NicNevol
Engineering Services

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Pine Ridge Drainage Improvements

Location: Middleburg, Clay County, FL.
Owner: Superior Construction Company
Markets: Municipal, Drainage & Infrastructure
Services: Geotechnical Exploration, Subsurface Investigation, Laboratory Testing, Engineering Recommendations

Project Description
NicNevol Engineering Services conducted a geotechnical exploration to support the drainage and roadway reconstruction at the intersection of Pine Ridge Blvd. and Creek Bluff Lane in Middleburg, FL.

The purpose of the study was to evaluate subsurface soil conditions underlying a sunken residential roadway corner, provide design parameters for reconstruction, and recommend measures to improve long-term performance of the roadway and utilities beneath.

Field activities included three (3) Standard Penetration Test (SPT) borings to depths of 60–70 feet, soil sampling, and groundwater monitoring. Laboratory tests determined soil classifications, moisture content, Atterberg limits, fines content, and organic content. Results showed loose sands underlain by clayey soils and limestone layers at depth, with shallow groundwater at ~5 ft. Recommendations addressed undercutting unsuitable soils, replacement with compacted fill, and drainage design considerations to account for seasonal fluctuations.

NicNevol Responsibilities
- Conducting subsurface exploration with SPT borings.
- Collecting and classifying soil samples.
- Performing laboratory testing for engineering properties.
- Monitoring groundwater levels at boring locations.
- Providing recommendations for roadway and drainage reconstruction.
- Delivering geotechnical report with design parameters for Superior Construction.

Project Highlights

- Client: Superior Construction Company.
- Drainage and roadway corner reconstruction.
- Field program: 3 SPT borings to depths of 60–70 ft.
- Laboratory testing: soil classification, moisture content, Atterberg limits, fines content, organic content.
- Subsurface profile: loose to medium sands (upper 6–17 ft), dense sands and clays, limestone below ~57 ft.
- Groundwater observed at ~5 ft below surface.
- Recommendations: undercut clays, replace with compacted structural fill, account for seasonal groundwater changes.

“Delivering engineering expertise that supports safer, stronger infrastructure.”