

Location Hydraulics Report

Widening Western Beltway (SR 429)

Project Development and Environment (PD&E) Study

From Interstate 4 to Seidel Road
(MP 0.5 to MP 11.5)

Osceola and Orange Counties, Florida

Financial Project ID (FPID) No. 446164-1
ETDM No.: 14446



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March 2023

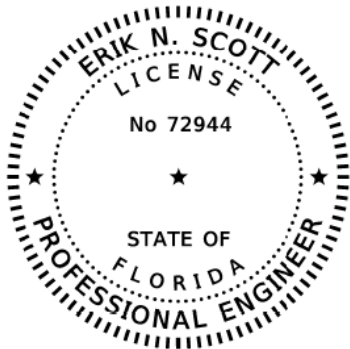
Location Hydraulics Report

PD&E Study Widening Western Beltway from Interstate 4 to Seidel Road
Florida's Turnpike Enterprise
Financial Project ID 446164-1
March 2023

This Location Hydraulic Report is based solely upon the information made available to or gathered by RS&H. RS&H does not assume responsibility for conditions, which did not come to knowledge, or conditions not recognized as unacceptable at the time this report was prepared. RS&H has performed these drainage calculations and recommendations in a manner consistent with sound practices and that level of care and skill normally exercised by members of the profession operating under similar circumstances.

I, Erik N. Scott, hereby certify that this report, as listed above, is true and correct, represents the described work and is in accordance with the requirements of this project.

This item has been digitally signed and sealed by Erik N. Scott on the date adjacent to the seal.



Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

RS&H, Inc.
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Erik N. Scott, P.E. No. 72944

EXECUTIVE SUMMARY

Florida's Turnpike Enterprise (FTE) is conducting a Project Development and Environment (PD&E) study to evaluate the widening of Florida's Turnpike Western Beltway (SR 429) from Interstate 4 (MP 0.5) to just north of Seidel Road (MP 11.5) from 4-lanes to 8-lanes. The proposed project lies within Osceola and Orange Counties. The purpose of this PD&E study is to evaluate engineering and environmental data and document information that will aid FTE in determining the location, type, and preliminary design of the proposed improvements. The total project length is approximately 11.0-miles. The study includes five existing interchanges and one new interchange.

The proposed widening of the existing Turnpike mainline from 4-lanes to 8-lanes will result in minor impacts to the adjacent Federal Emergency Management Agency (FEMA) floodplains. The anticipated 100-year floodplain encroachments due to the proposed roadway widening have been identified and quantified within this report. Because of the minimal nature of these impacts, no additional right-of-way is anticipated for floodplain compensation.

The datum used for this study is North American Vertical Datum of 1988 (NAVD-88). The datum shift from NGVD-29 is (-)0.87-ft, with NAVD-88 being the lower elevation of the two.

$$\text{NAVD-88} = \text{NGVD-29} + \text{datum shift}$$

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1.0 INTRODUCTION

Florida’s Turnpike Enterprise (FTE) is conducting a Project Development and Environment (PD&E) study to evaluate the widening of Florida's Turnpike Western Beltway (SR 429) from Interstate 4 (MP 0.5) to just north of Seidel Road (MP 11.5) from 4-lanes to 8-lanes. The purpose of this PD&E study is to evaluate engineering and environmental data and document information that will aid FTE in determining the location, type, and preliminary design of the proposed improvements. The total project length is approximately 11.0-miles. The study includes five existing interchanges and one new interchange.

Existing interchanges are as follows:

- Interstate 4 (MP 0)
- Sinclair Road (MP 1)
- US 192 (MP 6)
- Western Way (MP 8)
- Seidel Road (MP 11)

Proposed interchange:

- Livingston Road (MP 4)

