DRAFT POND SITING REPORT

McCulloch Road
Roadway Conceptual Analysis (RCA)
from N. Orion Boulevard to Tanner Road
Orange County

Orange County Project Number: Y21-832-CH

Prepared for:

Orange County Board of County Commissioners
Orange County, Florida

Prepared by:
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March 2026

Professional Engineer Certificate

I hereby certify that I am a registered professional engineer in the State of Florida practicing with Dewberry Engineers, Inc., a corporation authorized to operate as an engineering business, FEID No. 13-0746510, by the State of Florida, Department of Professional Regulation, and Board of Professional Engineers. I have reviewed or approved the evaluation, findings, opinions and conclusions as reported in this Draft Pond Siting Report.

The Pond Siting Report includes a summary of data collection efforts and design analysis of pond sites for the McCulloch Road Conceptual Analysis from N. Orion Boulevard to Tanner Road in Orange County, Florida. I acknowledge that the procedures and references used to develop the results contained in this report are standard to the professional practice of civil engineering as applied through design standards and criteria set forth by the federal, state, and local regulatory agencies as well as professional judgment and experience.

Signature:_____

Name: Mitchell Callaway, P. E.

P.E. Number: 93106

Date: Marcy 19th, 2026

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EXECUTIVE SUMMARY

Orange County Public Works proposes capacity improvements along McCulloch Road between N. Orion Boulevard and Tanner Road, in Orange County, Florida. Phase I of the project consists of a study to assess the various widening alternatives for the roadway. The purpose of the Pond Siting Report is to discuss, analyze, and identify the stormwater management plan for the proposed roadway improvements based on environmental, hydrology and hydraulics, and economic factors. Stormwater management for water quality treatment and runoff attenuation will be provided using offsite wet detention ponds. The design of the drainage and stormwater management facilities will comply with the standards set forth by the Orange County Engineering Standards, FDOT Drainage Manual, and the St. Johns River Water Management District (SJRWMD) Environmental Resource Permit (ERP) Manual, Vol I and II.

Alternative pond sites have been identified along the project limits. The analysis estimates right-of-way needs using volumetric analysis, which accounts for water quality treatment and water quantity attenuation. In addition to pond sites, Floodplain Compensation (FPC) areas were determined for Floodplain Impacts Areas (FIA). The total pond cost estimate found in this report is a budget tool used by the County to estimate total acquisition costs associated with each pond site and to budget the appropriate funds for acquisition.

Please note that the volumetric analysis of the pond sites is performed with preliminary data, reasonable engineering judgement, and assumptions. Pond sites and configurations may change during final design as more detailed information on Seasonal High Water Table (SHWT), wetland hydrologic information, and final roadway profile become available. Please refer to **Table ES-1: Recommended Stormwater & Floodplain Compensation Pond Sites.** The table summarizes the additional impacts caused by the project for the existing and proposed ponds.

Table ES-1: Recommended Stormwater & Floodplain Compensation Pond Sites

Basin	Preferred Pond Alternative	Additional Pond Access Easement Area (ac)	Additional Pond Right-of-way Area (ac)	Additional Total Required Right-of-Way Area (ac)	Cost ($) from Project
Basin 1	Pond 1	0.00	0.00	0.00	$0.00
Basin 2	Pond 2	0.00	0.00	0.00	$0.00
Basin 3	Pond 3	0.00	0.00	0.00	$0.00
Basin 4	Pond 4	0.00	0.00	0.00	$0.00
Basin 5	Pond 5	0.00	0.00	0.00	$0.00
Basin 6	Pond 6	0.00	0.00	0.00	$0.00
Basin 7	Pond 7A	0.00	4.08	4.08	TBD
FIA-1	FPC-1 (7K)	0.00	1.94	1.94	TBD
			Total	**6.02**	**TBD**

1.0 INTRODUCTION

Orange County Public Works proposes capacity improvements for McCulloch Road between N. Orion Boulevard and Tanner Road, a distance of 1.06 miles, in Orange County, Florida. The **Project Location Map** is shown in **Figure 1**, **Appendix A**. Currently, McCulloch Road is classified as an urban collector roadway with a posted speed and design speed of 45 MPH and provides access to the University Estates residential development, the Hawthorn Glenn subdivision, and the University of Central Florida.

The purpose of the Pond Siting Report is to discuss, analyze, and identify the stormwater management plan for the proposed roadway improvements based on environmental, hydrology and hydraulics, and economic factors. This report will determine the type, design requirements and location of stormwater management facilities required for the proposed improvements. Stormwater management for water quality treatment and runoff attenuation will be provided using existing wet detention and dry retention ponds within Basins 1-6, as well as a proposed wet detention pond within Basin 7. The design of the drainage and stormwater facilities will comply with the standards set forth by the Orange County Municipal Code, FDOT Drainage Manual, and the St. Johns River Water Management District (SJRWMD) ERP manual.

2.0 PROJECT DESCRIPTION

The McCulloch Road Study Area is located in Sections 35 and 36 of Township 21 South, Range 31 East and Sections 1 and 2 of Township 22 South, Range 31 East. The study will develop conceptual design alignments for the widening of McCulloch Road from the existing 2-lane roadway to a 4-lane roadway. The existing roadway is within Orange County jurisdiction. The proposed roadway improvements will be north of the existing 2-lanes and 6 foot sidewalk and in Seminole County jurisdiction. The proposed raised median will be along the county line The proposed roadway improvements include two-11 to 12 foot travel lanes, a 12 foot multi-use path, curb & gutter type F (2'), and curb and gutter type E (2.25'). A proposed raised median will divide the existing roadway and Orange County from the proposed roadway and Seminole County. Please refer to the **USGS Quadrangle Map** shown in **Figure 2, Appendix A**.

3.0 DATA COLLECTION

The study team collected and reviewed data from the following sources:

- FDOT Drainage Manual, January 2023
- FDOT Drainage Design Guide, January 2023
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel Nos. 12117C0280F and 12117C0285F Effective Date 9/28/2007 in Seminole County, FL
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel Nos. 12095C0280F and 12095C0285F Effective Date 9/25/2009 in Orange County, FL
- United States Geological Survey (USGS) Quadrangle Maps
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soils Survey of Orange County, Florida, 1989
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Soils Survey of Seminole County, Florida, 1966
- Existing SJRWMD Permits
- Field Reconnaissance (February 2023)

4.0 DESIGN CRITERIA

4.1 SJRWMD Criteria

- **Water Quality**:
  - Wet Detention Ponds: Treatment will be provided for the greater of one inch (1") of runoff over the drainage area or two and a half inches (2.5") of runoff from the impervious area (excluding water bodies).
    - The outfall structure shall be designed to drawdown one-half the required treatment volume within 24 and 30 hours following a storm event, but no more than one-half of this volume will be discharged within the first 24 hours.

  The project traverses one (1) Waterbody ID (WBID) within SJRWMD: 3012 Lake Price Outlet which is not impaired according to the current FDEP 303(d) list of impaired water bodies. However, the project eventually discharges into the Econlockhatchee River approximately 1-mile north of the project, which is considered an Outstanding Florida Waters (OFW). During the pre-application meeting with the SJRWMD dated April 19, 2022, Richard Lee (SJRWMD) explained that the additional 50% required treatment volume for discharges to OFW's will not be required for this project. Please refer to the SJRWMD Pre-Application Meeting Minutes in **Appendix H – Correspondence**.

- **Water Quantity** – For open basins, SJRWMD requires that the post-development peak discharges shall be at or below pre-development peak discharges for the 25-year/24-hour and mean annual storms. For closed basins, SJRWMD requires that the post-development peak discharges shall be at or below the pre-development peak discharges for the 25-year/96-hour storm event.

  Offsite discharges and peak stages for the existing and proposed conditions shall be computed using the SJRWMD 25-year/24-hour and 25-year/96-hour rainfall depth and the Natural Resources Conservation Service (NRCS) Type II Florida Modified 24-hour rainfall distribution with an AMC II.

- **Nutrient Load Reduction** – Calculations for the phosphorous loading for the site are based on the methodology outlined in the preliminary Florida Department of Environmental Protection (FDEP) Stormwater Quality Applicant's Handbook. It is intended for the site to be grandfathered to and not subjected to the new performance criteria as allowed by Section 3.1.2 for sites with an approved PD&E. The performance criteria listed below follows the assumption that the site will be grandfathered and subjected to the nutrient load criteria prior to the effective date. For sites draining to an impaired water body, the proposed development phosphorous and nutrient load leaving the site must meet the performance standards specified in Applicant's Handbook Vol. I Sections 8.2.3 through 8.3.6. Options for Nutrient Load reductions are:
  - Dry treatment ponds before stormwater outfalls to wet pond
  - Dry swales located on the side of proposed road
  - Bio swales located in the proposed road median
  - Filter media in inlets

- Smart ponds
- Purchase stormwater credits (if available within this basin)

- **Pond Configuration**:
  - Wet Detention Facilities: The average length to width ratio of the pond must be at least 2L:1W. If short flow paths are unavoidable, the effective flow path can be increased by adding diversion barriers such as islands, peninsulas, or baffles to the pond. Inlet structures should be designed to dissipate the energy of water entering the pond.
    - Permanent Pool – The permanent pool shall be sized to provide at least a 14-day average residence time during the wet season (June – October).
    - Littoral Zone – The littoral zone shall be gently sloped (6H:1V or flatter). At least 30 percent of the wet detention pond surface area shall consist of a littoral zone. The percentage of littoral zone is based on the ratio of vegetated littoral zone to surface area of the pond at the control elevation.
      - Littoral Zone Alternatives:
        - An additional 50% of the appropriate permanent pool volume.
        - Pre-treatment of the stormwater prior to the stormwater entering the wet detention pond. The level of pre-treatment must be at least that required for retention, underdrain, exfiltration or swale systems.
    - Pond Depth – Wet detention systems shall provide for a maximum pond depth of 12 feet and a mean (pond volume divided by the pond area at the control elevation) between 2 and 8 feet.
    - Side Slopes – The pond must be designed so that the average pond side slope measured between the control elevation and two feet below the control elevation is no steeper than 3H:1V.

4.2 Orange County

- **Water Quality:** Pollution abatement will be accomplished by retention, or detention with filtration, of one-half (½) inch of runoff from the developed site or the runoff generated from the first one (1) inch of rainfall on the developed site, whichever is greater.
- **Water Quantity:** The post development peak rate of discharge permitted from the site will not exceed the predevelopment peak rate of discharge from the site during a 25-year frequency/24-hour duration storm event. A rainfall amount of 8.6 inches using the Orange County distribution is used for this analysis.
- **Detention Pond Configuration:**
  - Maintenance Berm: Design ponds to provide a minimum 20 feet of horizontal clearance between the top edge of the control elevation and the right-of-way line. Provide at least 15 feet adjacent to the pond at a slope of 1:5 or flatter. Create the inside edge of the maintenance berm to have a minimum radius of 30 feet toward the pond and be a minimum of one foot above the maximum design stage

elevation. Sod the berm area. Discuss maintenance needs with the County before acquiring additional right-of-way to construct maintenance access around the full perimeter.

- Freeboard: As a safety factor for hydrologic inaccuracies, grading irregularities, control structure clogging, and downstream stage uncertainties, at least one foot of freeboard is required above the maximum design stage of the pond. The freeboard is the vertical distance between the maximum design stage elevation of the pond and the inside edge of the berm.
  For linear swales, the minimum freeboard is 0.5 foot.
- Slopes: For facilities designed to be wet, sod pond slopes to the control elevation of the pond. For facilities designed to be dry, sod pond slopes to the bottom of the slope.
- Fencing: Install fences around ponds that meet the following criteria.
  - If pond slopes steeper than 1:5 are unavoidable then fencing is required.
  - If the pond slope is 1:5 or flatter however below the water's edge is steeper than 1:3 then fencing is required.
  - The site is likely to experience significant exposure to children or the elderly. Examples of such locations are ponds immediately adjacent to schools, daycares, assisted living facilities, nursing homes, public playgrounds, public basketball courts, etc.
  - Livestock are expected to wander into the stormwater management facility.
  - Illicit dumping has historically occurred or is expected to occur.

- **Floodplain:** The Flood Insurance Study for Orange County, Florida and Incorporated Areas dated September 24, 2021, and subsequent amendments and revisions, and the accompanying FIRMs, and subsequent amendments and revisions to FIRMs, serve as the minimum basis for establishing flood hazard areas. Compensating storage is to be accomplished between the normal high water of the special flood hazard area and the estimated one-hundred-year flood.

5.0 ENVIRONMENTAL LOOK AROUND

Environmental Look Arounds (ELAs) provide a unique opportunity to team up with regional stakeholders to explore watershed wide stormwater needs and alternative permitting approaches for the project. Areas of potential cooperation are documented in this report for future follow up as the design moves forward. Portions of this project are adjacent to the University of Central Florida (UCF), during design a joint-use pond should be investigated to reduce potential impacts to existing wetlands, Floodplain, Riparian Habitat Protections Zone, and upland conservation areas. Further coordination with both UCF and SJRWMD is anticipated to investigate potential ELA opportunities.

6.0 EXISTING & PROPOSED CONDITIONS

6.1 Existing Drainage Conditions

The topography of McCulloch Road between N. Orion Boulevard and Tanner Road is virtually flat. However, ground elevations range between elevation 48 feet at the Little Econlockhatchee tributary cross drain to 61 feet at the Tanner Road intersection. In general, stormwater runoff flows from the south toward the north. There is one (1) existing cross drain within the project limits which allows offsite and onsite stormwater runoff to flow beneath McCulloch Road and continue along its historical path to Little Econlockhatchee River. The 5 – 72" RCP cross drain conveys the Little Econlockhatchee River tributary north to the Little Econlockhatchee River and ultimately the Upper St. Johns River.

The project is located within the Lake Price Outlet sub-basin of the Upper St. Johns River Watershed under the jurisdiction of the SJRWMD. The project traverses two (2) WBID's: Lake Price Outlet (WBID 3012) and Econlockhatchee River (WBID 2991). Please refer to the **WBID Impairments Map** found in **Figure 5, Appendix A**. A majority of the project is located in the Lake Price Outlet WBID and only the Tanner Road intersection is located in the Econlockhatchee River WBID. WBID 2991 is impaired for bacteria (E. coli). WBID 3012 itself is not an impaired waterbody, but it discharges into the Little Econlockhatchee River Below Michael's Reservoir (WBID 3001C) which is impaired for nutrients (macrophytes) and is part of the TMDL for fecal coliform.

The tributary which accepts the discharge from this project flows north for approximately 1 mile and joins the Little Econlockhatchee River and eventually the Econlockhatchee River. The Econlockhatchee River is categorized as a "Special Water" Outstanding Florida Water (OFW). According to the FDEP, the DEP and the WMDs cannot issue permits for direct discharges to OFWs that would lower ambient water quality. In most cases this requires increased treatment for stormwater discharging directly into an OFW. DEP and WMDs also may not issue permits for indirect discharges that would significantly degrade a nearby waterbody designated as an OFW.

McCulloch Road traverses a wetland approximately 0.5 miles to the east of the tributary crossing. The wetland located on the north side of the road drains to the tributary. The wetland located on the south side of the road discharges through a control structure and closed pipe system which crosses to the north side of the road and drains to the tributary. There are no known or documented cross drains connecting the north wetland to the south wetland beneath the road at this location. Any potential crossing in this location, along with the size and geometry of the existing cross drain will be verified with the roadway survey and during the field reconnaissance. During the design phase, a hydraulic analysis will be performed on the cross drain and recommendations will be made to either extend or replace it based on this analysis, physical condition, and remaining design service life.

6.2 Soils Data and Geotechnical Investigations

The soil surveys for Orange County and Seminole County published by the USDA NRCS have been reviewed within the project vicinity. USDA Soil Survey Geographic database (SSURGO) data was also obtained from SJRWMD to create a soils map for the project limits using GIS ArcMap. SSURGO data was compared to the soil survey by USDA NRCS and no deviations were found. The **Soil Survey Map** for the project vicinity is illustrated in **Figure 6**, **Appendix A.**

The soils within the project limits consist of Hydrologic Soil Group (HSG) A/D and HSG A. Group A soils have low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sand or gravel and have a high rate of water transmission. Group A/D soils are assigned to a dual HSG because they are wet soils due to the water table being close to the surface. If a soil is assigned to a dual HSG, the first letter is for drained areas and the second is for un-drained areas. In its natural state, a group A/D soil has high runoff potential but acts as a group A soil when properly drained. According to the Soil Survey, there are 8 different soil types located along the project limits. Please refer to table 6-1 and table 6-2.

Table 6-1 – USDA NRCS Soil Survey Information: Orange County

Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification	
		Depth* (feet)	Duration (months)		Unified	AASHTO
3	Bassinger	2	Jun-Feb	A/D	SP-SM	A-2-4
15	Felda	0-1.0	Jul-Mar	A/D	SP-SM	A-2-4
34	Pomello	2.0-3.5	Jul-Nov	A	SP-SM	A-3
44	Smyrna	0-1.0	Jul-Oct	A/D	SM	A-2-4

Table 6-2 - USDA NRCS Soil Survey Information: Seminole County

Soil No.	USDA Soil Name	Seasonal High Ground Water		HSG	Soil Classification	
		Depth* (feet)	Duration (months)		Unified	AASHTO
10	Bassinger	0	Jun-Feb	A/D	SP	A-3
	Samsula	0	Jan-Dec	A/D	SP	A-3
	Hontoon	0	Jan-Dec	A/D	SP	A-3
20	Myakka fine sands	1.02	Jan-Dec	A/D	SP	A-3
	EauGallie fine sands	1.02	Jan-Dec	A/D	SP	A-3
27	Pomello fine sands	2.76	Jun-Oct	A	SP-SM	A-3

6.3 Existing Drainage Permits

The available permits within the project limits were reviewed to obtain environmental and design information for the stormwater systems which may impact or affect the drainage design for the project. The sections below briefly describe the permitted condition, the impact to the permit associated with the proposed improvements and the action necessary to mitigate for the impacts. Please refer to **Appendix G** for a copy of each of the existing drainage permits listed.

6.3.1 Permit No. 40-117-0125AM5-ERP (28885-6): Tract 202, Carillon PUD

This permit authorized the expansion of an existing detention pond and site grading of 0.83 acres of McCulloch Road for future commercial development. The permit was authorized in June 1998.

6.3.2 Permit No. 40-117-28885-11: Northview Student Housing

This permit authorized the construction of the Northview Student Housing property in place of an existing Winn-Dixie grocery store. The Northview Student Housing property consists of 7.57 acres of land.

6.3.3 Permit No. 12-095-0004ASM: University Estates – McCulloch Road Construction

This permit authorizes the excavation of 936 cubic yards of material and placement of 13,043 cubic yards of fill material in Waters of the State for construction of McCulloch Road to provide access to a residential development known as University Estates. The permit was authorized in July 1989. A Lake Monitoring Report was also submitted with information pertaining to four (4) lakes and a mitigation area within the project limits.

6.3.4 Permit No. 4-095-0301: University Estates – McCulloch Road SWMS

This permit authorizes the construction of the surface water management system and stormwater system to serve 10.9 acres for road improvements to McCulloch Road and Tanner Road and a 223-acre residential development known as University Estates. The stormwater system consists of eight (8) retention/detention ponds with side-bank filter drain and underdrain, rear-lot swales, and storm sewer. Additionally, 4.2 acres of off-site area are being proposed as the site for mitigation to compensate for wetland encroachments due to the construction of McCulloch Road. Stormwater runoff from the site is directed via overland flow to on-site wetland areas which discharge to the west to a tributary of the Little Econlockhatchee River. Plans included with this permit show the construction of the 5 – 72” RCP cross drains under McCulloch Road.

6.3.5 Permit No. 4-095-20580-4: Additional Turn Lane at McCulloch Road and Tanner Road

This letter modification was submitted for the construction of turn lanes at the intersection of McCulloch Road and North Tanner Road resulting in an additional 0.17 acres of impervious area being added to the existing permitted impervious area. The permit states that the additional runoff produced by the 0.17-acre impervious area added for the proposed McCulloch Road turn lanes is negligible and will have no impact to the water quality or flood attenuation functions of the existing water retention system. The previous revisions to this permit including 4-095-20580-1 and 4-095-20828-1 are included for reference in Appendix G. The site is located within the existing Tanner Road right-of-way and drains to a pond in parcel 01-22-31-8825-00-008 (existing Pond 6).

6.3.6 Permit No. 4-117-22032-8: Intersection Improvements McCulloch Road and Lockwood Boulevard

This permit authorizes the construction of additional turn lanes from E McCulloch Road onto northbound Lockwood Boulevard and additional turn lanes along Lockwood Boulevard. Discharge from the intersection improvements is routed to the existing onsite stormwater facility and subsequently to the adjacent Little Econlockhatchee tributary. This permit will not be affected by the proposed improvements under this project. The site is located within the existing Lockwood Blvd. right-of-way and drains to a pond in parcel 35-21-31-505-0B00-0000.

6.3.7 Permit No. 4-095-64900-1: Tanner Road Widening

This permit authorizes the widening and paving of existing Tanner Road between Lake Pickett Road and McCulloch Road to a two-lane urban roadway with Type F curb and gutter. The permit states that management of surface water runoff will be accomplished via a combination of inlets and storm sewers and three (3) wet detention ponds. Any interaction with the existing drainage system at the intersection of McCulloch Road and Tanner Road will be considered during design. The site is located within the Tanner Road right-of-way and drains to a pond in parcel 12-22-31-0000-00-087.

6.3.8 Permit No. 40-117-91175-3: Commercial Retail Store (CRS) - Oviedo

This permit authorizes the construction of a 7545 square foot commercial retail store with associated parking, driveway, and a dry retention pond. The 1.48-acre commercial development located on the northwest corner of the intersection of Old Lockwood Road and McCulloch Road sheet flowed under existing conditions to the wet retention pond for the adjacent Hawthorn Glen Subdivision. Under proposed conditions, runoff from the site will be treated in a new dry detention pond before discharging to the wet pond. Discharge from the site will not be affected by the proposed improvements along McCulloch Road. The site is currently occupied by a Dollar General within parcel 36-21-31-300-0050-0000.

6.4 Existing Cross Drains

One existing cross drain is located on McCulloch Road at approximately station 319+25 and consists of five (5) 72” pipes which allow a tributary to the Econlockhatchee River flow from the south to the north beneath the roadway. The existing pipes will have to be extended northward in the proposed condition to accommodate the proposed roadway widening. Design flow rates have been established in permit 20580-1. **Please see Table 6-3: Summary of Existing Cross Drains for more information.**

Table 6-3: Summary of Existing Cross Drains

Name	Location	Size	50-year Flow Rate (cfs)	100-year flow rate (cfs)
CD-01	319+25	5 – 72”	849	937

6.5 Existing Drainage Basins

The seven (7) existing roadway basins within the project limits are described in the following sections.

6.5.1 Basin 1

Basin 1 consists of the northern portion of McCulloch Road starting at N. Orion Boulevard at station 310+48 and continuing east for 538 feet to station 315+86. The northern portion of the road drains to a roadside ditch which is conveyed via pipe to an existing wet retention pond which ultimately discharges to the adjacent Little Econlockhatchee tributary. This pond is located within the Carillon P.U.D. master drainage system (permit No 4-117-0193, 4-117-0194C issued on May 9, 1988 and 40-117-0125AM5-ERP (28885-6) issued June 26, 1998.

Permit No 28885-6 authorized the expansion of the existing stormwater pond and site grading, which consists of 0.83 acres from McCulloch Road (0.58 acres impervious and 0.25 acres pervious), the 1.30 acre pond (0.59 acres water and 0.71 acres pervious), and 4.21 acres from

Lot 1 (gas station Parcel) and Lot 2 (future Winn-Dixie parcel) combined (3.37 acres impervious and 0.84 acres pervious) for a total of 6.34 acres (3.95 acres impervious, 1.80 acres pervious and 0.59 acres water). The control structure was modified by raising the weir crest to elevation 46.30 feet and installing a control orifice at elevation 45.00 feet. The Southern Pond was designed with a Normal Water Level (NWL) at elevation 45.00 feet. The development required 0.82 ac-ft of treatment volume (using wet detention criteria) while the existing pond provided a treatment volume of 0.86 ac-ft at the treatment elevation 46.30 feet.

This permit was subsequently modified in permit 28885-7 and revised the gas station treatment system to an onsite dry retention pond that will provide treatment and attenuation for Lot 1 and will outfall to the existing pond through an overflow structure. The overflow structure is a Type E inlet with an internal weir set to elevation 52.20 feet.

Permit 28885-8 authorized the construction of the Winn Dixie store and associated parking lot and access roadway from McCulloch Road which would be treated in what is referred to as the "North Pond" and the "South Pond". The South Pond was authorized to provide treatment and attenuation for 4.34 acres of Lot 2 (1.76 acres pervious and 2.58 acres impervious). The pond and control structure were constructed as permitted in permit no 28885-6 and set a 25yr/24hr Design High Water (DHW) elevation of 47.72 feet. This permit demonstrates that the required treatment volume in the pond changed from 0.86 ac-ft to 0.71 ac-ft, leaving an additional 0.15 ac-ft of available treatment volume.

Permit 28885-11 authorized the demolition of the Winn-Dixie building and parking lot to be replaced with the Northview Student Housing development. The proposed basin area from the Northview Student Housing development consists of 1.75 acres of Pervious area and 2.60 acres of impervious area (4.94 acres total). The existing outfall control structure was not modified. Modifications to this permit demonstrate that the required treatment volume in the pond change from 0.71 ac-ft (28885-8) to 0.67 ac-ft, leaving an additional 0.20 ac-ft of available treatment volume

Table 6-4: Summary of Basin 1 (Pond 1)

Pond	Contributing area	Pervious Area (ac)	Impervious Area (ac)	Water Area (ac)	Total Area (ac)
Pond 1	*Northview Student Housing	1.75	2.60	0.59	4.94
	McCulloch Road	0.25	0.58	0.00	0.83
Totals		2.00	3.18	0.59	5.18

*Area includes existing pond and is updated to account for existing water surface area.

This pond currently provides treatment and attenuation for the Northview Student Housing Development as modified per Permit No. 28885-11 and the northern portion of McCulloch Road. This basin is considered an open basin.

6.5.2 Basin 2

Basin 2 begins at N. Orion Boulevard at station 310+48 and continues east for 1425 feet to a high point in the roadway at station 324+73. A transition in the roadway causes all lanes to drain to the south side of the road. The runoff is collected by curb inlets and conveyed via pipe to a wet pond located east of the intersection at approximately station 315+20. The pond was

authorized for construction under permit no. 4-117-0212 (22081-1) and is defined as “Pond 8”. Pond 8 provides treatment and attenuation for 4.0 acres of McCulloch Road prior to discharging to nearby wetlands. This pond was designed with a NWL of 45.50 feet and discharges via a DBI control structure with the treatment weir set at elevation 46.50 feet. No information regarding the required treatment volumes was able to be discerned from the existing permits, however calculations based on the permitted stage-storage relationship in the pond reveals that Pond 8 provides 0.24 ac-ft of treatment volume. Additional coordination with the Water Management District and/or Orange County may be required during final design. This basin is considered an open basin.

6.5.3 Basin 3

Basin 3 begins at station 324+73 and continues east to the Keats Way/Worchester Drive intersection at station 337+10. Both sides of the roadway drain toward the south and are conveyed via pipe to a wet pond on the south side of the roadway at approximately station 328+00. This pond was authorized for construction under permit no 20580-1 and is referred to as “Lake 5”. Lake 5 provides treatment and attenuation for “Basin 315” discharges across McCulloch Road to the existing wetlands that drain to the tributary.

Lake 5 was designed with a NWL of 46.33 feet, a top of bank of approximately elevation 50.00 feet. Basin 315 (Basin 3) was permitted to consist of 1.5 acres of total area with a required treatment volume of 0.06 ac-ft based of one-half inch of runoff from the developed basin, however the Pond provides 0.76 ac-ft of treatment volume. The existing treatment elevation, based on the existing stage-storage relationship within the pond, is 48.33 feet.

The existing DHW elevation for Lake 5 is 48.90 feet for the Orange County 25-year/24-hour storm and 49.20 for the SJRWMD 25-year/24-hour storm event using the SCS Type II hydrograph. This basin is considered an open basin.

6.5.4 Basin 4

Basin 4 begins at the Keats Way/Worchester Drive intersection at station 337+10 and continues east for approximately 1355 feet to approximately station 350+65. Both sides of the road drain toward the south and are conveyed via pipe to a dry pond located at approximately station 341+20. This pond was authorized for construction under permit no 20580-1 and is referred to as “Stormwater Management Area 7” (SWMA 7). SWMA 7 provides treatment and attenuation for “Basin 310” (Basin 4) discharges across McCulloch Road to the existing wetlands that drain to the tributary.

SWMA 7 was designed as a dry retention pond with a bottom elevation of 53.00 feet, a top of bank of approximately elevation 56.00 feet. Basin 310 (Basin 4) was permitted to consist of 1.5 acres of total area with a required treatment volume of 0.06 ac-ft based of one-half inch of runoff from the developed basin. The pond is designed to recover the treatment volume through an underdrain system; however, it also contains an emergency outfall structure with the overflow elevation at 54.50 feet.

The existing DHW elevation for SWMA 7 is 54.70 feet for the Orange County 25-year/24-hour storm and 54.87 for the SJRWMD 25-year/24-hour storm event using the SCS Type II hydrograph. This basin is considered an open basin.

6.5.5 Basin 5

Basin 5 begins at approximately station 350+65 and continues to a high point in the roadway at the Armour de Flame Way/Worchester Drive intersection at station 355+40. Both sides of the road drain toward the south and are conveyed via pipe to a pond located at the beginning of the basin at approximately station 350+80. This pond was authorized for construction under permit no 20580-1 and is referred to as “Stormwater Management Area 8” (SWMA 8). SWMA 8 provides treatment and attenuation for “Basin 305” (Basin 5) and discharges to nearby wetlands via a concrete flume which ultimately drains back to the tributary via a closed pipe system.

SWMA 8 was designed as a dry retention pond with a bottom elevation of 56.00 feet, a top of bank elevation of 57.00 feet. Basin 305 (Basin 5) was permitted to consist of 0.63 acres of total area with a required treatment volume of 0.03 ac-ft. The pond is designed to recover the treatment volume through an underdrain system. The elevation of the underdrain flowline is 55.00 feet. This pond does not have an emergency outfall.

The existing DHW elevation for SWMA 8 is 56.96 feet. This basin is considered an open basin.

6.5.6 Basin 6

Basin 6 begins at a high point in the road at the Armour de Flame Way/Worchester Drive intersection at station 355+40 and continues east for approximately 1050 feet to the Tanner Road intersection at the end of the study limits, station 366+00. It appears that the westbound turn lanes into the Hawthorne Glen subdivision drain toward a curb inlet on the north side of the road which is conveyed to an onsite pond. This connection will be confirmed with the survey and field reconnaissance. The remainder of the road drains to the south to the road’s curb and gutter and is collected by curb inlets which drain to a wet retention pond located at the southwest corner of the Tanner Road intersection. This pond was authorized for construction under permit 20580-1 and is referred to as “Lake 6”. Lake 6 provides treatment and attenuation for “Basin 300” (Basin 6) and is equipped with an underdrain system and discharges through a closed pipe system to the wetlands adjacent to SWMA 8.

Lake 6 was designed as a wet detention pond with a NWL of 56.60 feet, a top of bank elevation of 60.00 feet. Basin 300 (Basin 6) was permitted to consist of 4.11 acres of total area with a required treatment volume of 0.17 ac-ft based of one-half inch of runoff from the developed basin, however the Pond provides 0.61 ac-ft of treatment volume. The existing treatment elevation, based on the existing stage-storage relationship within the pond, is 59.10 feet. The pond is designed to recover the treatment volume through an underdrain system. The control structure is a manhole with an internal overflow weir.

The existing DHW elevation for Lake 6 is 58.72 feet for the Orange County 25-year/24-hour storm and 59.02 for the SJRWMD 25-year/24-hour storm event using the SCS Type II hydrograph. This basin is considered an open basin.

6.5.7 Basin 7

Basin 7 begins at station 315+86 and continues east to station 355+00. This basin consists of the area along the north side of the existing McCulloch Road, where the proposed two (2) new westbound lanes will be constructed. The area currently consists of wooded and wetland areas, existing ditches, driveways, and sidewalk. This area currently drains into roadside swales and is conveyed east or west to the wetland area north of the roadway between stations 317+00 and

333+00. A smaller wetland area exists on the north side of McCulloch Road between stations 344+00 and 349+00. This wetland drains west trough the roadside ditches and discharges into the larger wetland described previously. This wetland is connected to the Econlockhatchee River tributary that crosses beneath the roadway at approximately station 319+25 via 5-72" pipes. This basin is considered an open basin.

6.6 Proposed Drainage Basins

The proposed runoff from the project limits will be collected by curb and gutter into storm sewer inlets and conveyed to the existing and proposed offsite wet detention and dry retention ponds via closed drainage systems. The proposed basin limits may differ slightly from the existing conditions to account for the new roadway configuration.

6.6.1 Basin 1

The eastern and western extents of Basin 1 will remain the same as the existing conditions, while the southern limit will be revised to include the additional runoff from the proposed westbound left turn lanes onto Orion Boulevard. Stormwater runoff from this basin will be collected in curb inlets and conveyed to the existing Pond 1 along the north side of the roadway at station 315+00.

6.6.2 Basin 2

The eastern and western extents of Basin 2 will remain the same as the existing conditions, while the northern limit will be revised to match the median ridge line. Stormwater runoff from this basin will be collected in curb inlets and conveyed to the existing Pond 2 along the south side of the roadway at station 315+20.

6.6.3 Basin 3

The eastern and western extents of Basin 3 will remain the same as the existing conditions, while the northern limit will be revised to match the median ridge line. Stormwater runoff from this basin will be collected in curb inlets and conveyed to the existing Pond 3 along the south side of the roadway at station 328+00.

6.6.4 Basin 4

The eastern and western extents of Basin 4 will remain the same as the existing conditions, while the northern limit will be revised to match the median ridge line. Stormwater runoff from this basin will be collected in curb inlets and conveyed to the existing Pond 4 along the south side of the roadway at station 341+20.

6.6.5 Basin 5

The eastern and western extents of Basin 5 will remain the same as the existing conditions, while the northern limit will be revised to match the median ridge line. Stormwater runoff from this basin will be collected in curb inlets and conveyed to the existing Pond 5 along the south side of the roadway at station 350+80.

6.6.6 Basin 6

The eastern and western extents of Basin 6 will remain the same as the existing conditions, while the northern limit will be revised to match the median ridge line. Stormwater runoff from this basin will be collected in curb inlets and conveyed to the existing Pond 6 along the south side of the roadway at station 366+00.

6.6.7 Basin 7

The eastern and western extents of Basin 7 will remain the same as the existing conditions, while the southern limit will be revised to match the median ridge line. Stormwater runoff from this basin will be collected in curb inlets and conveyed to one or more of the pond alternatives for this basin: Pond 7A-7K.

7.0 FLOODPLAIN & ENVIRONMENTAL INFORMATION

7.1 Floodplains and Floodways

According to the Federal Emergency Management Agency (FEMA), the relevant Flood Insurance Rate Map (FIRM) panel numbers are 12117C0280F and 12117C0285F dated 9/28/2007, and 12095C0280F and 12095C0285F dated 9/25/2009. The FEMA FIRM indicates that the roadway is located within Zones A and X of the FEMA flood hazard areas. Zone A makes up part of the 100-year floodplain where predicted flood water elevations have not been established. Areas in Zone X (unshaded) are areas outside of the 100-year and 500-year floodplains and pose minimal flood hazards. The flood zone is depicted as being above the roadside swales, while the roadway is located above the existing flood zone and there is no history of floodwaters overtopping the roadway. It is anticipated that portions of the roadway improvements will encroach upon two areas of flood zones. Details of two Floodplain Impact Areas (FIA) and the associated Floodplain Compensation (FPC) areas are explained in Section 7.2. One compensation area is necessary for FIA-1. Floodplain compensation for FIA-2 will be provided during the final design phase via flood modeling of the isolated floodplain area. FIA-2 is located within a closed basin north of McCulloch Road, therefore a flood model will be completed to show that flood stages are not impacted by the proposed project. Please refer to **Figure 3 in Appendix A** for the **FEMA Floodplain Map**. There are no federally regulated floodways within the project limits.

Development within the 100-year floodplain has the potential for placing citizens and property at risk of flooding and producing changes in floodplain elevations and plan view extent. Development (such as roadways, housing developments, strip malls and other commercial facilities) within floodplains increases the potential for flooding by limiting flood storage capacity and exposing people and property to flood hazards. Development also reduces vegetated buffers that protect water quality and destroys important habitats for fish and wildlife. The area surrounding the proposed roadway improvements project has and will continue to experience growth.

7.1.1 Flooding and Maintenance Concerns

Maintenance records from the past 15 years were obtained from the Orange County Public Works Department in reference to any issues regarding the storm sewer system, cross drains or ponds along McCulloch Road.

According to the documented inquires, the County was contacted on July 23rd, 2018 regarding standing water along the southern portion of the road between the western entrance of University Estates and Tanner Road. When County maintenance personnel inspected the area the following day, no standing water was found.

The County was contacted on July 1st, 2007 regarding standing water at the intersection of McCulloch Road and N. Orion Boulevard. On July 8th, 2007 the system was cleaned, and no obstructions were found in the system. This occurred again on September 10th, 2017 and within three days County maintenance personnel were successful at draining the standing water.

The County was contacted on July 15th, 2007 regarding standing water between N. Orion Boulevard and N. Tanner Road. On August 25th, 2007 County maintenance personnel were able to clean the system and clear any blockages.

7.2 Floodplain Impacts and Compensation

Floodplain Impact Areas (FIA) are expected to occur at two areas of flood zones: along the north side of the widening between station 315+53 and station 323+23 (FIA-1) and between station 343+80 and station 350+45 (FIA-2). One compensation area is necessary for FIA-1. Floodplain compensation for FIA-2 will be provided during the final design phase via flood modeling of the isolated floodplain area. Please refer to the **FEMA Floodplain Map, Figure 3 in Appendix A**. For the purpose of this study, a cup-for-cup approach was taken to provide the County with right-of-way estimates for funding projections. Compensation volumes were calculated to be the available volume between the Seasonal High Water Table (SHWT) of the proposed compensation site and the 100-year flood elevation of the Floodplain impact Area. Floodplain Compensation (FPC) are shown in the location of Pond Alternative 7K for FIA-1 in the Post-Development **Basin Exhibits** in **Appendix B**.

Multiple FPC areas were determined in this study in the locations of pond alternatives within Basin 7. Pond Alternatives 7A, 7B, and 7K can be used as flood compensation as they are adjacent to the floodplain for FIA-1. Pond 7K is the preferred FPC location. It should be noted that a location directly adjacent to a floodplain is preferred for compensation to meet the County's cup-for-cup compensation requirement.

7.3 Land Use Data

The project corridor is a mixture of residential, commercial, upland forest and wetlands. Please see **Figure 4** for the **Land Use Map in Appendix A**. The widening of McCulloch Road from N. Orion Boulevard to Tanner Road does not alter the existing or future land uses in this area.

7.4 Cultural Features

Cultural features preserve and enhance the cultural nature of a community and include parks, schools, churches and other religious institutions. Also included are historic sites, archaeologically significant sites and neighborhood gathering places. Community services include facilities that provide necessary services such as fire stations, police stations, public and private schools, hospitals, cemeteries, public buildings, and civic facilities.

A desktop analysis has evaluated the McCulloch Road corridor for potential cultural resources within the study area. Please refer to the Cultural Resource Desktop Analysis for additional information.

7.5 Natural and Biological Features

The proposed project has potential to involve several State and/or Federally listed protected wildlife species. These species and their anticipated involvement are identified in the Natural Resources Evaluation Report.

The project corridor was evaluated for the presence of potentially occurring species. It was determined that 11 wildlife protected species and 11 flora protected species could potentially occur within the project area. The likelihood of each species occurring within the project corridor was evaluated based on historic ranges, literature review, aerial photography interpretation to identify suitable habitat, and field investigations.

The identification of wetlands has been investigated and is included within the Natural Resources Evaluation Report. It is likely that this project will impact wetlands regulated by the State and Federal Governments. Pond alternative recommendations will be based on avoidance of wetland impacts whenever possible.

8.0 STORMWATER PONDS

There are currently seven (7) basins within the project limits. Due to the limited availability of developable sites that are hydraulically feasible within the project limits, several pond alternatives have been analyzed for Basin 7, while the improvements within Basins 1 through 6 are proposed to drain to previously permitted stormwater facilities as part of the original permit for McCulloch Road, permit no. 20580-1. The proposed pond within Basin 7 is sized with the assumption that offsite runoff would bypass the pond alternative toward its historical path and not be retained within the pond. Also, for contingency purposes, the proposed pond is upsized by twenty percent (20%). The proposed pond is sized to accommodate two (2) 11-foot travel lanes and a six (6) foot sidewalk.

The proposed ponds have been sized to accommodate the increased attenuation volume due to the increase in impervious area within the basin.

8.1 Methodology of Pond Determination

The pond sizing analysis assumes that all ponds will be designed using wet detention pond design criteria. The report focuses on the preliminary estimate of required pond volumes necessary for each roadway drainage basin. A 20% upsize in the required pond right-of-way area has been applied for all new proposed ponds for preliminary parameters such as the estimated seasonal high water elevations, ground elevations and potential natural contouring of the ponds. The following parameters were considered in the sizing of potential pond sites:

- Hydrologic and hydraulic factors such as existing ground elevations, soil types, estimated seasonal high water (ESHW), stormwater conveyance feasibility, allowable hydraulics grade line (HGL);
- Environmental resource impacts including wetlands and threatened or endangered species;
- Floodplain Impacts;
- Major utility conflict potential;
- Parcel descriptions and land usage;
- Impacts to cultural resources;
- Impacts to contamination site

8.2 Stormwater Pond Evaluation

8.2.1 Pond 1 (South Pond)

Pond 1 is an existing wet detention pond located along the north side of McCulloch Road at approximately station 315+00. Currently, the pond provides treatment and attenuation for the Northview Student Housing development and the northern portion of McCulloch Road.

The pond was originally part of the Carillon PUD Master plan approved by permit 4-117-0193M and was exempted from the Econlockhatchee River Basin rules. Per previous modifications for this site, the exemptions continue to apply to projects if the existing treatment system is used. In doing so, dry retention criteria apply to the wet detention system.

The existing control structure in the pond has an overflow weir elevation of elevation 46.30 feet which provides 0.87 ac-ft of treatment volume. The modifications in permit 28885-11 demonstrate that the required treatment volume in the pond is 0.67 ac-ft, leaving an additional 0.20 ac-ft of available treatment volume. The proposed improvements to McCulloch Road within the basin will require an additional 0.02 ac-ft of treatment volume. Therefore, no modifications to the existing control structure or existing pond are required however, a modification to the permit is required because the basin limit has changed. A joint use agreement between Seminole County and the University of Central Florida is required for this pond.

8.2.2 Pond 2 (Pond 8)

Pond 2 is an existing wet detention pond located along the south side of McCulloch Road at approximately station 315+20. Currently, the pond provides treatment and attenuation for 4.0 acres of the south side of McCulloch Road.

The pond was originally permitted as part of the McCulloch Road construction project, approved by permit 4-117-0212 (22081-1) which converted the roadway from a dirt road to a 4-lane divided roadway between Alafaya Trail and Lockwood/Orion Boulevard. The existing control structure in the pond has an overflow weir elevation of elevation 46.50 feet which provides 0.24 ac-ft of treatment volume. A modification to the permit is required because the basin limit has changed. A joint use agreement between Orange County and the University of Central Florida is required for this pond.

8.2.3 Pond 3 (Lake 5)

Pond 3 within Parcel 01-22-31-8825-00-001 is an existing wet detention pond located along the south side of McCulloch Road at approximately station 328+00. Currently, the pond provides treatment and attenuation for 1.5 acres of McCulloch Road.

The pond was originally permitted as part of the University Estates development (20580-1) and was dedicated to the treatment and attenuation of McCulloch Road (Basin 315). The contributing basin required 0.06 ac-ft of treatment volume; however, the pond was designed to provide 0.76 ac-ft of treatment volume at the overflow weir elevation of 48.33 feet. Due to the proposed raised median, the contributing area to this pond is expected to increase by approximately 0.20 acres, mostly pervious area. This amounts to another 0.01 ac-ft of required treatment volume. Therefore, the total required treatment volume would increase to 0.07 ac-ft, which is less than the provided treatment volume. No modifications to the existing pond or control structure are necessary; however, a modification to the permit is required because the

basin limit was changed. A joint use agreement between Orange County and the University Estates property owners is required for this pond.

8.2.4 Pond 4 (SWMA 7)

Pond 4 is an existing dry retention pond located along the south side of McCulloch Road at approximately station 341+20. Currently, the pond provides treatment and attenuation for 1.5 acres of McCulloch Road.

The pond was originally permitted as part of the University Estates development (20580-1) and was dedicated to the treatment and attenuation of McCulloch Road (Basin 310). Pond 4 was permitted as a dry retention pond, however aerial images show the pond with water retention. The pond recovers through an existing underdrain system, therefore maintenance issues may exist within the underdrains if this pond does not recover. As of this date there are no non-compliance reports for SJRWMD ERP 20580-1. The contributing basin required 0.06 ac-ft of treatment volume and the pond was designed to recover the treatment volume through an underdrain system. Due to the proposed raised median, the contributing area to this pond is expected to increase by approximately 0.20 acres, mostly pervious area. This amounts to another 0.01 ac-ft of required treatment volume. Therefore, the total required treatment volume would increase to 0.07 ac-ft. It is expected that the additional required treatment volume will be able to recover through the existing underdrain system. An emergency overflow structure existing within the pond with an overflow elevation of 54.50 feet, however no modifications to the existing pond or control structure are necessary. A modification to the permit is required because the basin limit has changed. A joint use agreement between Orange County and the University Estates property owners is required for this pond.

8.2.5 Pond 5 (SWMA 8)

Pond 5 is an existing dry retention pond located along the south side of McCulloch Road at approximately station 350+80. Currently, the pond provides treatment and attenuation for 0.63 acres of McCulloch Road.

The pond was originally permitted as part of the University Estates development (20580-1) and was dedicated to the treatment and attenuation of McCulloch Road (Basin 305). Pond 5 was permitted as a dry retention pond, however aerial images show the pond with water retention. The pond recovers through an existing underdrain system, therefore maintenance issues may exist within the underdrains if this pond does not recover. As of this date there are no non-compliance reports for SJRWMD ERP 20580-1. The contributing basin required 0.03 ac-ft of treatment volume and the pond was designed to recover the treatment volume through an underdrain system. Due to the proposed configuration of McCulloch Road, the contributing area to this pond is expected to decrease slightly by approximately <0.01 acres. Therefore, no modifications to the pond are necessary; however, a modification to the permit is required because the basin limit has changed. This pond does not have an emergency overflow structure. A joint use agreement between Orange County and the University Estates property owners is required for this pond.

8.2.6 Pond 6 (Lake 6)

Pond 6 is an existing dry retention pond located along the south side of McCulloch Road at approximately station 365+00. Currently, the pond provides treatment and attenuation for 4.11 acres of McCulloch Road.

The pond was originally permitted as part of the University Estates development (20580-1) and was dedicated to the treatment and attenuation of McCulloch Road (Basin 300). Pond 6 was permitted as a dry retention pond, however aerial images show the pond with water retention. The pond recovers through an existing underdrain system, therefore maintenance issues may exist within the underdrains if this pond does not recover. As of this date there are no non-compliance reports for SJRWMD ERP 20580-1. The contributing basin required 0.17 ac-ft of treatment volume however, the pond was designed to provide 0.61 ac-ft of treatment volume at the overflow weir elevation of 59.10 feet. Due to the proposed configuration of McCulloch Road, the contributing area to this pond is expected to decrease by approximately 1.05 acres. Therefore, no modifications to the existing pond or control structure are necessary; however, a modification to the permit is required because the basin limit has changed. This pond does not have an emergency overflow structure. A joint use agreement between Orange County and the University Estates property owners is required for this pond.

