

## Sienna Parkway MSE Wall Missouri City, Texas



**Description:** A 31-foot tall Mechanically Stabilized Earth (MSE) wall to support the Sienna Parkway Bridge.

**Subsurface Conditions:** Stiff to very stiff brown and gray clay with silt pockets to a depth of 11 feet. Below the upper clay layer, loose brown sandy silt with clay pockets.

**Design Details:** *Geopier*<sup>®</sup> soil reinforcing elements were installed to increase the global factor of safety to 1.3 and reduce long term embankment settlements from 15 inches to less than the project criteria of 2 inches. A 17-foot width zone of elements were installed along the edge of the MSE wall to increase shearing resistance, while additional elements were installed 10 feet on center beneath the midpoint of the wall to reduce settlement. A total of 490 elements were installed on the project.

**Geopier Designer & Installer:** GFC-Houston; Peterson Contractors, Inc.

**General Contractor:** Sienna/Johnson Development, L.P.

**Owner:** City of Missouri City, Texas

**Geotechnical Engineer:** Tolunay-Wong Engineers, Inc.

**Structural Engineer:** LJA Engineering & Surveying, Inc.

**References:** Dr. Daniel Wong, PE, Tolunay-Wong Engineers, Inc. - (713) 722-7064