



GEOWEB® *permeable load support system*



CASE STUDY SUMMARY 1



THE PROBLEM: The need to construct an access roadway and parking area over an environmentally sensitive wetland.



THE SOLUTION: The Geoweb® Cellular Confinement System.

THE GEOWEB® PERMEABLE LOAD SUPPORT SYSTEM

Sarasota County, Florida acquired a 9,917 hectare (24,565 acre) environmentally-sensitive wetlands parcel to build the T. Mabry Carlton, Jr. Memorial Reserve, a public use and education facility. The first phase of the project required building a 300 sq. m (3,200 sq. ft.) roadway to the building site and a parking area for 51 cars.

Bids for alternative systems submitted by local contractors were cost-prohibitive. The Geoweb® system was ultimately specified and used as the road building material. The project was installed with Sarasota County personnel and equipment resulting in a 45% savings.

GEOWEB®

PERMEABLE LOAD SUPPORT SYSTEM



Preparing the base by placing a geotextile fabric over the muck soil. Next, Geoweb sections were placed over the geotextile fabric, staked and infilled with #57 stone.

PROJECT: T. Mabry Carlton, Jr. Memorial Reserve Roadway and Parking Area

Consulting Engineers: Bishop and Associates

General Contractor: Sarasota County Land Management Division

Location: Sarasota County, Florida

Engineers Bishop and Associates required that the roadway and parking lot at T. Mabry Carlton, Jr. Memorial Reserve serve a dual function. The system was required to **support loads over poor soils** and also **function as a stormwater retention system**, storing the first one inch of rainfall. The retention system consisted of 150 mm (6 in) depth Geoweb sections and #57 stone infill. Seven inches of #57 stone with 40% voids yielded a capacity of 71 mm (2.8 in) of water storage, a 2.8 safety factor. The permeability rate of the underlying soil was 75 mm (3 in)/hour, which resulted in the system being available for the next storm within 2.3 hours, a safety factor of 31.3.

The roadway and parking areas were built with the base approximately 200 mm (8 in) below the natural surface to form a surface that was flush with the existing terrain. A geotextile was first placed over the muck soil as a separation and filtration layer. Next, 150 mm (6 in) depth Geoweb sections were placed over the geotextile fabric and secured with stakes. The sections were stapled together, and the cells infilled with #57 stone. Another 50 mm (2 in) of stone was placed on top of the Geoweb system for maximum water retention, drainage, and as a surface wear course.

For speed and ease of installation, custom lengths of the 150 mm (6 in) depth, 2.44 m (8 ft) wide Geoweb sections were used. Special 3.66 m (12 ft) and 7.32 m (24 ft) lengths were used for the single- and double-lane roadways, and 7.92 m (26 ft) lengths for the car parking area. Presto distributor R.H. Moore & Associates supervised the installation and helped Sarasota County crews significantly improve the installation rate.

The fully engineered Geoweb system proved to be the right solution for the T. Mabry Carlton, Jr. Memorial Reserve project, offering cost-effectiveness, speed, efficiency, and environmental benefits.



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