2.0 PROJECT DESCRIPTION

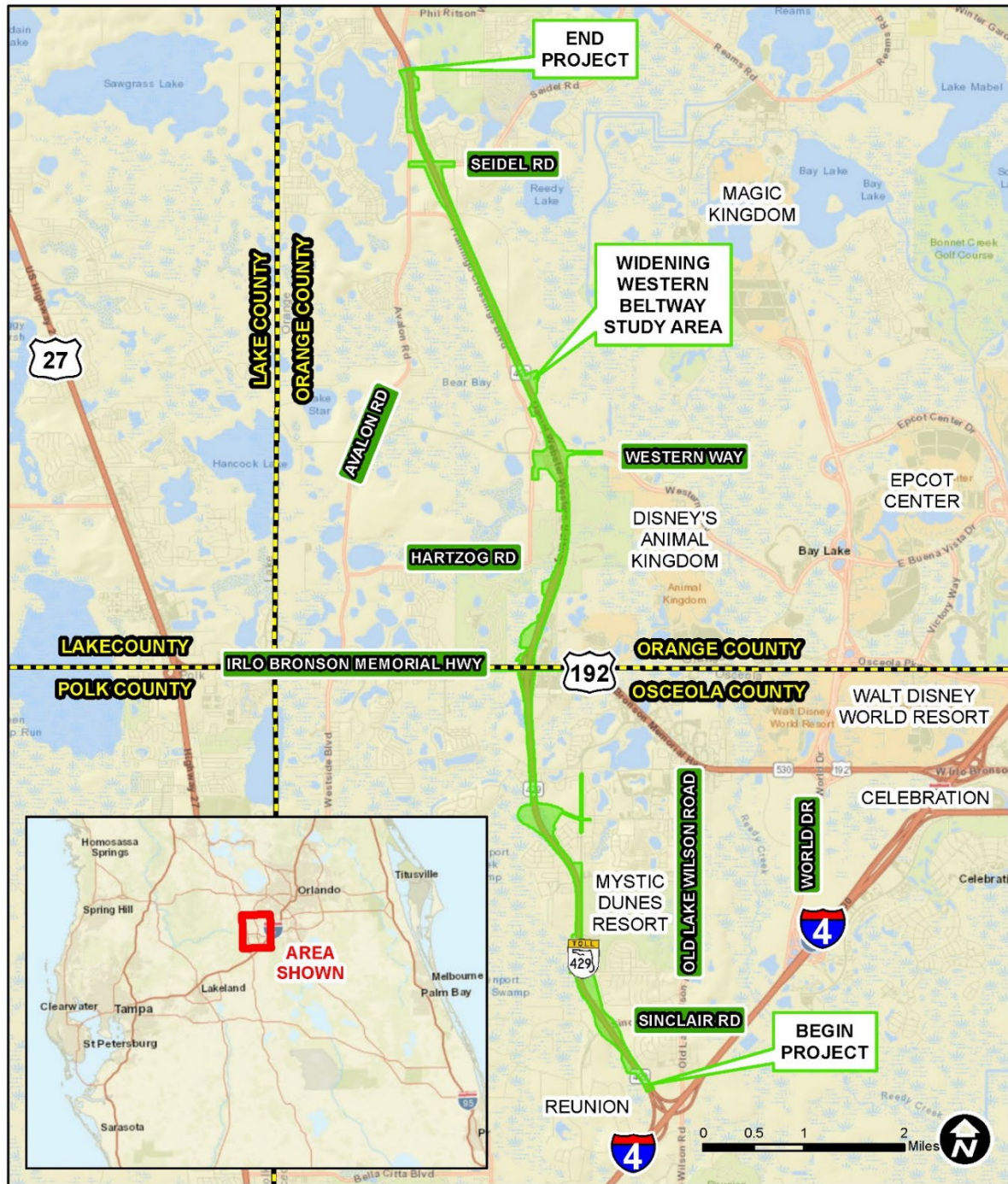
The intent of this Location Hydraulics Report (LHR) is to identify the potential 100-year (base) floodplain encroachments resulting from the roadway improvements evaluated in this study. In accordance with 23 Code of Federal Regulation (CFR) 650 Subpart A, Section 650.111, floodplains are to be protected. The intent of these regulations is to avoid possible long- and short-term adverse impacts associated with the modification of floodplains as a result of development. These regulations urge that where impacts are anticipated, alternatives should be sought out where practical and that development incompatible with floodplain values should be avoided. Conclusions and recommendations were developed using the best available data and conceptual roadway alignment and typical sections. The cross-drain lengths and exact locations shall be verified during the design phase, when survey is available.

