

## Recreational Entertainment Facility

Midwestern USA

After the failure of an MSE wall delayed the opening of a new recreational facility, the client called upon Keller to install a Micropile Slope Stabilization system (MS3).



### The project

Initial construction of a new recreational entertainment facility included a Mechanically Stabilized Earth (MSE) wall to level a sloping area. Soon after completion of the facility, translation of the wall was observed. In addition, voids were detected beneath the foundations of the structure retained by the wall, and significant deformation of the structure was observed.

## The challenge

Due to the failure of the client's MSE wall, the scheduled facility opening was delayed. An expedited solution was required to minimize the financial impact associated with the delay.

## The solution

Careful deconstruction of the wall was followed by Keller's design/build installation of an A-shaped Micropile Slide Stabilization System (MS3) consisting of an array of 116 battered steel micropiles, each 105 ft in length, and alternating in uphill and downhill batters, structurally connected to a cast-in-place concrete grade beam. Twenty-nine, 140-ft long tieback anchors were installed through the grade beam for additional lateral restraint.

Following the MS3 system completion, a new MSE wall was installed by others using lightweight slag aggregate and supported directly by the MS3 system.

## Project facts

### Owner(s)

Confidential Client

### Keller business unit(s)

Keller

### Main contractor(s)

Confidential

### Engineer(s)

Burns Cooley Dennis, Inc.

### Solutions

Slope stabilization

### Markets

Commercial

### Techniques

Micropile slide stabilization system (MS3)

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