STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

TECHNICAL REPORT COVERSHEET

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ENVIRONMENTAL
MANAGEMENT
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DRAFT CONCEPTUAL DRAINAGE DESIGN REPORT

Florida Department of Transportation

District 5

S.R. 60 Project Development and Environment (PD&E) Study

Limits of Project: Prairie Lake Road to Florida's Turnpike

Osceola County, Florida

Financial Management Number: 452574-1

ETDM Number: 14563

Date: June 2025

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the Florida Department of Transportation (FDOT) pursuant to 23 U.S.C. § 327 and a Memorandum of Understanding dated May 26, 2022 and executed by the Federal Highway Administration and FDOT.

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Issue and revision record

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1 Introduction

1.1 Purpose

Mott MacDonald (MM) has been authorized by Volkert, Inc. on behalf of the FDOT to prepare planning documents for the SR 60 improvements in Osceola County. This project begins at Prairie Lake Road on the east side of Lake Kissimmee and ends just west of the bridge crossing over Florida's Turnpike (SR 91).

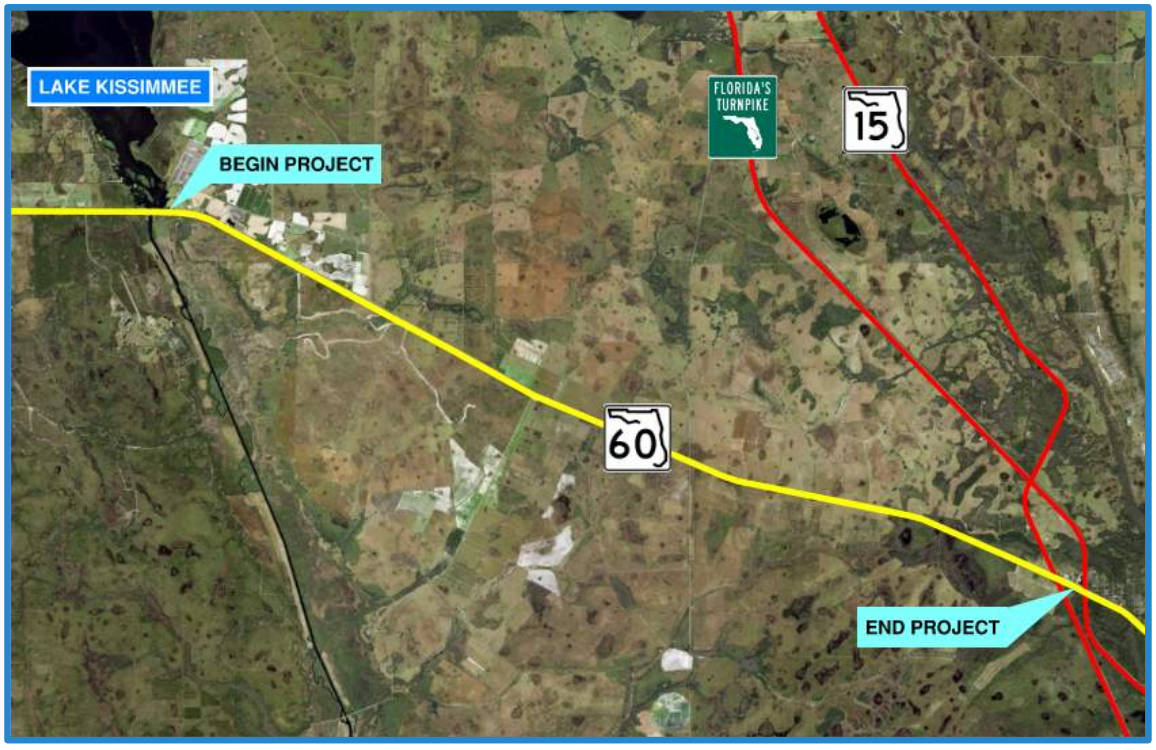
The development of a Conceptual Drainage Design Report is essential in the preparation of the SR 60 Project Development and Environmental (PD&E) Study. The primary goal of the report is to provide information regarding potential stormwater management facilities or pond locations. It also serves to inform the FDOT of the background information including soils, wetlands, and floodplains and to identify potential impacts that the proposed improvements might cause to the project area.

This report contains drainage calculations, references, research and assumptions used in the process to evaluate stormwater requirements for all basins within the project limits.

1.2 Project Description

This project involves the improvement of SR 60 from Prairie Lake Road to SR 91 in Osceola County, approximately 20 miles in total mainline length. A project location map is provided in **Figure 1**.

Figure 1 – Project Location Map



The existing roadway is classified as a rural principal arterial and is a two-lane, undivided roadway consisting of two 12-foot travel lanes with 4-foot outside paved shoulders in each direction.

The proposed improvements include widening to four, 12-foot travel lanes with 5-foot paved shoulders on both sides of the roadway. A median will be constructed to provide division between the opposing travel lanes. The purpose of the proposed roadway is to improve safety with considerations to the Target Zero Initiative. The project further aims to improve regional mobility by adding capacity to the mainline, which also increases safety for motorists and bicyclists, as well as increase emergency evacuation accessibility in the surrounding areas.

This project is located in Sections 1, 2, 11, and 12, Township 31 South, Range 31 East, Sections 1, 7, 8, 12, 15, 16, 17, 18, 22, 23, 25, 26, 29, 30 31, 32, 33, and 34, Township 31 South, Range 33 East, and Sections 5, 6, 8, 9, 10, 14, and 15, Township 32 South, Range 34 East. Elevations in this report are based on the 1988 North American Vertical Datum (NAVD).

2 Existing Conditions

2.1 Roadway

The existing typical section from the begin project to US 441 is a two-lane, undivided roadway consisting of two 12-foot travel lanes, as well as 4-foot outside paved shoulders in each direction. Within these limits, there are four sections of roadway that widen out to provide a passing lane. There are two passing lanes for both eastbound and westbound directions. These passing lanes are typically about 1 mile in length and provide an additional 12-foot wide lane.

Between US 441 and SR 91, the existing roadway uses a three-lane section with a two-way left turn lane separating the eastbound and westbound travel lanes. East of the SR 91 on and off-ramps, the roadway transitions to a four-lane, divided roadway prior to the overpass bridges over SR 91.

2.2 Drainage

Existing drainage infrastructure and patterns were evaluated by review of the project location through existing as-built plans and other available FDOT construction plans, Straight Line Diagrams (SLD) of Road Inventory, Geographic Information System (GIS) maps, and Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs). Further existing permit information was obtained from the St. Johns River Water Management District (SJRWMD) and the South Florida Water Management District (SFWMD).

The project limits span over six primary drainage basins and discharge into two Hydrologic Unit Code (HUC) Basins. Lake Kissimmee, Blanket Bay Slough and Skeeter Slough drain into the Kissimmee River (HUC 03090101). Lokosee ditches, unnamed ditch near Yeehaw Junction, and unnamed tributary to Cow Log Branch drain into the Upper St. Johns (HUC 03080101).

The land use is primarily agriculture with commercial and mixed use near US 441 and SR 91. The existing drainage for SR 60 from Prairie Lake Road to SR 91 consists predominantly of flat, open ditches that convey runoff to existing cross drain locations. Runoff generally leaves the right-of-way at these cross drain locations to either an existing channel or a man-made ditch. Much of the surrounding area is used for agricultural purposes and irrigation ditches or canals are present just outside the existing right-of-way in many locations on the project. Most of these irrigation canals are located on the north side of the roadway and many do not receive any flow from the Department's right-of-way unless under an extreme event. These locations are generally assumed to be isolated basins that contain runoff from offsite areas. However, there are some locations where runoff does leave the R/W and drain into these man-made canals. Refer to **Appendix D** for Drainage Maps of the project area.

2.2.1 *Basin Divides and Outfalls*

The existing drainage divides were determined using one-foot contours generated from LiDAR data from NOAA Coastal Service Center's Digital Coast Data Access Viewer and the USGS topographic quad maps.

Overall, the project was delineated into 27 mainline subbasins as shown in the Drainage Maps. All basins are considered open basins. **Table 1** below lists the limits of the existing drainage basins and the associated cross drains.

Table 1 – Basin Limits and Cross Drains

Basin No.	Existing Basin Limits		Waterbody ID	Watershed	WMD	Outfall	
	From Station	To Station				Type	Station
1	14+10.00	72+50.00	3183E2	Lake Kissimmee	SFWMD	Ditch	20+00
2	72+50.00	158+75.00	3186G	Blanket Bay Slough	SFWMD	30" CD	134+63
3	158+75.00	188+45.00	3186G	Blanket Bay Slough	SFWMD	30" CD	179+38
4	188+45.00	214+45.00	3186G	Blanket Bay Slough	SFWMD	36" CD	197+93
5	214+45.00	257+00.00	3186G	Blanket Bay Slough	SFWMD	30" CD	231+91
6	257+00.00	290+75.00	3186G	Blanket Bay Slough	SFWMD	Bridge	290+75
7	290+75.00	324+90.00	3186G	Blanket Bay Slough	SFWMD	Bridge	290+75
8	324+90.00	357+30.00	3186G	Blanket Bay Slough	SFWMD	24" CD	326+17
9	357+30.00	386+80.00	3186G	Blanket Bay Slough	SFWMD	24" CD	359+88
10	386+80.00	402+50.00	3186G	Blanket Bay Slough	SFWMD	30" CD	391+46
11	402+50.00	477+55.00	3186F	Skeeter Slough	SFWMD	36" CD	415+23
12	477+55.00	487+00.00	3186F	Skeeter Slough	SFWMD	24" CD	481+92
13	487+00.00	551+95.00	3186F	Skeeter Slough	SFWMD	8'X3' CBC	540+56
14	551+95.00	570+30.00	3186F	Skeeter Slough	SFWMD	24" CD	562+90
15	570+30.00	611+70.00	3186F	Skeeter Slough	SFWMD	8'X3' CBC	584+20
16	611+70.00	632+75.00	3186F	Skeeter Slough	SFWMD	30" CD	626+59
17	632+75.00	670+60.00	3186F	Skeeter Slough	SJRWMD	30" CD	638+99
18	670+60.00	695+10.00	3186F	Skeeter Slough	SJRWMD	30" CD	684+77
19	695+10.00	757+40.00	3186F	Skeeter Slough	SJRWMD	30" CD	705+90
20	757+40.00	812+90.00	3186F	Skeeter Slough	SJRWMD	24" CD	782+44
21	812+90.00	869+55.00	3148	Unnamed Ditch Near Yeehaw Junction	SJRWMD	6'X3' CBC	860+86
22	869+55.00	889+65.00	3143	Lokosee Ditches	SJRWMD	6'X3' CBC	872+89
23	889+65.00	915+80.00	3148	Unnamed Ditch Near Yeehaw Junction	SJRWMD	36" CD	912+04
24	915+80.00	937+90.00	3148	Unnamed Ditch Near Yeehaw Junction	SJRWMD	36" CD	929+65
25	937+90.00	999+20.00	3148	Unnamed Ditch Near Yeehaw Junction	SJRWMD	8'X5' CBC	959+64
26	999+20.00	1046+35.00	3148	Unnamed Ditch Near Yeehaw Junction	SJRWMD	CD – Size Unknown	1039+29
27	1046+35.00	1079+70.00	3148	Unnamed Ditch Near Yeehaw Junction	SFWMD	19"x30" CD	1068+00

2.3 Soils

Soils information was determined from the Soil Survey for Osceola County by the National Resources Conservation Service (NRCS). The soils within the project limits vary by type but are fairly consistent as defined from their Hydrologic Group. Group A soils have a high infiltration rate, whereas Hydrologic Soil Group A/D have a high or relatively high infiltration rates when the soils are drained, but very slow rate when undrained and are classified as Hydrologic Group D. **Table 2** below presents the most prominent soils located within the project area and their associated physical properties. As seen, these soils are all within Group A/D.

Table 2 – Project Soils

Project Soils	Hydrologic Group	Depth to Water Table (ft)	Capacity of the Most Limiting Layer to Transmit Water - K_{SAT} (in/hr)
Smyrna Fine Sand (0 to 2 Percent Slopes)	A / D	0.5 to 1.5	0.6 to 6
EauGallie Fine Sand (0 to 2 Percent Slopes)	A / D	0.5 to 1.5	0.06 to 0.20
Malabar Fine Sand (0 to 2 Percent Slopes)	A / D	0.25 to 1.5	2 to 6
Myakka Fine Sand (0 to 2 Percent Slopes)	A / D	0.5 to 1.5	0.57 to 5.95

The NRCS soils report for Osceola County is included in **Appendix A**.

2.4 Wetlands

The wetlands within the project limits have been determined by a desktop analysis of the National Wetlands Inventory database. Most of the wetlands are located within the existing floodplains, which have been avoided to the maximum extent possible. Therefore, potential impacts to the existing wetlands have also been avoided and minimized. Complete site investigations for wetlands will be completed on preferred alternatives and within the proposed roadway footprint prior to final pond selection.

2.5 Floodplains

Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA) were reviewed to determine potential floodplain involvement within the project limits. The current effective FIRMs for Osceola County dated 2013 were reviewed and showed encroachments into Zone A in many areas within the project limits and into Zone AE in one location. Special Flood Hazard Zone AE has a base flood elevation (BFE) determined and in this case is the area connected to Lake Kissimmee. The BFE for this floodplain is elevation 54. Comparison of the LiDAR data showed that the mapped floodplain does not match the existing contours of the surrounding area. Therefore, a revised floodplain shape has been shown on the Drainage Maps showing the area below elevation 54 feet. Special Flood Hazard Zone A is

defined as "No base flood elevation determined". Elevations for these Zone A areas were estimated using the LiDAR data. Refer to **Appendix B** for the official FIRM Maps.

As required by the water management districts, projects must avoid a net reduction of flood storage volume within the 100-year floodplain. Based on the improvements for this project as well as the ultimate typical section of the roadway, all designated floodplains within the right-of-way are expected to be impacted. Therefore, floodplain compensation will be required. Floodplain Compensation (FPC) areas have not been sited; however, preliminary floodplain compensation volumes have been calculated in the Location Hydraulics Report.

2.6 Utilities

A 36" gas main owned by Florida Southeast Connection is present along SR 60 for most of the project limits. The gas main crosses Lake Kissimmee on the north side of SR 60 and then about 600 feet west of Prairie Lake Road it turns and crosses to the south side of the roadway. From there the gas main runs within a 50' easement along the southern right-of-way line. The 36" line turns at US 441 and continues south along the west side of US 441.

Peace River Electric Cooperative has overhead electric lines that run along SR 60 for much of the corridor. The overhead lines are on the south side of the roadway from the bridge over Lake Kissimmee until just west of Prairie Lake Road and then it crosses to the north. Near Blanket Bay Slough the overhead lines cross to the south and then cross back to the north on the east side of the bridge. The overhead lines continue on the north side until about 0.5 mile west of Peavine Road where it turns north towards an existing communications tower. Overheads lines are not present again until Rohde Road and then they run along the north side of SR 60 toward the east to US 441. The overhead lines cross to the south side at the US 441 intersection and then cross back to the north side where they run to the end project.

From US 441 to the on/off ramp to Florida's Turnpike (SR 91) there are several utilities present. These consist mostly of communication lines, such as buried telephone and buried fiber for AT&T, Century Link, and Crown Castle. There are also buried electric and buried fiber lines related to ITS, signals, and lighting facilities operated by Osceola County.

3 Proposed Conditions

3.1 Proposed Roadway Configuration

The proposed roadway improvements strive to improve safety by accounting for the Target Zero Initiative. The capacity and operations for this roadway will be improved by utilizing both rural and urban typical sections.

For much of the project, the existing roadway will be reconstructed to use a rural typical. This will include two 12-foot lanes and a 5-foot paved shoulder in each direction. A 40-foot median will constructed to divide the eastbound and westbound lanes. Most of the project will utilize a 15-foot wide ditch to provide linear retention for stormwater requirements. This ditch is proposed to be constructed 3-feet above the seasonal high water level to provide sufficient separation from the water table and improve recovery performance. A modified version of this typical section is proposed to be used at the beginning of the project to reduce the footprint and impacts of the roadway. This modified rural typical section will have the same roadway characteristics, but will not use linear retention for stormwater requirements. Instead, a minimal ditch will be constructed on either side of the roadway to collect runoff. A closed drainage system will be used to collect runoff from this ditch and convey it to an offsite stormwater pond.

As the roadway nears US 441, the typical section will transition to an urban typical section to minimize impacts. This typical section will consist of two 12-foot lanes and a 7-foot bike lane on each side of the roadway separated by a 22-foot median. Type E curb will be used along the median and Type F curb constructed along the outside of the roadway. 6-foot sidewalks will be constructed on either side directly behind the curb and gutter. Figures 2, 3 and 4 illustrate the proposed typical sections for the roadway.

Figure 2 – Roadway Typical Section 1

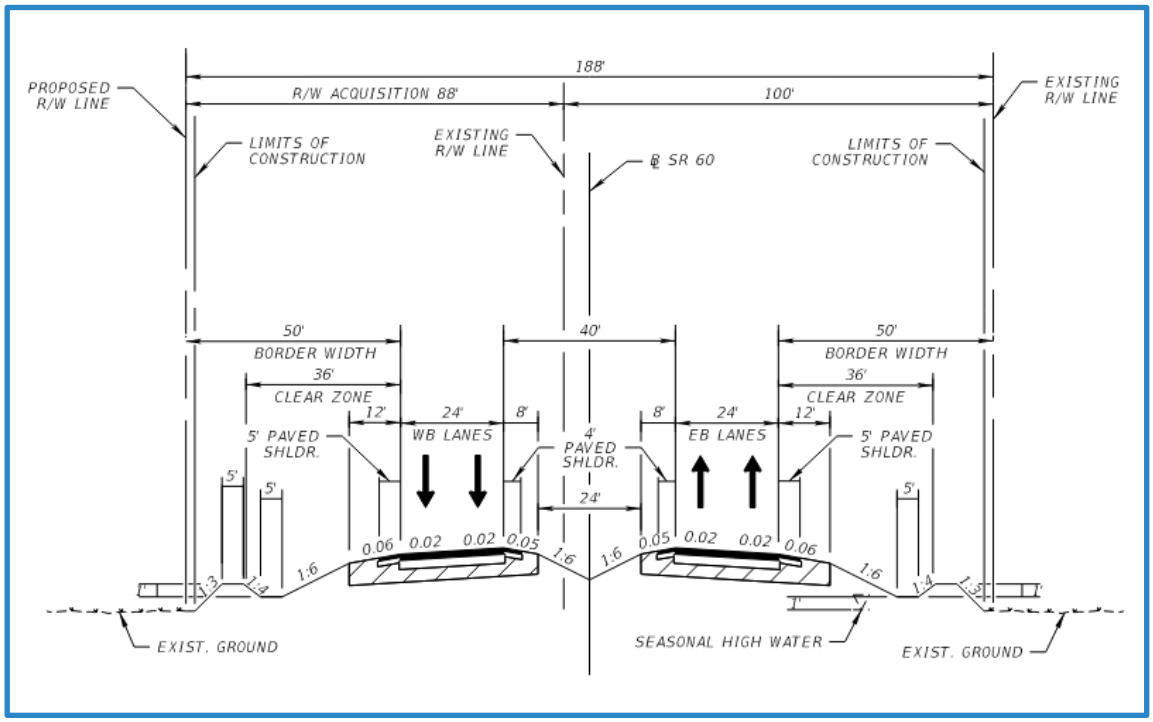


Figure 3 – Roadway Typical Section 2

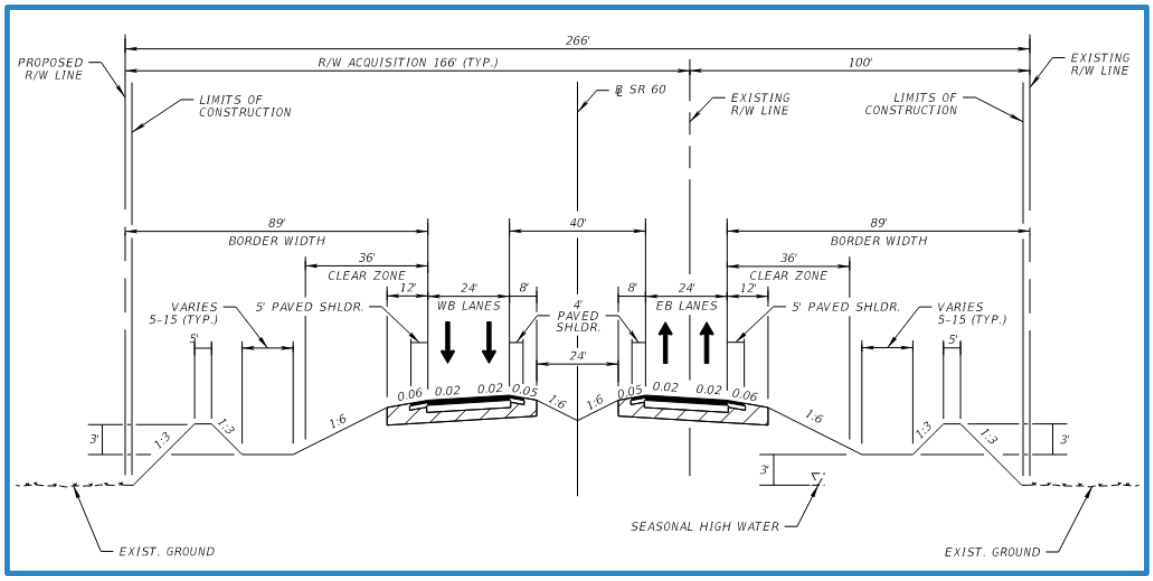
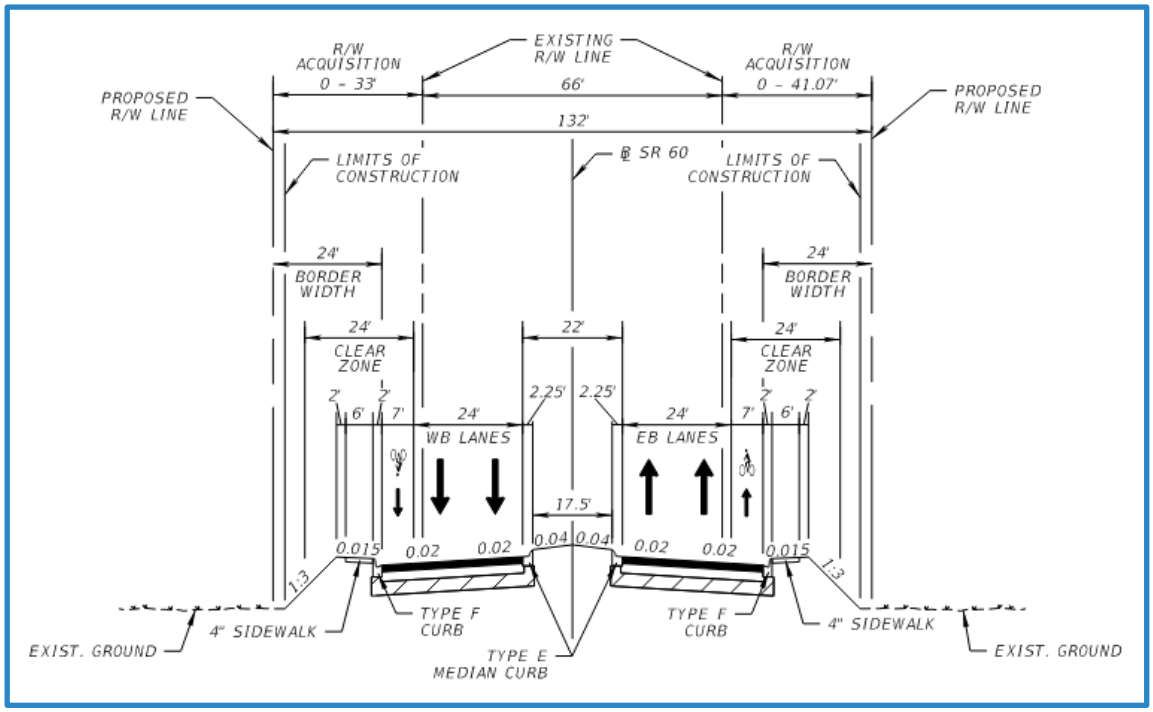


Figure 4 – Roadway Typical Section 3



3.2 Proposed Drainage

Most of the project will utilize linear retention on either side of the roadway for stormwater requirements. Runoff from the median will be conveyed in a ditch and collected in ditch bottom inlets and piped under the roadway to the linear retention pond on either side of the roadway. The linear retention systems will be sized to provide sufficient treatment and attenuation volume

for the basins. Outfall systems will discharge runoff from the linear treatment systems to the existing outfall location, which is typically near the existing cross drains.

As mentioned in the previous section, the beginning portion of the project will have a rural typical section but will not use linear retention for stormwater. This section of roadway will instead have minimal roadside ditches with an inlet system within the ditch to collect and convey runoff to an offsite stormwater pond. Similarly, the end of the project will use an urban typical section that will have a closed system to collect runoff along the curb and gutter and this system will be piped to an offsite stormwater pond.

Offsite drainage conditions for all basins will be maintained and routed to existing cross drains and outfalls. Unless unavoidable, these offsite basins will not be co-mingled with the onsite runoff from SR 60.

4 Governing Regulations

The final stormwater facilities will be required to meet the design criteria of the FDOT, and the regulatory requirements of the statewide Environmental Resource Permit (ERP) program. These requirements include regulations for both water quality and quantity of discharge and will dictate the required size, storage capacity and outfall design for stormwater ponds. This project within Osceola County falls within the jurisdiction of the SFWMD and SJRWMD. Criteria for both agencies is discussed below and shown in the pond sizing calculations. Per section 8.3 of the most recent version of the Applicant's Handbook, Volume I, the new stormwater quality nutrient permitting requirements, "shall not apply to public transportation projects which have completed a PD&E Study prior to June 28, 2026." Later in section 8.3 it also states the new stormwater rule, "shall apply to public transportation projects commencing the PD&E study phase, as described in PD&E Manual, after June 28, 2024. Per coordination with FDOT, it was determined that this project will meet these exemption requirements and not be required to meet the new stormwater quality nutrient permitting requirements. Therefore, previous versions of SFWMD and SJRWMD applicant's handbooks were used to gather permitting requirements for the project.

4.1 Water Quality Requirements

All FDOT projects must comply with the prevailing statewide regulations, including Chapter 62-330 of the Florida Administrative Code (F.A.C.). The required volume of runoff to be treated from a site and is determined by the type of treatment system used, i.e. wet detention, detention with effluent filtration, on-line retention or off-line retention treatment systems.

SFWMD requires the following:

- Wet Detention – treat one inch of runoff over the drainage area or 2.5 inches times the impervious area (excluding water bodies) (whichever is greater)
- Dry Retention – treat the runoff for 50% of the 1st inch of runoff from the developed project or 50% of 2.5" over the impervious area (whichever is greater)
- Impaired Waterbodies – Per an agreement between SFWMD and FDOT, SFWMD will not require 150% of the treatment volume for FDOT projects within impaired waterbodies. However, a pre and post condition nutrient loading analysis will be required for basins within an impaired waterbody to demonstrate that the post-condition nutrient load discharge is less than the pre-development nutrient load discharge. If the post-development pollutant load discharge is increased, then additional best management practices would be required to offset any increase. Refer to **Appendix E** for correspondence related to this agreement between SFWMD and FDOT.

SJRWMD requires the following:

- Wet Detention – treat one inch of runoff over the drainage area or 2.5 inches times the impervious area (excluding water bodies) (whichever is greater)
- Offline Retention – treat the runoff from the first inch of runoff from the developed area or 1.75 inches over the impervious area (whichever is greater)
- Online Retention – provide an additional one-half inch of runoff from the drainage area over that volume specified for offline treatment.

Further, if a project discharges directly into an Outstanding Florida Water (OFW), both agencies state that 50% additional treatment volume will also be required.

4.2 Water Quantity Requirements

The SFWMD and SJRWMD Applicant's Handbook Volume II (Applicant's Handbook) states that reasonable assurance must be provided for that the proposed construction, alteration, operation, maintenance, removal or abandonment of the works will:

- Not cause adverse water quantity impacts to receiving waters and adjacent lands;
- Not cause adverse flooding to on-site of off-site property;
- Not cause adverse impacts to existing surface water storage and conveyance capabilities; and
- Not adversely impact the maintenance of surface or ground water levels or surface water flows established pursuant to Section 373.042, Florida Statue (F.S.).

Projects located within an open drainage basin, the allowable discharge is 1) the historic discharge, which is the peak rate at which runoff leaves a parcel of land by gravity under existing site conditions, or the legally allowable discharge at the time of permit application; or 2) amounts determined in previous District permit actions relevant to the project.

If SFWMD is determined to be the responsible agency, the design storms below must be analyzed.

- Open Basins
    - 25-year, 72-hour storm using SFWMD rainfall map

If SJRWMD is determined to be the responsible agency, the design storms below must be analyzed. All storms will use an antecedent moisture condition II. Allowable 24-hour storm rainfall depths and distributions are discussed in Section 35.1 of the SJRWMD Applicant's Handbook. Section 35.2 of the handbook provides the allowable rainfall depths and distributions for the 96-hour storm.

- Open Basins
    - Mean annual 24-hour storm for systems serving both of the following:
        - New construction area greater than 50% impervious (excluding waterbodies)
        - Projects for the construction of new developments that exceed the thresholds in paragraphs 62-330.020(2)(b) or (c), F.A.C.
    - 25-year, 24-hour storm
- Closed Basins
    - 25-year, 96-hour storm (ensure post developed volume of runoff does not exceed the pre-developed volume of runoff)

FDOT requirements will also be met for these proposed stormwater ponds. Open basins shall meet stage and attenuation requirements for the critical duration (1-hr through 24-hour) up to and including the 100-year frequency. Closed basins shall meet stage and attenuation requirements for the critical duration (1-hr through 10-day), up to and including the 100-year frequency. Closed basins must also ensure that the post developed volume of runoff does not exceed the pre-development volume of runoff for these events.

4.3 Additional Design Requirements

The FDOT and the statewide ERP program have several criteria which will impact the amount of right-of-way required for stormwater treatment. Some of these FDOT criteria are:

- Closed Basins – Retention Volume should recover at a rate that ½ of the volume is available in 7 days with the total volume available in 30 days.
  - Soil conditions may limit recovery rates of some ponds. A secondary approach and criterion may need to be used in problematic basins with approval from the District 5 Drainage Engineer. SJRWMD typically requires that a second 25-year, 96-hour storm be run to ensure that the pond can handle another design storm and keep the stage within the pond.
- A minimum of 20-ft horizontal distance for pond maintenance between Normal Pool Level (NPL) and adjacent easement or right-of-way line.
- A minimum of 15-ft within this pond maintenance area shall be at a slope of 1:8 of flatter.
- A 1-ft minimum freeboard is required between the maximum design pond stage and inside maintenance berm top of bank.
- Fences should only be installed when a documented maintenance need for restricted access has been demonstrated.

5 Proposed Stormwater Management Facilities

Stormwater runoff will be directly treated and attenuated per regulatory requirements. Preliminary pond sizes have been estimated using the treatment volumes and design storms discussed in Section 4 for open and closed basins. All basins within the project limits are open basins. As discussed earlier in the report, linear retention will be utilized for a majority of the project. The volume provided in these linear facilities was checked to ensure that sufficient treatment and attenuation volume can be provided within the proposed right-of-way. A few basins will not utilize linear treatment and instead use offsite, wet detention ponds. Ponds have been sized and sites evaluated for these basins. Refer to **Appendix C** for the pond sizing calculations of all basins. Drainage maps are provided in **Appendix D** and show the existing drainage patterns as well as the proposed pond alternative sites for those basins not using linear facilities within the proposed right-of-way. The right-of-way basins shown are for a north shift alternative as that is the current preferred alignment. All basins and calculations were completed assuming this alignment alternative.

5.1 Basin 1

Basin 1 includes the area draining west into Lake Kissimmee. The limits of this project begin at Prairie Lake Road, but the limits of Basin 1 begin prior to this limit as it is assumed all area east of the bridge over Lake Kissimmee will be conveyed and treated in a single stormwater pond. Currently, the north side of SR 60 drains back to Lake Kissimmee through a roadside ditch from about Station 72+00. About 16 acres of offsite area on the north side of SR 60 drains into the right-of-way and combines with the roadside ditch. The south side of SR 60 drains back west from Station 87+50 toward the bridge and leaves the right-of-way prior to the access driveway east of the bridge.

The Kissimmee River basin, which is just downstream of the bridge over Lake Kissimmee is classified as an impaired waterbody. As discussed in Section 4, additional treatment volume will not be required for basins within an impaired waterbody. However, a pre- and post-condition nutrient loading analysis will be required to ensure no increase in the nutrient load discharge. The Kissimmee River is also considered an Outstanding Florida Water. Due to the proximity of the proposed discharge likely being a direct discharge, it is assumed that 50% additional treatment volume and permanent pool volume should be provided for proposed ponds within Basin 1.

FEMA has a zone AE Floodplain designated for the area directly upstream and downstream of the bridge over Lake Kissimmee. Being zone AE, this floodplain does have a base flood elevation (BFE) which has been determined to be 54-feet. Comparison of the mapped floodplain area to the existing LiDAR contours revealed the mapped floodplain encompasses land area above 54-feet. As shown on the Drainage Map within Basin 1, a revised floodplain area has been shown that follows the contour for elevation 54-feet. The PD&E Study for SR 60 from CR 630 to East of the Kissimmee River Bridge (FPID 433856-1) stated that through coordination with SFWMD it was determined that the Kissimmee River Revitalization Project would cause an increase of approximately 1.5-feet to the current maximum stages. Per correspondence from SFWMD, a peak stage of 55.7-feet is assumed once the Kissimmee River Revitalization Project is completed.