8.2.7 Pond 7A (FPC Option 1)

Pond 7A is a proposed wet detention pond that will serve the treatment and attenuation needs for Basin 7. Pond 7A is located south of McCulloch Road and west of existing Pond 3 at approximately station 325+00. The site is within one (1) parcel 03-22-31-0000-00-005 owned by UCF. The area available for the pond is approximately **4.08 acres** in size and is located adjacent to the outfall for the Econlockhatchee River tributary. The estimated tailwater elevation is 47.21 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft. The adjacent permit for Parcel 01-22-31-8825-00-001, SJRWMD ERP 20580-1, defines the control elevation for existing Pond 3 (Lake 5) as elevation 46.34 NAVD88 (elevation 47.34 NGVD29 shown in permitted plans). A joint use agreement between Orange County and the University of Central Florida is required for this pond. The pond has potential impacts to wetlands, conservation areas and the Econlockhatchee River Riparian Habitat Protection Zone (RHPZ). Additional mitigation may be required due to the Conservation Easement restrictions. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

8.2.8 Pond 7B (FPC Option 2)

Pond 7B is located south of McCulloch Road and consists of expanding existing Pond 3 within Parcel 01-22-31-8825-00-001 to accommodate the additional stormwater runoff. Pond 7D requires the acquisition of seven (7) residential properties located within the University Estates subdivision. The market value of these seven properties obtained from the Orange County Property Appraisers website is approximately $3,625,000 and totals 3.57 acres. Combined with the existing area of Pond 3, the total area available for Pond 7B is **4.31 acres**. However additional calculations will be required to determine if this area is sufficient to provide treatment for the existing basin within University Estates. The estimated tailwater elevation is 47.18 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

8.2.9 Pond 7C

Pond 7C is located north of McCulloch Road in Seminole County. This option requires the acquisition of 19 residential properties located within the Madison Park subdivision consisting of Parcels 35-21-31-509-0000-0530 through 35-21-31-509-0000-0710. These 19 parcels and one easement are located west of the subdivision entrance road and adjacent to the tributary to the

Econlockhatchee River. According to the Seminole County Property Appraiser's website, these parcels total **3.31 acres** with a Market value of approximately $7,200,000. The estimated tailwater elevation is 47.81 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft, which could cause hydraulic grade issues for the proposed secondary storm conveyance system. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

8.2.10 Pond 7D

This option also requires the acquisition of 19 residential properties located within the Madison Park subdivision consisting of Parcels 35-21-31-509-0000-0650 through 35-21-31-509-0000-0810 and 35-21-31-509-0000-0010 through 35-21-31-509-0000-0030. These 19 properties front McCulloch Road and are split by the subdivision entrance roadway. These properties total **3.17 acres** with a Fair Market value of approximately $7,500,000 according to the Seminole County Property Appraiser. The estimated tailwater elevation is 50.44 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft, which could cause hydraulic grade issues for the proposed secondary storm conveyance system. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

8.2.11 Pond 7E

Pond 7E is located in the northwest quadrant of the McCulloch Road and Lockwood Boulevard intersection within UCF property within Parcel 35-21-31-300-007A-0000. This property is located west of the existing 72" cross drain. This option will require that the 42" conveyance pipe be drilled under the existing 5-72" pipe cross drain and under Lockwood Boulevard. The depth of the conveyance system will be greater than 20'. The jacking and receiving pits will be 60' to 75' long, 15' to 20' wide and nearly 20' deep, which will significantly impact existing utilities. Dewatering of the pits will be required and sheet piling may be needed to minimize wetland impacts. The cost of the bore and jack is estimated to be $5,000 per linear foot. The area available for the pond is approximately **4.17 acres**. The estimated tailwater elevation is 54.35 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft, which could cause hydraulic grade issues for the proposed secondary storm conveyance system. The property cost of this site is unknown. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

8.2.12 Pond 7F

Pond 7F is a proposed wet detention pond that will serve the treatment, and attenuation needs for Basin 7. Pond 7F is located south of McCulloch Road and on the east side of N Orion Blvd between two existing ponds serving UCF drainage. This site sits within one (1) parcel (03-22-31-0000-00-005). This property is located west of the existing 72" cross drain. This option will require that the 42" conveyance pipe be drilled under the existing 5-72" pipe cross drain and under Lockwood Boulevard. The depth of the conveyance system will be greater than 20'. The pond has potential to have wetland, and floodplain impacts. According to the Orange County soil survey Pond 7F consists of Smyrna Fine Sand (A/D). The soil survey defines the seasonal high-water depth in these soils to be 0-1 feet below existing ground. According to the LiDAR

data obtained for this pond site, the existing ground ranges from elevation 49.0' and 53.0'. Based on the LiDAR elevations, the adjacent ponds are designed with a NWL of 50.0 feet. Therefore, Pond 7F is proposed to be a wet pond with a normal water level set at elevation 50.0 ft. The area available for the pond is **1.87 acres**. The estimated tailwater elevation is 51.71 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft, which could cause hydraulic grade issues for the proposed secondary storm conveyance system. This pond is located adjacent to the low point of the road at elevation 49.0 ft, therefore secondary conveyance will not work because the elevations of the road are too low to provide the required freeboard in the stormwater system. The pond has potential impacts to wetlands, conservation areas and the Econlockhatchee River Riparian Habitat Protection Zone (RHPZ). This pond would only be able to treat approximately 2,000 ft out of the 4,000 ft of road length, or elevations above 52.71 ft. While Pond 7F is able to provide treatment and attenuation, the pond requires 1.27 acres of wetland impacts. This pond will outfall to the unnamed tributary of the Econlockhatchee River, east of the proposed pond location. A joint use agreement between Orange County and the University of Central Florida is required for this pond. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

8.2.13 Pond 7G

Pond 7G is a proposed wet detention pond that will serve the treatment, and attenuation needs for Basin 7. Pond 7G is located south of McCulloch Road on the east side of N Orion Blvd next to the Orange County/ Seminole County Fire Rescue Station 65. This site sits within one (1) parcel (03-22-31-0000-00-005). This property is located west of the existing 72" cross drain. This option will require that the 42" conveyance pipe be drilled under the existing 5-72" pipe cross drain and under Lockwood Boulevard. The depth of the conveyance system will be greater than 20'. The pond has potential to have wetland, and floodplain impacts. According to the Orange County soil survey Pond 7G consists of Smyrna Fine Sand (A/D). The soil survey defines the seasonal high-water depth in these soils to be 0-1 feet below existing ground. According to the LiDAR data obtained for this pond site, the existing ground ranges from elevation 49.0' and 53.0'. Based on the LiDAR elevations, the adjacent ponds are designed with a NWL of 50.0 feet. Therefore, Pond 7G is proposed to be a wet pond with a NWL at elevation 50.0 feet. The area available for the pond is **1.78 acres**. The estimated tailwater elevation is 52.25 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft, which could cause hydraulic grade issues for the proposed secondary storm conveyance system. This pond would only be able to treat approximately 2,200 ft out of the 4,000 ft or elevations above 52.25 ft of Basin 7 before the elevations of the road are too low to provide the required freeboard in the stormwater system. The pond has potential impacts to wetlands, conservation areas and the Econlockhatchee River Riparian Habitat Protection Zone (RHPZ). This pond will outfall to the unnamed tributary of the Econlockhatchee River, east of the proposed pond location. A joint use agreement between Orange County and the University of Central Florida is required for this pond. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

8.2.14 Pond 7H

Pond 7H is a proposed wet detention pond that will serve the treatment, and attenuation needs for Basin 7. Pond 7H is located southeast side of the corner of McCulloch Rd and N Tanner Rd.

This site sits within two (2) parcels (01-22-31-0000-00-032, 01-22-31-3000-02-000) and is currently occupied by Econ River Family Dental. The pond has potential to have wetland, and floodplain impacts. According to the Orange County soil survey Pond 7H consists of Pomello Fine Sand (A). The soil survey defines the seasonal high-water depth in these soils to be 2-4 feet below existing ground. According to the LiDAR data obtained for this pond site, the existing ground ranges from elevation 60' and 62'. Based on the LiDAR elevation of the area, Pond 7H is proposed to be a wet pond with a normal water level set at elevation 50.0 feet. The preliminary pond sizing calculations indicate that this pond requires 1.89 ac-ft for treatment and attenuation. Pond 7H will provide 1.90 ac-ft of treatment volume at 1.6 ft below the inside of the berm. The area available for the pond is **2.37 acres**. The estimated tailwater elevation is 51.33 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft, which could cause hydraulic grade issues for the proposed secondary storm conveyance system. This pond would only treat 400 ft+/- out of the 4,000 ft of roadway, or elevations above 51.33 ft of Basin 7 before the elevations of the road are too low to get required freeboard in the stormwater system. This pond will outfall to the unnamed tributary of the Econlockhatchee River, west of the proposed pond location. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

8.2.15 Pond 7I

Pond 7I is a proposed wet detention pond that will serve the treatment, and attenuation needs for Basin 7. Pond 7I located northwest corner of McCulloch Rd and Old Lockwood Rd. This site sits within one (1) parcel (36-21-31-300-0050-0000) and is currently occupied by Dollar General. According to the Orange County soil survey Pond 7I consists of Myakka and EauGallie Fine Sand (A/D) and Pomello Fine Sand (A). The soil survey defines the seasonal high-water depth in these soils to be 0-4 feet below existing ground. According to the LiDAR data obtained for this pond site, the existing ground ranges from elevation 60.0' and 63.0'. Based on the LiDAR elevations, the adjacent ponds are designed with a NWL of 56.0 feet. Therefore, Pond 7I is proposed to be a wet pond with a normal water level set at elevation 56.00 ft. The preliminary pond sizing calculations indicate that this pond requires 1.76 ac-ft for treatment and attenuation. Pond 7I will provide 1.78 ac-ft of treatment volume at 1.9 ft below the inside of the berm. The area available for the pond is **1.40 acres**. The estimated tailwater elevation is 58.95 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft, which could cause hydraulic grade issues for the proposed secondary storm conveyance system. This pond would only treat 450 ft+/- out of the 4,000 ft of roadway, or elevations above 58.95 ft of Basin 7 before the elevations of the road are too low to get required freeboard in the stormwater system. This pond will outfall to the unnamed tributary of the Econlockhatchee River, west of the proposed pond location. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

8.2.16 Pond 7J

Pond 7J is a proposed wet detention pond that will serve the treatment, and attenuation needs for Basin 7. Pond 7J is located on the northeast corner of McCulloch Rd and Lockwood Blvd. This site sits within one (1) parcel (35-21-31-512-0000-0010) and is currently occupied by a 7-Eleven Gas Station. This property is located west of the existing 72" cross drain. This option will require that the 42" conveyance pipe be drilled under the existing 5-72" pipe cross drain and

under Lockwood Boulevard. The depth of the conveyance system will be greater than 20'. According to the Orange County soil survey Pond 7J consists of Myakka and EauGallie Fine Sand (A/D). The soil survey defines the seasonal high-water depth in these soils to be 0.5-1.5 feet below existing ground. According to the LiDAR data obtained for this pond site, the existing ground ranges from elevation 52.0' and 53.0'. Based on the LiDAR elevations, the adjacent ponds are designed with a NWL of 49.0 feet. Therefore, Pond 7J is proposed to be a wet pond with a normal water level set at elevation 49.0 ft. The area available for the pond is **1.73 acres**. The estimated tailwater elevation is 50.99 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft, which will cause hydraulic grade issues for the proposed secondary storm conveyance system. This pond is located adjacent to the low point of the road at elevation 49.0 ft, therefore secondary conveyance will not work because the elevations of the road are too low to provide the required freeboard in the stormwater system. This pond will outfall to the unnamed tributary of the Econlockhatchee River, east of the proposed pond location. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

8.2.17 Pond 7K (FPC Option 3 – Recommended)

Pond 7K is a proposed wet detention pond that will serve the treatment, and attenuation needs for Basin 7. Pond 7K is located on the north side of McCulloch Road and west of the lots on Carnaby Dr. This site sits within two (2) parcels (35-21-31-505-0A00-0000 and 35-21-31-505-0C00-0000) and is currently undeveloped. According to the Seminole County soil survey, Pond 7K consists of Myakka and EauGallie fine Sand (A/D). The soil survey defines the seasonal high-water depth in these soils to be 0.5-1.5 feet below existing ground. According to the LiDAR data obtained for this pond site, the existing ground ranges from elevation 45.0' and 47.0'. Therefore, Pond 7L is proposed to be a wet pond with a NWL at elevation 45.00' with a top of bank at 47.00'. The area available for the pond is **1.94 acres** due to a majority of the parcels consisting of floodplain. The estimated tailwater elevation is 48.16 ft, and the existing roadway elevations within Basin 7 are between 49.0 ft and 61.0 ft. This pond does not provide enough treatment as the provided treatment volume is 0.31 acre-feet and the required treatment volume is 1.72 acre-feet. The pond has potential impacts to wetlands, floodplain, conservation areas and the Econlockhatchee River Riparian Habitat Protection Zone (RHPZ). This pond will outfall to the unnamed tributary of the Econlockhatchee River, east of the proposed pond location. This pond is located upstream of Outstanding Florida Waters (OFW), therefore St. Johns Water Management District requires that the pond treat for 90% reduction to the average annual loading of total phosphorous and 80% reduction to the average annual loading of total nitrogen.

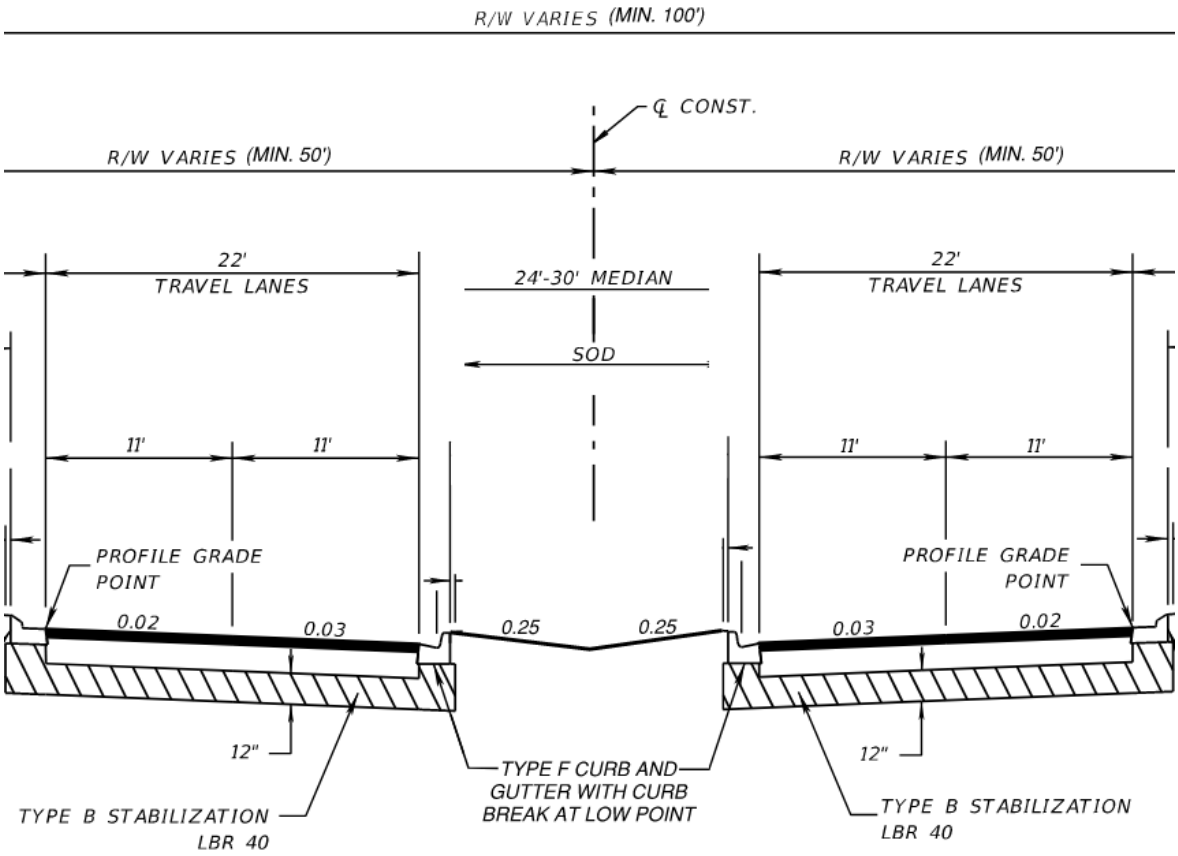
9.0 NUTRIENT LOAD REDUCTION

Calculations for the phosphorous loading for the site are based on the methodology outlined in the preliminary Florida Department of Environmental Protection (FDEP) Stormwater Quality Applicant's Handbook. For sites draining to an impaired water body, the proposed development phosphorous and nutrient load leaving the site must meet the performance standards specified in Applicant's Handbook Vol. I Sections 8.2.3 through 8.3.6. Options for Nutrient Load reductions are:

- Dry treatment ponds before stormwater outfalls to wet pond
- Dry swales located on the side of proposed road
- Bio swales located in the proposed road median
- Filter media in inlets
- Smart ponds
- Purchase stormwater credits or nutrient trading credits (if available within this basin)

9.1 Methodology of Nutrient Load Reduction

The proposed roadway typical section was analyzed to provide pre-treatment options located within the proposed right-of-way. Alternative designs such as Green Stormwater Infrastructure (GSI), compensating stormwater treatment, or treatment options stated above can be used to meet the nutrient load reduction requirements. An example of pre-treatment located within the median is shown below. Treatment efficiency varies based on site conditions such as soil infiltration rates, but typical treatment for the swale shown below is 99% nitrogen and phosphorus treatment efficiency.



10.0 RESULTS

Dewberry

800 N. Magnolia Ave., Suite 1000, Orlando, FL 32803
(407) 843-5120

McCOLLUCH ROAD CAPACITY IMPROVEMENTS

ENGINEERING DATA & ANALYSIS

Alternative	Location	Existing Ground Elevation (ft)	Soil Names & Hydrologic Groups	Estimated AWSHWT Elevation (ft)	Lowest Edge of Existing Roadway (ft)	Distance From Lowest Edge of Proposed Roadway (ft)	Estimated Allowable DHWZONE1 (ft)	Estimated Allowable Treatment & Attenuation Depth (ft)	Outfall Location	Roadway Drainage Area (ac)	Required Treatment & Attenuation Volume (ac-ft)	Required Pond Area (ac)*	Wetland Impacts	Floodplain Impacts	Option for Floodplain Compensation	HGL Freeboard Requirements Met?	Pre-Treatment Needed for Nutrient Reduction	Comments
7A	UCF	50	Smyrna Fine Sand (A/D) Pomello Fine Sand (A)	46.3	49	720	47.3	2.7	Little Econlockhatchee tributary	5.76	2.01	4.08	No	No	Yes	Yes	Yes	Possible Riparian Habitat Protection Zone Impacts Possible Impacts to Conservation Areas
7B	University Estates	50	Zolfo Fine Sand (A) Smyrna Fine Sand (A/D) Pomello Fine Sand (A)	46.3	49	750	47.3	2.7	Little Econlockhatchee tributary	5.76	2.04	4.31	No	No	Yes	Yes	Yes	Requires Acquisition of Seven (7) Homes
7C	Madison Park West	52	Basinger, Samsula, and Hontoon Soils (C/D) Myakka and EauGallie Fine Sands (B/D)	46.5	49	1400	47.3	1.6	Little Econlockhatchee tributary	5.76	1.88	3.31	No	No	No	Tes	Yes	Requires Acquisition of Nineteen (19) Homes
7D	Madison Park East	53	Basinger, Samsula, and Hontoon Soils (A/D) Brighton, Samsula, and Sanibel Mucks (B/D)	43.0	49	1600	50.6	2.4	Little Econlockhatchee tributary	5.76	1.88	3.17	No	No	Yes	No	Yes	Requires Acquisition of Nineteen (19) Homes Hydraulic Grade Issues at Low Gutter Grades
7E	UCF	54	Basinger, Samsula, and Hontoon Soils (A/D) Manatee, Floridana, and Holopaw Soils (B/D) Immokalee Sand (B/D)	53.5	49	1703	54.4	2.1	Little Econlockhatchee tributary	5.76	2.03	4.17	No	No	No	No	Yes	Requires Deep Bore & Jack Crossing of Little Econ Tributary Requires Deep Bore & JackCrossing of Lockwood Boulevard Potential Utility Impacts Hydraulic Grade Issues at Low Gutter Grades
7F	UCF	53	Smyrna-Smyrna (A/D)	43.0	49	2500	51.8	1.2	Little Econlockhatchee tributary	5.76	1.83	1.87	No	No	No	No	Yes	Requires Deep Bore & Jack Crossing of Little Econ Tributary Hydraulic Grade Issues at Low Gutter Grades
7G	UCF	52	Smyrna-Smyrna (A/D)	50.0	49	1400	52.4	1.6	Little Econlockhatchee tributary	5.76	1.79	1.78	No	No	No	No	Yes	Requires Deep Bore & Jack Crossing of Little Econ Tributary Hydraulic Grade Issues at Low Gutter Grades
7H	Family Dentist	53	Pomello Fine Soils (A)	50.0	49	4320	51.4	1.6	Little Econlockhatchee tributary	5.76	1.83	2.37	No	No	No	No	Yes	Hydraulic Grade Issues at Low Gutter Grades
7I	Dollar General	60	Myakka & EauGallie (A/D) Pomello Soils (A)	56.0	49	773	59.1	1.9	Little Econlockhatchee tributary	5.76	1.76	1.40	No	No	No	No	Yes	Hyydraulic Grade Issues at Low Gutter Grades
7J	Gas Statiion 7/11	62	Myakka & EauGallie (A/D)	43.0	49	480	58.5	1.5	Little Econlockhatchee tributary	5.76	1.79	1.73	No	No	No	No	Yes	Requires Deep Bore & Jack Crossing of Little Econ Tributary
7K	West of West Hampton	46	Myakka & EauGallie (A/D)	45.0	49	230	45.9	1.1	Little Econlockhatchee tributary	5.76	2.04	1.94	No	No	Yes	No	Yes	Possible Riparian Habitat Protection Zone Impacts Possible Impacts to Conservation Areas Does Not Provide Required Treatment Volume

*SHWT

IMPACT & COST ANALYSIS

Alternative	FEMA		Arch. / Historical Impact Potential	Wetland Impacts (Y/N)	Environmental Impact Risk	Threatened or Endangered Species Impacts	Hazardous Materials & Contamination Potential	Major Utility Conflict Potential (Y/N)	Existing Land Use	Total Pond Area (ac)	Total R/W Costs	Rankings
	Impacts (ac)	Zone										
7A	0	-	N/A	N	TBD	Y	TBD	N	Undeveloped	4.08	Unknown	1
7B	0	-	N/A	N	TBD	N	TBD	N	Residential	4.31	$3,625,000	2
7C	0	-	N/A	N	TBD	N	TBD	N	Residential	3.31	$7,200,000	3
7D	0	-	N/A	N	TBD	N	TBD	N	Residential	3.17	$7,500,000	4
7E	0	-	N/A	N	TBD	N	TBD	Y	Undeveloped	4.17	Unknown	5
7F	0	-	N/A	N	TBD	Y	TBD	Y	Institutional	1.87	Unknown	8
7G	0	-	N/A	N	TBD	Y	TBD	Y	Institutional	1.78	Unknown	7
7H	0	-	N/A	N	TBD	N	TBD	N	Office	2.37	$1,988,000	9
7I	0	-	N/A	N	TBD	N	TBD	N	Commercial	1.40	$1,604,000	10
7J	0	-	N/A	N	TBD	N	TBD	Y	Commercial	1.73	$1,313,000	6
7K	0	-	N/A	N	TBD	Y	TBD	N	Undeveloped	1.94	Unknown	11

11.0 CONCLUSIONS

Potential ponds have been sized and located along the project limits for this study. The analysis for proposed pond alternatives estimates right-of-way needs using a volumetric analysis, which accounts for water quality treatment and water quantity for runoff attenuation. The existing ponds which currently provide treatment and attenuation for the existing two-lane section of McCulloch Road are expected to be able to continue this stormwater pattern. Existing Ponds 4-6 recover through existing underdrain systems, however aerial images show the ponds with water retention. Therefore, maintenance issues may exist within the underdrains if the ponds do not recover. Should it be determined that existing Ponds 4-6 do not meet the permitted criteria, additional modifications or maintenance may be required to meet dry retention criteria. Please note that the estimated right-of-way areas for the proposed ponds were based on pond sizes determined from preliminary data calculations, reasonable engineering judgment, and assumptions. Pond sizes and configurations may change during final design as more detailed information on SHWT, wetland normal pool elevation, final roadway profile design, etc. become available. Please refer to **Table 1-1** for **Recommended Stormwater Pond Sizes** and **Table 10-2** for **Recommended Floodplain Compensation Pond Sizes**.

Table 10-1: Recommended Stormwater Pond Sizes

Basin	Preferred Pond Alternative	From Station	To Station	Side	Type (Dry/Wet)	Req'd Treatment + Attenuation (ac-ft)	Provided Treatment + Attenuation (ac-ft)	Pond Right-of-Way Area Including Access (ac)
Basin 1	1	182+00	226+52	South	Wet	0.67	0.87	0.00
Basin 2	2	226+52	262+00	South	Wet	0.24	0.24	0.00
Basin 3	3	262+00	337+50	South	Wet	0.07	0.76	0.00
Basin 4	4	337+50	371+00	South	Dry	0.07	0.07	0.00
Basin 5	5	371+00	400+00	South	Dry	0.03	0.03	0.00
Basin 6	6	400+00	455+00	South	Wet	0.17	0.61	0.00
Basin 7	7A	455+00	487+00	North	Wet	1.65	2.51	4.08
							Total:	**4.08**

Note: Pond 1 through Pond 6 are existing ponds.

Table 10-2: Recommended Floodplain Compensation Pond Sizes

FIA	FPC	SHWT Elevation (ft)	100-yr Flood Elevation (ft)	Req'd Compensation Volume (ac-ft)	Provided Compensation Volume (ac-ft)	Pond Right-of-Way Area Including Access (ac)
FIA-1	FPC – 1 (7K)	46.34	48.00	1.02	1.02	1.94
			Total:	**1.02**	**1.02**	**1.94**

12.0 REFERENCES

- *ARTICLE VII. - STORMWATER MANAGEMENT*. Municode Library. (n.d.). Retrieved March 7, 2023, from https://library.municode.com/fl/orange_county/codes/code_of_ordinances

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Appendix A

Figures

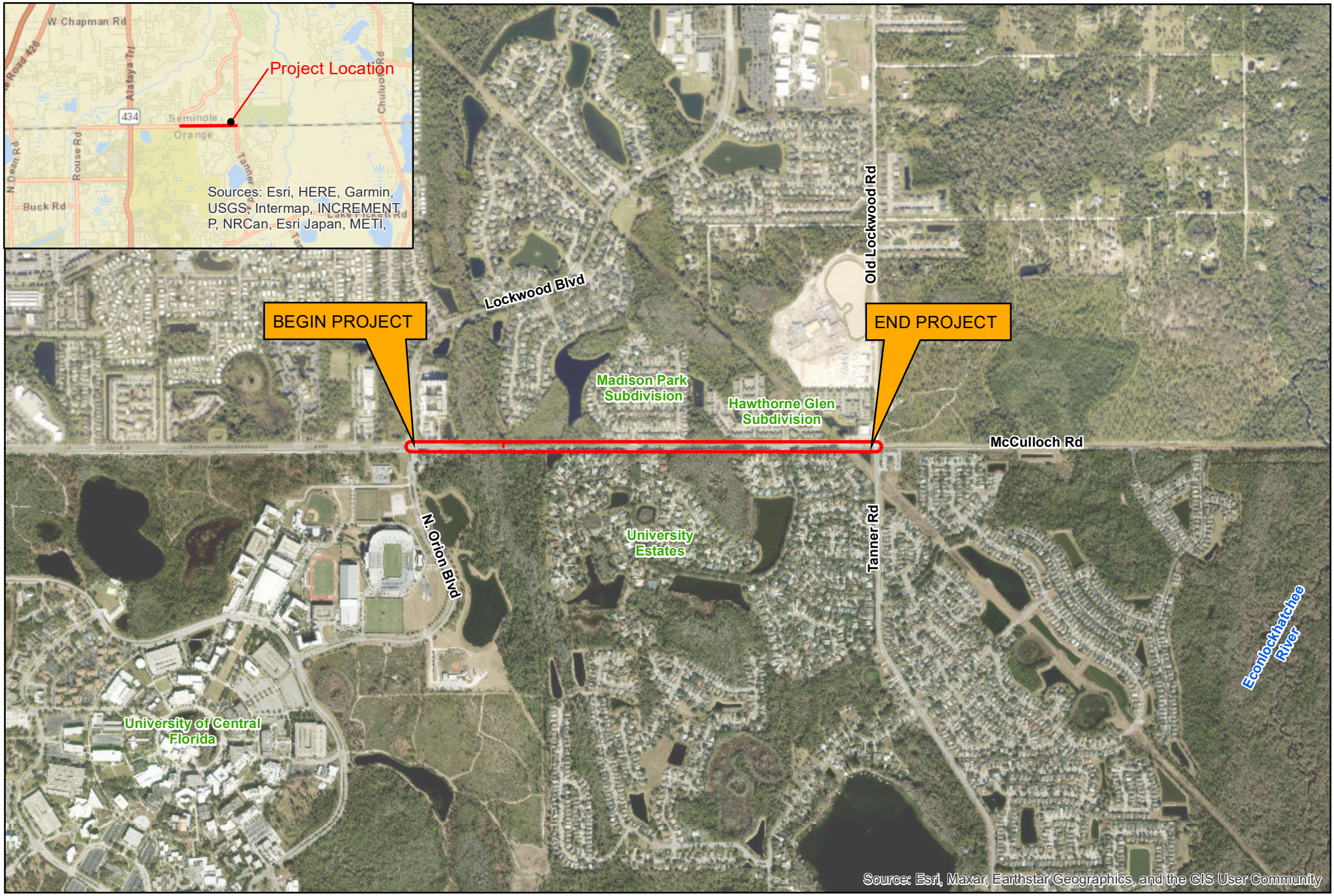

Figure 1 - Project Location Map

McCulloch RCA Study

Orange County, Florida

N

Data Source:
Image Source: ESRI

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Feburary, 2022

Dewberry

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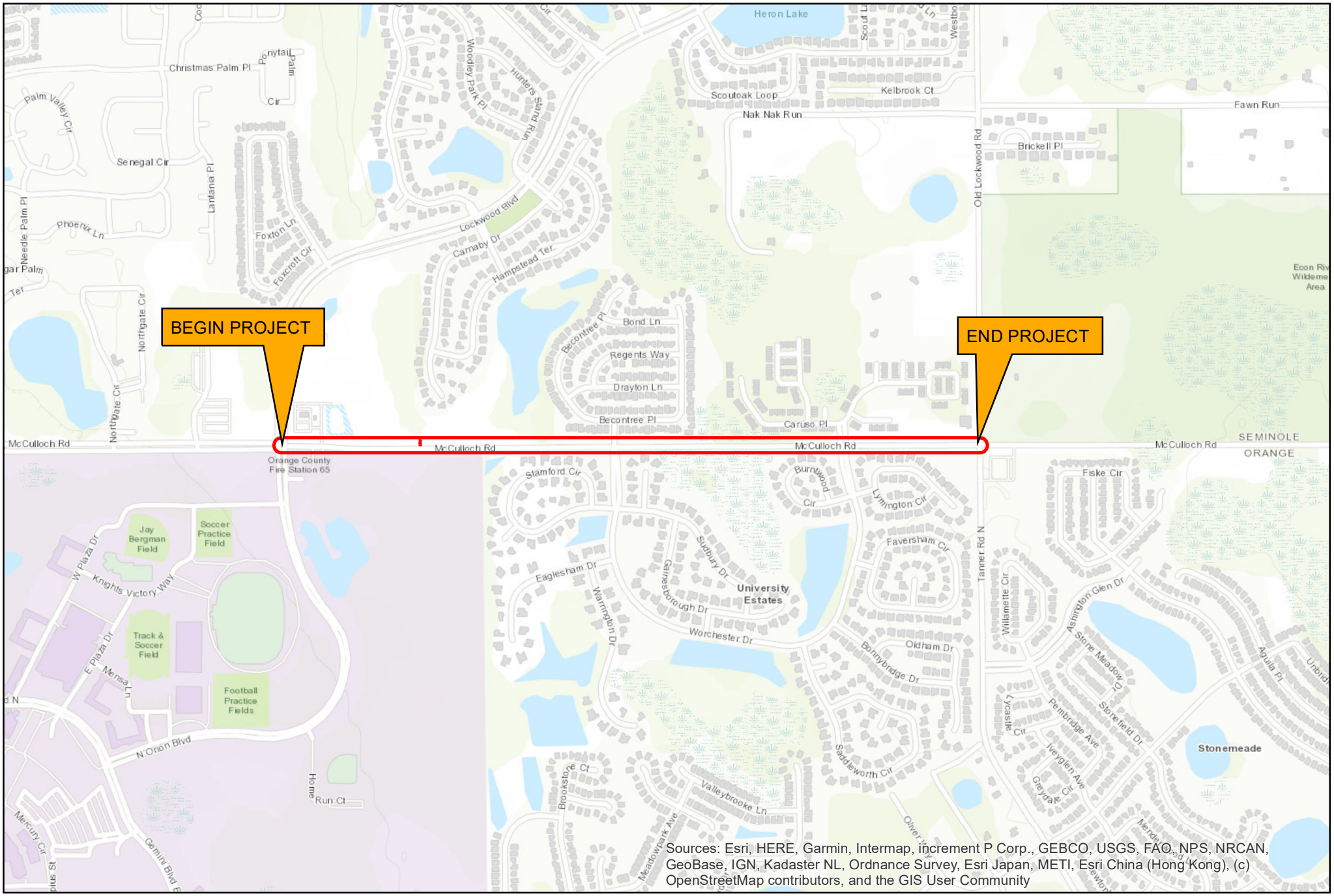

Figure 2 - USGS Quadrangle Map

McCulloch RCA Study

Orange County, Florida

N

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Feburary, 2022

Dewberry

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Figure 1 - Floodplain Map

McCulloch RCA Study

Orange County, Florida

January 2022

N

Data Source: FEMA
Image Source: ESRI

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Dewberry

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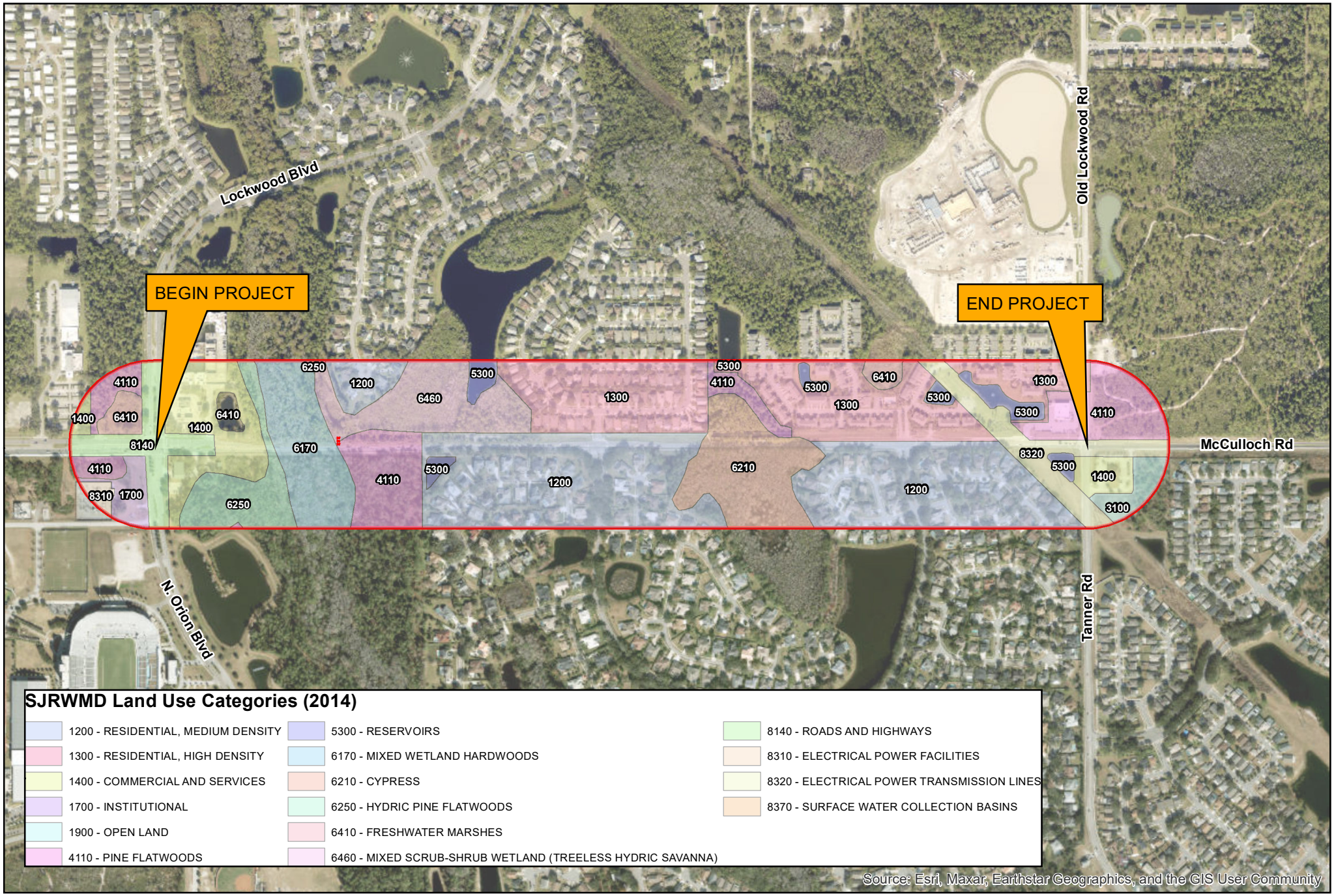

Figure 5 - SJRWMD Land Use Map

McCulloch RCA Study

Orange County, Florida

N

Data Source:
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Feburary, 2022

Dewberry

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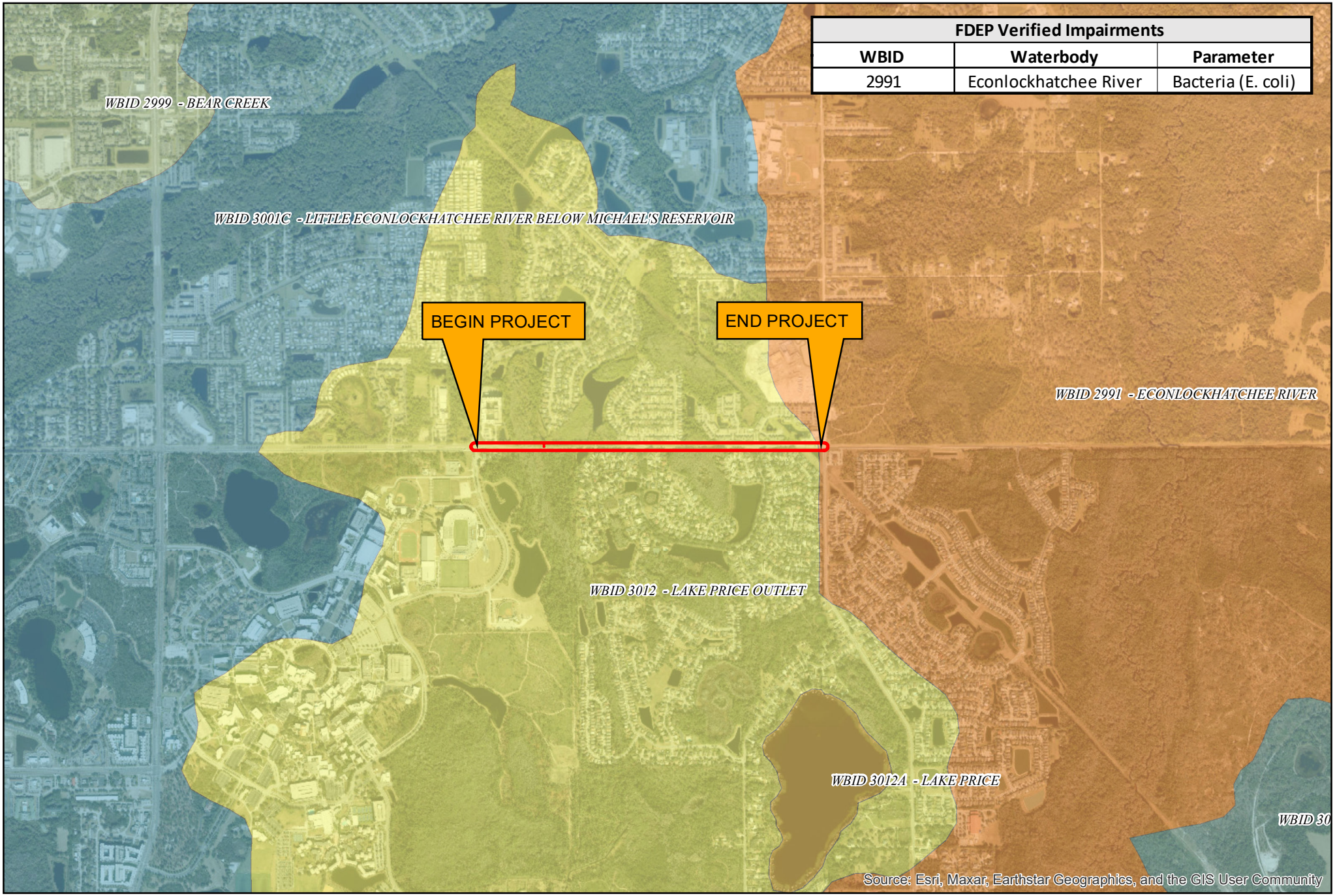

Figure 3 - FDEP WBIDs Impairments Map

McCulloch RCA Study

Orange County, Florida

March, 2022

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Data Source:
Image Source: ESRI

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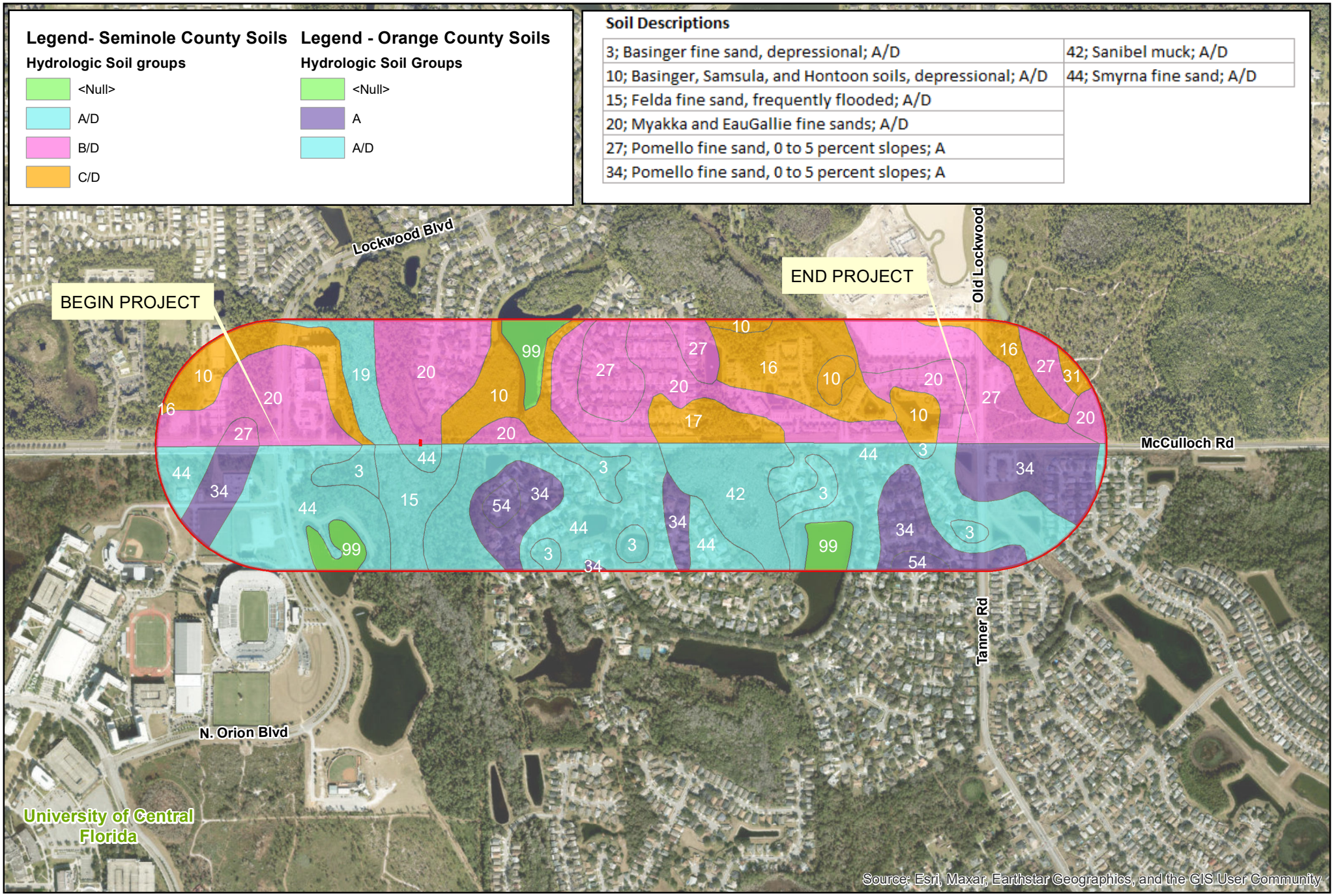

Figure 3 - Soils Map

McCulloch RCA Study

Orange County, Florida

N

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Feburary, 2022

Dewberry

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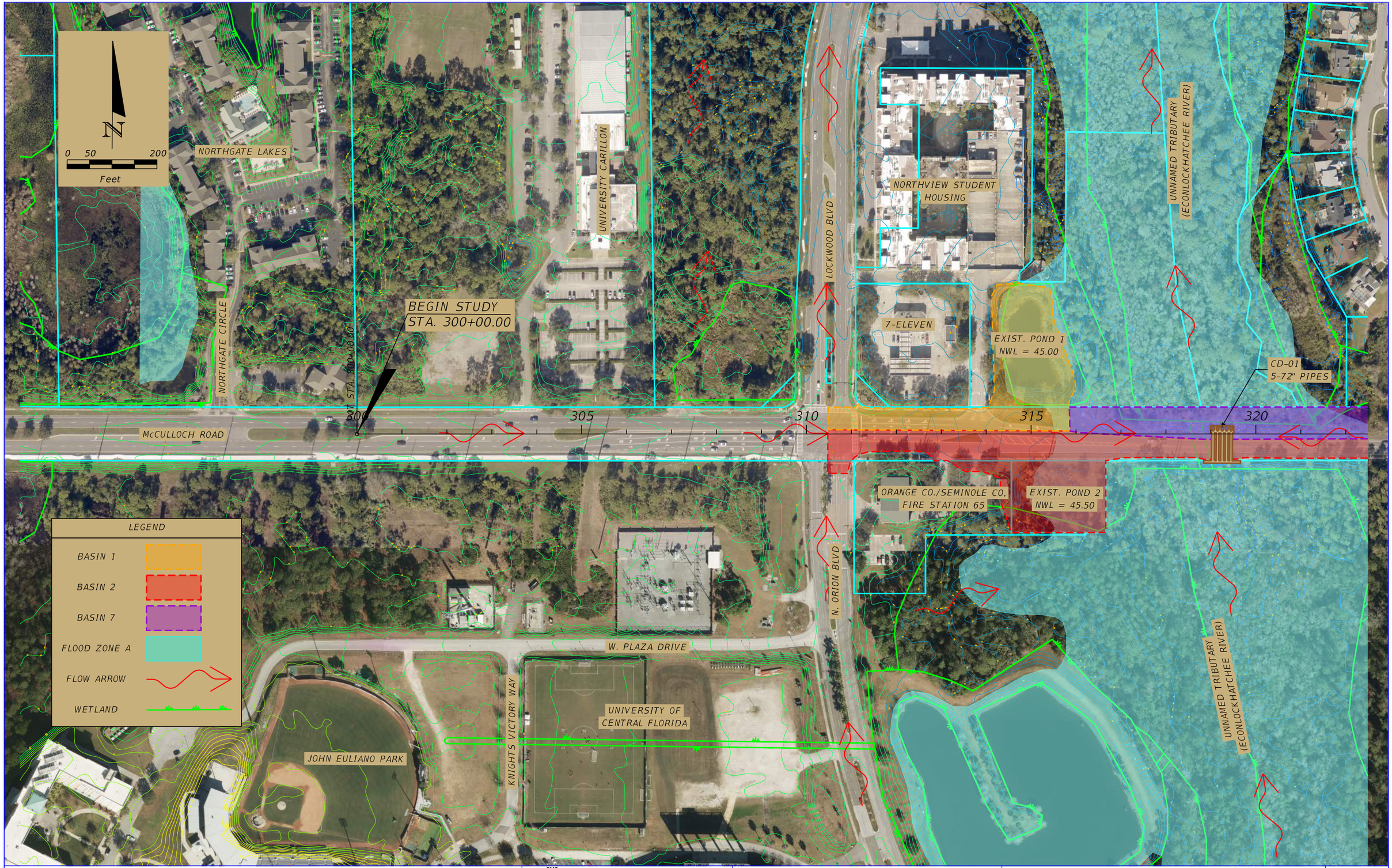
Appendix B

Pre and Post Development Basin Maps



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Dewberry
800 N. MAGNOLIA AVE. ORLANDO, FL. 32803
407-843-5120 / DEWBERRY.COM
FBPR CERT. OF AUTHORIZATION NO. 8794
DANIEL F. CHRISTIE, P.E.
P.E. LICENSE NUMBER 64849

ORANGE COUNTY PUBLIC WORKS
ENGINEERING DIVISION
4200 SOUTH JOHN YOUNG PARKWAY
ORLANDO, FLORIDA 32839-9205
(407) 836-7908

EXISTING BASIN MAP

SHEET NO.

