution. Frequently, weirs are also a part of, or are installed very near to these distribution structures and water volumes are measured and recorded.

The company estimates it has as many as 200 structures in its network, and many are in need of repair. The aged concrete has cracked and is leaking, and in many cases the cost of replacement is expensive. As a result, the company is interested in a more cost effective solution to repair the structures.

SOLUTION

Concrete Cloth GCCM was chosen because of its unique attributes, including the ability to customize shape the material to the configuration of each individual handcrafted basin. Additionally, the product is easy to install, allowing the company to use its own labor rather than hire an external contractor. The portability of Concrete Cloth GCCM was an advantage as many of these structures are not easily accessible. The product is also fire resistant, which allows debris to be burned in these structures in the spring.

Day 1: The area was cleaned of debris, and then the layout was determined based on geometry and dimensions of the basin. In this case, the irregular shape led to a design where the bottom would be lined first, then separate panels would be installed on the walls of the structure. Concrete Cloth GCCM was cut to fit the bottom, laid in place and fastened. The panels on the walls were then glued and fastened using a nail gun. The entrance opening was affixed using a hold down bar fastened into the walls of the opening. Concrete Cloth GCCM was screwed together at many overlaps, and the completed installation was hydrated using a water truck. Watering was completed late the same day.

Day 2: The site was revisited for a final inspection of the product.

RESULTS

This irrigation company was pleased with the installation, and will likely use Concrete Cloth GCCM again in the near future, as it proved easy to handle, convenient to install with, and more cost-effective than the alternative replacement.

PROJECT DETAILS

Location: Wellington, Colorado

Application: Irrigation Collection/
Distribution Structure Lining

Client: North Poudre Irrigation
Company

Installation: March 2014



Filled irrigation collection and distribution structure after repair.



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Existing damaged drainage structure prior to lining.



Adhesive applied to vertical wall for separate GCCM panels.



Hydration of repair site.



Brooming site to hydrate material.



Repair site fully lined with Concrete Cloth GCCM.



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