

application

location

products

Mechanically Stabilized Slope

I-495, Lawrence, MA

Miragrid® & Mirafi® G-Series

THE CHALLENGE

Part of a Massachusetts Highway Department contract, required the relocation of the existing I-495 northbound ramp at Marston Street in Lawrence, MA. The existing 2:1 slope was steepened to 1:1, keeping the toe of the slope at approximately the same location and replicating a small existing wetland area that was within the slope profile.

THE DESIGN

Fay Spofford and Thorndike, Inc. was the engineer for the Massachusetts Highway Dept. and did the preliminary design.

BL Companies, Inc. of Meriden, CT did the final design for the MSE slope.

CONSTRUCTION

Construction of the MSE slopes began in April 2002, with the slope for Marston Street ramp being completed in several stages because of adjacent construction of bridge abutments at each end of the slope.

The lower portion of the slope contained 6 layers of Miragrid® 8XT as the primary reinforcement spaced 0.6 m (1.96 ft) vertically with a 0.9 m (3.0 ft) embedment length and the upper portion of the slope used

Miragrid® 8XT spaced 1.0 m (3.3 ft) vertically and a 8.0 m (26.2 ft) embedment length. Miragrid® 2XT was used as an intermediate geogrid spaced 0.5 m (1.6 ft) vertically with an embedment length of 2.0 m (6.6 ft) and placed in the upper portion of the slope in between the layers of 8XT.

The Mirafi® G200N drainage composite was installed at the back of the slope against the native soil and up 1/3 of the slope height.

JOB OWNER:

Massachusetts Highway Dept.

ENGINEER:

Fay Spofford & Thorndike Inc.

CONTRACTOR:

SPS New England, Inc.



Miragrid® 8XT, used as the primary reinforcement, is installed in 0.9 m (3.0 ft) embedment lengths.



The 2:1 MSE slope at Marston Street was steepened to 1:1.

The slope face was loamed, seeded and covered with a synthetic permanent erosion control mat.

PERFORMANCE

The I-495 MSE slope and relocated north-bound ramp has been in use for approximately one year and the 1:1 slope is fully vegetated and performing as expected.



For more information: www.mirafi.com

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CORPORATE OFFICE

365 South Holland Drive • Pendergrass, GA 30567
(888) 795-0808 • (706) 693-2226 • Fax (706) 693-4400



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