The proposed project lies within Osceola and Orange Counties, Florida. **Table 2-1** lists the Section, Township, and Ranges of the project. A Project Location Map is provided in **Figure 2-1**. A USGS Quad Map is provided in **Figure 2-2**.

Table 2-1: Section, Township, and Range

Range	Township	Section(s)
27E	25S	4, 9, 15, 16, 21, 22, 27
28E	24S	5, 8, 16, 17, 21, 28, 33

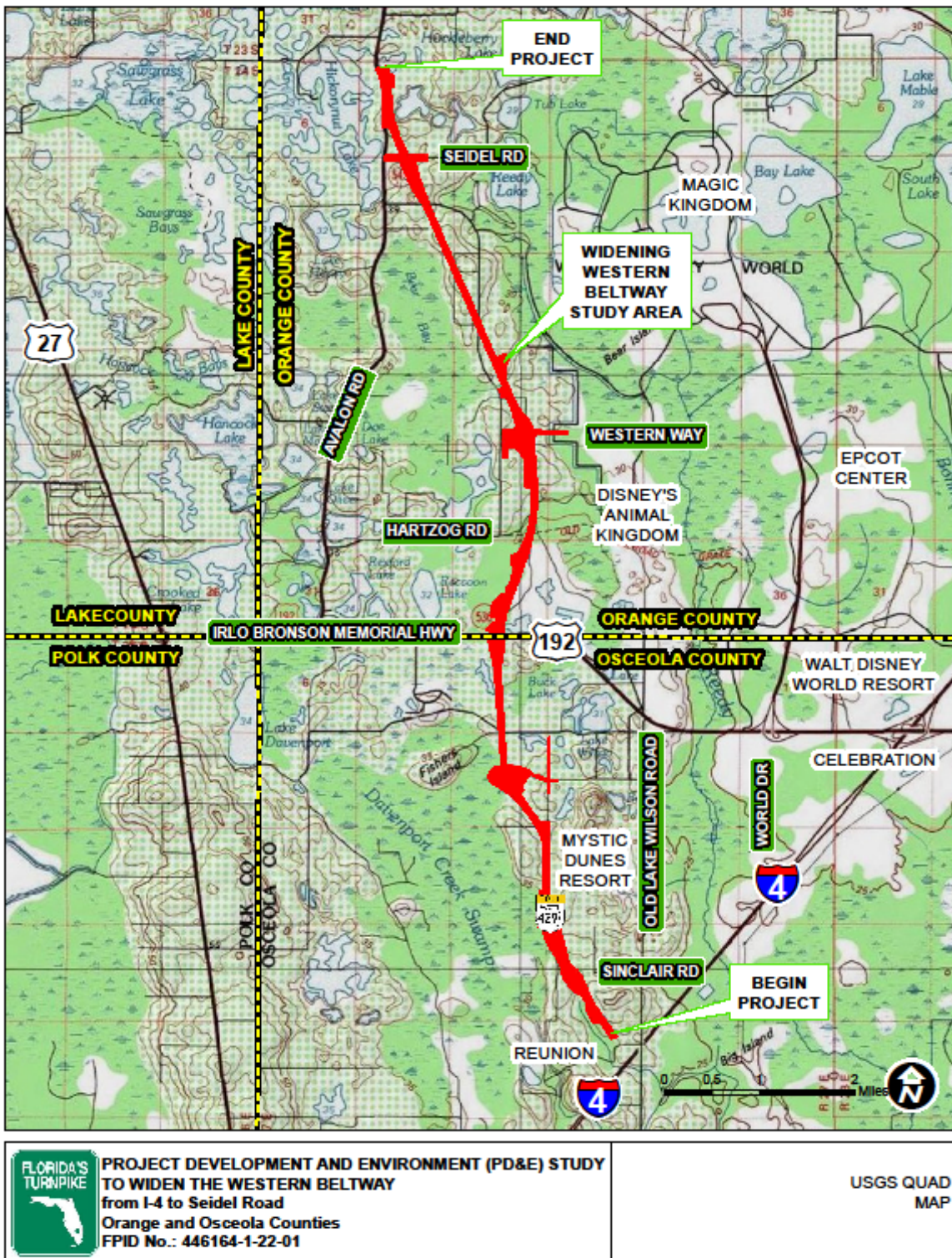
Figure 2-1: Project Location Map



**PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY
TO WIDEN WESTERN BELTWAY
from I-4 to Seidel Road
Orange and Osceola Counties
FPID No.: 446164-1-22-01**