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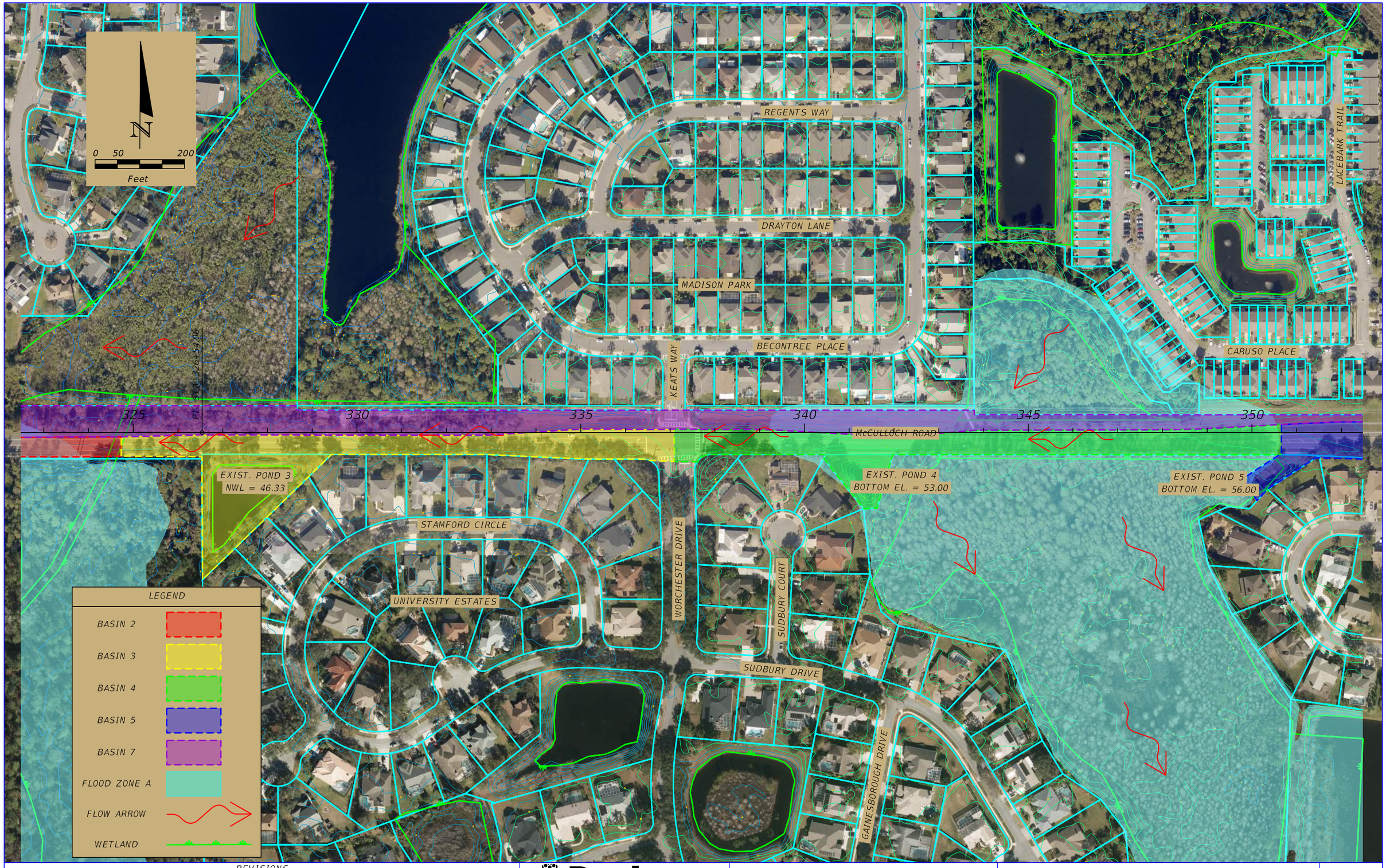

REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION

Dewberry
800 N. MAGNOLIA AVE. ORLANDO, FL. 32803
407-843-5120 / DEWBERRY.COM
FBPR CERT. OF AUTHORIZATION NO. 8794
DANIEL F. CHRISTIE, P.E.
P.E. LICENSE NUMBER 64849

ORANGE COUNTY PUBLIC WORKS
ENGINEERING DIVISION
4200 SOUTH JOHN YOUNG PARKWAY
ORLANDO, FLORIDA 32839-9205
(407) 836-7908

EXISTING BASIN MAP

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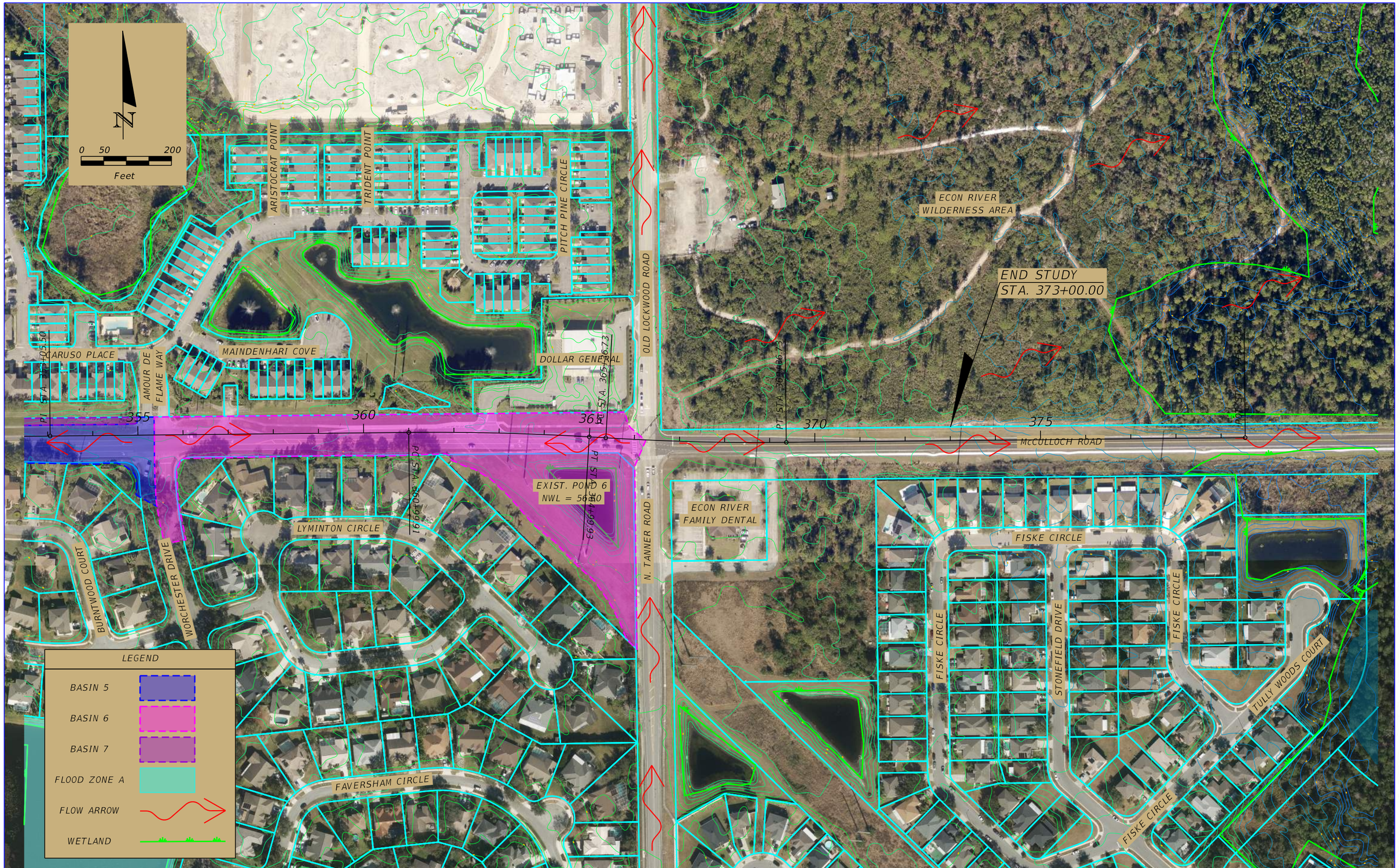

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

Dewberry
800 N. MAGNOLIA AVE. ORLANDO, FL. 32803
407-843-5120 / DEWBERRY.COM
FBPR CERT. OF AUTHORIZATION NO. 8794
DANIEL F. CHRISTIE, P.E.
P.E. LICENSE NUMBER 64849

ORANGE COUNTY PUBLIC WORKS
ENGINEERING DIVISION
4200 SOUTH JOHN YOUNG PARKWAY
ORLANDO, FLORIDA 32839-9205
(407) 836-7908

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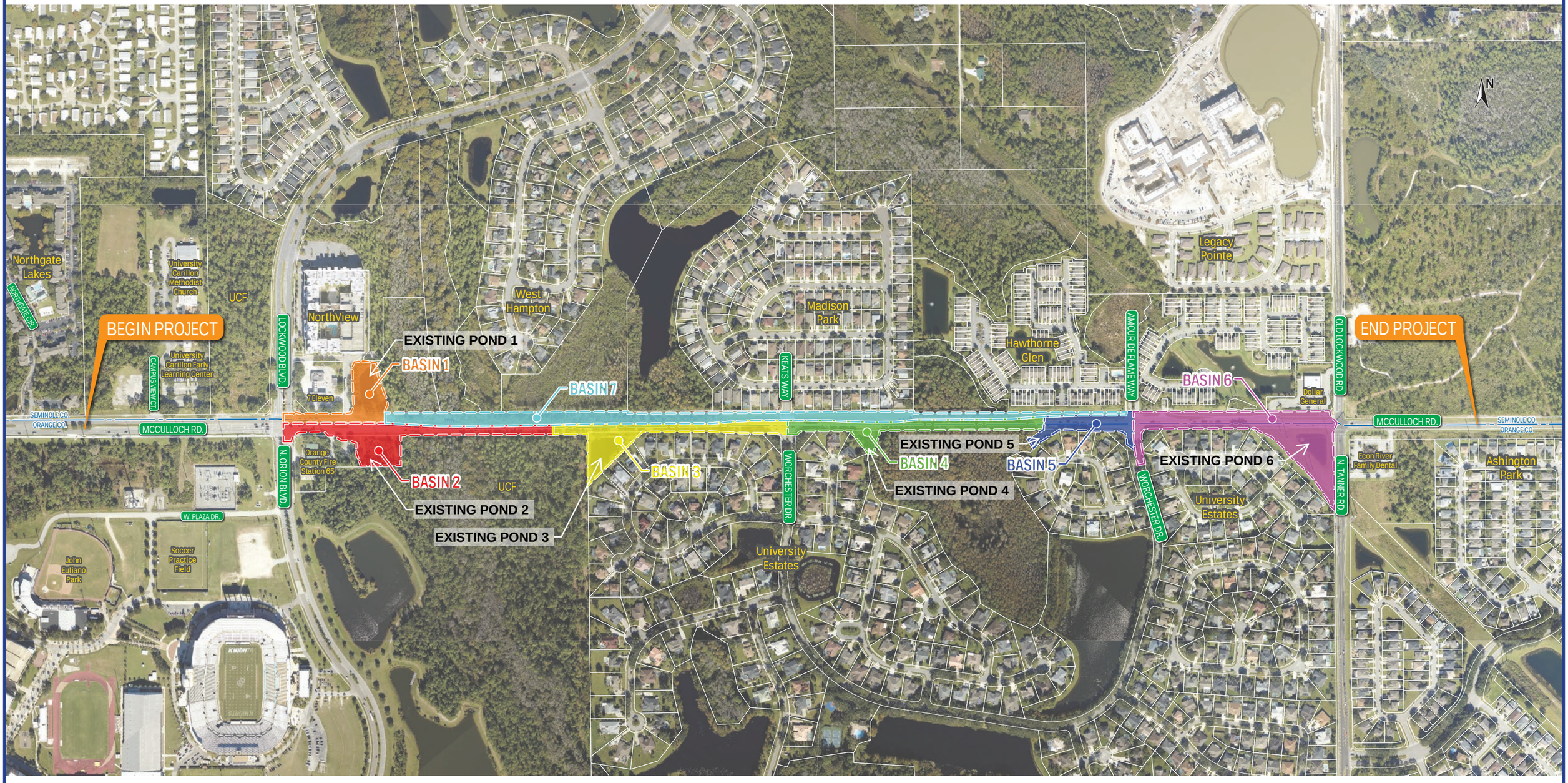


McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Orange County Project Number: Y21-832-CH

Basin Map

ORANGE COUNTY GOVERNMENT FLORIDA

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7A

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7B

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7C

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7D

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7E

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7F

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7G

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7H

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7I

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7J

McCulloch Road Roadway Conceptual Analysis (RCA)

from West of N. Orion Boulevard to East of Tanner Road

Basin 7 Technical Memorandum

Orange County Project Number: Y21-832-CH

Basin 7

Pond 7K

Appendix C

Pre-Development Calculations

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by: SVC

DATE: March 8, 2023
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7**

Station Limits: From: 315+90 To: 365+90

Roadway Length = 5000 ft
R/W Width = 60 ft

EXISTING CONDITION

Roadway Area:

Impervious Roadway Area:	0.36 ac
Measured Pervious Roadway Area:	5.35 ac
Total Roadway Area:	5.71 ac

Pond Area: Pervious Pond Area: 2.21 ac

Total Area:

Impervious Area:	**0.36 ac**
Pervious Area:	**7.56 ac**
Total Area:	**7.92 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.36 ac	35.3
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	5.35 ac	428.0
Pine Flatwoods (Pond Footprint)	A	57	0.87 ac	49.7
Pine Flatwoods (Pond Footprint)	D	86	2.96 ac	254.1
		Total:	9.54 ac	767.2

CN = Total CN*Area / Total Area = **80.4**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Storm Sewer Design 10y/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.43 in**	Precipitation (P) =	8.50 in	8.60 in	7.50 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$	Runoff (Q) =	**6.15 in**	**6.24 in**	**5.21 in**

Appendix D

Post Development Calculations

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7A**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 60 ft

EXISTING CONDITION

Roadway Area:

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 3.40 ac

Total Area:

Impervious Area:	**0.32 ac**
Pervious Area:	**8.25 ac**
Total Area:	**8.57 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.13 ac	7.4
Pine Flatwoods (Pond Footprint)	D	86	3.27 ac	281.1
		Total:	8.57 ac	707.9

CN = Total CN*Area / Total Area = **82.6**

*Color denotes pond area

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.10 in**

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) =	**6.41 in**	**6.51 in**	**6.31 in**	**5.40 in**

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by: _____

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7A**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	1.27 ac
Water Surface Area:	2.13 ac
Total Pond Area:	3.40 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**3.31 ac**	
Water Surface Area:	**2.13 ac**	Wet Pond
Total Area:	**9.15 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	2.13 ac	213.0
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.05 ac	2.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	1.22 ac	104.9
		Total:	9.15 ac	847.9

CN = Total CN*Area / Total Area = **92.6**

*Color denotes pond area

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **0.80 in**

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) =	**7.61 in**	**7.71 in**	**7.52 in**	**6.56 in**

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7A**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.76 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.77 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Q_{pre} =	4.58 ac-ft	4.64 ac-ft	4.51 ac-ft	3.86 ac-ft
Q_{post} =	5.81 ac-ft	5.88 ac-ft	5.73 ac-ft	5.01 ac-ft
ΔQ =	**1.23 ac-ft**	**1.24 ac-ft**	**1.22 ac-ft**	**1.15 ac-ft**

Attenuation V_{req} = **1.24 ac-ft** (use largest value)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

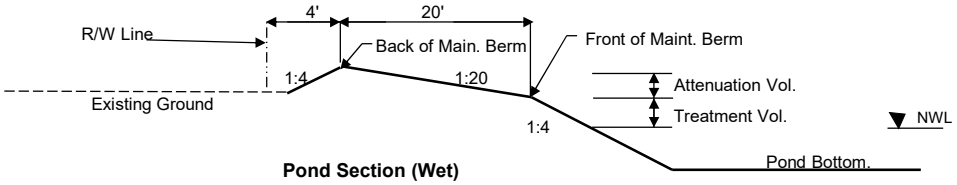
PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7A**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	50.00
Pond Tie-In Width =	4.0 ft	@ 1:4	Normal Water Elevation =	46.34
Maximum Storage Depth (**SD**) =	0.66 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

NWL in refrence to SWMA #5 from Permit # 20580-1

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	720 ft	
Estimated Energy Losses =	0.7 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	47.28 ft	



Pond Section (Wet)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7A**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
50.00	Pond R/W	3.40 ac	771.0 ft	192.0 ft	
49.00	Back of Main. Berm	3.22 ac	763.0 ft	184.0 ft	6.56 ac-ft
48.50		2.80 ac	743.0 ft	164.0 ft	5.05 ac-ft
48.00	Front of Main. Berm	2.39 ac	723.0 ft	144.0 ft	3.75 ac-ft
47.30	Provided Treat.Vol.+Att.Vol	2.28 ac	717.4 ft	138.4 ft	2.12 ac-ft
47.25	Req'd Treat.Vol+Att. Vol	2.27 ac	717.0 ft	138.0 ft	2.01 ac-ft
47.21	Estimated Storm Sewer TW	2.26 ac	716.6 ft	137.6 ft	1.90 ac-ft
46.70	Top of Treatment Vol.	2.19 ac	712.6 ft	133.6 ft	0.77 ac-ft
46.34	Normal Water Level	2.13 ac	709.7 ft	130.7 ft	0.00 ac-ft
44.34		1.83 ac	693.7 ft	114.7 ft	3.96 ac-ft
40.34	Pond Bottom	1.30 ac	685.7 ft	82.7 ft	10.22 ac-ft

Required Treatment+Attenuation Vol.= 2.01 ac-ft
Required Treatment+Attenuation Stage= 47.25 ft

Provided Treatment+Attenuation Vol.= 2.12 ac-ft
Provided Treatment+Attenuation Stage= 47.30 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.92 ac-ft
Estimated Storm Sewer TW EL.= 47.21 ft

HGL requirements met

Freeboard	1.08 ft

20% Pond Contingency =	4.08 ac

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7B**

Station Limits: From: 315+86 To: 366+00 Roadway Length = 5014 ft Basin Width = 60 ft

EXISTING CONDITION

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 3.59 ac

Total Area:
Impervious Area: **0.32 ac**
Pervious Area: **8.44 ac**
Total Area: **8.76 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.14 ac	7.8
Pine Flatwoods (Pond Footprint)	D	86	3.46 ac	297.2
		Total:	8.76 ac	724.4

CN = Total CN*Area / Total Area = **82.7**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.10 in**	Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$	Runoff (Q) =	**6.42 in**	**6.51 in**	**6.32 in**	**5.41 in**

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by: _____

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7B**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	1.31 ac
Water Surface Area:	2.29 ac
Total Pond Area:	3.59 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**3.35 ac**	
Water Surface Area:	**2.29 ac**	Wet Pond
Total Area:	**9.35 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	2.29 ac	228.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.05 ac	2.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	1.26 ac	108.0
		Total:	9.35 ac	866.8

CN = Total CN*Area / Total Area = **92.7**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ =	**0.78 in**				
Precipitation (P) =		8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$		**7.63 in**	**7.73 in**	**7.53 in**	**6.57 in**

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7B**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.78 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.78 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Q_{pre} =	4.68 ac-ft	4.75 ac-ft	4.61 ac-ft	3.95 ac-ft
Q_{post} =	5.94 ac-ft	6.02 ac-ft	5.86 ac-ft	5.12 ac-ft
ΔQ =	**1.26 ac-ft**	**1.26 ac-ft**	**1.25 ac-ft**	**1.17 ac-ft**

Attenuation V_{req} = **1.26 ac-ft** (use largest value)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

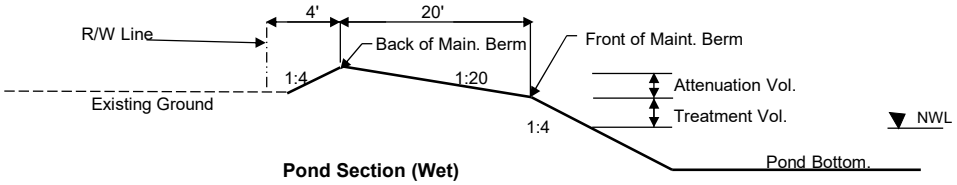
DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7B**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	50.00
Pond Tie-In Width =	4.0 ft	@ 1:4	Normal Water Elevation =	46.34
Maximum Storage Depth (**SD**) =	2.66 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	750 ft	
Estimated Energy Losses =	0.8 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	47.25 ft	



Pond Section (Wet)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7B**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
50.00	Pond R/W	3.59 ac	500.0 ft	313.0 ft	
51.00	Back of Main. Berm	3.44 ac	492.0 ft	305.0 ft	12.32 ac-ft
50.50		3.09 ac	472.0 ft	285.0 ft	10.68 ac-ft
50.00	Front of Main. Berm	2.75 ac	452.0 ft	265.0 ft	9.22 ac-ft
47.30	Provided Treat.Vol.+Att.Vol	2.40 ac	430.4 ft	243.4 ft	2.25 ac-ft
47.23	Req'd Treat.Vol+Att. Vol	2.40 ac	429.9 ft	242.9 ft	2.09 ac-ft
47.18	Estimated Storm Sewer TW	2.39 ac	429.4 ft	242.4 ft	1.95 ac-ft
46.69	Top of Treatment Vol.	2.33 ac	425.5 ft	238.5 ft	0.80 ac-ft
46.34	Normal Water Level	2.29 ac	422.7 ft	235.7 ft	0.00 ac-ft
44.34		2.05 ac	406.7 ft	219.7 ft	4.34 ac-ft
40.34	Pond Bottom	1.72 ac	398.7 ft	187.7 ft	11.88 ac-ft

Required Treatment+Attenuation Vol.= 2.04 ac-ft
Required Treatment+Attenuation Stage= 47.23 ft

Provided Treatment+Attenuation Vol.= 2.25 ac-ft
Provided Treatment+Attenuation Stage= 47.30 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.95 ac-ft
Estimated Storm Sewer TW EL.= 47.18 ft

HGL requirements met

Freeboard	1.08 ft

20% Pond Contingency =	4.31 ac

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS _____
Checked by: _____

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7C**

Station Limits: From: 315+86 To: 366+00 Roadway Length = 5014 ft Basin Width = 60 ft

EXISTING CONDITION

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 2.76 ac

Total Area:
Impervious Area: **0.32 ac**
Pervious Area: **7.61 ac**
Total Area: **7.93 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.11 ac	6.0
Pine Flatwoods (Pond Footprint)	D	86	2.65 ac	228.1
		Total:	7.93 ac	653.5

CN = Total CN*Area / Total Area = **82.4**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.13 in**	Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$	Runoff (Q) =	**6.39 in**	**6.48 in**	**6.29 in**	**5.38 in**

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by: _____

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7C**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	1.48 ac
Water Surface Area:	1.27 ac
Total Pond Area:	2.76 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**3.53 ac**	
Water Surface Area:	**1.27 ac**	Wet Pond
Total Area:	**8.51 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	1.27 ac	127.5
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.06 ac	3.2
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	1.43 ac	122.7
		Total:	8.51 ac	780.6

CN = Total CN*Area / Total Area = **91.7**

*Color denotes pond area

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **0.91 in**

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) =	**7.50 in**	**7.60 in**	**7.40 in**	**6.45 in**

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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7C**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.71 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.77 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Q_{pre} =	4.22 ac-ft	4.28 ac-ft	4.16 ac-ft	3.55 ac-ft
Q_{post} =	5.32 ac-ft	5.39 ac-ft	5.25 ac-ft	4.58 ac-ft
ΔQ =	**1.10 ac-ft**	**1.11 ac-ft**	**1.10 ac-ft**	**1.02 ac-ft**

Attenuation V_{req} = **1.11 ac-ft** (use largest value)

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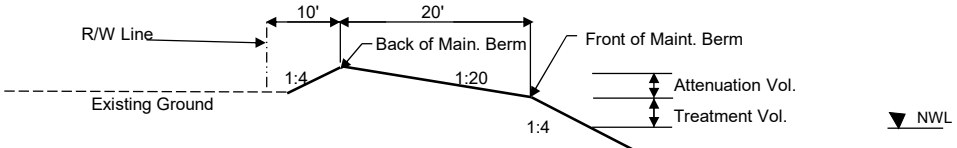
DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7C**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	52.00
Pond Tie-In Width =	10.0 ft	@ 1:4	Normal Water Elevation =	46.50
Maximum Storage Depth (**SD**) =	1.00 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	1400 ft	
Estimated Energy Losses =	1.4 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	46.60 ft	



Pond Section (Wet)

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Made by: NGS
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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7C**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
52.00	Pond R/W	2.76 ac	770.0 ft	156.0 ft	
49.50	Back of Main. Berm	2.34 ac	750.0 ft	136.0 ft	4.79 ac-ft
49.00		1.94 ac	730.0 ft	116.0 ft	3.72 ac-ft
48.50	Front of Main. Berm	1.56 ac	710.0 ft	96.0 ft	2.84 ac-ft
47.90	Provided Treat.Vol.+Att.Vol	1.48 ac	705.2 ft	91.2 ft	1.93 ac-ft
47.87	Req'd Treat.Vol+Att. Vol	1.47 ac	705.0 ft	91.0 ft	1.88 ac-ft
47.81	Estimated Storm Sewer TW	1.46 ac	704.5 ft	90.5 ft	1.80 ac-ft
47.09	Top of Treatment Vol.	1.36 ac	698.7 ft	84.7 ft	0.77 ac-ft
46.50	Normal Water Level	1.27 ac	694.0 ft	80.0 ft	0.00 ac-ft
44.50		1.00 ac	678.0 ft	64.0 ft	2.27 ac-ft
40.50	Pond Bottom	0.49 ac	670.0 ft	32.0 ft	5.25 ac-ft

Required Treatment+Attenuation Vol.= 1.88 ac-ft
Required Treatment+Attenuation Stage= 47.87 ft

Provided Treatment+Attenuation Vol.= 1.93 ac-ft
Provided Treatment+Attenuation Stage= 47.90 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.80 ac-ft
Estimated Storm Sewer TW EL.= 47.81 ft

Try again

Freeboard	-0.21 ft

20% Pond Contingency =	3.31 ac

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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7D**

Station Limits: From: 315+86 To: 366+00 Roadway Length = 5014 ft Basin Width = 60 ft

EXISTING CONDITION

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 2.64 ac

Total Area:
Impervious Area: **0.32 ac**
Pervious Area: **7.49 ac**
Total Area: **7.81 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.10 ac	5.7
Pine Flatwoods (Pond Footprint)	D	86	2.54 ac	218.4
		Total:	7.81 ac	643.5

CN = Total CN*Area / Total Area = **82.4**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.14 in**	Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$	Runoff (Q) =	**6.38 in**	**6.48 in**	**6.29 in**	**5.37 in**

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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7D**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	1.54 ac
Water Surface Area:	1.10 ac
Total Pond Area:	2.64 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**3.59 ac**	
Water Surface Area:	**1.10 ac**	Wet Pond
Total Area:	**8.40 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	1.10 ac	109.6
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.06 ac	3.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	1.49 ac	127.7
		Total:	8.40 ac	767.9

CN = Total CN*Area / Total Area = **91.5**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ =	**0.93 in**				
Precipitation (P) =		8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$		**7.47 in**	**7.57 in**	**7.38 in**	**6.43 in**

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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7D**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.70 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.77 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Q_{pre} =	4.15 ac-ft	4.22 ac-ft	4.09 ac-ft	3.50 ac-ft
Q_{post} =	5.23 ac-ft	5.30 ac-ft	5.16 ac-ft	4.50 ac-ft
ΔQ =	**1.08 ac-ft**	**1.08 ac-ft**	**1.07 ac-ft**	**1.00 ac-ft**

Attenuation V_{req} = **1.08 ac-ft** (use largest value)

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Made by: NGS
Checked by:

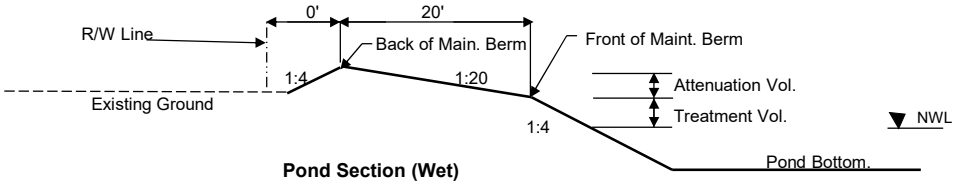
DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7D**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	53.00
Pond Tie-In Width =	0.0 ft	@ 1:4	Normal Water Elevation =	49.00
Maximum Storage Depth (**SD**) =	2.00 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	1600 ft	
Estimated Energy Losses =	1.6 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	46.40 ft	



Pond Section (Wet)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
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Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7D**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
53.00	Pond R/W	2.64 ac	1000.0 ft	115.0 ft	
53.00	Back of Main. Berm	2.64 ac	1000.0 ft	115.0 ft	6.27 ac-ft
52.50		2.14 ac	980.0 ft	95.0 ft	5.07 ac-ft
52.00	Front of Main. Berm	1.65 ac	960.0 ft	75.0 ft	4.12 ac-ft
50.60	Provided Treat.Vol.+Att.Vol	1.39 ac	948.8 ft	63.8 ft	1.99 ac-ft
50.51	Req'd Treat.Vol+Att. Vol	1.37 ac	948.1 ft	63.1 ft	1.86 ac-ft
50.44	Estimated Storm Sewer TW	1.36 ac	947.5 ft	62.5 ft	1.77 ac-ft
49.67	Top of Treatment Vol.	1.22 ac	941.3 ft	56.3 ft	0.77 ac-ft
49.00	Normal Water Level	1.10 ac	936.0 ft	51.0 ft	0.00 ac-ft
47.00		0.74 ac	920.0 ft	35.0 ft	1.84 ac-ft
43.00	Pond Bottom	0.06 ac	912.0 ft	3.0 ft	3.44 ac-ft

Required Treatment+Attenuation Vol.= 1.86 ac-ft
Required Treatment+Attenuation Stage= 50.51 ft

Provided Treatment+Attenuation Vol.= 1.99 ac-ft
Provided Treatment+Attenuation Stage= 50.60 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.77 ac-ft
Estimated Storm Sewer TW EL.= 50.44 ft

Try again

Freeboard -3.04 ft

20% Pond Contingency = 3.17 ac

DEWBERRY
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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7E**

Station Limits: From: 315+86 To: 366+00 Roadway Length = 5014 ft Basin Width = 60 ft

EXISTING CONDITION

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 3.47 ac

Total Area:
Impervious Area: **0.32 ac**
Pervious Area: **8.32 ac**
Total Area: **8.64 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.13 ac	7.6
Pine Flatwoods (Pond Footprint)	D	86	3.34 ac	287.1
		Total:	8.64 ac	714.0

CN = Total CN*Area / Total Area = **82.6**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.10 in**	Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$	Runoff (Q) =	**6.41 in**	**6.51 in**	**6.32 in**	**5.40 in**

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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7E**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	1.23 ac
Water Surface Area:	2.24 ac
Total Pond Area:	3.47 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**3.27 ac**	
Water Surface Area:	**2.24 ac**	Wet Pond
Total Area:	**9.23 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	2.24 ac	224.3
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.05 ac	2.7
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	1.18 ac	101.6
		Total:	9.23 ac	855.8

CN = Total CN*Area / Total Area = **92.8**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ =	**0.78 in**				
Precipitation (P) =		8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$		**7.63 in**	**7.73 in**	**7.53 in**	**6.58 in**

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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7E**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.77 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.77 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Q_{pre} =	4.62 ac-ft	4.69 ac-ft	4.55 ac-ft	3.89 ac-ft
Q_{post} =	5.87 ac-ft	5.94 ac-ft	5.79 ac-ft	5.06 ac-ft
ΔQ =	**1.25 ac-ft**	**1.26 ac-ft**	**1.24 ac-ft**	**1.17 ac-ft**

Attenuation V_{req} = **1.26 ac-ft** (use largest value)

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DATE: July 24, 2025
Job Number: 50145232

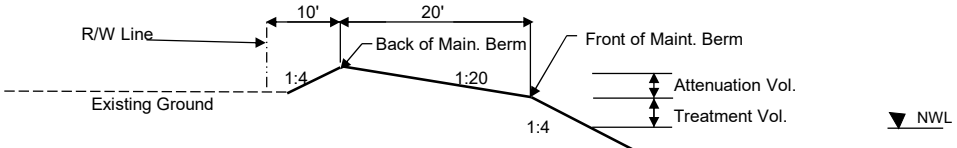
PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7E**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	54.00
Pond Tie-In Width =	10.0 ft	@ 1:4	Normal Water Elevation =	53.50
Maximum Storage Depth (**SD**) =	1.00 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

Pulled from permit in adjacent pond permit # 22265-3

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	1703 ft	
Estimated Energy Losses =	1.7 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	46.30 ft	



Pond Section (Wet)

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Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7E**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
54.00	Pond R/W	3.47 ac	420.0 ft	360.0 ft	
56.50	Back of Main. Berm	3.12 ac	400.0 ft	340.0 ft	7.52 ac-ft
56.00		2.79 ac	380.0 ft	320.0 ft	6.04 ac-ft
55.50	Front of Main. Berm	2.48 ac	360.0 ft	300.0 ft	4.72 ac-ft
54.40	Provided Treat.Vol.+Att.Vol	2.35 ac	351.2 ft	291.2 ft	2.07 ac-ft
54.39	Req'd Treat.Vol+Att. Vol	2.35 ac	351.1 ft	291.1 ft	2.03 ac-ft
54.35	Estimated Storm Sewer TW	2.34 ac	350.8 ft	290.8 ft	1.94 ac-ft
53.84	Top of Treatment Vol.	2.28 ac	346.7 ft	286.7 ft	0.77 ac-ft
53.50	Normal Water Level	2.24 ac	344.0 ft	284.0 ft	0.00 ac-ft
51.50		2.02 ac	328.0 ft	268.0 ft	4.26 ac-ft
47.50	Pond Bottom	1.73 ac	320.0 ft	236.0 ft	11.76 ac-ft

Required Treatment+Attenuation Vol.= 2.03 ac-ft
Required Treatment+Attenuation Stage= 54.39 ft

Provided Treatment+Attenuation Vol.= 2.07 ac-ft
Provided Treatment+Attenuation Stage= 54.40 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.94 ac-ft
Estimated Storm Sewer TW EL.= 54.35 ft

Try again

Freeboard -7.05 ft

20% Pond Contingency =	4.17 ac

DEWBERRY
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Made by: NGS
Checked by: _____

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7F**

Station Limits: From: 315+86 To: 366+00 Roadway Length = 5014 ft Basin Width = 60 ft

EXISTING CONDITION

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 1.56 ac

Total Area:
Impervious Area: **0.32 ac**
Pervious Area: **6.41 ac**
Total Area: **6.73 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.06 ac	3.4
Pine Flatwoods (Pond Footprint)	D	86	1.50 ac	128.7
		Total:	6.73 ac	551.4

CN = Total CN*Area / Total Area = **82.0**

*Color denotes pond area

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.20 in**

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) =	**6.33 in**	**6.43 in**	**6.24 in**	**5.33 in**

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by: _____

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7F**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	0.60 ac
Water Surface Area:	0.96 ac
Total Pond Area:	1.56 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**2.64 ac**	
Water Surface Area:	**0.96 ac**	Wet Pond
Total Area:	**7.31 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	0.96 ac	95.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.02 ac	1.3
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	0.57 ac	49.4
		Total:	7.31 ac	673.7

CN = Total CN*Area / Total Area = **92.2**

*Color denotes pond area

Runoff:

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Soil Capacity (S) = 1000/CN - 10 = **0.85 in**				
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$	**7.56 in**	**7.66 in**	**7.46 in**	**6.51 in**

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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7F**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.61 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.77 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Q_{pre} =	3.55 ac-ft	3.60 ac-ft	3.50 ac-ft	2.99 ac-ft
Q_{post} =	4.60 ac-ft	4.66 ac-ft	4.54 ac-ft	3.96 ac-ft
ΔQ =	**1.05 ac-ft**	**1.06 ac-ft**	**1.05 ac-ft**	**0.98 ac-ft**

Attenuation V_{req} = **1.06 ac-ft** (use largest value)

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Made by: NGS
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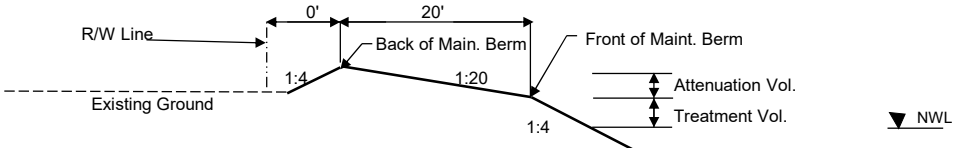
DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7F**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	53.00
Pond Tie-In Width =	0.0 ft	@ 1:4	Normal Water Elevation =	49.00
Maximum Storage Depth (**SD**) =	2.00 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	2500 ft	
Estimated Energy Losses =	2.5 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	45.50 ft	



Pond Section (Wet)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
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Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7F**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
53.00	Pond R/W	1.56 ac	271.0 ft	250.0 ft	
53.00	Back of Main. Berm	1.56 ac	271.0 ft	250.0 ft	3.41 ac-ft
52.50		1.33 ac	251.0 ft	230.0 ft	2.68 ac-ft
52.00	Front of Main. Berm	1.11 ac	231.0 ft	210.0 ft	2.07 ac-ft
51.80	Provided Treat.Vol.+Att.Vol	1.10 ac	229.4 ft	208.4 ft	1.85 ac-ft
51.78	Req'd Treat.Vol+Att. Vol	1.10 ac	229.2 ft	208.2 ft	1.83 ac-ft
51.71	Estimated Storm Sewer TW	1.09 ac	228.7 ft	207.7 ft	1.75 ac-ft
50.78	Top of Treatment Vol.	1.02 ac	221.2 ft	200.2 ft	0.77 ac-ft
50.00	Normal Water Level	0.96 ac	215.0 ft	194.0 ft	0.00 ac-ft
48.00		0.81 ac	199.0 ft	178.0 ft	1.77 ac-ft
44.00	Pond Bottom	0.64 ac	191.0 ft	146.0 ft	4.68 ac-ft

Required Treatment+Attenuation Vol.= 1.83 ac-ft
Required Treatment+Attenuation Stage= 51.78 ft

Provided Treatment+Attenuation Vol.= 1.85 ac-ft
Provided Treatment+Attenuation Stage= 51.80 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.75 ac-ft
Estimated Storm Sewer TW EL.= 51.71 ft

Try again

Freeboard	-5.21 ft

20% Pond Contingency =	1.87 ac

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Made by: NGS
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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7G**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 60 ft

EXISTING CONDITION

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 1.48 ac

Total Area:
Impervious Area: **0.32 ac**
Pervious Area: **6.33 ac**
Total Area: **6.65 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.06 ac	3.2
Pine Flatwoods (Pond Footprint)	D	86	1.42 ac	122.5
		Total:	6.65 ac	545.1

CN = Total CN*Area / Total Area = **82.0**

*Color denotes pond area

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.20 in**

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) =	**6.33 in**	**6.43 in**	**6.23 in**	**5.32 in**

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Made by: NGS
Checked by: _____

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7G**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	0.80 ac
Water Surface Area:	0.68 ac
Total Pond Area:	1.48 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**2.84 ac**	
Water Surface Area:	**0.68 ac**	Wet Pond
Total Area:	**7.24 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	0.68 ac	68.2
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.03 ac	1.7
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	0.77 ac	66.1
		Total:	7.24 ac	663.2

CN = Total CN*Area / Total Area = **91.7**

*Color denotes pond area

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **0.91 in**

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) =	**7.50 in**	**7.60 in**	**7.40 in**	**6.45 in**

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Made by: NGS
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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7G**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.60 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.77 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Q_{pre} =	3.51 ac-ft	3.56 ac-ft	3.46 ac-ft	2.95 ac-ft
Q_{post} =	4.52 ac-ft	4.58 ac-ft	4.46 ac-ft	3.89 ac-ft
ΔQ =	**1.01 ac-ft**	**1.02 ac-ft**	**1.01 ac-ft**	**0.94 ac-ft**

Attenuation V_{req} = **1.02 ac-ft** (use largest value)

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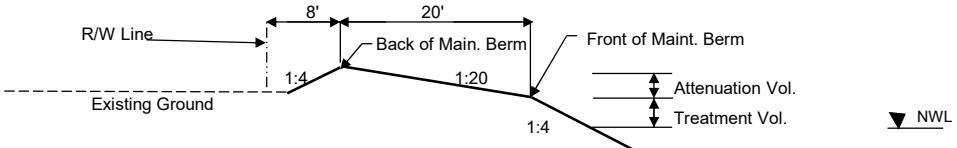
DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7G**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	52.00
Pond Tie-In Width =	8.0 ft	@ 1:4	Normal Water Elevation =	50.00
Maximum Storage Depth (**SD**) =	2.00 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	1400 ft	
Estimated Energy Losses =	1.4 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	46.60 ft	



Pond Section (Wet)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7G**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
52.00	Pond R/W	1.48 ac	300.0 ft	215.0 ft	
54.00	Back of Main. Berm	1.30 ac	284.0 ft	199.0 ft	3.45 ac-ft
53.50		1.08 ac	264.0 ft	179.0 ft	2.85 ac-ft
53.00	Front of Main. Berm	0.89 ac	244.0 ft	159.0 ft	2.36 ac-ft
52.40	Provided Treat.Vol.+Att.Vol	0.85 ac	239.2 ft	154.2 ft	1.83 ac-ft
52.35	Req'd Treat.Vol+Att. Vol	0.84 ac	238.8 ft	153.8 ft	1.79 ac-ft
52.25	Estimated Storm Sewer TW	0.84 ac	238.0 ft	153.0 ft	1.71 ac-ft
51.07	Top of Treatment Vol.	0.75 ac	228.6 ft	143.6 ft	0.77 ac-ft
50.00	Normal Water Level	0.68 ac	220.0 ft	135.0 ft	0.00 ac-ft
48.00		0.56 ac	204.0 ft	119.0 ft	1.24 ac-ft
44.00	Pond Bottom	0.39 ac	196.0 ft	87.0 ft	3.14 ac-ft

Required Treatment+Attenuation Vol.= 1.79 ac-ft
Required Treatment+Attenuation Stage= 52.35 ft

Provided Treatment+Attenuation Vol.= 1.83 ac-ft
Provided Treatment+Attenuation Stage= 52.40 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.71 ac-ft
Estimated Storm Sewer TW EL.= 52.25 ft

Try again

Freeboard	-4.65 ft

20% Pond Contingency =	1.78 ac

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Made by: NGS
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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7H**

Station Limits: From: 315+86 To: 366+00 Roadway Length = 5014 ft Basin Width = 60 ft

EXISTING CONDITION

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 1.98 ac

Total Area:
Impervious Area: **0.32 ac**
Pervious Area: **6.83 ac**
Total Area: **7.15 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.08 ac	4.3
Pine Flatwoods (Pond Footprint)	D	86	1.90 ac	163.5
		Total:	7.15 ac	587.2

CN = Total CN*Area / Total Area = **82.2**

*Color denotes pond area

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.17 in**

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) =	**6.35 in**	**6.45 in**	**6.26 in**	**5.35 in**

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Made by: NGS
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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7H**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	0.68 ac
Water Surface Area:	1.29 ac
Total Pond Area:	1.98 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**2.73 ac**	
Water Surface Area:	**1.29 ac**	Wet Pond
Total Area:	**7.73 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	1.29 ac	129.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.03 ac	1.5
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	0.66 ac	56.5
		Total:	7.73 ac	714.6

CN = Total CN*Area / Total Area = **92.4**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ =	**0.82 in**	Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$		Runoff (Q) =	**7.59 in**	**7.69 in**	**7.49 in**	**6.54 in**

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Made by: NGS
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DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7H**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.64 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.77 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	**Orange County 25yr/24hr**	**Seminole County 25yr/24hr**	**Storm Sewer Design 10yr/24hr**
Q_{pre} =	3.78 ac-ft	3.84 ac-ft	3.73 ac-ft	3.19 ac-ft
Q_{post} =	4.89 ac-ft	4.95 ac-ft	4.83 ac-ft	4.21 ac-ft
ΔQ =	**1.11 ac-ft**	**1.11 ac-ft**	**1.10 ac-ft**	**1.03 ac-ft**

Attenuation V_{req} = **1.11 ac-ft** (use largest value)

DEWBERRY
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Made by: NGS
Checked by:

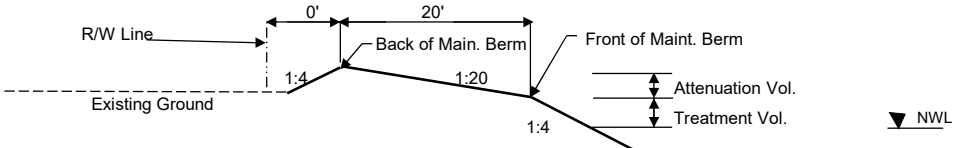
DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7H**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	53.00
Pond Tie-In Width =	0.0 ft	@ 1:4	Normal Water Elevation =	50.00
Maximum Storage Depth (**SD**) =	1.00 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	4920 ft	
Estimated Energy Losses =	4.9 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	43.08 ft	



Pond Section (Wet)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7H**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
53.00	Pond R/W	1.98 ac	300.0 ft	287.0 ft	
53.00	Back of Main. Berm	1.98 ac	300.0 ft	287.0 ft	4.49 ac-ft
52.50		1.72 ac	280.0 ft	267.0 ft	3.57 ac-ft
52.00	Front of Main. Berm	1.47 ac	260.0 ft	247.0 ft	2.77 ac-ft
51.40	Provided Treat.Vol.+Att.Vol	1.42 ac	255.2 ft	242.2 ft	1.90 ac-ft
51.40	Req'd Treat.Vol+Att. Vol	1.42 ac	255.2 ft	242.2 ft	1.89 ac-ft
51.33	Estimated Storm Sewer TW	1.41 ac	254.6 ft	241.6 ft	1.80 ac-ft
50.58	Top of Treatment Vol.	1.35 ac	248.6 ft	235.6 ft	0.77 ac-ft
50.00	Normal Water Level	1.29 ac	244.0 ft	231.0 ft	0.00 ac-ft
48.00		1.13 ac	228.0 ft	215.0 ft	2.42 ac-ft
44.00	Pond Bottom	0.92 ac	220.0 ft	183.0 ft	6.52 ac-ft

Required Treatment+Attenuation Vol.= 1.89 ac-ft
Required Treatment+Attenuation Stage= 51.40 ft

Provided Treatment+Attenuation Vol.= 1.90 ac-ft
Provided Treatment+Attenuation Stage= 51.40 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.80 ac-ft
Estimated Storm Sewer TW EL.= 51.33 ft

Try again

Freeboard	-7.25 ft

20% Pond Contingency =	2.37 ac

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7I**

Station Limits: From: 315+86 To: 366+00 Roadway Length = 5014 ft Basin Width = 60 ft

EXISTING CONDITION

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 1.17 ac

Total Area:
Impervious Area: **0.32 ac**
Pervious Area: **6.02 ac**
Total Area: **6.34 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.04 ac	2.5
Pine Flatwoods (Pond Footprint)	D	86	1.12 ac	96.6
		Total:	6.34 ac	518.5

CN = Total CN*Area / Total Area = **81.8**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.22 in**	Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$	Runoff (Q) =	**6.31 in**	**6.41 in**	**6.22 in**	**5.31 in**

DEWBERRY
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Made by: NGS
Checked by: _____

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7I**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	0.68 ac
Water Surface Area:	0.48 ac
Total Pond Area:	1.17 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**2.73 ac**	
Water Surface Area:	**0.48 ac**	Wet Pond
Total Area:	**6.92 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	0.48 ac	48.5
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.03 ac	1.5
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	0.66 ac	56.5
		Total:	6.92 ac	633.7

CN = Total CN*Area / Total Area = **91.5**

*Color denotes pond area

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **0.92 in**

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) =	**7.48 in**	**7.58 in**	**7.38 in**	**6.43 in**

DEWBERRY
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Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7I**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.58 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.77 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	**Orange County 25yr/24hr**	**Seminole County 25yr/24hr**	**Storm Sewer Design 10yr/24hr**
Q_{pre} =	3.33 ac-ft	3.38 ac-ft	3.28 ac-ft	2.80 ac-ft
Q_{post} =	4.32 ac-ft	4.37 ac-ft	4.26 ac-ft	3.71 ac-ft
ΔQ =	**0.98 ac-ft**	**0.99 ac-ft**	**0.98 ac-ft**	**0.91 ac-ft**

Attenuation V_{req} = **0.99 ac-ft** (use largest value)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

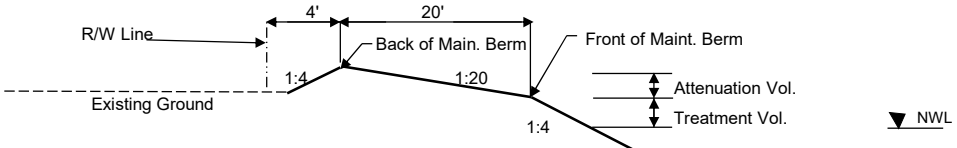
DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7I**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	60.00
Pond Tie-In Width =	4.0 ft	@ 1:4	Normal Water Elevation =	56.00
Maximum Storage Depth (**SD**) =	3.00 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	4750 ft	
Estimated Energy Losses =	4.8 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	43.25 ft	



Pond Section (Wet)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7I**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
60.00	Pond R/W	1.17 ac	240.0 ft	212.0 ft	
61.00	Back of Main. Berm	1.09 ac	232.0 ft	204.0 ft	3.32 ac-ft
60.50		0.90 ac	212.0 ft	184.0 ft	2.82 ac-ft
60.00	Front of Main. Berm	0.72 ac	192.0 ft	164.0 ft	2.42 ac-ft
59.10	Provided Treat.Vol.+Att.Vol	0.67 ac	184.8 ft	156.8 ft	1.78 ac-ft
59.06	Req'd Treat.Vol+Att. Vol	0.66 ac	184.5 ft	156.5 ft	1.76 ac-ft
58.95	Estimated Storm Sewer TW	0.66 ac	183.6 ft	155.6 ft	1.68 ac-ft
57.47	Top of Treatment Vol.	0.57 ac	171.8 ft	143.8 ft	0.77 ac-ft
56.00	Normal Water Level	0.48 ac	160.0 ft	132.0 ft	0.00 ac-ft
54.00		0.38 ac	144.0 ft	116.0 ft	0.87 ac-ft
50.00	Pond Bottom	0.26 ac	136.0 ft	84.0 ft	2.16 ac-ft

Required Treatment+Attenuation Vol.= 1.76 ac-ft
Required Treatment+Attenuation Stage= 59.06 ft

Provided Treatment+Attenuation Vol.= 1.78 ac-ft
Provided Treatment+Attenuation Stage= 59.10 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.68 ac-ft
Estimated Storm Sewer TW EL.= 58.95 ft

Try again

Freeboard -14.70 ft

20% Pond Contingency =	1.40 ac

DEWBERRY
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Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7J**

Station Limits: From: 315+86 To: 366+00 Roadway Length = 5014 ft Basin Width = 60 ft

EXISTING CONDITION

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 1.44 ac

Total Area:
Impervious Area: **0.32 ac**
Pervious Area: **6.29 ac**
Total Area: **6.61 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.05 ac	3.1
Pine Flatwoods (Pond Footprint)	D	86	1.39 ac	119.2
		Total:	6.61 ac	541.7

CN = Total CN*Area / Total Area = **81.9**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.20 in**	Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$	Runoff (Q) =	**6.33 in**	**6.42 in**	**6.23 in**	**5.32 in**

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Made by: NGS
Checked by: _____

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7J**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	0.64 ac
Water Surface Area:	0.80 ac
Total Pond Area:	1.44 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**2.69 ac**	
Water Surface Area:	**0.80 ac**	Wet Pond
Total Area:	**7.20 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	0.80 ac	79.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.02 ac	1.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	0.62 ac	53.1
		Total:	7.20 ac	661.6

CN = Total CN*Area / Total Area = **91.9**

*Color denotes pond area

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **0.88 in**

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) =	**7.53 in**	**7.63 in**	**7.43 in**	**6.48 in**

DEWBERRY
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Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7J**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.60 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.77 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Q_{pre} =	3.49 ac-ft	3.54 ac-ft	3.43 ac-ft	2.93 ac-ft
Q_{post} =	4.52 ac-ft	4.58 ac-ft	4.46 ac-ft	3.89 ac-ft
ΔQ =	**1.03 ac-ft**	**1.04 ac-ft**	**1.02 ac-ft**	**0.96 ac-ft**

Attenuation V_{req} = **1.04 ac-ft** (use largest value)

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Made by: NGS
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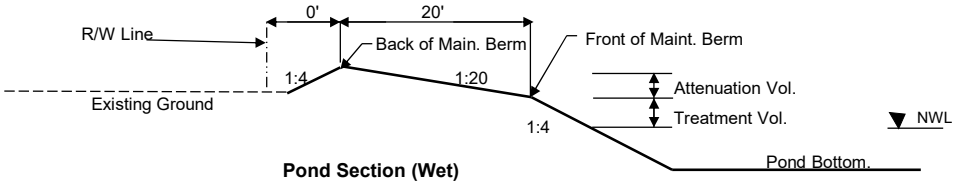
DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7J**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	53.00
Pond Tie-In Width =	0.0 ft	@ 1:4	Normal Water Elevation =	49.00
Maximum Storage Depth (**SD**) =	2.00 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	750 ft	
Estimated Energy Losses =	0.8 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	47.25 ft	



Pond Section (Wet)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7J**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
53.00	Pond R/W	1.44 ac	250.0 ft	251.0 ft	
53.00	Back of Main. Berm	1.44 ac	250.0 ft	251.0 ft	3.95 ac-ft
52.50		1.22 ac	230.0 ft	231.0 ft	3.28 ac-ft
52.00	Front of Main. Berm	1.02 ac	210.0 ft	211.0 ft	2.72 ac-ft
51.10	Provided Treat.Vol.+Att.Vol	0.95 ac	202.8 ft	203.8 ft	1.83 ac-ft
51.07	Req'd Treat.Vol+Att. Vol	0.95 ac	202.6 ft	203.6 ft	1.81 ac-ft
50.99	Estimated Storm Sewer TW	0.94 ac	201.9 ft	202.9 ft	1.73 ac-ft
49.93	Top of Treatment Vol.	0.86 ac	193.4 ft	194.4 ft	0.77 ac-ft
49.00	Normal Water Level	0.80 ac	186.0 ft	187.0 ft	0.00 ac-ft
47.00		0.67 ac	170.0 ft	171.0 ft	1.47 ac-ft
43.00	Pond Bottom	0.52 ac	162.0 ft	139.0 ft	3.83 ac-ft

