

MSE Wall Design & Construction Fort Lauderdale – Hollywood Int. Airport

Client:

Odebrecht – CFE
Joint Venture

Location:

Dania Beach, FL

Services Provided:

- Risk-based monitoring
- Evaluation & mitigation services

Value Provided:

- Provided methodology to determine if actual settlements are exceeding design values
- Provided client methodology to determine if the reinforcing strips are functioning as designed

Background & Project Challenges

Runway 9R-27L at the Fort Lauderdale – Hollywood International airport is being expanded / lengthened to increase capacity. This will be only the third airport in the US with an active runway over a major highway US 1. Mechanical Stabilized Earth walls (MSE), which range up to 50 feet in height, are being used in conjunction with the runway expansion. FDOT Specification 548 requires the preparation and implementation of an instrumentation plan to monitor the walls during construction and during the settlement period.



Geocomp field technician supervising the drilling of a borehole for the installation of an inclinometer. Note the iSite™ datalogger (for automated storing and transferring strain gage data) mounted on the MSE wall

Geocomp Role & Accomplishments

Due to our expertise in MSE wall design and construction, Odebrecht-CFE JV called upon Geocomp Engineering to prepare and implement the MSE wall monitoring plan. Our first step was to review all available data including, but not limited to, geotechnical reports and soil borings. From this information we prepared a monitoring plan which included: prisms, settlement platforms, crack gages, strain gages, inclinometers.

In addition to instrumentation recommendations, our plan also included provisions for installing and retrieving durability samples of the reinforcing strips. Evaluations of metal losses at specific periods in the life of the walls will confirm expected behavior. Samples will be pulled at ten years increments beginning at 10 years and ending at 90.

As power was not available on the site, Geocomp designed and installed solar panels to power the data loggers required for automated data acquisitions.

Currently the majority of the system is installed and operating. Geocomp is providing weekly reports containing all strain gage and inclinometer data.