**PROJECT
LOCATION
MAP**

Figure 2-2: USGS Quad Map



Location Hydraulics Report

Widening Western Beltway PD&E Study from Interstate 4 to Seidel Road

Florida's Turnpike Enterprise

Financial Project ID 446164-1

The existing 4-lane corridor includes a large, grassed median. The proposed lanes will be constructed to the inside, replacing the grassed median. Minimal widening to the outside is anticipated.

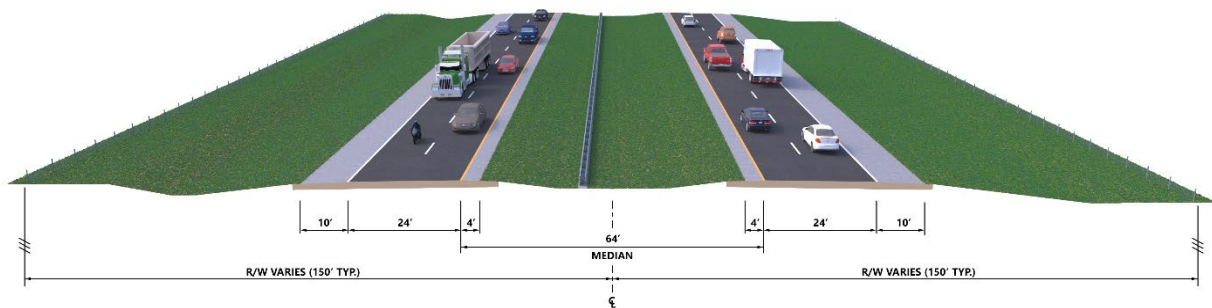
The datum used for this study is North American Vertical Datum of 1988 (NAVD-88). The datum shift from NGVD-29 is (-)0.87-ft, with NAVD-88 being the lower elevation of the two.

$$\text{NAVD-88} = \text{NGVD-29} + \text{datum shift}$$

3.0 EXISTING CONDITIONS

The existing Turnpike corridor from the Interstate 4 interchange to Seidel Road consists of four 12-ft travel lanes with 4-foot paved inside shoulders and 10-foot paved outside shoulders. **Figure 3-1** depicts the existing typical section.

Figure 3-1: Existing SR 429 Typical Section



In general, stormwater runoff sheet flows from the roadway into roadside ditches that convey runoff to offsite ponds for treatment and attenuation. In some locations runoff is collected within a shoulder gutter with inlets and piped to a pond.

The Florida Department of Environmental Protection (FDEP) has identified 4 waterbodies along the corridor. **Table 3-1** lists the waterbody identification numbers (WBIDs) and their respective name.

Table 3-1: Project WBID's

WBID	Waterbody Name
3170K	Davenport Creek
3170F5	Davenport Creek Headwaters
3170F4	Whittenhorse Creek
3170IA	Lake Hickorynut Drain

There are 3 major outfalls along the project corridor: Davenport Creek, Boggy Creek, and Whittenhorse Creek. 20 basins have been identified within the limits of the study area. Basin divides have been developed from existing permit information (ERP No. 49-187636001) and supplemented with LiDAR data and field review. Cross drain information was obtained from the existing plans. Naming conventions for basins and cross drains correspond with the existing permits, where possible. Basin and sub-basin divides are detailed on the basin maps included in **Appendix A**. **Table 3-2** provides a summary of the cross drains in each basin.

Table 3-2: Cross Drains per Basin

Basin ID	Cross Drain ID	Baseline	Size
F	S-716A (CD-2)	SR 429	54"
B	S-119A (CD-3)	SR 429	24"
2A	S-1	SR 429	2~48"
2A	S-2	SR 429	48"
2B	S-8	SR 429	3~24"
2B	S-107	SR 429	3~8'x6'
12	S-500	SR 429	2~9'x4'
13	S-518	SR 429	24"
14	S-606	Hartzog Rd / SR 429	24"
2A	S-9	US 192	2~8'x4'

Straight line diagram can be found in **Appendix H**.