Required Treatment+Attenuation Vol.= 1.81 ac-ft
Required Treatment+Attenuation Stage= 51.07 ft

Provided Treatment+Attenuation Vol.= 1.83 ac-ft
Provided Treatment+Attenuation Stage= 51.10 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.73 ac-ft
Estimated Storm Sewer TW EL.= 50.99 ft

Try again

Freeboard	-2.74 ft

20% Pond Contingency =	1.73 ac

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7K**

Station Limits: From: 315+86 To: 366+00 Roadway Length = 5014 ft Basin Width = 60 ft

EXISTING CONDITION

Impervious Roadway Area:	0.32 ac	--------->	Measured from CAD
Pervious Roadway Area:	4.85 ac	--------->	Total Roadway Area - Impervious Roadway Area
Total Roadway Area:	5.17 ac	--------->	Measured from CAD

Pond Area: Pervious Pond Area: 1.61 ac

Total Area:
Impervious Area: **0.32 ac**
Pervious Area: **6.46 ac**
Total Area: **6.78 ac**

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	0.32 ac	31.4
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	4.85 ac	388.0
Pine Flatwoods (Pond Footprint)	A	57	0.06 ac	3.5
Pine Flatwoods (Pond Footprint)	D	86	1.55 ac	133.4
		Total:	6.78 ac	556.3

CN = Total CN*Area / Total Area = **82.0**

*Color denotes pond area

Runoff:

Soil Capacity (S) = $\frac{1000}{CN} - 10$ = **2.19 in**

Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$

	SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10yr/24hr
Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) =	**6.34 in**	**6.43 in**	**6.24 in**	**5.33 in**

DEWBERRY
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Orlando, FL 32803

Made by: NGS
Checked by: _____

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7K**

Station Limits: From: 315+86 To: 366+00

Roadway Length = 5014 ft
Basin Width = 50 ft

PROPOSED CONDITION

Roadway Area:

Description	Width	Quantity	Total Width
Travel Lane	11.00 ft	2	22.00 ft
Bike Lane	0.00 ft	0	0.00 ft
Imperv. Median	0.00 ft	0	0.00 ft
Sidewalk	6.00 ft	1	6.00 ft
Multi-Use Path	10.00 ft	0	0.00 ft
Curb&Gutter E	2.25 ft	1	2.25 ft
Curb&Gutter F	2.00 ft	1	2.00 ft
Shldr Gutter	0.00 ft	0	0.00 ft
Barrier Wall	0.00 ft	0	0.00 ft
		Total Impervious Width:	32.25 ft

Impervious Roadway Area:	3.71 ac	--------->	Total Impervious Width * Roadway Length / 43560
Pervious Roadway Area:	2.04 ac	--------->	(Basin Width - Total Impervious Width) * Roadway Length / 43560
Total Roadway Area:	5.76 ac	--------->	Impervious Roadway Area + Pervious Roadway Area

Pond Area:

Pervious Pond Area :	1.40 ac
Water Surface Area:	0.21 ac
Total Pond Area:	1.61 ac

Total Area:

Impervious Area:	**3.71 ac**	
Pervious Area:	**3.44 ac**	
Water Surface Area:	**0.21 ac**	Wet Pond
Total Area:	**7.37 ac**	

Curve Number:

Land Use Description	Soil Group	CN	Area	CN*Area
Impervious areas; Streets & roads	D	98	3.71 ac	363.8
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%) (Roadway)	D	80	2.04 ac	163.4
Proposed Ponds (Water Surface)	D	100	0.21 ac	21.2
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	A	57	0.05 ac	3.0
Open Space (lawns, parks, golf courses, cemeteries, etc.) Good condition (grass cover > 75%)	D	86	1.35 ac	115.9
		Total:	7.37 ac	667.4

CN = Total CN*Area / Total Area = **90.6**

*Color denotes pond area

Runoff:

		SJRWMD 25yr/24hr	Orange County 25yr/24hr	Seminole County 25yr/24hr	Storm Sewer Design 10y/24hr
Soil Capacity (S) = $\frac{1000}{CN} - 10$ =	**1.04 in**	Precipitation (P) =	8.50 in	8.60 in	8.40 in	7.44 in
Runoff (Q) = $\frac{(P - 0.2S)^2}{(P + 0.8S)}$		Runoff (Q) =	**7.37 in**	**7.47 in**	**7.27 in**	**6.32 in**

DEWBERRY
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Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7K**

POND SIZING

Required Treatment Volume (TV)

Selection criteria

Permitting Agency	**SJRWMD**
StormW.Mgmt.	**Wet Detention**
Online/Offline	**Online**
OFW	**No**
Open/Closed Basin	**Open**

Wet Detention	**2.50 in**	x Impervious Areas =	0.77 ac-ft
	1.00 in	x Total Basin Area =	0.61 ac-ft

Treatment V_{req} = Largest of Trt. Vol. = **0.77 ac-ft**

Required Attenuation Volume:

Total Runoff (ac-ft)

	SJRWMD 25yr/24hr	**Orange County 25yr/24hr**	**Seminole County 25yr/24hr**	**Storm Sewer Design 10yr/24hr**
Q_{pre} =	3.58 ac-ft	3.64 ac-ft	3.53 ac-ft	3.01 ac-ft
Q_{post} =	4.52 ac-ft	4.58 ac-ft	4.46 ac-ft	3.88 ac-ft
ΔQ =	**0.94 ac-ft**	**0.95 ac-ft**	**0.93 ac-ft**	**0.87 ac-ft**

Attenuation V_{req} = **0.95 ac-ft** (use largest value)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

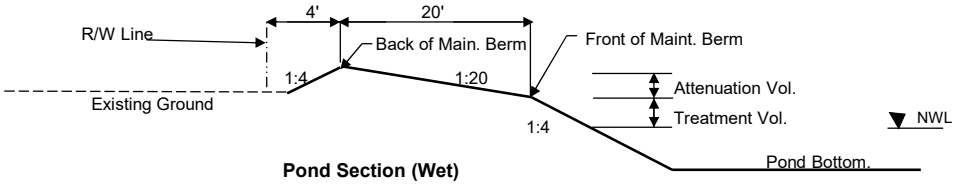
PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7K**

Maintenance Area Width =	20.0 ft	@ 1:20	Existing Ground Elevation =	46.00
Pond Tie-In Width =	4.0 ft	@ 1:4	Normal Water Elevation =	45.00
Maximum Storage Depth (**SD**) =	0.00 ft	with 1.0 ft freeboard	Lowest EOP Elevation =	49.00

Hydraulic Grade Line (HGL) check

NWL Pulled from adjacent pond in permit 28885-11

HGL Slope =	0.10%	Use 0.05% for very flat terrain to 0.1% for flat terrain
Distance from Pond to Lowest EOP =	230 ft	
Estimated Energy Losses =	0.2 ft	
HGL Clearance =	1.0 ft	Use 1.0 foot as a standard HGL clearance (no junction losses)
Estimated Storm Sewer Tailwater EL =	47.77 ft	



Pond Section (Wet)

DEWBERRY
800 N. Magnolia Ave., Suite 1000
Orlando, FL 32803

Made by: NGS
Checked by:

DATE: July 24, 2025
Job Number: 50145232

PROJECT : **McCulloch Road RCA Study**
BASIN NAME : **7**
POND NAME : **7K**

Pond Stage / Storage Calculations

ELEVATION	DESCRIPTION	AREA	DIMENSIONS		STORAGE
			LENGTH	WIDTH	
46.00	Pond R/W	1.61 ac	1081.0 ft	65.0 ft	
47.00	Back of Main. Berm	1.40 ac	1073.0 ft	57.0 ft	1.21 ac-ft
46.50		0.89 ac	1053.0 ft	37.0 ft	0.63 ac-ft
46.00	Front of Main. Berm	0.40 ac	1033.0 ft	17.0 ft	0.31 ac-ft
46.00	Provided Treat.Vol.+Att.Vol	0.40 ac	1033.0 ft	17.0 ft	0.31 ac-ft
48.25	Req'd Treat.Vol+Att. Vol	0.84 ac	1051.0 ft	35.0 ft	1.72 ac-ft
48.16	Estimated Storm Sewer TW	0.83 ac	1050.2 ft	34.2 ft	1.64 ac-ft
46.94	Top of Treatment Vol.	0.59 ac	1040.5 ft	24.5 ft	0.77 ac-ft
45.00	Normal Water Level	0.21 ac	1025.0 ft	9.0 ft	0.00 ac-ft
43.00		-0.16 ac	1009.0 ft	-7.0 ft	0.05 ac-ft
40.00	Pond Bottom	-0.72 ac	1005.0 ft	-31.0 ft	-1.27 ac-ft

Required Treatment+Attenuation Vol.= 1.72 ac-ft
Required Treatment+Attenuation Stage= 48.25 ft

Provided Treatment+Attenuation Vol.= 0.31 ac-ft
Provided Treatment+Attenuation Stage= 46.00 ft

Estimated Treat. Vol.+Storm Sewer Att.= 1.64 ac-ft
Estimated Storm Sewer TW EL.= 48.16 ft

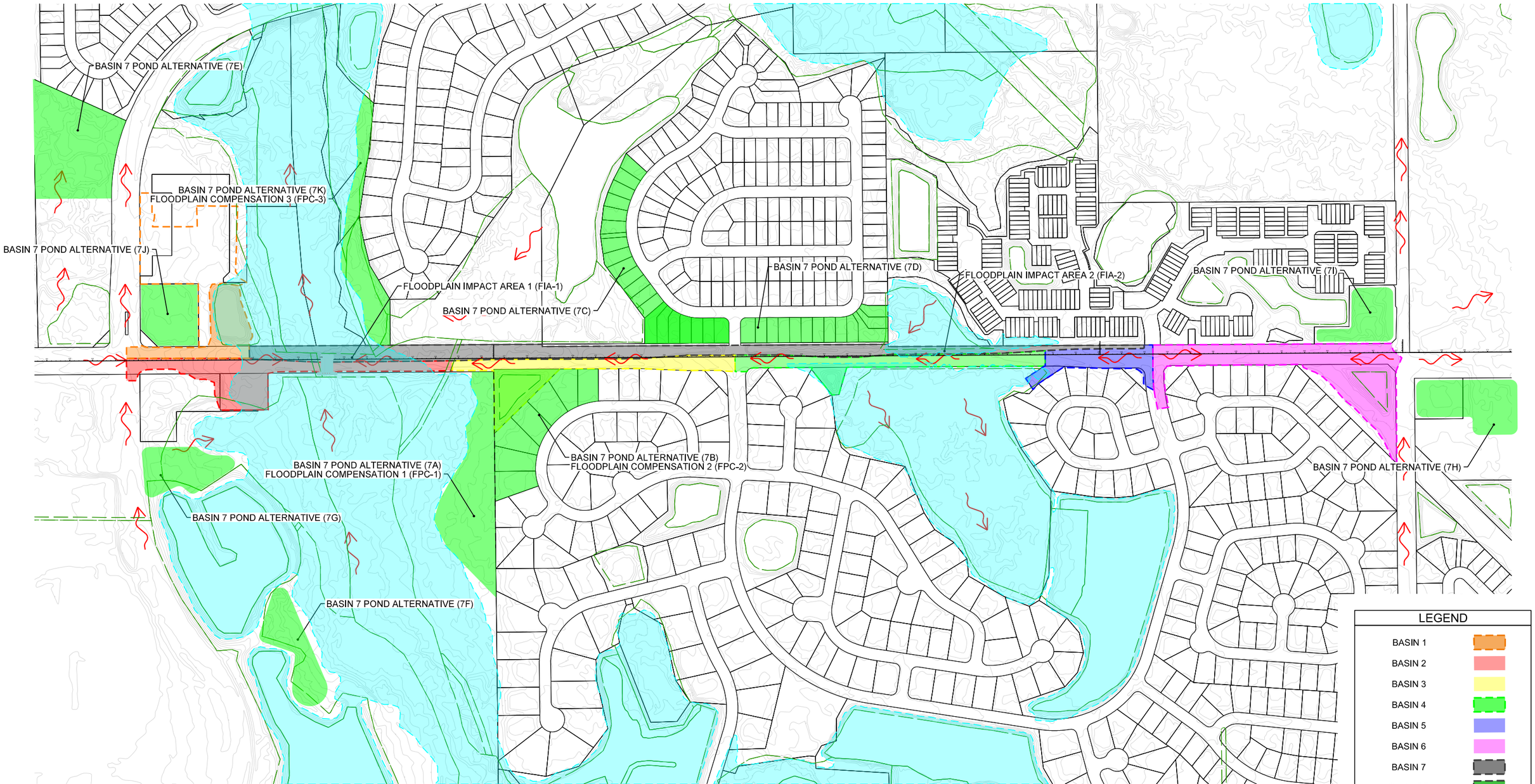
Try again

Freeboard	0.62 ft

20% Pond Contingency =	1.94 ac

Appendix E

Floodplain Encroachment Calculations



Dewberry

Dewberry Engineers Inc.
800 NORTH MAGNOLIA AVE
SUITE 1000
ORLANDO, FL 32803
PHONE: 407.843.5120
ENGINEERING BUSINESS -8794

SCALE 0' 200' 400' NORTH

N

REVISIONS	
DATE	DESCRIPTION

MCCULLOCH ROAD
EVALUATION STUDY

RECOMMENDED ATERNATIVE

ORANGE COUNTY
PUBLIC WORKS DEPARTMENT

ROAD NO.	COUNTY	PROJECT NO.
	ORANGE	Y21-832-CH

FLOODPLAIN EXHIBIT

SHEET NO.
E-1

mcallaway 2/4/2026 $TIME$ $FILE$

Dewberry

800 N. Magnolia Ave., Suite 1000, Orlando, FL 32803
(407) 843-5120

McCOLLUCH ROAD CAPACITY IMPROVEMENTS

Floodplain Impact Calculations

Floodplain Impact Area	Station	-	Station	Length of Impact (ft)	Impact Width (ft)	Area of Impact (ac)	Approximate 100-year Flood Elevation (ft)	Existing Low-Point within Right-of-Way	Impact Depth (ft)	Impact Volume (ac-ft)	Total Impact Volume (ac-ft)
FIA-1	315+53	-	323+23	770	58	1.02	48	47	1	1.02	1.02
FIA-2	343+80	-	350+45	665	39	0.60	57	54	3	1.79	1.79

Note: Compensation for FIA-2 will be provided during the final design phase via flood modeling of the isolated floodplain area.

Floodplain Compensation Calculations

Floodplain Compensation Area	Station	-	Station	Length of Compensation (ft)	Compensation Width (ft)	Area of Compensation (ac)	Floodplain Name	Approximate 100-year Flood Elevation (ft)	Seasonal High Water Elevation (Ft)	Compensation Depth (ft)	Compensation Volume (ac-ft)
FPC 1 (7A)*	323+05	-	326+56	351	76	0.61	FIA-1	48	46.34	1.66	1.02
FPC 2 (7B)	326+56	-	331+56	500	54	0.61	FIA-1	48	46.34	1.66	1.02
FPC 3 (7K)	316+44	-	319+53	309	48	0.34	FIA-1	48	45.00	3.00	1.02

Notes:

1. FPC 1 (7A) is the recommended FCP location proposed

Appendix F

Pond Site Evaluation Matrices

Dewberry

800 N. Magnolia Ave., Suite 1000, Orlando, FL 32803

(407) 843-5120

McCOLLUCH ROAD CAPACITY IMPROVEMENTS

ENGINEERING DATA & ANALYSIS

Alternatives	Location	Existing Ground Elevation (ft)	Soil Names & Hydrologic Groups	Estimated AWSHWT Elevation (ft)	Lowest Edge of Existing Roadway (ft)	Distance From Lowest Edge of Proposed Roadway (ft)	Estimated Allowable $DHW_{25yr/24hr}$ (ft)	Estimated Allowable Treatment & Attenuation Depth (ft)	Outfall Location	Roadway Drainage Area (ac)	Required Treatment & Attenuation Volume (ac-ft)	Required Pond Access Area (ac)-	Required Pond Area (ac)*	Required Pond Area Including Access (ac)*
1	Station 315 + 00 (LT.) Parcel No. 35-21-505-0A00-0000	45	Basinger, Samsula, and Hontoon Soils (A/D) Myakka and EauGallie Fine Sands (A/D)	45.00	49	420	47.72	2.72	Little Econlockhatchee tributary	0.83	0.67	-	-	-
2	Station 315 + 20 (RT.) Parcel No. 03-22-31-0000-00-005	48	Basinger Fine Sand (A/D)	45.50	49	400	48.50	3.00	Little Econlockhatchee tributary	4.00	0.24	-	-	-
3	Station 328 + 00 (RT.) Parcel No. 01-22-31-8825-00-001	48	Smyrna Fine Sand (A/D)	46.33	49	250	48.89	2.56	Little Econlockhatchee tributary	1.50	0.07	-	-	-
4	Station 341 + 20 (RT.) Parcel No. 01-22-31-8825-00-009	55	Sanibel Muck (A/D)	52.00	49	400	54.70	1.70	Little Econlockhatchee tributary	1.50	0.07	-	-	-
5	Station 350 + 80 (RT.) Parcel No. 01-22-31-8825-00-005 (and a little 01-22-31-8825-00-009)	57	Sanibel Muck (A/D)	55.00	49	25	56.99	0.99	Little Econlockhatchee tributary	0.63	0.03	-	-	-
6	Station 365 + 00 (RT.) Parcel No. 01-22-31-8825-00-008	55	Pomello Fine Snd (A)	56.59	49	500	58.71	2.12	Little Econlockhatchee tributary	4.11	0.17	-	-	-
7A	Station 325 + 00 (RT.) Parcel No. 03-22-31-0000-00-005	50	Felda Fine Sand (A/D) Smyrna Fine Sand (A/D) Pomello Fine Sand (A)	46.33	49	580	48	1.67	Little Econlockhatchee tributary	5.71	1.65	0.00	2.66	2.66
7B	Station 325 + 00 (LT.) Parcel No. 35-21-31-505-0E00-0000	48	Basinger, Samsula, and Hontoon Soils (C/D) Myakka and EauGallie Fine Sands (B/D)	46.33	49	580	48	1.67	Little Econlockhatchee tributary	5.71	1.65	0.00	2.66	2.66
FPC 1	Station 325 + 00 (RT.) Parcel No. 03-22-31-0000-00-006	50	Felda Fine Sand (A/D) Smyrna Fine Sand (A/D) Pomello Fine Sand (A)	47.00*	N/A	N/A	48	N/A	Little Econlockhatchee tributary	N/A	N/A	0.00	3.88	3.88

* Ponds 1 through 6 will utilize their existing configurations

**SHWT

IMPACT & COST ANALYSIS

Alternatives	FEMA		Arch. / Historical Impact	Wetland Impacts (ac)	Environmental Impact Risk	Threatened or Endangered Species	Hazardous Materials & Contamination Potential	Major Utility Conflict Potential (Y/N)	Existing Land Use	Total Parcel Area (ac)	Total Alternative Costs	Rankings
	Impacts (ac)	Zone										
1	0	A	N/A	0	N/A	N/A	N/A	N	Freshwater Marshes	1.589	$0	1
2	0	A	N/A	0	N/A	N/A	N/A	N	Commercial and Services	0.77	$0	1
3	0	N/A	N/A	0	N/A	N/A	N/A	N	Reservoirs	0.92	$0	1
4	0	A	N/A	0	N/A	N/A	N/A	N	Residental, Medium Density	0.26	$0	1
5	0	A	N/A	0	N/A	N/A	N/A	N	Residental, Medium Density	0.16	$0	1
6	0	N/A	N/A	0	N/A	N/A	N/A	N	Reservoirs	1.68	$0	1
7A	1.85	A	N/A	TBD	TBD	TBD	TBD	N	Pine Flatwoods	1194.20	TBD	1
7B	1.85	A	N/A	TBD	TBD	TBD	TBD	N	Pine Flatwoods	1194.20	TBD	1
FPC 1	0	A	N/A	TBD	TBD	TBD	TBD	N	Pine Flatwoods	1195.20	TBD	1

Note: The cost evaluation for the stormwater management facility alternatives in this report include stormwater management facility construction costs, costs associated with wetland impacts, and parcel acquisition costs. The stormwater management facility construction costs include cost of installed drainage structures, drainage pipes and outfalls, clearing and grubbing, earthwork excavation and grading, berm construction, erosion protection, fencing, access accommodations and sodding. The associated parcel acquisition cost for each alternative evaluated include the estimated cost of land and any impacted improvements, administrative costs and legal fees.

Dewberry
800 N. Magnolia Ave., Suite 1000, Orlando, FL 32803
(407) 843-5120

McCOLLUCH ROAD CAPACITY IMPROVEMENTS

ENGINEERING DATA & ANALYSIS

Alternatives	Location	Existing Ground Elevation (ft)	Soil Names & Hydrologic Groups	Estimated AWSHWT Elevation (ft)	Lowest Edge of Existing Roadway (ft)	Distance From Lowest Edge of Proposed Roadway (ft)	Estimated Allowable $DHW_{25yr/24hr}$ (ft)	Estimated Allowable Treatment & Attenuation Depth (ft)	Outfall Location	Roadway Drainage Area (ac)	Required Treatment & Attenuation Volume (ac-ft)	Required Pond Area (ac)*	Wetland Impacts	Floodplain Impacts	Option for Flooplain Compensation	HGL Freeboard Requirements Met?	Pre-Treatment Needed for Nutrient Reduction	Construction Remarks
7A	UCF	50	Smyrna Fine Sand (A/D) Pomello Fine Sand (A)	46.3	49	720	47.3	2.7	Little Econlockhatchee tributary	5.76	2.01	4.08	No	No	Yes	Yes	Yes	East of ex. 5-72" Culverts
7B	University Estates	50	Zolfo Fine Sand (A) Smyrna Fine Sand (A/D) Pomello Fine Sand (A)	46.3	49	750	47.3	2.7	Little Econlockhatchee tributary	5.76	2.04	4.31	No	No	Yes	Yes	Yes	East of ex. 5-72" Culverts
7C	Madison Park	52	Basinger, Samsula, and Hontoon Soils (C/D) Myakka and EauGallie Fine Sands (B/D)	46.5	49	1400	47.9	1.6	Little Econlockhatchee tributary	5.76	1.88	3.31	No	No	No	No	Yes	East of ex. 5-72" Culverts
7D	Madison Park	53	Basinger, Samsula, and Hontoon Soils (A/D) Brighton, Samsula, and Sanibel Mucks (B/D)	49.0	49	1600	50.6	2.4	Little Econlockhatchee tributary	5.76	1.88	3.17	No	No	Yes	No	Yes	East of ex. 5-72" Culverts
7E	UCF	54	Basinger, Samsula, and Hontoon Soils (A/D) Manatee, Floridana, and Holopaw Soils (B/D) Immokalee Sand (B/D)	53.5	49	1703	54.4	2.1	Little Econlockhatchee tributary	5.76	2.03	4.17	No	No	No	No	Yes	West of ex. 5-72" Culverts
7F	UCF	53	Smyrna-Smyrna (A/D)	49.0	49	2500	51.8	1.2	Little Econlockhatchee tributary	5.76	1.83	1.87	Yes	No	No	No	Yes	West of ex. 5-72" Culverts
7G	UCF	52	Smyrna-Smyrna (A/D)	50.0	49	1400	52.4	1.6	Little Econlockhatchee tributary	5.76	1.79	1.78	Yes	No	No	No	Yes	West of ex. 5-72" Culverts
7H	Family Dentist	53	Pomello Fine Soils (A)	50.0	49	4920	51.4	1.6	Little Econlockhatchee tributary	5.76	1.89	2.37	No	No	No	No	Yes	East of ex. 5-72" Culverts
7I	Dollar General	60	Myakka & EauGallie (A/D) Pomello Soils (A)	56.0	49	773	59.1	1.9	Little Econlockhatchee tributary	5.76	1.76	1.40	No	No	No	No	Yes	East of ex. 5-72" Culverts
7J	Gas Statiion 7/11	62	Myakka & EauGallie (A/D)	49.0	49	480	58.5	1.5	Little Econlockhatchee tributary	5.76	1.79	1.73	No	No	No	No	Yes	West of ex. 5-72" Culverts
7K	West of West Hampton	46	Myakka & EauGallie (A/D)	45.0	49	230	45.9	1.1	Little Econlockhatchee tributary	5.76	2.04	1.94	Yes	No	Yes	No	Yes	East of ex. 5-72" Culverts

**SHWT

IMPACT & COST ANALYSIS

Alternatives	FEMA		Arch. / Historical Impact Potential	Wetland Impacts (ac)	Environmental Impact Risk	Threatened or Endangered Species Impacts	Hazardous Materials & Contamination Potential	Major Utility Conflict Potential (Y/N)	Existing Land Use	Total Parcel Area (ac)	Total Alternative Costs	Rankings
	Impacts (ac)	Zone										
7A	0	-	N/A	-	-	TBD	TBD	N	Undeveloped	2.88	TBD	1
7B	0	-	N/A	-	-	TBD	TBD	N	Residential	3.56	TBD	2
7C	0	-	N/A	-	-	TBD	TBD	N	Residential	2.75	TBD	3
7D	0	-	N/A	-	-	TBD	TBD	N	Residential	2.87	TBD	4
7E	0	-	N/A	-	-	TBD	TBD	N	Undeveloped	8.41	TBD	6
7F	0	-	N/A	-	-	TBD	TBD	N	Institutional	1194.20	TBD	8
7G	0	-	N/A	-	-	TBD	TBD	N	Institutional	1194.20	TBD	7
7H	0	-	N/A	-	-	TBD	TBD	N	Office	2.00	TBD	9
7I	0	-	N/A	-	-	TBD	TBD	N	Commercial	1.46	TBD	10
7J	0	-	N/A	-	-	TBD	TBD	N	Commercial	1.54	TBD	6
7K	0	-	N/A	-	-	TBD	TBD	N	Undeveloped	4.79	TBD	11

Appendix G

Existing Permits

15043-2

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
Mildred G. Horton, Assistant Executive Director
John R. Wehle, Assistant Executive Director

POST OFFICE BOX 1429 • PALATKA, FLORIDA 32078-1429
904/328-8321

☐ 2133 N. Wickham Rd.
Melbourne, FL 32935-8109
(407) 254-1761

☐ 7775 Baymeadows Way
Suite 102
Jacksonville, FL 32256
(904) 730-6270

☐ 618 E. South St.
Orlando, FL 32801
(407) 894-5423

JULY 11, 1989

UNIVERSITY ESTATES, LTD.
4651 SALISBURY ROAD
JACKSONVILLE, FL 32216

RE: PERMIT # 12-095-0004SM

ENCLOSED IS YOUR PERMIT AS AUTHORIZED BY THE GOVERNING BOARD OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT ON JULY 11, 1989.

THIS PERMIT IS A LEGAL DOCUMENT AND SHOULD BE KEPT WITH YOUR OTHER IMPORTANT DOCUMENTS. THE ATTACHED COMPLETION REPORT SHOULD BE FILLED IN AND RETURNED TO THE PALATKA OFFICE WITHIN THIRTY DAYS AFTER THE WORK IS COMPLETED. BY SO DOING, YOU WILL ENABLE US TO SCHEDULE A PROMPT INSPECTION OF THE PERMITTED ACTIVITY.

PERMIT ISSUANCE DOES NOT RELIEVE YOU FROM THE RESPONSIBILITY OF OBTAINING PERMITS FROM ANY FEDERAL, STATE, AND/OR LOCAL AGENCIES ASSERTING CONCURRENT JURISDICTION FOR THIS WORK.

IN THE EVENT YOU SELL YOUR PROPERTY, THE PERMIT WILL BE TRANSFERRED TO THE NEW OWNER, IF WE ARE NOTIFIED BY YOU WITHIN NINETY DAYS OF THE SALE. PLEASE ASSIST US IN THIS MATTER SO AS TO MAINTAIN A VALID PERMIT FOR THE NEW PROPERTY OWNER.

THANK YOU FOR YOUR COOPERATION AND IF THIS OFFICE CAN BE OF ANY FURTHER ASSISTANCE TO YOU, PLEASE DO NOT HESITATE TO CONTACT US.

SINCERELY,

Dannise Kemp

DANNISE T. KEMP, DIRECTOR
DIVISION OF RECORDS

DTK:BW

ENCLOSURES: PERMIT WITH COMPLETION REPORT

CC: DISTRICT PERMIT FILE
MARGARET LANGWORTHY, CORPS OF ENGINEERS
DONALD W. MC INTOSH ASSOCIATES, INC.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Post Office Box 1429
Palatka, Florida 32078-1429

PERMIT NO. 12-095-0004SM DATE ISSUED JULY 11, 1989

A PERMIT AUTHORIZING:

THE EXCAVATION OF 936 CUBIC YARDS OF MATERIAL AND PLACEMENT OF 13,043 CUBIC YARDS OF FILL MATERIAL IN WATERS OF THE STATE FOR ROAD CONSTRUCTION TO PROVIDE ACCESS TO A RESIDENTIAL DEVELOPMENT KNOWN AS UNIVERSITY ESTATES-MCCULLOCH ROAD.

LOCATION:

SECTION 02, TOWNSHIP 22 SOUTH, RANGE 31 EAST,
ORANGE COUNTY

ISSUED TO:
(owner)

UNIVERSITY ESTATES LTD.
4651 SALISBURY ROAD
JACKSONVILLE, FL 32216

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, of liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This Permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373 or 403, Florida Statutes and 40C-1, Florida Administrative Codes:

PERMIT IS CONDITIONED UPON:

SEE CONDITIONS ON ATTACHED "EXHIBIT A", DATED JULY 11, 1989

AUTHORIZED BY: St. Johns River Water Management District

Department of Resource Management Governing Board

By: _____ (Director) By: _____ (Assistant Secretary)

JEFF ELLEDGE HENRY DEAN

"EXHIBIT A"

CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 12-095-0004SM

UNIVERSITY ESTATES, LTD.

DATED JULY 11, 1989

1. THE TERMS, CONDITIONS, REQUIREMENTS, LIMITATIONS, AND RESTRICTIONS SET FORTH IN THIS PERMIT, ARE "PERMIT CONDITIONS" AND ARE BINDING AND ENFORCEABLE PURSUANT TO SECTIONS 403.141, 403.727, OR 403.859 THROUGH 403.861, FLORIDA STATUTES. THE PERMITTEE IS PLACED ON NOTICE THAT THE DISTRICT WILL REVIEW THIS PERMIT PERIODICALLY AND MAY INITIATE ENFORCEMENT ACTION FOR ANY VIOLATION OF THESE PERMIT CONDITIONS.

2. THIS PERMIT IS VALID ONLY FOR THE SPECIFIC PROCESSES AND OPERATIONS APPLIED FOR AND INDICATED IN THE APPROVED DRAWINGS OR EXHIBITS. ANY UNAUTHORIZED DEVIATION FROM THE APPROVED DRAWINGS, EXHIBITS, SPECIFICATIONS, OR CONDITIONS OF THIS PERMIT MAY CONSTITUTE GROUNDS FOR REVOCATION AND ENFORCEMENT ACTION BY THE DISTRICT.

3. AS PROVIDED IN SUBSECTIONS 403.087(6), AND 403.722(5), FLORIDA STATUTES, THE ISSUANCE OF THIS PERMIT DOES NOT CONVEY ANY VESTED RIGHTS OR ANY EXCLUSIVE PRIVILEGES. NEITHER DOES IT AUTHORIZE ANY INJURY TO PUBLIC OR PRIVATE PROPERTY OR ANY INVASION OF PERSONAL RIGHTS, NOR ANY INFRINGEMENT OF FEDERAL, STATE, OR LOCAL LAWS OR REGULATIONS. THIS PERMIT IS NOT A WAIVER OF OR APPROVAL OF ANY OTHER DER OR DISTRICT PERMIT THAT MAY BE REQUIRED FOR OTHER ASPECTS OF THE TOTAL PROJECT WHICH ARE NOT ADDRESSED IN THIS PERMIT.

4. THIS PERMIT CONVEYS NO TITLE TO LAND OR WATER, DOES NOT CONSTITUTE STATE RECOGNITION OR ACKNOWLEDGEMENT OF TITLE, AND DOES NOT CONSTITUTE AUTHORITY FOR THE USE OF SUBMERGED LANDS UNLESS HEREIN PROVIDED AND THE NECESSARY TITLE OR LEASEHOLD INTERESTS HAVE BEEN OBTAINED FROM THE STATE. ONLY THE TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND MAY EXPRESS STATE OPINION AS TO TITLE.

5. THIS PERMIT DOES NOT RELIEVE THE PERMITTEE FROM LIABILITY FOR HARM OR INJURY TO HUMAN HEALTH OR WELFARE, ANIMAL, OR PLANT LIFE, OR PROPERTY CAUSED BY THE CONSTRUCTION OR OPERATION OF THIS PERMITTED SOURCE, OR FROM PENALTIES THEREFORE; NOR DOES IT ALLOW THE PERMITTEE TO CAUSE POLLUTION IN CONTRAVENTION OF FLORIDA STATUTES AND DEPARTMENT OF ENVIRONMENTAL REGULATION (DER) RULES, UNLESS SPECIFICALLY AUTHORIZED BY AN ORDER FROM THE DER OR DISTRICT.

6. THE PERMITTEE SHALL PROPERLY OPERATE AND MAINTAIN THE FACILITY AND SYSTEMS OF TREATMENT AND CONTROL (AND RELATED APPURTENANCES) THAT ARE INSTALLED AND USED BY THE PERMITTEE TO ACHIEVE COMPLIANCE WITH THE CONDITIONS OF THIS PERMIT, AS REQUIRED BY DEPARTMENT RULES. THIS PROVISION INCLUDES THE OPERATION OF BACKUP OR AUXILIARY FACILITIES OR SIMILAR SYSTEMS WHEN NECESSARY TO ACHIEVE COMPLIANCE WITH THE CONDITIONS OF THE PERMIT AND WHEN REQUIRED BY DEPARTMENT RULES.

7. THE PERMITTEE, BY ACCEPTING THIS PERMIT, SPECIFICALLY AGREES TO ALLOW AUTHORIZED DISTRICT PERSONNEL, UPON PRESENTATION OF CREDENTIALS OR OTHER DOCUMENTS AS MAY BE REQUIRED BY LAW AND AT REASONABLE TIMES, ACCESS TO THE PREMISES WHERE THE PERMITTED ACTIVITY IS LOCATED OR CONDUCTED TO:

(A) HAVE ACCESS TO AND COPY ANY RECORDS THAT MUST BE KEPT UNDER CONDITIONS OF THE PERMIT;

(B) INSPECT THE FACILITY, EQUIPMENT, PRACTICES, OR OPERATIONS REGULATED OR REQUIRED UNDER THIS PERMIT; AND

(C) SAMPLE OR MONITOR ANY SUBSTANCES OR PARAMETERS AT ANY LOCATION REASONABLE NECESSARY TO ASSURE COMPLIANCE WITH THIS PERMIT OR DEPARTMENT RULES.

REASONABLE TIME MAY DEPEND ON THE NATURE OF THE CONCERN BEING INVESTIGATED.

8. IF, FOR ANY REASON, THE PERMITTEE DOES NOT COMPLY WITH OR WILL BE UNABLE TO COMPLY WITH ANY CONDITION OR LIMITATION SPECIFIED IN THIS PERMIT, THE PERMITTEE SHALL IMMEDIATELY PROVIDE THE DISTRICT WITH THE FOLLOWING INFORMATION:

(A) A DESCRIPTION OF AND CAUSE OF NON-COMPLIANCE; AND

(B) THE PERIOD OF NONCOMPLIANCE, INCLUDING DATES AND TIMES; OR, IF NOT CORRECTED, THE ANTICIPATED TIME THE NON-COMPLIANCE IS EXPECTED TO CONTINUE, AND STEPS BEING TAKEN TO REDUCE, ELIMINATE, AND PREVENT RECURRENCE OF THE NON-COMPLIANCE.

THE PERMITTEE SHALL BE RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY RESULT AND MAY BE SUBJECT TO ENFORCEMENT ACTION BY THE DISTRICT FOR PENALTIES OR REVOCATION OF THIS PERMIT.

9. IN ACCEPTING THIS PERMIT, THE PERMITTEE UNDERSTANDS AND AGREES THAT ALL RECORDS, NOTES, MONITORING DATA AND OTHER INFORMATION RELATED TO THE CONSTRUCTION OR OPERATION OF THIS PERMITTED SOURCE, WHICH ARE SUBMITTED TO THE DISTRICT MAY BE USED BY THE DISTRICT AS EVIDENCE IN ANY ENFORCEMENT CASE INVOLVING THE PERMITTED SOURCE ARISING UNDER THE FLORIDA STATUTES OR DEPARTMENT RULES, EXCEPT WHERE SUCH USE IS PRESCRIBED BY SECTIONS 403.111 AND 403.73, FLORIDA STATUTES. SUCH EVIDENCE SHALL ONLY BE USED TO THE EXTENT IT IS CONSISTENT WITH THE FLORIDA RULES OF CIVIL PROCEDURE AND APPROPRIATE EVIDENTIARY RULES.

10. THE PERMITTEE AGREES TO COMPLY WITH CHANGES IN DER RULES AND FLORIDA STATUTES AFTER A REASONABLE TIME FOR COMPLIANCE, PROVIDED, HOWEVER, THE PERMITTEE DOES NOT WAIVE ANY OTHER RIGHTS GRANTED BY FLORIDA STATUTES OR DER RULES.

11. THIS PERMIT IS TRANSFERABLE ONLY UPON DISTRICT APPROVAL IN ACCORDANCE WITH RULES 17-4.120 AND 17-30.300, FLORIDA ADMINISTRATIVE CODE, AS APPLICABLE. THE PERMITTEE SHALL BE LIABLE FOR ANY NON-COMPLIANCE OF THE PERMITTED ACTIVITY UNTIL THE TRANSFER IS APPROVED BY THE DISTRICT.

12. THIS PERMIT OR A COPY THEREOF SHALL BE KEPT AT THE WORK SITE OF THE PERMITTED ACTIVITY.

13. THIS PERMIT ALSO CONSTITUTES:

(A) DETERMINATION OF BEST AVAILABLE CONTROL TECHNOLOGY (BACT),

(B) DETERMINATION OF PREVENTION OF SIGNIFICANT DETERIORATION (PSD),

(C) CERTIFICATION OF COMPLIANCE WITH STATE WATER QUALITY STANDARDS (SECTION 401, PL 92-500), AND

(D) COMPLIANCE WITH NEW SOURCE PERFORMANCE STANDARDS.

14. THE PERMITTEE SHALL COMPLY WITH THE FOLLOWING:

(A) UPON REQUEST, THE PERMITTEE SHALL FURNISH ALL RECORDS AND PLANS REQUIRED UNDER DER RULES. DURING ENFORCEMENT ACTIONS, THE RETENTION PERIOD FOR ALL RECORDS WILL BE EXTENDED AUTOMATICALLY UNLESS OTHERWISE STIPULATED BY THE DISTRICT.

(B) THE PERMITTEE SHALL HOLD AT THE FACILITY OR OTHER LOCATION DESIGNATED BY THIS PERMIT RECORDS OF ALL MONITORING INFORMATION (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION) REQUIRED BY THE PERMIT, COPIES OF ALL REPORTS REQUIRED BY THIS PERMIT, AND RECORDS OF ALL DATA USED TO COMPLETE THE APPLICATION FOR THIS PERMIT. THESE MATERIALS SHALL BE RETAINED AT LEAST THREE YEARS FROM THE DATE OF THE SAMPLE, MEASUREMENT, REPORT OR APPLICATION UNLESS OTHERWISE SPECIFIED BY DEPARTMENT RULE.

(C) RECORDS OF MONITORING INFORMATION SHALL INCLUDE:

1. THE DATE, EXACT PLACE, AND TIME OF SAMPLING OR MEASUREMENTS;

2. THE PERSON RESPONSIBLE FOR PERFORMING THE SAMPLING OR MEASUREMENTS;

3. THE DATES ANALYSES WERE PERFORMED;

4. THE PERSON RESONSIBLE FOR PERFORMING THE ANALYSES;

5. THE ANALYTICAL TECHNIQUES OR METHODS USED; AND

6. THE RESULT OF SUCH ANALYSES.

15. WHEN REQUESTED BY THE DISTRICT, THE PERMITTEE SHALL WITHIN A REASONABLE TIME FURNISH ANY INFORMATION REQUIRED BY LAW WHICH IS NEEDED TO DETERMINE COMPLIANCE WITH THE PERMIT. IF THE PERMITTEE BECOMES AWARE THAT RELEVANT FACTS WERE NOT SUBMITTED OR WERE INCORRECT IN THE PERMIT APPLICATION OR IN ANY REPORT TO THE DISTRICT, SUCH FACTS OR INFORMATION SHALL BE CORRECTED PROMPTLY.

16. THE PERMITTEE IS HEREBY ADVISED THAT FLORIDA LAW STATES: "NO PERSON SHALL COMMENCE ANY EXCAVATION, CONSTRUCTION, OR OTHER ACTIVITY INVOLVING THE USE OF SOVEREIGN OR OTHER LANDS OF THE STATE, TITLE TO WHICH IS VESTED IN THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND OR THE DEPARTMENT OF NATURAL RESOURCES UNDER CHAPTER 253, UNTIL SUCH PERSON HAS RECEIVED FROM THE BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND THE REQUIRED LEASE, LICENSE, EASEMENT, OR OTHER FORM OF CONSENT AUTHORIZING THE PROPOSED USE." PURSUANT TO FLORIDA ADMINISTRATIVE CODE RULE 16Q-14, IF SUCH WORK IS DONE WITHOUT CONSENT, OR IF A PERSON OTHERWISE DAMAGES STATE LAND OR PRODUCTS OF STATE LAND, THE BOARD OF TRUSTEES MAY LEVY ADMINISTRATIVE FINES OF UP TO $10,000 PER OFFENSE.

17. IF HISTORICAL OR ARCHEOLOGICAL ARTIFACTS SUCH AS INDIAN CANOES ARE DISCOVERED AT ANYTIME WITHIN THE PROJECT SITE, THE PERMITTEE SHALL IMMEDIATELY CEASE CONSTRUCTION AND NOTIFY THE DISTRICT OFFICE AND THE BUREAU OF HISTORIC PRESERVATION, DIVISION OF ARCHIVES, HISTORY AND RECORDS MANAGEMENT, R.A. GRAY BUILDINGS, TALLAHASSEE, FLORIDA 32301.

18. PRIOR TO COMMENCEMENT OF THE WORK AUTHORIZED BY THIS PERMIT, THE PERMITTEE SHALL NOTIFY THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT, DEPARTMENT OF RESOURCE MANAGEMENT IN PALATKA AND THE ORLANDO FIELD OFFICE.

19. PRIOR TO THE PLACEMENT OF FILL IN THE EXISTING WETLANDS AND EXCAVATION ADJACENT TO WETLANDS, THE PERMITTEE SHALL PLACE TURBIDITY SCREENS AT THE WATERWARD LIMIT OF ALL CONSTRUCTION. THESE SCREENS SHALL REMAIN IN PLACE UNTIL THE FILLED AND CREATED WETLAND AREA HAS STABILIZED AND HAS BEEN REVEGETATED IN ACCORDANCE WITH NECESSARY EROSION CONTROL CRITERIA OR MITIGATION PLANS.

20. HERBACEOUS AREAS OF THE CREATED WETLANDS SHALL BE CONSIDERED SUCCESSFUL WHEN THE FOLLOWING CONDITIONS ARE MET:

    A. AT LEAST 30% OF THE PLANTED HERBACEOUS AREA MUST CONSIST OF WETLAND VEGETATION LISTED IN RULE 17-3.022, F.A.C., AND BE SURVIVING AND SHOWING SIGNS OF GROWTH, AND

    B. CATTAIL, PRIMROSE WILLOW, AND EXOTICS DO NOT EXCEED 10% OF THE TOTAL COVER.

21. FORESTED AREAS OF THE CREATED WETLANDS SHALL BE CONSIDERED SUCCESSFUL WHEN THE FOLLOWING CONDITIONS ARE MET:

    A. AN AVERAGE OF AT LEAST 440 TREES PER ACRE SHALL BE GROWING ABOVE THE HERBACEOUS STRATUM,

    B. THE TREE COVER MUST EXCEED 70% OF THE TOTAL AREA AND 20% OF THE TOTAL COVER IN ANY SINGLE AREA OF 1 ACRE IN SIZE. COVER MEASUREMENT SHALL BE RESTRICTED TO: (1) TREES EXCEEDING THE HERBACEOUS STRATUM IN HEIGHT, AND (2) INDIGENOUS SPECIES THAT CONTRIBUTE TO THE OVERSTORY OF THE MATURE WETLAND FOREST ADJACENT TO THE CREATED WETLAND AND ARE LISTED IN RULE 17-3.022, F.A.C, AND

    C. AT LEAST 80% OF UNDERSTORY VEGETATION SHALL BE SPECIES LISTED IN RULE 17-3.022, F.A.C., AND SHALL BE REPRODUCING NATURALLY. CATTAIL, PRIMROSE WILLOW, AND EXOTICS MUST NOT EXCEED 10% OF THE TOTAL COVER.

22. THE PERMITTEE SHALL FURNISH ANNUAL STATISTICAL REPORTS OF VEGETATIONAL SAMPLING OF THE CREATED MITIGATION WETLANDS TO THE DISTRICT'S ORLANDO FIELD OFFICE USING A METHOD APPROVED IN ADVANCE BY THE DISTRICT. ACCEPTABLE METHODS MAY BE FOUND IN DAUBENMIRE (1968), OR IN MUELLER-DOMBOIS AND ELLENBERG (1974). REPORTS SHALL DESCRIBE THE PERCENT SURVIVAL, DENSITY AND PERCENT COVER OF LISTED TREES, EXISTING TREE DIVERSITY AND PERCENT COVER OF LISTED HERBACEOUS SPECIES. PERCENT COVER FOR LISTED NUISANCE OR EXOTIC SPECIES, AS STATED IN THE OTHER CONDITIONS, SHALL BE TABULATED SEPARATELY FROM THE REMAINING DATA. A LISTED SPECIES IS ONE LISTED IN RULE 17-3.022, F.A.C. DATA SHALL BE TAKEN DURING THE SUMMER GROWING SEASON. REPORTS SHALL BE SUBMITTED UNTIL DISTRICT STAFF DETERMINES THAT WETLAND CREATION HAS BEEN SUCCESSFUL.

    SEMI-ANNUAL NARRATIVE REPORTS SHALL BE SUBMITTED TO THE DISTRICT'S ORLANDO FIELD OFFICE DETAILING THE PROGRESS OF THIS WETLAND CREATION PROGRAM. THE REPORTS MUST INCLUDE: PHOTOGRAPHS TAKEN FROM THE SAME PERMANENT STATIONS (SOME OF WHICH MUST BE LOCATED IN THE VEGETATION SAMPLING AREAS), A DESCRIPTION OF PROBLEMS ENCOUNTERED AND SOLUTIONS UNDERTAKEN, AND ANTICIPATED WORK FOR THE FOLLOWING 6 MONTHS.

IF THE D[illegible] INDICATES THAT THE WETLA[illegible] CREATION EFFORT IS NOT SUCCE[illegible]FUL PURSUANT TO OTHER CONDITION #7 ABOVE, THE PERMITTEE SHALL PROPOSE METHODS AND SOLUTIONS TO BE REVIEWED AND APPROVED BY THE DISTRICT TO ENSURE THE SUCCESS OF THE WETLANDS CREATION EFFORT.

THE COMPLETE REFERENCES FOR THE AUTHORITIES CITED ABOVE ARE AS FOLLOWS:

DAUBENMIRE, R. 1986. PLANT COMMUNITIES: A TEXTBOOK OF SYNECOLOGY. HARPER & ROW, NEW YORK. 300 PP.

OOSTING, H.J., 1956. THE STUDY OF PLANT COMMUNITIES: AN INTRODUCTION TO PLANT ECOLOGY. W. H. FREEMAN, SAN FRANCISCO. 440 PP.

MUELLER-DOMBOIS, D. AND H. ELLENBERG. 1974. AIMS AND METHODS OF VEGETATION ECOLOGY. JOHN WILEY, NEW YORK. 547 PP.

23. THE DISTRICT MAY RELEASE THE PERMITTEE FROM FURTHER OBLIGATION BY DETERMINING THAT THE CREATED WETLANDS ARE SUCCESSFUL AFTER A VISUAL EVALUATION BY DISTRICT STAFF, NOTWITHSTANDING THAT THE ANNUAL STATISTICAL REPORTS INDICATE THAT THE CRITERIA IN CONDITION #22 ARE NOT BEING MET. IF THE DISTRICT'S FIELD EVALUATION DETERMINES THAT THE WETLAND CREATION HAS NOT BEEN SUCCESSFUL ACCORDING TO THE PERMIT, THE PERMITTEE MAY PROVIDE STATISTICAL REPORTS OTHER THAN THOSE REQUIRED BY THIS PERMIT TO SHOW THAT THE SUCCESS CRITERIA HAVE BEEN MET.

24. WITHIN 30 DAYS OF PERMIT ISSUANCE, PERMITTEE SHALL RECORD A CONSERVATION EASEMENT PURSUANT TO SECTION 704.06, F.S., PROHIBITING ALL CONSTRUCTION INCLUDING CLEARING, DREDGING, OR FILLING, EXCEPT THAT WHICH IS SPECIFICALLY AUTHORIZED BY THIS PERMIT OR WHICH MAY BE AUTHORIZED BY FUTURE DISTRICT PERMIT, FOR THE ON-SITE MITIGATION AREA IDENTIFIED AS "ALTERNATE C" ON REVISED PLANS RECEIVED BY THE DISTRICT ON JUNE 12, 1989. SAID EASEMENT MUST BE SUBMITTED TO THE DISTRICT FOR STAFF REVIEW AND APPROVAL PRIOR TO RECORDING.