5.1.1 *Pond Alternatives for Basin 1*

As discussed earlier in the report, Basin 1 at the beginning of the project will not use linear retention for stormwater requirements. Therefore, three pond alternatives have been identified for Basin 1. Considerations for pond sites included floodplain, wetland, and utility impacts among others. Preliminary pond sizing calculations show that a site of approximately 3.7 acres would be necessary for stormwater needs. This includes 50% additional treatment volume for discharge into an OFW.

Pond 1-1 is located on the north side of the roadway, just west of Prairie Lake Road. This area is within the mapped FEMA floodplain zone AE, but as discussed the existing contours of this area are all above the BFE of the floodplain. Additionally, this site is also above elevation 55.7-feet, which is the peak stage that is assumed once the Kissimmee River Revitalization Project is completed. Therefore, a stormwater pond could be sited here and not cause any adverse impacts to the floodplain or adjacent properties with increases in stage due to these modifications. The site is currently used for agricultural purposes and is generally sloping northwesterly toward Lake Kissimmee. West of the site is the existing 36" gas main that crosses from the north side to south side of SR 60 around Station 42+00. Overhead electric lines are present on the pond site as it appears these poles connect power from SR 60 to properties down Prairie Lake Road. These overhead lines would likely need to be relocated if this pond is selected.

Pond 1-2 is located south of SR 60 directly across from **Pond 1-1**. Similar to the first site alternative, this area is within the mapped FEMA floodplain zone AE. However, the existing elevations on the site range from 55 to 56 feet (above the BFE of 54 feet). Therefore, a stormwater pond could be sited on this location and not cause any adverse impacts to the base flood elevation. However, it would add fill below elevation 55.7-feet which could adversely impact adjacent parcels once the modifications from the Kissimmee River Revitalization Project are complete. Further coordination with SFWMD and other agencies may be needed to determine these impacts. The site is undeveloped and has few trees present. The 36" gas main runs along the south right-of-way within a 50' easement. A piped inflow and outflow connecting SR 60 to the pond site would need to be constructed through this easement and be careful to avoid any impacts to the gas main.

Pond 1-3 is also located south of SR 60 but is situated east of Prairie Lake Road. This site is located outside of the mapped FEMA floodplain zone AE. The site is completely wooded and existing ground is between 57 and 58 feet in elevation. The 36" gas main is also between the pond site and SR 60 at this location and would require careful coordination and construction to avoid any impacts to the gas line from a needed drainage inflow and outflow system.

Pond 1-1 is the preferred pond alternative due to proximity to the outfall and avoidance of potential conflicts with the 36" gas main for drainage systems into and out of the proposed pond.

5.2 Linear Retention Ponds

Basins 2 through 25 are all proposed to use linear retention to meet stormwater requirements for the project. General characteristics of these basins will be discussed as it relates to special considerations in offsite flows, outfalls, and other factors.

The pond sizing calculations for the linear retention ponds are included in **Appendix C**. Calculations for these linear facilities were set up to ensure that sufficient treatment volume and attenuation volume will be provided in the proposed typical section. To complete this, the pre and post basins were broken up into a roadway basin area and linear pond area. The roadway basin area comprises of the area between the proposed EB and WB shoulder points which is

112-feet wide for the proposed typical. The remaining 154-feet of the 266-foot proposed right-of-way was classified as the linear pond area. For the pre-condition, it was assumed that 32-feet of the roadway basin area was impervious. There are several locations throughout the project with passing lanes that produce additional impervious area, but a typical width of 32-feet was used to be conservative on the amount of runoff produced in the pre-condition. The remaining area of the roadway basin and the entire linear pond area was assumed to be open space.

For the proposed condition, it was assumed that 78-feet of the 112-foot wide roadway basin would be impervious. This conservatively included 12-feet of additional impervious to account for any turn lanes or median openings. The remaining roadway basin was assumed to be open space. Half of the linear pond area was assumed to be water with a curve number (CN) of 100, while the other half was classified as open space. Using the pre and post areas and CN's a pre and post runoff was calculated. These values were used to ensure sufficient volume was provided in the linear retention facilities. Geometry of the dry linear retention ponds was input to estimate the amount of volume provided. These characteristics included:

- Pond Bottom Width = 15 feet
- Pond Front Slope = 1V:6H
- Pond Back Slope = 1V:3H
- Maximum Treatment Volume Depth = 1 foot
- Maximum Allowable Pond Depth = 2 feet
- Desired Freeboard = 1 foot
- Assumed Vertical Separation Between Exist. Ground and Pond Bottom = 3 feet

Additionally, it was assumed that only half of the basin length would provide linear treatment on both sides of the roadway. This accounts for areas near the high points of the basin that could instead use a conveyance ditch or at areas over cross drains where a ditch or pond may be terminated due to vertical constraints. The pond sizing calculations show that there is sufficient volume for treatment and attenuation using the proposed typical section with dry linear ponds. In areas that have better soils present, additional basin length of linear treatment was needed to provide sufficient attenuation volume. This is due to the better soils producing less runoff in the existing condition. Basins 25 and 26 are the two basins with a significant amount of type A soils present. As a result, Basin 25 proposes 60% of the basin length use linear treatment and Basin 26A proposes 75% of the basin use linear treatment.

Zone A FEMA floodplains are present through many of these basins. Due to being designated as zone A, there are no BFE's associated with these floodplains. Floodplain impacts are estimated in the Location Hydraulics Report and discussed in more detail. Compensation for these floodplain impacts will likely be required in offsite areas that are not identified as part of this report.

5.2.1 *Linear Retention Ponds within Basins 2 to 10*

Basins 2 through 10 are to be described in this section, as they fall within waterbodies that drain into either Kissimmee River or Blanket Bay Slough. These basins are classified as being impaired waterbodies. As mentioned earlier, basins within impaired waterbodies will need to perform a pre- and post-condition nutrient loading analysis to verify that there is no increase in nutrient loading in the post-condition. An additional 50% of treatment volume for discharges to impaired waterbodies will not be required per the agreement between SFWMD and FDOT that was referenced previously.

Drainage maps are provided in **Appendix D** that show the existing drainage patterns of the project area. Due to the amount of agricultural land immediately adjacent to SR 60 throughout the project, there are several areas along the project with existing irrigation ditches/canals parallel or near the roadway. These irrigation ditches generally are flat and provide drainage to the surrounding agricultural fields. The flow pattern for the irrigation ditches is difficult to confirm due to the lack of information on possible pipes connecting irrigation ditches on private property. Based on the information available, the irrigation ditches within Basins 2 through 6 drain to the northwest. There is a main irrigation ditch about 2,500 feet north of SR 60 that flows from the east to west and eventually into Lake Kissimmee. Irrigation ditches within Basins 8 through 10 also drain northwest, but discharge into the Blanket Bay Slough which drains back south under SR 60. Several irrigation ditches will be impacted in the proposed condition due to the additional right-of-way required. These locations include:

Table 3 – Irrigation Ditches Within Basins 2 through 10 Impacted

Basin	Begin Station	End Station
2	94+90 LT	152+00 LT
3	177+50 LT	188+45 LT
4	188+45 LT	214+45 LT
5	214+45 LT	257+00 LT
6	257+00 LT	267+00 LT
8	340+00 LT	357+30 LT
9	357+30 LT	386+80 LT
10	386+80 LT	402+50 LT

The existing right-of-way area for Basins 2 through 10 generally outfalls to the south side of SR 60 near the existing cross drain locations. Basins 2, 3, 4, and 9 all follow this trend and leave the right-of-way near the existing cross drains in the associated basin. Basin 5 has an existing double 30" cross drain at Station 231+00. However, there is no clear outfall to either the north or south side of the roadway. The north side has an irrigation canal, which appears to be separated from the roadway runoff with a berm and there appears to be some offsite area south of the right-of-way that is draining toward the roadway. It is likely that runoff within Basin 5 sits near the existing cross drain and stages up in the ditch to flow to either Basin 4 to the west or Basin 6 to the east. Basins 6 and 7 were identified as the primary basins that drain directly to the bridge over Blanket Bay Slough. Basin 8 has a cross drain, but there is no clear outfall outside of the right-of-way. Instead, the cross drain in Basin 8 provides a connection to the ditches on the north and south side of SR 60 and both sides of the roadway drain back west into Basin 7 and discharge into Blanket Bay Slough. Basin 10 has offsite area that drains into the south side of SR 60. Runoff then drains through the existing cross drain and can stage into the adjacent irrigation ditch to the north. This irrigation ditch drains northwest and eventually drains into Blanket Bay Slough.

5.2.2 *Linear Retention Ponds within Basins 11 to 26A*

Basins 11 to 26A are to be described in this section, as they fall outside of impaired waterbodies. Therefore, these basins do not require nutrient loading analysis to be completed.

Drainage maps are provided in **Appendix D** that show the existing drainage patterns of the project area. Similar to the previous section, much of the surrounding areas are used for agricultural use and have irrigation ditches/canals parallel or near the roadway. These irrigation ditches generally are flat and provide drainage to the surrounding agricultural fields. The flow pattern for the irrigation ditches is difficult to confirm due to the lack of information on possible pipes connecting irrigation ditches on private property. Based on the information available, the irrigation ditches within Basins 11, 12 and a portion of 13 drain to the northwest towards Blanket Bay Slough. The remaining portion of the irrigation ditch in Basin 13, as well as Basins 18 and 19 drain south into the SR 60 right-of-way. Basin 20 also has an irrigation ditch and it drains westerly and then turns north and drains into the Lokosee Ditches waterbody. Several irrigation ditches will be impacted in the proposed condition due to the additional right-of-way required. These locations include:

Table 4 - Irrigation Ditches Within Basins 11 through 26A Impacted

Basin	Begin Station	End Station
11	402+50 LT	411+00 LT
	426+50 LT	477+55 LT
12	477+55 LT	487+00 LT
13	487+00 LT	540+50 LT
18	685+50 LT	695+10 LT
19	695+10 LT	735+50 LT
20	776+00 LT	792+00 LT

The existing right-of-way area for Basins 11 through 26A generally outfalls to the south side of SR 60 near the existing cross drain locations. Basins 11 through 13, 15 through 21, and 23 through 25 follow this trend and leave the right-of-way on the south. Basin 14 has an existing double 24" cross drain near Station 563+00 and has a small amount of offsite area contributing from the south. However, there is no clear outfall to either the north or south side of the roadway. Based on LiDAR contours, this basin would stage up and pop-off to the west within the SR 60 roadside ditch and drain into Basin 13. Basin 20 has contributing offsite area from the south side of the road toward the existing double 24" cross drain near Station 782+50. There is an irrigation ditch on the north side that has a berm to separate flow from roadway runoff. Based on the LiDAR contours, Basin 20 would stage up and leave the right-of-way at Station 787+00 into an irrigation ditch which continues south. Further to the east, Basin 22 has contributing offsite area on the south that drains toward SR 60 and through the existing cross drain. Basin 26 is broken up into two sub-basins, as a portion of the basin is proposed to use linear retention and the portion within the urban typical section is proposed to use an offsite stormwater pond. An existing cross drain of unknown size is located about 700 feet west of the US 441 intersection. This cross drain collects the roadway runoff and conveys it north into an existing outfall ditch that connects the ditch on the west side of US 441.

5.3 Basin 26B

As discussed, Basin 26 is split into two sub-basins with Basin 26A falling within the rural typical section using linear retention ponds and Basin 26B falling within the urban typical section that will collect and convey runoff to an offsite stormwater pond. The stormwater pond was sized for just the area within the urban section of roadway from Station 1029+85 to the intersection of US 441. For sizing purposes, it was assumed that a wet pond would be used with 1-foot of treatment volume and 3-feet of maximum pond depth. Refer to **Appendix C** for the pond sizing calculations.

There are no mapped FEMA floodplains within this basin. Based on the LiDAR information, offsite areas appear to drain away from the roadway. As mentioned above, the existing cross drain collects the roadway runoff and conveys it north into an outfall ditch that connects to the ditch on the west side of US 441. Discharge from the linear retention areas in Basin 26A would need to be discharged to this outfall location.

5.3.1 *Pond Alternatives for Basin 26B*

Land south of SR 60 in this basin is designated as conservation. This eliminated evaluation of pond sites on the south side of the roadway. Two pond alternatives have been sited for Basin 26B. **Pond 26-1** is located on the north side west of the existing outfall ditch that connects SR 60 and US 441. The site is located on a single large parcel that also encompasses the towing facility to the west. This portion of the parcel is undeveloped and all open space that appears to be used currently for cattle grazing. Overhead electric poles are present on the parcel, but would not be impacted by the proposed pond. Proximity to the cross drain and ditch between SR 60 and US 441 would provide a logical outfall for the pond site.

Pond 26-2 is located just east of **Pond 26-1** on a single parcel. The parcel is the triangular property between SR 60 and US 441. Acquisition of this parcel may be required in the future for any additional improvements to this intersection. This parcel was the previous site of the Desert Inn, which has since been demolished. The location is currently classified as a DEP cleanup site where groundwater has been monitored since 1996. At that time it was learned that the site had previously sold gas since the 1920's until the facility stopped in 1979 and removed the fuel dispensers. Based on the most recent Annual Natural Attenuation Monitoring Report, it appears the fuel tanks were in the very eastern portion of the parcel. The groundwater flow direction is northeasterly away from the proposed pond site, which is mostly situated on the open space area to the west of the previous building locations. Therefore, it is not anticipated that the presence of groundwater monitoring would eliminate this site as an alternative. The existing ditch between SR 60 and US 441 would be impacted by this pond site. However, this should not be an issue since the ditch currently only receives water from the right-of-way and this area will now be routed to this stormwater pond. The pond outfall would discharge into the US 441 west roadside ditch as this is where the runoff is currently conveyed. An existing overhead line does currently cross over the proposed pond location and would need to be relocated.

Pond 26-2 is the preferred pond alternative due to proximity to the outfall and acquisition of the parcel would provide space for future intersection improvements to be constructed at SR 60 and US 441.

5.4 Basin 27

Limits for Basin 27 are from US 441 to the bridge over Florida's Turnpike (SR 91). This area currently drains toward the existing cross drain just east of the SR 91 on and off ramps. About 30 acres of offsite area from the south also drains toward the crossing. This cross drain flows into the north roadside ditch. Based on existing RRR plans for SR 60, there is an existing inlet

just east of the cross drain that collects this runoff and conveys it into the existing FDOT stormwater pond within the infield of SR 91 and its ramps. Due to Basin 27 already being routed to an existing stormwater pond, it would be recommended that an allowable portion of the basin continue to be sent to the existing pond in the infield and the remaining basin be routed to the proposed new stormwater pond. The existing pond outfalls in the northwest corner of the site under the ramps and into a ditch along the west side of the southbound off ramp. This ditch continues north along SR 91 and eventually drains into the Cow Log Branch.

There is zone A FEMA floodplain within this basin. However, the shape for the floodplain does not follow existing contours. Floodplain compensation may be needed for any impact to this floodplain. Further discussion on this can be found in the Location Hydraulics Report.

5.4.1 *Pond Alternatives for Basin 27*

As was the case in Basin 26B, land on the south side of the roadway is designated as conservation. This eliminated pond sites from consideration on the south side. Due to the amount of development in proximity to the outfall, the viable sites were limited. Two pond alternatives have been sited. **Pond 27-1** is located on the north side of SR 60 on a parcel with frontage to both SR 60 and the ramps of SR 91. Due to the frontage along a limited access ramp being less desirable from a development perspective due to lack of access, the alternative was sited along the ramp right-of-way line. Drainage inflow and outflow pipes could be routed through the SR 91 ramp right-of-way to eliminate any required easements.

Pond 27-2 is located further north on a parcel that is landlocked along the SR 91 ramp right-of-way. Similar to **Pond 27-1**, the SR 91 ramp right-of-way would provide area for drainage inflow and outflow pipes to be constructed without the need for additional easements. The site is directly adjacent to the outfall location of the existing FDOT stormwater pond to the east. There is a portion of mapped zone A FEMA floodplain that extends into the parcel. This impact would need to be compensated and could likely be completed within the remaining portion of the site.

Pond 27-2 is the preferred pond site alternative due to proximity to the outfall and being located within a parcel along the limited access right-of-way for the SR 91 ramps.

6 Conclusion

A conceptual drainage design has been evaluated for all basins for SR 60 between Prairie Lake Road and Florida's Turnpike (SR 91). The analysis was performed in accordance with published FDOT guidelines and standards. The preferred approach is to utilize linear pond systems for a majority of the project. Basins 1, 26B, and 27 would use offsite stormwater ponds to meet necessary treatment and attenuation requirements. **Table 5** below summarizes the basins limits, type of stormwater facility proposed, and approximate size needed for any offsite facilities. This report is preliminary and should be used as a tool for comparing alternative pond sites. Any assumptions made within this report will be verified and updated throughout the design process which may alter the exact pond size, configuration, and location.

Table 5 – Summary of Stormwater Facilities

Basin No.	Basin Limits		Length (ft)	Type of Facility	Offsite Pond Area (acres)
	From Station	To Station			
1	14+10.00	72+50.00	5,840	Offsite Wet Pond	3.70
2	72+50.00	158+75.00	8,625	Linear Retention	-
3	158+75.00	188+45.00	2,970	Linear Retention	-
4	188+45.00	214+45.00	2,600	Linear Retention	-
5	214+45.00	257+00.00	4,255	Linear Retention	-
6	257+00.00	290+75.00	3,375	Linear Retention	-
7	290+75.00	324+90.00	3,415	Linear Retention	-
8	324+90.00	357+30.00	3,240	Linear Retention	-
9	357+30.00	386+80.00	2,950	Linear Retention	-
10	386+80.00	402+50.00	1,570	Linear Retention	-
11	402+50.00	477+55.00	7,505	Linear Retention	-
12	477+55.00	487+00.00	945	Linear Retention	-
13	487+00.00	551+95.00	6,495	Linear Retention	-
14	551+95.00	570+30.00	1,835	Linear Retention	-
15	570+30.00	611+70.00	4,140	Linear Retention	-
16	611+70.00	632+75.00	2,105	Linear Retention	-
17	632+75.00	670+60.00	3,785	Linear Retention	-
18	670+60.00	695+10.00	2,450	Linear Retention	-
19	695+10.00	757+40.00	6,230	Linear Retention	-
20	757+40.00	812+90.00	5,550	Linear Retention	-

21	812+90.00	869+55.00	5,665	Linear Retention	-
22	869+55.00	889+65.00	2,010	Linear Retention	-
23	889+65.00	915+80.00	2,615	Linear Retention	-
24	915+80.00	937+90.00	2,210	Linear Retention	-
25	937+90.00	999+20.00	6,130	Linear Retention	-
26A	999+20.00	1029+85.00	3,065	Linear Retention	-
26B	1029+85.00	1046+35.00	1,650	Offsite Wet Pond	1.71
27	1046+35.00	1079+70.00	3,335	Offsite Wet Pond	2.06

APPENDIX A – Soils Reports

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Osceola County, Florida

June 11, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Osceola County, Florida
Survey Area Data: Version 22, Aug 22, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Adamsville sand, 0 to 2 percent slopes	35.3	0.4%
4	Arents, 0 to 5 percent slopes	26.6	0.3%
5	Basinger fine sand, 0 to 2 percent slopes	375.0	3.9%
6	Basinger fine sand, depressional, 0 to 1 percent slopes	401.5	4.1%
9	Cassia fine sand, 0 to 2 percent slopes	214.1	2.2%
10	Delray loamy fine sand, depressional	106.5	1.1%
11	EauGallie fine sand, 0 to 2 percent slopes	1,785.2	18.4%
12	Floridana fine sand, frequently ponded, 0 to 1 percent slopes	15.7	0.2%
13	Gentry fine sand	12.2	0.1%
14	Holopaw fine sand, 0 to 2 percent slopes	42.4	0.4%
16	Immokalee fine sand, 0 to 2 percent slopes	537.2	5.5%
17	Kaliga muck, frequently ponded, 0 to 1 percent slopes	71.0	0.7%
18	Lokosee fine sand	12.4	0.1%
19	Malabar fine sand, 0 to 2 percent slopes	1,195.2	12.3%
20	Malabar fine sand, frequently ponded, 0 to 1 percent slopes	250.4	2.6%
22	Myakka fine sand, 0 to 2 percent slopes	778.2	8.0%
24	Narcoossee fine sand, 0 to 2 percent slopes	9.3	0.1%
26	Oldsmar fine sand, 0 to 2 percent slopes	81.2	0.8%
28	Paola sand, 0 to 5 percent slopes	12.2	0.1%
30	Pineda-Pineda, wet, fine sand, 0 to 2 percent slopes	174.5	1.8%
32	Placid fine sand, frequently ponded, 0 to 1 percent slopes	35.9	0.4%
33	Placid variant fine sand	0.4	0.0%
34	Pomello fine sand, 0 to 5 percent slopes	31.1	0.3%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
36	Pompano fine sand, 0 to 2 percent slopes	30.7	0.3%
37	Pompano fine sand, frequently ponded, 0 to 1 percent slopes	149.3	1.5%
39	Riviera fine sand, frequently ponded, 0 to 1 percent slopes	41.1	0.4%
40	Samsula muck, frequently ponded, 0 to 1 percent slopes	50.0	0.5%
41	Satellite sand, 0 to 2 percent slopes	27.1	0.3%
42	Smyrna fine sand, 0 to 2 percent slopes	2,938.7	30.3%
43	St. Lucie fine sand, 0 to 5 percent slopes	23.3	0.2%
44	Tavares fine sand, 0 to 5 percent slopes	52.8	0.5%
47	Winder loamy fine sand	0.2	0.0%
99	Water	183.9	1.9%
Totals for Area of Interest		**9,705.2**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor

components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Osceola County, Florida

1—Adamsville sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2r8hb
Elevation: 10 to 100 feet
Mean annual precipitation: 44 to 56 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 290 to 365 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Adamsville and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Adamsville

Setting

Landform: Knolls on flatwoods, rises on flatwoods
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, talf, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 4 inches: sand
C1 - 4 to 33 inches: sand
C2 - 33 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G155XB131FL)

Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Upland Hardwood Hammock (R155XY008FL), Upland Hardwood Hammock (R154XY008FL)
Hydric soil rating: No

Minor Components

Riviera
Percent of map unit: 4 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

Narcoossee
Percent of map unit: 4 percent
Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Hydric soil rating: No

4—Arents, 0 to 5 percent slopes

Map Unit Setting
National map unit symbol: 1lt1y
Elevation: 20 to 130 feet
Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition
Arents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arents

Setting
Landform: Rises on marine terraces
Landform position (three-dimensional): Rise

Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Altered marine deposits

Typical profile

C1 - 0 to 10 inches: gravelly sand
C2 - 10 to 32 inches: sand
C3 - 32 to 60 inches: sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Forage suitability group: Forage suitability group not assigned (G155XB999FL)
Other vegetative classification: Forage suitability group not assigned (G155XB999FL)
Hydric soil rating: No

5—Basinger fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2svym
Elevation: 0 to 100 feet
Mean annual precipitation: 42 to 63 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Basinger and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Basinger

Setting

Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, dip

Down-slope shape: Linear, convex
Across-slope shape: Linear, concave
Parent material: Sandy marine deposits

Typical profile

Ag - 0 to 2 inches: fine sand
Eg - 2 to 18 inches: fine sand
Bh/E - 18 to 36 inches: fine sand
Cg - 36 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Minor Components

Myakka

Percent of map unit: 6 percent
Landform: Drainageways on marine terraces, flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Immokalee

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Riser, talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)

Hydric soil rating: No

Placid

Percent of map unit: 4 percent
Landform: Depressions on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Pompano

Percent of map unit: 4 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Felda

Percent of map unit: 1 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Slough (R155XY011FL), Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

Anclote

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, convex
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Hydric soil rating: Yes

6—Basinger fine sand, depressional, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2v16t
Elevation: 0 to 150 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 287 to 317 days
Farmland classification: Not prime farmland

Map Unit Composition

Basinger, depressional, and similar soils: 92 percent
Minor components: 8 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Basinger, Depressional

Setting

Landform: Depressions on marine terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy marine deposits

Typical profile

A - 0 to 3 inches: fine sand
E - 3 to 8 inches: fine sand
E/Bh - 8 to 24 inches: fine sand
C - 24 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 50.02 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D

Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Forage suitability group: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL)
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G154XB145FL), Freshwater Marshes and Ponds (R154XY010FL)
Hydric soil rating: Yes

Minor Components

Smyrna
Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA007FL - Moist Sandy Wet-Mesic Flatwoods
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: No

Immokalee, hydric
Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F154XA007FL - Moist Sandy Wet-Mesic Flatwoods
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: Yes

Floridana, hydric
Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G154XB245FL)
Hydric soil rating: Yes

9—Cassia fine sand, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 2tzx6

Elevation: 0 to 110 feet
Mean annual precipitation: 42 to 63 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Cassia and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cassia

Setting

Landform: Knolls on flatwoods on marine terraces, rises on flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 5 inches: fine sand
E - 5 to 26 inches: fine sand
Bh - 26 to 42 inches: fine sand
C - 42 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Minor Components

Myakka

Percent of map unit: 7 percent

Landform: Drainageways on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Pomello

Percent of map unit: 6 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Side slope, interfluve, riser
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Satellite

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces, rises on marine terraces
Landform position (three-dimensional): Tread, talf, rise
Down-slope shape: Linear, convex
Across-slope shape: Linear
Ecological site: R155XY180FL - Sandy Scrub on Rises, Ridges, and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Jonathan

Percent of map unit: 3 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, tread, rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R155XY180FL - Sandy Scrub on Rises, Ridges, and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G155XB121FL)
Hydric soil rating: No

10—Delray loamy fine sand, depressional

Map Unit Setting

National map unit symbol: 1lt24
Elevation: 10 to 100 feet
Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Delray, depressional, and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Delray, Depressional

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 14 inches: loamy fine sand
E - 14 to 44 inches: fine sand
Btg - 44 to 62 inches: fine sandy loam
BCg - 62 to 80 inches: loamy fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps

Forage suitability group: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Minor Components

Floridana
Percent of map unit: 4 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL)
Hydric soil rating: Yes

Holopaw
Percent of map unit: 3 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

Kaliga
Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL)
Hydric soil rating: Yes

11—EauGallie fine sand, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 2svz1
Elevation: 10 to 130 feet
Mean annual precipitation: 42 to 68 inches

Mean annual air temperature: 66 to 77 degrees F
Frost-free period: 335 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Eaugallie and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Eaugallie

Setting

Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 6 inches: fine sand
E - 6 to 23 inches: fine sand
Bh - 23 to 47 inches: fine sand
Bw - 47 to 55 inches: fine sand
Btg - 55 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Minor Components

Myakka

Percent of map unit: 5 percent
Landform: Drainageways on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear

Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Immokalee

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Riser, talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Farmton

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Malabar

Percent of map unit: 2 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Basinger

Percent of map unit: 1 percent
Landform: Drainageways on marine terraces, flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave, convex
Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

12—Floridana fine sand, frequently ponded, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sm53
Elevation: 0 to 90 feet
Mean annual precipitation: 42 to 64 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Floridana and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Floridana

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 19 inches: fine sand
Eg - 19 to 25 inches: fine sand
Btg - 25 to 80 inches: fine sandy loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C/D
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps

Forage suitability group: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL)
Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Minor Components

Tequesta
Percent of map unit: 4 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL), Freshwater Marshes and Ponds (R156BY010FL)
Hydric soil rating: Yes

Anclote
Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, convex
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Hydric soil rating: Yes

Riviera
Percent of map unit: 3 percent
Landform: Drainageways on marine terraces, flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY130FL - Sandy over Loamy Flatwoods and Hammocks
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Gator
Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Felda
Percent of map unit: 2 percent

Landform: Drainageways on marine terraces, flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY130FL - Sandy over Loamy Flatwoods and Hammocks
Other vegetative classification: Slough (R155XY011FL), Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

13—Gentry fine sand

Map Unit Setting

National map unit symbol: 1lt27
Elevation: 10 to 100 feet
Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Gentry and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gentry

Setting

Landform: Flood plains on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy marine deposits

Typical profile

A - 0 to 24 inches: fine sand
Btg - 24 to 64 inches: fine sandy loam
Cg - 64 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Occasional
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C/D
Ecological site: R155XY040FL - Sandy over Loamy Freshwater Floodplain Marshes and Swamps
Forage suitability group: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL)
Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL)
Hydric soil rating: Yes

Minor Components

Floridana

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL)
Hydric soil rating: Yes

Delray

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Hydric soil rating: Yes

Malabar

Percent of map unit: 1 percent
Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

Pineda

Percent of map unit: 1 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear

Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

Riviera

Percent of map unit: 1 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

Kaliga

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL)
Hydric soil rating: Yes

Nittaw

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY090FL - Loamy and Clayey Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL)
Hydric soil rating: Yes

Winder

Percent of map unit: 1 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear, concave
Across-slope shape: Linear
Ecological site: R155XY090FL - Loamy and Clayey Freshwater Isolated Marshes and Swamps
Other vegetative classification: Loamy and clayey soils on stream terraces, flood plains, or in depressions (G155XB345FL)
Hydric soil rating: Yes

14—Holopaw fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2vbpd
Elevation: 0 to 130 feet
Mean annual precipitation: 4 to 62 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Holopaw and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Holopaw

Setting

Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Convex, linear
Across-slope shape: Linear, concave
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 6 inches: fine sand
Eg - 6 to 42 inches: fine sand
Btg - 42 to 60 inches: fine sandy loam
Cg - 60 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 3 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D

Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Minor Components

Basinger
Percent of map unit: 6 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

Oldsmar
Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Cypress lake
Percent of map unit: 3 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Convex, linear
Across-slope shape: Linear, concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: Yes

Riviera
Percent of map unit: 2 percent
Landform: Drainageways on marine terraces, flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY130FL - Sandy over Loamy Flatwoods and Hammocks
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL), Slough (R155XY011FL)
Hydric soil rating: Yes

16—Immokalee fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2s3lk
Elevation: 0 to 130 feet
Mean annual precipitation: 42 to 68 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Immokalee and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Immokalee

Setting

Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Riser, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 6 inches: fine sand
E - 6 to 35 inches: fine sand
Bh - 35 to 54 inches: fine sand
BC - 54 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: B/D
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks

Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Minor Components

Basinger
Percent of map unit: 4 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

Pomello
Percent of map unit: 2 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Wabasso
Percent of map unit: 2 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Placid
Percent of map unit: 1 percent
Landform: Depressions on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Jenada
Percent of map unit: 1 percent

Landform: Flats on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Slough (R155XY011FL)
Hydric soil rating: Yes

17—Kaliga muck, frequently ponded, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tzw6
Elevation: 0 to 130 feet
Mean annual precipitation: 44 to 55 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Kaliga and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kaliga

Setting

Landform: Depressions on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Herbaceous organic material over loamy marine deposits

Typical profile

Oa - 0 to 25 inches: muck
C1 - 25 to 35 inches: fine sandy loam
C2 - 35 to 60 inches: sandy clay loam
C3 - 60 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very high (about 15.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C/D
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Forage suitability group: Organic soils in depressions and on flood plains (G155XB645FL)
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Minor Components

Samsula

Percent of map unit: 5 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Chobee

Percent of map unit: 4 percent
Landform: Depressions on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY090FL - Loamy and Clayey Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Tequesta

Percent of map unit: 4 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL), Freshwater Marshes and Ponds (R156BY010FL)
Hydric soil rating: Yes

Felda

Percent of map unit: 4 percent
Landform: Depressions on marine terraces, flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf

Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY130FL - Sandy over Loamy Flatwoods and Hammocks
Other vegetative classification: Slough (R155XY011FL), Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

Placid

Percent of map unit: 3 percent
Landform: Depressions on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

18—Lokosee fine sand

Map Unit Setting

National map unit symbol: 1lt2d
Elevation: 20 to 100 feet
Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Lokosee and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lokosee

Setting

Landform: Drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 4 inches: fine sand
E - 4 to 27 inches: fine sand
Bw - 27 to 35 inches: fine sand
Bh - 35 to 43 inches: fine sand
E' - 43 to 49 inches: fine sand
B'tg - 49 to 57 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Wetland Hardwood Hammock (R155XY012FL)
Hydric soil rating: No

Minor Components

Riviera

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

Oldsmar

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: No

Pineda

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear

Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

Eaugallie

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: No

Holopaw

Percent of map unit: 3 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

19—Malabar fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2svz3
Elevation: 10 to 140 feet
Mean annual precipitation: 42 to 63 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Malabar and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Malabar

Setting

Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave

Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 5 inches: fine sand
E - 5 to 17 inches: fine sand
Bw - 17 to 42 inches: fine sand
Btg - 42 to 59 inches: fine sandy loam
Cg - 59 to 80 inches: loamy fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 3 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Minor Components

Valkaria

Percent of map unit: 5 percent
Landform: Drainageways on marine terraces, flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Oldsmar

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks

Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Pineda

Percent of map unit: 4 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Basinger

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

20—Malabar fine sand, frequently ponded, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2svz5
Elevation: 10 to 90 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Malabar and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Malabar

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 5 inches: fine sand
E - 5 to 17 inches: fine sand
Bw - 17 to 42 inches: fine sand
Btg - 42 to 59 inches: fine sandy loam
Cg - 59 to 80 inches: loamy fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 1 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Minor Components