3.1 SOILS

The soils within and adjacent to the corridor vary greatly. The roadway itself was constructed predominately along a ridge. Therefore, the soils within the project right-of-way are primarily "Excessively Drained". Adjacent to the project corridor are low laying wetlands, these soils are classified as "poorly drained". The Natural Resource Conservation Service (NRCS) Web Soil Survey of Osceola and Orange Counties were used to determine the soil types within the project limits. The Soil Survey indicates that much of the project corridor consists of fine sands.

Minimal right-of-way is anticipated for the proposed roadway improvements. Soils within the existing right-of-way do not appear to contain any organic soil, such as muck which would require remediation.

Based on a review and evaluation of subsurface information available for the project area, it is expected that soil and groundwater conditions found along the corridor are generally favorable for roadway improvements. Refer to **Appendix B** for a Soils Map.

3.2 LAND USE

The land use within the right-of-way throughout the study limits is classified as Roads and Highways. The areas adjacent to the project right-of-way consist of residential and commercial land uses.

Please refer to **Appendix C** for the Land Use Map.

3.3 CROSS CULVERTS

There are 10 existing culverts within the project limits. **Table 3-3** provides a summary of the existing culverts.

Table 3-3: Existing Culverts

Station	Cross Culvert Size	Existing Length (ft)	Number of Barrels	Culvert ID	Notes
64+80	54-inch	486	1	S-716A (CD-2)	
96+50	24-inch	301	1	S-119A (CD-3)	
248+40	48-inch	199	2	S-1	
282+85	48-inch	206	1	S-2	
1358+20	24-inch	277	3	S-8	
1390+00	8-ft x 6-ft	417	3	S-107	Bridge Class, Boggy Creek
487+00	9-ft x 4-ft	200	2	S-500	Bridge Class, Whittenhorse Creek
499+00	24-inch	255	1	S-518	
3585+00	24-inch	540	1	S-606	
2025+68	8-ft x 4-ft	158	2	S-9	

3.4 BRIDGE STRUCTURES

There are 9 bridge crossings along SR 429, which are comprised of a total of 16 individual bridges within the project limits; however, none of the bridges within the project limits are over water bodies.

3.5 FLOODPLAINS AND FLOODWAYS

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) for Osceola and Orange Counties were reviewed to determine the extents of the FEMA floodplains within the project limits. **Table 3-4** provides a summary of the FEMA FIRMs, including their effective dates. The FEMA FIRMs are provided in **Appendix D**.

Table 3-4: Summary of FEMA FIRMs

FEMA Panel No.	Effective Date
12097C0040G	June 18, 2013
12097C0030G	June 18, 2013
12095C0580F	September 25, 2009
12095C0390F	September 25, 2009
12095C0375F	September 25, 2009

The applicable Flood Insurance Study (FIS) for this project is the Orange County FIS (effective September 24, 2021). There are no regulatory floodways within this project corridor. **Table 3-5** provides a summary of the floodplain areas within the project limits.

Table 3-5: Floodplain Areas Adjacent to Project

Location ID	Centerline / Baseline	From Station	To Station	Side	Floodplain / Waterbody Name	FIRM Panel No.	Floodplain Zone	FEMA 100-yr Floodplain Elevation (ft)
1	SR 429	125+60	141+00	LT	Davenport Creek Swamp	12097C0040G	AE	106.00
2	SR 429	280+30	286+25	LT/RT	Isolated Wetland	12097C0030G	AE	104.30
3	SR 429	287+80	296+00	LT	Boggy Creek	12097C0030G	A	-
4	SR 429	1371+40	1390+00	LT/RT	Boggy Creek	12095C0580F	A	-
5	SR 429	485+60	489+20	LT/RT	Whittenhorse	12095C0390F	AH	104.00

Floodplain encroachments were mitigated by offsite floodplain compensation sites and the use of the importer/exporter method associated with storage within the stormwater management facilities. See **Appendix F** for documentation and calculations provided as part of the ERP.