IF WITHIN 90 DAYS OF PERMIT ISSUANCE, THE PERMITTEE PROVIDES THE DISTRICT WITH AN EXECUTED CONSERVATION EASEMENT FOR THE OFFSITE MITIGATION AREA IDENTIFIED AS "ALTERNATE A" ON REVISED PLANS RECEIVED BY THE DISTRICT ON MAY 24, 1989, THE DISTRICT WILL ALLOW THE PERMITTEE TO SUBSTITUTE THE "ALTERNATE A" AREA FOR THE "ALTERNATE C" AREA, IN MITIGATION OF THE WETLAND ENCROACHMENTS ASSOCATED WITH CONSTRUCTION ON MCCLULLOCH ROAD. SAID EASEMENT MUST BE SUBMITTED TO THE DISTRICT FOR STAFF REVIEW AND APPROVAL PRIOR TO ITS RECORDING. UPON RECEIPT OF A CERTIFIED COPY OF THE RECORDED CONSERVATION EASEMENT, APPROVED BY DISTRICT STAFF, THE DISTRICT WILL PROVIDE THE PERMITTEE WITH AN EXECUTED RELEASE OF THE CONSERVATION EASEMENT PREVIOUSLY RECORDED FOR THE "ALTERNATE C" MITIGATION AREA.

SAID RESTRICTIONS AND EASEMENTS MUST CONTAIN PROVISIONS AS SET FORTH IN PARAGRAPHS 1(A) THROUGH (H) OF SECTION 704.06, F.S., AS WELL AS PROVISIONS INDICATING THAT THEY MAY BE ENFORCED BY THE DISTRICT AND MAY NOT BE AMENDED WITHOUT PRIOR DISTRICT APPROVAL.

WITHIN 30 DAYS OF RECORDING, THE PERMITTEE MUST PROVIDE THE DISTRICT WITH A CERTIFIED COPY OF THE RECORDED RESTRICTIONS AND EASEMENT SHOWING THE DATE THEY WERE RECORDED AND THE OFFICIAL RECORDS PLAT BOOK AND PAGE NUMBER.

25. IF THE MITIGATION AREA IS DETERMINED TO BE UNSUCCESSFUL, THE PERMITTEE MUST OBTAIN AN OPERATING PERMIT FOR THE MITIGATION AREA FOR A DURATION OF TIME NECESSARY TO ACHIEVE THE CONDITIONS OF THIS PERMIT.

26. 14 DAYS PRIOR TO COMMENCEMENT OF THE WORK AUTHORIZED BY THIS PERMIT, THE PERMITTEE MUST PROVIDE EVIDENCE OF FINANCIAL RESOURCES FOR, INCLUDING BUT NOT LIMITED TO, MITIGATION CONSTRUCTION, MONITORING, AND REMEDIAL ACTIONS PURSUANT TO SECTION 17-12.390, F.A.C.

27. THIS PERMIT WILL EXPIRE 5 YEARS FROM THE DATE OF ISSUANCE.

28. PRIOR TO CONSTRUCTION OF THE 4.2 ACRE WETLAND CREATION AREA, THE LIMITS OF CONSTRUCTION MUST BE FLAGGED AND SURVEYED.

29. THE PERMITTEE MUST SUBMIT TO THE DISTRICT FOR STAFF APPROVAL 14 DAYS PRIOR TO CONSTRUCTION OF THE PROPOSED 4.2 MITIGATION AREA, WHETHER "ALTERNATE A" OR "ALTERNATE C", CROSS SECTION DRAWINGS OF THE MITIGATION AREA SHOWING PRE-CONSTRUCTION AND POST-CONSTRUCTION NORMAL AND ORDINARY HIGH WATER ELEVATIONS AND ZONES OF PLANTING IN ADDITION TO A DESCRIPTION OF THE METHODOLOGY FOR DETERMINING THE ELEVATIONS.

ST. JOHNS RIVER
SJR
WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
Mildred G. Horton, Assistant Executive Director
John R. Wehle, Assistant Executive Director

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APRIL 10, 1989

UNIVERSITY ESTATES, LTD
QUADRANT I
4651 SALISBURY ROAD #350
JACKSONVILLE, FL 32216

RE: PERMIT # 4-095-0301

ENCLOSED IS YOUR PERMIT AS AUTHORIZED BY THE GOVERNING BOARD OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT ON APRIL 10, 1989.

THIS PERMIT IS A LEGAL DOCUMENT AND SHOULD BE KEPT WITH YOUR OTHER IMPORTANT DOCUMENTS. THE ATTACHED COMPLETION REPORT SHOULD BE FILLED IN AND RETURNED TO THE PALATKA OFFICE WITHIN THIRTY DAYS AFTER THE WORK IS COMPLETED. BY SO DOING, YOU WILL ENABLE US TO SCHEDULE A PROMPT INSPECTION OF THE PERMITTED ACTIVITY.

IN ADDITION TO THE COMPLETION REPORT, YOUR PERMIT ALSO CONTAINS CONDITIONS WHICH REQUIRE SUBMITTAL OF ADDITIONAL INFORMATION. ALL INFORMATION SUBMITTED AS COMPLIANCE TO PERMIT CONDITIONS MUST BE SUBMITTED TO THE PALATKA OFFICE ADDRESS.

PERMIT ISSUANCE DOES NOT RELIEVE YOU FROM THE RESPONSIBILITY OF OBTAINING PERMITS FROM ANY FEDERAL, STATE, AND/OR LOCAL AGENCIES ASSERTING CONCURRENT JURISDICTION FOR THIS WORK.

IN THE EVENT YOU SELL YOUR PROPERTY, THE PERMIT WILL BE TRANSFERRED TO THE NEW OWNER, IF WE ARE NOTIFIED BY YOU WITHIN NINETY DAYS OF THE SALE. PLEASE ASSIST US IN THIS MATTER SO AS TO MAINTAIN A VALID PERMIT FOR THE NEW PROPERTY OWNER.

THANK YOU FOR YOUR COOPERATION AND IF THIS OFFICE CAN BE OF ANY FURTHER ASSISTANCE TO YOU, PLEASE DO NOT HESITATE TO CONTACT US.

SINCERELY,

DANNISE T. KEMP, DIRECTOR
DIVISION OF RECORDS

DTK:LH

ENCLOSURES: PERMIT WITH COMPLETION REPORT

CC: DISTRICT PERMIT FILE
DONALD W. MC INTOSH ASSPCIATES INC.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Post Office Box 1429
Palatka, Florida 32078-1429

PERMIT NO. 4-095-0301 DATE ISSUED APRIL 10, 1989

A PERMIT AUTHORIZING:

THE CONSTRUCTION OF THE SURFACE WATER MANAGEMENT SYSTEM AND STORMWATER SYSTEM TO SERVE 10.9 ACRES FOR ROAD IMPROVEMENTS TO MCCULLOCH ROAD AND TANNER ROAD AND A 223 ACRE RESIDENTIAL DEVELOPMENT TO BE KNOWN AS UNIVERSITY ESTATES.

LOCATION:

Section 01 & 02, Township 22 South, Range 31 East
Orange County

ISSUED TO:
(owner)

UNIVERSITY ESTATES, LTD
QUADRANT I
4651 SALISBURY ROAD #350
JACKSONVILLE, FL 32216

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, of liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This Permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

PERMIT IS CONDITIONED UPON:

See Conditions on Attached "Exhibit A", dated APRIL 10, 1989

AUTHORIZED BY: St. Johns River Water Management District

Department of Resource Management Governing Board

By: _____ (Director) By: _____ (Assistant Secretary)

Jeff Elledge Henry Dean

"EXHIBIT A"

CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 4-095-0301

UNIVERSITY ESTATES, LTD

DATED APRIL 10, 1989

1. PRIOR TO LOT OR UNIT SALES, OR CONSTRUCTION, WHICHEVER OCCURS FIRST, THE DISTRICT MUST RECEIVE THE PERMITTEE'S PROPOSAL OF AN ENTITY TO BE RESPONSIBLE FOR OPERATION AND MAINTENANCE OF THE PERMITTED SYSTEM. WITH THE DESIGNATION OF THE PROPOSED ENTITY, THE DISTRICT MUST ALSO RECEIVE A DRAFT DOCUMENT ENUMERATING ENFORCEABLE AFFIRMATIVE OBLIGATIONS ON THE ENTITY TO PROPERLY OPERATE AND MAINTAIN THE SYSTEM FOR ITS EXPECTED LIFE. THE DRAFT DOCUMENT MAY CONSIST OF A SHOWING OF COMPLIANCE WITH THE REQUIREMENTS OF A PUBLIC BODY THAT WILL RESULT IN THAT BODY'S ACCEPTANCE OF THE SYSTEM FOR MAINTENANCE, ARTICLES OF INCORPORATION FOR A CONDOMINIUM OR HOMEOWNER'S ASSOCIATION, PLAT OR DEED RESTRICTIONS APPORTIONING MAINTENANCE RESPONSIBILITY, OR IN THE EVENT THE PROPERTY IS BEING DEVELOPED FOR A CORPORATE PERMITTEE'S CORPORATE USE WITHOUT CONTEMPLATING SALES OF LOTS OR UNITS, A LETTER SIGNED BY THE CORPORATE OFFICER AUTHORIZED TO BIND THE CORPORATION STATING THE CORPORATION'S ACCEPTANCE OF PERMANENT MAINTENANCE RESPONSIBILITY. PRIOR TO THE DISTRICT'S ACCEPTANCE OF A COMPLETED SYSTEM, THE SUBMITTED DOCUMENT MUST BE APPROVED BY THE DISTRICT AND RECORDED, IF THE LATTER IS APPROPRIATE. FAILURE TO SUBMIT THE DESIGNATED ENTITY AND THE APPROPRIATE DOCUMENT WILL RESULT IN THE PERMITTEE REMAINING PERSONALLY LIABLE FOR CARRYING OUT MAINTENANCE AND OPERATION OF THE PERMITTED SYSTEM.

2. ALL CONSTRUCTION, OPERATION AND MAINTENANCE SHALL BE AS SET FORTH IN THE PLANS, SPECIFICATIONS AND PERFORMANCE CRITERIA AS APPROVED BY THIS PERMIT.

3. DISTRICT AUTHORIZED STAFF, UPON PROPER IDENTIFICATION, WILL HAVE PERMISSION TO ENTER, INSPECT AND OBSERVE THE SYSTEM TO INSURE CONFORMITY WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE PERMIT.

4. TURBIDITY BARRIERS MUST BE INSTALLED AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATERBODY EXISTS DUE TO THE PROPOSED WORK. TURBIDITY BARRIERS MUST REMAIN IN PLACE AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND SOILS ARE STABILIZED AND VEGETATION HAS BEEN ESTABLISHED. THEREAFTER THE PERMITTEE WILL BE RESPONSIBLE FOR THE REMOVAL OF THE BARRIERS.

5. THE OPERATION PHASE OF THE PERMIT SHALL NOT BECOME EFFECTIVE UNTIL A FLORIDA REGISTERED PROFESSIONAL ENGINEER CERTIFIES THAT ALL FACILITIES HAVE BEEN CONSTRUCTED IN ACCORDANCE WITH THE DESIGN APPROVED BY THE DISTRICT. WITHIN 30 DAYS AFTER COMPLETION OF CONSTRUCTION OF THE SURFACE WATER MANAGEMENT SYSTEM, THE PERMITTEE SHALL SUBMIT THE CERTIFICATION OR ONE SET OF PLANS WHICH REFLECT THE SURFACE WATER MANAGEMENT SYSTEM AS ACTUALLY CONSTRUCTED AND NOTIFY THE DISTRICT THAT THE FACILITIES ARE READY FOR INSPECTION AND APPROVAL. UPON APPROVAL OF THE COMPLETED SURFACE WATER MANAGEMENT SYSTEM, THE PERMITTEE SHALL REQUEST TRANSFER OF THE PERMIT TO THE RESPONSIBLE ENTITY APPROVED BY THE DISTRICT.

6. IF ANY OTHER REGULATORY AGENCY SHOULD REQUIRE REVISIONS OR MODIFICATION TO THE PERMITTED PROJECT, THE DISTRICT IS TO BE NOTIFIED OF THE REVISIONS SO THAT A DETERMINATION CAN BE MADE WHETHER A PERMIT MODIFICATION IS REQUIRED.

7. Within thirty (30) days after sale or conveyance of the permitted surface water management system or the land on which the system is located, the owner in whose name the permit was granted shall notify the District of such change of ownership. Transfer of this permit shall be in accordance with the provisions of Chapter 373, Florida Statutes, and Chapters 40C-4, 40C-40, and 40C-41, Florida Administrative Code. All terms and conditions of this permit shall be binding upon the transferee.

8. This permit for construction will expire five years from the date of issuance.

9. All swale and retention basin side slopes must be seeded and mulched within 30 days following their completion and a substantial vegetative cover must be established within one year of seeding.

10. Permanent vegetative cover must be established on all exposed land surfaces within one year from the date the construction is complete.

11. Permittee must obtain a general or individual permit from the District prior to beginning construction of subsequent phases or any other work not specifically authorized by this permit.

12. All detention, retention and out-flow structures must be built before any impervious area (pavement) is placed.

13. If dewatering is to occur during any phase of construction or thereafter and the surface water pump(s), wells or facilities are capable of withdrawing one million gallons of water per day or more or an average of 100,000 gallons per day or more over a year and any discharge is to be off-site, a Consumptive use Permit (40C-2) will be required prior to any dewatering.

14. The permittee must require the contractor to review and to maintain in good condition at the construction site a copy of this permit complete with all conditions, attachments, exhibits, and permit modifications issued for this permit. The complete permit copy must be available for review upon request by the District representatives.

15. A registered Professional Engineer (P.E.) or designee must be on-site to verify that the filtration system is constructed according to the permitted plans. This P.E. must submit a signed and sealed inspection report to the District within 30 days of completion of filter system. An annual inspection of the filter system must be made by a P.E. in the month of May. a signed and sealed inspection report must be submitted to the District by the P.E. within 30 days of the inspection date. If the filtration system is not functioning as designed and permitted, maintenance must be performed immediately and reported in the annual inspection report. If maintenance measures are insufficient, Permittee must submit a permit modification for an alternative design within 60 days of the annual inspection. The Permittee must use District form EN-42.

16. The proposed stormwater management system must be constructed as per plans submitted to the District on January 10, 1989, and as amended on April 5, 1989.

17. The Permittee is responsible for the selection, implementation, and operation of all erosion and sediment control measures required to retain sediment on-site and to prevent violations of water quality standards in Chapters 17-3, and 17-4, F.A.C.

18. The "Mitigation and Monitoring Plan" received by the District on April 5, 1988, is incorporated as a conditions of this permit unless superseded by other written conditions of this permit and must be implemented.

19. Successful establishment of the 4.2 acre created wetlands, zone "C" of the littoral zones in Lakes 1 through 4, and the 0.3 acre area of wetland No. 4, as per the mitigation plan, will have occurred when at least 80% of the planted trees have survived and have shown signs of growth for 3 successive years or after 5 years as determined by District Staff.

Replacement or an alternative planting plan will be required if successful establishment of desired species does not occur within 5 years. Should an amended planting plan be required, the Permittee must submit to the District for staff review, revised plans which must include, at a minimum, the information listed in section 16.1.5, A.H. A statement listing probable causes of failure must also be submitted for District staff review at this time. Time frames for successful establishment of the planted areas will begin again if greater than 20% of the planted vegetation is replaced during the 5 year monitoring period or until the establishment of the mitigation area has been determined successful by District Staff.

20. Successful establishment of the herbaceous littoral zones of lakes 1, 2, and 4, as per the mitigation plan, will have occurred when at least an 80% vegetative coverage is obtained.

Replacement or an alternative planting plan will be required if successful establishment of desired species does not occur after 2 years. Should an amended planting plan be required, the Permittee must submit to the District, for staff review, revised plans which must include at a minimum the information listed in section 16.1.5, A.H. A statement listing probable causes of failure must also be submitted for District staff review at this time.

21. A monitoring plan must be implemented by the Permittee following completion of the planting with the following information and submitted biannually to the District in report form. Monitoring must be conducted once before and once following each growing season, until the mitigation is determined to be successful by District staff under condition Nos. 19 and 20.

A. Description of the vegetative composition,

B. Percent cover,

C. Percent survival of each plant species,

D. Photographs with a diagram plan referencing photographing stations,

E. Location of sampling transect, and

F. Maintenance practices and schedules including the number and species of new plants used to replace dead materials.

22. The permittee must submit an as-built survey or plan of the created littoral zones of Lake Nos. 1-4, and the 0.3 acre area of wetland No. 4 to be planted with cypress and the 4.2 acre wetland creation area, showing dimensions, grades, ground elevations, and water surface elevations certified by a registered surveyor or professional engineer. The as-built must be submitted with the first monitoring report.

23. Prior to beginning construction, the Permittee must clearly delineate the physical/geographical limits of construction on-site. The Permittee must advise the contractor in writing that any work, including clearing, outside the limits of construction is a violation of this permit.

24. The 4.2 acre wetland creation areas, 0.3 acre area of wetland No. 4 and the herbaceous littoral zones must be planted prior to issuance of first certificate of occupancy, initiation of intended use of infrastructure, or transfer of responsibility for maintenance of the system to a local government of other responsible entity, whichever occurs first.

25. Prior to initiating any additional construction, the Permittee must record a conservation easement on the real property pursuant to section 704.06, F.S., prohibiting all construction including clearing, dredging, or filling, except that which is specifically authorized by this permit or which may be authorized by future District permit, within the preserved and created wetlands and upland conservation area and within the 25 ft. buffer area, around wetland No. 5 and lake No. 3 as delineated on plans dated as received by the District on December 2, 1988, and as amended on March 23, 1989.

Prior to the sale of lots, the Permittee must record deed restrictions on the real property pursuant to section 704.06, F.S., prohibiting all construction including clearing, dredging, or filling, except that which is authorized by this permit, or which may be authorized by future District permit, within the 20 ft. wide rear lot drainage easement as delineated on plans dated as received by the District on December 2, 1988, and as amended on March 23, 1989.

Said restrictions and easement must contain provisions as set forth in subsections 1(a) through (l) of section 704.06, F.S., as well as provisions indicating that they may be enforced by the District and may not be amended without prior District approval. Within 30 days of the date of issuance of this permit and prior to recording, said restrictions and easement must be submitted to the District for review and approval.

Within 30 days of receipt of District approval, the Permittee must provide the District with a certified copy of the recorded restrictions and easement showing the date they were recorded and the official records plat book and page number.

26. Within 30 days of permit approval, the permitte must submit for District staff review, the proposed location of the staff guages and peizometers in wetland #7. The Permittee must locate one set of each of the staff guage and peizometer at the eastern and western extent of wetland #7.

27. The Permittee must monitor groundwater and surface water conditions in wetland #7 and submit data in report form to the District quarterly for 5 years.

28. The permit must plant 50% of the total surface area of Lake No. 3. This area must achieve 100% coverage after 1 year.

29. Restored upland vegetation in the 25 ft. upland buffer area around Lake #3 and wetland #5 must achieve the same success criteria as detailed in condition #19. The Permittee must submit (30 days prior to construction) for District staff review and approval a plan view delineating only the necessary areas within this 25 ft. upland buffer area around Lake #3 to be cleared to gain access to the proposed lake area. These areas must be planted within 30 days of completion of construction of Lake #3.

30. The Permittee must notify the District's staff within 30 days of beginning construction of Lake #3.

31. The 4.2 acre created wetland, the 0.3 acre area in wetland No. 4, and any restored areas of the 25 ft. upland buffer area, must be planted with trees which are 6 ft. - 10 ft. in height and at a 10 foot on center density or no less than 440 trees per acre.

32. All wetland areas which are outside of the specific limits of construction authorized by this permit must be protected from erosion, scouring, siltation, and excess turbidity or dewatering.

33. Within 30 days of issuance of this permit, the Permittee must submit a statement of ownership for the proposed 4.2 acre wetland creation site.

34. The Permittee must submit plans and cross section drawings illustrating the culvert crossing which must be constructed for the wetland crossings, corresponding to station number 75+00.00 on the plans titled McCulloch Road Improvements Plan and Profile - STA 71+00 to STA 86+00 received by the District on January 10, 1989.

35. The littoral zones in Lake Nos. 1-4 must all be established from the ordinary high water elevation to the ordinary low water elevation utilizing herbaceous plant species listed in section 16.1.1, Vegetative Index of the Applicant's Handbook for Management and Storage of Surface Waters Permits, except for those species specified in Condition #36.

36. Within the 4.2 acre wetland creation area and the created littoral zones of Lakes 1-4 and within wetlands No. 3 and 4, non-native vegetation and cattails (typha sp.) and primrose willow (ludwigia peruviana) must be controlled by hand clearing methods or other methods approved by the District such that they constitute no more than 10% of the areal cover in each stratum.

37. All wells on-site must be abandoned pursuant to Chapter 40C-3, F.A.C.

38. Prior to construction of the 4.2 acre wetland creation area, the permittee must demonstrate to District staff by flagging and surveying the limits of construction that no portion of the proposed site is in wetlands as defined under Section 16.1.1 and 16.1.2, A.H.

Brindley Pieters & Associates, Inc.

212 East New York Avenue
DeLand, Florida 32724
386.822.9473 . Fax 386.822.9475
www.bpa-engineers.com

November 26, 2008

Mr. Nabil Muhiasen
Department of Water Resources
St. Johns River Water Management District
975 Keller Road
Altamonte Springs, FL 32714 -1618

RE: Letter Modification
SJRWMD Permit Nos. 4-095-20580-1 and 4-095-20828-1
Additional Turn Lanes at the intersection of McCulloch Road and North Tanner Road

Dear Mr. Muhiasen:

This letter modification is being submitted for the construction of turn lanes at the intersection of McCulloch Road and North Tanner Road resulting in an additional 0.17 acres of impervious area being added to the existing permitted impervious area in St. Johns River Water Management Permits (4-095-20580-1 and 4-095-20828-1).

Permit application 4-095-20580-1 included the 223 acre University Estates development in Orange County, 10.9 acres for constructing North Tanner Road south to Lake Price Road and the construction 1500 feet of McCulloch Road for access to the subdivision.

Permit application 4-095-20828-1 included the construction of McCulloch Road east of North Tanner Road as part of the 141 acre Stonemeade Subdivision.

The runoff from the proposed additional 0.08 acres impervious area in the proposed McCulloch Road turn lane west of North Tanner Road will flow via the existing storm sewer to the existing permitted interconnected wet detention ponds within University Estates. The ponds outfall to an existing wetland area south of McCulloch Road. The additional 0.08 acres for the proposed turn lane west of North Tanner Road will result in a net increase of 0.07% of the total previously permitted impervious area.

The runoff from the additional 0.09 acres impervious area on the east side of the McCulloch Road and North Tanner Road intersection will flow via the existing storm sewer to the existing permitted interconnected wet retention ponds constructed for the Stonemeade subdivision. The existing Stonemeade ponds were designed to treat the 141 acre subdivision. The additional 0.09 acres impervious area for the proposed McCulloch Road turn lane east of North Tanner Road will result in a net increase of 0.40% of the total previously permitted impervious area.

The additional runoff produced by the 0.17 acre impervious area added for the proposed McCulloch Road turn lanes is negligible and will have no impact to the water quality or flood attenuation functions of the existing water retention systems.

Enclosed please find the roadway construction plans for the turn lanes as well as the permit modification fee of $250. Should you have any questions or need any additional information please do not hesitate to contact me.

BPA
Brindley Pieters & Associates, Inc.

212 East New York Avenue
DeLand, Florida 32724
386.822.9473 . Fax 386.822.9475
www.bpa-engineers.com

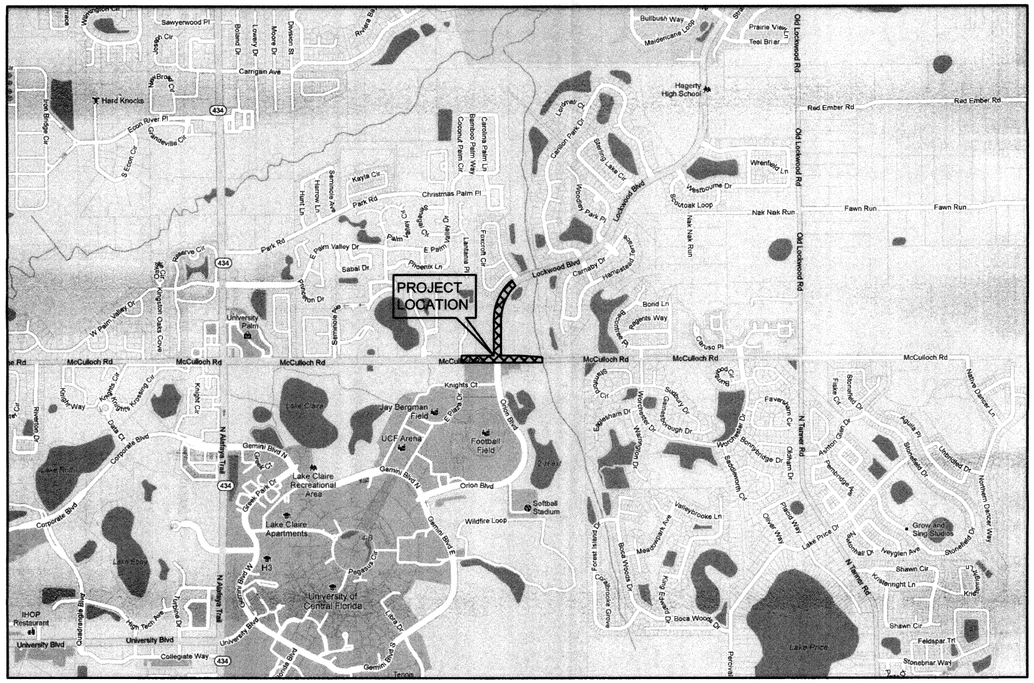
Sincerely,

Brindley Pieters & Associates, Inc.

Randy Augat
Senior Project Manager

Cc: Louis Alvan, J.D., P.E.
Tommy Smith, P.E.

CONSTRUCTION PLANS
FOR
McCULLOCH ROAD & LOCKWOOD BLVD.
INTERSECTION IMPROVEMENTS
SEMINOLE COUNTY, FLORIDA



VICINITY MAP
SCALE: 1"=1500'

DRAWING INDEX:

OWNER/DEVELOPER:

LOCKWOOD CAMPUS COMMUNITY, LLC
215 N. EOLA DRIVE
ORLANDO, FL 32801
PHONE: 407-418-6336
CONTACT: AARON GOROVITZ, ESQ.

SURVEYOR:

SEARS SURVEYING COMPANY
126 WIGWAM PLACE
MAITLAND, FLORIDA 32751
PHONE: 407-645-1332
FAX: 407-645-1044
CONTACT: ROB SEARS

ENGINEER:

DRMP, INC.
941 LAKE BALDWIN LANE
ORLANDO, FLORIDA 32814
PHONE: 407-896-0594
FAX: 407-896-4836
CONTACT: ROBERT M. MOON, P.E.

LANDSCAPE ARCHITECT:

CANIN ASSOICATES
500 DELANEY AVENU
ORLANDO, FLORIDA 32801
PHONE: 407-422-4040
FAX: 407-425-7427
CONTACT: RYAN PASCHEN

4-117-22038-8
RECEIVED
JUL 20 2012
MAITLAND

Property Appraiser ID Number 35 - 21 - 31 - 512 - 0000 - 0020

Seminole County
Approved for construction

This approval is subject to specific conformance to the Seminole County Land Development Code and any special requirements of the Board of County Commissioners. It shall be the responsibility of the developer to correct any defects in the plans or the facility as constructed which results in a failure to meet applicable code requirements. Administrative acceptance of the developer's plans does not constitute a waiver of any code requirements nor does it relieve the developer of responsibility to meet those requirements. This specific approval is valid for a period of one year from the date below.

Approved.

Seminole County

Date

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BY	DCL	CHECKED BY	RMM
DRAWN BY	DAC	APPROVED BY	JCK

COVER

SITE ENGINEERING PLANS FOR
McCULLOCH ROAD AND LOCKWOOD BLVD.
INTERSECTION IMPROVEMENTS
SEMINOLE COUNTY, FLORIDA

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
Certificate of Authorization No. 2648
941 Lake Baldwin Lane - Orlando, Florida 32814
Phone:407.896.0594 Fax:407.896.4836 WWW.DRMP.COM

DRMP, INC.

ROBERT M. MOON
LICENSE
No. 66501
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
Jul 19 2012

Robert M. Moon, P.E.
State of Florida # 66501

PROJECT NO.: 11-0514.002
SCALE: AS SHOWN
DATE: June, 2012
DRAWING: C1.0

GENERAL NOTES

1. UNLESS OTHERWISE SPECIFIED, ALL WORK SHALL BE PERFORMED CONSISTENT WITH THE FOLLOWING SPECIFICATIONS:

- SEMINOLE COUNTY, FLORIDA
- ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
- FLORIDA DEPARTMENT OF TRANSPORTATION
- FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

2. THIS DESIGN HAS BEEN BASED UPON GROUND-RUN TOPOGRAPHIC SURVEYS BY SEARS SURVEYING COMPANY AND MILLER LEGG. GEOTECHNICAL EVALUATION HAS BEEN PERFORMED BY UNIVERSAL ENGINEERING SCIENCES. DYER, RIDDLE, MILLS & PRECOURT, INC. MAKES NO ASSURANCES REGARDING THE ACCURACY OF EITHER SUCH EVALUATION.

3. CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH THE SITE, INCLUDING ALL SURFACE AND SUBSURFACE CONDITIONS, THE WORK REQUIRED AND ALL OTHER CONDITIONS THAT MAY AFFECT THE SUCCESSFUL COMPLETION OF THE JOB PRIOR TO COMMENCEMENT OF WORK.

4. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND PERMIT CONDITIONS BEARING ON THE CONDUCT OF THE WORK, AS DRAWN AND SPECIFIED. IF THE CONTRACTOR OBSERVES THAT THE DRAWINGS AND SPECIFICATIONS ARE AT VARIANCE THEREWITH, HE SHALL PROMPTLY NOTIFY THE ENGINEER, IN WRITING, AND ANY NECESSARY CHANGES SHALL BE ADJUSTED, AS PROVIDED IN THE AGREEMENT FOR CHANGES IN THE WORK.

5. THE CONTRACTOR SHALL BE RESPONSIBLE TO THE OWNER AND THE ENGINEER FOR THE ACTS AND OMISSIONS OF CONTRACTOR'S EMPLOYEES AND ALL HIS SUBCONTRACTORS AND THEIR AGENTS AND EMPLOYEES AND OTHER PERSONS PERFORMING ANY OF THE WORK UNDER A CONTRACT WITH THE CONTRACTOR.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS WITH GOVERNMENTAL DEPARTMENTS, PUBLIC UTILITIES, PUBLIC CARRIERS, SERVICE COMPANIES, AND CORPORATIONS OWNING OR CONTROLLING ROADWAYS, RAILWAYS, WATER, SEWER, GAS, ELECTRICAL, TELEPHONE, AND TELEGRAPH FACILITIES SUCH AS PAVEMENTS, TRACKS, PIPING, WIRES, CABLES, CONDUITS, POLES, GUYS, OR OTHER SIMILAR FACILITIES, INCLUDING INCIDENTAL STRUCTURES CONNECTED THEREWITH THAT ARE ENCOUNTERED IN THE WORK IN ORDER THAT SUCH ITEMS MAY BE PROPERLY SUPPORTED, PROTECTED OR LOCATED.

7. UNLESS OTHERWISE SPECIFIED IN THE GENERAL CONDITIONS, ALL CONSTRUCTION IS TO BE GOVERNED BY THE PLANS, APPLICABLE PERMITS, AND SPECIFICATIONS HEREIN, AND ALL APPLICABLE FEDERAL, STATE AND LOCAL BUILDING AND SAFETY CODES, LAWS AND ORDINANCES.

8. PRIOR TO PERFORMING ANY WORK WITHIN ANY PUBLIC OR UTILITY RIGHT-OF-WAY, CONTRACTOR SHALL OBTAIN AUTHORIZATION AND PERMIT FROM JURISDICTION RESPONSIBLE FOR SUCH RIGHT-OF-WAY. IN ADDITION, CONTRACTOR SHALL OBTAIN GAS I.D. NUMBER FROM LOCAL GAS COMPANY AND NOTIFY UNDERGROUND UTILITIES, NOTIFICATION CENTER AT 1-800-432-4770 AT LEAST 72 HOURS PRIOR TO START OF WORK.

9. PRIOR TO PERFORMING ANY WORK WITHIN ANY PUBLIC RIGHT-OF-WAY, CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRAFFIC CONTROL PLAN CONSISTENT WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION, AND SUBMIT TO THE ENGINEER FOR APPROVAL.

10. IN THE EVENT THE CONTRACTOR DISCOVERS ANY ERRORS OR OMISSIONS IN THE PLANS HE SHALL IMMEDIATELY NOTIFY THE OWNER OR OWNER'S AGENT.

11.1 CONTRACTOR SHALL PRESERVE AND PROTECT ALL PERMANENT REFERENCE MONUMENTS, PERMANENT CONTROL POINTS, PERMANENT BENCH MARKS AND PROPERTY CORNERS. IN THE EVENT THE MONUMENTS, POINTS OR MARKERS ARE DISTURBED THE CONTRACTOR SHALL EMPLOY A FLORIDA REGISTERED LAND SURVEYOR TO RESET OR REPLACE THEM.

11.2 THIS PROJECT WILL REQUIRE AN NPDES PERMIT THROUGH THE FDEP. ALSO, ADDITIONAL COPIES OF THE EROSION CONTROL PLAN ARE TO BE SUBMITTED TO THE DEVELOPMENT REVIEW INSPECTIONS TEAM AND THE NATURAL RESOURCES OFFICER PRIOR TO THE PRECONSTRUCTION MEETING.

12. THE OWNER, OWNER'S AGENT AND INSPECTORS OF APPLICABLE GOVERNMENT JURISDICTIONS, SHALL AT ALL TIMES HAVE ACCESS TO THE WORK WHEREVER AND WHENEVER IT IS IN PREPARATION OR PROGRESS; AND THE CONTRACTOR SHALL PROVIDE PROPER FACILITIES FOR SUCH ACCESS AND FOR THE INSPECTION.

13. IT IS THE CONTRACTOR'S RESPONSIBILITY TO TAKE ALL REASONABLE AND PRUDENT PRECAUTIONS TO INSURE THAT ALL COMPLETED WORK, MATERIALS AND EQUIPMENT STORED ON SITE ARE SAFE AND SECURED FROM UNAUTHORIZED ACCESS OR USE. SUCH PRECAUTIONS MAY INCLUDE INSTALLATION OF SIGNS, FENCES, OR POSTING OF SECURITY GUARDS.

14. CONTRACTOR SHALL, AT ALL TIMES, UTILIZE ALL NORMALLY ACCEPTED AND REASONABLY EXPECTED SAFETY PRACTICES AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL REGULATIONS, ORDINANCES AND GUIDELINES PERTAINING TO SAFE UTILIZATION OF EQUIPMENT OR MATERIALS AS PUBLISHED BY MANUFACTURER.

15. PRIOR TO INITIATING ANY EXCAVATION (INCLUDING BUT NOT LIMITED TO TUNNELS, DITCHES, STORM WATER PONDS, CANALS, ARTIFICIAL LAKES) CONTRACTOR SHALL INSTALL FENCES AND TAKE ALL OTHER REASONABLE AND PRUDENT STEPS TO INSURE THAT ACCESS TO EXCAVATION BY UNAUTHORIZED PERSONNEL IS PREVENTED.

16 CONTRACTOR SHALL COMPLY IN EVERY RESPECT WITH THE PROVISIONS OF THE FLORIDA STATE TRENCH SAFETY ACT.

17.1 THE CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS FOR THE SAFETY OF, AND SHALL PROVIDE ALL REASONABLE PROTECTION TO PREVENT DAMAGE, INJURY OR LOSS TO:

A. ALL EMPLOYEES ON THE WORK AND ALL OTHER PERSONS WHO MAY BE AFFECTED THEREBY;

B. ALL THE WORK AND ALL MATERIALS AND EQUIPMENT TO BE INCORPORATED THEREIN, WHETHER IN STORAGE ON OR OFF THE SITE, UNDER THE CARE, CUSTODY OR CONTROL OF THE CONTRACTOR OR ANY OF ITS SUBCONTRACTORS;

C. OTHER PROPERTY AT THE SITE OR ADJACENT THERETO, INCLUDING TREES, SHRUBS, LAWNS, WALKS, PAVEMENTS, ROADWAY, STRUCTURES AND UTILITIES NOT DESIGNATED FOR DEMOLITION IN THE COURSE OF CONSTRUCTION.

17.2 THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND WITH ALL APPLICABLE LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC, QUASI PUBLIC OR OTHER AUTHORITY HAVING JURISDICTION FOR THE SAFETY OF PERSONS OR PROPERTY OR FOR THEIR PROTECTION AGAINST DAMAGE, INJURY OR LOSS, OR DESIGNED TO PROTECT THE ENVIRONMENT. THE CONTRACTOR SHALL ERECT AND MAINTAIN, AS REQUIRED BY EXISTING CONDITIONS AND PROGRESS OF THE WORK, ALL REASONABLE SAFEGUARDS FOR SAFETY AND PROTECTION, INCLUDING POSTING DANGER SIGNS AND OTHER WARNINGS AGAINST HAZARDS, PROMULGATING SAFETY REGULATIONS AND NOTIFYING OWNERS AND USERS OF ADJACENT UTILITIES OF THE EXISTENCE OF HAZARDS AND OF THE SAFETY REGULATIONS.

17.3 ALL DAMAGE OR LOSS TO ANY PROPERTY REFERRED TO IN CLAUSES 17.1(B) AND 17.1(C) CAUSED IN WHOLE OR IN PART BY THE CONTRACTOR, A SUBCONTRACTOR, OR BY ANYONE FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE, SHALL BE REMEDIED BY THE CONTRACTOR, EXCEPT DAMAGE OR LOSS PROPERLY ATTRIBUTABLE SOLELY TO THE ACTS OR OMISSIONS OF THE OWNER, OR THE ENGINEER OR ANYONE EMPLOYED BY THEM, OR FOR WHOSE ACTS ANY OF THEM MAY BE LIABLE, AND NOT PROPERLY ATTRIBUTABLE IN WHOLE OR IN PART, TO THE FAULT OR NEGLIGENCE OF THE CONTRACTOR.

17.4 UNTIL FINAL ACCEPTANCE OF THE WORK BY OWNER, THE CONTRACTOR SHALL HAVE THE CHARGE AND CARE OF AND SHALL BEAR THE RISK OF INJURY OR DAMAGE, LOSS OR EXPENSE TO ANY PART THEREOF, OR TO ANY MATERIALS STORED ON SITE, BY THE ACTION OF THE ELEMENTS OR FROM ANY OTHER CAUSE WHETHER ARISING FROM THE EXECUTION OR NON-EXECUTION OF THE WORK. THE CONTRACTOR SHALL REBUILD, REPAIR, RESTORE AND MAKE GOOD ALL INJURIES OR DAMAGES TO ANY PORTION OF THE WORK OCCASIONED BY ANY OF THE ABOVE CAUSES BEFORE FINAL ACCEPTANCE AND SHALL BEAR THE EXPENSES THEREOF.

17.5 THOSE PARTS OF WORK IN PLACE WHICH ARE SUBJECT TO DAMAGE BECAUSE OF OPERATIONS BEING CARRIED ON ADJACENT THERETO SHALL BE COVERED, BOARDED UP OR SUBSTANTIALLY ENCLOSED WITH ADEQUATE PROTECTION BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.

17.6 ADEQUATE TRAFFIC CONTROL, BARRICADES AND FLAGMAN SERVICES SHALL BE FURNISHED AND MAINTAINED BY THE CONTRACTOR AT ALL POINTS WHERE CONVEYING EQUIPMENT ENGAGED ON THE WORK REGULARLY ENTERS ONTO OR CROSSES TRAFFIC-CARRYING ROADS.

18. 18.1 THE CONTRACTOR SHALL COMPLY IN EVERY RESPECT WITH THE FEDERAL OCCUPATIONAL HEALTH AND SAFETY ACT OF 1970 AND ALL RULES AND REGULATIONS NOW OR HEREAFTER IN EFFECT UNDER SAID ACT, AND THE CONTRACTOR FURTHER AGREES TO COMPLY WITH ANY AND ALL APPLICABLE STATE LAWS AND REGULATIONS PERTAINING TO JOB SAFETY AND HEALTH.

18.2 THE CONTRACTOR SHALL PROTECT AND KEEP OWNER (INCLUDING THEIR AGENTS AND EMPLOYEES) FREE AND HARMLESS FROM ANY AND ALL LIABILITY, PUBLIC OR PRIVATE, PENALTIES, CONTRACTUAL OR OTHERWISE, LOSSES, DAMAGES, COSTS, ATTORNEY'S FEES, EXPENSES, CAUSES OF ACTION, CLAIMS OR JUDGMENTS RESULTING FROM THE FEDERAL OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AS AMENDED OR ANY RULE OR REGULATION PROMULGATED THEREUNDER OR OF ANY STATE LAWS OR REGULATIONS PERTAINING TO JOB SAFETY AND HEALTH ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE PERFORMANCE OF WORK OR WORK TO BE PERFORMED UNDER THIS CONTRACT, AND CONTRACTOR SHALL INDEMNIFY OWNER FROM ANY SUCH CLAIMS, PENALTIES, SUITS OR ACTIONS, PUBLIC OR PRIVATE, ADMINISTRATIVE OR JUDICIAL, INCLUDING ATTORNEY'S FEES PAID OR INCURRED BY OR ON BEHALF OF OWNER, JOINTLY OR SEVERALLY, AND/OR THEIR AGENTS AND EMPLOYEES. THE CONTRACTOR FURTHER AGREES, IN THE EVENT OF A CLAIMED VIOLATION OF ANY FEDERAL OR STATE SAFETY AND HEALTH LAW OR REGULATION ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE PERFORMANCE OF WORK OR WORK TO BE PERFORMED UNDER THIS CONTRACT, OWNER MAY IMMEDIATELY TAKE WHATEVER ACTION IS DEEMED NECESSARY BY OWNER TO REMEDY THE CLAIMED VIOLATION. ANY AND ALL COSTS OR EXPENSES PAID OR INCURRED BY OWNER IN TAKING SUCH ACTION SHALL BE BORNE BY CONTRACTOR, AND CONTRACTOR AGREES TO PROTECT, HOLD HARMLESS AND INDEMNIFY OWNER AGAINST ANY AND ALL SUCH COSTS OR EXPENSES.

19. ALL WORK PERFORMED UNDER THE CONTRACT, AND ALL EQUIPMENT, APPLIANCES, TOOLS AND LIKE ITEMS USED IN THE WORK SHALL CONFORM TO APPLICABLE SAFETY CODES AND REGULATIONS OF ANY PUBLIC OR OTHER AUTHORITY HAVING JURISDICTION. IN THE EVENT OF CONFLICTING REQUIREMENTS, THE MORE STRINGENT INTERPRETATION OR REGULATION SHALL GOVERN.

20.1 CONTRACTOR AND ITS SUBCONTRACTORS SHALL USE, HANDLE, TRANSPORT, AND DISPOSE OF ALL HAZARDOUS MATERIALS (AS DEFINED PARAGRAPH21.8) IN COMPLIANCE WITH ALL PRESENT FEDERAL, STATE AND LOCAL ENVIRONMENTAL, HEALTH OR SAFETY LAW, INCLUDING, BUT NOT LIMITED TO, ALL SUCH STATUTES, REGULATIONS, RULES, ORDINANCES, CODES, AND RULES OF COMMON LAW.

20.2 CONTRACTOR FURTHER AGREES THAT CONTRACTOR AND ITS SUBCONTRACTORS SHALL NOT CAUSE THE DISCHARGE, RELEASE OR DISPOSAL OF ANY HAZARDOUS MATERIAL CREATED BY ITS WORK ON OR ABOUT THE JOB SITE. IN THE EVENT OF ANY SPILL, RELEASE OR ANY OTHER REPORTABLE OCCURRENCE, CONTRACTOR SHALL NOTIFY THE APPROPRIATE GOVERNMENTAL AGENCY AND SHALL TAKE SUCH ACTION AS MAY BE NECESSARY TO MINIMIZE THE DELETERIOUS EFFECT OF SUCH SPILL ON PERSONS OR PROPERTY.

20.3 CONTRACTOR AND ITS SUBCONTRACTORS SHALL, UPON COMPLETION OF PERFORMANCE OF ALL DUTIES UNDER THIS CONTRACT, REMOVE ALL SUPPLIES, MATERIALS, AND WASTE CONTAINING AND HAZARDOUS MATERIAL FROM THE JOB SITE. CONTRACTOR SHALL BEAR FULL FINANCIAL RESPONSIBILITY, AS BETWEEN THE PARTIES OF THIS CONTRACT, FOR THE COMPLIANCE OF CONTRACTOR AND ITS SUBCONTRACTORS WITH THE PROVISIONS OF THIS PARAGRAPH 21.7.

20.4 CONTRACTOR AGREES TO INDEMNIFY, DEFEND, PROTECT AND HOLD THE OWNER HARMLESS FROM AND AGAINST ANY CLAIMS INCLUDING, WITHOUT LIMITATION, ACTUAL ATTORNEY'S FEES AND ANY COSTS OF INVESTIGATION, SOILS TESTING, GOVERNMENTAL APPROVALS, REMEDIATION AND CLEANUP ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE FAILURE OF CONTRACTOR OR ITS SUBCONTRACTORS, OR THEIR AGENTS, EMPLOYEES, OFFICERS, OR REPRESENTATIVES, TO COMPLY WITH THE TERMS OF THIS ARTICLE 21.

20.5 SHOULD CONTRACTOR OR ITS SUBCONTRACTORS DISCHARGE, RELEASE OR DISPOSE OF ANY HAZARDOUS MATERIAL ON OR ABOUT THE JOB SITE IN VIOLATION OF THIS PARAGRAPH, CONTRACTOR SHALL IMMEDIATELY SO INFORM OWNER IN WRITING. IN THE EVENT OF ANY SPILL, RELEASE OR ANY OTHER REPORTABLE OCCURRENCE, CONTRACTOR SHALL NOTIFY THE APPROPRIATE GOVERNMENTAL AGENCY AND SHALL TAKE SUCH ACTION AS MAY BE NECESSARY TO MINIMIZE THE DELETERIOUS EFFECT OF SUCH SPILL ON PERSONS OR PROPERTY.

20.6 IN THE EVENT CONTRACTOR OR ITS SUBCONTRACTORS ENCOUNTER ON THE PREMISES ANY PIPELINE, UNDERGROUND STORAGE TANK OR OTHER CONTAINER, OF ANY KIND, THAT MAY CONTAIN A HAZARDOUS MATERIAL, OR ENCOUNTER MATERIAL REASONABLY BELIEVED TO BE A HAZARDOUS MATERIAL, CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA AFFECTED AND REPORT THE CONDITION TO OWNER IN WRITING.

20.7 IF CONTRACTOR OR ITS SUBCONTRACTORS DO NOT COMPLY WITH THE REQUIREMENTS OF THIS PARAGRAPH, OWNER MAY, BUT IS NOT OBLIGATED TO, GIVE WRITTEN NOTICE OF VIOLATION TO CONTRACTOR. SHOULD CONTRACTOR OR ITS SUBCONTRACTORS FAIL TO COMPLY WITH THE REQUIREMENTS OF THE PARAGRAPH WITHIN TWENTY-FOUR (24) HOURS FROM THE TIME OWNER ISSUES SUCH WRITTEN NOTICE OF NONCOMPLIANCE OR WITHIN THE TIME OF AN ABATEMENT PERIOD SPECIFIED BY ANY GOVERNMENTAL AGENCY, WHICHEVER PERIOD IS SHORTER, CONTRACTOR SHALL BE IN MATERIAL DEFAULT OF THIS CONTRACT.

20.8 "HAZARDOUS MATERIAL" MEANS ANY SUBSTANCE: (A) THE PRESENCE OF WHICH REQUIRES INVESTIGATION OR REMEDIATION UNDER ANY PRESENT FEDERAL, STATE OR LOCAL STATUTE, REGULATION, ORDINANCE, RULE, CODE, ORDER, ACTION, POLICY OR COMMON LAW, OR (B) WHICH IS OR BECOMES DEFINED AS A "HAZARDOUS WASTE," "HAZARDOUS SUBSTANCE," POLLUTANT OR CONTAMINANT UNDER ANY PRESENT FEDERAL, STATE OR LOCAL STATUTE, REGULATION, RULE OR ORDINANCE OR AMENDMENTS THERETO INCLUDING, WITHOUT LIMITATION, THE COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (42 U.S.C. SECTIONS 9601 ET SEQ.) AND/OR THE RESOURCE CONSERVATION AND RECOVERY ACT (42 U.S.C. SECTIONS 6901 ET SEQ.), OR (C) WHICH IS TOXIC, EXPLOSIVE, CORROSIVE, FLAMMABLE, INFECTIOUS, RADIOACTIVE, CARCINOGENIC, MUTAGENIC, OR OTHERWISE HAZARDOUS AND IS REGULATED BY ANY GOVERNMENTAL AUTHORITY, AGENCY, DEPARTMENT, COMMISSION, BOARD, AGENCY OR INSTRUMENTALITY OF THE UNITED STATES, THE STATE IN WHICH THE PREMISES ARE LOCATED OR ANY POLITICAL SUBDIVISION THEREOF, OR (D) THE PRESENCE OF WHICH ON THE PREMISES CAUSES OR THREATENS TO CAUSE A NUISANCE UPON THE PREMISES OR TO ADJACENT PROPERTIES OR POSES OR THREATENS TO POSE A HAZARD TO THE HEALTH OR SAFETY OF PERSONS ON OR ABOUT THE PREMISES, OR (E) WHICH CONTAINS GASOLINE, DIESEL FUEL OR OTHER PETROLEUM HYDROCARBONS, OR (F) WHICH CONTAINS POLYCHLORINATED BIPHENYLS (PCBS), ASBESTOS, LEAD OR UREA FORMALDEHYDE FOAM INSULATION.

21. THE EXISTING UTILITIES SHOWN ARE APPROXIMATE AND NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITIES AS TO SIZE, LOCATION, AND ELEVATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY AND ALL CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.

22. IF ANY TESTING, INSPECTION OR APPROVAL REVEAL DEFECTIVE WORK, CONTRACTOR SHALL NOT BE ALLOWED TO RECEIVE ANY ASSOCIATED COSTS AND THE OWNER SHALL BE ENTITLED TO DEDUCT FROM THE CONTRACT PRICE, BY ISSUING A CHANGE ORDER, OWNER'S COSTS ARISING OUT OF THE DEFECTIVE WORK, INCLUDING COSTS OF REPEATED PROCEDURES, COMPENSATION FOR ENGINEER'S AND DESIGN ENGINEER'S SERVICES AND OTHER RELATED COSTS.

UTILITY COMPANIES

WATER: SEMINOLE COUNTY UTILITIES - 407-323-9615 (SANFORD)
SEWER: SEMINOLE COUNTY UTILITIES - 407-323-9615 (SANFORD)
POWER: FLORIDA POWER & LIGHT COMPANY - 407-321-5620 (SANFORD)
TELEPHONE: SOUTHERN BELL TELEPHONE COMPANY - 407-237-3523 (ORLANDO)

ADDITIONAL NOTES

1. THE CONTRACTOR SHALL SUBMIT SIX COPIES OF SHOP DRAWINGS TO THE ENGINEER ON ALL STRUCTURES AND RECEIVE BACK FROM THE ENGINEER THE APPROVED SHOP DRAWINGS BEFORE COMMENCING WORK ON THE STRUCTURE.