Valkaria

Percent of map unit: 3 percent
Landform: Drainageways on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Pineda

Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps

Other vegetative classification: Freshwater Marshes and Ponds (R155XY010FL), Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL)
Hydric soil rating: Yes

Felda

Percent of map unit: 3 percent
Landform: Flats on marine terraces, depressions on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Delray

Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Hydric soil rating: Yes

22—Myakka fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2s3lg
Elevation: 0 to 130 feet
Mean annual precipitation: 42 to 56 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Myakka and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Myakka

Setting

Landform: Drainageways on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear

Across-slope shape: Concave, linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 6 inches: fine sand
E - 6 to 20 inches: fine sand
Bh - 20 to 36 inches: fine sand
C - 36 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Minor Components

Basinger

Percent of map unit: 5 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

Wabasso

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Cassia

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces, rises on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Immokalee

Percent of map unit: 2 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Riser, talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Satellite

Percent of map unit: 1 percent
Landform: Flatwoods on marine terraces, rises on marine terraces
Landform position (three-dimensional): Tread, talf, rise
Down-slope shape: Linear, convex
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

24—Narcoossee fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2v17r
Elevation: 0 to 180 feet
Mean annual precipitation: 44 to 56 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Narcoossee and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Narcoossee

Setting

Landform: Knolls on marine terraces, ridges on marine terraces, rises on marine terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 5 inches: fine sand
E - 5 to 22 inches: fine sand
Bh - 22 to 26 inches: fine sand
BC - 26 to 36 inches: fine sand
C - 36 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A
Ecological site: F154XA008FL - Moist Sandy Scrubby Flatwoods
Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G154XB131FL)
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL), Upland Hardwood Hammock (R154XY008FL)
Hydric soil rating: No

Minor Components

Smyrna, non-hydric

Percent of map unit: 10 percent
Landform: Flats on marine terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve, tread, talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA007FL - Moist Sandy Wet-Mesic Flatwoods
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G154XB131FL), Upland Hardwood Hammock (R154XY008FL)
Hydric soil rating: No

26—Oldsmar fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2sm4t
Elevation: 0 to 100 feet
Mean annual precipitation: 44 to 64 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Oldsmar and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Oldsmar

Setting

Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 4 inches: fine sand
E - 4 to 35 inches: fine sand
Bh - 35 to 50 inches: fine sand
Btg - 50 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks

Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Minor Components

Malabar
Percent of map unit: 5 percent
Landform: — error in exists on —
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Nettles
Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: No

Basinger
Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

Pineda
Percent of map unit: 2 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: F155XY130FL - Sandy over Loamy Flatwoods and Hammocks
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Cypress lake
Percent of map unit: 2 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Convex, linear

Across-slope shape: Linear, concave
Ecological site: F155XY130FL - Sandy over Loamy Flatwoods and Hammocks
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: Yes

28—Paola sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2tzwj
Elevation: 0 to 100 feet
Mean annual precipitation: 44 to 60 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Paola and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paola

Setting

Landform: Ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 6 inches: sand
E - 6 to 55 inches: sand
B/E - 55 to 80 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 50.02 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: R155XY230FL - Sandy Scrub on Ridges, Knolls, and Dunes of Xeric Uplands
Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Minor Components

Apopka

Percent of map unit: 6 percent
Landform: Knolls on marine terraces, ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G154XB111FL), Longleaf Pine-Turkey Oak Hills (R154XY002FL)
Hydric soil rating: No

Astatula

Percent of map unit: 5 percent
Landform: Knolls on marine terraces, ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R155XY230FL - Sandy Scrub on Ridges, Knolls, and Dunes of Xeric Uplands
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)
Hydric soil rating: No

Pomello

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

30—Pineda-Pineda, wet, fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2svyp
Elevation: 0 to 100 feet
Mean annual precipitation: 42 to 63 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Pineda and similar soils: 45 percent
Pineda, wet, and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pineda

Setting

Landform: Drainageways on marine terraces, flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 1 inches: fine sand
E - 1 to 5 inches: fine sand
Bw - 5 to 36 inches: fine sand
Btg/E - 36 to 54 inches: fine sandy loam
Cg - 54 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: A/D
Ecological site: F155XY130FL - Sandy over Loamy Flatwoods and Hammocks
Forage suitability group: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Description of Pineda, Wet

Setting

Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 1 inches: fine sand
E - 1 to 5 inches: fine sand
Bw - 5 to 36 inches: fine sand
Btg/E - 36 to 54 inches: fine sandy loam
Cg - 54 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Forage suitability group: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Minor Components

Felda

Percent of map unit: 6 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip

Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Slough (R155XY011FL), Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

Wabasso

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Valkaria

Percent of map unit: 2 percent
Landform: Drainageways on flats on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Cypress lake

Percent of map unit: 2 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Convex, linear
Across-slope shape: Linear, concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: Yes

Brynwood

Percent of map unit: 2 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: Yes

32—Placid fine sand, frequently ponded, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tzx9
Elevation: 0 to 160 feet
Mean annual precipitation: 44 to 61 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Placid and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Placid

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy marine deposits

Typical profile

A - 0 to 24 inches: fine sand
Cg - 24 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps

Forage suitability group: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Minor Components

Basinger
Percent of map unit: 7 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

Myakka
Percent of map unit: 5 percent
Landform: Drainageways on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Gentry
Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Samsula
Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Felda

Percent of map unit: 2 percent
Landform: Drainageways on marine terraces, flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY130FL - Sandy over Loamy Flatwoods and Hammocks
Other vegetative classification: Slough (R155XY011FL), Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

33—Placid variant fine sand

Map Unit Setting

National map unit symbol: 1lt2w
Elevation: 10 to 100 feet
Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Placid variant and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Placid Variant

Setting

Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A1 - 0 to 8 inches: fine sand
A2 - 8 to 17 inches: fine sand
C - 17 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Upland Hardwood Hammock (R155XY008FL)
Hydric soil rating: No

Minor Components

Ona

Percent of map unit: 4 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: No

Adamsville

Percent of map unit: 4 percent
Landform: Flats on marine terraces, rises on marine terraces
Landform position (three-dimensional): Interfluve, talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Hydric soil rating: No

Basinger

Percent of map unit: 4 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

Placid

Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Hydric soil rating: Yes

34—Pomello fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2v16y
Elevation: 0 to 180 feet
Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Pomello and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pomello

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve, riser
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 4 inches: fine sand
E - 4 to 47 inches: fine sand
Bh - 47 to 58 inches: fine sand
Bw - 58 to 65 inches: fine sand
C - 65 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 24 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A

Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Minor Components

Smyrna
Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: No

Bulow
Percent of map unit: 1 percent
Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F155XY210FL - Deep Sandy over Loamy Maritime Forests
Other vegetative classification: Sandy over loamy soils on knolls and ridges of mesic uplands (G155XB211FL)
Hydric soil rating: No

Tavares
Percent of map unit: 1 percent
Landform: Flats on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R155XY180FL - Sandy Scrub on Rises, Ridges, and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G154XB121FL)
Hydric soil rating: No

36—Pompano fine sand, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: 2tzw3
Elevation: 0 to 100 feet
Mean annual precipitation: 44 to 65 inches

Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Pompano and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pompano

Setting

Landform: Flats on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave, linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 4 inches: fine sand
C - 4 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 3 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Minor Components

Anclote

Percent of map unit: 4 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, convex
Across-slope shape: Concave, linear

Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Valkaria

Percent of map unit: 4 percent
Landform: Drainageways on flats on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Malabar

Percent of map unit: 4 percent
Landform: — error in exists on —
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Immokalee

Percent of map unit: 3 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Riser, talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Myakka

Percent of map unit: 3 percent
Landform: Drainageways on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Riviera

Percent of map unit: 2 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear
Across-slope shape: Concave, linear

Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL), Slough (R155XY011FL)
Hydric soil rating: Yes

37—Pompano fine sand, frequently ponded, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2sm5f
Elevation: 0 to 160 feet
Mean annual precipitation: 38 to 64 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 340 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Pompano and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pompano

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy marine deposits

Typical profile

A - 0 to 12 inches: fine sand
C - 12 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: A/D
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Forage suitability group: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Other vegetative classification: Freshwater Marshes and Ponds (R155XY010FL), Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Hydric soil rating: Yes

Minor Components

Basinger
Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

Myakka
Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Malabar
Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Anclote
Percent of map unit: 1 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, convex
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Hydric soil rating: Yes

Placid

Percent of map unit: 1 percent
Landform: Depressions on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Adamsville

Percent of map unit: 1 percent
Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Upland Hardwood Hammock (R155XY008FL)
Hydric soil rating: No

39—Riviera fine sand, frequently ponded, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tzwl
Elevation: 0 to 80 feet
Mean annual precipitation: 44 to 64 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Riviera and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Riviera

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 4 inches: fine sand

E - 4 to 36 inches: fine sand
Bt/E - 36 to 42 inches: fine sandy loam
Cg1 - 42 to 56 inches: fine sand
Cg2 - 56 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Forage suitability group: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL)
Other vegetative classification: Freshwater Marshes and Ponds (R155XY010FL), Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL)
Hydric soil rating: Yes

Minor Components

Chobee

Percent of map unit: 7 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY090FL - Loamy and Clayey Freshwater Isolated Marshes and Swamps
Other vegetative classification: Freshwater Marshes and Ponds (R156BY010FL), Loamy and clayey soils on stream terraces, flood plains, or in depressions (G156BC345FL)
Hydric soil rating: Yes

Tequesta

Percent of map unit: 4 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps

Other vegetative classification: Organic soils in depressions and on flood plains (G156AC645FL), Freshwater Marshes and Ponds (R156BY010FL)
Hydric soil rating: Yes

Wabasso

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

40—Samsula muck, frequently ponded, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2tzw9
Elevation: 0 to 250 feet
Mean annual precipitation: 44 to 63 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 335 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Samsula and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Samsula

Setting

Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Herbaceous organic material over sandy marine deposits

Typical profile

Oa1 - 0 to 24 inches: muck
Oa2 - 24 to 32 inches: muck
Cg1 - 32 to 35 inches: sand
Cg2 - 35 to 44 inches: sand
Cg3 - 44 to 80 inches: sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very high (about 13.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Forage suitability group: Organic soils in depressions and on flood plains (G155XB645FL)
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Minor Components

Myakka

Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Kaliga

Percent of map unit: 3 percent
Landform: Depressions on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Basinger

Percent of map unit: 3 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)

Hydric soil rating: Yes

Anclote

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, convex
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL)
Hydric soil rating: Yes

Floridana

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY080FL - Sandy over Loamy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Sanibel

Percent of map unit: 2 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave
Ecological site: R155XY100FL - Organic Freshwater Isolated Marshes and Swamps
Other vegetative classification: Organic soils in depressions and on flood plains (G155XB645FL)
Hydric soil rating: Yes

41—Satellite sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2svzb
Elevation: 0 to 200 feet
Mean annual precipitation: 44 to 61 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Satellite and similar soils: 85 percent

Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Satellite

Setting

Landform: Drainageways on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 6 inches: sand
C1 - 6 to 13 inches: sand
C2 - 13 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 to 50.02 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Very low (about 2.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Forage suitability group: Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Other vegetative classification: Sand Pine Scrub (R155XY001FL), Sandy soils on rises and knolls of mesic uplands (G155XB131FL)
Hydric soil rating: No

Minor Components

Myakka

Percent of map unit: 5 percent
Landform: Drainageways on flatwoods on marine terraces
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Linear
Across-slope shape: Concave, linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Immokalee

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Basinger

Percent of map unit: 3 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Convex, concave
Across-slope shape: Linear, concave
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

Cassia

Percent of map unit: 2 percent
Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Pompano

Percent of map unit: 1 percent
Landform: Drainageways on flats on marine terraces
Landform position (three-dimensional): Tread, talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), Slough (R155XY011FL)
Hydric soil rating: Yes

42—Smyrna fine sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2svzh
Elevation: 0 to 130 feet

Mean annual precipitation: 38 to 63 inches
Mean annual air temperature: 68 to 77 degrees F
Frost-free period: 300 to 365 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Smyrna and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Smyrna

Setting

Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Sandy marine deposits

Typical profile

A - 0 to 4 inches: fine sand
E - 4 to 13 inches: fine sand
Bh - 13 to 18 inches: fine sand
C/Bw - 18 to 49 inches: fine sand
C - 49 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Forage suitability group: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Minor Components

Eaugallie

Percent of map unit: 5 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Tread, talf

Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

Basinger

Percent of map unit: 4 percent
Landform: Depressions on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

Placid

Percent of map unit: 2 percent
Landform: Depressions on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Ecological site: R155XY070FL - Sandy Freshwater Isolated Marshes and Swamps
Other vegetative classification: Sandy soils on stream terraces, flood plains, or in depressions (G155XB145FL), Freshwater Marshes and Ponds (R155XY010FL)
Hydric soil rating: Yes

Pomello

Percent of map unit: 2 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Immokalee

Percent of map unit: 2 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Riser, talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

43—St. Lucie fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2twsr
Elevation: 20 to 110 feet
Mean annual precipitation: 44 to 61 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 350 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

St. lucie and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of St. Lucie

Setting

Landform: Dunes on marine terraces, knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, tread
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy eolian deposits and/or marine deposits

Typical profile

A - 0 to 4 inches: fine sand
C - 4 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Very high (19.98 to 50.02 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R155XY230FL - Sandy Scrub on Ridges, Knolls, and Dunes of Xeric Uplands

Forage suitability group: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)
Other vegetative classification: Sand Pine Scrub (R155XY001FL), Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)
Hydric soil rating: No

Minor Components

Paola

Percent of map unit: 6 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: R155XY230FL - Sandy Scrub on Ridges, Knolls, and Dunes of Xeric Uplands
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Pomello

Percent of map unit: 5 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Immokalee

Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Riser, talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL), South Florida Flatwoods (R155XY003FL)
Hydric soil rating: No

44—Tavares fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 2sw00
Elevation: 0 to 130 feet

Mean annual precipitation: 42 to 63 inches
Mean annual air temperature: 66 to 77 degrees F
Frost-free period: 340 to 365 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Tavares and similar soils: 83 percent
Minor components: 17 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tavares

Setting

Landform: Flats on marine terraces, knolls on marine terraces, ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Interfluve, side slope, tread, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Parent material: Eolian or sandy marine deposits

Typical profile

A - 0 to 6 inches: fine sand
C - 6 to 80 inches: fine sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 18 to 42 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: R155XY180FL - Sandy Scrub on Rises, Ridges, and Knolls of Mesic Uplands
Forage suitability group: Sandy soils on rises, knolls, and ridges of mesic uplands (G155XB121FL)
Other vegetative classification: Sandy soils on rises, knolls, and ridges of mesic uplands (G155XB121FL), Longleaf Pine-Turkey Oak Hills (R155XY002FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Minor Components

Cassia

Percent of map unit: 5 percent
Landform: Knolls on marine terraces, rises on marine terraces

Landform position (three-dimensional): Tread, talf
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Pomello

Percent of map unit: 4 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex, linear
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands
Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Sand Pine Scrub (R155XY001FL)
Hydric soil rating: No

Astatula

Percent of map unit: 3 percent
Landform: Knolls on marine terraces, ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser, rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: R155XY230FL - Sandy Scrub on Ridges, Knolls, and Dunes of Xeric Uplands
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL)
Hydric soil rating: No

Apopka

Percent of map unit: 3 percent
Landform: Ridges on marine terraces, hills on marine terraces
Landform position (two-dimensional): Summit, backslope
Landform position (three-dimensional): Interfluve, side slope, riser
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F154XA004FL - Moist Sandy Pine-Hardwood Woodlands
Other vegetative classification: Sandy soils on ridges and dunes of xeric uplands (G155XB111FL), Longleaf Pine-Turkey Oak Hills (R155XY002FL)
Hydric soil rating: No

Adamsville

Percent of map unit: 2 percent
Landform: Knolls on marine terraces, rises on marine terraces
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F155XY150FL - Sandy Flatwoods and Hammocks on Rises and Knolls of Mesic Uplands

Other vegetative classification: Sandy soils on rises and knolls of mesic uplands (G155XB131FL), Upland Hardwood Hammock (R155XY008FL)
Hydric soil rating: No

47—Winder loamy fine sand

Map Unit Setting

National map unit symbol: 1lt3b
Elevation: 20 to 100 feet
Mean annual precipitation: 44 to 52 inches
Mean annual air temperature: 70 to 77 degrees F
Frost-free period: 342 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Winder and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Winder

Setting

Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear, concave
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 3 inches: loamy fine sand
E - 3 to 14 inches: fine sand
Btg - 14 to 34 inches: sandy clay loam
BCg - 34 to 52 inches: fine sandy loam
Cg - 52 to 80 inches: loamy fine sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F155XY140FL - Loamy and Clayey Flats and Hammocks
Forage suitability group: Loamy and clayey soils on stream terraces, flood plains, or in depressions (G155XB345FL)
Other vegetative classification: South Florida Flatwoods (R155XY003FL), Loamy and clayey soils on stream terraces, flood plains, or in depressions (G155XB345FL)
Hydric soil rating: Yes

Minor Components

Gentry

Percent of map unit: 4 percent
Landform: Flood plains on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Ecological site: R155XY040FL - Sandy over Loamy Freshwater Floodplain Marshes and Swamps
Other vegetative classification: Sandy over loamy soils on stream terraces, flood plains, or in depressions (G155XB245FL)
Hydric soil rating: Yes

Riviera

Percent of map unit: 3 percent
Landform: Flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F155XY130FL - Sandy over Loamy Flatwoods and Hammocks
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G155XB241FL)
Hydric soil rating: Yes

Holopaw

Percent of map unit: 3 percent
Landform: Flats on marine terraces, drainageways on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: F155XY120FL - Sandy Flatwoods and Hammocks
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G155XB141FL)
Hydric soil rating: Yes

99—Water

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Interpretive groups

Land capability classification (irrigated): None specified
Ecological site: R156BY150FL - Subaqueous Freshwater Lacustrine Habitats
Forage suitability group: Forage suitability group not assigned (G155XB999FL)
Other vegetative classification: Forage suitability group not assigned (G155XB999FL)
Hydric soil rating: Unranked

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Custom Soil Resource Report
Map—Hydrologic Soil Group

Map Scale: 1:167,000 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 2000 4000 8000 12000

Feet
0 5000 10000 20000 30000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Osceola County, Florida
Survey Area Data: Version 22, Aug 22, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 1, 1999—Dec 31, 2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Adamsville sand, 0 to 2 percent slopes	A	35.3	0.4%
4	Arents, 0 to 5 percent slopes	A	26.6	0.3%
5	Basinger fine sand, 0 to 2 percent slopes	A/D	375.0	3.9%
6	Basinger fine sand, depressional, 0 to 1 percent slopes	A/D	401.5	4.1%
9	Cassia fine sand, 0 to 2 percent slopes	A	214.1	2.2%
10	Delray loamy fine sand, depressional	A/D	106.5	1.1%
11	EauGallie fine sand, 0 to 2 percent slopes	A/D	1,785.2	18.4%
12	Floridana fine sand, frequently ponded, 0 to 1 percent slopes	C/D	15.7	0.2%
13	Gentry fine sand	C/D	12.2	0.1%
14	Holopaw fine sand, 0 to 2 percent slopes	A/D	42.4	0.4%
16	Immokalee fine sand, 0 to 2 percent slopes	B/D	537.2	5.5%
17	Kaliga muck, frequently ponded, 0 to 1 percent slopes	C/D	71.0	0.7%
18	Lokosee fine sand	A/D	12.4	0.1%
19	Malabar fine sand, 0 to 2 percent slopes	A/D	1,195.2	12.3%
20	Malabar fine sand, frequently ponded, 0 to 1 percent slopes	A/D	250.4	2.6%
22	Myakka fine sand, 0 to 2 percent slopes	A/D	778.2	8.0%
24	Narcoossee fine sand, 0 to 2 percent slopes	A	9.3	0.1%
26	Oldsmar fine sand, 0 to 2 percent slopes	A/D	81.2	0.8%
28	Paola sand, 0 to 5 percent slopes	A	12.2	0.1%
30	Pineda-Pineda, wet, fine sand, 0 to 2 percent slopes	A/D	174.5	1.8%
32	Placid fine sand, frequently ponded, 0 to 1 percent slopes	A/D	35.9	0.4%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
33	Placid variant fine sand	A/D	0.4	0.0%
34	Pomello fine sand, 0 to 5 percent slopes	A	31.1	0.3%
36	Pompano fine sand, 0 to 2 percent slopes	A/D	30.7	0.3%
37	Pompano fine sand, frequently ponded, 0 to 1 percent slopes	A/D	149.3	1.5%
39	Riviera fine sand, frequently ponded, 0 to 1 percent slopes	A/D	41.1	0.4%
40	Samsula muck, frequently ponded, 0 to 1 percent slopes	A/D	50.0	0.5%
41	Satellite sand, 0 to 2 percent slopes	A	27.1	0.3%
42	Smyrna fine sand, 0 to 2 percent slopes	A/D	2,938.7	30.3%
43	St. Lucie fine sand, 0 to 5 percent slopes	A	23.3	0.2%
44	Tavares fine sand, 0 to 5 percent slopes	A	52.8	0.5%
47	Winder loamy fine sand	C/D	0.2	0.0%
99	Water		183.9	1.9%
Totals for Area of Interest			**9,705.2**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

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APPENDIX B – FEMA Flood Insurance Rate Maps

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Transverse Mercator State Plane Florida East FIPS 0901. The **horizontal datum** was NAD83 HARN. GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242** or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the Osceola County Planning Office. Orthophotography was collected in late 2007 early 2008.

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Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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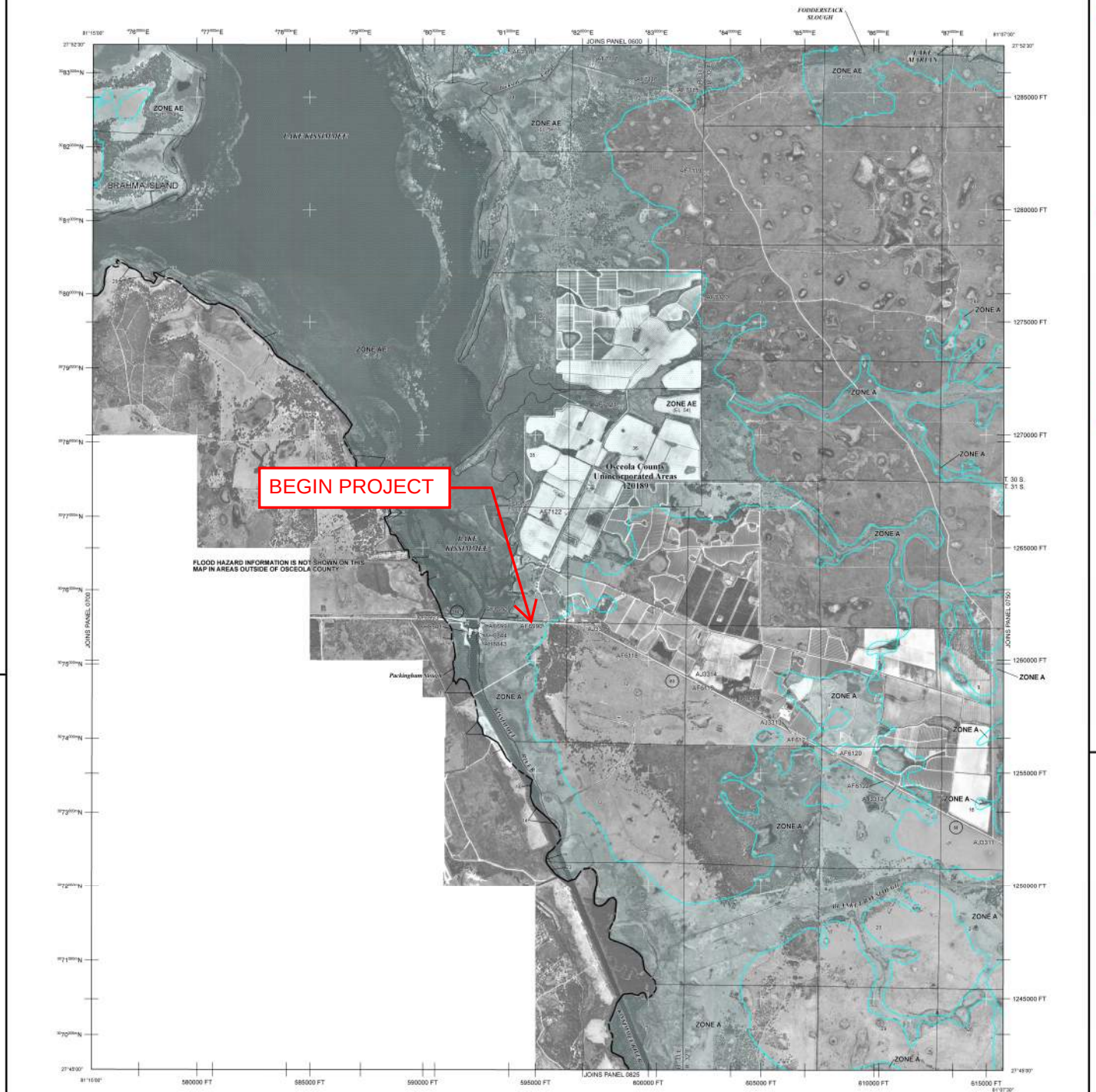
The **"profile base lines"** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 — Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*
* Referenced to the North American Vertical Datum of 1988
A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
1000-meter Universal Transverse Mercator grid ticks, zone 17
6000000 FT — 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 0901), Transverse Mercator projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
MAY 7, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
JUNE 8, 2001 - To correct datum reference note.

JUNE 18, 2013 - To update corporate limits, change Base Flood Elevations, add Base Flood Elevations, change Special Flood Hazard Areas, change zone designations, update roads and road names, incorporate previously issued Letters of Map Revision, and reflect updated topographic information.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0725G

FIRM

FLOOD INSURANCE RATE MAP

OSCEOLA COUNTY, FLORIDA

AND INCORPORATED AREAS

PANEL 725 OF 900

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSCEOLA COUNTY	120189	0725	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12097C0725G

MAP REVISED
JUNE 18, 2013

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

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Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

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The **projection** used in the preparation of this map was Transverse Mercator State Plane Florida East FIPS 0901. The **horizontal datum** was NAD83 HARN, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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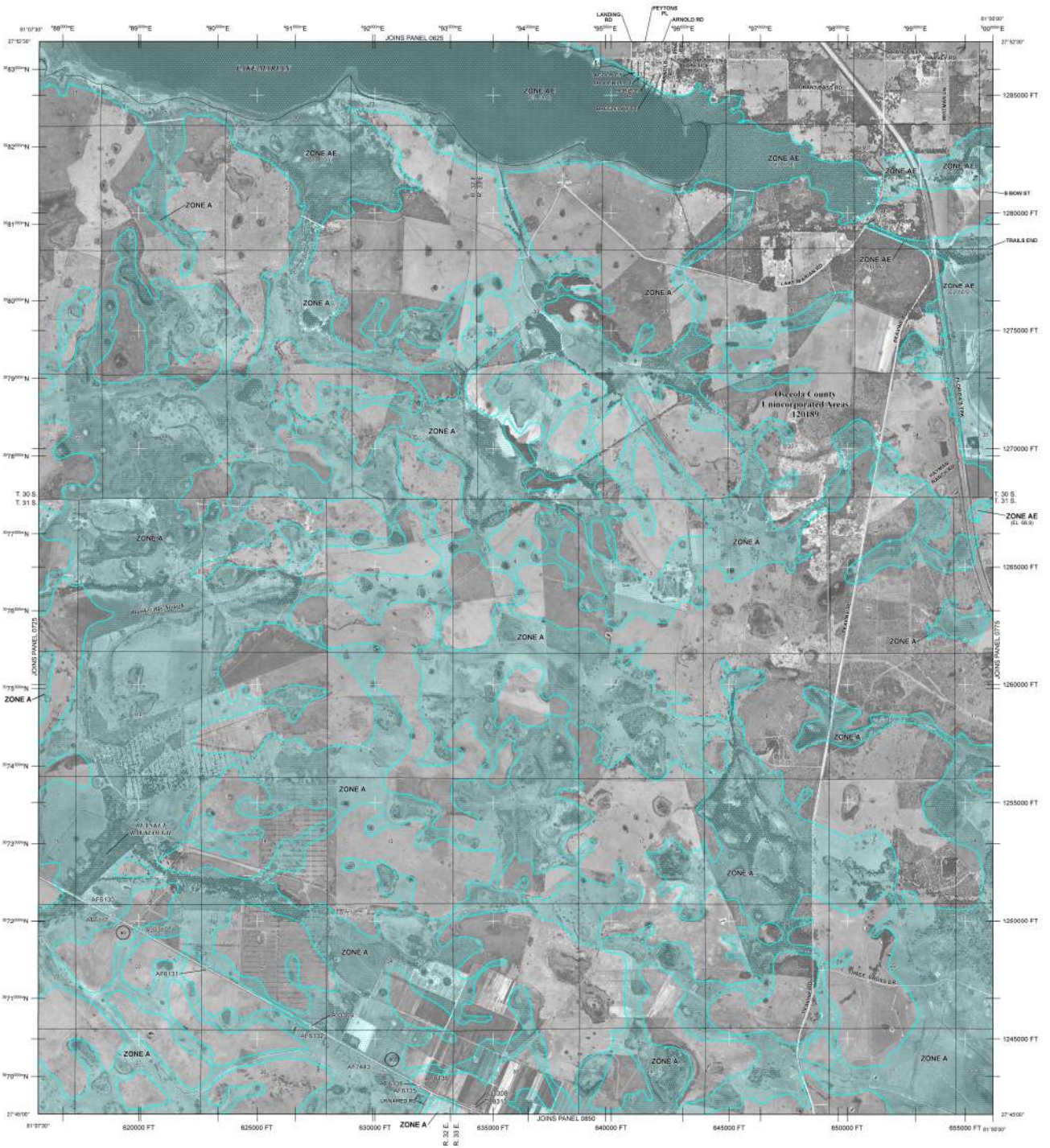

LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513 (EL 987) — Base Flood Elevation line and value; elevation in feet*
Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4725000 FT E — 1000-meter Universal Transverse Mercator grid ticks, zone 17
6000000 FT — 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 0901), Transverse Mercator projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
March 7, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
JUNE 6, 2001 - To correct datum reference note.

JUNE 18, 2013 - To update corporate limits, change Base Flood Elevations, add Base Flood Elevations, change Special Flood Hazard Areas, change zone designations, update roads and road names, incorporate previously issued Letters of Map Revision, and reflect updated topographic information.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

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MAP SCALE 1" = 2000'

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0750G

FIRM

FLOOD INSURANCE RATE MAP

OSCEOLA COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 750 OF 900

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSCEOLA COUNTY	120189	0750	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 12097C0750G

MAP REVISED JUNE 18, 2013

Federal Emergency Management Agency

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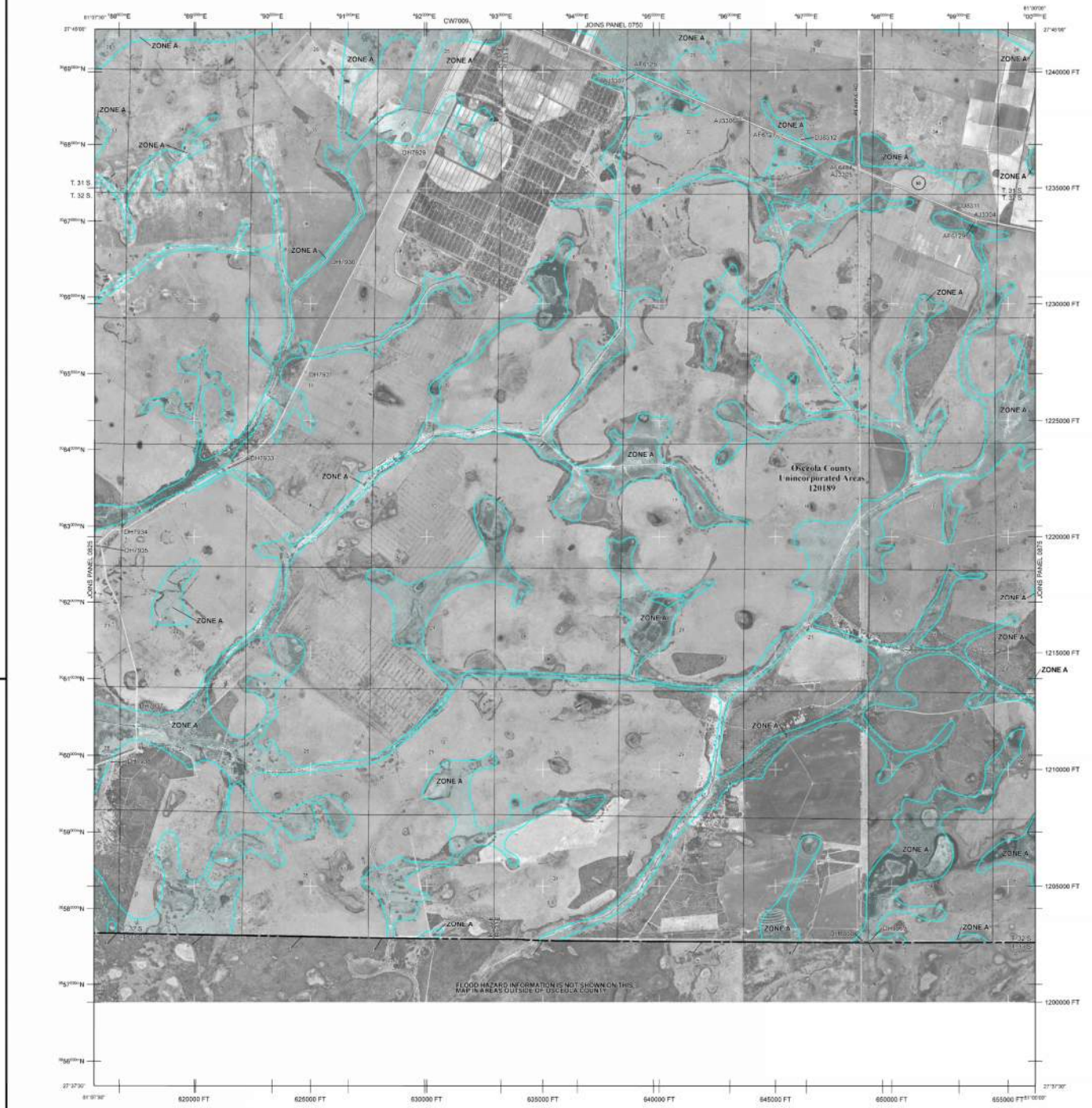

LEGEND

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- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
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FLOODWAY AREAS IN ZONE AE

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OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

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* Referred to the North American Vertical Datum of 1988

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- 97°07'30", 32°22'30" Geographic coordinates, referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4°75'000"E 1000-meter Universal Transverse Mercator grid ticks, zone 17
- 6000000 FT 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 0901), Transverse Mercator projection
- DX510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
MAY 7, 2021

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
JUNE 6, 2001 - To correct datum reference note.
JUNE 18, 2013 - To update corporate limits, change Base Flood Elevations, add Base Flood Elevations, change Special Flood Hazard Areas, change zone designations, update roads and road names, incorporate previously issued Letters of Map Revision, and reflect updated topographic information.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0850G

FIRM

FLOOD INSURANCE RATE MAP

OSCEOLA COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 850 OF 900

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSCEOLA COUNTY	120189	0850	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12097C0850G

MAP REVISED
JUNE 18, 2013

Federal Emergency Management Agency

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Transverse Mercator State Plane Florida East FIPS 0901. The **horizontal datum** was NAD83 HARN. GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242** or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the Osceola County Planning Office. Orthophotography was collected in late 2007 early 2008.