Existing offsite floodplain compensation site locations are shown in **Table 3-6**.

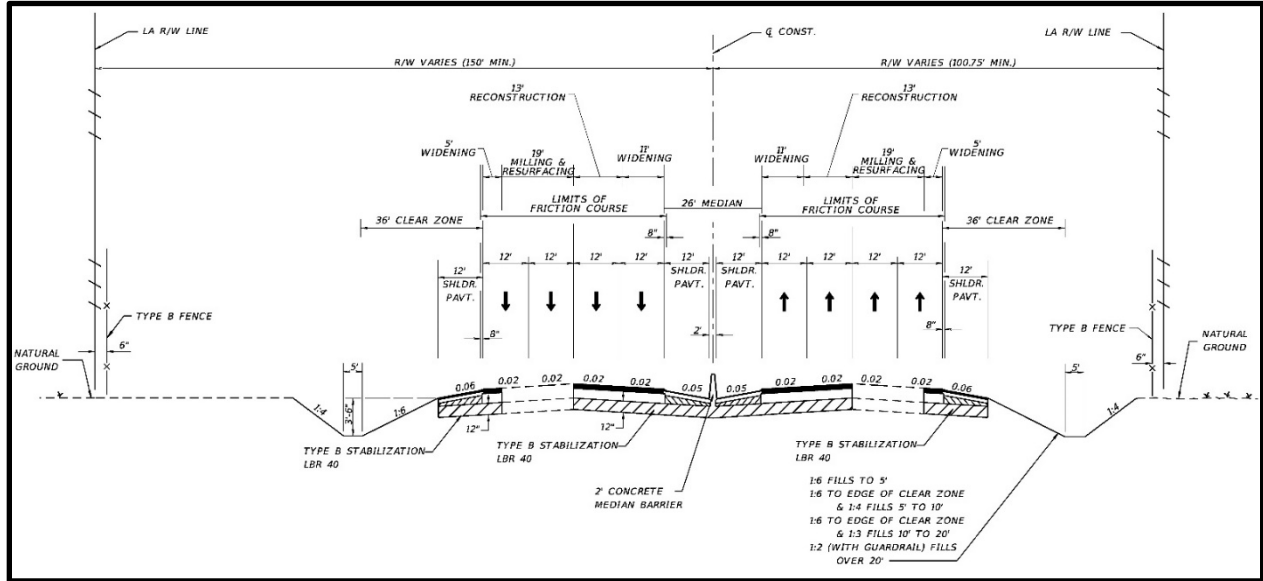
Table 3-6: Existing Floodplain Compensation Sites

Centerline / Baseline	Name	From Station	To Station	Side	Project
SR 429	Comp. Area	234+00	240+00	LT	Section 2A

4.0 PROPOSED CONDITIONS

The recommended improvements involve widening SR 429 from four 12-foot lanes to eight 12-foot lanes by adding two general purpose lanes to the median in each direction. The proposed Typical Section for the mainline is shown in **Figure 4-1**.

Figure 4-1: Proposed Mainline Typical Section



4.1 CROSS CULVERTS

The proposed roadway widening will require extensions to most existing cross drains along the Turnpike mainline. **Table 4-1** provides the projected improvements and modifications to each cross culvert. The existing box culverts are recommended to be extended rather than replaced; however, this should be analyzed further during the design phase based on the latest culvert inspection reports and history of maintenance repairs for each culvert.

Table 4-1: Proposed Improvements to Cross Culverts within Project Limits

Station	Cross Culvert Size	Number of Barrels	Culvert ID	Existing Length (ft)	Proposed Length (ft)	Proposed Improvement	Notes
64+80	54-inch	1	S-716A (CD-2)	486	486	None	
96+50	24-inch	1	S-119A (CD-3)	301	346	Extend	
248+40	48-inch	2	S-1	199	226	Extend	
282+85	48-inch	1	S-2	206	224	Extend	
1358+20	24-inch	3	S-8	277	277	None	
1390+00	8-ft x 6-ft	3	S-107	417	417	None	Bridge Class, Boggy Creek
487+00	9-ft x 4-ft	2	S-500	200	220	Extend	Bridge Class, Whittenhorse Creek
499+00	24-inch	1	S-518	255	277	Extend	
3585+00	24-inch	1	S-606	540	550	Extend	
2025+68	8-ft x 4-ft	2	S-9	158	187	Extend	