2. ALL TRAFFIC CONTROL DEVICES AND SIGNAGE SHALL BE D.O.T. AND SEMINOLE COUNTY SPECIFICATIONS, AND MEET THE REQUIREMENTS OF CHAPTER 316 FLORIDA STATUES.

3. STREET SIGNS TO BE REFLECTIVE AND PLACED IN ACCORDANCE WITH SEMINOLE COUNTY STANDARDS. CONTRACTOR SHALL FURNISH AND INSTALL STREET SIGNS.

4. ALL STOP SIGNS TO BE 30" HIGH INTENSITY.

5. ALL WORK SHALL BE IN ACCORDANCE WITH CURRENT SEMINOLE COUNTY STANDARDS AND SPECIFICATIONS. IF A CONFLICT OCCURS THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR A DETERMINATION.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE RESTORATION OF ANY TRAFFIC SIGNAL EQUIPMENT, INCLUDING BUT NOT LIMITED TO FIBER, LOOP SENSORS, PULL BOXES, CONDUIT, TRAFFIC SIGNALS, AND CABINETS. ANY ITEMS DAMAGED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS, UNLESS AGREED UPON BY THE COUNTY TRAFFIC ENGINEER.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH ANY OTHER CONTRACTORS WHO MAY BE PERFORMING WORK AT THE PROJECT SITE.

8. EXISTING FACILITIES SHALL BE RESTORED TO A CONDITION EQUIVALENT TO THAT WHICH EXISTED PRIOR TO COMMENCEMENT OF CONSTRUCTION. NO SEPARATE PAYMENT WILL BE MADE FOR THIS WORK.

9. THE CONTRACTOR SHALL KEEP AND MAINTAIN ON-SITE AN ACCURATE UP-TO-DATE SET OF AS-BUILT DRAWINGS. THESE DRAWINGS SHALL INCLUDE LOCATIONS AND ELEVATIONS OF MAINS, FITTINGS, VALVES, SERVICES, CASINGS, AND OTHER APPURTENANCES AS WELL AS ANY DEVIATIONS IN THE PLANS. THESE AS-BUILT DRAWINGS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE UPON COMPLETION OF THE WORK FOR HIS REVIEW AND USE.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED CITY, COUNTY, STATE, OR LOCAL CONSTRUCTION PERMITS OR APPROVALS, ETC. AND POSTING ALL REQUIRED BONDS, ETC. PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL REQUIRED INSPECTIONS WITH UTILITY COMPANIES, CITY, COUNTY, OR STATE AGENCIES AND THE OWNER'S REPRESENTATIVE.

11. THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND ALL UTILITY COMPANIES IN THE AREA 72 HOURS (MINIMUM) BEFORE BEGINNING CONSTRUCTION.

12. THE CONTRACTOR SHALL MAINTAIN COPIES OF ALL APPLICABLE PERMITS ON-SITE AND SHALL BE RESPONSIBLE TO ADHERE TO ALL PERMIT CONDITIONS DURING CONSTRUCTION.

13. PRIOR TO BUILDING PERMIT APPROVAL: PER SEMINOLE COUNTY ORDINANCE 92-1, SECTION 40.231 STREET SIGNS/BUILDING PERMITS. "NO BUILDING PERMIT MAY BE ISSUED, UNLESS THE "PRIVATE WAY", OR "PUBLIC WAY" UPON WHICH THE BUILDING LOT IS LOCATED IS APPROPRIATELY MARKED WITH TEMPORARY STREET SIGNAGE WHICH HAS BEEN APPROPRIATELY INSTALLED AND MAINTAINED. PRIOR TO OCCUPANCY THE PERMANENT STREET SIGNAGE SHALL BE INSTALLED."

CLEARING NOTES

1. THE CONTRACTOR SHALL NOTIFY THE APPLICABLE REGULATORY AGENCIES PRIOR TO COMMENCING CLEARING.

2. ALL CLEARING SHALL BE IN ACCORDANCE WITH SJRWMD AND USACOE PERMITS.

3. WHERE DIRECTED BY THE OWNER'S REPRESENTATIVE TREES, AND/OR OTHER VEGETATION WITHIN THE CLEARING AREA TO BE SAVED, SHALL BE PROTECTED AND TRIMMED TO PREVENT DAMAGE DURING CONSTRUCTION.

4. VEGETATION TO REMAIN SHALL BE PROTECTED BY STAKED SILT FENCE WHICH SHALL REMAIN IN PLACE UNTIL COMPLETION OF CONSTRUCTION.

4-117-27032-8
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JUL 20 2012
MAITLAND

Property Appraiser ID Number 35 - 21 - 31 - 512 - 0000 - 0020

Seminole County
Approved for construction

This approval is subject to specific conformance to the Seminole County Land Development Code and any special requirements of the Board of County Commissioners. It shall be the responsibility of the developer to correct any defects in the plans or the facility as constructed which results in a failure to meet applicable code requirements. Administrative acceptance of the developer's plans does not constitute a waiver of any code requirements nor does it relieve the developer of responsibility to meet those requirements. This specific approval is valid for a period of one year from the date below.

Approved.

Seminole County

Date

NO.	DATE	BY	DESCRIPTION

REVISIONS

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DCL	DAC	RMM	JCK

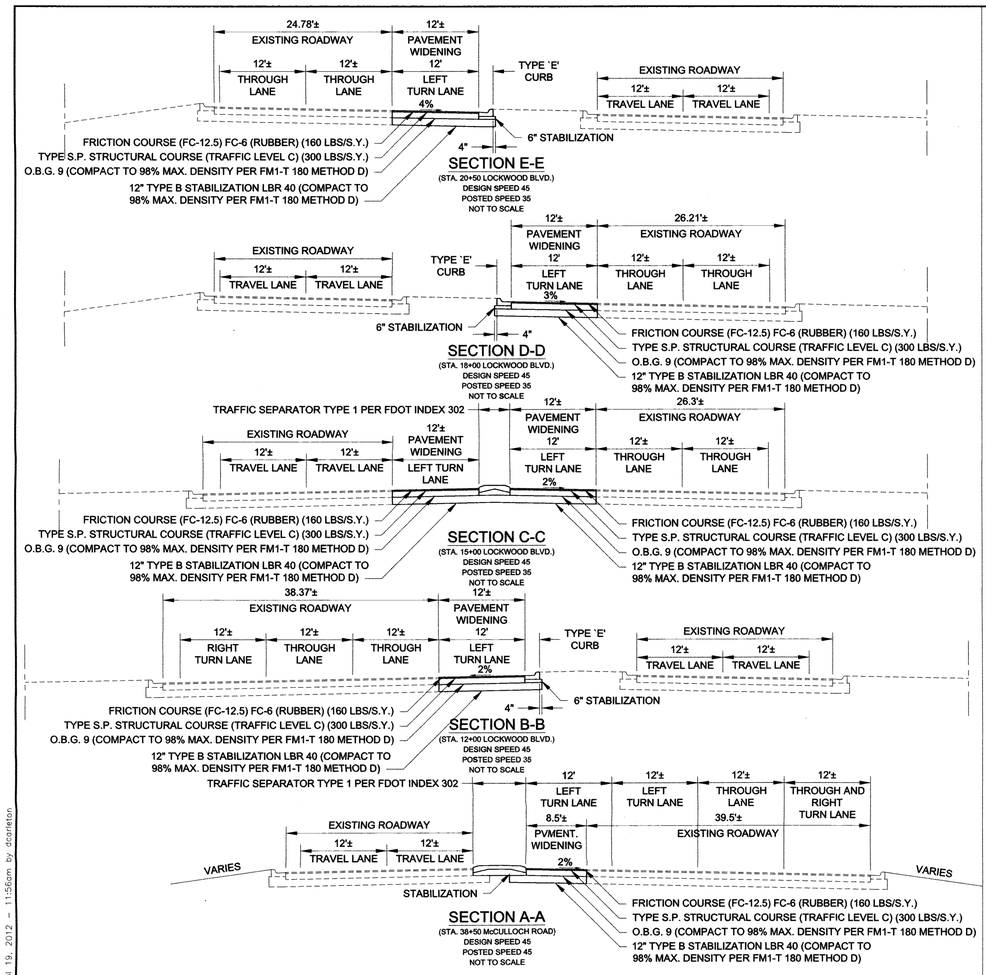
GENERAL NOTES

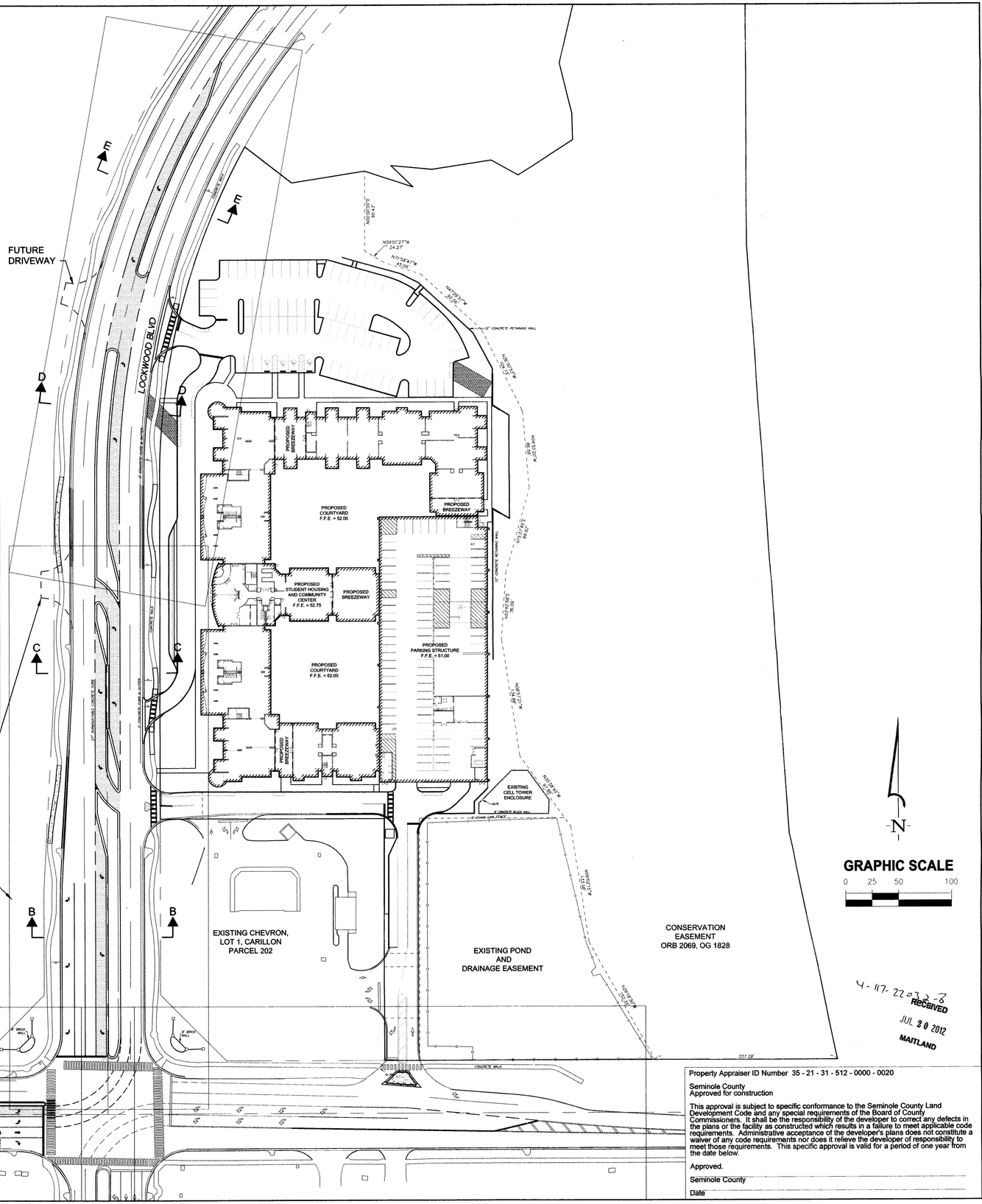
SITE ENGINEERING PLANS FOR
McCULLOCH ROAD AND LOCKWOOD BLVD.
INTERSECTION IMPROVEMENTS
SEMINOLE COUNTY, FLORIDA

DRMP
ENGINEERS · SURVEYORS · PLANNERS · SCIENTISTS
Certificate of Authorization No. 2648
941 Lake Baldwin Lane, Orlando, FL 32814
Phone:407.896.0594 Fax:407.896.4836 WWW.DRMP.COM

DRMP, INC.
ROBERT M. MOON
LICENSE
No. 66501
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
JULY 18, 2012
Robert M. Moon, P.E.
State of Florida # 66501

PROJECT NO.: 11-0514.002
SCALE: NONE
DATE: June, 2012
DRAWING: C2.0





REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BY	DCL
DRAWN BY	DAC
CHECKED BY	RMM
APPROVED BY	JCK

OVERALL PROJECT PLAN

SITE ENGINEERING PLANS FOR
McCULLOCH ROAD AND LOCKWOOD BLVD.
INTERSECTION IMPROVEMENTS
SEMINOLE COUNTY, FLORIDA

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DRMP, INC.
ROBERT M. MOON
LICENSE No. 66501
STATE OF FLORIDA
PROFESSIONAL ENGINEER
Robert M. Moon, P.E.
State of Florida # 66501

Property Appraiser ID Number 35 - 21 - 31 - 512 - 0000 - 0020

Seminole County
Approved for construction

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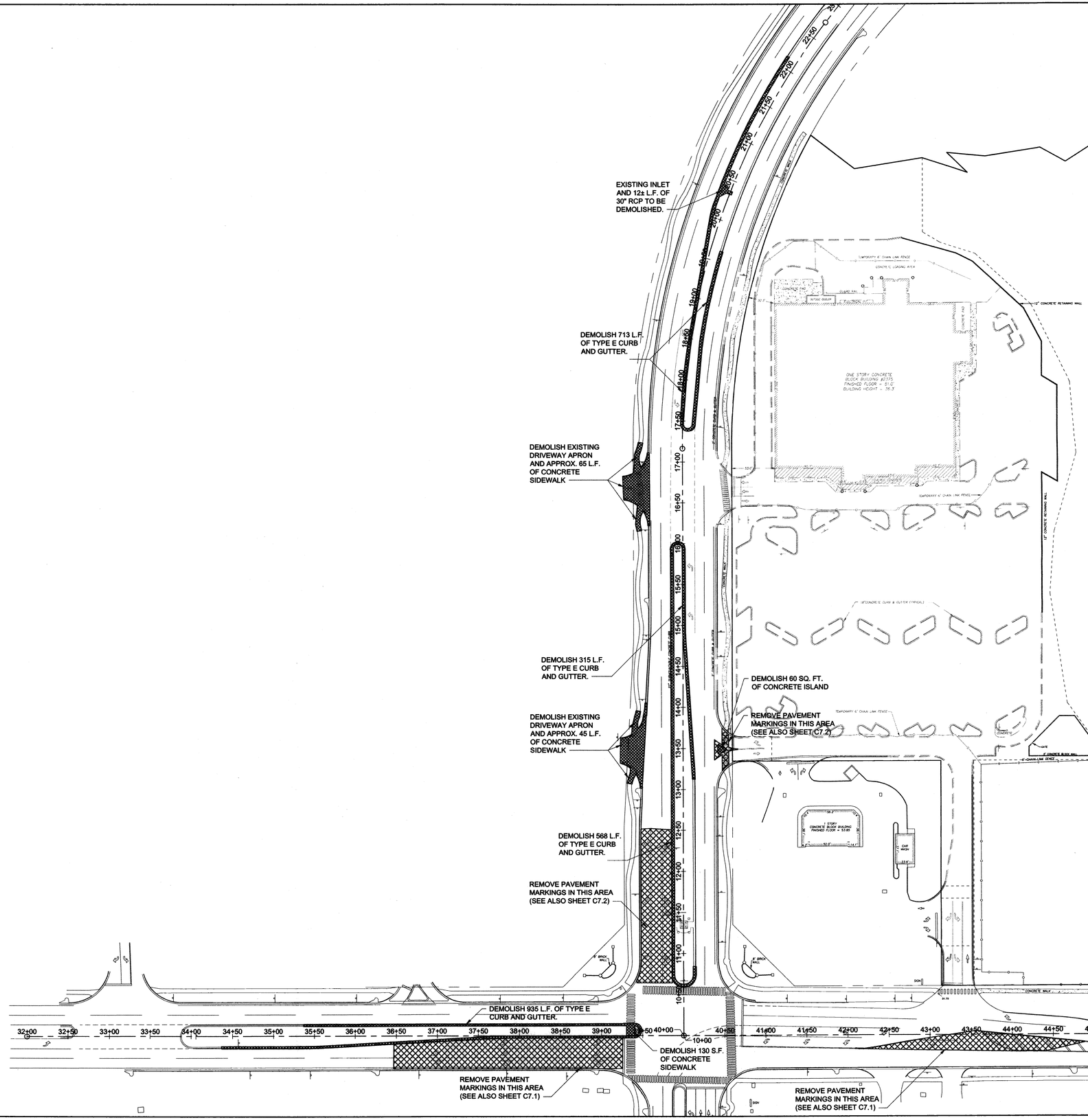
Approved.

Seminole County

Date

PROJECT NO.: 11-0514.002
SCALE: 1"=60'
DATE: June, 2012
DRAWING: C3.0



4-117-22032-8
RECEIVED
JUL 20 2012
MAITLAND

Property Appraiser ID Number 35 - 21 - 31 - 512 - 0000 - 0020

Seminole County
Approved for construction

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Approved.

Seminole County

Date

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BY	DCL	
DRAWN BY	DAC	
CHECKED BY	RMM	
APPROVED BY	JCK	

EXISTING CONDITIONS AND DEMOLITION PLAN

SITE ENGINEERING PLANS FOR
McCULLOCH ROAD AND LOCKWOOD BLVD.
INTERSECTION IMPROVEMENTS
SEMINOLE COUNTY, FLORIDA

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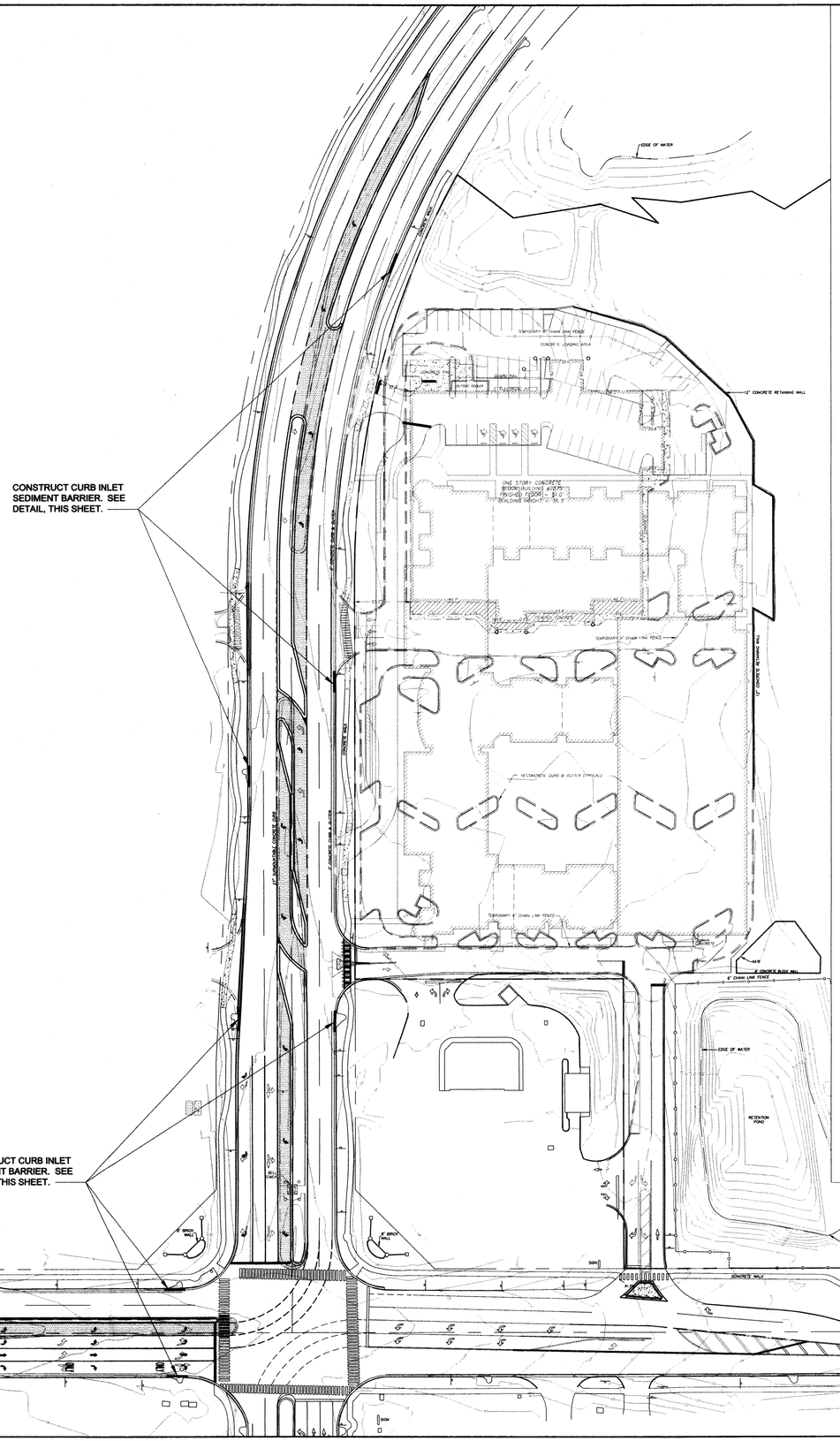
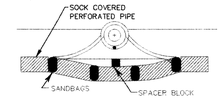
ROBERT M. MOON
DRMP, INC.
No. 66501
STATE OF FLORIDA
PROFESSIONAL ENGINEER
JUL 19 2012

Robert M. Moon, P.E.
State of Florida # 66501

PROJECT NO.: 11-0514.002
SCALE: 1"=60'
DATE: June, 2012
DRAWING: C4.0





CURB INLET SEDIMENT BARRIER

INLET PROTECTION HAS SPACER BLOCK TO ALLOW MORE FLOW TO GO INTO INLET DURING CONSTRUCTION, TO BE USED IN AREAS WHERE INLET PROTECTION COULD CAUSE FLOODING DURING LARGE RAINFALL AMOUNTS

NOTE:

CURB INLET TO BE PROTECTED USING CURB INLET SEDIMENT BARRIER, SEE FDOT INDEX 102. ALL CURB INLETS ARE TO BE PROTECTED, INCLUDING ANY INLETS NOT INDICATED ON THIS DRAWING, WITHIN THE PROJECT AREA, ALL CURB INLETS ARE TO BE PROTECTED WITH CURB INLET SEDIMENT BARRIERS AFTER INSTALLATION FOR THE DURATION OF CONSTRUCTION ACTIVITY.

4-117-22032-8
RECEIVED
JUL 20 2012
MAITLAND

Property Appraiser ID Number 35 - 21 - 31 - 512 - 0000 - 0020

Seminole County
Approved for construction

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Approved.

Seminole County

Date

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BY	DCL
DRAWN BY	DAC
CHECKED BY	RMM
APPROVED BY	JCK

STORMWATER POLLUTION PREVENTION PLAN

SITE ENGINEERING PLANS FOR
McCULLOCH ROAD AND LOCKWOOD BLVD.
INTERSECTION IMPROVEMENTS
SEMINOLE COUNTY, FLORIDA

DRMP
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DRMP, INC.
ROBERT M. MOON
LICENSE
No. 66501
STATE OF
FLORIDA
PROFESSIONAL ENGINEER
Robert M. Moon, P.E.
State of Florida # 66501

PROJECT NO.: 11-0514.002
SCALE: 1"=60'
DATE: June, 2012
DRAWING: C5.0

INTRODUCTION

THIS DOCUMENT WAS PREPARED IN ORDER TO BE IN COMPLIANCE WITH CHAPTER 62-621-300(4) OF THE FLORIDA ADMINISTRATIVE CODE, WHICH PERTAINS TO THE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES. THE ADMINISTRATIVE CODE GRANTS THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) THE AUTHORITY TO REGULATE POINT SOURCE DISCHARGES OF STORMWATER FROM CONSTRUCTION SITES. THIS DOCUMENT ESTABLISHES A STORMWATER POLLUTION PREVENTION PLAN FOR THE SITE AND IS ORGANIZED TO CORRESPOND TO PART V OF DEP DOCUMENT NO. 62-621.300((a).

PROJECT ID: _____.
COVERAGE UNDER GENERAL PERMIT APPROVED: __-__-____
EXPIRES: __-__-____

SITE DESCRIPTION

PROJECT DESCRIPTION
THIS PROJECT CONSIST OF THE CONSTRUCTION OF A MULTI-STORY STUDENT APARTMENT DEVELOPMENT. THE STORMWATER FROM THE DEVELOPMENT WILL BE CONVEYED TO AN EXISTING MASTER STORMWATER POND THAT WAS PREVIOUSLY DESIGNED AND PERMITTED TO PROVIDE ADEQUATE WATER QUALITY TREATMENT AND ATTENUATION VOLUME FOR THE BUILDOUT OF THIS PROPOSED DEVELOPMENT.

SITE LOCATION DATA

COUNTY:	SEMINOLE COUNTY, FLORIDA
SECTION/ TOWNSHIP/ RANGE:	35, 21S, 31E
TAX PARCEL ID:	35-21-31-512-0000-0020
STREET ADDRESS:	1680 EAST MCCULLOCH ROAD ORLANDO, FLORIDA 32765

SITE DEVELOPMENT DATA

TOTAL PROJECT AREA:	16.10 ACRES
TOTAL DISTURBED AREA:	7.57 ACRES

DISCHARGE DATA

LATITUDE & LONGITUDE:	28°36'54.12" N & 81°11'27.83" W
RECEIVING WATER:	UNNAMED WETLAND

CONTROLS

THIS PLAN UTILIZES BEST MANAGEMENT PRACTICES TO CONTROL EROSION AND TURBIDITY CAUSED BY STORM WATER RUN OFF. THE STORM WATER POLLUTION PREVENT PLAN HAS BEEN PREPARED TO INSTRUCT THE CONTRACTOR ON PLACEMENT OF THESE CONTROLS. IT IS THE CONTRACTORS RESPONSIBILITY TO INSTALL AND MAINTAIN THE CONTROLS AS PER PLAN AS WELL AS ENSURING THE PLAN IS PROVIDING THE PROPER PROTECTION AS REQUIRED BY FEDERAL, STATE AND LOCAL LAWS. REFER TO "OTHER CONDITIONS" FOR A DESCRIPTION OF THE CONTROLS THAT MAY BE IMPLEMENTED.

STORM WATER MANAGEMENT
STORM WATER DRAINAGE WILL BE PROVIDED BY CURB AND GUTTER STORM SEWER, CURB INLETS AND CATCH BASINS FOR THE DEVELOPED AREAS, AREAS WHICH ARE NOT DEVELOPED BUT WILL BE REGRADED SHALL BE STABILIZED IMMEDIATELY AFTER GRADING IS COMPLETE. WHEN WHERE PRACTICAL, THE TEMPORARY SEDIMENT BASIN WILL BE IN THE LOCATION OF THE PERMANENT RETENTION BASIN. WHEN UPSLOPE AREAS ARE STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM SEDIMENT BASINS, AND THE AREAS ON THE SIDE OF THE BASIN WILL BE PLANTED WITH VEGETATION.

CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

IN AN EFFORT TO ENSURE COMPLIANCE WITH FEDERAL, STATE AND LOCAL LAWS REGARDING EROSION AND TURBIDITY CONTROLS, THE FOLLOWING PERMITS HAVE BEEN OBTAINED.

D.E.P. DREDGE/FILL PERMIT _____
C.O.E. DREDGE/FILL PERMIT _____
S.J.R.W.M.D. M.S.S.W. PERMIT _____

POLLUTION PREVENTION PLAN CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNED: _____ DATE: _____
_____

TITLE: _____
FOR OPERATOR:
_____

GENERAL

THE CONTRACTOR SHALL AT A MINIMUM IMPLEMENT THE CONTRACTOR'S REQUIREMENTS OUTLINED BELOW AND THOSE MEASURES SHOWN ON THE EROSION AND TURBIDITY CONTROL PLAN. IN ADDITION THE CONTRACTOR SHALL UNDERTAKE ADDITIONAL MEASURES REQUIRED TO BE IN COMPLIANCE WITH APPLICABLE PERMIT CONDITIONS AND STATE WATER QUALITY STANDARDS. DEPENDING ON THE NATURE OF MATERIALS AND METHODS OF CONSTRUCTION THE CONTRACTOR MAY BE REQUIRED TO ADD FLOCCULANTS TO THE RETENTION SYSTEM PRIOR TO PLACING THE SYSTEM INTO OPERATION.

SEQUENCE OF MAJOR ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:
1. INSTALL STABILIZED CONSTRUCTION ENTRANCE
2. INSTALL SILT FENCES AND HAY BALED AS REQUIRED
3. CLEAR AND GRUB FOR DIVERSION SWALES/DIKES AND SEDIMENT BASIN
4. CONSTRUCT SEDIMENTATION BASIN
5. CONTINUE CLEARING AND GRUBBING
6. STOCK PILE TOP SOIL IF REQUIRED
7. PERFORM PRELIMINARY GRADING ON SITE AS REQUIRED
8. STABILIZE DENUDED AREAS AND STOCKPILES AS SOON AS PRACTICABLE
9. INSTALL UTILITIES, STORM SEWER, CURBS & GUTTER.
10. APPLY BASE TO PAVEMENT AREAS
11. COMPLETE GRADING AND INSTALL PERMANENT SEEDING/SOD AND PLANTING
12. COMPLETE FINAL PAVING
13. REMOVE ACCUMULATED SEDIMENT FROM BASINS
14. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE STABILIZED, REMOVE ANY TEMPORARY DIVERSION SWALES/DIKES AND RESEED/SOD AS REQUIRED.

NOTE: VERTICAL CONSTRUCTION OF THE BUILDING WILL BE TAKING PLACE DURING ALL THE SEQUENCE STEPS LISTED ABOVE.

TIMING OF CONTROLS

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, THE SILT FENCES AND HAY BALES, STABILIZED CONSTRUCTION ENTRANCE AND SEDIMENT BASIN WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY IN AN AREA, THAT AREA WILL BE STABILIZED PERMANENTLY IN ACCORDANCE WITH THE PLANS. AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE SEDIMENT TRAPS AND THE EARTH DIKE/SWALES WILL BE REGRADED/REMOVED AND STABILIZED IN ACCORDANCE WITH THE SEDIMENT AND EROSION CONTROL PLAN.

CONTROLS

IT IS THE CONTRACTORS RESPONSIBILITY TO IMPLEMENT THE EROSION AND TURBIDITY CONTROLS AS SHOWN OF THE SEDIMENT AND EROSION CONTROL PLAN. IT IS ALSO THE CONTRACTORS RESPONSIBILITY TO ENSURE THESE CONTROLS ARE PROPERLY INSTALLED, MAINTAINED AND FUNCTIONING PROPERLY TO PREVENT TURBID OR POLLUTED WATER FROM LEAVING THE PROJECT SITE. THE CONTRACTOR WILL ADJUST THE EROSION AND TURBIDITY CONTROLS SHOWN ON THE SEDIMENT AND EROSION CONTROL PLAN AND ADD ADDITIONAL CONTROL MEASURES, AS REQUIRED, TO ENSURE THE SITE MEETS ALL FEDERAL, STATE AND LOCAL EROSION AND TURBIDITY CONTROL REQUIREMENTS. THE FOLLOWING BEST MANAGEMENT PRACTICES WILL BE IMPLEMENTED BY THE CONTRACTOR AS REQUIRED BY THE EROSION AND SEDIMENT CONTROL PLAN AND AS REQUIRED TO MEET THE SEDIMENT AND TURBIDITY REQUIREMENTS IMPOSED ON THE PROJECT SITE BY THE REGULATORY AGENCIES.

EROSION AND SEDIMENT CONTROLS STABILIZATION PRACTICES

1. SYNTHETIC BALE BARRIER: SYNTHETIC BALE BARRIERS CAN BE USED BELOW DISTURBED
AREAS SUBJECT TO SHEET AND RILL EROSION WITH THE FOLLOWING LIMITATIONS:
   A. WHERE THE MAXIMUM SLOPE BEHIND THE BARRIER IS 33 PERCENT.
   B. IN MINOR SWALES OR DITCH LINES WHERE THE MAXIMUM CONTRIBUTING DRAINAGE AREA IS NO GREATER THAN 2 ACRES.
   C. WHERE EFFECTIVENESS IS REQUIRED FOR LESS THAN 3 MONTHS.
   D. EVERY EFFORT SHOULD BE MADE TO LIMIT THE USE OF SYNTHETIC BALE BARRIERS CONSTRUCTED IN LIVE STREAMS OR IN SWALES WHERE THERE IS THE POSSIBILITY OF A WASHOUT. IF NECESSARY, MEASURES SHALL BE TAKEN TO PROPERLY ANCHOR BALES TO INSURE AGAINST WASHOUT.

2. FILTER FABRIC BARRIER: FILTER FABRIC BARRIERS CAN BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WITH THE FOLLOWING LIMITATIONS:
   A. WHERE THE MAXIMUM SLOPE BEHIND THE BARRIER IS 33 PERCENT.
   B. IN MINOR SWALES OR DITCH LINES WHERE THE MAXIMUM CONTRIBUTING DRAINAGE AREA IS NO GREATER THAN 2 ACRES.

3. BRUSH BARRIER WITH FILTER FABRIC: BRUSH BARRIER MAY BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WHERE ENOUGH RESIDUE MATERIAL IS AVAILABLE ON SITE.

4. LEVEL SPREADER: A LEVEL SPREADER MAY BE USED WHERE SEDIMENT-FREE STORM RUNOFF IS INTERCEPTED AND DIVERTED AWAY FROM THE GRADED AREAS ONTO UNDISTURBED STABILIZED AREAS. THIS PRACTICE APPLIES ONLY IN THOSE SITUATIONS WHERE THE SPREADER CAN BE CONSTRUCTED ON UNDISTURBED SOIL AND THE AREA BELOW THE LEVEL LIP IS STABILIZED. THE WATER SHOULD NOT BE ALLOWED TO RECONCENTRATE AFTER RELEASE.

5. STOCKPILING MATERIAL: NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE INTO ANY ADJACENT WATER BODY OR STORM WATER COLLECTION FACILITY.

6. EXPOSED AREA LIMITATION: THE SURFACE AREA OF OPEN, RAW ERODIBLE SOIL EXPOSED BY CLEARING AND GRUBBING OPERATIONS OR EXCAVATION AND FILLING OPERATIONS SHALL NOT EXCEED 10 ACRES. THIS REQUIREMENT MAY BE WAIVED FOR LARGE PROJECTS WITH AN EROSION CONTROL PLAN WHICH DEMONSTRATES THAT OPENING OF ADDITIONAL AREAS WILL NOT SIGNIFICANTLY
AFFECT OFF-SITE DEPOSIT OF SEDIMENTS.

7. INLET PROTECTION: INLETS AND CATCH BASINS WHICH DISCHARGE DIRECTLY OFF-SITE SHALL BE PROTECTED FROM SEDIMENT-LADEN STORM RUNOFF UNTIL THE COMPLETION OF ALL CONSTRUCTION OPERATIONS THAT MAY CONTRIBUTE SEDIMENT TO THE INLET.

8. TEMPORARY SEEDING: AREAS OPENED BY CONSTRUCTION OPERATIONS AND THAT ARE NOT ANTICIPATED TO BE RE-EXCAVATED OR DRESSED AND RECEIVE FINAL GRASSING TREATMENT WITHIN 30 DAYS SHALL BE SEEDED WITH A QUICK GROWING GRASS SPECIES WHICH WILL PROVIDE AN EARLY COVER DURING THE SEASON IN WHICH IT IS PLANTED AND WILL NOT LATER COMPETE WITH THE PERMANENT GRASSING.

9. TEMPORARY SEEDING AND MULCHING: SLOPES STEEPER THAN 6:1 THAT FALL WITHIN THE CATEGORY ESTABLISHED IN PARAGRAPH 8 ABOVE SHALL ADDITIONALLY RECEIVE MULCHING OF APPROXIMATELY 2 INCHES LOOSE MEASURE OF MULCH MATERIAL CUT INTO THE SOIL OF THE SEEDED AREA ADEQUATE TO PREVENT MOVEMENT OF SEED AND MULCH.

10. TEMPORARY GRASSING: THE SEEDED OR SEEDED AND MULCHED AREA(S) SHALL BE ROLLED AND WATERED OR HYDROMULCHED OR OTHER SUITABLE METHODS IF REQUIRED TO ASSURE OPTIMUM GROWING CONDITIONS FOR THE ESTABLISHMENT OF A GOOD GRASS COVER.

11. TEMPORARY REGRASSING: IF, AFTER 14 DAYS FROM SEEDING, THE TEMPORARY GRASSED AREAS HAVE NOT ATTAINED A MINIMUM OF 75 PERCENT GOOD GRASS COVER, THE AREA WILL BE REWORKED AND ADDITIONAL SEED APPLIED SUFFICIENT TO ESTABLISH THE DESIRED VEGETATIVE COVER.

12. MAINTENANCE: ALL FEATURES OF THE PROJECT DESIGNED AND CONSTRUCTED TO PREVENT EROSION AND SEDIMENT SHALL BE MAINTAINED DURING THE LIFE OF THE CONSTRUCTION SO AS TO FUNCTION AS THEY WERE ORIGINALLY DESIGNED AND CONSTRUCTED.

13. PERMANENT EROSION CONTROL: THE EROSION CONTROL FACILITIES OF THE PROJECT SHOULD BE DESIGNED TO MINIMIZE THE IMPACT ON THE OFFSITE FACILITIES.

14. PERMANENT SEEDING: ALL AREAS WHICH HAVE BEEN DISTURBED BY CONSTRUCTION WILL, AS A MINIMUM, BE SEEDED. THE SEEDING MIX MUST PROVIDE BOTH LONG-TERM VEGETATION AND RAPID GROWTH SEASONAL VEGETATION. SLOPES STEEPER THAN 4:1 SHALL BE SEEDED AND MULCHED OR SODDED.

STRUCTURAL PRACTICES

1. TEMPORARY DIVERSION DIKE: TEMPORARY DIVERSION DIKES MAY BE USED TO DIVERT RUNOFF THROUGH A SEDIMENT-TRAPPING FACILITY.

2. TEMPORARY SEDIMENT TRAP: A SEDIMENT TRAP IS USUALLY INSTALLED IN AN DRAINAGEWAY AT A STORM DRAIN INLET OR AT OTHER POINTS OF DISCHARGE FROM A DISTURBED AREA WITH THE FOLLOWING LIMITATION:
   A. THE SEDIMENT TRAP MAY BE CONSTRUCTED EITHER INDEPENDENTLY OR IN CONJUNCTION WITH A TEMPORARY DIVERSION DIKE.

3. OUTLET PROTECTION: APPLICABLE TO THE OUTLETS OF ALL PIPES AND PAVED CHANNEL SECTIONS WHERE THE VELOCITY OF FLOW AT DESIGN CAPACITY OF THE OUTLET WILL EXCEED THE PERMISSIBLE VELOCITY OF THE RECEIVING CHANNEL OR AREA.

4. SEDIMENT BASIN: WILL BE CONSTRUCTED AT THE COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH 10 OR MORE DISTURBED AREAS AT ONE TIME, THE PROPOSED STORM WATER PONDS (OR TEMPORARY PONDS) WILL BE CONSTRUCTED FOR USE AS SEDIMENT BASINS. THESE SEDIMENT BASINS MUST PROVIDE A MINIMUM OF 3,600 CUBIC FEET OF STORAGE PER ACRE DRAINED UNTIL FINAL STABILIZATION OF THE SITE. THE 3,600 CUBIC FEET OF STORAGE AREA PER ACRE DRAINED DOES NOT APPLY TO FLOWS FROM OFFSITE AREAS AND FLOWS FROM ONSITE AREAS THAT ARE EITHER UNDISTURBED OR HAVE UNDERGONE FINAL STABILIZATION WHERE SUCH FLOWS ARE DIVERTED AROUND BOTH THE DISTURBED AREA AND THE SEDIMENT BASIN. ANY TEMPORARY SEDIMENT BASINS CONSTRUCTED MUST BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR STRUCTURAL FILL. ALL SEDIMENT COLLECTED IN PERMANENT OR TEMPORARY SEDIMENT TRAPS MUST BE REMOVED UPON FINAL STABILIZATION.

OTHER CONTROLS

WASTE DISPOSAL

WASTE MATERIALS

ALL WASTE MATERIALS EXCEPT LAND CLEARING DEBRIS SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. THE DUMPSTER WILL BE EMPTIED AS NEEDED AND THE TRASH WILL BE HAULED TO A STATE APPROVED LANDFILL. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL NOTICES STATING THESE PRACTICES WILL BE POSTED AT THE CONSTRUCTION SITE BY THE CONSTRUCTION SUPERINTENDENT, THE INDIVIDUAL WHO MANAGES THE DAY-TO-DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS WASTE

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES AND THE SITE SUPERINTENDENT, THE INDIVIDUAL WHO MANAGES DAY-TO-DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

SANITARY WASTE

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS AS NEEDED TO PREVENT POSSIBLE SPILLAGE. THE WASTE WILL BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH STATE AND LOCAL WASTE DISPOSAL REGULATIONS FOR SANITARY SEWER OR SEPTIC SYSTEMS.

OFFSITE VEHICLE TRACKING

A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. THE PAVED STREET ADJACENT TO THE SITE ENTRANCE WILL BE SWEPT DAILY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARPAULIN.

INVENTORY FOR POLLUTION PREVENTION PLAN

THE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION: CONCRETE, FERTILIZERS, WOOD, ASPHALT, PETROLEUM BASED PRODUCTS, MASONRY BLOCKS, TAR, CLEANING SOLVENTS, ROOFING MATERIALS, DETERGENTS, PAINTS, METAL STUDS

SPILL PREVENTION

MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.

* AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.

* ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.

* PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.

* SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURE.

* WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.

* MANUFACTURER'S RECOMMENDATION FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.

* THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE MATERIALS ONSITE RECEIVE PROPER USE AND DISPOSAL.

HAZARDOUS PRODUCTS

THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

* PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESALABLE.

* ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION.

* IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ONSITE:

PETROLEUM PRODUCTS

ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS

FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER, STORAGE WILL BE IN A COVERED AREA. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS

ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURER'S INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS

CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED ON SITE AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, LIQUID ADSORBENT (i.e. KITTY LITTER OR EQUAL), SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.

ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

SPILL OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE OF THE SPILL.

THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.

THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE/SHE WILL DESIGNATE AT LEAST ONE OTHER SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IF APPLICABLE, IN THE OFFICE TRAILER ONSITE.

MAINTENANCE / INSPECTION PROCEDURES

EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES

THE FOLLOWING ARE INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS.

- NO MORE THAN 10 ACRES OF THE SITE WILL BE DENUDED AT ONE TIME WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
- ALL CONTROL MEASURES WILL BE INSPECTED BY THE SUPERINTENDENT, THE PERSON RESPONSIBLE FOR THE DAY TO DAY SITE OPERATION OR SOMEONE APPOINTED BY THE SUPERINTENDENT, AT LEAST ONCE A WEEK AND FOLLOWING ANY STORM EVENT OF 0.25 INCHES OR GREATER.
- ALL TURBIDITY CONTROL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
- BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE.
- SILT FENCE WILL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, TO SEE IF THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND TO SEE THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND.
- THE SEDIMENT BASINS WILL BE INSPECTED FOR THE DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES 10 PERCENT OF THE DESIGN CAPACITY OR AT THE END OF THE JOB.
- DIVERSION DIKES/SWALES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
- TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.
- A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. A COPY OF THE REPORT FORM SHALL BE COMPLETED BY THE INSPECTOR. THE REPORTS WILL BE KEPT ON SITE DURING CONSTRUCTION AND AVAILABLE UPON REQUEST TO THE OWNER, ENGINEER OR ANY FEDERAL, STATE OR LOCAL AGENCY APPROVING SEDIMENT AND ANY EROSION PLANS, OR STORM WATER MANAGEMENT PLANS. THE REPORTS SHALL BE MADE AND RETAINED AS PART OF THE STORM WATER POLLUTION PREVENTION PLAN FOR *AT LEST* THREE YEARS FROM THE DATE THAT THE SITE IS FINALLY STABILIZED AND THE NOTICE OF TERMINATION IS SUBMITTED. THE REPORTS SHALL IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE.
- THE SITE SUPERINTENDENT WILL SELECT UP TO THREE INDIVIDUALS WHO WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR *ACTIVITIES, AND FILLING OUT* THE INSPECTION AND MAINTENANCE REPORT.
- PERSONNEL SELECTED FOR INSPECTION AND MAINTENANCE RESPONSIBILITIES WILL RECEIVE TRAINING FROM THE SITE SUPERINTENDENT. THEY WILL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER.

NON-STORM WATER DISCHARGES

- IT IS EXPECTED THAT THE FOLLOWING NON-STORM WATER DISCHARGES WILL OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD:
- WATER FROM WATER LINE FLUSHING
- PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED).
- UNCONTAMINATED GROUNDWATER (FROM DEWATERING EXCAVATION).

ALL NON-STORM WATER DISCHARGES WILL BE DIRECTED TO THE SEDIMENT BASIN PRIOR TO DISCHARGE.

4-117-22032-8
RECEIVED
JUL 20 2012
MAITLAND

Property Appraiser ID Number 35 - 21 - 31 - 512 - 0000 - 0020

Seminole County
Approved for construction

This approval is subject to specific conformance to the Seminole County Land Development Code and any special requirements of the Board of County Commissioners. It shall be the responsibility of the developer to correct any defects in the plans or the facility as constructed which results in a failure to meet applicable code requirements. Administrative acceptance of the developer's plans does not constitute a waiver of any code requirements nor does it relieve the developer of responsibility to meet those requirements. This specific approval is valid for a period of one year from the date below.

Approved.
Seminole County
Date

NO.	DATE	BY	REVISIONS DESCRIPTION

DESIGNED BY: DCL
DRAWN BY: DAC
CHECKED BY: RMM
APPROVED BY: JCK

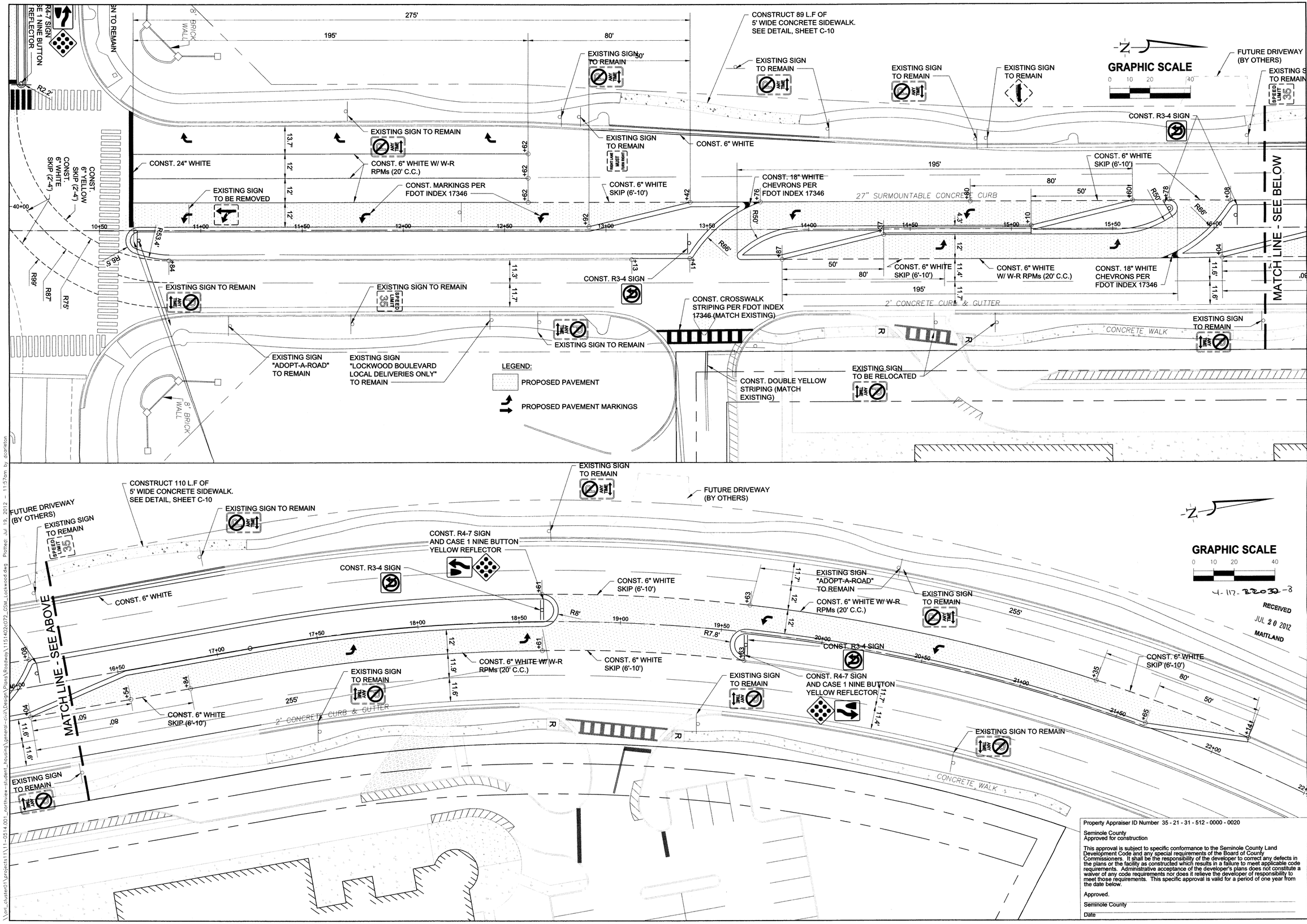
STORMWATER POLLUTION PREVENTION PLAN NOTES

SITE ENGINEERING PLANS FOR
McCULLOCH ROAD AND LOCKWOOD BLVD.
INTERSECTION IMPROVEMENTS
SEMINOLE COUNTY, FLORIDA

DRMP
ENGINEERS · SURVEYORS · PLANNERS · SCIENTISTS
Certificate of Authorization No. 2648
941 Lake Baldwin Lane - Orlando, Florida 32814
Phone 407.896.0594 Fax 407.896.4536 WWW.DRMP.COM

DRMP, INC.
LICENSE
No. 66501
STATE OF
FLORIDA
Robert M. Moon
PROFESSIONAL ENGINEER
Robert M. Moon, P.E.
State of Florida # 66501

PROJECT NO.: 11-0514.002
SCALE: NONE
DATE: June, 2012
DRAWING: C6.0



Property Appraiser ID Number 35 - 21 - 31 - 512 - 0000 - 0020

Seminole County
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Approved.