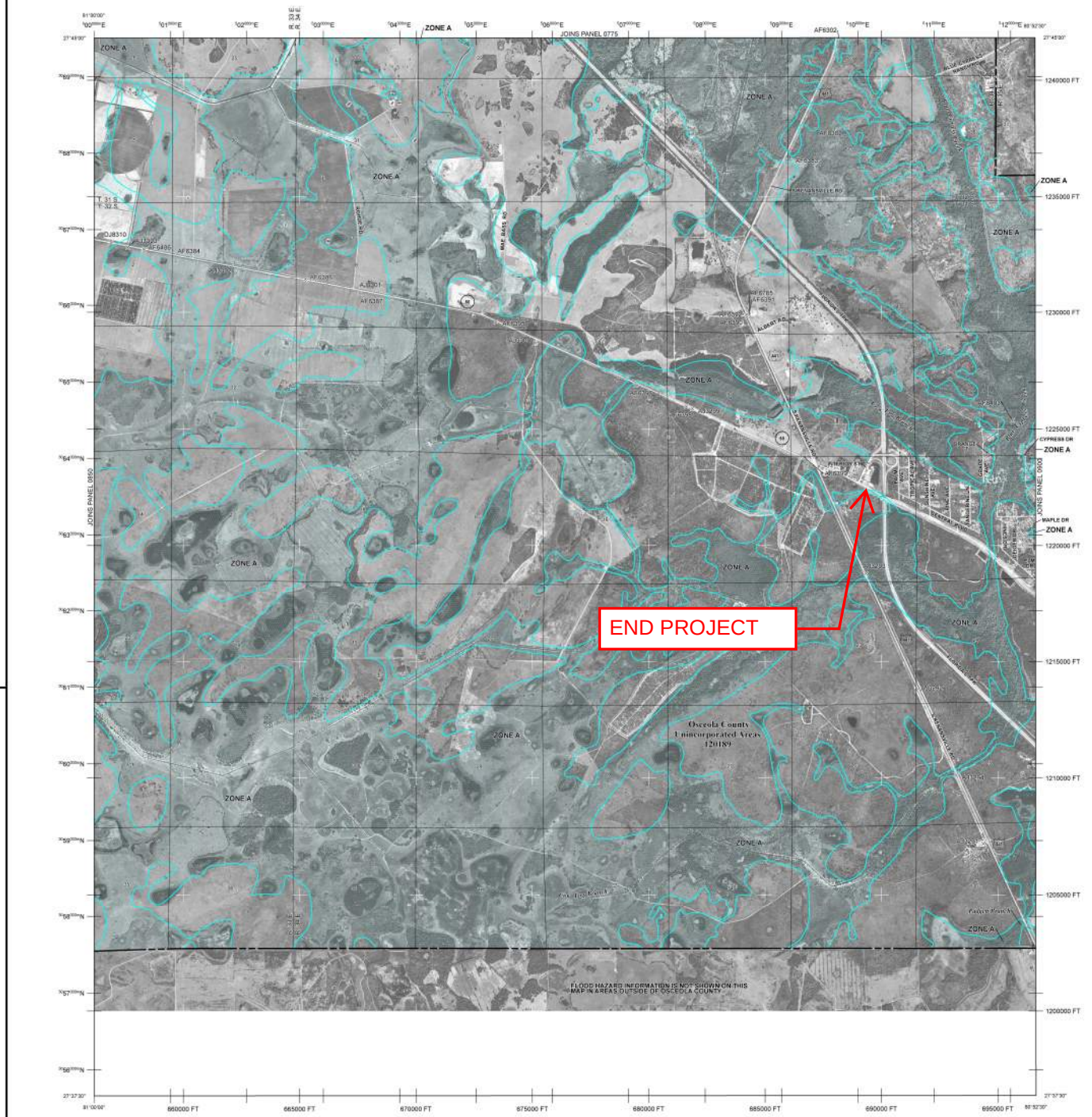
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the **FEMA Mapping Information eXchange** at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service website at http://www.msc.fema.gov/. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

The **"profile base lines"** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 — Area to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987)
* Referenced to the North American Vertical Datum of 1988
Cross section line
Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
1000-meter Universal Transverse Mercator grid ticks, zone 17
6000000 FT — 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 0901), Transverse Mercator projection
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
MAY 7, 2001

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
JUNE 8, 2001 - To correct datum reference note.

JUNE 18, 2013 - To update corporate limits, change Base Flood Elevations, add Base Flood Elevations, change Special Flood Hazard Areas, change zone designations, update roads and road names, incorporate previously issued Letters of Map Revision, and reflect updated topographic information.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0875G

FIRM
FLOOD INSURANCE RATE MAP
OSCEOLA COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 875 OF 900
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSCEOLA COUNTY	120189	0875	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
12097C0875G

MAP REVISED
JUNE 18, 2013

Federal Emergency Management Agency

APPENDIX C – Pond Sizing Spreadsheets

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 1
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Basin Area	1,284,800	ft^2	29.49	acres
Pond Parcel Area	161,002	ft^2	3.70	acres
Total Area	1,445,802	ft^2	33.19	acres

Exist. Basin Limits	
14+10	72+50

*Assume 220' of R/W

Existing Basin Length = 5840 ft

EXISTING CURVE NUMBER CALCULATION:

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%)		0.00%		0.00%		0.00%	161,002	11.14%	39	61	74	80	12,880,160	161002	3.70
Open Space - Good Condition (grass cover > 75%)		0.00%		0.00%		0.00%	1,117,776	77.31%	39	61	74	80	89,422,080	1117776	25.66
Streets and Roads - Paved curbs and storm sewers (excluding right-of-way)		0.00%		0.00%		0.00%	167,024	11.55%	98	98	98	98	16,368,352	167024	3.83
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,445,802**	**100.00%**			**COMPOSITE CN =**	**82**	**118,670,592**	**1,445,802**	**33.19**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.18
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.21
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,230,692 ft^3 28.25 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Basin Area	1,284,800	ft^2	29.49	acres	
Pond Parcel Area	161,002	ft^2	3.70	acres	161,002
Total Area	1,445,802	ft^2	33.19	acres	

Prop. Basin Limits	
14+10	72+50

*Assume 220' of R/W

Proposed Basin Length = 5840 ft

PROPOSED CURVE NUMBER CALCULATION:

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	144,902	10.02%	100	100	100	100	14,490,180	144,902	3.33
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	16,100	1.11%	39	61	74	80	1,288,016	16,100	0.37
Open Space - Good Condition (grass cover > 75%)		0.00%		0.00%		0.00%	835,120	57.76%	39	61	74	80	66,809,600	835,120	19.17
Streets and Roads - Paved curbs and storm sewers (excluding right-of-way)		0.00%		0.00%		0.00%	449,680	31.10%	98	98	98	98	44,068,640	449,680	10.32
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,445,802**	**100.00%**			**COMPOSITE CN =**	**88**	**126,656,436**	**1,445,802**	**33.19**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 1.42
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.95
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,319,141 ft^3 30.28 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 1
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

1.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Wet Pond**		
Area Inside R/W:	33.19	acres	
Weighted C	0.51		
Impervious Area (C = 0.95)	10.32	acres	
Pervious Area (C = 0.2)	19.54	acres	
Water / Pond (C = 1.0)	3.33	acres	
Discharge to OFW (If yes, additional 50% Treatment)	Yes		
SFWMD and SJRWMD Wet Detention Criteria - Greater of the Following:			
a) 1st inch of runoff from the developed project (1" x Area)	4.15	ac-ft	(whichever is greater)
b) 2.5" over the impervious area (2.5" x Impervious Area)	3.23	ac-ft	
Required Treatment for Watershed (Max.):	**180,725**	ft^3	**4.15** ac-ft

2.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	1,230,692	ft^3	28.25 ac-ft
Proposed Runoff Volume =	1,319,141	ft^3	30.28 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**88,449**	ft^3	**2.03** ac-ft

3.) Floodplain Compensation

0 ft^3 ac-ft

4.) Total Storage

88,449 ft^3 **2.03** ac-ft

5.) Analysis of Site Required

Assumed Pond Configuration:

Pond Maintenance Berm Width (ft):	20	Freeboard Desired (ft):	1
L/W Ratio:	2	Pond Side Slopes (X:1):	4
Max. Treatment Volume Depth (ft):	1.0	Discharge to OFW:	Yes
Anticipated Max Pond Depth(ft):	3.0		

6.) Assuming Treatment Volume Controls

Pond is sized to provide calculated treatment volume in the depth listed above for "Max. Treatment Volume Depth". The total pond volume from the pond bottom to the depth listed above for "Anticipated Max Pond Depth" is then checked to see if it is more or less than the calculated attenutation volume.

Dimensions of Equivalent Rectangular Pond with Vertical Sides to Meet Pond Treatment Volume Requirement

L_{Rect} (ft): 601.2
W_{Rect} (ft): 300.6

Pond Dimensions at Peak Design Stage Considering Side Slopes and Treatment Volume

L_{Rect} (ft): 621.2
W_{Rect} (ft): 320.6

Volume between Permanent Pool Elevation and Peak Design Stage to Check Attenuation Requirement

$V_{Available\ for\ Total\ Storage}$ (ft^3) 564,011.22 (<--- Highlights in red if less than total volume required)
12.95 acre-ft

7.) Assuming Total Volume Controls

Pond is sized to for the total pond volume to equal the calculated attenuation volume using the depth listed above for "Anticipated Max Pond Depth". The volume provided from the bottom to the depth listed above for "Max. Treatment Volume Depth" is then checked to see if it is more or less than the calculated treatment volume.

Dimensions of Equivalent Rectangular Pond with Vertical Sides to Meet Pond Volume Requirement

L_{Rect} (ft):	242.8
W_{Rect} (ft):	121.4

Pond Dimensions at Peak Design Stage Considering Sides Slopes

L_{Rect} (ft):	254.8
W_{Rect} (ft):	133.4

Volume in First "X" Feet above Perm. Pool to Check Treatment Requirement

$V_{Available\ for\ Treatment}$ (ft^3) 26,633.05 (<--- Highlights in red if less than treatment volume required)

0.61 acre-ft

8.) Does Treatment or Total Volume Control?

Is there enough total volume provided when sized for the treatment volume?	**Yes**
Is there enough treatment volume provided when sized for the total volume?	**No**
Should dimensions from step 6 (treatment volume controls) or from step 7 (total volume controls) be used?	**Step 6**

Pond Site Dimensions Considering Freeboard and Maintenance Berm

L_{Rect} (ft):	303.00
W_{Rect} (ft):	369.00
Area (Ac):	2.57

Estimated Site Size Including 20% Factor Of Safety

L_{Rect} (ft):	363.60
W_{Rect} (ft):	442.80
Area (ac):	3.70

Pond Volume Required = Attenuation Volume + Floodplain Compensation + Treatment Volume

Anticipated Pond $Depth_{Dry}$ = Depth To SHGWT - Distance From Pond Bottom To SHGWT - Freeboard

Anticipated Pond $Depth_{Wet}$ = Depth To SHGWT - Freeboard

$$L_{Rect} = \sqrt{\frac{V}{H}(L/W\ Ratio)} + 2*0.5*H*Side\ Slope + 2*Berm\ Width$$

$$W_{Rect} = L*(L/W\ Ratio) + 2*0.5*H*Side\ Slope + 2*Berm\ Width$$

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 2 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	GL
Checked By:	DS

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	966,000	ft^2	22.18 acres
Linear Pond Area	1,328,250	ft^2	30.49 acres
Total Area	2,294,250	ft^2	52.67 acres

Exist. Basin Limits	
72+50	158+75

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 8,625 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	1,328,250	57.89%	39	61	74	80	106,260,000	1328250	30.49
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	690,000	30.08%	39	61	74	80	55,200,000	690000	15.84
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	276,000	12.03%	98	98	98	98	27,048,000	276000	6.34
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**2,294,250**	**100.00%**			**COMPOSITE CN =**	**82**	**188,508,000**	**2,294,250**	**52.67**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,955,132 ft^3 44.88 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	966,000	ft^2	22.18 acres
Linear Pond Area	1,328,250	ft^2	30.49 acres
Total Area	2,294,250	ft^2	52.67 acres

Prop. Basin Limits	
72+50	158+75

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 8,625 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	664,125	28.95%	100	100	100	100	66,412,500	664,125	15.25
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	664,125	28.95%	39	61	74	80	53,130,000	664,125	15.25
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	293,250	12.78%	39	61	74	80	23,460,000	293,250	6.73
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	672,750	29.32%	98	98	98	98	65,929,500	672,750	15.44
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**2,294,250**	**100.00%**			**COMPOSITE CN =**	**91**	**208,932,000**	**2,294,250**	**52.67**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 2,178,659 ft^3 50.02 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 2 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	GL
Checked By:	DS

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	8,625	Discharge to OFW:	No
Pond Area Basin (acres):	15.25		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	22.18	acres	
Area of North Linear Treatment Pond	15.25	acres	
Area of South Linear Treatment Pond	15.25	acres	
TOTAL R/W AREA	**52.67**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	15.44	acres	
Pervious Area (C = 0.2)	21.98	acres	
Water / Pond (C = 1.0)	15.25	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	2.86	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	2.25	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	2.19	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	1.13	ac-ft	

Required Treatment for Watershed (Max.):	**124,559**	ft^3	**2.86** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	1,955,132	ft^3	44.88 ac-ft
Proposed Runoff Volume =	2,178,659	ft^3	50.02 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**223,527**	ft^3	**5.13** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

223,527 ft^3 **5.13** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	4,312.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	64,687.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	4,324.5
Width (ft):	24.0
Area (ft^2):	103,788.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	168,475.5	
	3.87	acre-ft

Total Treatment Volume Provided =	7.74 acre-ft
Total Treatment Volume Required =	2.86 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	4,336.5
Width (ft):	33.0
Area (ft^2):	143,104.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	207,792.0	
	4.77	acre-ft

Total Volume Provided =	9.54 acre-ft
Total Volume Required =	5.13 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 3 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	332,640 ft^2	7.64 acres	
Linear Pond Area	457,380 ft^2	10.50 acres	
Total Area	790,020 ft^2	18.14 acres	

Exist. Basin Limits: 158+75 188+45

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 2,970 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	457,380	57.89%	39	61	74	80	36,590,400	457380	10.50
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	237,600	30.08%	39	61	74	80	19,008,000	237600	5.45
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	95,040	12.03%	98	98	98	98	9,313,920	95040	2.18
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**790,020**	**100.00%**				**COMPOSITE CN =**	**82**	**64,912,320**	**790,020**	**18.14**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 673,245 ft^3 15.46 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	332,640 ft^2	7.64 acres	
Linear Pond Area	457,380 ft^2	10.50 acres	
Total Area	790,020 ft^2	18.14 acres	

Prop. Basin Limits: 158+75 188+45

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 2,970 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	228,690	28.95%	100	100	100	100	22,869,000	228,690	5.25
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	228,690	28.95%	39	61	74	80	18,295,200	228,690	5.25
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	100,980	12.78%	39	61	74	80	8,078,400	100,980	2.32
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	231,660	29.32%	98	98	98	98	22,702,680	231,660	5.32
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**790,020**	**100.00%**				**COMPOSITE CN =**	**91**	**71,945,280**	**790,020**	**18.14**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 750,216 ft^3 17.22 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 3 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	2,970	Discharge to OFW:	No
Pond Area Basin (acres):	5.25		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	7.64	acres	
Area of North Linear Treatment Pond	5.25	acres	
Area of South Linear Treatment Pond	5.25	acres	
TOTAL R/W AREA	**18.14**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	5.32	acres	
Pervious Area (C = 0.2)	7.57	acres	
Water / Pond (C = 1.0)	5.25	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.98	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.78	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.76	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.39	ac-ft	

Required Treatment for Watershed (Max.):	**42,892**	ft^3	**0.98** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	673,245	ft^3	15.46 ac-ft
Proposed Runoff Volume =	750,216	ft^3	17.22 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**76,971**	ft^3	**1.77** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

76,971 ft^3 **1.77** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,485.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	22,275.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,497.0
Width (ft):	24.0
Area (ft^2):	35,928.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	58,203.0	
	1.34	acre-ft

Total Treatment Volume Provided =	2.67 acre-ft
Total Treatment Volume Required =	0.98 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,509.0
Width (ft):	33.0
Area (ft^2):	49,797.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	72,072.0
	1.65 acre-ft

Total Volume Provided =	3.31 acre-ft
Total Volume Required =	1.77 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 4 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	291,200 ft^2	6.69 acres	
Linear Pond Area	400,400 ft^2	9.19 acres	
Total Area	691,600 ft^2	15.88 acres	

Exist. Basin Limits: 188+45 214+45

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 2,600 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	400,400	57.89%	39	61	74	80	32,032,000	400400	9.19
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	208,000	30.08%	39	61	74	80	16,640,000	208000	4.78
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	83,200	12.03%	98	98	98	98	8,153,600	83200	1.91
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**691,600**	**100.00%**				**COMPOSITE CN =**	**82**	**56,825,600**	**691,600**	**15.88**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 589,373 ft^3 13.53 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	291,200 ft^2	6.69 acres	
Linear Pond Area	400,400 ft^2	9.19 acres	
Total Area	691,600 ft^2	15.88 acres	

Prop. Basin Limits: 188+45 214+45

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 2,600 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	200,200	28.95%	100	100	100	100	20,020,000	200,200	4.60
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	200,200	28.95%	39	61	74	80	16,016,000	200,200	4.60
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	88,400	12.78%	39	61	74	80	7,072,000	88,400	2.03
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	202,800	29.32%	98	98	98	98	19,874,400	202,800	4.66
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**691,600**	**100.00%**				**COMPOSITE CN =**	**91**	**62,982,400**	**691,600**	**15.88**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 656,755 ft^3 15.08 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 4 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	2,600	Discharge to OFW:	No
Pond Area Basin (acres):	4.60		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	6.69	acres	
Area of North Linear Treatment Pond	4.60	acres	
Area of South Linear Treatment Pond	4.60	acres	
TOTAL R/W AREA	**15.88**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	4.66	acres	
Pervious Area (C = 0.2)	6.63	acres	
Water / Pond (C = 1.0)	4.60	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.86	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.68	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.66	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.34	ac-ft	

Required Treatment for Watershed (Max.):	**37,548**	ft^3	**0.86** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	589,373	ft^3	13.53 ac-ft
Proposed Runoff Volume =	656,755	ft^3	15.08 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**67,382**	ft^3	**1.55** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

67,382 ft^3 **1.55** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,300.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	19,500.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,312.0
Width (ft):	24.0
Area (ft^2):	31,488.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	50,988.0	
	1.17	acre-ft

Total Treatment Volume Provided =	2.34 acre-ft
Total Treatment Volume Required =	0.86 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,324.0
Width (ft):	33.0
Area (ft^2):	43,692.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	63,192.0
	1.45 acre-ft

Total Volume Provided =	2.90 acre-ft
Total Volume Required =	1.55 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 5 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	476,560 ft^2	10.94 acres	
Linear Pond Area	655,270 ft^2	15.04 acres	
Total Area	1,131,830 ft^2	25.98 acres	

Exist. Basin Limits: 214+45 257+00

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 4,255 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	655,270	57.89%	39	61	74	80	52,421,600	655270	15.04
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	340,400	30.08%	39	61	74	80	27,232,000	340400	7.81
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	136,160	12.03%	98	98	98	98	13,343,680	136160	3.13
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,131,830**	**100.00%**			**COMPOSITE CN =**	**82**	**92,997,280**	**1,131,830**	**25.98**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 964,532 ft^3 22.14 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	476,560 ft^2	10.94 acres	
Linear Pond Area	655,270 ft^2	15.04 acres	
Total Area	1,131,830 ft^2	25.98 acres	

Prop. Basin Limits: 214+45 257+00

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 4,255 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	327,635	28.95%	100	100	100	100	32,763,500	327,635	7.52
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	327,635	28.95%	39	61	74	80	26,210,800	327,635	7.52
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	144,670	12.78%	39	61	74	80	11,573,600	144,670	3.32
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	331,890	29.32%	98	98	98	98	32,525,220	331,890	7.62
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,131,830**	**100.00%**			**COMPOSITE CN =**	**91**	**103,073,120**	**1,131,830**	**25.98**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,074,805 ft^3 24.67 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 5 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	4,255	Discharge to OFW:	No
Pond Area Basin (acres):	7.52		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	10.94	acres	
Area of North Linear Treatment Pond	7.52	acres	
Area of South Linear Treatment Pond	7.52	acres	
TOTAL R/W AREA	**25.98**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	7.62	acres	
Pervious Area (C = 0.2)	10.84	acres	
Water / Pond (C = 1.0)	7.52	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment) — No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	1.41	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	1.11	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	1.08	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.56	ac-ft	

Required Treatment for Watershed (Max.):	**61,449**	ft^3	**1.41** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	964,532	ft^3	22.14 ac-ft
Proposed Runoff Volume =	1,074,805	ft^3	24.67 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**110,273**	ft^3	**2.53** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

110,273 ft^3 **2.53** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	2,127.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	31,912.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	2,139.5
Width (ft):	24.0
Area (ft^2):	51,348.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	83,260.5	
	1.91	acre-ft

Total Treatment Volume Provided =	3.82 acre-ft
Total Treatment Volume Required =	1.41 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	2,151.5
Width (ft):	33.0
Area (ft^2):	70,999.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	102,912.0	
	2.36	acre-ft

Total Volume Provided =	4.73	acre-ft
Total Volume Required =	2.53	acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 6 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits: 257+00 290+75

Roadway Basin Area	378,000 ft^2	8.68	acres
Linear Pond Area	519,750 ft^2	11.93	acres
Total Area	897,750 ft^2	20.61	acres

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 3,375 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	519,750	57.89%	39	61	74	80	41,580,000	519750	11.93
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	270,000	30.08%	39	61	74	80	21,600,000	270000	6.20
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	108,000	12.03%	98	98	98	98	10,584,000	108000	2.48
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**897,750**	**100.00%**				**COMPOSITE CN =**	**82**	**73,764,000**	**897,750**	**20.61**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 765,052 ft^3 17.56 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits: 257+00 290+75

Roadway Basin Area	378,000 ft^2	8.68	acres
Linear Pond Area	519,750 ft^2	11.93	acres
Total Area	897,750 ft^2	20.61	acres

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 3,375 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	259,875	28.95%	100	100	100	100	25,987,500	259,875	5.97
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	259,875	28.95%	39	61	74	80	20,790,000	259,875	5.97
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	114,750	12.78%	39	61	74	80	9,180,000	114,750	2.63
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	263,250	29.32%	98	98	98	98	25,798,500	263,250	6.04
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**897,750**	**100.00%**				**COMPOSITE CN =**	**91**	**81,756,000**	**897,750**	**20.61**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 852,519 ft^3 19.57 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 6 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	3,375	Discharge to OFW:	No
Pond Area Basin (acres):	5.97		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	8.68	acres	
Area of North Linear Treatment Pond	5.97	acres	
Area of South Linear Treatment Pond	5.97	acres	
TOTAL R/W AREA	**20.61**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	6.04	acres	
Pervious Area (C = 0.2)	8.60	acres	
Water / Pond (C = 1.0)	5.97	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	1.12	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.88	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.86	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.44	ac-ft	

Required Treatment for Watershed (Max.):	**48,741**	ft^3	**1.12** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	765,052	ft^3	17.56 ac-ft
Proposed Runoff Volume =	852,519	ft^3	19.57 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**87,467**	ft^3	**2.01** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

87,467 ft^3 **2.01** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,687.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	25,312.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,699.5
Width (ft):	24.0
Area (ft^2):	40,788.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	66,100.5	
	1.52	acre-ft

Total Treatment Volume Provided =	3.03 acre-ft
Total Treatment Volume Required =	1.12 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,711.5
Width (ft):	33.0
Area (ft^2):	56,479.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	81,792.0
	1.88 acre-ft

Total Volume Provided =	3.76 acre-ft
Total Volume Required =	2.01 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 7 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits: 290+75 to 324+90

Roadway Basin Area	382,480 ft^2	8.78 acres	
Linear Pond Area	525,910 ft^2	12.07 acres	
Total Area	908,390 ft^2	20.85 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 3,415 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	525,910	57.89%	39	61	74	80	42,072,800	525910	12.07
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	273,200	30.08%	39	61	74	80	21,856,000	273200	6.27
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	109,280	12.03%	98	98	98	98	10,709,440	109280	2.51
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**908,390**	**100.00%**				**COMPOSITE CN =**	**82**	**74,638,240**	**908,390**	**20.85**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 774,119 ft^3 17.77 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits: 290+75 to 324+90

Roadway Basin Area	382,480 ft^2	8.78 acres	
Linear Pond Area	525,910 ft^2	12.07 acres	
Total Area	908,390 ft^2	20.85 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 3,415 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	262,955	28.95%	100	100	100	100	26,295,500	262,955	6.04
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	262,955	28.95%	39	61	74	80	21,036,400	262,955	6.04
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	116,110	12.78%	39	61	74	80	9,288,800	116,110	2.67
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	266,370	29.32%	98	98	98	98	26,104,260	266,370	6.12
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**908,390**	**100.00%**				**COMPOSITE CN =**	**91**	**82,724,960**	**908,390**	**20.85**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 862,623 ft^3 19.80 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 7 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	3,415	Discharge to OFW:	No
Pond Area Basin (acres):	6.04		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	8.78	acres	
Area of North Linear Treatment Pond	6.04	acres	
Area of South Linear Treatment Pond	6.04	acres	
TOTAL R/W AREA	**20.85**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	6.12	acres	
Pervious Area (C = 0.2)	8.70	acres	
Water / Pond (C = 1.0)	6.04	acres	Assume 50% of Pond Basin Areas
Discharge to OFW (If yes, additional 50% Treatment)	No		
SJRWMD Dry Retention Criteria - Greater of the Following:			
a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	1.13	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.89	ac-ft	
SFWMD Dry Retention Criteria - Greater of the Following:			
a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.87	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.45	ac-ft	
Required Treatment for Watershed (Max.):	**49,318**	ft^3	**1.13** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	774,119	ft^3	17.77 ac-ft
Proposed Runoff Volume =	862,623	ft^3	19.80 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**88,504**	ft^3	**2.03** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

88,504 ft^3 **2.03** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,707.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	25,612.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,719.5
Width (ft):	24.0
Area (ft^2):	41,268.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	66,880.5	
	1.54	acre-ft

Total Treatment Volume Provided =	3.07 acre-ft
Total Treatment Volume Required =	1.13 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,731.5
Width (ft):	33.0
Area (ft^2):	57,139.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	82,752.0
	1.90 acre-ft

Total Volume Provided =	3.80 acre-ft
Total Volume Required =	2.03 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 8 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	362,880	ft^2	8.33 acres
Linear Pond Area	498,960	ft^2	11.45 acres
Total Area	861,840	ft^2	19.79 acres

Exist. Basin Limits: 324+90 to 357+30

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 3,240 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	498,960	57.89%	39	61	74	80	39,916,800	498960	11.45
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	259,200	30.08%	39	61	74	80	20,736,000	259200	5.95
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	103,680	12.03%	98	98	98	98	10,160,640	103680	2.38
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**861,840**	**100.00%**				**COMPOSITE CN =**	**82**	**70,813,440**	**861,840**	**19.79**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 734,449 ft^3 16.86 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	362,880	ft^2	8.33 acres
Linear Pond Area	498,960	ft^2	11.45 acres
Total Area	861,840	ft^2	19.79 acres

Prop. Basin Limits: 324+90 to 357+30

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 3,240 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	249,480	28.95%	100	100	100	100	24,948,000	249,480	5.73
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	249,480	28.95%	39	61	74	80	19,958,400	249,480	5.73
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	110,160	12.78%	39	61	74	80	8,812,800	110,160	2.53
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	252,720	29.32%	98	98	98	98	24,766,560	252,720	5.80
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**861,840**	**100.00%**				**COMPOSITE CN =**	**91**	**78,485,760**	**861,840**	**19.79**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 818,418 ft^3 18.79 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 8 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	3,240	Discharge to OFW:	No
Pond Area Basin (acres):	5.73		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	8.33	acres	
Area of North Linear Treatment Pond	5.73	acres	
Area of South Linear Treatment Pond	5.73	acres	
TOTAL R/W AREA	**19.79**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	5.80	acres	
Pervious Area (C = 0.2)	8.26	acres	
Water / Pond (C = 1.0)	5.73	acres	Assume 50% of Pond Basin Areas
Discharge to OFW (If yes, additional 50% Treatment)	No		

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	1.07	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.85	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.82	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.42	ac-ft	

Required Treatment for Watershed (Max.):	**46,791**	ft^3	**1.07** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	734,449	ft^3	16.86 ac-ft
Proposed Runoff Volume =	818,418	ft^3	18.79 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**83,968**	ft^3	**1.93** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

83,968 ft^3 **1.93** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,620.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	24,300.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,632.0
Width (ft):	24.0
Area (ft^2):	39,168.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	63,468.0	
	1.46	acre-ft

Total Treatment Volume Provided =	2.91 acre-ft
Total Treatment Volume Required =	1.07 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,644.0
Width (ft):	33.0
Area (ft^2):	54,252.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	78,552.0	
	1.80	acre-ft

Total Volume Provided =	3.61 acre-ft
Total Volume Required =	1.93 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 9 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	330,400 ft^2	7.58 acres	
Linear Pond Area	454,300 ft^2	10.43 acres	
Total Area	784,700 ft^2	18.01 acres	

Exist. Basin Limits: 357+30 386+80

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 2,950 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	454,300	57.89%	39	61	74	80	36,344,000	454300	10.43
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	236,000	30.08%	39	61	74	80	18,880,000	236000	5.42
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	94,400	12.03%	98	98	98	98	9,251,200	94400	2.17
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**784,700**	**100.00%**				**COMPOSITE CN =**	**82**	**64,475,200**	**784,700**	**18.01**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 668,712 ft^3 15.35 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	330,400 ft^2	7.58 acres	
Linear Pond Area	454,300 ft^2	10.43 acres	
Total Area	784,700 ft^2	18.01 acres	

Prop. Basin Limits: 357+30 386+80

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 2,950 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	227,150	28.95%	100	100	100	100	22,715,000	227,150	5.21
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	227,150	28.95%	39	61	74	80	18,172,000	227,150	5.21
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	100,300	12.78%	39	61	74	80	8,024,000	100,300	2.30
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	230,100	29.32%	98	98	98	98	22,549,800	230,100	5.28
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**784,700**	**100.00%**				**COMPOSITE CN =**	**91**	**71,460,800**	**784,700**	**18.01**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 745,164 ft^3 17.11 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 9 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	2,950	Discharge to OFW:	No
Pond Area Basin (acres):	5.21		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	7.58	acres	
Area of North Linear Treatment Pond	5.21	acres	
Area of South Linear Treatment Pond	5.21	acres	
TOTAL R/W AREA	**18.01**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	5.28	acres	
Pervious Area (C = 0.2)	7.52	acres	
Water / Pond (C = 1.0)	5.21	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment) — No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.98	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.77	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.75	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.39	ac-ft	

