

PROJECT SUMMARY

Project Name:
Hillsboro Canal Bank Stabilization

Owner:
 South Florida Water Management District (SFWMD)
Client: ATKINS North America, Inc.

Project Information:
 Location: Broward & Palm Beach
 Counties, FL

The Hillsboro Canal Bank Stabilization Project is located in southeastern Palm Beach and northeastern Broward County, running west to east from Structure S-39 to US1 between SW 18th Street and Hillsboro Boulevard.

RADISE provided Geotechnical Engineering Services including reviewing the Feasibility Report, and researching literature the regional geology, surrounding elevations, hydro-geologic data and surface water data of canal. Field explorations and laboratory tests were conducted to assess the soil, rock and groundwater flow characteristics of the subsoil.

Field exploration and testing consisted of standard penetration tests, rock coring and field permeability tests to determine the vertical and horizontal infiltration rate of surficial soils by double ring infiltrometer and SFWMD open hole percolation tests, respectively.

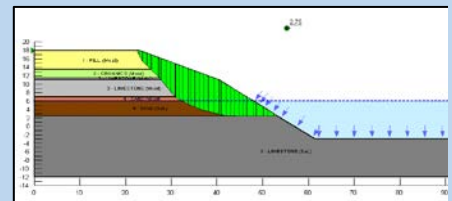
Performed geotechnical and slope stability analysis for typical canal cross-sections with different slope stabilization alternatives for different water levels, normal operating levels, dried-up conditions and a 100-year flood. The slope stabilization alternatives analyzed included Rip Rap Types A and B, High Performance Turf Reinforcement Mat, Articulated Concrete Block Mat and Gabion Mattress. All these sections were analyzed for applicable piezometric conditions of steady state, end of construction and rapid drawdown. Output from the slope stability calculations was presented as post processing canal cross sections with critical failure surfaces shown with corresponding minimum factors of safety.

The analysis results were used to formulate the intermediate design to assess for cost-effectiveness and constructability, and refined for the final selection of slope stabilization alternative.

Developed Basis of Design Report along with various Technical Memorandums. Also developed in-house gINT boring logs and AutoCAD sheets that assisted in visualization of the project subsurface information.

PROJECT ELEMENTS

- Canal Bank Stabilization
- Canal Section Approximately 10.4 miles



RADISE ROLE:

GEOTECHNICAL ENGINEERING

- Standard Penetration Test Borings
- Rock Coring
- Field Tests
 - Double Ring Infiltration Tests
 - SFWMD Open Hole Percolation Tests
 - Test Pits
- Lab Soil Tests - Organic Content Tests, Gradational Properties Analysis and Atterberg Limits
- Slope Stability Analysis
- Report Review