Seminole County

Date

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BY: DCL
DRAWN BY: DAC
CHECKED BY: RMM
APPROVED BY: JCK

ENLARGED GEOMETRY STRIPING AND PAVEMENT MARKING PLAN - LOCKWOOD BLVD.

SITE ENGINEERING PLANS FOR
McCULLOCH ROAD AND LOCKWOOD BLVD.
INTERSECTION IMPROVEMENTS
SEMINOLE COUNTY, FLORIDA

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS
Certificate of Authorization No. 2648
941 Lake Baldwin Lane - Orlando, Florida 32814
Phone:407.896.0594 Fax:407.896.4836 WWW.DRMP.COM

DRMP, INC.
ROBERT M. MOON LICENSE No. 66501 STATE OF FLORIDA PROFESSIONAL ENGINEER
JUL. 19, 2012

Robert M. Moon, P.E.
State of Florida # 66501

PROJECT NO.: 11-0514.002
SCALE: 1"=20'
DATE: June, 2012
DRAWING: C7.2

LEGEND:

PROPOSED PAVEMENT

PROPOSED CONCRETE SIDEWALK

CONSTRUCT 89 L.F. OF 5' WIDE CONCRETE SIDEWALK. SEE DETAIL, SHEET C-10

CONSTRUCT 104 L.F. OF TYPE F CURB AND GUTTER PER FDOT INDEX 300 MATCH EXISTING EDGE OF PAVEMENT ELEVATION

FUTURE DRIVEWAY (BY OTHERS)

GRAPHIC SCALE 0 10 20 40

CONSTRUCT 405 L.F. OF TYPE E CURB AND GUTTER PER FDOT INDEX 300

CONSTRUCT 155 L.F. OF TYPE E CURB AND GUTTER PER FDOT INDEX 300

CONSTRUCT 73 L.F. OF TYPE 1 TRAFFIC SEPARATOR PER FDOT INDEX 302

CONSTRUCT 151 L.F. OF TYPE E CURB AND GUTTER PER FDOT INDEX 300

CONSTRUCT 110 L.F OF 5' WIDE CONCRETE SIDEWALK. SEE DETAIL, SHEET C-10

FUTURE DRIVEWAY (BY OTHERS)

CONSTRUCT 90 L.F. OF TYPE F CURB AND GUTTER PER FDOT INDEX 300 MATCH EXISTING EDGE OF PAVEMENT ELEVATION

FUTURE DRIVEWAY (BY OTHERS)

GRAPHIC SCALE 0 10 20 40

CONSTRUCT 590 L.F. OF TYPE E CURB AND GUTTER PER FDOT INDEX 300

CONSTRUCT TYPE 2 INLET E.O.P. = 49.93 INV. = 43.16

CONSTRUCT 277 L.F. OF TYPE E CURB AND GUTTER PER FDOT INDEX 300

4-117-22038-8
RECEIVED
JUL 20 2012
MAITLAND

Property Appraiser ID Number 35 - 21 - 31 - 512 - 0000 - 0020

Seminole County
Approved for construction

This approval is subject to specific conformance to the Seminole County Land Development Code and any special requirements of the Board of County Commissioners. It shall be the responsibility of the developer to correct any defects in the plans or the facility as constructed which results in a failure to meet applicable code requirements. Administrative acceptance of the developer's plans does not constitute a waiver of any code requirements nor does it relieve the developer of responsibility to meet those requirements. This specific approval is valid for a period of one year from the date below.

Approved.

Seminole County

Date

REVISIONS			
NO.	DATE	BY	DESCRIPTION

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
DCL	DAC	RMM	JCK

ENLARGED PAVING GRADING AND DRAINAGE PLAN - LOCKWOOD BLVD.

SITE ENGINEERING PLANS FOR
McCULLOCH ROAD AND LOCKWOOD BLVD.
INTERSECTION IMPROVEMENTS
SEMINOLE COUNTY, FLORIDA

DRMP
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Certificate of Authorization No. 2848
941 Lake Baldwin Lane - Orlando, Florida 32814
Phone:407.896.0594 Fax:407.896.4836 WWW.DRMP.COM

ROBERT M. MOON
LICENSE No. 66501
STATE OF FLORIDA
PROFESSIONAL ENGINEER
JUL 19 2012

DRMP, INC.

Robert M. Moon, P.E.
State of Florida # 66501

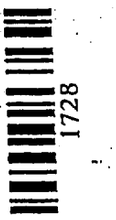
PROJECT NO.: 11-0514.002

SCALE: 1"=20'

DATE: June, 2012

DRAWING: C8.2

28885-6



Permit with conditions 1728

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-1429
TELEPHONE 904-329-4500 SUNCOM 904-860-4500
TDD 904-329-4450 TDD SUNCOM 860-4450
FAX (Executive) 329-4125 (Legal) 329-4485 (Permitting) 329-4315 (Administration/Finance) 329-4508
(Planning and Acquisition) 329-4848

SERVICE CENTERS

618 E. South Street
Orlando, Florida 32801
407-897-4300
TDD 407-897-5960

7775 Baymeadows Way
Suite 102
Jacksonville, Florida 32256
904-730-6270
TDD 904-448-7900

PERMITTING:
305 East Drive
Melbourne, Florida 32904
407-984-4940
TDD 407-722-5368

OPERATIONS:
2133 N. Wickham Road
Melbourne, Florida 32935-8109
407-752-3100
TDD 407-752-3102

June 26, 1998

FIRSTDEV THREE PROPERTIES LIMITED PARTNERSHIP
ATTN: SHELL Z. ROSENBERG, V.P.
TWO N. RIVERSIDE PLAZA, SUITE 1600
CHICAGO, IL 60606

SUBJECT: Permit Number 40-117-0125M5-ERP

Dear Sir/Madam:

Enclosed is your general permit as authorized by the staff of the St. Johns River Water Management District on June 26, 1998.

This permit is a legal document and should be kept with your other important documents. The attached MSSW/Stormwater As-Built Certification Form should be filled in and returned to the Palatka office within thirty days after the work is completed. By so doing, you will enable us to schedule a prompt inspection of the permitted activity.

In addition to the MSSW/Stormwater As-Built Certification Form, your permit also contains conditions which require submittal of additional information. All information submitted as compliance to permit conditions must be submitted to the Palatka office address.

Permit issuance does not relieve you from the responsibility of obtaining permits from any federal, state and/or local agencies asserting concurrent jurisdiction for this work.

Please be advised that the District has not published a notice in the newspaper advising the public that it is issuing a permit for this proposed project. Publication, using the District form, notifies members of the public (third parties) of their rights to challenge the issuance of the general permit. If proper notice is given by publication, third parties have a 14 day time limit on the time they

have to file a petition opposing the issuance of the permit. If you do not publish, a party's right to challenge the issuance of the general permit extends for an indefinite period of time. If you wish to have certainty that the period for filing such a challenge is closed, then you may publish, at your own expense, such a notice in a newspaper of general circulation. A copy of the form of the notice and a list of newspapers of general circulation is attached for your use.

In the event you sell your property, the permit can be transferred to the new owner, if we are notified by you within thirty days of the sale. Please assist us in this matter so as to maintain a valid permit for the new property owner.

Thank you for your cooperation and if this office can be of any further assistance to you, please do not hesitate to contact us.

Sincerely,

Shirlee Arrowood

Shirlee Arrowood, Senior Permit Data Technician
Permit Data Services Division - Orlando

Enclosures: Permit with As-built Certification Form
Notice of Rights
List of Newspapers for Publication

cc: District Files
Attorney: N/A

WBQ DESIGN & ENGINEERING, INC.
ATTN: STEVE WIEDENBECK, P.E.
201 N. MAGNOLIA AVE., SUITE 200
ORLANDO, FL 32801

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-1429
TELEPHONE 904-329-4500 SUNCOM 904-860-4500
TDD 904-329-4450 TDD SUNCOM 860-4450
FAX (Executive) 329-4125 (Legal) 329-4485 (Permitting) 329-4315 (Administration/Finance) 329-4508
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PERMITTING:
305 East Drive
Melbourne, Florida 32904
407-984-4940
TDD 407-722-5368

OPERATIONS:
2133 N. Wickham Road
Melbourne, Florida 32935-8109
407-752-3100
TDD 407-752-3102

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

PERMIT NO. 40-117-0125M5-ERP DATE ISSUED June 26, 1998

PROJECT NAME: CARILLON P.U.D., TRACT 202

A PERMIT AUTHORIZING:

MODIFICATION AND OPERATION OF A SURFACE WATER MANAGEMENT SYSTEM CONSISTING OF AN EXPANSION TO AN EXISTING DETENTION POND WITH FILTRATION AUTHORIZED IN PERMIT 4-117-0193, ISSUED ON MAY 9, 1988, AND GRADING THE PROJECT AREA FOR FUTURE COMMERCIAL DEVELOPMENT. CONSTRUCTION OF THE PROPOSED SYSTEM INVOLVES NO WORK IN, ON, OR OVER WETLANDS OR OTHER SURFACE WATERS.

LOCATION:

Section 35, Township 21 South, Range 31 East
Seminole County

ISSUED TO:
(owner)

FIRSTDEV THREE PROPERTIES LIMITED PARTNERSHIP
ATTN: SHELL Z. ROSENBERG, V.P.
TWO N. RIVERSIDE PLAZA, SUITE 1600
CHICAGO, IL 60606

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement

affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This Permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

PERMIT IS CONDITIONED UPON:

See conditions on attached "Exhibit A", dated June 26, 1998

AUTHORIZED BY: St. Johns River Water Management District

Department of Resource Management

By: _____
(ASSISTANT SERVICE CENTER DIRECTOR - ORLANDO)
DAVID DEWEY

"EXHIBIT A"

CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 40-117-0125M5-ERP

FIRSTDEV THREE PROPERTIES LIMITED PARTNERSHIP

DATED JUNE 26, 1998

1. All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. Activities approved by this permit shall be conducted in a manner which do not cause violations of state water quality standards.

4. Prior to and during construction, the permittee shall implement and maintain all erosion and sediment control measures (best management practices) required to retain sediment on-site and to prevent violations of state water quality standards. All practices must be in accordance with the guidelines and specifications in chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988), which are incorporated by reference, unless a project specific erosion and sediment control plan is approved as part of the permit, in which the practices must be in accordance with the plan. If site specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediment, beyond those specified in the erosion and sediment control plan, the permittee shall implement additional best management practices as necessary, in accordance with the specifications in chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988). The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

5. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

6. At least 48 hours prior to commencement of activity authorized by this permit, the permitted shall submit to the District a Construction Commencement Notice Form No. 40C-4.900(3) indicating the actual start date and the expected completion date.

7. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an Annual Status Report Form No. 40C-4.900(4). These forms shall be submitted during June of each year.

8. For those systems which will be operated or maintained by an entity which will require an easement or deed restriction in order to provide that entity with the authority necessary to operate or maintain the system, such easement or deed restriction, together with any other final operation or maintenance documents as are required by subsections 7.1.1 through 7.1.4 of the Applicants Handbook: Management and Storage of Surface Waters, must be submitted to the District for approval. Documents meeting the requirements set forth in these subsections of the Applicants Handbook will be approved. Deed restrictions, easements and other operation and maintenance documents which require recordation either with the Secretary of State or the Clerk of the Circuit Court must be so recorded prior to lot or unit sales within the project served by the system, or upon completion of construction of the system, whichever occurs first. For those systems which are proposed to be maintained by county or municipal entities, final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local governmental entity. Failure to submit the appropriate final documents referenced in this paragraph will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system.

9. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent

portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to a local government or other responsible entity.

10. Within 30 days after completion of construction of the permitted system, or independent portion of the system, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing As Built Certification Form 40C-1.181(13) or 40C-1.181(14) supplied with this permit. When the completed system differs substantially from the permitted plans, any substantial deviations shall be noted and explained and two copies of as-built drawings submitted to the District. Submittal of the completed form shall serve to notify the District that the system is ready for inspection. The statement of completion and certification shall be based on on-site observation of construction (conducted by the registered professional engineer, or other appropriate individual as authorized by law, or under his or her direct supervision) or review of as-built drawings for the purpose of determining if the work was completed in compliance with approved plans and specifications. As-built drawings shall be the permitted drawings revised to reflect any changes made during construction. Both the original and any revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawing. All surveyed dimensions and elevations shall be certified by a registered surveyor. The following information, at a minimum, shall be certified on the as-built drawings:

    A. Dimensions and elevations of all discharge structures including all weirs, slots, gates, pumps, pipes, and oil and grease skimmers;

    B. Locations, dimensions, and elevations of all filter, exfiltration, or underdrain systems including cleanouts, pipes, connections to control structures, and points of discharge to the receiving waters;

    C. Dimensions, elevations, contours, or cross-sections of all treatment storage areas sufficient to determine stage-storage relationships of the storage area and the permanent pool depth and volume below the control elevation for normally wet systems, when appropriate;

    D. Dimensions, elevations, contours, final grades, or

cross-sections of the system to determine flow directions and conveyance of runoff to the treatment system;

E. Dimensions, elevations, contours, final grades, or cross-sections of all conveyance systems utilized to convey off-site runoff around the system;

F. Existing water elevation(s) and the date determined; and

G. Elevation and location of benchmark(s) for the survey.

11. The operation phase of this permit shall not become effective until the permittee has complied with the requirements of general condition No. 9 above, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District in accordance with subsections 7.1.1 through 7.1.4 of the Applicants Handbook: Management and Storage of Surface Waters, accepts responsibility for operation and maintenance of the system. The permit may not be transferred to such an approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible approved operation and maintenance entity, if different from the permittee. Until the permit is transferred pursuant to section 7.1 of the Applicants Handbook: Management and Storage of Surface Waters, the permittee shall be liable for compliance with the terms of the permit.

12. Should any other regulatory agency require changes to the permitted system, the permittee shall provide written notification to the District of the changes prior to implementation so that a determination can be made whether a permit modification is required.

13. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and chapter 40C-4 or chapter 40C-40, F.A.C.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of section 40C-1.612, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to the sale, conveyance or other transfer.

17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District.

19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

20. This permit for construction will expire five years from the date of issuance.

21. All wetland areas or water bodies that are outside the specific limits of construction authorized by this permit must be protected from erosion, siltation, scouring or excess turbidity, and dewatering.

22. Prior to construction, the permittee must clearly designate the limits of construction on-site. The permittee must advise the contractor that any work outside the limits of construction, including clearing, may be a violation of this permit.

23. The operation and maintenance entity shall submit inspection reports to the District two years after the operation phase permit becomes effective and every two years thereafter on District form EN-46. The inspection form must be signed and sealed by an appropriate registered professional.

24. The proposed surface water management system must be constructed and operated in accordance with the plans received by the District on May 22, 1998.

25. A modification to this permit must be ontained prior to any construction of impervious area not shown on the plans authorized with this permit. Prior to permit issuance, the permittee must submit Certification to the District that the detention with filtration system is functioning in accordance with the intent of the design requirements. Additionally, if the total (future development) impervious area within this project exceeds 2.95 acres, (70% impervious area) the applicant must obtain a Standard General Environmental Resource Permit(ERP), and demonstrate that the entire project conforms with applicable criteria set forth in Chapter 40C-4, 40C-40, and 40C-41, F.A.C.

NOTICE OF RIGHTS

1. A person whose substantial interests are or may be determined has the right to request an administrative hearing by filing a written petition with the St. Johns River Water Management District (District), or may choose to pursue mediation as an alternative remedy under sections 120.569 and 120.57 Florida Statutes, before the deadline for filing a petition. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement. The procedures for pursuing mediation are set forth in sections 120.569 and 120.57, Florida Statutes, and Rules 28-106.111 and 28-106.401-.405, Florida Administrative Code. Pursuant to District rule 40C-1.511, Florida Administrative Code, the petition must be filed at the office of the District Clerk at District Headquarters, Highway 100 West, Palatka, Florida 32178-1429 within nineteen (19) days of the District depositing notice of its intent in the mail (for those persons to whom the District mails actual notice) or within fourteen (14) days of newspaper publication of the notice of its intent (for those persons to whom the District does not mail actual notice). Such a petition must comply with District rule 40C-1.521, Florida Administrative Code.

2. If the Governing Board took action which substantially differs from the notice of intent to grant or deny the permit application, a person whose substantial interests are or may be determined has the right to request an administrative hearing. Pursuant to District rule 40C-1.511, Florida Administrative Code, the petition must be filed at the office of the District Clerk at District Headquarters, Highway 100 West, Palatka, Florida 32178-1429, within nineteen (19) days of the District depositing notice of final agency action the the mail (for those persons to whom the District mails actual notice) or within fourteen (14) days of newspaper publication of the notice of its final agency action (for those persons to whom the District does not mail actual notice). Such a petition must comply with District rule 40C-1.521, Florida Administrative Code.

3. A substantially interested person has the right to a formal administrative hearing pursuant to Sections 120.569 and 120.57(1), Florida Statutes, where there is a dispute between the District and the party reqarding an issue of material fact. A petition for formal hearing must comply with the requirements set forth in Section 40C-1.521(2), Florida Administrative Code.

4. A substantially interested person has the right to an informal hearing pursuant to Sections 120.569 and 120.57(2), Florida Statutes, where no material facts are in dispute. A petition for

an informal hearing must comply with the requirements set forth in Section 40C-1.521(2), Florida Administrative Code.

5. A petition for an administrative hearing is deemed filed upon delivery of the petition to the District Clerk at the District headquarters in Palatka, Florida. (Section 40C-1.013, Florida Administrative Code)

6. Failure to file a petition for an administrative hearing, within the requisite time frame shall constitute a waiver of the right to an administrative hearing. (Section 40C-1.511, Florida Administrative Code)

7. The right to an administrative hearing and the relevant procedures to be followed are governed by Chapter 120, Florida Statutes, and Chapter 40C-1, Florida Administrative code.

8. An applicant with a legal or equitable interest in real property who believes that a District permitting action is unreasonable or will unfairly burden the use of his property, has the right to, within 30 days of receipt of notice of the District's intent to grant or deny a permit application, apply for a special master proceeding under section 70.51, Florida Statutes, by filing a written request for relief at the office of the District Clerk located at District headquarters, Highway 100 West, Palatka, Florida 32178-1429. A request for relief must contain the information listed in subsection 70.51(6), Florida Statutes.

9. A timely filed request for relief under section 70.51, Florida Statutes, tolls the time to request an administrative hearing under paragraph no. 1 or 2 above. (Paragraph 70.51(10)(b), Florida Statutes) However, the filing of a request for an administrative hearing under paragraph no. 1 or 2 above waives the right to a special master proceeding. (Subsection 70.51(10)(b), Florida Statutes)

10. Failure to file a request for relief within the requisite time frame shall constitute a waiver of the right to a special master proceeding. (Subsection 70.51(3), Florida Statutes)

11. Any substantially affected person who claims that final action of the District constitutes an unconstitutional taking of property without just compensation may seek review of the action in circuit court pursuant to Section 373.617, Florida Statutes, and the Florida Rules of Civil Procedures, by filing an action in circuit court within 90 days of the rendering of the final District action, (Section 373.617, Florida Statutes).

12. Pursuant to Section 120.68, Florida Statutes, a person who is adversely affected by final District action may seek review of the action in the district court of appeal by filing a notice of appeal pursuant to the Florida Rules of Appellate Procedure, within 30 days of the rendering of the final District action.

13. A party to the proceeding before the District who claims that a District order is inconsistent with the provisions and purposes of Chapter 373, Florida Statutes, may seek review of the order pursuant to Section 373.114, Florida Statutes, by the Florida Land and Water Adjudicatory Commission, by filing a request for review with the Commission and serving a copy on the Department of Environmental Protection and any person named in the order within 20 days of adoption of a rule or the rendering of the District order.

14. For appeals to the District courts of appeal, a District action is considered rendered after it is signed on behalf of the District, and is filed by the District Clerk.

15. Failure to observe the relevant time frames will result in waiver of that right to review.

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a copy of the foregoing Notice of Rights has been sent by U.S. Mail to:

FIRSTDEV THREE PROPERTIES LIMITED PARTNERSHIP
ATTN: SHELL Z. ROSENBERG, V.P.
TWO N. RIVERSIDE PLAZA, SUITE 1600
CHICAGO, IL 60606

at 4:00 p.m. this 26th day of JUNE, 1998

Shirley Arnwood for
Permit Data Services
Director, Gloria Lewis

St. Johns River Water Management District
Post Office Box 1429
Palatka, FL 32178-1429
(904) 329-4566

40-117-0125M5-ERP

St. Johns River
Water Management District
Hans G. Tanzler III, Executive Director

4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500
On the Internet at floridaswater.com.

April 20, 2012

AHG Group LLC
C/O Alan Ginsburg
1551 Sandspur Rd
Maitland, FL 32751

SUBJECT: Permit Number 40-117-28885-11
Northview Student Housing - Tract 202 Carillion PUD

Dear Sir/Madam:

Enclosed is your permit issued by the St. Johns River Water Management District on April 20, 2012. This permit is a legal document and should be kept with your other important documents. Permit issuance does not relieve you from the responsibility of obtaining any necessary permits from any federal, state, or local agencies for your project.

Technical Staff Report:
If you wish to review a copy of the Technical Staff Report (TSR) that provides the District's staff analysis of your permit application, you may view the TSR by going to the Permitting section of the District's website at floridaswater.com/permitting. Using the "search applications and permits" feature, you can use your permit number or project name to find information about the permit. When you see the results of your search, click on the permit number.

Noticing Your Permit:
For noticing instructions, please refer to the noticing materials in this package regarding closing the point of entry for someone to challenge the issuance of your permit. Please note that if a timely petition for administrative hearing is filed, your permit will become nonfinal and any activities that you choose to undertake pursuant to your permit will be at your own risk.

Compliance with Permit Conditions:
To submit your required permit compliance information, go to the District's website at floridaswater.com/permitting. Under the "Apply for a permit or submit compliance data" section, click to sign-in to your existing account or to create a new account. Select the "Compliance Submittal" tab, enter your permit number, and select "No Specific Date" for the Compliance Due Date Range. You will then be able to view all the compliance submittal requirements for your project. Select the compliance item that you are ready to submit and then attach the appropriate information or form.

The forms to comply with your permit conditions are available at floridaswater.com/permitting under the section "Handbooks, forms, fees, final orders". Click on forms to view all permit compliance forms, then scroll to the ERP application forms section and select the applicable compliance forms. Alternatively, if you have difficulty finding forms or need copies of the appropriate forms, please contact the Bureau of Regulatory Support at (386) 329-4570.

Transferring Your Permit:
As required by a condition of your permit, you must notify the District in writing within 30 days of any sale, conveyance or other transfer of a permitted system or facility, or within 30 days of any transfer of ownership or control of the real property where the permitted system or facility is located. You will need to provide the District with the information specified in District rule 40C-1.612, Florida Administrative Code (name and address of the transferee and a copy of the instrument effectuating the transfer). Please note that a permittee remains liable for any corrective actions that may be required as a result of any permit violations that occur before the sale, conveyance, or other transfer of the system or facility, so it is recommended that you request a permit transfer in advance.

Thank you and please let us know if you have additional questions. For general questions contact e-permit@sjrwmd.com or (386) 329-4570.

Sincerely,

Victor Castro, Division Director
Bureau of Regulatory Support
St. Johns River Water Management District
4049 Reid Street
Palatka, FL 32177

Enclosures: Permit with As-built Certification Form
Notice of Rights
List of Newspapers for Publication

cc: District Permit File

Consultant: Robert M Moon
DRMP Inc
941 Lake Baldwin Ln
Orlando, FL 32814

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

PERMIT NO. 40-117-28885-11 **DATE ISSUED:** April 20, 2012
PROJECT NAME: Northview Student Housing - Tract 202 Carillion PUD

A PERMIT AUTHORIZING:

Modification of Permit Number 40-117-28885-8 for Winn-Dixie Tract 202 Carillion PUD to include the construction and operation of a 7.57-acre project known as Northview Student Housing - Tract 202 Carillion PUD, as per plans received by the District on March 26, 2012.

LOCATION:

Section(s): 35 Township(s): 21S Range(s): 31E

Seminole County

ISSUED TO:

AHG Group LLC
C/O Alan Ginsburg
1551 Sandspur Rd
Maitland, FL 32751

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

PERMIT IS CONDITIONED UPON:

See conditions on attached "Exhibit A", dated April 20, 2012

AUTHORIZED BY: St. Johns River Water Management District
Division of Regulatory Services

By: 

David Dewey
Service Center Director

"EXHIBIT A"
CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 40-117-28885-11
AHG Group LLC
DATED APRIL 20, 2012

1. All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. Activities approved by this permit shall be conducted in a manner which do not cause violations of state water quality standards.

4. Prior to and during construction, the permittee shall implement and maintain all erosion and sediment control measures (best management practices) required to retain sediment on-site and to prevent violations of state water quality standards. All practices must be in accordance with the guidelines and specifications in chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988), which are incorporated by reference, unless a project specific erosion and sediment control plan is approved as part of the permit, in which case the practices must be in accordance with the plan. If site specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediment, beyond those specified in the erosion and sediment control plan, the permittee shall implement additional best management practices as necessary, in accordance with the specifications in chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988). The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

5. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

6. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a Construction Commencement Notice Form No. 40C-4.900(3) indicating the actual start date and the expected completion date.

7. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an Annual Status Report Form No. 40C-4.900(4). These forms shall be submitted during June of each year.

8. For those systems which will be operated or maintained by an entity which will require an easement or deed restriction in order to provide that entity with the authority necessary to operate or maintain the system, such easement or deed restriction, together with any other final operation or maintenance documents as are required by subsections 7.1.1 through 7.1.4 of the Applicant's Handbook: Management and Storage of Surface Waters, must be submitted to the District for approval. Documents meeting the requirements set forth in these subsections of the Applicant's Handbook will be approved. Deed restrictions, easements and other operation and maintenance documents which require recordation

either with the Secretary of State or the Clerk of the Circuit Court must be so recorded prior to lot or unit sales within the project served by the system, or upon completion of construction of the system, whichever occurs first. For those systems which are proposed to be maintained by county or municipal entities, final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local governmental entity. Failure to submit the appropriate final documents referenced in this paragraph will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system.

9. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by the portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to local government or other responsible entity.

10. Within 30 days after completion of construction of the permitted system, or independent portion of the system, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing As Built Certification Form 40C-1.181(13) or 40C-1.181(14) supplied with this permit. When the completed system differs substantially from the permitted plans, any substantial deviations shall be noted and explained and two copies of as-built drawings submitted to the District. Submittal of the completed form shall serve to notify the District that the system is ready for inspection. The statement of completion and certification shall be based on on-site observation of construction (conducted by the registered professional engineer, or other appropriate individual as authorized by law, or under his or her direct supervision) or review of as-built drawings for the purpose of determining if the work was completed in compliance with approved plans and specifications. As-built drawings shall be the permitted drawings revised to reflect any changes made during construction. Both the original and any revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawing. All surveyed dimensions and elevations shall be certified by a registered surveyor. The following information, at a minimum, shall be verified on the as-built drawings: 1. Dimensions and elevations of all discharge structures including all weirs, slots, gates, pumps, pipes, and oil and grease skimmers; 2. Locations, dimensions, and elevations of all filter, exfiltration, or underdrain systems including cleanouts, pipes, connections to control structures, and points of discharge to the receiving waters; 3. Dimensions, elevations, contours, or cross-sections of all treatment storage areas sufficient to determine state-storage relationships of the storage area and the permanent pool depth and volume below the control elevation for normally wet systems, when appropriate; 4. Dimensions, elevations, contours, final grades, or cross-sections of the system to determine flow directions and conveyance of runoff to the treatment system; 5. Dimensions, elevations, contours, final grades, or cross-sections of all conveyance systems utilized to convey off-site runoff around the system; 6. Existing water elevation(s) and the date determined; and Elevation and location of benchmark(s) for the survey.

11. The operation phase of this permit shall not become effective until the permittee has submitted the appropriate As-Built Certification Form, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District in accordance with subsections 7.1.1 through 7.1.4 of the Applicant's Handbook: Management and Storage of Surface Waters, accepts responsibility for operation and maintenance of the system. The permit may not be transferred to such an approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the

permittee shall request transfer of the permit to the responsible approved operation and maintenance entity, if different from the permittee. Until the permit is transferred pursuant to section 7.1 of the Applicant's Handbook: Management and Storage of Surface Waters, the permittee shall be liable for compliance with the terms of the permit.

12. Should any other regulatory agency require changes to the permitted system, the permittee shall provide written notification to the District of the changes prior implementation so that a determination can be made whether a permit modification is required.

13. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and chapter 40C-4 or chapter 40C-40, F.A.C.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under rule 40C-1.1006, F.A.C., provides otherwise.

16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of rule 40C-1.612, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.

17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District.

19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

20. This permit for construction will expire five years from the date of issuance.

21. All wetland areas or water bodies that are outside the specific limits of construction authorized by this permit must be protected from erosion, siltation, scouring or excess turbidity, and dewatering.

22. Prior to construction, the permittee must clearly designate the limits of construction on-site. The permittee must advise the contractor that any work outside the limits of construction, including clearing, may be a violation of this permit.

23. The proposed surface water management system shall be constructed and operated per plans received by the District on March 26, 2012.

24. This permit does not authorize any work in, on or over wetlands or other surface waters.

Notice Of Rights

1. A person whose substantial interests are or may be affected has the right to request an administrative hearing by filing a written petition with the St. Johns River Water Management District (District). Pursuant to Chapter 28-106 and Rule 40C-1.1007, Florida Administrative Code, the petition must be filed (received) either by delivery at the office of the District Clerk at District Headquarters, P. O. Box 1429, Palatka Florida 32178-1429 (4049 Reid St., Palatka, FL 32177) or by e-mail with the District Clerk at Clerk@sjrwmd.com, within twenty-six (26) days of the District depositing the notice of District decision in the mail (for those persons to whom the District mails actual notice), within twenty-one (21) days of the District emailing the notice of District decision (for those persons to whom the District emails actual notice), or within twenty-one (21) days of newspaper publication of the notice of District decision (for those persons to whom the District does not mail or email actual notice). A petition must comply with Sections 120.54(5)(b)4. and 120.569(2)(c), Florida Statutes, and Chapter 28-106, Florida Administrative Code. The District will not accept a petition sent by facsimile (fax), as explained in paragraph no. 4 below.

2. Please be advised that if you wish to dispute this District decision, mediation may be available and that choosing mediation does not affect your right to an administrative hearing. If you wish to request mediation, you must do so in a timely-filed petition. If all parties, including the District, agree to the details of the mediation procedure, in writing, within 10 days after the time period stated in the announcement for election of an administrative remedy under Sections 120.569 and 120.57, Florida Statutes, the time limitations imposed by Sections 120.569 and 120.57, Florida Statutes, shall be tolled to allow mediation of the disputed District decision. The mediation must be concluded within 60 days of the date of the parties' written agreement, or such other timeframe agreed to by the parties in writing. Any mediation agreement must include provisions for selecting a mediator, a statement that each party shall be responsible for paying its pro-rata share of the costs and fees associated with mediation, and the mediating parties' understanding regarding the confidentiality of discussions and documents introduced during mediation. If mediation results in settlement of the administrative dispute, the District will enter a final order consistent with the settlement agreement. If mediation terminates without settlement of the dispute, the District will notify all the parties in writing that the administrative hearing process under Sections 120.569 and 120.57, Florida Statutes, is resumed. Even if a party chooses not to engage in formal mediation, or if formal mediation does not result in a settlement agreement, the District will remain willing to engage in informal settlement discussions.

3. A person whose substantial interests are or may be affected has the right to an informal administrative hearing pursuant to Sections 120.569 and 120.57(2), Florida Statutes, where no material facts are in dispute. A petition for an informal hearing must also comply with the requirements set forth in Rule 28-106.301, Florida Administrative Code.

4. A petition for an administrative hearing is deemed filed upon receipt of the complete petition by the District Clerk at the District Headquarters in Palatka, Florida during the District's regular business hours. The District's regular business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Petitions received by the District Clerk after the District's regular business hours shall be deemed filed as of 8:00 a.m. on the District's next regular business day. The District's acceptance of petitions filed by e-mail is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation (issued pursuant to Rule 28-101.001, Florida Administrative Code), which is available for viewing at floridaswater.com. These conditions include, but are not limited to, the petition being in the form of a PDF or TIFF file and being capable of

being stored and printed by the District. Further, pursuant to the District's Statement of Agency Organization and Operation, attempting to file a petition by facsimile is prohibited and shall not constitute filing.

5. Failure to file a petition for an administrative hearing within the requisite timeframe shall constitute a waiver of the right to an administrative hearing. (Rule 28-106.111, Florida Administrative Code).

6. The right to an administrative hearing and the relevant procedures to be followed are governed by Chapter 120, Florida Statutes, Chapter 28-106, Florida Administrative Code, and Rule 40C-1.1007, Florida Administrative Code. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means the District's final action may be different from the position taken by it in this notice. A person whose substantial interests are or may be affected by the District's final action has the right to become a party to the proceeding, in accordance with the requirements set forth above.

7. Pursuant to Section 120.68, Florida Statutes, a party to the proceeding before the District who is adversely affected by final District action may seek review of the action in the District Court of Appeal by filing a notice of appeal pursuant to Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, within 30 days of the rendering of the final District action.

8. A District action is considered rendered, as referred to in paragraph no. 7 above, after it is signed on behalf of the District and filed by the District Clerk.

9. Failure to observe the relevant timeframes for filing a petition for judicial review as described in paragraph no. 7 above will result in waiver of that right to review.

Notice Of Rights

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Notice of Rights has been sent to the permittee:

AHG Group LLC
C/O Alan Ginsburg
1551 Sandspur Rd
Maitland, FL 32751

This 20th day of April, 2012.

Victor Castro, Director
Bureau of Regulatory Support
St. Johns River Water Management District
4049 Reid Street
Palatka, FL 32177
(386) 329-4570
Permit Number: 40-117-28885-11

NOTICING INFORMATION

Dear Permittee:

Please be advised that the St. Johns River Water Management District has not published a notice in the newspaper advising the public that it has issued a permit for this project.

Newspaper publication, using the District's form, notifies members of the public of their right to challenge the issuance of the permit. If proper notice is given by newspaper publication, then there is a 21-day time limit to file a petition challenging the issuance of the permit.

To close the point of entry for filing a petition, you may publish (at your own expense) a one-time notice of the District's decision in a newspaper of general circulation within the affected area as defined in Section 50.011 of the Florida Statutes. If you do not publish a newspaper notice, the time to challenge the issuance of your permit will not expire.

A copy of the notice and a partial list of newspapers of general circulation are attached for your convenience. However, you are not limited to those listed newspapers. If you choose to close the point of entry and the notice is published, the newspaper will return to you an affidavit as proof of publication. Please submit this original affidavit of publication to:

Victor Castro, Director
Bureau of Regulatory Support
4049 Reid Street
Palatka, FL 32177

If you have any questions, please contact the Bureau of Regulatory Support at (386) 329-4570.

Sincerely,

Victor Castro, Director
Bureau of Regulatory Support

NOTICE OF AGENCY ACTION TAKEN BY THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Notice is given that the following permit was issued on _____:

(Name and address of applicant)_____
permit#_____. The project is located in _____County, Section _____, Township _____ South, Range _____ East. The permit authorizes a surface water management system on _____ acres for _____ known as _____. The receiving water body is _____.

A person whose substantial interests are or may be affected has the right to request an administrative hearing by filing a written petition with the St. Johns River Water Management District (District). Pursuant to Chapter 28-106 and Rule 40C-1.1007, Florida Administrative Code (F.A.C.), the petition must be filed (received) either by delivery at the office of the District Clerk at District Headquarters, P.O. Box 1429, Palatka FL 32178-1429 (4049 Reid St, Palatka, FL 32177) or by e-mail with the District Clerk at Clerk@sjrwmd.com, within twenty six (26) days of the District depositing the notice of intended District decision in the mail (for those persons to whom the District mails actual notice), within twenty-one (21) days of the District emailing notice of intended District decision (for those persons to whom the District emails actual notice), or within twenty-one (21) days of newspaper publication of the notice of intended District decision (for those persons to whom the District does not mail or email actual notice). A petition must comply with Sections 120.54(5)(b)4. and 120.569(2)(c), Florida Statutes (F.S.), and Chapter 28-106, F.A.C. The District will not accept a petition sent by facsimile (fax). Mediation pursuant to Section 120.573, F.S., is not available.

A petition for an administrative hearing is deemed filed upon receipt of the complete petition by the District Clerk at the District Headquarters in Palatka, Florida during the District's regular business hours. The District's regular business hours are 8 a.m. – 5 p.m., excluding weekends and District holidays. Petitions received by the District Clerk after the District's regular business hours shall be deemed filed as of 8 a.m. on the next regular District business day. The District's acceptance of petitions filed by e-mail is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation (issued pursuant to Rule 28-101.001, Florida Administrative Code), which is available for viewing at floridaswater.com. These conditions include, but are not limited to, the petition being in the form of a PDF or TIFF file and being capable of being stored and printed by the District. Further, pursuant to the District's Statement of Agency Organization and Operation, attempting to file a petition by facsimile (fax) is prohibited and shall not constitute filing.

The right to an administrative hearing and the relevant procedures to be followed are governed by Chapter 120, Florida Statutes, Chapter 28-106, Florida Administrative Code, and Rule 40C-1.1007, Florida Administrative Code. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means the District's final action may be different from the position taken by it in this notice. **Failure to file a petition for an administrative hearing within the requisite time frame shall constitute a waiver of the right to an administrative hearing. (Rule 28-106.111, F.A.C.).**

If you wish to do so, please visit http://floridaswater.com/noticeofrights/ to read the complete Notice of Rights to determine any legal rights you may have concerning the District's intended decision(s) on the permit application(s) described above. You can also request the Notice of Rights by contacting the Director, Bureau of Regulatory Support (RS), 4049 Reid St., Palatka, FL 32177-2529, tele. no. (386)329-4570.

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Seminole Herald, Legal Advertising
300 North French Avenue
Sanford, FL 32771
407-323-9408

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News Journal Corporation, Legal Advertising
P. O. Box 2831
Daytona Beach, FL 32120-2831
(386) 681-2322

St. Johns River
Water Management District
Hans G. Tanzler III, Executive Director

4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500
On the Internet at floridaswater.com.

November 13, 2012

Seminole County
100 E 1st St
Sanford, FL 32771

Re: Lockwood Blvd. Intersection Improvements (Ltr Mod)
Letter Modification Number 4-117-22032-8
(Please reference the above number on any submittal)

The St. Johns River Water Management District is in receipt of your request for letter modification to Permit Number 4-117-22032-2. Based upon staff review of the information you submitted, the proposed modification qualifies for a letter modification pursuant to 40C-4.331(1)(b), Florida Administrative Code (F.A.C.). A copy of the modified permit is enclosed for your records.

Please be advised that the District has not published a notice in the newspaper to advise the public that it is issuing this letter of modification. If you do not publish a notice in the newspaper, a party's right to challenge the issuance of this letter modification extends for an indefinite period of time. If you wish to have certainty that the period of filing such a challenge is closed, then you may publish, at your own expense, such a notice in a newspaper of general circulation within the area that includes the project to which the modification applies. A copy of the form of the notice is attached for your use. If you have any questions, please contact Ratna Salihin-Lee at (407) 659-4847 or Timothy Wetzel at (407) 659-4859.

Sincerely,

Victor Castro, Bureau Chief
Bureau of Regulatory Support

cc: District Permit File

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

PERMIT NO. 4-117-22032-8 **DATE ISSUED:** November 13, 2012
PROJECT NAME: Lockwood Blvd. Intersection Improvements (Ltr Mod)

A PERMIT AUTHORIZING:

Modification by letter of Permit Number 4-117-22032-2 for Lockwood Blvd. Intersection Improvements (Ltr Mod), a 0.4 - acre project to be constructed as per plans received by the District on July 20, 2012, and amended by Sheet 4 of 46 received by the District on October 23, 2012.

LOCATION:

Section(s): 35 Township(s): 21S Range(s): 31E

Seminole County

ISSUED TO:

Seminole County
100 E 1st St
Sanford, FL 32771

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights or privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

PERMIT IS CONDITIONED UPON:

See conditions on attached "Exhibit A", dated November 13, 2012

AUTHORIZED BY: St. Johns River Water Management District

By: David Dewey
_____
David Dewey
Service Center Director

"EXHIBIT A"
CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 4-117-22032-8
Seminole County
DATED NOVEMBER 13, 2012

1. All wetland areas or water bodies that are outside the specific limits of construction authorized by this permit must be protected from erosion, siltation, scouring or excess turbidity, and dewatering.

2. Prior to construction, the permittee must clearly designate the limits of construction on-site. The permittee must advise the contractor that any work outside the limits of construction, including clearing, may be a violation of this permit.

3. Prior to lot or unit sales, or upon completion of construction of the system, whichever occurs first, the District must receive the final operation and maintenance document(s) approved by the District and recorded, if the latter is appropriate. For those systems which are proposed to be maintained by county or municipal entities, final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local government entity. Failure to submit the appropriate final document will result in the permittee remaining personally liable for carrying out maintenance and operation of the permitted system.

4. All construction, operation and maintenance shall be as set forth in the plans, specifications and performance criteria as approved by this permit.

5. District authorized staff, upon proper identification, will have permission to enter, inspect and observe the system to insure conformity with the plans and specifications approved by the permit.

6. The permittee must implement and maintain all erosion and sediment control measures (best management practices) required to retain sediment on -site and to prevent violations of the water quality criteria and standards in chapters 17-4, 17-302, F.A.C. All practices must be in accordance with the guidelines and specifications in section 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988) unless a project - specific erosion and sediment control plan is approved as part of the permit in which case the practices must be in accordance with the plan. If site specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediment, beyond those specified in the erosion sediment control plan, the permittee must implement additional best management practices as necessary, in accordance with the specifications in section 6 of the Florida Land Development Manual: A guide to sound Land and Water Management (Florida Department of Environmental Regulation, 1988).

7. Stabilization measures shall be indicated for erosion and sediment control on disturbed areas as soon as practicable in or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

8. The operation phase of the permit shall not become effective until a Florida registered Professional Engineer certifies that the system, or independent portion of a system, has been constructed in accordance with the permit issued by the District, and the permittee receives written notification by District staff that the construction, alteration or maintenance has been completed according to the permit. Within 30 days after completion of construction of the surface water management system, or independent portion of the system, the permittee shall submit the certification or one set of plans

which reflect the surface water management system as actually constructed. This submittal shall serve to notify the District that the system is ready for inspection. The permit may not be transferred to an operation and maintenance entity approved by the District until the operation phase of the permit becomes effective.

9. If any other regulatory agency should require revisions or modification to the permitted project, the District is to be notified of the previsions so that determination can be made whether a permit modification is required.

10. The District must be notified, in writing, within 30 days of any sale, conveyance or other transfer of a permitted system or facility or within 30 days of any transfer of ownership or control of the real property at which the permitted system or facility is located. All transfers of a permit are subject to the requirements of section 40C-1.612, F.A.C.

11. The permittee must require the contractor to review and maintain a copy of this permit, complete with all conditions, attachments, exhibits, and modifications in good condition at the construction site. The complete permit shall be available for review upon request by District representatives.

12. Construction or alteration of each phase or independent portion of the permitted surface water management system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be complete in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to local government or other responsible entity.

13. To the extent permitted by Florida law, the permittee must hold and save the District harmless from any and all liability arising from property damage or personal injury as a result of the permitted, activities.

14. Nothing contained herein relieves the permittee from timely complying with applicable laws of other federal, state or local governments.

15. If and entity other than the permittee has been approved as the operation and maintenance entity the permittee may request transfer of the permit for a completed system or independent portion of a system to the District approved operation and maintenance entity at the time of submittal of the as - builts or Professional Engineer certification for construction of the permitted surface water management system.

16. This permit will expire 2-years from the date of issuance.

17. The proposed surface water management system shall be constructed and operated in accordance with the plans received by the District on July 20, 2012, and amended by Sheet 4 of 46 received by the District on October 23, 2012.

Notice Of Rights

1. A person whose substantial interests are or may be affected has the right to request an administrative hearing by filing a written petition with the St. Johns River Water Management District (District). Pursuant to Chapter 28-106 and Rule 40C-1.1007, Florida Administrative Code, the petition must be filed (received) either by delivery at the office of the District Clerk at District Headquarters, P. O. Box 1429, Palatka Florida 32178-1429 (4049 Reid St., Palatka, FL 32177) or by e-mail with the District Clerk at Clerk@sjrwmd.com, within twenty-six (26) days of the District depositing the notice of District decision in the mail (for those persons to whom the District mails actual notice), within twenty-one (21) days of the District emailing the notice of District decision (for those persons to whom the District emails actual notice), or within twenty-one (21) days of newspaper publication of the notice of District decision (for those persons to whom the District does not mail or email actual notice). A petition must comply with Sections 120.54(5)(b)4. and 120.569(2)(c), Florida Statutes, and Chapter 28-106, Florida Administrative Code. The District will not accept a petition sent by facsimile (fax), as explained in paragraph no. 4 below.

2. Please be advised that if you wish to dispute this District decision, mediation may be available and that choosing mediation does not affect your right to an administrative hearing. If you wish to request mediation, you must do so in a timely-filed petition. If all parties, including the District, agree to the details of the mediation procedure, in writing, within 10 days after the time period stated in the announcement for election of an administrative remedy under Sections 120.569 and 120.57, Florida Statutes, the time limitations imposed by Sections 120.569 and 120.57, Florida Statutes, shall be tolled to allow mediation of the disputed District decision. The mediation must be concluded within 60 days of the date of the parties' written agreement, or such other timeframe agreed to by the parties in writing. Any mediation agreement must include provisions for selecting a mediator, a statement that each party shall be responsible for paying its pro-rata share of the costs and fees associated with mediation, and the mediating parties' understanding regarding the confidentiality of discussions and documents introduced during mediation. If mediation results in settlement of the administrative dispute, the District will enter a final order consistent with the settlement agreement. If mediation terminates without settlement of the dispute, the District will notify all the parties in writing that the administrative hearing process under Sections 120.569 and 120.57, Florida Statutes, is resumed. Even if a party chooses not to engage in formal mediation, or if formal mediation does not result in a settlement agreement, the District will remain willing to engage in informal settlement discussions.

3. A person whose substantial interests are or may be affected has the right to an informal administrative hearing pursuant to Sections 120.569 and 120.57(2), Florida Statutes, where no material facts are in dispute. A petition for an informal hearing must also comply with the requirements set forth in Rule 28-106.301, Florida Administrative Code.

4. A petition for an administrative hearing is deemed filed upon receipt of the complete petition by the District Clerk at the District Headquarters in Palatka, Florida during the District's regular business hours. The District's regular business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Petitions received by the District Clerk after the District's regular business hours shall be deemed filed as of 8:00 a.m. on the District's next regular business day. The District's acceptance of petitions filed by e-mail is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation (issued pursuant to Rule 28-101.001, Florida Administrative Code), which is available for viewing at floridaswater.com. These conditions include, but are not limited to, the petition being in the form of a PDF or TIFF file and being capable

of being stored and printed by the District. Further, pursuant to the District's Statement of Agency Organization and Operation, attempting to file a petition by facsimile is prohibited and shall not constitute filing.

5. Failure to file a petition for an administrative hearing within the requisite timeframe shall constitute a waiver of the right to an administrative hearing. (Rule 28-106.111, Florida Administrative Code).

6. The right to an administrative hearing and the relevant procedures to be followed are governed by Chapter 120, Florida Statutes, Chapter 28-106, Florida Administrative Code, and Rule 40C-1.1007, Florida Administrative Code. Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means the District's final action may be different from the position taken by it in this notice. A person whose substantial interests are or may be affected by the District's final action has the right to become a party to the proceeding, in accordance with the requirements set forth above.

7. Pursuant to Section 120.68, Florida Statutes, a party to the proceeding before the District who is adversely affected by final District action may seek review of the action in the District Court of Appeal by filing a notice of appeal pursuant to Rules 9.110 and 9.190, Florida Rules of Appellate Procedure, within 30 days of the rendering of the final District action.

8. A District action is considered rendered, as referred to in paragraph no. 7 above, after it is signed on behalf of the District and filed by the District Clerk.

9. Failure to observe the relevant timeframes for filing a petition for judicial review as described in paragraph no. 7 above will result in waiver of that right to review.

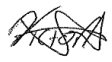
Notice Of Rights

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Notice of Rights has been sent to the permittee:

Seminole County
100 E 1st St
Sanford, FL 32771

This 13th day of November, 2012.



_____

Victor Castro, Bureau Chief
Bureau of Regulatory Support
St. Johns River Water Management District
4049 Reid Street
Palatka, FL 32177
(386) 329-4570

NOTICING INFORMATION

Dear Permittee:

Please be advised that the St. Johns River Water Management District has not published a notice in the newspaper advising the public that it has issued a permit for this project.

Newspaper publication, using the District's form, notifies members of the public of their right to challenge the issuance of the permit. If proper notice is given by newspaper publication, then there is a 21-day time limit to file a petition challenging the issuance of the permit.

To close the point of entry for filing a petition, you may publish (at your own expense) a one-time notice of the District's decision in a newspaper of general circulation within the affected area as defined in Section 50.011 of the Florida Statutes. If you do not publish a newspaper notice, the time to challenge the issuance of your permit will not expire.

A copy of the notice and a partial list of newspapers of general circulation are attached for your convenience. However, you are not limited to those listed newspapers. If you choose to close the point of entry and the notice is published, the newspaper will return to you an affidavit as proof of publication. Please submit this original affidavit of publication to:

Victor Castro, Bureau Chief
Bureau of Regulatory Support
4049 Reid Street
Palatka, FL 32177

If you have any questions, please contact the Bureau of Regulatory Support at (386) 329-4570.

Sincerely,

Victor Castro, Bureau Chief
Bureau of Regulatory Support

NOTICE OF AGENCY ACTION TAKEN BY THE
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Notice is given that the following permit was issued on _____:

(Name and address of applicant)_____
permit#_____. The project is located in _____County, Section _____, Township _____ South, Range _____ East. The permit authorizes a surface water management system on _____ acres for _____ known as _____. The receiving water body is _____.