Required Treatment for Watershed (Max.):	**42,603**	ft^3	**0.98** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	668,712	ft^3	15.35 ac-ft
Proposed Runoff Volume =	745,164	ft^3	17.11 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**76,453**	ft^3	**1.76** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

76,453 ft^3 **1.76** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,475.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	22,125.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,487.0	
Width (ft):	24.0	
Area (ft^2):	35,688.0	

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	57,813.0	
	1.33	acre-ft

Total Treatment Volume Provided =	2.65 acre-ft
Total Treatment Volume Required =	0.98 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,499.0
Width (ft):	33.0
Area (ft^2):	49,467.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	71,592.0	
	1.64	acre-ft

Total Volume Provided =	3.29 acre-ft
Total Volume Required =	1.76 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 10 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits	
386+80	402+50

Roadway Basin Area	175,840 ft^2	4.04	acres
Linear Pond Area	241,780 ft^2	5.55	acres
Total Area	417,620 ft^2	9.59	acres

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 1,570 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	241,780	57.89%	39	61	74	80	19,342,400	241780	5.55
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	125,600	30.08%	39	61	74	80	10,048,000	125600	2.88
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	50,240	12.03%	98	98	98	98	4,923,520	50240	1.15
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**417,620**	**100.00%**				**COMPOSITE CN =**	**82**	**34,313,920**	**417,620**	**9.59**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 355,891 ft^3 8.17 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits	
386+80	402+50

Roadway Basin Area	175,840 ft^2	4.04	acres
Linear Pond Area	241,780 ft^2	5.55	acres
Total Area	417,620 ft^2	9.59	acres

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 1,570 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	120,890	28.95%	100	100	100	100	12,089,000	120,890	2.78
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	120,890	28.95%	39	61	74	80	9,671,200	120,890	2.78
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	53,380	12.78%	39	61	74	80	4,270,400	53,380	1.23
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	122,460	29.32%	98	98	98	98	12,001,080	122,460	2.81
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**417,620**	**100.00%**				**COMPOSITE CN =**	**91**	**38,031,680**	**417,620**	**9.59**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 396,579 ft^3 9.10 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 10 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	1,570	Discharge to OFW:	No
Pond Area Basin (acres):	2.78		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	4.04	acres	
Area of North Linear Treatment Pond	2.78	acres	
Area of South Linear Treatment Pond	2.78	acres	
TOTAL R/W AREA	**9.59**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	2.81	acres	
Pervious Area (C = 0.2)	4.00	acres	
Water / Pond (C = 1.0)	2.78	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.52	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.41	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.40	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.20	ac-ft	

Required Treatment for Watershed (Max.):	**22,673**	ft^3	**0.52** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	355,891	ft^3	8.17 ac-ft
Proposed Runoff Volume =	396,579	ft^3	9.10 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**40,688**	ft^3	**0.93** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

40,688 ft^3 **0.93** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	785.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	11,775.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	797.0
Width (ft):	24.0
Area (ft^2):	19,128.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	30,903.0	
	0.71	acre-ft

Total Treatment Volume Provided =	1.42 acre-ft
Total Treatment Volume Required =	0.52 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	809.0
Width (ft):	33.0
Area (ft^2):	26,697.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	38,472.0	
	0.88	acre-ft

Total Volume Provided =	1.77 acre-ft
Total Volume Required =	0.93 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 11 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits: 402+50 to 477+55

Roadway Basin Area	840,560 ft^2	19.30 acres	
Linear Pond Area	1,155,770 ft^2	26.53 acres	
Total Area	1,996,330 ft^2	45.83 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 7,505 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	1,155,770	57.89%	39	61	74	80	92,461,600	1155770	26.53
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	600,400	30.08%	39	61	74	80	48,032,000	600400	13.78
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	240,160	12.03%	98	98	98	98	23,535,680	240160	5.51
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,996,330**	**100.00%**			**COMPOSITE CN =**	**82**	**164,029,280**	**1,996,330**	**45.83**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,701,248 ft^3 39.06 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits: 402+50 to 477+55

Roadway Basin Area	840,560 ft^2	19.30 acres	
Linear Pond Area	1,155,770 ft^2	26.53 acres	
Total Area	1,996,330 ft^2	45.83 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 7,505 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	577,885	28.95%	100	100	100	100	57,788,500	577,885	13.27
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	577,885	28.95%	39	61	74	80	46,230,800	577,885	13.27
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	255,170	12.78%	39	61	74	80	20,413,600	255,170	5.86
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	585,390	29.32%	98	98	98	98	57,368,220	585,390	13.44
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,996,330**	**100.00%**			**COMPOSITE CN =**	**91**	**181,801,120**	**1,996,330**	**45.83**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,895,749 ft^3 43.52 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 11 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	7,505	Discharge to OFW:	No
Pond Area Basin (acres):	13.27		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	19.30	acres	
Area of North Linear Treatment Pond	13.27	acres	
Area of South Linear Treatment Pond	13.27	acres	
TOTAL R/W AREA	**45.83**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	13.44	acres	
Pervious Area (C = 0.2)	19.12	acres	
Water / Pond (C = 1.0)	13.27	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	2.49	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	1.96	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	1.91	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.98	ac-ft	

Required Treatment for Watershed (Max.): **108,385** ft^3 **2.49** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	1,701,248	ft^3	39.06 ac-ft
Proposed Runoff Volume =	1,895,749	ft^3	43.52 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**194,501**	ft^3	**4.47** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

194,501 ft^3 **4.47** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	3,752.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	56,287.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	3,764.5
Width (ft):	24.0
Area (ft^2):	90,348.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	146,635.5	
	3.37	acre-ft

Total Treatment Volume Provided =	6.73 acre-ft
Total Treatment Volume Required =	2.49 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	3,776.5
Width (ft):	33.0
Area (ft^2):	124,624.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	180,912.0	
	4.15	acre-ft

Total Volume Provided =	8.31 acre-ft
Total Volume Required =	4.47 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 12 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits: 477+55 to 487+00

Roadway Basin Area	105,840 ft^2	2.43 acres	
Linear Pond Area	145,530 ft^2	3.34 acres	
Total Area	251,370 ft^2	5.77 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 945 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	145,530	57.89%	39	61	74	80	11,642,400	145530	3.34
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	75,600	30.08%	39	61	74	80	6,048,000	75600	1.74
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	30,240	12.03%	98	98	98	98	2,963,520	30240	0.69
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**251,370**	**100.00%**				**COMPOSITE CN =**	**82**	**20,653,920**	**251,370**	**5.77**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 214,214 ft^3 4.92 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits: 477+55 to 487+00

Roadway Basin Area	105,840 ft^2	2.43 acres	
Linear Pond Area	145,530 ft^2	3.34 acres	
Total Area	251,370 ft^2	5.77 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 945 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	72,765	28.95%	100	100	100	100	7,276,500	72,765	1.67
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	72,765	28.95%	39	61	74	80	5,821,200	72,765	1.67
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	32,130	12.78%	39	61	74	80	2,570,400	32,130	0.74
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	73,710	29.32%	98	98	98	98	7,223,580	73,710	1.69
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**251,370**	**100.00%**				**COMPOSITE CN =**	**91**	**22,891,680**	**251,370**	**5.77**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 238,705 ft^3 5.48 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 12 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	945	Discharge to OFW:	No
Pond Area Basin (acres):	1.67		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?		**Dry Pond**	
Area Between Roadway Shoulder Points		2.43 acres	
Area of North Linear Treatment Pond		1.67 acres	
Area of South Linear Treatment Pond		1.67 acres	
TOTAL R/W AREA		**5.77 acres**	
Resulting R/W Width		266 ft	
Weighted C		0.65	
	Impervious Area (C = 0.95)	1.69 acres	
	Pervious Area (C = 0.2)	2.41 acres	
	Water / Pond (C = 1.0)	1.67 acres	Assume 50% of Pond Basin Areas
Discharge to OFW (If yes, additional 50% Treatment)		No	
SJRWMD Dry Retention Criteria - Greater of the Following:			
	a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.31 ac-ft	(whichever is greater)
	b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.25 ac-ft	
SFWMD Dry Retention Criteria - Greater of the Following:			
	a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.24 ac-ft	(whichever is greater)
	b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.12 ac-ft	
Required Treatment for Watershed (Max.):		**13,647** ft^3	**0.31** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	214,214 ft^3	4.92 ac-ft
Proposed Runoff Volume =	238,705 ft^3	5.48 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**24,491** ft^3	**0.56** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

24,491 ft^3 **0.56** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	472.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	7,087.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	484.5
Width (ft):	24.0
Area (ft^2):	11,628.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	18,715.5	
	0.43	acre-ft

Total Treatment Volume Provided =	0.86 acre-ft
Total Treatment Volume Required =	0.31 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	496.5
Width (ft):	33.0
Area (ft^2):	16,384.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	23,472.0	
	0.54	acre-ft

Total Volume Provided =	1.08 acre-ft
Total Volume Required =	0.56 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 13 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	727,440	ft^2	16.70 acres
Linear Pond Area	1,000,230	ft^2	22.96 acres
Total Area	1,727,670	ft^2	39.66 acres

Exist. Basin Limits: 487+00 551+95

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 6,495 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	1,000,230	57.89%	39	61	74	80	80,018,400	1000230	22.96
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	519,600	30.08%	39	61	74	80	41,568,000	519600	11.93
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	207,840	12.03%	98	98	98	98	20,368,320	207840	4.77
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,727,670**	**100.00%**			**COMPOSITE CN =**	**82**	**141,954,720**	**1,727,670**	**39.66**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,472,299 ft^3 33.80 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	727,440	ft^2	16.70 acres
Linear Pond Area	1,000,230	ft^2	22.96 acres
Total Area	1,727,670	ft^2	39.66 acres

Prop. Basin Limits: 487+00 551+95

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 6,495 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	500,115	28.95%	100	100	100	100	50,011,500	500,115	11.48
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	500,115	28.95%	39	61	74	80	40,009,200	500,115	11.48
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	220,830	12.78%	39	61	74	80	17,666,400	220,830	5.07
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	506,610	29.32%	98	98	98	98	49,647,780	506,610	11.63
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,727,670**	**100.00%**			**COMPOSITE CN =**	**91**	**157,334,880**	**1,727,670**	**39.66**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,640,625 ft^3 37.66 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 13 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	6,495	Discharge to OFW:	No
Pond Area Basin (acres):	11.48		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	16.70	acres	
Area of North Linear Treatment Pond	11.48	acres	
Area of South Linear Treatment Pond	11.48	acres	
TOTAL R/W AREA	**39.66**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	11.63	acres	
Pervious Area (C = 0.2)	16.55	acres	
Water / Pond (C = 1.0)	11.48	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	2.15	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	1.70	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	1.65	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.85	ac-ft	

Required Treatment for Watershed (Max.):	**93,799**	ft^3	**2.15** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	1,472,299	ft^3	33.80 ac-ft
Proposed Runoff Volume =	1,640,625	ft^3	37.66 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**168,326**	ft^3	**3.86** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

168,326 ft^3 **3.86** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	3,247.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	48,712.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	3,259.5
Width (ft):	24.0
Area (ft^2):	78,228.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	126,940.5	
	2.91	acre-ft

Total Treatment Volume Provided =	5.83 acre-ft
Total Treatment Volume Required =	2.15 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	3,271.5
Width (ft):	33.0
Area (ft^2):	107,959.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	156,672.0	
	3.60	acre-ft

Total Volume Provided =	7.19 acre-ft
Total Volume Required =	3.86 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 14 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	205,520 ft^2	4.72 acres	
Linear Pond Area	282,590 ft^2	6.49 acres	
Total Area	488,110 ft^2	11.21 acres	

Exist. Basin Limits: 551+95 to 570+30

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 1,835 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	282,590	57.89%	39	61	74	80	22,607,200	282590	6.49
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	146,800	30.08%	39	61	74	80	11,744,000	146800	3.37
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	58,720	12.03%	98	98	98	98	5,754,560	58720	1.35
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**488,110**	**100.00%**				**COMPOSITE CN =**	**82**	**40,105,760**	**488,110**	**11.21**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 415,961 ft^3 9.55 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	205,520 ft^2	4.72 acres	
Linear Pond Area	282,590 ft^2	6.49 acres	
Total Area	488,110 ft^2	11.21 acres	

Prop. Basin Limits: 551+95 to 570+30

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 1,835 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	141,295	28.95%	100	100	100	100	14,129,500	141,295	3.24
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	141,295	28.95%	39	61	74	80	11,303,600	141,295	3.24
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	62,390	12.78%	39	61	74	80	4,991,200	62,390	1.43
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	143,130	29.32%	98	98	98	98	14,026,740	143,130	3.29
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**488,110**	**100.00%**				**COMPOSITE CN =**	**91**	**44,451,040**	**488,110**	**11.21**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 463,518 ft^3 10.64 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 14 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	1,835	Discharge to OFW:	No
Pond Area Basin (acres):	3.24		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	4.72	acres	
Area of North Linear Treatment Pond	3.24	acres	
Area of South Linear Treatment Pond	3.24	acres	
TOTAL R/W AREA	**11.21**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	3.29	acres	
Pervious Area (C = 0.2)	4.68	acres	
Water / Pond (C = 1.0)	3.24	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.61	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.48	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.47	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.24	ac-ft	

Required Treatment for Watershed (Max.):	**26,500**	ft^3	**0.61** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	415,961	ft^3	9.55 ac-ft
Proposed Runoff Volume =	463,518	ft^3	10.64 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**47,556**	ft^3	**1.09** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

47,556 ft^3 **1.09** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	917.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	13,762.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	929.5
Width (ft):	24.0
Area (ft^2):	22,308.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	36,070.5	
	0.83	acre-ft

Total Treatment Volume Provided =	1.66 acre-ft
Total Treatment Volume Required =	0.61 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	941.5
Width (ft):	33.0
Area (ft^2):	31,069.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	44,832.0	
	1.03	acre-ft

Total Volume Provided =	2.06 acre-ft
Total Volume Required =	1.09 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 15 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits: 570+30 611+70

Roadway Basin Area	463,680 ft^2	10.64 acres	
Linear Pond Area	637,560 ft^2	14.64 acres	
Total Area	1,101,240 ft^2	25.28 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 4,140 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	637,560	57.89%	39	61	74	80	51,004,800	637560	14.64
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	331,200	30.08%	39	61	74	80	26,496,000	331200	7.60
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	132,480	12.03%	98	98	98	98	12,983,040	132480	3.04
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,101,240**	**100.00%**				**COMPOSITE CN =**	**82**	**90,483,840**	**1,101,240**	**25.28**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 938,463 ft^3 21.54 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits: 570+30 611+70

Roadway Basin Area	463,680 ft^2	10.64 acres	
Linear Pond Area	637,560 ft^2	14.64 acres	
Total Area	1,101,240 ft^2	25.28 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 4,140 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	318,780	28.95%	100	100	100	100	31,878,000	318,780	7.32
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	318,780	28.95%	39	61	74	80	25,502,400	318,780	7.32
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	140,760	12.78%	39	61	74	80	11,260,800	140,760	3.23
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	322,920	29.32%	98	98	98	98	31,646,160	322,920	7.41
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,101,240**	**100.00%**				**COMPOSITE CN =**	**91**	**100,287,360**	**1,101,240**	**25.28**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,045,756 ft^3 24.01 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 15 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	4,140	Discharge to OFW:	No
Pond Area Basin (acres):	7.32		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	10.64	acres	
Area of North Linear Treatment Pond	7.32	acres	
Area of South Linear Treatment Pond	7.32	acres	
TOTAL R/W AREA	**25.28**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	7.41	acres	
Pervious Area (C = 0.2)	10.55	acres	
Water / Pond (C = 1.0)	7.32	acres	Assume 50% of Pond Basin Areas
Discharge to OFW (If yes, additional 50% Treatment)	No		
SJRWMD Dry Retention Criteria - Greater of the Following:			
a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	1.37	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	1.08	ac-ft	
SFWMD Dry Retention Criteria - Greater of the Following:			
a) 50% of 1st inch of runoff from the developed project (1" x Area)	1.05	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.54	ac-ft	
Required Treatment for Watershed (Max.):	**59,789**	ft^3	**1.37** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	938,463	ft^3	21.54 ac-ft
Proposed Runoff Volume =	1,045,756	ft^3	24.01 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**107,293**	ft^3	**2.46** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

107,293 ft^3 **2.46** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	2,070.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	31,050.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	2,082.0
Width (ft):	24.0
Area (ft^2):	49,968.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	81,018.0	
	1.86	acre-ft

Total Treatment Volume Provided =	3.72 acre-ft
Total Treatment Volume Required =	1.37 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	2,094.0
Width (ft):	33.0
Area (ft^2):	69,102.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	100,152.0	
	2.30	acre-ft

Total Volume Provided =	4.60 acre-ft
Total Volume Required =	2.46 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 16 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	235,760	ft^2	5.41 acres
Linear Pond Area	324,170	ft^2	7.44 acres
Total Area	559,930	ft^2	12.85 acres

Exist. Basin Limits: 611+70 632+75

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 2,105 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	324,170	57.89%	39	61	74	80	25,933,600	324170	7.44
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	168,400	30.08%	39	61	74	80	13,472,000	168400	3.87
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	67,360	12.03%	98	98	98	98	6,601,280	67360	1.55
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**559,930**	**100.00%**				**COMPOSITE CN =**	**82**	**46,006,880**	**559,930**	**12.85**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 477,165 ft^3 10.95 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	235,760	ft^2	5.41 acres
Linear Pond Area	324,170	ft^2	7.44 acres
Total Area	559,930	ft^2	12.85 acres

Prop. Basin Limits: 611+70 632+75

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 2,105 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	162,085	28.95%	100	100	100	100	16,208,500	162,085	3.72
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	162,085	28.95%	39	61	74	80	12,966,800	162,085	3.72
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	71,570	12.78%	39	61	74	80	5,725,600	71,570	1.64
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	164,190	29.32%	98	98	98	98	16,090,620	164,190	3.77
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**559,930**	**100.00%**				**COMPOSITE CN =**	**91**	**50,991,520**	**559,930**	**12.85**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 531,719 ft^3 12.21 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 16 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	2,105	Discharge to OFW:	No
Pond Area Basin (acres):	3.72		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	5.41	acres	
Area of North Linear Treatment Pond	3.72	acres	
Area of South Linear Treatment Pond	3.72	acres	
TOTAL R/W AREA	**12.85**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	3.77	acres	
Pervious Area (C = 0.2)	5.36	acres	
Water / Pond (C = 1.0)	3.72	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.70	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.55	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.54	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.27	ac-ft	

Required Treatment for Watershed (Max.):	**30,400**	ft^3	**0.70** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	477,165	ft^3	10.95 ac-ft
Proposed Runoff Volume =	531,719	ft^3	12.21 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**54,554**	ft^3	**1.25** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

54,554 ft^3 **1.25** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,052.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	15,787.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,064.5
Width (ft):	24.0
Area (ft^2):	25,548.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	41,335.5	
	0.95	acre-ft

Total Treatment Volume Provided =	1.90 acre-ft
Total Treatment Volume Required =	0.70 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,076.5
Width (ft):	33.0
Area (ft^2):	35,524.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	51,312.0
	1.18 acre-ft

Total Volume Provided =	2.36 acre-ft
Total Volume Required =	1.25 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 17 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits: 632+75 to 670+60

Roadway Basin Area	423,920 ft^2	9.73 acres	
Linear Pond Area	582,890 ft^2	13.38 acres	
Total Area	1,006,810 ft^2	23.11 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 3,785 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	582,890	57.89%	39	61	74	80	46,631,200	582890	13.38
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	302,800	30.08%	39	61	74	80	24,224,000	302800	6.95
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	121,120	12.03%	98	98	98	98	11,869,760	121120	2.78
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,006,810**	**100.00%**				**COMPOSITE CN =**	**82**	**82,724,960**	**1,006,810**	**23.11**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 857,991 ft^3 19.70 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits: 632+75 to 670+60

Roadway Basin Area	423,920 ft^2	9.73 acres	
Linear Pond Area	582,890 ft^2	13.38 acres	
Total Area	1,006,810 ft^2	23.11 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 3,785 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	291,445	28.95%	100	100	100	100	29,144,500	291,445	6.69
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	291,445	28.95%	39	61	74	80	23,315,600	291,445	6.69
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	128,690	12.78%	39	61	74	80	10,295,200	128,690	2.95
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	295,230	29.32%	98	98	98	98	28,932,540	295,230	6.78
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,006,810**	**100.00%**				**COMPOSITE CN =**	**91**	**91,687,840**	**1,006,810**	**23.11**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 956,084 ft^3 21.95 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 17 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	3,785	Discharge to OFW:	No
Pond Area Basin (acres):	6.69		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	9.73	acres	
Area of North Linear Treatment Pond	6.69	acres	
Area of South Linear Treatment Pond	6.69	acres	
TOTAL R/W AREA	**23.11**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	6.78	acres	
Pervious Area (C = 0.2)	9.64	acres	
Water / Pond (C = 1.0)	6.69	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	1.25	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.99	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.96	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.49	ac-ft	

Required Treatment for Watershed (Max.):	**54,662**	ft^3	**1.25** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	857,991	ft^3	19.70 ac-ft
Proposed Runoff Volume =	956,084	ft^3	21.95 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**98,093**	ft^3	**2.25** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

98,093 ft^3 **2.25** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,892.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	28,387.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,904.5
Width (ft):	24.0
Area (ft^2):	45,708.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	74,095.5	
	1.70	acre-ft

Total Treatment Volume Provided =	3.40 acre-ft
Total Treatment Volume Required =	1.25 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,916.5
Width (ft):	33.0
Area (ft^2):	63,244.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	91,632.0
	2.10 acre-ft

Total Volume Provided =	4.21 acre-ft
Total Volume Required =	2.25 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 18 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits: 670+60 to 695+10

Roadway Basin Area	274,400 ft²	6.30	acres
Linear Pond Area	377,300 ft²	8.66	acres
Total Area	651,700 ft²	14.96	acres

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 2,450 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**A**	**B**	**C**	**D**		**(Ft²)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	377,300	57.89%	39	61	74	80	30,184,000	377300	8.66
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	196,000	30.08%	39	61	74	80	15,680,000	196000	4.50
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	78,400	12.03%	98	98	98	98	7,683,200	78400	1.80
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**651,700**	**100.00%**				**COMPOSITE CN =**	**82**	**53,547,200**	**651,700**	**14.96**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 555,371 ft³ 12.75 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits: 670+60 to 695+10

Roadway Basin Area	274,400 ft²	6.30	acres
Linear Pond Area	377,300 ft²	8.66	acres
Total Area	651,700 ft²	14.96	acres

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 2,450 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**A**	**B**	**C**	**D**		**(Ft²)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	188,650	28.95%	100	100	100	100	18,865,000	188,650	4.33
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	188,650	28.95%	39	61	74	80	15,092,000	188,650	4.33
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	83,300	12.78%	39	61	74	80	6,664,000	83,300	1.91
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	191,100	29.32%	98	98	98	98	18,727,800	191,100	4.39
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**651,700**	**100.00%**				**COMPOSITE CN =**	**91**	**59,348,800**	**651,700**	**14.96**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 618,865 ft³ 14.21 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 18 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	2,450	Discharge to OFW:	No
Pond Area Basin (acres):	4.33		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	6.30	acres	
Area of North Linear Treatment Pond	4.33	acres	
Area of South Linear Treatment Pond	4.33	acres	
TOTAL R/W AREA	**14.96**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	4.39	acres	
Pervious Area (C = 0.2)	6.24	acres	
Water / Pond (C = 1.0)	4.33	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.81	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.64	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.62	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.32	ac-ft	

Required Treatment for Watershed (Max.):	**35,382**	ft^3	**0.81** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	555,371	ft^3	12.75 ac-ft
Proposed Runoff Volume =	618,865	ft^3	14.21 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**63,495**	ft^3	**1.46** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

63,495 ft^3 **1.46** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,225.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	18,375.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,237.0
Width (ft):	24.0
Area (ft^2):	29,688.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	48,063.0	
	1.10	acre-ft

Total Treatment Volume Provided =	2.21 acre-ft
Total Treatment Volume Required =	0.81 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,249.0
Width (ft):	33.0
Area (ft^2):	41,217.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	59,592.0	
	1.37	acre-ft

Total Volume Provided =	2.74	acre-ft
Total Volume Required =	1.46	acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 19 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits: 695+10 757+40

Roadway Basin Area	697,760 ft²	16.02 acres	
Linear Pond Area	959,420 ft²	22.03 acres	
Total Area	1,657,180 ft²	38.04 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 6,230 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**A**	**B**	**C**	**D**		**(Ft²)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	959,420	57.89%	39	61	74	80	76,753,600	959420	22.03
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	498,400	30.08%	39	61	74	80	39,872,000	498400	11.44
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	199,360	12.03%	98	98	98	98	19,537,280	199360	4.58
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,657,180**	**100.00%**			**COMPOSITE CN =**	**82**	**136,162,880**	**1,657,180**	**38.04**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,412,228 ft³ 32.42 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits: 695+10 757+40

Roadway Basin Area	697,760 ft²	16.02 acres	
Linear Pond Area	959,420 ft²	22.03 acres	
Total Area	1,657,180 ft²	38.04 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 6,230 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**A**	**B**	**C**	**D**		**(Ft²)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	479,710	28.95%	100	100	100	100	47,971,000	479,710	11.01
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	479,710	28.95%	39	61	74	80	38,376,800	479,710	11.01
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	211,820	12.78%	39	61	74	80	16,945,600	211,820	4.86
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	485,940	29.32%	98	98	98	98	47,622,120	485,940	11.16
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,657,180**	**100.00%**			**COMPOSITE CN =**	**91**	**150,915,520**	**1,657,180**	**38.04**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,573,686 ft³ 36.13 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 19 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	6,230	Discharge to OFW:	No
Pond Area Basin (acres):	11.01		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	16.02	acres	
Area of North Linear Treatment Pond	11.01	acres	
Area of South Linear Treatment Pond	11.01	acres	
TOTAL R/W AREA	**38.04**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	11.16	acres	
Pervious Area (C = 0.2)	15.88	acres	
Water / Pond (C = 1.0)	11.01	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment) — No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	2.07	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	1.63	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	1.59	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.81	ac-ft	

Required Treatment for Watershed (Max.):	**89,972**	ft^3	**2.07** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	1,412,228	ft^3	32.42 ac-ft
Proposed Runoff Volume =	1,573,686	ft^3	36.13 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**161,458**	ft^3	**3.71** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

161,458 ft^3 **3.71** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	3,115.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	46,725.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	3,127.0
Width (ft):	24.0
Area (ft^2):	75,048.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	121,773.0	
	2.80	acre-ft

Total Treatment Volume Provided =	5.59 acre-ft
Total Treatment Volume Required =	2.07 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	3,139.0
Width (ft):	33.0
Area (ft^2):	103,587.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	150,312.0	
	3.45	acre-ft

Total Volume Provided =	6.90 acre-ft
Total Volume Required =	3.71 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 20 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	621,600 ft^2	14.27 acres	
Linear Pond Area	854,700 ft^2	19.62 acres	
Total Area	1,476,300 ft^2	33.89 acres	

Exist. Basin Limits: 757+40 812+90

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 5,550 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	854,700	57.89%	39	61	74	80	68,376,000	854700	19.62
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	444,000	30.08%	39	61	74	80	35,520,000	444000	10.19
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	177,600	12.03%	98	98	98	98	17,404,800	177600	4.08
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,476,300**	**100.00%**				**COMPOSITE CN =**	**82**	**121,300,800**	**1,476,300**	**33.89**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,258,085 ft^3 28.88 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	621,600 ft^2	14.27 acres	
Linear Pond Area	854,700 ft^2	19.62 acres	
Total Area	1,476,300 ft^2	33.89 acres	

Prop. Basin Limits: 757+40 812+90

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 5,550 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	427,350	28.95%	100	100	100	100	42,735,000	427,350	9.81
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	427,350	28.95%	39	61	74	80	34,188,000	427,350	9.81
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	188,700	12.78%	39	61	74	80	15,096,000	188,700	4.33
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	432,900	29.32%	98	98	98	98	42,424,200	432,900	9.94
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,476,300**	**100.00%**				**COMPOSITE CN =**	**91**	**134,443,200**	**1,476,300**	**33.89**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,401,920 ft^3 32.18 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 20 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	5,550	Discharge to OFW:	No
Pond Area Basin (acres):	9.81		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	14.27	acres	
Area of North Linear Treatment Pond	9.81	acres	
Area of South Linear Treatment Pond	9.81	acres	
TOTAL R/W AREA	**33.89**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	9.94	acres	
Pervious Area (C = 0.2)	14.14	acres	
Water / Pond (C = 1.0)	9.81	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment) — No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	1.84	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	1.45	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	1.41	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.72	ac-ft	

Required Treatment for Watershed (Max.):	**80,151**	ft^3	**1.84** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	1,258,085	ft^3	28.88 ac-ft
Proposed Runoff Volume =	1,401,920	ft^3	32.18 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**143,835**	ft^3	**3.30** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

143,835 ft^3 **3.30** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	2,775.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	41,625.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	2,787.0
Width (ft):	24.0
Area (ft^2):	66,888.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	108,513.0	
	2.49	acre-ft

Total Treatment Volume Provided =	4.98 acre-ft
Total Treatment Volume Required =	1.84 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	2,799.0
Width (ft):	33.0
Area (ft^2):	92,367.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	133,992.0	
	3.08	acre-ft

Total Volume Provided =	6.15 acre-ft
Total Volume Required =	3.30 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 21 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits: 812+90 to 869+55

Roadway Basin Area	634,480 ft²	14.57 acres	
Linear Pond Area	872,410 ft²	20.03 acres	
Total Area	1,506,890 ft²	34.59 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 5,665 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**A**	**B**	**C**	**D**		**(Ft²)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	872,410	57.89%	39	61	74	80	69,792,800	872410	20.03
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	453,200	30.08%	39	61	74	80	36,256,000	453200	10.40
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	181,280	12.03%	98	98	98	98	17,765,440	181280	4.16
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,506,890**	**100.00%**				**COMPOSITE CN =**	**82**	**123,814,240**	**1,506,890**	**34.59**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,284,153 ft³ 29.48 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits: 812+90 to 869+55

Roadway Basin Area	634,480 ft²	14.57 acres	
Linear Pond Area	872,410 ft²	20.03 acres	
Total Area	1,506,890 ft²	34.59 acres	

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 5,665 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**A**	**B**	**C**	**D**		**(Ft²)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	436,205	28.95%	100	100	100	100	43,620,500	436,205	10.01
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	436,205	28.95%	39	61	74	80	34,896,400	436,205	10.01
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	192,610	12.78%	39	61	74	80	15,408,800	192,610	4.42
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	441,870	29.32%	98	98	98	98	43,303,260	441,870	10.14
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,506,890**	**100.00%**				**COMPOSITE CN =**	**91**	**137,228,960**	**1,506,890**	**34.59**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,430,968 ft³ 32.85 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 21 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	5,665	Discharge to OFW:	No
Pond Area Basin (acres):	10.01		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	14.57	acres	
Area of North Linear Treatment Pond	10.01	acres	
Area of South Linear Treatment Pond	10.01	acres	
TOTAL R/W AREA	**34.59**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	10.14	acres	
Pervious Area (C = 0.2)	14.44	acres	
Water / Pond (C = 1.0)	10.01	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	1.88	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	1.48	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	1.44	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.74	ac-ft	

Required Treatment for Watershed (Max.):	**81,812**	ft^3	**1.88** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	1,284,153	ft^3	29.48 ac-ft
Proposed Runoff Volume =	1,430,968	ft^3	32.85 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**146,815**	ft^3	**3.37** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

146,815 ft^3 **3.37** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	2,832.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	42,487.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	2,844.5
Width (ft):	24.0
Area (ft^2):	68,268.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	110,755.5	
	2.54	acre-ft

Total Treatment Volume Provided =	5.09 acre-ft
Total Treatment Volume Required =	1.88 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	2,856.5
Width (ft):	33.0
Area (ft^2):	94,264.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	136,752.0	
	3.14	acre-ft

Total Volume Provided =	6.28 acre-ft
Total Volume Required =	3.37 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 22 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Exist. Basin Limits	
869+55	889+65

Roadway Basin Area	225,120	ft^2	5.17 acres
Linear Pond Area	309,540	ft^2	7.11 acres
Total Area	534,660	ft^2	12.27 acres

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 2,010 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	309,540	57.89%	39	61	74	80	24,763,200	309540	7.11
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	160,800	30.08%	39	61	74	80	12,864,000	160800	3.69
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	64,320	12.03%	98	98	98	98	6,303,360	64320	1.48
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**534,660**	**100.00%**				**COMPOSITE CN =**	**82**	**43,930,560**	**534,660**	**12.27**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 455,631 ft^3 10.46 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Prop. Basin Limits	
869+55	889+65

Roadway Basin Area	225,120	ft^2	5.17 acres
Linear Pond Area	309,540	ft^2	7.11 acres
Total Area	534,660	ft^2	12.27 acres

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 2,010 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	154,770	28.95%	100	100	100	100	15,477,000	154,770	3.55
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	154,770	28.95%	39	61	74	80	12,381,600	154,770	3.55
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	68,340	12.78%	39	61	74	80	5,467,200	68,340	1.57
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	156,780	29.32%	98	98	98	98	15,364,440	156,780	3.60
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**534,660**	**100.00%**				**COMPOSITE CN =**	**91**	**48,690,240**	**534,660**	**12.27**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 507,722 ft^3 11.66 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 22 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	2,010	Discharge to OFW:	No
Pond Area Basin (acres):	3.55		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	5.17	acres	
Area of North Linear Treatment Pond	3.55	acres	
Area of South Linear Treatment Pond	3.55	acres	
TOTAL R/W AREA	**12.27**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	3.60	acres	
Pervious Area (C = 0.2)	5.12	acres	
Water / Pond (C = 1.0)	3.55	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.67	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.52	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.51	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.26	ac-ft	

