



NicNevol

Engineering Services



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Washechek Residence – Geotechnical Exploration

Location: 95329 Clements Rd., Fernandina Beach, FL

Owner: Todd Washechek

Markets: Residential, Geotechnical Engineering

Services: Geotechnical Exploration, Subsurface Investigation, Laboratory Testing, Foundation Recommendations

Project Description

NicNevol Engineering Services performed a geotechnical exploration and evaluation for the Washechek Residence in Fernandina Beach, FL, following reports of structural distress (wall cracking and settlement).

The purpose of the study was to evaluate foundation soils and groundwater conditions and determine whether weak or unsuitable soils were contributing to observed structural issues.

Field exploration included four (4) Standard Penetration Test (SPT) borings to depths of ~24 ft. Subsurface conditions showed very loose sands in the upper 4–6 ft, a hard soil layer at ~8 ft, followed by weaker soils down to termination depth. Groundwater was encountered at ~3.75–4.25 ft depth. Laboratory testing confirmed the soils as sands with low organics, but weak densities (low N-values).

Engineering recommendations focused on addressing weak foundation soils, including undercutting, compaction, and replacement with suitable structural fill to mitigate settlement and improve foundation support.

NicNevol Responsibilities

- Conducting SPT borings with Geoprobe drill rig.
- Collecting and classifying soil samples for lab testing.
- Evaluating soil strength, consistency, and groundwater conditions.
- Providing recommendations for foundation soil improvement.
- Preparing compaction and structural fill guidelines.
- Delivering final geotechnical report with corrective measures.



Project Highlights

- Client: Todd Washechek (private residence).
- Structural distress observed: wall cracks and settlement.
- Field program: 4 SPT borings to 24 ft depth.
- Subsurface profile: very loose fine sands (0–6 ft), hard layer at ~8 ft, weak soils below.
- Groundwater: 3.75–4.25 ft depth (seasonal variation expected).
- Laboratory testing: moisture content, fines, organics, classified as sands (SP) with low organic content.
- Recommendations: undercut weak soils, replace with structural fill, compact to 95% Modified Proctor, control groundwater during construction.

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Delivering engineering expertise that supports safer, stronger infrastructure.

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