A person whose substantial interests are or may be affected has the right to request an administrative hearing by filing a written petition with the St. Johns River Water Management District (District). Pursuant to Chapter 28-106 and Rule 40C-1.1007, Florida Administrative Code (F.A.C.), the petition must be filed (received) either by delivery at the office of the District Clerk at District Headquarters, P.O. Box 1429, Palatka FL 32178-1429 (4049 Reid St, Palatka, FL 32177) or by e-mail with the District Clerk at Clerk@sjrwmd.com, within twenty six (26) days of the District depositing the notice of intended District decision in the mail (for those persons to whom the District mails actual notice), within twenty-one (21) days of the District emailing notice of intended District decision (for those persons to whom the District emails actual notice), or within twenty-one (21) days of newspaper publication of the notice of intended District decision (for those persons to whom the District does not mail or email actual notice). A petition must comply with Sections 120.54(5)(b)4. and 120.569(2)(c), Florida Statutes (F.S.), and Chapter 28-106, F.A.C. The District will not accept a petition sent by facsimile (fax). Mediation pursuant to Section 120.573, F.S., is not available.

A petition for an administrative hearing is deemed filed upon receipt of the complete petition by the District Clerk at the District Headquarters in Palatka, Florida during the District's regular business hours. The District's regular business hours are 8 a.m. – 5 p.m., excluding weekends and District holidays. Petitions received by the District Clerk after the District's regular business hours shall be deemed filed as of 8 a.m. on the next regular District business day. The District's acceptance of petitions filed by e-mail is subject to certain conditions set forth in the District's Statement of Agency Organization and Operation (issued pursuant to Rule 28-101.001, Florida Administrative Code), which is available for viewing at floridaswater.com. These conditions include, but are not limited to, the petition being in the form of a PDF or TIFF file and being capable of being stored and printed by the District. Further, pursuant to the District's Statement of Agency Organization and Operation, attempting to file a petition by facsimile (fax) is prohibited and shall not constitute filing.

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If you wish to do so, please visit http://floridaswater.com/noticeofrights/ to read the complete Notice of Rights to determine any legal rights you may have concerning the District's intended decision(s) on the permit application(s) described above. You can also request the Notice of Rights by contacting the Bureau Chief, Bureau of Regulatory Support (RS), 4049 Reid St., Palatka, FL 32177-2529, tele. no. (386)329-4570.

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Sanford, FL 32771
407-323-9408

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News Journal Corporation, Legal Advertising
P. O. Box 2831
Daytona Beach, FL 32120-2831
(386) 681-2322

64900-1

Permit with conditions 1728

Henry Dean, Executive Director
John R. Wehle, Assistant Executive Director

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

POST OFFICE BOX 1429 PALATKA, FLORIDA 32178-1429
TELEPHONE 904-329-4500 SUNCOM 904-860-4500
TDD 904-329-4450 TDD SUNCOM 860-4450
FAX (Executive) 329-4125 (Legal) 329-4485 (Permitting) 329-4315 (Administration/Finance) 329-4508

SERVICE CENTERS

618 E. South Street
Orlando, Florida 32801
407-897-4300
TDD 407-897-5960

7775 Baymeadows Way
Suite 102
Jacksonville, Florida 32256
904-730-6270
TDD 904-448-7900

PERMITTING:
305 East Drive
Melbourne, Florida 32904
407-984-4940
TDD 407-722-5368

OPERATIONS:
2133 N. Wickham Road
Melbourne, Florida 32935-8109
407-752-3100
TDD 407-752-3102

April 10, 2001

Orange County Public Works Division
4200 S. John Young Parkway
Orlando, FL 32839-9205

SUBJECT: Permit Number 4-095-64900-1
North Tanner Road Improvements

Dear Sir/Madam:

Enclosed is your permit as authorized by the Governing Board of the St. Johns River Water Management District on April 10, 2001.

This permit is a legal document and should be kept with your other important documents. The attached MSSW/Stormwater As-Built Certification Form should be filled in and returned to the Palatka office within thirty days after the work is completed. By so doing, you will enable us to schedule a prompt inspection of the permitted activity.

In addition to the MSSW/Stormwater As-Built Certification Form, your permit also contains conditions which require submittal of additional information. All information submitted as compliance to permit conditions must be submitted to the Palatka office address.

Permit issuance does not relieve you from the responsibility of obtaining permits from any federal, state and/or local agencies asserting concurrent jurisdiction for this work.

In the event you sell your property, the permit can be transferred to the new owner, if we are notified by you within thirty days of the sale. Please assist us in this matter so as to maintain a valid permit for the new property owner.

Thank you for your cooperation and if this office can be of any further assistance to you, please do not hestitate to contact us.

Sincerely,

Gloria Lewis, Director
Permit Data Services Division

Enclosures: Permit with EN Form(s), if applicable

cc: District Permit File
Consultant: Bowyer-Singleton & Associates
520 South Magnolia Ave.
Orlando, FL 32801

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

PERMIT NO. 4-095-64900-1 **DATE ISSUED:** April 10, 2001

PROJECT NAME: North Tanner Road Improvements

A PERMIT AUTHORIZING:

construction and operation of a surface water management system consisting of the widening and paving of 2.2-miles of North Tanner Road from Lake Pickett Road (State Road 420) to McCulloch Road. This permit also authorizes work in wetlands and RHPZ with an associated mitigation plan.

LOCATION:

Section(s): 1, 12, 13 Township(s): 22S Range(s): 31E
Orange County

ISSUED TO:
Orange County Public Works Division
4200 S. John Young Parkway
Orlando, FL 32839-9205

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights of privileges other than those specified therein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

PERMIT IS CONDITIONED UPON:

See conditions on attached "Exhibit A", dated April 10, 2001

AUTHORIZED BY: St. Johns River Water Management District

Department of Water Resources

By: _____
(Director)
Jeff Elledge

Governing Board

By: _____
(Assistant Secretary)
Henry Dean

"EXHIBIT A"

CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 4-095-64900-1
ORANGE COUNTY PUBLIC WORKS DIVISION
DATED APRIL 10, 2001

1. All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. Activities approved by this permit shall be conducted in a manner which do not cause violations of state water quality standards.

4. Prior to and during construction, the permittee shall implement and maintain all erosion and sediment control measures (best management practices) required to retain sediment on-site and to prevent violations of state water quality standards. All practices must be in accordance with the guidelines and specifications in chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988), which are incorporated by reference, unless a project specific erosion and sediment control plan is approved as part of the permit, in which case the practices must be in accordance with the plan. If site specific conditions require additional measures during any phase of construction or operation to prevent erosion or control sediment, beyond those specified in the erosion and sediment control plan, the permittee shall implement additional best management practices as necessary, in accordance with the specifications in chapter 6 of the Florida Land Development Manual: A Guide to Sound Land and Water Management (Florida Department of Environmental Regulation 1988). The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

5. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

6. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a Construction Commencement Notice Form No.

40C-4.900(3) indicating the actual start date and the expected completion date.

7. When the duration of construction will exceed one year, the permittee shall submit construction status reports to the District on an annual basis utilizing an Annual Status Report Form No. 50C-4.900(4). These forms shall be submitted during June of each year.

8. For those systems which will be operated or maintained by an entity which will require an easement or deed restriction in order to provide that entity with the authority necessary to operate or maintain the system, such easement or deed restriction, together with any other final operation or maintenance documents as are required by subsections 7.1.1 through 7.1.4 of the Applicant's Handbook: Management and Storage of Surface Waters, must be submitted to the District for approval. Documents meeting the requirements set forth in these subsections of the Applicant's Handbook will be approved. Deed restrictions, easements and other operation and maintenance documents which require recordation either with the Secretary of State or the Clerk of the Circuit Court must be so recorded prior to lot or unit sales within the project served by the system, or upon completion of construction of the system, whichever occurs first. For those systems which are proposed to be maintained by county or municipal entities, final operation and maintenance documents must be received by the District when maintenance and operation of the system is accepted by the local governmental entity. Failure to submit the appropriate final documents referenced in this paragraph will result in the permittee remaining liable for carrying out maintenance and operation of the permitted system.

9. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the initiation of the permitted use of site infrastructure located within the area served by the portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to local government or other responsible entity.

10. Within 30 days after completion of construction of the permitted system, or independent portion of the system, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing As Built Certification Form 40C-1.181(13) or 40C-1.181(14) supplied with this permit. When the completed system differs substantially from the permitted plans, any substantial deviations shall be noted and explained and two copies of as-built drawings submitted to the District. Submittal of the completed from shall serve to notify the District that the system is ready for inspection. The statement of completion and certification shall be based on on-site observation of construction

(conducted by the registered professional engineer, or other appropriate individual as authorized by law, or under his or her direct supervision) or review of as-built drawings for the purpose of determining if the work was completed in compliance with approved plans and specifications. As-built drawings shall be the permitted drawings revised to reflect any changes made during construction. Both the original and any revised specifications must be clearly shown. The plans must be clearly labeled as "as-built" or "record" drawing. All surveyed dimensions and elevations shall be certified by a registered surveyor. The following information, at a minimum, shall be verified on the as-built drawings:

1. Dimensions and elevations of all discharge structures including all weirs, slots, gates, pumps, pipes, and oil and grease skimmers;

2. Locations, dimensions, and elevations of all filter, exfiltration, or underdrain systems including cleanouts, pipes, connections to control structures, and points of discharge to the receiving waters;

3. Dimensions, elevations, contours, or cross-sections of all treatment storage areas sufficient to determine state-storage relationships of the storage area and the permanent pool depth and volume below the control elevation for normally wet systems, when appropriate;

4. Dimensions, elevations, contours, final grades, or cross-sections of the system to determine flow directions and conveyance of runoff to the treatment system;

5. Dimensions, elevations, contours, final grades, or cross-sections of all conveyance systems utilized to convey off-site runoff around the system;

6. Existing water elevation(s) and the date determined; and Elevation and location of benchmark(s) for the survey.

11. The operation phase of this permit shall not become effective until the permittee has complied with the requirements of general condition 9 above, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District in accordance with subsections 7.1.1 through 7.1.4 of the Applicant's Handbook: Management and Storage of Surface Waters, accepts responsibility for operation and maintenance of the system. The permit may not be transferred to such an approved operation and maintenance entity until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible approved operation

and maintenance entity, if different from the permittee. Until the permit is transferred pursuant to section 7.1 of the Applicant's Handbook: Management and Storage of Surface Waters, the permittee shall be liable for compliance with the terms of the permit.

12. Should any other regulatory agency require changes to the permitted system, the permittee shall provide written notification to the District of the changes prior implementation so that a determination can be made whether a permit modification is required.

13. This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations prior to the start of any activity approved by this permit. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and chapter 40C-4 or chapter 40C-40, F.A.C.

14. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered specifically approved unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

16. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of section 40C-1.612, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.

17. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with the plans and specifications approved by the permit.

18. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District.

19. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

20. This permit for construction will expire five years from the date of issuance.

21. All wetland areas or water bodies that are outside the specific limits of construction authorized by this permit must be protected from erosion, siltation, scouring or excess turbidity, and dewatering.

22. Prior to construction, the permittee must clearly designate the limits of construction on-site. The permittee must advise the contractor that any work outside the limits of construction, including clearing, may be a violation of this permit.

23. The operation and Maintenance entity shall submit inspection reports to the District two years after the operation phase permit becomes effective and every two years thereafter on District Form EN-46. The inspection form must be signed and sealed by an appropriate registered professional.

24. The wetland and RHPZ impacts must be done in accordance with the plans dated as received on February 19, 2001.

25. The preservation area within the OCNLC must contain at least 10 acres.

26. Prior to beginning construction, the permittee must record a conservation easement on the real property described herein, pursuant to section 704.06, F.S. The easement must prohibit all construction including clearing, dredging or filling except that which is specifically authorized by this permit within the 10.0-acre preservation site. Said easement must contain provisions as set forth in paragraphs 1 (a) - (h) of section 704.06, F.S., as well as provisions that the easement may be enforced by the District and may not be amended without District approval. The surveyors sketch of the area included in the legal description must be submitted within thirty days of permit issuance for District review and approval prior to recording. The easement must be recorded and the easement area boundaries must be permanently monumented on the project site prior to use of the infrastucture of its intended use, all changes in the directions of the easement area boundaries must be permanently monumented above the ground on the project site.

    The permittee must provide the District with a certified copy of the final recorded easements showing the official records book and page number no later than 30 days after receipt of District approval of the draft easement.

27. The proposed surface water management system must be constructed and operated in accordance with the plans received by the District on February 19, 2001.

28. In accordance with the letter dated June 21, 1999, from Terry E. Wilkinson, Chief, Bureau of Survey and Mapping, Division of State Lands, Florida Department of Environmental Protection, in the event that the portion of Long Branch being preserved as part of this permit is determined to be navigable, and therefore state owned, the proprietary requirements of the Florida Board of Trustees for state owned waterbodies would apply. Within 30 days of notification of an affirmative determination of sovereignty, the permittee must provide written notification to the District that this area is considered SSL.

St. Johns River
Water Management District
Kirby B. Green III, Executive Director • David W. Fisk, Assistant Executive Director

4049 Reid Street • P.O. Box 1429 • Palatka, FL 32178-1429 • (386) 329-4500
On the Internet at *www.sjrwmd.com.*

CERTIFIED #7006 0100 0005 0263 5344

November 20, 2006

Hawthorne Glen Townhome Owners Association, Inc.
c/o Leland Management
8009 S. Orange Avenue
Orlando, FL 32809

Subject: Permit Number: 40-117-91175-**3**
Project Name: Hawthorne Glen
Original Permit Issued: June 17, 2004 (Permitted as 40-117-91175-1)

The surface water management system serving the above referenced project has been constructed and is functioning in conformance with the requirements of the St. Johns River Water Management District.

The Hawthorne Glen Townhome Owners Association, Inc. is now authorized to operate the system and is responsible for its routine maintenance. Enclosed you will find an operation permit, plan, maintenance guidelines, and a pamphlet entitled "Neighborhood Guide to Stormwater Systems".

The permit, plan and maintenance guidelines provide information to assist you in assuring the system is properly maintained and will continue to function as designed. Please review this material carefully to assure that your association meets all of the requirements contained in your permit and keep it with other important documents. The pamphlet contains general information about the stormwater systems that will be useful to the homeowners in your development.

For additional support, an education program has been developed to provide neighborhood groups with information about proper landscape and pond maintenance practices that will save them money and help ensure protection of Florida's natural waterways. This watershed and ponds education program is available through the District's Watershed Action Volunteer (WAV) program. For more information, contact your local WAV coordinator at (386)312-2346. As an introduction to the education program, videos on watersheds and stormwater systems can be ordered from the District, (800)725-5922.

Your participation is vital to the protection of our rivers, streams, lakes, and wetlands. If you have any questions, please call your local District Service Center, the staff will be happy to respond.

Sincerely,

for Gloria R. Lewis, Director
Division of Permit Data Services

cc: District Permit File
Bill Carlie, Compliance Manager; Altamonte Springs Service Center
Centex Homes of Florida, Inc., 385 Douglas Ave., Suite 2000, Altamonte Springs, FL 32714

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
Post Office Box 1429
Palatka, Florida 32178-1429

PERMIT NO.: 40-117-91175-3 **ORIGINAL PERMIT ISSUED:** June 17, 2004
OPERATION PHASE ISSUED: November 20, 2006

PROJECT NAME: Hawthorne Glen

A PERMIT AUTHORIZING:

This permit authorizes the operation of the surface water management system serving Hawthorne Glen, a 45.97-acre residential development that includes 224 townhomes, which was permitted and constructed in accordance with permit number 40-117-91175-1.

LOCATION:

Sections: 35 & 36 Township: 21 South Range: 31 East
Seminole County

ISSUED TO:

Hawthorne Glen Townhome Owners Association, Inc.
c/o Leland Management
8009 S. Orange Avenue
Orlando, FL 32809

Permittee agrees to hold and save the St. Johns River Water Management District and its successors harmless from any and all damages, claims, or liabilities which may arise from permit issuance. Said application, including all plans and specifications attached thereto, is by reference made a part hereof.

This permit does not convey to permittee any property rights nor any rights of privileges other than those specified herein, nor relieve the permittee from complying with any law, regulation or requirement affecting the rights of other bodies or agencies. All structures and works installed by permittee hereunder shall remain the property of the permittee.

This permit may be revoked, modified or transferred at any time pursuant to the appropriate provisions of Chapter 373, Florida Statutes:

PERMIT IS CONDITIONED UPON:

See conditions on attached "Exhibit A", dated June 17, 2004

AUTHORIZED BY: St. Johns River Water Management District
Department of Resource Management

By: _____
(Division Director - Palatka)
Michael Register

"EXHIBIT A"

CONDITIONS FOR ISSUANCE OF PERMIT NUMBER 40-117-91175-3

HAWTHORNE GLEN TOWNHOME OWNERS ASSOCIATION, INC.

ORIGINAL PERMIT DATED JUNE 17, 2004

OPERATION PHASE DATED NOVEMBER 20, 2006

1. This permit authorizes the operation of the surface water management system as permitted and constructed. It does not authorize modifications to the existing system or the addition of stormwater discharge from areas outside the permitted project boundaries.

2. The permittee must maintain a copy of this permit complete with all conditions, attachments, and exhibits. The complete permit must be available for review upon request by District representatives.

3. All operation and maintenance shall be as set forth in the plans, specifications, and performance criteria contained in this permit.

4. District authorized staff, upon proper identification, must be granted permission to inspect the system to insure conformity with the permit.

5. To the extent permitted by Florida law, the permittee must hold and save the District harmless from any and all liability arising from property damage or personal injury as a result of the permitted activities.

Appendix H

Correspondence

Dewberry

MEETING MINUTES

MEETING DATE: April 19, 2022

TIME: 12:30pm

LOCATION: Microsoft Teams Meeting

PURPOSE: McCulloch Road, SJRWMD PRE-095-183309-1; Pre-App Meeting with SJRWMD

In Attendance

NAME	ORGANIZATION	EMAIL
Richard Lee	SJRWMD	rlee@sjrwmd.com
Nicole Martin	SJRWMD	nmartin@sjrwmd.com
Jon Miller	Dewberry	jmiller@dewberry.com
Sean Carrigan	Dewberry	scarrigan@dewberry.com
Hannah Hart	Dewberry	hhart@dewberry.com
Jennifer Cummings	Orange County	jennifer.cummings@ocfl.net
Ian Phyars	Orange County	Ian.phyars@ocfl.net

Summary of Discussion

The meeting began with SJRWMD, County, and Consultant Team introductions.

The Project Description was also provided by Dewberry. Orange County is conducting a Roadway Conceptual Analysis (RCA) study for McCulloch Road from North Orion / Lockwood Boulevard to North Tanner Road. The jurisdictional boundary line between Orange County and Seminole County is aligned along McCulloch Road and the northern portion of public road right-of-way (ROW) is in Seminole County with the southern portion of public road ROW in Orange County. Orange and Seminole County have an interlocal agreement for the maintenance of McCulloch Road and coordination with Seminole County Public Works is being provided during the study. The objective of the RCA is to identify a preferred improvement alternative to address the current and future transportation needs along the corridor. The preferred improvements identified in the Final report will serve as the basis for the subsequent design (under a separate contract) of the roadway improvements.

- **Engineering**

The following topics were discussed:

  - Within Lake Price outlet (WBID 3012) sub-basin of the Upper St. Johns River Watershed
    - **WBID Not Impaired – Pollutant Loading Analysis is not required – Richard Lee**
  - Eventually discharges to Econ River – OFW
    - **No direct discharge**
    - **Additional 50% Treatment volume not required, - Richard Lee**

- 6 existing roadway drainage basins
  - Treatment and attenuation are provided for the existing roadway
    - **If runoff from the widened portion of the roadway can be separated from the existing runoff then the existing ponds do not need to be modified. – Richard Lee**
  - Modify existing ponds
  - Alternative sites
- 1 existing cross drain: 5 - 72" pipes
  - Will require extension
- Floodplain – Zone A in 2 locations: **SJRWMD is only concerned with the 10-year floodplain impacts**
  - Impact determination – Lidar contour which follows Zone A delineation
  - Area is highly developed
    - Compensation within ponds not possible
    - Sites are limited to nonexistent
  - **Watershed model: County would have to provide the model (if any)**

- **Environmental**
  The following topics were discussed:

  - The approximate limits of the existing wetlands on site were discussed briefly and displayed for SJRWMD regulatory science team; the project site also contains a number of existing permitted stormwater systems, which would be classified as Other Surface Waters (OSWs).

  - SJRWMD confirmed that the study area does contain Regulatory Conservation Easements, and it's anticipated that those RCEs may need to be partially amended if additional Right-of-Way (ROW) is necessary for capacity improvements. SJRWMD is in the process of working with the Governing Board and Executive team to streamline partial amendment requests for public projects, such as this project.

  - The RCE boundaries will be verified using the sketch and legal descriptions, based on Orange County book & page# 4084-909. The existing other permitted neighborhood areas will be also checked to confirm that no additional CEs exist that are unmapped but recorded in the study area.

  - SJRWMD also confirmed the study area does contain Riparian Habitat Protection Zones (RHPZ). If RHPZ is not natural (i.e.: mowed ROW); then mitigation would not be required at time of permitting.

  - Orange County explained that a permit application and wetland delineation schedule would follow within approximately two years, based on the current project funding and time to complete the corridor study.

- Protected Species observed within the study area include gopher tortoises (Gopherus polyphemus). The limited remaining natural habitat within the corridor primarily consists of floodplain and wetlands. Most of the remaining wetlands are ultimately surrounded by development in the regional area, with minimal upland habitat for large-scale, landscape-level wildlife movement.

We believe the foregoing record to be an accurate summary of the meeting and related decisions. We would appreciate notification of exceptions or corrections to these Minutes within five (5) days of receipt. Without notification, we will consider these minutes to be a record of fact.

Inquires (Details)

Bithlo Area
Road Name: McCulloch Rd - Flooding Issues - see page 7

3/9/2016-3/9/2026

Date/#	MF/CD	Inquiree	Road Name	Specific Area	Problem	Completion	Referred	Received By/Remarks
4/19/17 198635	BI 5	4076209758 Cekala, Bill	MCCULLOCH RD	MCCULLOCH Road & North Orion Blvd	100 Citizen is requesting pot hole to be fix. Please call citizen.	**Completed 04/19/17**	04/19/2017 Seminole County	Nalini Sookraj David Contacted Seminole County - this belongs to them - citizen was informed- completed 311 ticket# 1406452
9/1/21 240521	BI 5	4074923574 Meldrum, Gary	MCCULLOCH RD	MCCULLOCH RD	111 is McCulloch Road going to be extended	**Completed 08/31/21**	08/31/2021 DAVID S.	SANDRA **2377376**9/13/21: Called Citizen left message to call Seminole County Completed 8/31/21
9/18/20 232971	BI 5	4076657623 Roads &: Drainage, Seminole County	MCCULLOCH RD	just before N Orion Bv	120 10' pothole goes underground, they put tape around it, just before Fire House	**Completed 11/18/20** note: this ticket has been re-opened 9/22/20: Unit looked at area and this was Seminole County	09/18/2020 CONTRACT SECTION	Donna Reardon **2124117 & 2136607 **area Completed 9/18/20// 10/12/20: Sent Work order TV and Seal on 10/8/20/ 12-7-20: Completed 11-18-20
1/17/20 227560	BI 5	407-484-1508 Hearn, Phil	MCCULLOCH RD	10844 McCulloch Road, Orlando, Fl 32817	120 Caller is requesting the foreman to contact him regarding McCulloch Rd were it curves at Iron	**Completed 01/21/20** 1-17-20 Area not OC ROW. Is in Seminole County. Referred Citizen to Them. Completed 1-21-20		Sandra Lezcano **1840150** Bridge Rd, he is requesting a site visit from Mike Casey. He states the road has potholes, is dipping, has sunken areas and erosion.
12/8/25 291331	BI 5	Olney, Lucy	MCCULLOCH RD	pothole - Mcculoch Rd and Worchester Dr	120 Caller states there is a pot hole 2ft wide and 2ft deep on McCulloch Rd at the entrance of	**Completed 12/08/25** University Estates on Worchester Drive. Caller states its on McCulloch in the turn lane to turn into University Estates. Caller states there are two entrances because Worchester is a horseshoe and its the one without the stop light.	12/05/2025 unit	(860303432) W/O#7496 12/08/25: pothole repaired by Asphalt Patch Truck. COMPLETED
9/25/17 203204	BI 5	(407) 435-5541 Catotti, Chris	MCCULLOCH RD	Intersection of Mcculloch Rd near Orion Blvd near	120 Citizen called to report pothole on Mcculloch Rd called Seminole county was told to call us	**Completed 09/26/17**	09/25/2017 DAVID SUROWITZ	Princess Poke-Clarke **1519900**09/26/17:Completed water drained down 09/26/17
8/10/17 202577	BI 5	None	MCCULLOCH RD	Intersection at West Mcclulloch Road and Rocking H	120 Citizen left vmail pot hole in road on W Mcclulloch Rd and Rocking Horse Lane	**Completed 08/15/17** ** 311 TICKET# 1479819** 08/15/17:Completed	08/10/2017 DAVID SUROWITZ	Princess Poke-Clarke City of Oviedo stated it's our portion of road
4/8/16 190060	BI 5	Anonymous,	MCCULLOCH RD	and Rouse Rd	120 Citizen states that there is a pothole on the roadway in the east bound lane. The hole is about 1ft	**Completed 04/12/16** 04/12/16: Completed - Sent to Seminole County 04/08/16	04/08/2016 greg miller	activity 1152076 deep and about 18 inchs wide. Address is for ref. only
12/30/19 227122	BI 5	n/a Walsh, Mary Ann	MCCULLOCH RD	across from Carillon United Methodist Church	120 near church large pothole but on OC side of road	**Completed 12/30/19** This section of McCulloch Rd between Rouse Rd and Alafaya Trail Seminole County maintains I have forwarded an email to them requesting that they repair it.	12/30/2019 SEMINOLE COUNT	Donna Reardon NO 311 was created, because this ticket is in the Seminole County
5/24/25 284551	BI 5	Anonymous, Anonymous	MCCULLOCH RD	Heading East in right turn lane towards Orion Blvd	120 Pothole	**Completed 06/03/25** This area of the road is in Seminole County	05/24/2025 SEMINOLE COUNT	Sheyra Concepcion UID# 3107571* This area of the road is in Seminole County

Inquires (Details)

3/9/2016-3/9/2026

Date/#	MF/CD	Inquiree	Road Name	Specific Area	Problem	Completion	Referred	Received By/Remarks
7/19/21 239272	BI 5	407 399 9906 Wood, Mike	MCCULLOCH RD	McCulloch Rd and Rocking Horse Dr	120 pothole left on road about 5-6 inches down. Please call with findings	**Completed 07/22/21**	07/22/2021 DAVID SUROWITZ	Anna Vilches **2354170** 7/29/21: Unit repaired Pothole Completed 7/22/21
3/30/16 189845	BI 5	(407) 277-8405 Buchanan, Eva	MCCULLOCH RD	pothole	120 Pothole on the McCulloch Rd between Riverton Dr and University Unitarian Society Church	**Completed 03/31/16** 03/30/16: Completed sen to SEMINOLE COUNTY	03/30/2016 SEMINOLE COUNT	activity 1143393 The address is used as a reference.
7/7/16 193015	BI 5	(407)491-2985 Hoag, Ron	MCCULLOCH RD	pothole on eastbound McCulloch Rd	120 pothole right before Rocking horse Rd and between Scala Point and Cardinal Glen.	**Completed 07/12/16** The address is used as a landmark. 07/12/16: Completed 07/07/16	07/07/2016 David Surowitz	Sandra Lezcano ref# 1217813
9/6/18 214697	BI 5	(407)823-3088 Dispatch, UCF Monica	MCCULLOCH RD	pot hole in front of the Orange County Fire Statio	120 There is a pot hole in front of the Orange County fire station #65 that need to be repaired.	**Completed 09/06/18** This may be Seminole County sending it over to be forward it need to be. It is one of the questionable areas on the map. Sent over per lead AS.	09/06/2018 DAVID SUROWITZ	SANDRA **1701357** 09/10/18:Referred to Seminole County Completed 09/06/18
3/2/21 236196	BI 5	4076655269 Shelton, Michelle	MCCULLOCH RD	MCCULLOCH RD EAST OF NORTH TANNER RD MANHOLE	300 Manhole cover loose	**Completed 03/02/21**	03/02/2021 DAVID SUROWITZ	SANDRA **2259834**3/4/21: unit secured manhole back Completed 3/2/21
5/2/24 270247	BI 5	4076209758 Cekala, Bill	MCCULLOCH RD	University Estates Subd.	300 Citizen called to request that the asphalt around a manhole cover be repaired since he observed it	**Completed 05/08/24** degraded and crumbling. According to citizen the manhole cover in question will westbound once you make a left from the University Estates Subdivision which he stated that the manhole cover will be about	05/02/2024 CHARLES GENTRY	SANDRA 2896621*50 feet from when you make the left turn out of his subdivision. CJJ // 05/08/2024: Checked 05/02/24, asphalt condition does not meet criteria for repair - Completed
9/9/24 276153	BI 5	N/A ANONYMOUS	MCCULLOCH RD	MCCULLOCH RD AND DEAN ROAD	300 Citizen states a citizen drove on dean road turning left nd the swear cover just	**Completed 09/09/24** opened . MCCULLOCH RD and N DEAN RD//09/09/2024:Checked 09/10/24 - no missing cover found - completed	09/09/2024 NO MISSING COVER FOUND	SANDRA **2969647*
7/3/25 286042	BI 5	Anonymous, Anonymous	MCCULLOCH RD	14700	300 The citizen stated the drains in the area needs cleaning	**Completed 07/03/25** because of flooding. He stated all drains that belongs to county in that area need cleaning to keep water flowing into the drains and not flooding the roads. This around Mcculloch Rd and Worchester	07/07/2025 Chris/Herson	Sheyra Concepcion UID#3128687 | per foreman 07/03/25 Drains on Worchester has already been cleaned CLOSE
12/4/18 216619	BI 5	(321)363-7979 Duby, Jim	MCCULLOCH RD	Mcculloch Rd and N Tanner Rd	335 Caller works with Seminole County report there is a missing manhole cover and the whole top	**Completed 12/04/18** is open. Caller described the manhole cover has a raised rim that is off and there is a 6 foot drop in to the sewer, he is unable to move the cover by hand requesting it is replaced to cover the manhole. this is located on the shoulder	12/04/2018 DAVID SUROWITZ	SANDRA **1742768** on the north side of McCullough Road near the incident address which is east of N tanner Road. Not within a gated community. LJ 12/10:Reset manhole cover - completed 12/04/18

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Date/#	MF/CD	Inquiree	Road Name	Specific Area	Problem	Completion	Referred	Received By/Remarks
7/25/21 239650	BI 5	4073839011 Hall, Alyson	MCCULLOCH RD	N Tanner Rd	410 grass needs to be mowed located on Mcculloch Rd and N Tanner Rd . SW	**Completed 07/25/21** UID# 2355770 7/29/21: Unit Referred this to Mowing Contract Section Completed 7/25/21	07/25/2021 Mowing Contract Section	D Reardon
10/27/23 265337	BI 5	4076206868 Gutierrez, Alfredo	MCCULLOCH RD	grass in the county easement on Mcculloch between	420 Please see # 2796589. Citizen is calling back and reporting that the job was not complete	**Completed 10/27/23** on OC side. Citizen is requesting to be contacted directly. Alfredo Gutierrez 4076206868NP Caller states the grass in the county easement on McCulloch between Dean and Rocking Horse needs to be mowed. Address is only for a reference.NP	10/27/2023 CONTRACT SECTION	sandra **2802229**10/27/23, Sent to inspector working for contract section. That road is on mowing contract. CLOSE
7/14/21 239285	BI 5	Casiano, Kaye	MCCULLOCH RD	Mcculloch Rd and N Tanner Rd	420 Citizen states on the county right of way the grass needs to be cut. No gate. No subdivision. SW	**Completed 07/14/21** Citizen states on the county right of way the grass needs to be cut. No gate. No subdivision. SW	07/14/2021 DAVID S.	SANDRA **2348942**7/20/21: Unit Referred area to Mowing Contract Section Completed 7/14/21
4/26/17 198769	BI 5	(407)482-1951 Rodriguez, Francisco	MCCULLOCH RD	McCulloch Rd and Rouse Rd	440 Citizen is requesting to have both of the large oak trees removed front he right of Way.	**Completed 05/03/17** He is concerned with the roots damaging his water line and driveway. Address if used for informational purposes	04/26/2017 DAVID SUROWITZ	SANDRA LEZCANO 311 TICKET# 1407016 05/03/2017:Checked and Called Citizen The tree's are on private property - Completed 04/26/17.
9/2/25 288407	BI 5	4077193033 Level, Joel	MCCULLOCH RD	McCulloch turning into Rocking Horse Road	440 Citizen reporting trees are low overhanging on roadway. Requesting trim	**Completed 12/12/25** Please respond to citizen.	09/02/2025 WOLF TREE	Ruth Santos **3159887**09/03/25 Unit will send to Wolf Tree for routine elevations.//12/12/25: Wolf Tre completed tree work completed
8/15/22 249327	BI 5	4074153214 Imo, Charles	MCCULLOCH RD	MCCULLOCH ROAD BETWEEN N DEAN ROAD	440 Citizen reports low hanging trees along McCulloch road between N Dean Road &	**Completed 10/24/22** Rocking Horse Road . Incident address used as reference point only. FS//8-22-22: Tree Contractor to Trim Trees By 9-16-22	08/15/2022 DAVID S.	SANDRA **2558232**COMPLETED BY TREE SERVICE10-24-22
7/13/18 212824	BI 5	(484)680-4053 Webb, Kyle	MCCULLOCH RD	right side from Tanner Rd to Native Dancer	440 Details: 2 large potholes on right side when traveling from Tanner to Native Dancer.	**Completed 07/13/18** One towards Tanner, one towards Native Dancer.	07/13/2018 DAVID SUROWITZ	SANDRA **1672121** 07/13/18: Repaired Potholes 7-13-18 Completed
10/17/22 252971	BI 5	4076454945 McKay, Danielle	MCCULLOCH RD	oak fell as well as broken limb across the street	440 Need to have removed a big oak that fell as well as the broken limb across the street and	**Completed 11/04/22** sidewalk on McCulloch Road at the Worchester Drive intersection.	10/17/2022 DANIEL W.	SANDRA **2585720** 11/04/22: Removed by OCFD - COMPLETED
2/8/23 256788	BI 5	4074153214 Imo, Charles	MCCULLOCH RD	trees needs to be trimmed over the middle lane of	440 Requesting (2) trees that are hanging over the middle lane of McCulloch Rd be trimmed,	**Completed 03/10/23** located 50 feet east of Rocking Horse Rd. The address is used as a close landmark. 02/10/23:Checked and sent to Wolf tree for routine removals. Completion date scheduled for 03/10/23	02/08/2023 TREE SERV.	SANDRA **2663710** 02/10/23:Checked and sent to Wolf Tree Serv. for routine removal - 03/10/23: Tree work completed

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Date/#	MF/CD	Inquiree	Road Name	Specific Area	Problem	Completion	Referred	Received By/Remarks
8/27/21 240385	BI 5	4077975520 Schmidt, Michell	MCCULLOCH RD	4974 N Alafaya Trail near CVS - This address only	440 resident requesting tree trimming, also wanted to know if this is area the county mows.	**Completed 09/30/21** Note: this issue was referred to us from Seminole County - Resident requesting tree trimming, also wanted to know if this is area the county mows.	08/27/2021 DAVID S.	Donna Reardon **2375496** 8/30/21: Tree Contractor pending quote for trimming/9/13/21 Tree Contractor to Completed by 9/30/21// 10-4-21: Completed 9/30/21
10/13/16 195639	BI 5	(407)701-6214 Snodgrass, Guy	MCCULLOCH RD	McCulloch Rd / Worchester DR	440 The caller stated that there are 4 large limbs hanging in the tree in front of	**Completed 11/21/16** his house on the right of way. The limbs are still in the tree but hanging loose over the sidewalk and road causing a hazard.	10/13/2016 10/13/2016	Sandra Lezcano REF# 1288954 10/13/2016: It will be scheduled to trim trees. 10/14/16: Scheduled meeting with tree contractor on 10/18/16 10/25/16: Pending contractor completion. 11/15/16: Scheduled tree contractor to start 11/16/16.11/28/16:Completed 11/21/16
8/11/20 231862	BI 5	3013269384 Berdanier, Jackie	MCCULLOCH RD	back of 14342 Stamford Circle on Mcculloch Rd	440 Tree going into her screen in pool, please cut limbs back, call w/findings	**Completed 08/11/20**	08/11/2020 DAVID SUROWITZ	Donna Reardon *2094071**8/12/20: Unit called citizen trees are maintianed by the HOA. Completed 8/11/20
4/26/19 219000	BI 5	951-265-6383 Aglugub, Armando	MCCULLOCH RD	behind 14928 Lymington Circle house in University	440 trees on Mcculloch Rd need trimming, touching his screen pool enclosure.	**Completed 04/29/19** would like a call and be there when trees are trimmed.	04/29/2019 DAVID SUROWITZ	Donna Reardon ** 1812129** 04/29/19:Unit called citizen to call HOA trees are behind sidewalk are HOA to maintain - Completed 04/29/19
5/16/23 259856	BI 5	5618661283 Bauman, Ross	MCCULLOCH RD	GARBAGE AND TIRES DUMPED ON MCCULLOCH RD	530 McCulloch Rd, Orlando - Details: Garbage and tires dumped here	**Completed 05/17/23** 05/17/23: Checked and removed debris - COMPLETED	05/16/2023 UNIT	SANDRA **2714340**
11/19/23 265854	BI 5	5618661283 Bauman, Ross	MCCULLOCH RD	TRASG DUMPED AT ECON RIVER DENTAL BY MCCULLOCH RD	530 4999 N Tanner Rd, Orlando Details: Trash dumped at econ river dental by	**Completed 11/19/23** mcculloch entrance//11/19/23, checked no debris found. CLOSE	11/19/2023 UNIT	SANDRA **2813802**
3/20/20 228626	BI 5	4079289908 Weiss, Arwen	MCCULLOCH RD	MCCULLOCH RD AND N TANNER RD	530 Caller states there is trash on the county easement along McCulloch Rd near N Tanner Road.	**Completed 03/20/20**	03/20/2020 DAVID SUROWITZ	SANDRA **1978967**3/23/20: Unit checked area and did not find any trash in area completed 3/20/20
4/2/24 269260	BI 5	4083403068 Garrison, Todd Alexander	MCCULLOCH RD	easter dead end of Mcculloch Rd	530 Citizen is requesting to McCullough Rd cleaned. Reporter stated at the eastern dead end of	**Completed 04/05/24** Mc Cullough there are numerous bags of yard waste and pruned tree limbs. 04/05/24:Checked and spoke to citizen. Trees are not on Orange County right of way. Completed	04/02/2024 TREE NOT IN O.C PROPERTY	SANDRA **2879961** 04/05/2024: Checked and removed debris. Completed
4/15/24 269687	BI 5	4073403062 Alexander, Todd	MCCULLOCH RD	MCCULLOCH RD and NATIVE DANCER LN	530 Citizen reports trash and debris including a discarded sofa and and furniture at the dead end	**Completed 04/16/24** of McCulloch Rd. Incident address used as reference point. //04/16/2024:Checked and removed debris - Completed	04/15/2024 UNIT	SANDRA **2887019*

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Date/#	MF/CD	Inquiree	Road Name	Specific Area	Problem	Completion	Referred	Received By/Remarks
10/10/19 224579	BI 5	Anonymous	MCCULLOCH RD	Along McCulloch Rd and ending at the intersection	530 Citizen stated that there is trash and debris all along both sides of McCulloch	**Completed 10/10/19** starting at the dead end of McCulloch and ending at the intersection of N Tanner Rd. RP	10/10/2019 DAVID SUROWITZ	Sandra *1904840 ** 10/14: Unit picked up Trash and debris 10-10-19 Completed .
11/27/18 216521	BI 5	407-359-7202 Davis, Kevin	MCCULLOCH RD	Native Dancer Ln	530 Citizen stated there are a bunch or mattresses and large boxes that was dumped at the intersection	**Completed 11/28/18** of Mcculloch Rd and Native Dancer Ln. Caller stated they are located on Mcculloch road in front of the Rybolt Reserves community entrance, requesting the item are remove from the side of the road.	11/27/2018 DAVID SUROWITZ	SANDA **1739755** The items are located on the right a way visible from the street, incident address used as reference only, not within a gated community. LJ 12/03:Picked up debris - Completed 11/28/18
3/14/22 244427	BI 5	4076370857 Kurilo, Thomas	MCCULLOCH RD	tires and trash debris located on the side of the	530 Citizen states there are tires and trash located on the side of the county's right of way.	**Completed 03/14/22** Located on the grassy area near the sidewalk and road. SW	03/14/2022 DAVID S.	SANDRA **2477177**3/21/22: Referred to Seminole County Completed 3-14-22
7/6/16 193011	BI 5	(407)679-1985 Peters, John	MCCULLOCH RD	McCulloch Rd	530 Citizen states there is a TV on McCulloch Rd on the O.C. side on the south side of the road.	**Completed 07/12/16** Address used for directional purposes only. 07/12/16: completed	07/06/2016 David Surowitz	Sandra Lezcano ref# 1217350
1/15/19 217236	BI 5	(47)960-8080 DeSilva, Ranwalage	MCCULLOCH RD	debris located on McCulloch Rd bt N Tanner and Nat	530 Citizen states there is trash and debris located on McCulloch Rd between North Tanner and	**Completed 01/22/19** Native Dancer that need to be cleaned up due to citizens states the trash is blowing in their yards.	01/15/2019 DAVID SUROWITZ	SANDRA **1759221** 01/22/19:Picked trash up removed 01/15/19 - Completed
6/20/23 261016	BI 5	5618661283 Bauman, Ross	MCCULLOCH RD	DEBRIS ON MCCULLOC RD	530 Details: garbage dumped in the county driveway at the entrance of the cul de sac	**Completed 06/21/23** 6/21/23: checked and removed debris. CLOSE	06/20/2023 UNIT	Sandra **2733324**
8/16/20 232011	BI 5	7148225374 Farrell, Seerina	MCCULLOCH RD	Mcculloch Rd	530 It looks like a piece of furniture fell off someone's truck. It's on the right of way in front	**Completed 08/17/20** of the west entrance of University Estates on McCulloch between Lockwood and Tanner	08/16/2020 UNIT	SANDRA **2098038** 8/17/20: Unit Checked area and debris was removed completed 8/17/20//8/18/20: Unit Under investigation Pending 8-18-20/8/19/20: Unit looked at Curb and water is draining Completed 8/18/20
1/5/24 266934	BI 5	n/a Anonymous	MCCULLOCH RD	MCCULLOCH RD and N TANNER RD	530 OCFR is calling to report that there is a dump truck that has dumped a load of dirt in the turn	**Completed 01/05/24** lane and its blocking traffic. They have sent OCFR to go and assist. JT// 01/05/2024: Checked and removed dirt - completed	01/05/2024 UNIT	SANDRA **2834399**
1/14/19 217166	BI 5	(407)453-0222 Weiss, Michael	MCCULLOCH RD	MCCULLOCH RD AND N TANNER RD	530 Reporter states there two mattresses and a large box along side Mccullah Rd and N Tanner Rd.	**Completed 01/14/19** Address used for directional purposes only. cb	01/14/2019 UNIT	SANDRA *1758481** 01/14:Picked up debris on 01/14/19 - completed
10/9/17 205980	BI 5	(703)798-5326 Scott, Shaun	MCCULLOCH RD	Mcculloch Rd and Native Dancer Ln	530 Solid Waste told me to contact you. Someone has thrown a mattress near the	**Completed 11/07/17** intersection, it has been there for months.	10/09/2017 DAVID SUROWITZ	SANDRA LEZCANO **1527614** 10/10/17:Will schedule o have picked up pending 10/10/17 11/08/17:Completed no mattress found 11/07/17 11/04/17:Completed no mattress found 11/07/17

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Date/#	MF/CD	Inquiree	Road Name	Specific Area	Problem	Completion	Referred	Received By/Remarks
1/26/23 256451	BI 5	4074168888 Lundquist, Carl	MCCULLOCH RD	COUNTY RIGHT OF WAY ON MCCULLOCH RD	530 The citizen claims there is something that is pile up on the county right of way.	**Completed 01/27/23** He is requesting Orange County come clean it up. He stated it has been there for 6 weeks. cp	01/26/2023 CHARLES GENTRY	SANDRA **2657030**01/27/2023: Checked - debris are in Seminole County - We will not remove - completed
9/19/18 215059	BI 5	(407)761-5075 Galindo, Anibal	MCCULLOCH RD	Mcculloch rd	530 The citizen stated that there is a lot rocks in the road on Mcculloch Rd at the intersection of	**Completed 09/19/18** The citizen stated that there is a lot rocks in the road on Mcculloch Rd at the intersection of Worchester Dr. He stated they may have fell off a truck but are denagerous because they become projectiles when run over. He stated one hit his car. cp	09/19/2018 DAVID SUROWITZ	SANDRA **1708331** 09/19/18: Picked up rocks in road completed 09/19/18
5/20/24 270789	BI 5	4083403062 Garrision, Todd	MCCULLOCH RD	DEBRIS ON THE EASTERN END OF MCCULLOCH RD	530 There is debris on the eastern end of McCullough Rd in Orange County. We also requested a sign	**Completed 05/22/24** for that area so no more dumping but have not heard any new updates. I know signs take time Further illegal dumping has occurred in the subject area. Palm fronds and random garbage are strewn about.	05/20/2024 UNIT	SANDRA **2906430** 5/22/24; Crew picked up debris. CLOSE
1/23/19 217282	BI 5	(407)359-7202 Davis, Kevin	MCCULLOCH RD	Intersection of McCulloch Rd and Native Dancer Ln	530 Trash in the County RoW	**Completed 01/28/19**	01/23/2019 DAVID SUROWITZ/ GARRY WILLIAMS	** 1762963** 01/28/19:Completed 01/24/19
6/11/21 238424	BI 5	4079135563 Mueller, Richard	MCCULLOCH RD	MCCULLOCH ROAD ABOUT 104 MILE WEST OF TANNER RD	715 Citizen states on Mcculloch Rd about a quarter mile west of Tanner Rd, which is between	**Completed 06/17/21** to the two entrances of University Estates, the sidewalk has buckled about 1 -2 feet causing a hazard.	06/11/2021 DAVID S	SANDRA **2331654**6/21/21: Unit Repaired Sidewalk Completed 6/17/21
7/1/25 285937	BI 5	Anonymous, Anonymous	MCCULLOCH RD	between N Orion Blvd and Worchester Drive	716 Broken and raised sidewalk	**Completed 07/22/25** the sidewalk is located on McCulloch Rd between N Orion Blvd and Worchester Drive (Intersection 27915)	07/01/2025 UNIT	Sheyra Concepcion UID#3127265 | per foreman 7/1/25 Checked; Placed cone to safe up area.7/22/25; Unit completed sidewalk repairs. CLOSE
4/11/16 190106	BI 5	(407) 306-7894	MCCULLOCH RD	University Estates	716 Caller stated that his wife fell and injured herself on an uneven sidewalk. He also stated that	**Completed 04/12/16** (407) 306-7894 for additionals information. 04/12/16: Completed - safe area up Until Contractor Starts Sidewalk repairs.	04/11/2016 greg miller - David Surowitz	activity 1154312 there have been marking on the sidewalks for approximately 2 years and no repairs have been made as of yet. They location is East entrance on west side of Worchester Drive approximately 150 ft of McCulloch Rd in the University Estates. he can be reaches
6/9/25 285065	BI 5	4072492646 Blake, Jim	MCCULLOCH RD	Alafaya Tl	716 Citizen states sidewalk needs to be repaired states it is broken off into smaller pieces.	**Completed 06/16/25**	06/09/2025 UNIT	Sheyra Concepcion UID#3115327 Already on assessment list 06/12/25
9/18/24 276503	BI 5	4072492646 Blake, Jim	MCCULLOCH RD	s/w lifted coming from Mcculloch rd on the eastsid	716 Citizen states the sidewalk is lifted. Coming from McCulloch Rd On the Eastside of Rouse Rd	**Completed 09/18/24** headed SB towards University Blvd. States it is a tripping hazard. GC	09/18/2024 UNIT	SANDRA **2975268** 09/18/2024:Crew repaired sidewalk 09/18/2024 - Completed

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Date/#	MF/CD	Inquiree	Road Name	Specific Area	Problem	Completion	Referred	Received By/Remarks
7/1/25 285938	BI 5	Anonymous, Anonymous	MCCULLOCH RD		716 raised sidewalk is located on McCulloch Rd between	**Completed 07/14/25** Worchester Drive (intersection 27915) and Ken Dixon Way, just east of the Orange County fires station 65	07/01/2025 UNIT	Sheyra Concepcion UID#3127270 | per foreman 7/1/25 Checked; Placed cone to safe up area. | per FO Unit repaired sidewalk 07/14/25 Close
8/10/22 249153	BI 5	407-836-7842 Olson, Joni	MCCULLOCH RD	sidewalk and lighting	716 repairs of the sidewalk along McCulloch from Lockwood to Tanner on the south side of the street	**Completed 08/10/22** It is the safety of the cyclists & walkers on this path	08/10/2022 charles gentry	linda kroom note this ticket was never received
8/31/22 250000	BI 5	4079672099 Garvey, Michael	MCCULLOCH RD	11601 - 11605 Mcculloch Road	716 Very uneven sidewalk above drainage pipe in front of University Unitarian Church on McCulloch.	**Completed 09/12/22**	08/31/2022 DAVID S.	SANDRA **2567630**9-7-22: Unit repairing area week of 9-6-22 9-12-22: Completed 9-12-22
8/23/18 214304	BI 5	N/A Caller, Anonymous	MCCULLOCH RD	MCCULLOCH RD AND WORCHESTER DR	880 14434-14672 McCulloch Rd, Orlando, Fl 32826	**Completed 08/24/18** Road not draining water covering entire Orange County side of street reported as Anonymous	08/23/2018 DAVID SUROWITZ	SANDRA **1693839** 08/24/18:Foreman went and checked area and took pictures and the pictures reflect there was no water - completed
10/10/24 278348	BI 5	n/a ANONYMOUS	MCCULLOCH RD	mcculloch rd and riverton drive	880 Caller stated Lake Ruth is overflowing into neighborhood called Riverchase (aka University	**Completed 10/10/24** Pines) and specific street is called Riverton Dr. Orlando, FL. 32817	10/10/2024 dev eng.	**2990828** CHECKED 10/10/24; SPOKE TO HOMEOWENR SENT T DEV. ENG. COMPLETED
9/10/17 203782	BI 5	(000)000-0000 Caller, Anonymous	MCCULLOCH RD	FLOODING	880 Flooding at the intersection of McCulloch Rd and North Orion Blvd.	**Completed 09/13/17**	09/10/2017 DAVID SUROWITZ	**311 ticket# 1501253** Intersection: Mcculloch Rd and North Orion Blvd 09/13/2017: Completed - Water drained - need picture

62 Total Inquiries on this Report