Required Treatment for Watershed (Max.):	**29,028**	ft^3	**0.67** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	455,631	ft^3	10.46 ac-ft
Proposed Runoff Volume =	507,722	ft^3	11.66 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**52,092**	ft^3	**1.20** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

52,092 ft^3 **1.20** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,005.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	15,075.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,017.0
Width (ft):	24.0
Area (ft^2):	24,408.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	39,483.0	
	0.91	acre-ft

Total Treatment Volume Provided =	1.81 acre-ft
Total Treatment Volume Required =	0.67 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,029.0
Width (ft):	33.0
Area (ft^2):	33,957.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	49,032.0	
	1.13	acre-ft

Total Volume Provided =	2.25 acre-ft
Total Volume Required =	1.20 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 23 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	292,880	ft^2	6.72 acres
Linear Pond Area	402,710	ft^2	9.24 acres
Total Area	695,590	ft^2	15.97 acres

Exist. Basin Limits: 889+65 to 915+80

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 2,615 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	402,710	57.89%	39	61	74	80	32,216,800	402710	9.24
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	209,200	30.08%	39	61	74	80	16,736,000	209200	4.80
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	83,680	12.03%	98	98	98	98	8,200,640	83680	1.92
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**695,590**	**100.00%**				**COMPOSITE CN =**	**82**	**57,153,440**	**695,590**	**15.97**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 592,773 ft^3 13.61 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	292,880	ft^2	6.72 acres
Linear Pond Area	402,710	ft^2	9.24 acres
Total Area	695,590	ft^2	15.97 acres

Prop. Basin Limits: 889+65 to 915+80

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 2,615 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	201,355	28.95%	100	100	100	100	20,135,500	201,355	4.62
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	201,355	28.95%	39	61	74	80	16,108,400	201,355	4.62
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	88,910	12.78%	39	61	74	80	7,112,800	88,910	2.04
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	203,970	29.32%	98	98	98	98	19,989,060	203,970	4.68
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**695,590**	**100.00%**				**COMPOSITE CN =**	**91**	**63,345,760**	**695,590**	**15.97**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 660,544 ft^3 15.16 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 23 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	2,615	Discharge to OFW:	No
Pond Area Basin (acres):	4.62		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	6.72	acres	
Area of North Linear Treatment Pond	4.62	acres	
Area of South Linear Treatment Pond	4.62	acres	
TOTAL R/W AREA	**15.97**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	4.68	acres	
Pervious Area (C = 0.2)	6.66	acres	
Water / Pond (C = 1.0)	4.62	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.87	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.68	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.67	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.34	ac-ft	

Required Treatment for Watershed (Max.):	**37,765**	ft^3	**0.87** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	592,773	ft^3	13.61 ac-ft
Proposed Runoff Volume =	660,544	ft^3	15.16 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**67,771**	ft^3	**1.56** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

67,771 ft^3 **1.56** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,307.5	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	19,612.5	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,319.5
Width (ft):	24.0
Area (ft^2):	31,668.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	51,280.5	
	1.18	acre-ft

Total Treatment Volume Provided =	2.35 acre-ft
Total Treatment Volume Required =	0.87 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,331.5
Width (ft):	33.0
Area (ft^2):	43,939.5

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	63,552.0
	1.46 acre-ft

Total Volume Provided =	2.92 acre-ft
Total Volume Required =	1.56 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 24 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	247,520	ft^2	5.68 acres
Linear Pond Area	340,340	ft^2	7.81 acres
Total Area	587,860	ft^2	13.50 acres

Exist. Basin Limits: 915+80 937+90

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 2,210 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	340,340	57.89%	39	61	74	80	27,227,200	340340	7.81
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	176,800	30.08%	39	61	74	80	14,144,000	176800	4.06
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	70,720	12.03%	98	98	98	98	6,930,560	70720	1.62
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**587,860**	**100.00%**			**COMPOSITE CN =**	**82**	**48,301,760**	**587,860**	**13.50**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.17
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 10.23
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 500,967 ft^3 11.50 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	247,520	ft^2	5.68 acres
Linear Pond Area	340,340	ft^2	7.81 acres
Total Area	587,860	ft^2	13.50 acres

Prop. Basin Limits: 915+80 937+90

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 2,210 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	170,170	28.95%	100	100	100	100	17,017,000	170,170	3.91
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	170,170	28.95%	39	61	74	80	13,613,600	170,170	3.91
Open Space - Good Condition (grass cover > 75%		0.00%		0.00%		0.00%	75,140	12.78%	39	61	74	80	6,011,200	75,140	1.72
Streets and Roads - Paved curbs and storm sewers (excluding right-		0.00%		0.00%		0.00%	172,380	29.32%	98	98	98	98	16,893,240	172,380	3.96
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**587,860**	**100.00%**			**COMPOSITE CN =**	**91**	**53,535,040**	**587,860**	**13.50**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.98
$S = (1000/CN) - 10$

Runoff Depth (Q) (Inch) = 11.40
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 558,242 ft^3 12.82 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 24 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	2,210	Discharge to OFW:	No
Pond Area Basin (acres):	3.91		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	5.68	acres	
Area of North Linear Treatment Pond	3.91	acres	
Area of South Linear Treatment Pond	3.91	acres	
TOTAL R/W AREA	**13.50**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	3.96	acres	
Pervious Area (C = 0.2)	5.63	acres	
Water / Pond (C = 1.0)	3.91	acres	Assume 50% of Pond Basin Areas
Discharge to OFW (If yes, additional 50% Treatment)	No		

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	0.73	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.58	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.56	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.29	ac-ft	

Required Treatment for Watershed (Max.):	**31,916**	ft^3	**0.73** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	500,967	ft^3	11.50 ac-ft
Proposed Runoff Volume =	558,242	ft^3	12.82 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**57,275**	ft^3	**1.31** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

57,275 ft^3 **1.31** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	1,105.0	Assume Linear Treatment Provided for Only 50% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	16,575.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	1,117.0
Width (ft):	24.0
Area (ft^2):	26,808.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	43,383.0	
	1.00	acre-ft

Total Treatment Volume Provided =	1.99 acre-ft
Total Treatment Volume Required =	0.73 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	1,129.0
Width (ft):	33.0
Area (ft^2):	37,257.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	53,832.0	
	1.24	acre-ft

Total Volume Provided =	2.47 acre-ft
Total Volume Required =	1.31 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 25 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	686,560 ft^2	15.76 acres	
Linear Pond Area	944,020 ft^2	21.67 acres	
Total Area	1,630,580 ft^2	37.43 acres	

Exist. Basin Limits: 937+90 to 999+20

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 6,130 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%	349,287	21.42%		0.00%		0.00%	594,733	36.47%	39	61	74	80	61,200,817	944020	21.67
Open Space - Good Condition (grass cover > 75%	181,448	11.13%		0.00%		0.00%	308,952	18.95%	39	61	74	80	31,792,632	490400	11.26
Streets and Roads - Paved curbs and storm sewers (e	72,579	4.45%		0.00%		0.00%	123,581	7.58%	98	98	98	98	19,223,680	196160	4.50
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**603,315**	**37.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,027,265**	**63.00%**				**COMPOSITE CN =**	**69**	**112,217,129**	**1,630,580**	**37.43**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 4.53
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 8.34
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,132,748 ft^3 26.00 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	686,560 ft^2	15.76 acres	
Linear Pond Area	944,020 ft^2	21.67 acres	
Total Area	1,630,580 ft^2	37.43 acres	

Prop. Basin Limits: 937+90 to 999+20

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 6,130 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)	174,644	10.71%		0.00%		0.00%	297,366	18.24%	100	100	100	100	47,201,000	472,010	10.84
retention/detention Pond (Pervious)	174,644	10.71%		0.00%		0.00%	297,366	18.24%	39	61	74	80	30,600,408	472,010	10.84
Open Space - Good Condition (grass cover > 75%	77,115	4.73%		0.00%		0.00%	131,305	8.05%	39	61	74	80	13,511,869	208,420	4.78
Streets and Roads - Paved curbs and storm sewers (e	176,912	10.85%		0.00%		0.00%	301,228	18.47%	98	98	98	98	46,857,720	478,140	10.98
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**603,315**	**37.00%**	**0**	**0.00%**	**0**	**0.00%**	**1,027,265**	**63.00%**				**COMPOSITE CN =**	**85**	**138,170,997**	**1,630,580**	**37.43**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 1.80
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.57
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 1,436,446 ft^3 32.98 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 25 - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	6,130	Discharge to OFW:	No
Pond Area Basin (acres):	10.84		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	15.76	acres	
Area of North Linear Treatment Pond	10.84	acres	
Area of South Linear Treatment Pond	10.84	acres	
TOTAL R/W AREA	**37.43**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	10.98	acres	
Pervious Area (C = 0.2)	15.62	acres	
Water / Pond (C = 1.0)	10.84	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	2.03	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	1.60	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	1.56	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.80	ac-ft	

Required Treatment for Watershed (Max.):	**88,527**	ft^3	**2.03** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	1,132,748	ft^3	26.00 ac-ft
Proposed Runoff Volume =	1,436,446	ft^3	32.98 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**303,698**	ft^3	**6.97** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

303,698 ft^3 **6.97** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	3,678.0	Assume Linear Treatment Provided for Only 60% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	55,170.0	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	3,690.0
Width (ft):	24.0
Area (ft^2):	88,560.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	143,730.0	
	3.30	acre-ft

Total Treatment Volume Provided =	6.60 acre-ft
Total Treatment Volume Required =	2.03 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	3,702.0
Width (ft):	33.0
Area (ft^2):	122,166.0

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	177,336.0
	4.07 acre-ft

Total Volume Provided =	8.14 acre-ft
Total Volume Required =	6.97 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 26A (Rural Section) - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Roadway Basin Area	343,280 ft^2	7.88 acres	
Linear Pond Area	472,010 ft^2	10.84 acres	
Total Area	815,290 ft^2	18.72 acres	

Exist. Basin Limits: 999+20 to 1029+85

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Existing Impervious Width = 32 ft
Existing Pervious Width = 80 ft

EXISTING CURVE NUMBER CALCULATION:

Existing Basin Length = 3,065 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%	316,247	38.79%		0.00%		0.00%	155,763	19.11%	39	61	74	80	24,794,685	472010	10.84
Open Space - Good Condition (grass cover > 75%	164,284	20.15%		0.00%		0.00%	80,916	9.92%	39	61	74	80	12,880,356	245200	5.63
Streets and Roads - Paved curbs and storm sewers (e	65,714	8.06%		0.00%		0.00%	32,366	3.97%	98	98	98	98	9,611,840	98080	2.25
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**546,244**	**67.00%**	**0**	**0.00%**	**0**	**0.00%**	**269,046**	**33.00%**			**COMPOSITE CN =**	**58**	**47,286,881**	**815,290**	**18.72**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 7.24
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 6.68
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 453,633 ft^3 10.41 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Roadway Basin Area	343,280 ft^2	7.88 acres	
Linear Pond Area	472,010 ft^2	10.84 acres	
Total Area	815,290 ft^2	18.72 acres	

Prop. Basin Limits: 999+20 to 1029+85

Width from Proposed WB Outside Shoulder to EB Outside Shoulder = 112 ft
Proposed Impervious Width = 78 ft (Conservatively includes 12-ft LTL
Proposed Pervious Width = 34 ft

PROPOSED CURVE NUMBER CALCULATION:

Proposed Basin Length = 3,065 ft

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)	158,123	19.39%		0.00%		0.00%	77,882	9.55%	100	100	100	100	23,600,500	236,005	5.42
retention/detention Pond (Pervious)	158,123	19.39%		0.00%		0.00%	77,882	9.55%	39	61	74	80	12,397,343	236,005	5.42
Open Space - Good Condition (grass cover > 75%	69,821	8.56%		0.00%		0.00%	34,389	4.22%	39	61	74	80	5,474,151	104,210	2.39
Streets and Roads - Paved curbs and storm sewers (e	160,177	19.65%		0.00%		0.00%	78,893	9.68%	98	98	98	98	23,428,860	239,070	5.49
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**546,244**	**67.00%**	**0**	**0.00%**	**0**	**0.00%**	**269,046**	**33.00%**			**COMPOSITE CN =**	**80**	**64,900,854**	**815,290**	**18.72**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 2.56
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 9.88
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 671,029 ft^3 15.40 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 26A (Rural Section) - Dry Linear Treatment Option
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

= Input

1.) Analysis of Site Required

Assumed Linear Pond Configuration for Each Side of the Roadway:

Linear Pond Berm Width (ft):	5	Freeboard Desired (ft):	1
Linear Pond Bottom Width (ft):	15	Pond Front/Side Slopes (X:1):	6
Pond Area Basin Width (ft):	77	Pond Back Slopes (X:1):	3
Pond Area Basin Length (ft):	3,065	Discharge to OFW:	No
Pond Area Basin (acres):	5.42		
Proposed Total Pond Depth to Back Berm (ft):	3.0		
Proposed Total Pond Depth to Shoulder Point (ft):	4.6		
Distance between LOC and R/W Line (ft):	2.0		
Max. Treatment Volume Depth (ft):	1.0		
Max. Allowable Pond Depth (ft):	2.0		
Assumed Vertical Separation between Exist. Ground and Pond Bottom (ft):	3.0		

2.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Dry Pond**		
Area Between Roadway Shoulder Points	7.88	acres	
Area of North Linear Treatment Pond	5.42	acres	
Area of South Linear Treatment Pond	5.42	acres	
TOTAL R/W AREA	**18.72**	**acres**	
Resulting R/W Width	266	ft	
Weighted C	0.65		
Impervious Area (C = 0.95)	5.49	acres	
Pervious Area (C = 0.2)	7.81	acres	
Water / Pond (C = 1.0)	5.42	acres	Assume 50% of Pond Basin Areas

Discharge to OFW (If yes, additional 50% Treatment): No

SJRWMD Dry Retention Criteria - Greater of the Following:

a) Runoff from 1st 1" of Rainfall (1" x Area x Weighted C)	1.02	ac-ft	(whichever is greater)
b) 1.75" over the Impervious Area (1.75" x Impervious Area)	0.80	ac-ft	

SFWMD Dry Retention Criteria - Greater of the Following:

a) 50% of 1st inch of runoff from the developed project (1" x Area)	0.78	ac-ft	(whichever is greater)
b) 50% of 2.5" over the impervious area (2.5" x Impervious Area)	0.40	ac-ft	

Required Treatment for Watershed (Max.): **44,264** ft^3 **1.02** ac-ft

3.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	453,633 ft^3	10.41 ac-ft
Proposed Runoff Volume =	671,029 ft^3	15.40 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**217,396** ft^3	**4.99** ac-ft

4.) Floodplain Compensation

0 ft^3 **0.00** ac-ft

5.) Total Storage

217,396 ft^3 **4.99** ac-ft

6.) Check of Treatment Volume

Dimensions of Pond Bottom Area

Length (ft):	2,298.8	Assume Linear Treatment Provided for Only 75% of the Basin Length
Width (ft):	15.0	
Area (sq. ft):	34,481.3	

Dimensions of Pond at Treatment Volume Depth

Length (ft):	2,310.8
Width (ft):	24.0
Area (ft^2):	55,458.0

Volume of Each Linear Pond at Treatment Volume Depth

Volume (ft^3)	89,939.3	
	2.06	acre-ft

Total Treatment Volume Provided =	4.13 acre-ft
Total Treatment Volume Required =	1.02 acre-ft

7.) Check of Attenuation Volume

Dimensions of Pond at Max. Pond Depth

Length (ft):	2,322.8
Width (ft):	33.0
Area (ft^2):	76,650.8

Volume of Each Linear Pond at Max. Depth

Volume (ft^3)	111,132.0	
	2.55	acre-ft

Total Volume Provided =	5.10 acre-ft
Total Volume Required =	4.99 acre-ft

8.) Is criteria met?

Is there enough treatment volume provided?	**Yes**
Is there enough total volume provided?	**Yes**

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 26B (Urban Section)
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Basin Area	217,800	ft²	5.00	acres
Pond Parcel Area	75,100	ft²	1.72	acres
Total Area	292,900	ft²	6.72	acres

Exist. Basin Limits: 1029+85 1046+35

*Assume 132' of R/W

Existing Basin Length = 1650 ft

EXISTING CURVE NUMBER CALCULATION:

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**A**	**B**	**C**	**D**		**(Ft²)**	**(acres)**
Open Space - Good Condition (grass cover > 75%)	75,100	25.64%		0.00%		0.00%		0.00%	39	61	74	80	2,928,900	75100	1.72
Open Space - Good Condition (grass cover > 75%)	119,246	40.71%		0.00%		0.00%	39,749	13.57%	39	61	74	80	7,830,455	158994	3.65
Streets and Roads - Paved curbs and storm sewers (excluding right-of-way)	44,105	15.06%		0.00%		0.00%	14,702	5.02%	98	98	98	98	5,762,988	58806	1.35
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**238,450**	**81.41%**	**0**	**0.00%**	**0**	**0.00%**	**54,450**	**18.59%**				**COMPOSITE CN =**	**56**	**16,522,343**	**292,900**	**6.72**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = NOAA Atlas 14	12.50		
Potential Abstraction (S) = S = (1000/CN) - 10	7.73		
Runoff Depth (Q) (Inch) = $Q = (P - 0.2S)^2 / (P + 0.8S)$	6.42		
Estimated Runoff Volume: Peak Volume = Area x Q	156,783	ft³	3.60 acre-ft

PROPOSED RUNOFF PARAMETERS

Basin Area	217,800	ft²	5.00	acres
Pond Parcel Area	75,100	ft²	1.72	acres
Total Area	292,900	ft²	6.72	acres

74,680

Prop. Basin Limits: 1029+85 1046+35

*Assume 132' of R/W

Proposed Basin Length = 1650 ft

PROPOSED CURVE NUMBER CALCULATION:

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**Area (Ft²)**	**%**	**A**	**B**	**C**	**D**		**(Ft²)**	**(acres)**
retention/detention Pond (Impervious)	67,590	23.08%		0.00%		0.00%		0.00%	100	100	100	100	6,759,000	67,590	1.55
retention/detention Pond (Pervious)	7,510	2.56%		0.00%		0.00%		0.00%	39	61	74	80	292,890	7,510	0.17
Open Space - Good Condition (grass cover > 75%)	81,675	27.88%		0.00%		0.00%	27,225	9.29%	39	61	74	80	5,363,325	108,900	2.50
Streets and Roads - Paved curbs and storm sewers (excluding right-of-way)	81,675	27.88%		0.00%		0.00%	27,225	9.29%	98	98	98	98	10,672,200	108,900	2.50
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**238,450**	**81.41%**	**0**	**0.00%**	**0**	**0.00%**	**54,450**	**18.59%**				**COMPOSITE CN =**	**79**	**23,087,415**	**292,900**	**6.72**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = NOAA Atlas 14	12.50		
Potential Abstraction (S) = S = (1000/CN) - 10	2.69		
Runoff Depth (Q) (Inch) = $Q = (P - 0.2S)^2 / (P + 0.8S)$	9.77		
Estimated Runoff Volume:	238,441	ft³	5.47 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 26B (Urban Section)
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

1.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Wet Pond**		
Area Inside R/W:	6.72	acres	
Weighted C	0.66		
Impervious Area (C = 0.95)	2.50	acres	
Pervious Area (C = 0.2)	2.67	acres	
Water / Pond (C = 1.0)	1.55	acres	
Discharge to OFW (If yes, additional 50% Treatment)	No		
SFWMD and SJRWMD Wet Detention Criteria - Greater of the Following:			
a) 1st inch of runoff from the developed project (1" x Area)	0.56	ac-ft	(whichever is greater)
b) 2.5" over the impervious area (2.5" x Impervious Area)	0.52	ac-ft	
Required Treatment for Watershed (Max.):	**24,408**	ft^3	**0.56** ac-ft

2.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	156,783	ft^3	3.60 ac-ft
Proposed Runoff Volume =	238,441	ft^3	5.47 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**81,657**	ft^3	**1.87** ac-ft

3.) Floodplain Compensation

0 ft^3 ac-ft

4.) Total Storage

81,657 ft^3 **1.87** ac-ft

5.) Analysis of Site Required

Assumed Pond Configuration:

Pond Maintenance Berm Width (ft):	20	Freeboard Desired (ft):	1
L/W Ratio:	2	Pond Side Slopes (X:1):	4
Max. Treatment Volume Depth (ft):	1.0	Discharge to OFW:	No
Anticipated Max Pond Depth(ft):	3.0		

6.) Assuming Treatment Volume Controls

Pond is sized to provide calculated treatment volume in the depth listed above for "Max. Treatment Volume Depth". The total pond volume from the pond bottom to the depth listed above for "Anticipated Max Pond Depth" is then checked to see if it is more or less than the calculated attenutation volume.

Dimensions of Equivalent Rectangular Pond with Vertical Sides to Meet Pond Treatment Volume Requirement

L_{Rect} (ft): 220.9
W_{Rect} (ft): 110.5

Pond Dimensions at Peak Design Stage Considering Side Slopes and Treatment Volume

L_{Rect} (ft): 240.9
W_{Rect} (ft): 130.5

Volume between Permanent Pool Elevation and Peak Design Stage to Check Attenuation Requirement

$V_{Available\ for\ Total\ Storage}$ (ft^3) 81,371.02 (<--- Highlights in red if less than total volume required)
1.87 acre-ft

7.) Assuming Total Volume Controls

Pond is sized to for the total pond volume to equal the calculated attenuation volume using the depth listed above for "Anticipated Max Pond Depth". The volume provided from the bottom to the depth listed above for "Max. Treatment Volume Depth" is then checked to see if it is more or less than the calculated treatment volume.

Dimensions of Equivalent Rectangular Pond with Vertical Sides to Meet Pond Volume Requirement

L_{Rect} (ft): 233.3
W_{Rect} (ft): 116.7

Pond Dimensions at Peak Design Stage Considering Sides Slopes

L_{Rect} (ft): 245.3
W_{Rect} (ft): 128.7

Volume in First "X" Feet above Perm. Pool to Check Treatment Requirement

$V_{Available\ for\ Treatment}$ (ft^3) 24,483.28 (<--- Highlights in red if less than treatment volume required)
0.56 acre-ft

8.) Does Treatment or Total Volume Control?

Is there enough total volume provided when sized for the treatment volume? **No**
Is there enough treatment volume provided when sized for the total volume? **Yes**

Should dimensions from step 6 (treatment volume controls) or from step 7 (total volume controls) be used? **Step 7**

Pond Site Dimensions Considering Freeboard and Maintenance Berm

L_{Rect} (ft): 293.00
W_{Rect} (ft): 177.00
Area (Ac): 1.19

Estimated Site Size Including 20% Factor Of Safety

L_{Rect} (ft): 351.60
W_{Rect} (ft): 212.40

Area (ac): 1.71

Pond Volume Required = Attenuation Volume + Floodplain Compensation + Treatment Volume

Anticipated Pond $Depth_{Dry}$ = Depth To SHGWT - Distance From Pond Bottom To SHGWT - Freeboard

Anticipated Pond $Depth_{Wet}$ = Depth To SHGWT - Freeboard

$$L_{Rect} = \sqrt{\frac{V}{H}(L/W\ Ratio)} + 2*0.5*H*Side\ Slope + 2*Berm\ Width$$

$$W_{Rect} = L*(L/W\ Ratio) + 2*0.5*H*Side\ Slope + 2*Berm\ Width$$

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Basin Name:	Basin 27 (Urban Section)
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

Blue cells require input

EXISTING RUNOFF PARAMETERS

Basin Area	516,925	ft^2	11.87	acres
Pond Parcel Area	89,637	ft^2	2.06	acres
Total Area	606,562	ft^2	13.92	acres

Exist. Basin Limits: 1046+35 1079+70

*Assume 155' of R/W

Existing Basin Length = 3335 ft

EXISTING CURVE NUMBER CALCULATION:

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
Open Space - Good Condition (grass cover > 75%)		0.00%		0.00%		0.00%	89,637	14.78%	39	61	74	80	7,170,960	89637	2.06
Open Space - Good Condition (grass cover > 75%)		0.00%		0.00%		0.00%	398,032	65.62%	39	61	74	80	31,842,580	398032	9.14
Streets and Roads - Paved curbs and storm sewers (excluding right-of-way)		0.00%		0.00%		0.00%	118,893	19.60%	98	98	98	98	11,651,490	118893	2.73
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
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		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**606,562**	**100.00%**			**COMPOSITE CN =**	**84**	**50,665,030**	**606,562**	**13.92**

EXISTING RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 1.97
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 10.41
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 526,184 ft^3 12.08 acre-ft
Peak Volume = Area x Q

PROPOSED RUNOFF PARAMETERS

Basin Area	516,925	ft^2	11.87	acres	
Pond Parcel Area	89,637	ft^2	2.06	acres	89,637
Total Area	606,562	ft^2	13.92	acres	

Prop. Basin Limits: 1046+35 1079+70

*Assume 155' of R/W

Proposed Basin Length = 3335 ft

PROPOSED CURVE NUMBER CALCULATION:

	Type A Soils		Type B Soils		Type C Soils		Type D Soils		CN, Soil Groups				CN*A	Total Area	
LAND USE	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**Area (Ft^2)**	**%**	**A**	**B**	**C**	**D**		**(Ft^2)**	**(acres)**
retention/detention Pond (Impervious)		0.00%		0.00%		0.00%	80,673	13.30%	100	100	100	100	8,067,330	80,673	1.85
retention/detention Pond (Pervious)		0.00%		0.00%		0.00%	8,964	1.48%	39	61	74	80	717,096	8,964	0.21
Open Space - Good Condition (grass cover > 75%)		0.00%		0.00%		0.00%	206,770	34.09%	39	61	74	80	16,541,600	206,770	4.75
Streets and Roads - Paved curbs and storm sewers (excluding right-of-way)		0.00%		0.00%		0.00%	310,155	51.13%	98	98	98	98	30,395,190	310,155	7.12
		0.00%		0.00%		0.00%		0.00%						0	0.00
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		0.00%		0.00%		0.00%		0.00%						0	0.00
		0.00%		0.00%		0.00%		0.00%						0	0.00
TOTALS	**0**	**0.00%**	**0**	**0.00%**	**0**	**0.00%**	**606,562**	**100.00%**			**COMPOSITE CN =**	**92**	**55,721,216**	**606,562**	**13.92**

PROPOSED RUNOFF DEPTH :

Rainfall Depth for 100yr-72hr (P) (inch) = 12.50
NOAA Atlas 14

Potential Abstraction (S) = 0.89
S = (1000/CN) - 10

Runoff Depth (Q) (Inch) = 11.50
$Q = (P - 0.2S)^2 / (P + 0.8S)$

Estimated Runoff Volume: 581,117 ft^3 13.34 acre-ft

Job Name:	FPID: 452574-1, SR 60 PD&E Pond Siting
Location:	Osceola County
Pond Name:	Basin 27 (Urban Section)
Date:	16-Jun-25
MM Project #:	502101832
Designed By:	DS
Checked By:	SW

POND SIZING CALCULATIONS

1.) Treatment Volume: (Maximum of SFWMD and SJRWMD Criterion)

Assume Wet or Dry Pond?	**Wet Pond**		
Area Inside R/W:	13.92	acres	
Weighted C	0.69		
Impervious Area (C = 0.95)	7.12	acres	
Pervious Area (C = 0.2)	4.95	acres	
Water / Pond (C = 1.0)	1.85	acres	
Discharge to OFW (If yes, additional 50% Treatment)	No		
SFWMD and SJRWMD Wet Detention Criteria - Greater of the Following:			
a) 1st inch of runoff from the developed project (1" x Area)	1.16	ac-ft	(whichever is greater)
b) 2.5" over the impervious area (2.5" x Impervious Area)	1.48	ac-ft	
Required Treatment for Watershed (Max.):	**64,616**	ft^3	**1.48** ac-ft

2.) Estimated Peak Attenuation Volume

Existing Runoff Volume =	526,184	ft^3	12.08 ac-ft
Proposed Runoff Volume =	581,117	ft^3	13.34 ac-ft
E.P.A.V. = Proposed Runoff Vol. - Existing Runoff Vol.	**54,932**	ft^3	**1.26** ac-ft

3.) Floodplain Compensation

0 ft^3 ac-ft

4.) Total Storage

54,932 ft^3 **1.26** ac-ft

5.) Analysis of Site Required

Assumed Pond Configuration:

Pond Maintenance Berm Width (ft):	20	Freeboard Desired (ft):	1
L/W Ratio:	2	Pond Side Slopes (X:1):	4
Max. Treatment Volume Depth (ft):	1.0	Discharge to OFW:	No
Anticipated Max Pond Depth(ft):	3.0		

6.) Assuming Treatment Volume Controls

Pond is sized to provide calculated treatment volume in the depth listed above for "Max. Treatment Volume Depth". The total pond volume from the pond bottom to the depth listed above for "Anticipated Max Pond Depth" is then checked to see if it is more or less than the calculated attenutation volume.

Dimensions of Equivalent Rectangular Pond with Vertical Sides to Meet Pond Treatment Volume Requirement

L_{Rect} (ft): 359.5
W_{Rect} (ft): 179.7

Pond Dimensions at Peak Design Stage Considering Side Slopes and Treatment Volume

L_{Rect} (ft): 379.5
W_{Rect} (ft): 199.7

Volume between Permanent Pool Elevation and Peak Design Stage to Check Attenuation Requirement

$V_{Available\ for\ Total\ Storage}$ (ft^3) 206,980.42 (<--- Highlights in red if less than total volume required)
4.75 acre-ft

7.) Assuming Total Volume Controls

Pond is sized to for the total pond volume to equal the calculated attenuation volume using the depth listed above for "Anticipated Max Pond Depth". The volume provided from the bottom to the depth listed above for "Max. Treatment Volume Depth" is then checked to see if it is more or less than the calculated treatment volume.

Dimensions of Equivalent Rectangular Pond with Vertical Sides to Meet Pond Volume Requirement

L_{Rect} (ft):	191.4
W_{Rect} (ft):	95.7

Pond Dimensions at Peak Design Stage Considering Sides Slopes

L_{Rect} (ft):	203.4
W_{Rect} (ft):	107.7

Volume in First "X" Feet above Perm. Pool to Check Treatment Requirement

$V_{Available\ for\ Treatment}$ (ft^3) 16,078.40 (<--- Highlights in red if less than treatment volume required)

0.37 acre-ft

8.) Does Treatment or Total Volume Control?

