

STORMWATER DRAINAGE ANALYSIS

Jalarmy Road & Lake Minneola Shores Roundabout

Date: April 18, 2023
CPH Job No. L3609

SUBMITTED BY



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JALARMY ROAD & LAKE MINNEOLA SHORES ROUNDABOUT

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INTRODUCTION

The proposed Jalarmy Road and Lake Minneola Shores project consists of the clearing and grading of approximately 6.31 +/- acres for the proposed roundabout within the city of Clermont. The project consists of site clearing and grading as well as the construction of a roundabout, entry driveways, curb and gutter, a dry pond and the associated stormwater network. The site is situated within Section 11 & 12, Township 22 south, Range 25 east in Lake County, Florida. The site is located in the northwest corner of the intersection of Lake Minneola Shores and Jalarmy Road.

DESIGN METHODS

SJRWMD Design Criteria – Methodology and design specifications for dry detention ponds obtained from the SJRWMD's *Applicants Handbook: Regulation of Stormwater Management Systems (June 1, 2018)* were utilized to determine the required treatment volume for the proposed pond. SCS Curve Number methodology and SCS Type II Florida Modified storm for rainfall distribution were used to analyze the existing and proposed hydrologic characteristics of the site.

Design Software – Streamline Technology's Interconnected Channel and Pond Routing (ICPR) version 4.07.06 software was used to model the hydrological characteristics of the existing and proposed site.

Existing Topography and Vertical Datum – Topographic information based on information provided by Lake County Department of Public Works utilizing the vertical datum (stages, inverts, etc.) NAVD 1988.

Geotech Investigation – Geotech information based on information provided by Andreyev Engineering, Inc.

PREDEVELOPMENT CONDITIONS

The existing site consists of a combination of upland, swale, and roadway area. Based on the Soil Survey Data provided for the site, the majority of the soil in the upland area is classified as type A soil. The majority of the soils encountered onsite are classified as Candler Sand and Lake Sands.

POST-DEVELOPMENT CONDITIONS

The proposed site consists of the clearing and grading of approximately 6.31 +/- acres for the proposed roundabout within the city of Clermont. The project consists of site clearing and grading as well as the construction of a roundabout, entry driveways, curb and gutter, a dry pond and the associated stormwater network. The proposed pond will serve the future roundabout site.

The site area will contribute runoff into the pond through a series of storm structures and pipes. The proposed pond then conveys treated stormwater through a control structure to an existing swale which is then conveyed to Lake Minneola. The Geotech Report shows a layer of clay roughly 6 feet below the location of the proposed pond. Due to the steepness in grade of the existing site, to capture the wanted volume of runoff, digging into the clay will be required. CPH is designing an exfiltration system around the pond to capture and release water from the sides of the pond to help with the percolation of water from the pond.

Volume required in the pond is 0.75 acre.
Rainfall in inches for 25year/24hour storm is 7.51
Composite CN for PRE is 49
Composite CN for POST is 60