4.2 FLOODPLAINS AND FLOODWAYS

The anticipated floodplain impacts due to the proposed roadway widening were estimated to determine potential impacts to the 100-year floodplains and necessary compensation volumes. The exact impact volume from the proposed widening will need to be assessed during the design phase, when survey, geotechnical data, and proposed cross sections are available. Floodplain impacts will be mitigated within cut ditch sections or within existing stormwater management facilities along the corridor. Floodplain impact calculations have been provided for each floodplain encroachment.

The project will impact the 100-year floodplain through both longitudinal and transverse impacts. The longitudinal impacts result from filling the floodplain areas associated with proposed roadway widening within the project limits. Transverse impacts result from the extension of existing cross drain culverts. The longitudinal impacts can be minimized using guardrail and retaining walls to reduce encroachment. The floodplain encroachment areas were quantified based on the FEMA 100-year base flood elevations (BFEs) and the existing ground elevations using 1-foot LiDAR contours. The existing profile grades were used to estimate the floodplain impacts. The floodplain impacts may increase during the design phase if modifications to the profile are necessary.

No additional floodplain compensations sites are anticipated as part of the study. Floodplain calculations are provided in **Appendix E**. However, it should be noted that a proposed toll facility for the new Livingston T-Ramp interchange will be located adjacent to the existing floodplain compensation site at approximately 236+00. Currently the proposed walls of the toll facility are positioned to lay within the berm of this facility. It may be necessary to widen the site to the north, within the existing FDOT parcel, to mitigate any loss of storage associated with the tolling facility.

Floodplain Impact Location 1

This floodplain is located between Sta. 125+60 and 141+00. The anticipated impacts are approximately 3.54 ac-ft. The permitted seasonal high water table for this location is 101.37. Based on the calculations provided as part of the original design, a surplus of 3.91 ac-ft of floodplain mitigation was provided. As shown on page IV-7 within the ERP No 49-187636001 for Part 'C' – Section 1, the stormwater management facilities constructed for the corridor (Pond B-3A, Pond B-3B, Pond B-4, Pond 5, and Pond B-6) provided 58.77 ac-ft of mitigation volume. The permitted encroachment volume was determined to be 54.86 ac-ft, this yielded a surplus of 3.91 ac-ft. Based on the permitted data, utilizing the surplus mitigation volume within the existing ponds will leave a surplus of approximately 0.37 ac-ft remaining once the 3.54 ac-ft of encroachments are accounted for as part of the proposed improvements. Therefore, the use of a dedicated offsite floodplain compensation site is not recommended.

Floodplain Impact Location 2

This floodplain is located between Sta. 280+30 and 286+25 with a BFE of 104.3. The FEMA floodplain map depicts this floodplain being located on the east and west side of the existing roadway as well as overtopping the roadway. However, this is not accurate. The existing roadway in this location varies

from elevation 125-ft to 111-ft. The existing elevations within the FTE right of way are at approximately elevation 105-ft, which is above the Base Flood Elevation (BFE) of 104.3. Therefore, no floodplain encroachments are anticipated at this location.

Floodplain Impact Location 3

This floodplain is located between Sta. 287+80 and 296+00. The anticipated impacts are approximately 0.28 ac-ft. The permitted seasonal high water table for this location is 100.80 based on borings for Pond 2A-3. The Zone A BFE for this impact was set at elevation 107.00-ft. This is based on a conservative value of the Davenport Creek Zone AE elevation of 107.00-ft located less than 1,000-ft to the south. Existing contours generated from LiDAR in the vicinity of the impacts align with this elevation as well. Two options are available for mitigation. The first is utilize the additional storage within the proposed Pond 2A-2 preferred pond alternative. The second is to expand the existing floodplain compensation site located between Sta. 234+00 and 240+00 adjacent to the southbound lanes. FDOT/Turnpike owns the parcel adjacent to the existing floodplain compensation site, however it is predominately wetland and should be preserved if possible.

