

CASE STUDY

Ponce Inlet, FL



CANTSINK
— SUPPORTING INNOVATION —



Ponce Inlet, FL Beachfront Pool

Helical Piles Distribute The Load and Support Pool Shell in Sand

SITUATION

A beachfront coastal foundation design for a swimming pool at Ponce Inlet, FL required accounting for several site-specific geotechnical variables: loose, poorly-graded beach sand (SP classification per USCS), active littoral erosion processes, and a water table typically within 2–4 feet of grade due to tidal influence. These conditions preclude conventional shallow foundation systems and require a deep foundation solution capable of resisting axial compression, uplift, and lateral loading independent of near-surface soil stability.

CASE STUDY

Ponce Inlet, FL Beachside Swimming Pool



SCOPE OF WORK

Tropicana Pools, Inc. contracted Cantsink LLC to install a helical pile foundation system for a residential beachfront pool in Ponce Inlet. The system was engineered by AllAquatic Engineering and designed specifically to prevent tilting, tipping, heaving, and washout of the pool structure under the site's challenging coastal conditions.

Anchor System

The engineered design specified 23 helical piles, each fitted with an 8"/10"/12" triple-helix configuration, rated for a working load capacity of 20 kips per pile and an ultimate capacity of 40 kips. This configuration was selected to evenly distribute structural loads across multiple grade beams, providing reliable support for the pool shell and its associated load-bearing elements. The scope of the anchor system was limited to the pool structure itself and did not extend to support of the pool deck or surrounding hardscape.

RESULT

All 23 helical piles were driven to an average depth of 14 feet below grade, with each pile achieving the required installation torque and target depth as specified by the engineering design. Following installation, the piles were cut to the correct elevation and capped per specification, completing preparation for the pool structure's foundation.