Is there enough total volume provided when sized for the treatment volume?	**Yes**
Is there enough treatment volume provided when sized for the total volume?	**No**
Should dimensions from step 6 (treatment volume controls) or from step 7 (total volume controls) be used?	**Step 6**

Pond Site Dimensions Considering Freeboard and Maintenance Berm

L_{Rect} (ft):	251.00
W_{Rect} (ft):	248.00
Area (Ac):	1.43

Estimated Site Size Including 20% Factor Of Safety

L_{Rect} (ft):	301.20
W_{Rect} (ft):	297.60
Area (ac):	2.06

Pond Volume Required = Attenuation Volume + Floodplain Compensation + Treatment Volume

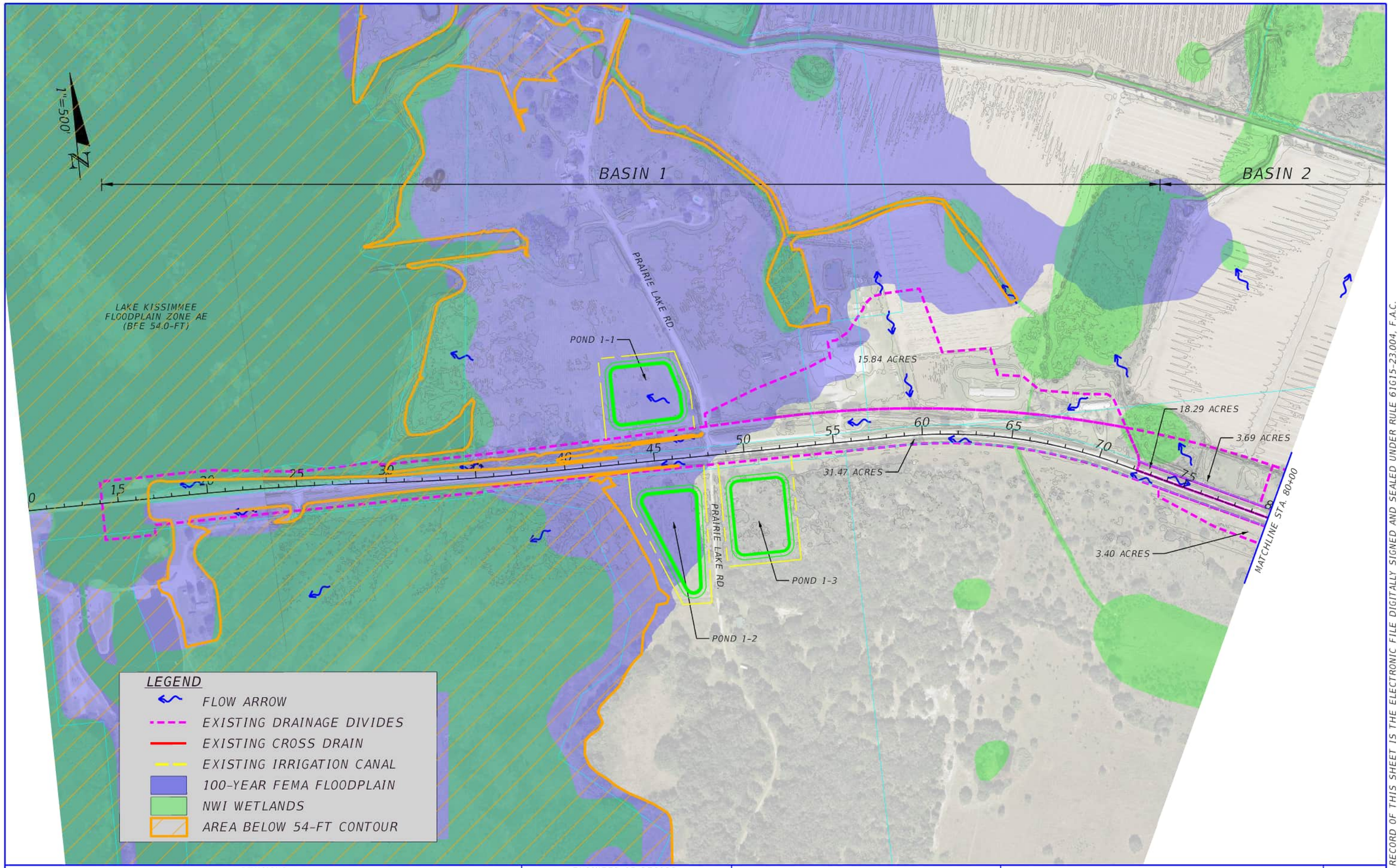
Anticipated Pond $Depth_{Dry}$ = Depth To SHGWT - Distance From Pond Bottom To SHGWT - Freeboard

Anticipated Pond $Depth_{Wet}$ = Depth To SHGWT - Freeboard

$$L_{Rect} = \sqrt{\frac{V}{H}\left(L/W\ Ratio\right)} + 2*0.5*H*Side\ Slope + 2*Berm\ Width$$

$$W_{Rect} = L*\left(L/W\ Ratio\right) + 2*0.5*H*Side\ Slope + 2*Berm\ Width$$

APPENDIX D – Drainage Maps



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD

DANIEL P. SHULL, P.E.
LICENSE NUMBER: 86494
MOTT MACDONALD FLORIDA, LLC.
220 WEST GARDEN STREET, SUITE 700
PENSACOLA, FLORIDA 32502

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 60	OSCEOLA	452574-1-22-01

DRAINAGE MAP

SHEET NO. 1

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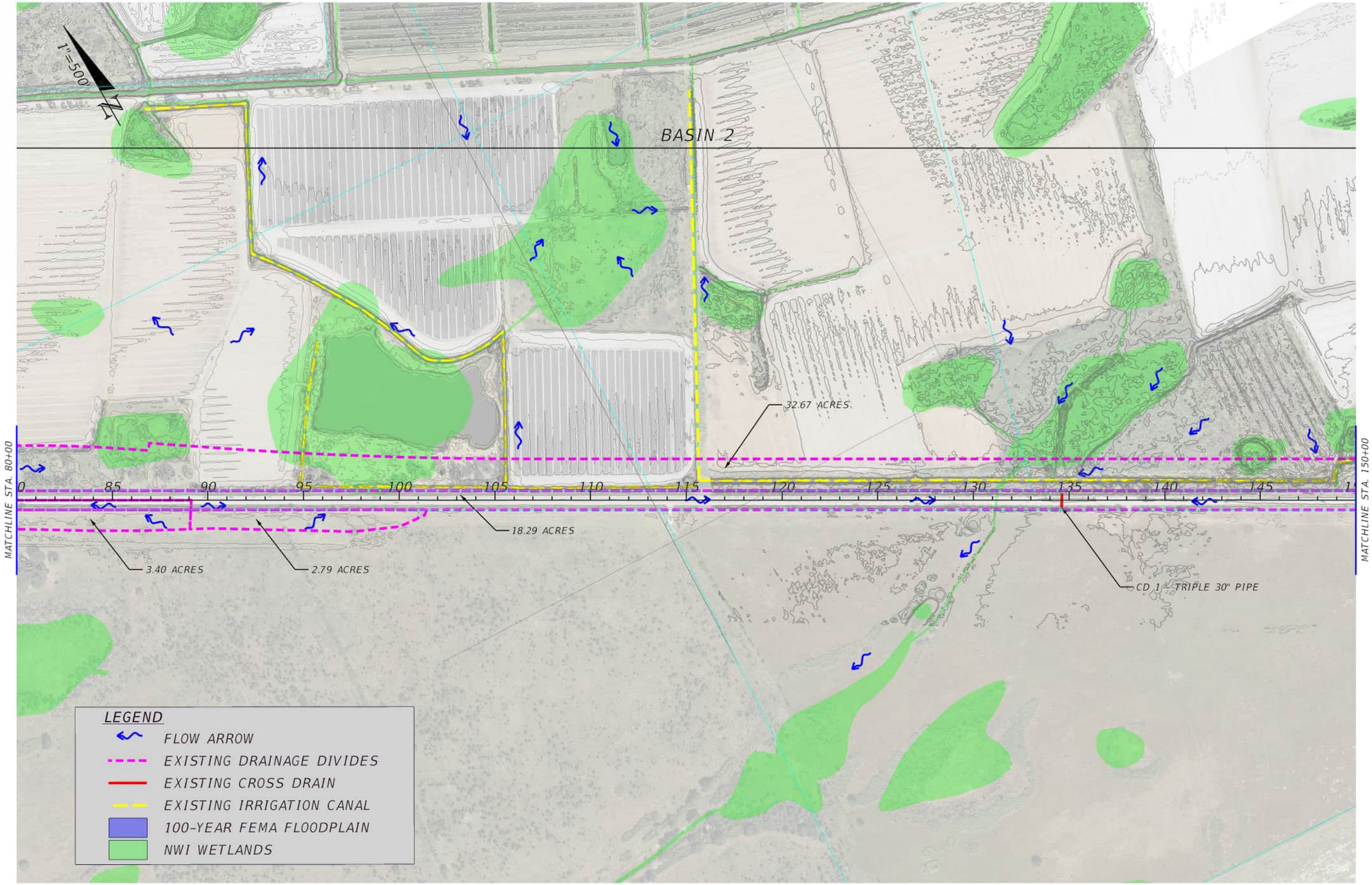

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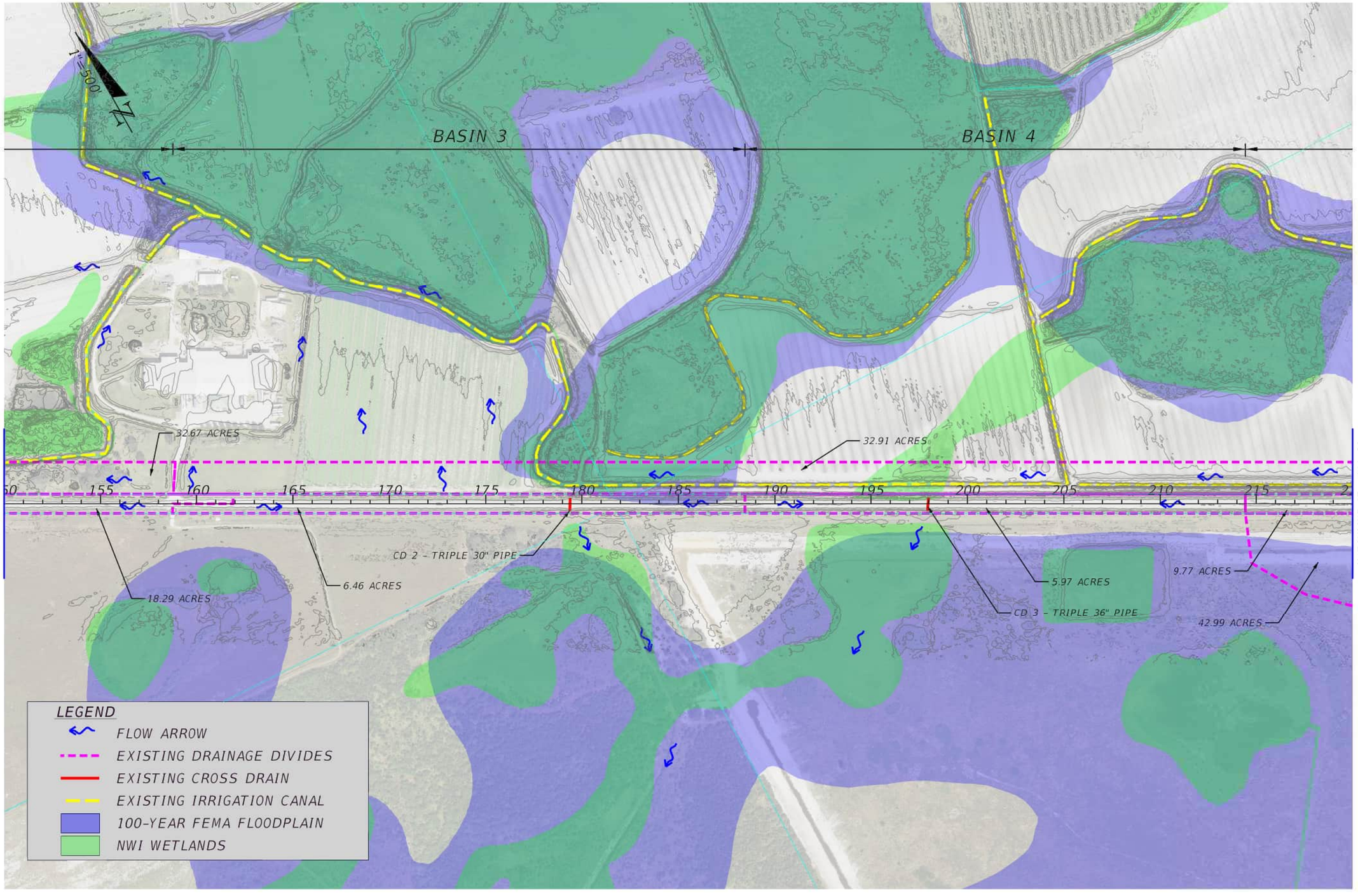

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DATE	DESCRIPTION	DATE	DESCRIPTION	DANIEL P. SHULL, P.E. LICENSE NUMBER: 86494 MOTT MACDONALD FLORIDA, LLC. 220 WEST GARDEN STREET, SUITE 700 PENSACOLA, FLORIDA 32502	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		3
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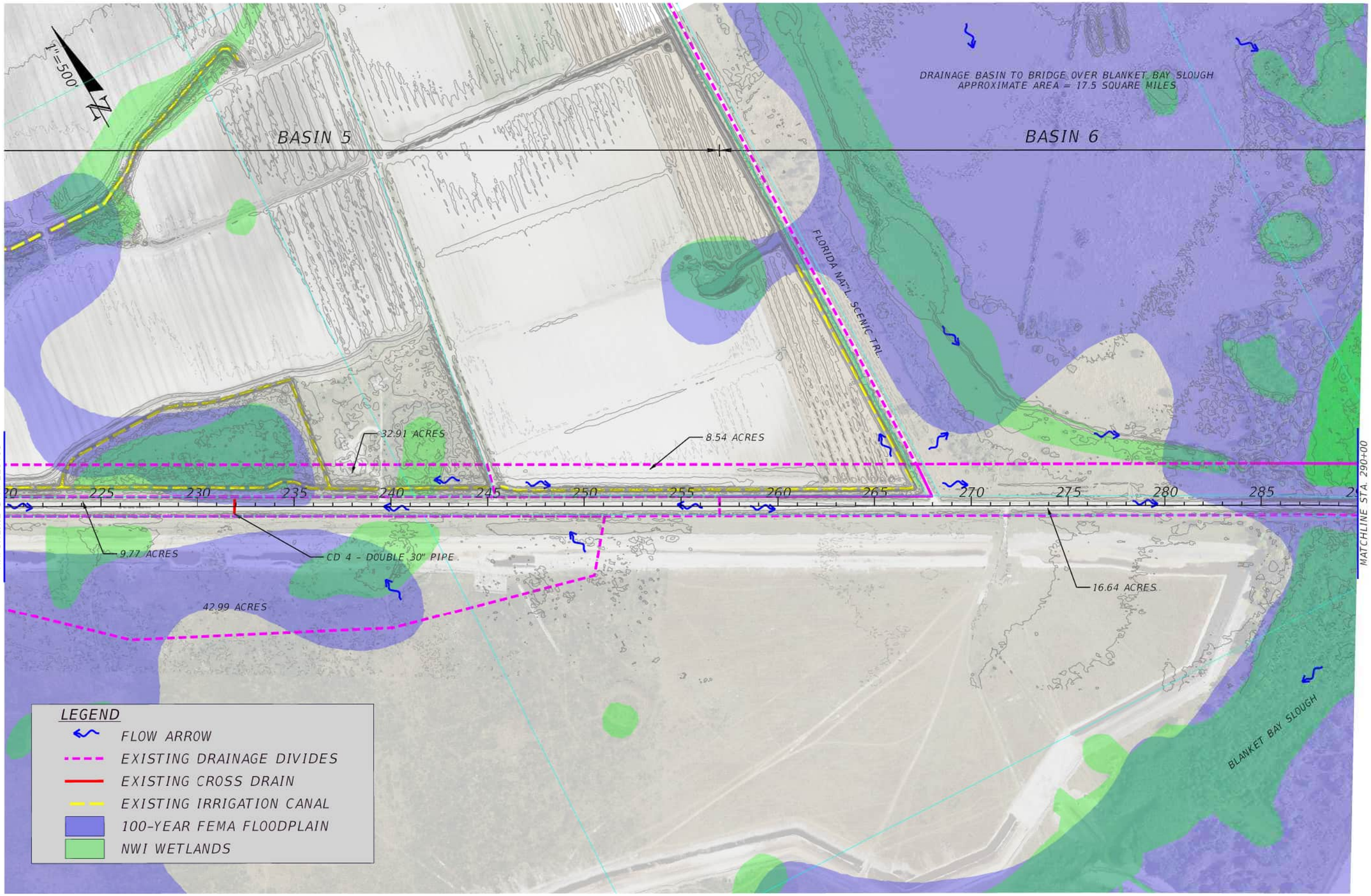

REVISIONS				ENGINEER OF RECORD	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION				SHEET NO.
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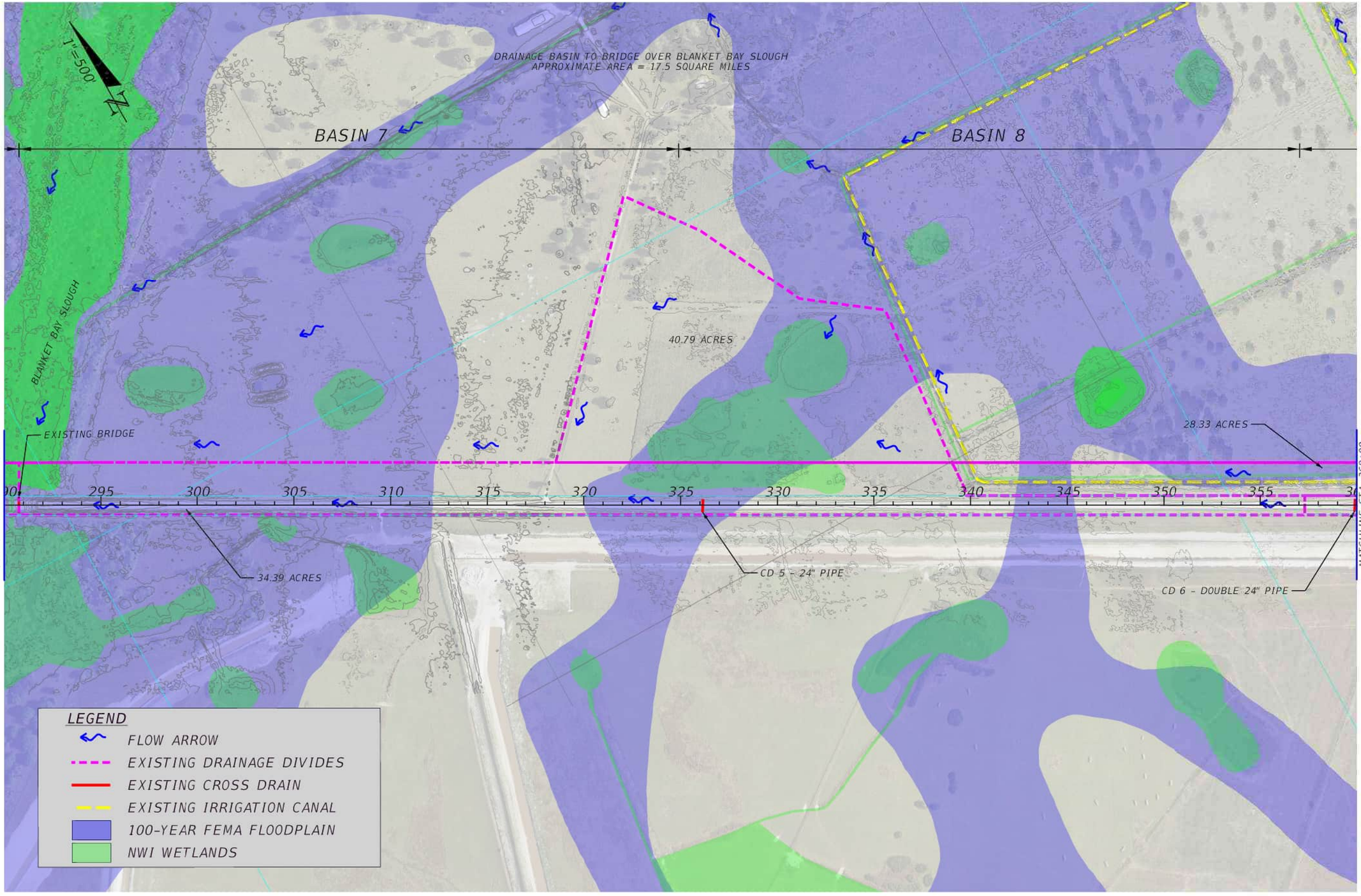

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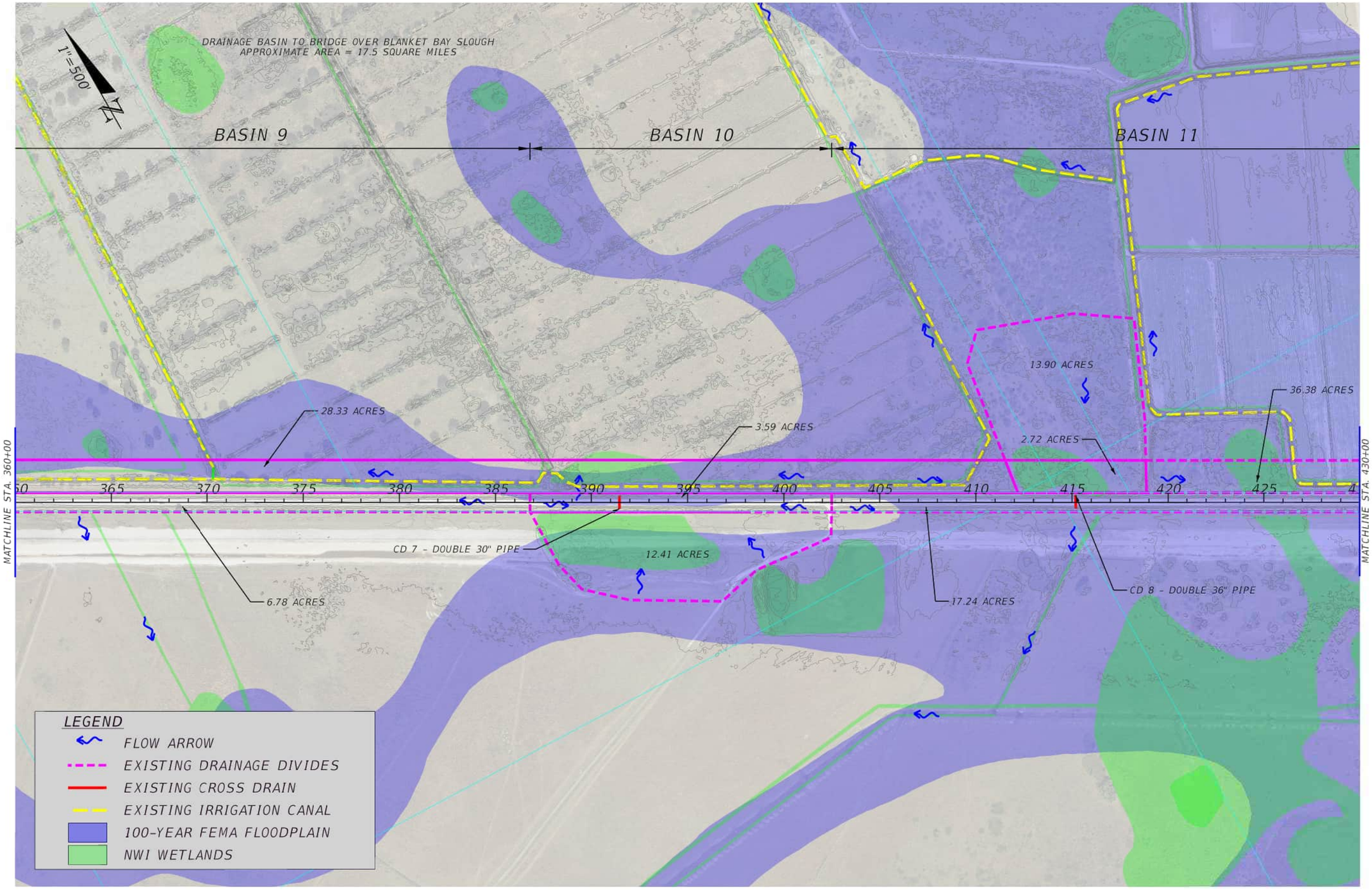

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD

DANIEL P. SHULL, P.E.
LICENSE NUMBER: 86494
MOTT MACDONALD FLORIDA, LLC.
220 WEST GARDEN STREET, SUITE 700
PENSACOLA, FLORIDA 32502

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 60	OSCEOLA	452574-1-22-01

DRAINAGE MAP

SHEET NO. 6

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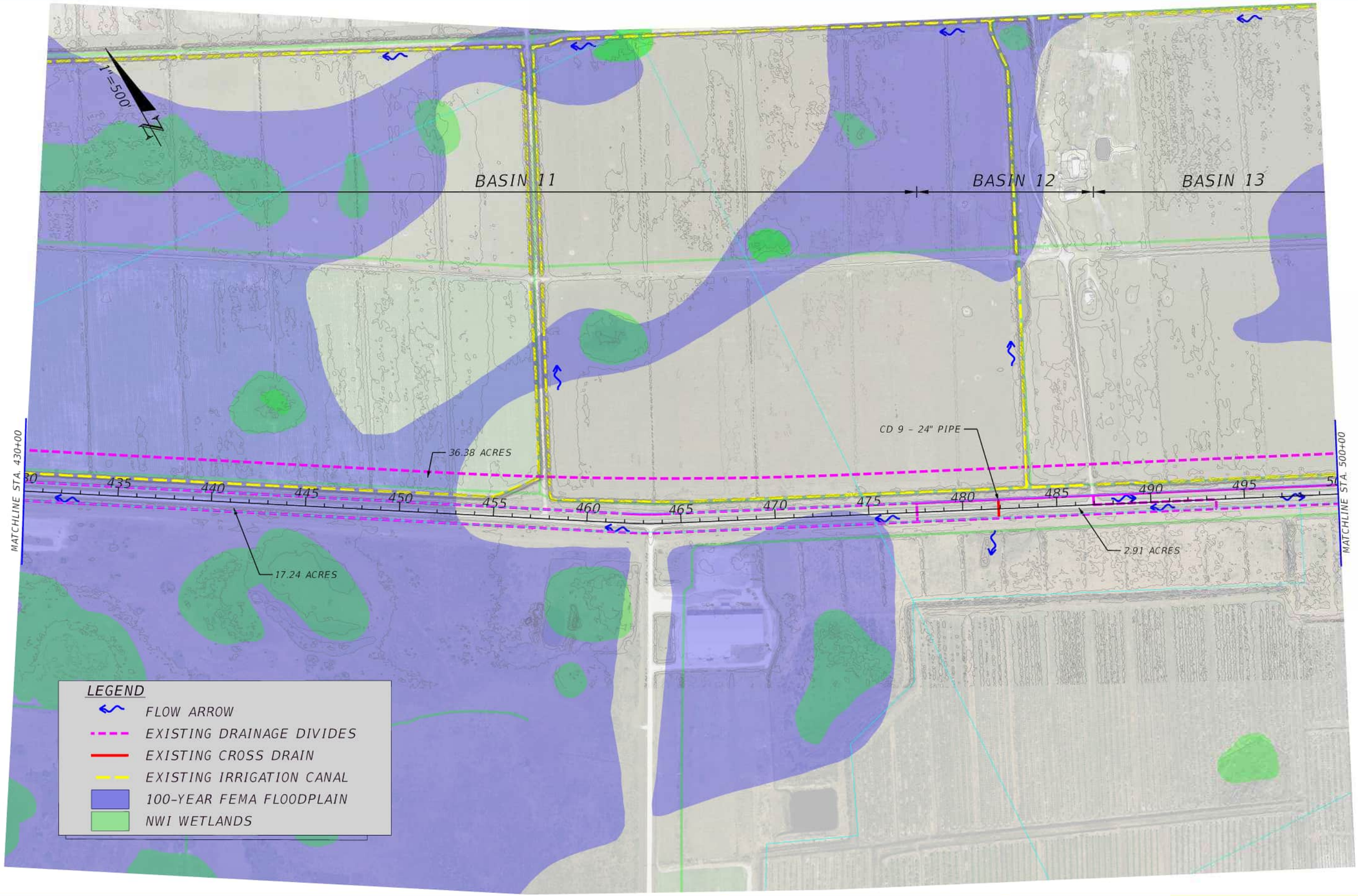

REVISIONS				ENGINEER OF RECORD	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			DRAINAGE MAP	SHEET NO.
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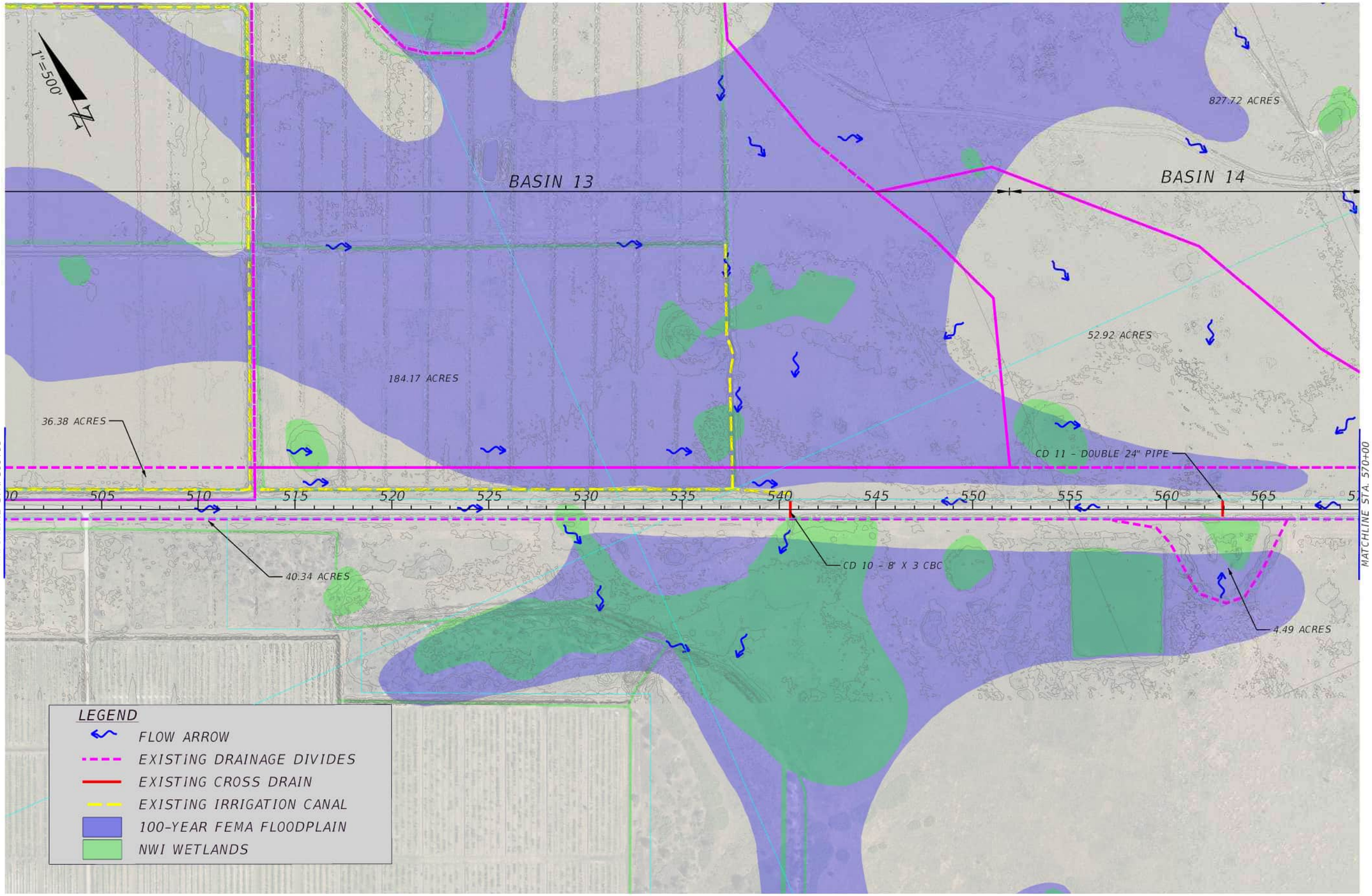

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD

DANIEL P. SHULL, P.E.
LICENSE NUMBER: 86494
MOTT MACDONALD FLORIDA, LLC.
220 WEST GARDEN STREET, SUITE 700
PENSACOLA, FLORIDA 32502

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 60	OSCEOLA	452574-1-22-01

DRAINAGE MAP

SHEET NO. 8

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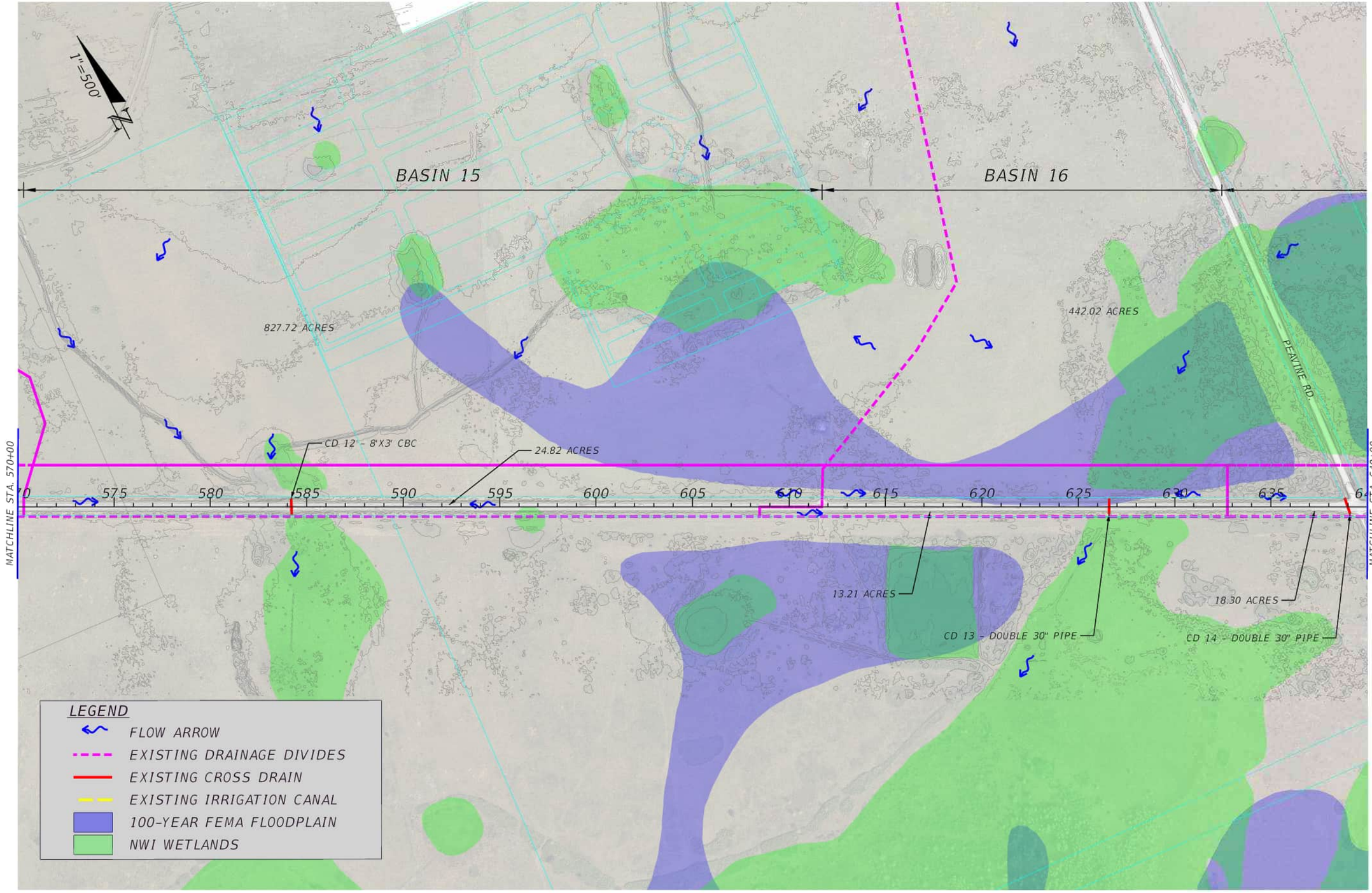

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD

DANIEL P. SHULL, P.E.
LICENSE NUMBER: 86494
MOTT MACDONALD FLORIDA, LLC.
220 WEST GARDEN STREET, SUITE 700
PENSACOLA, FLORIDA 32502

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 60	OSCEOLA	452574-1-22-01

DRAINAGE MAP

SHEET NO. 9

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

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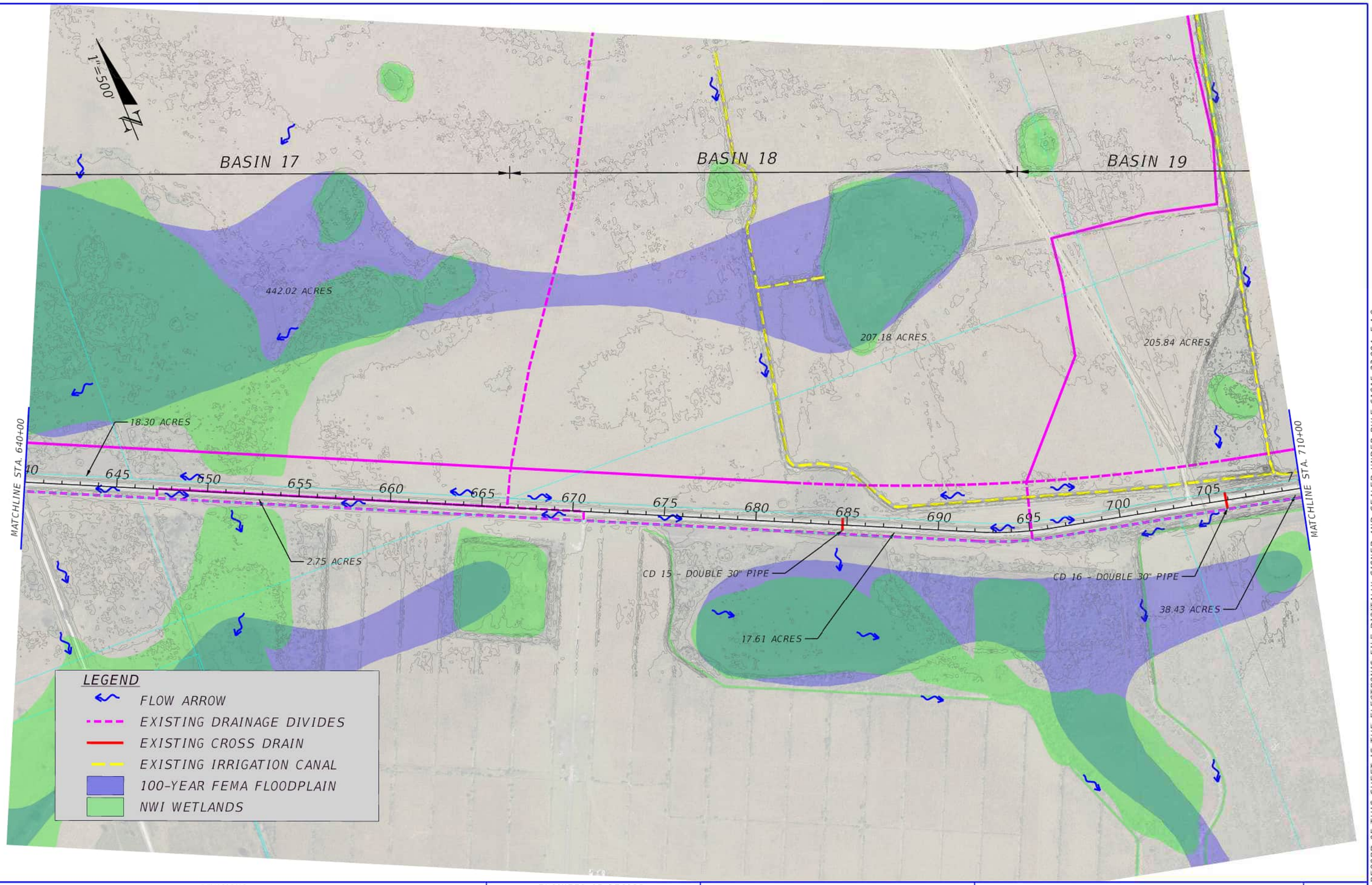

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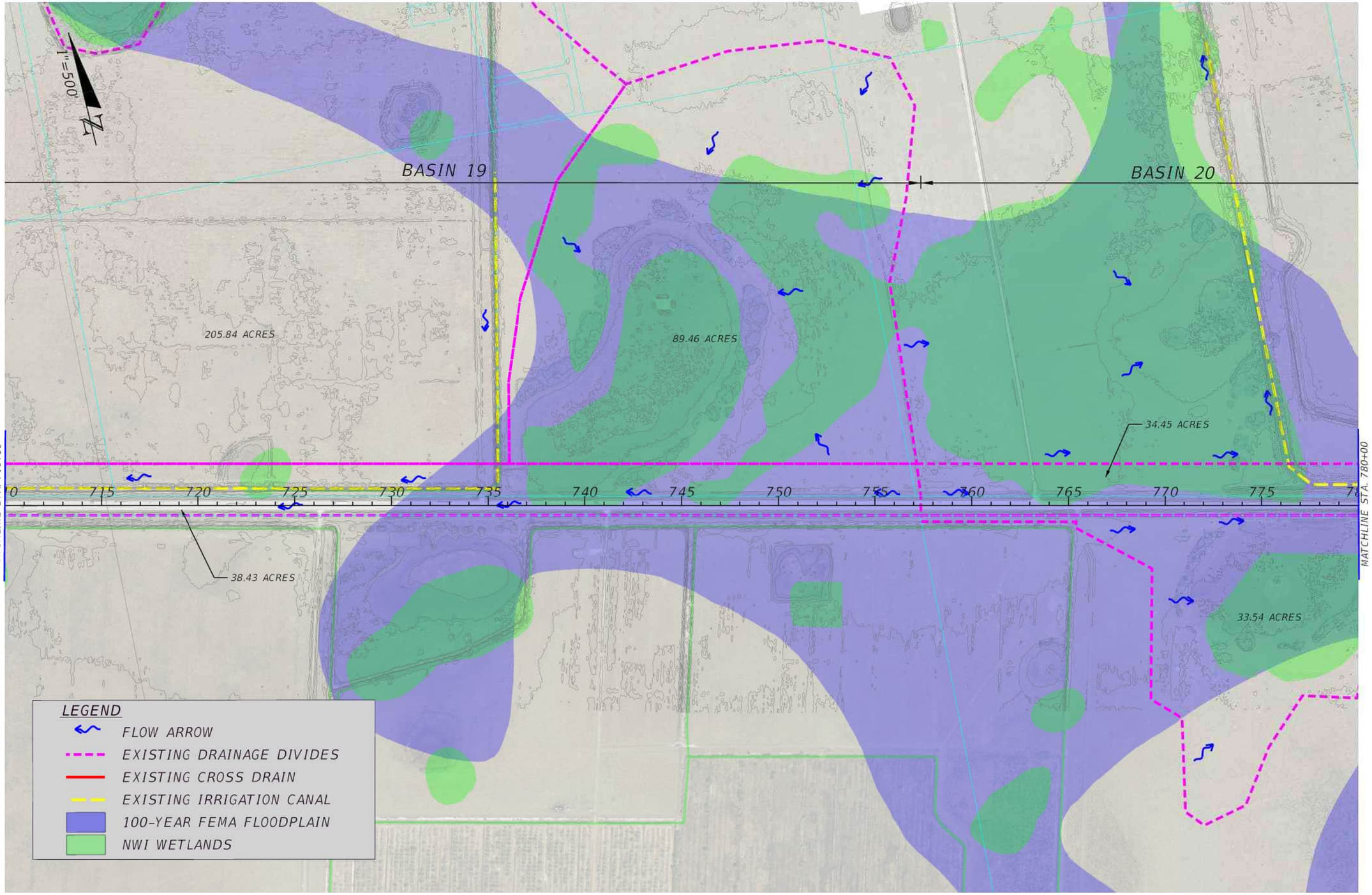

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DATE	DESCRIPTION	DATE	DESCRIPTION	DANIEL P. SHULL, P.E. LICENSE NUMBER: 86494 MOTT MACDONALD FLORIDA, LLC. 220 WEST GARDEN STREET, SUITE 700 PENSACOLA, FLORIDA 32502	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	DRAINAGE MAP	11
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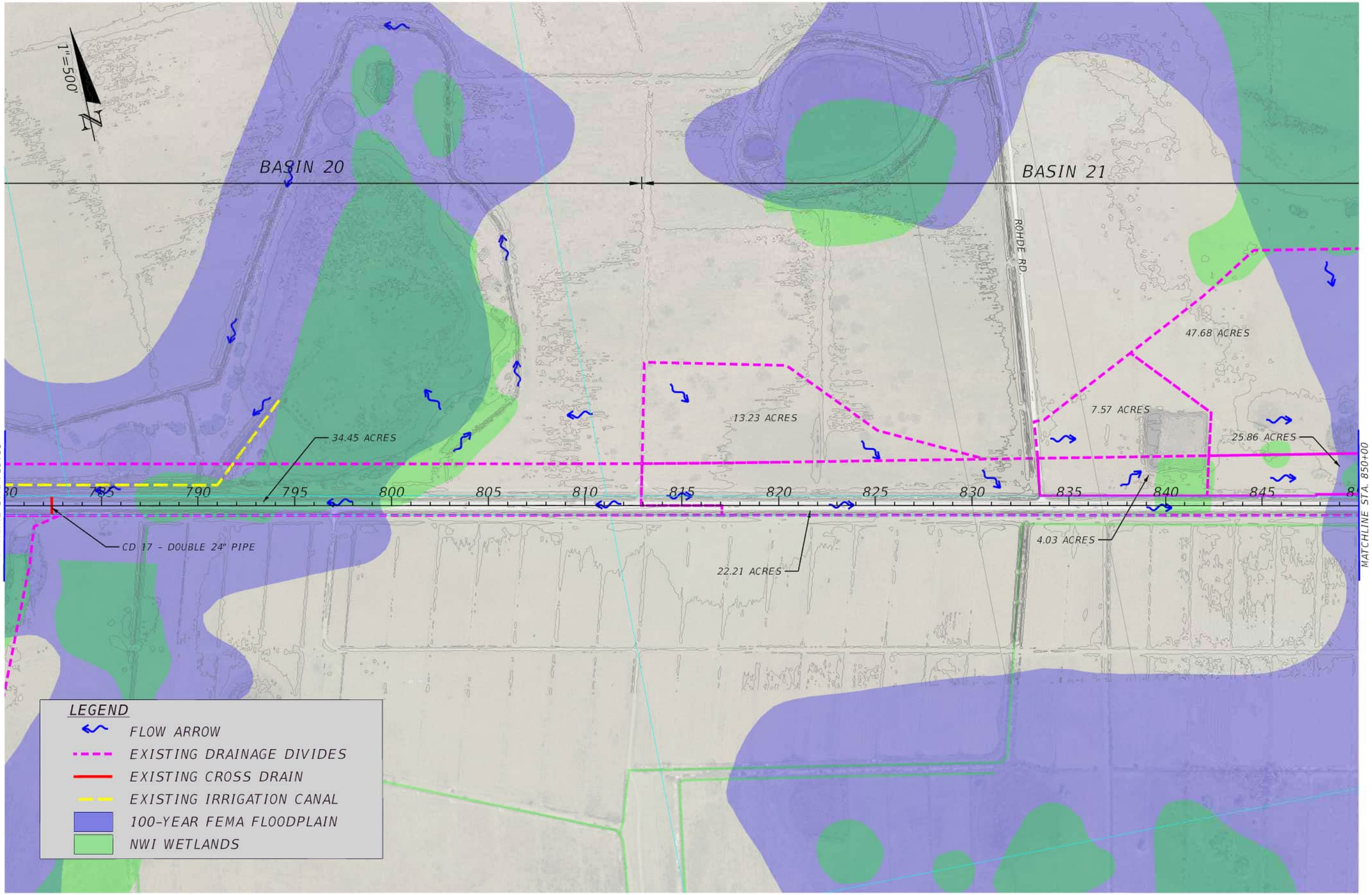

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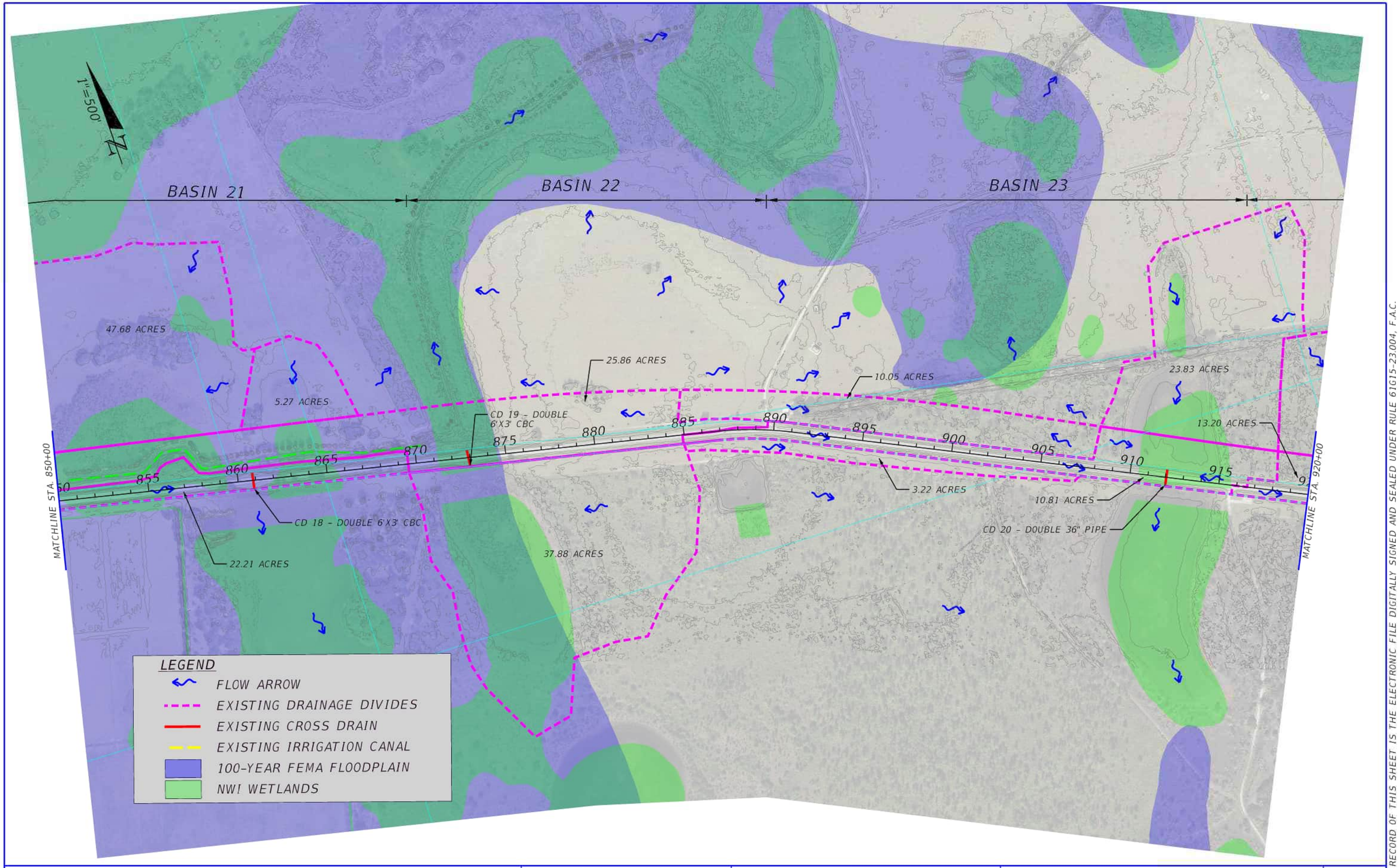

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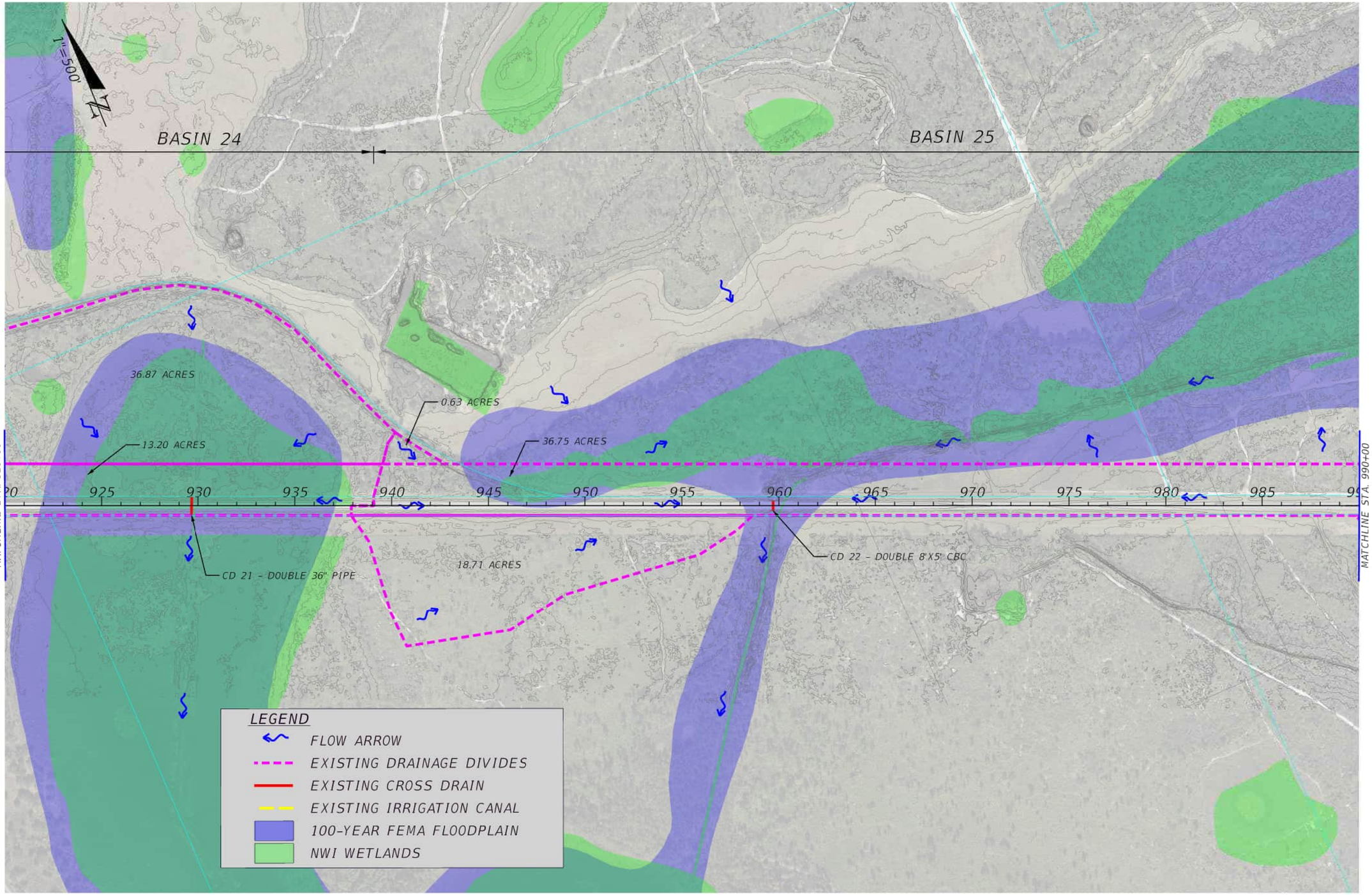

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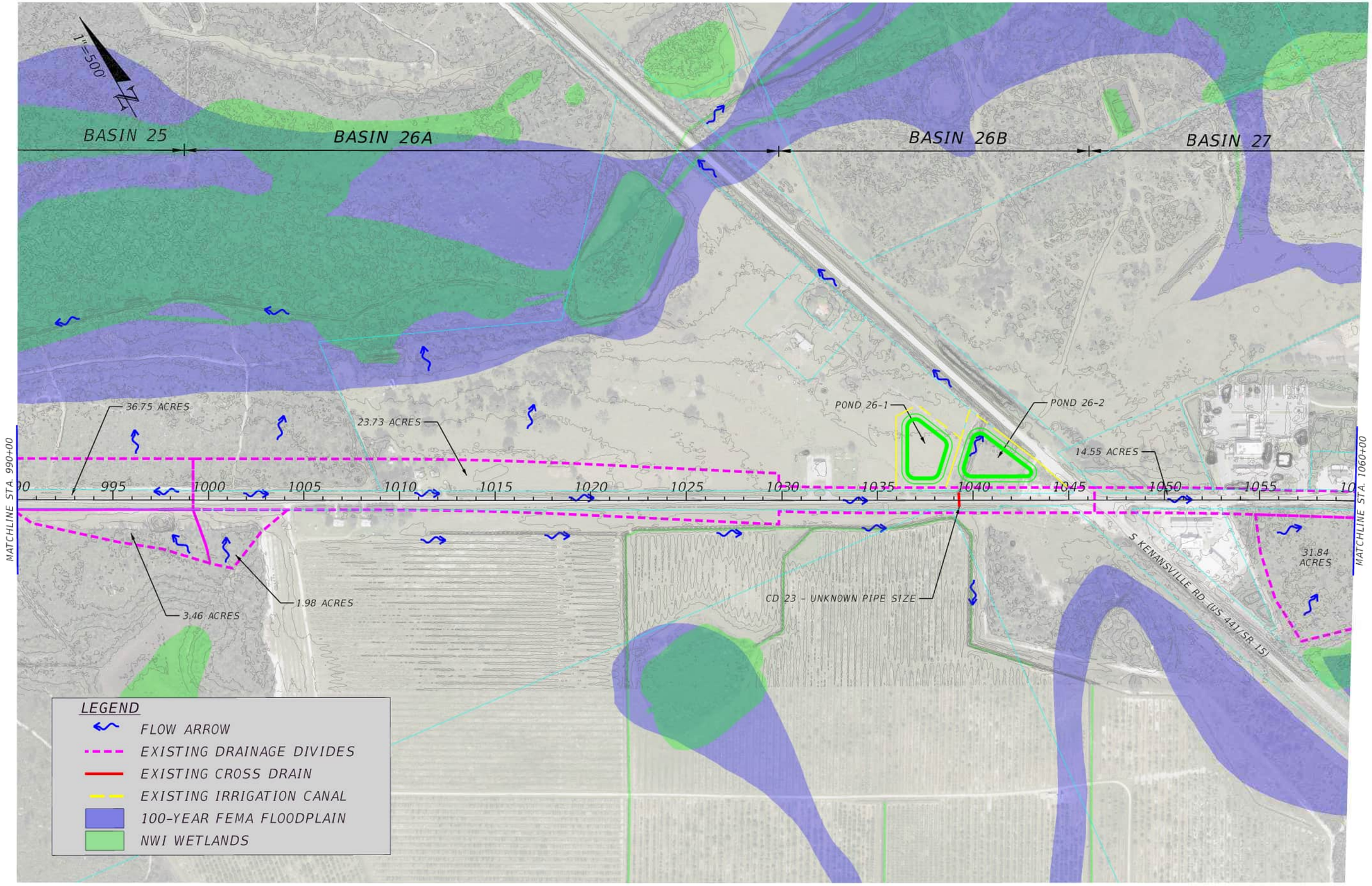

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD

DANIEL P. SHULL, P.E.
LICENSE NUMBER: 86494
MOTT MACDONALD FLORIDA, LLC.
220 WEST GARDEN STREET, SUITE 700
PENSACOLA, FLORIDA 32502

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 60	OSCEOLA	452574-1-22-01

DRAINAGE MAP

SHEET NO. 15

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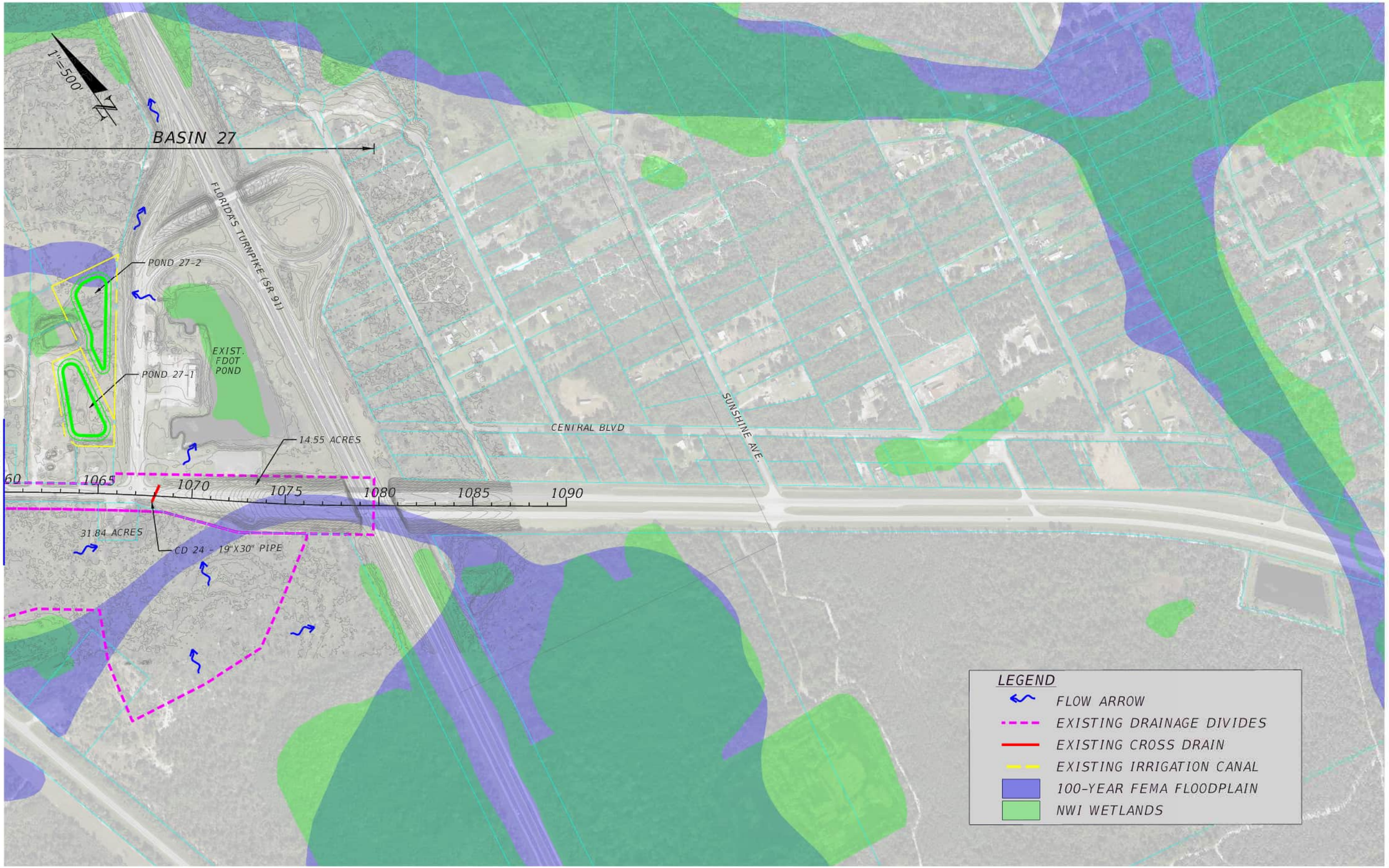

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APPENDIX E – Correspondence

Daniel Shull

From: Steven White
Sent: Wednesday, June 11, 2025 11:02 AM
To: Daniel Shull
Subject: FW: Stormwater Treatment requirements for FDOT project within Lake Okeechobee BMAP (Lower Kissimmee sub-basin) evaluated under old stormwater treatment rules
Attachments: Rick Renna FDOT Email.pdf

Daniel,

Please see below and attached Rick Renna FDOT e-mail from SFWMD.

Steven D. White, PE
Principal Engineer - Civil

D +18506029780 C +18506980842
steven.white@mottmac.com

From: Lott, Richard <rlott@sfwmd.gov>
Sent: Wednesday, June 11, 2025 10:51 AM
To: Steven White <Steven.White@mottmac.com>
Subject: RE: Stormwater Treatment requirements for FDOT project within Lake Okeechobee BMAP (Lower Kissimmee sub-basin) evaluated under old stormwater treatment rules

Here is the Rick Renna email...

From: Steven White <Steven.White@mottmac.com>
Sent: Wednesday, June 11, 2025 11:08 AM
To: Lott, Richard <rlott@sfwmd.gov>
Cc: Daniel Shull <Daniel.Shull@mottmac.com>
Subject: Stormwater Treatment requirements for FDOT project within Lake Okeechobee BMAP (Lower Kissimmee sub-basin) evaluated under old stormwater treatment rules

[Please remember, this is an external email]

Mr. Lott,

Again, it was a pleasure speaking with you earlier. As a quick synopsis of our discussion regarding the FDOT SR-60 project we are currently assisting on the PD&E for we discussed the following:

1. The project PD&E is anticipated to fall within the timelines specified in the second paragraph of Section 8.3 of the Statewide stormwater rule, that results in the nutrient removal provisions to not be applied. (Specifically, the PD&E was started prior to June 28, 2024 and will be complete prior to June 28, 2026)
2. The project falls within the Lower Kissimmee sub-basin as defined in the Lake Okeechobee BMAP.
3. The Rick Renna memo established an agreement whereby SFWMD agreed not to impose the 150% water quality treatment volume provisions of the old rule for FDOT project.
4. The project will be required to perform pre- and post-condition nutrient loading analysis and demonstrate that the post-condition nutrient load discharge is equal to or less than the pre-development nutrient load discharge.

I would greatly appreciate if you can send a copy of the Rick Renna memo that you mentioned for our records and if you could also verify that my understanding of the stormwater treatment requirements for the project as detailed above are correct.

Lastly, The project falls within a Sole Source Aquifer as defined under the Clean Waters Act. I am hoping that you can forward this on to an appropriate contact within SFWMD and/or FDEP so that they might answer if this condition brings any additional considerations or requirements with it from the State of Florida's perspective.

Once again, I appreciate your assistance with this. If you have any questions, or require any additional information, please do not hesitate to call.

Best regards,

Steven D. White, PE
Principal Engineer - Civil

D +18506029780 C +18506980842
steven.white@mottmac.com

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Website | **LinkedIn** | **Instagram** | **Facebook** | **YouTube**

Setchell, Brent

From: Renna, Rick
Sent: Thursday, May 02, 2013 4:07 PM
To: Hickson, Ferrell; Lewis, Francis; Muench, Patrick; Salazar, Ricardo; Sidan, Clara; Spirio, Carlton D; Stewart, Kevin; Setchell, Brent; Homrich-Micocci, Kevin
Cc: Green, Jennifer (Roadway Design - Hydraulics); Tootle, Amy
Subject: Resolution of Issues with the SFWMD
Attachments: FDOT_project_summary_master list.xlsx; 150% cost savings -SWIA.PDF; SFWMD 150 vs pre-post.pdf

Clara / Gentlemen:
The correspondence in the e-mails below will be the official final word from SFWMD on the issues we have been discussing with them; if they put out an further guidance, I will forward to you. Their final position, taken from the e-mails below is as follows:

Given the legislation enacted last year relating to flexibility in the regulatory criteria as it is applied to FDOT projects, we offer the following:

- *100' minimum width and 0.5 acre dimensional requirements for detention ponds would not apply to FDOT projects.*

- *The SFWMD will not require 150% of the detention volume for FDOT projects. However, a pre versus post nutrient analysis is required for all projects (within SFWMD Jurisdiction) that are within a watershed that outfalls to ~~an~~ nutrient impaired WBID. If the results indicate the project as designed increases the nutrient load, additional best management practices would be required such that the annual nutrient load post project is less than the pre-developed condition.*

Simply put – for FDOT, no more dimensional criteria for wet ponds, no more 150% treatment volume, and no more reaching far upstream for impairments: we simply use pre/post Harper analysis to evaluate annual loadings of the pollutant of concern when flowing into an impaired WBID.

Firstly, I want to thank you for the supporting information you supplied, as summarized in the attached table and documents. We would not have succeeded without the project specific information you supplied. Thank you also for your encouragement during the months of discussions with the WMD.

Secondly, would you mind estimating an annual savings – realistic, but not detailed or time consuming, perhaps even a range – based on the data you supplied. This will enable me to responsibly report an expected savings to Management.

Thirdly, please remember: "no spiking the football" – just quietly target the Harper analysis in impaired basins. Amy and I will be addressing this issue at the June Design Expo.

Gratefully,

Rick Renna
850-414-4351

mottmac.com