Floodplain Impact Location 4

This floodplain is located between Sta. 1371+40 and 1390+00. This floodplain is associated with the Boggy Creek crossing. Similar to Floodplain Impact Location 2, the floodplain is depicted as overtopping the roadway, despite the elevation of the roadway being higher than the BFE. The existing cross culvert associated with Boggy Creek was constructed at the right of way on either side of the corridor. The proposed improvements will not impact the existing culvert and no proposed widening is anticipated in this area. Therefore, no floodplain encroachments are anticipated at this location.

Floodplain Impact Location 5

This floodplain is located between Sta. 485+60 and 489+20. The anticipated impacts are approximately 0.17 ac-ft and are associated with the Whittenhorse Creek culvert extension. The permitted seasonal high water table for this location is 100.00. The amount of fill associated with the culvert extension is negligible; a rise in BFE is not anticipated as a result of the proposed improvements. Should it be deemed necessary, minor grading around each of the headwalls could be excavated to offset the encroachment volume.

Table 4-2: Mainline Floodplain Encroachment Areas

Location ID	From Station	To Station	Side	Floodplain / Waterbody Name	Floodplain Zone	FEMA 100-yr Floodplain Elevation (ft)	Encroachment Amount (ac-ft)
1	125+60	141+00	LT	Davenport Creek Swamp	AE	106.00	3.54
2	280+30	286+25	LT/RT	Isolated Wetland	AE	104.30	-
3	287+80	296+00	LT	Boggy Creek	A	-	0.28
4	1371+40	1390+00	LT/RT	Boggy Creek	A	-	-
5	485+60	489+20	LT/RT	Whittenhorse	AH	104.00	0.17

4.3 PROJECT CLASSIFICATION

The floodplain areas within the project limits are associated with creeks and wetlands located adjacent to the project corridor. The encroachments into the existing floodplain associated with the widening are anticipated to be minimal. Minimal encroachments on a floodplain occur when there is floodplain involvement but the impacts on human life, transportation facilities, and natural and beneficial floodplain values are not significant and can be resolved with minimal efforts. Normally, these minimal efforts to address the impacts will consist of applying FDOT’s drainage design standards and following the Water Management Districts’ procedures to achieve results that will not increase or significantly change the flood elevations and/or limits.

4.4 RISK EVALUATION

The proposed improvements were evaluated to determine whether there would be adverse floodplain impacts. The project will not affect existing floodplain elevations or extents. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes as the result of construction of this project. Therefore, it has been determined that encroachments are not significant.

4.5 COORDINATION WITH LOCAL AGENCIES

Pre-Application Meetings were held with the Florida Department of Environmental Protection (FDEP) and Reedy Creek Improvement District (RCID). Please refer to **Appendix G** for the Pre-Application Meeting Minutes.

4.6 HISTORY OF FLOODING

There are no documented flooding issues along the corridor.

5.0 RECOMMENDATIONS AND CONCLUSIONS

The proposed widening of SR 429 from 4-lanes to 8-lanes from MP 0.5 to MP 11.5 and associated interchange improvements will result in minor impacts to the adjacent FEMA floodplains. The anticipated floodplain encroachments due to the proposed roadway widening were calculated and mitigation alternatives were identified. The floodplain impact calculations are conservative and should be revised during design when survey, geotechnical data, and proposed cross sections are available. Floodplain compensation should be provided in stormwater management facilities to the maximum extent possible.

Replacement drainage structures for this project are limited to hydraulically equivalent structures which are not expected to increase the backwater surface elevations. The limitations to the hydraulic equivalency proposed are due to restrictions imposed by the geometrics of design, existing development, cost feasibility, or practicability. An alternative encroachment location is not considered since it does not meet the project's purpose and need or is economically unfeasible.

Furthermore, the project will not affect existing floodplain elevations or extents. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes as the result of construction of this project. Therefore, it has been determined that these encroachments are not significant.

6.0 REFERENCES

FDEP Map Direct

FDOT Drainage Manual (2022)

FDOT Drainage Design Guide (2022)

FDOT Project Development and Environment Manual (2020)

FEMA FIRM Maps for Osceola and Orange Counties

FEMA Flood Map Service Center

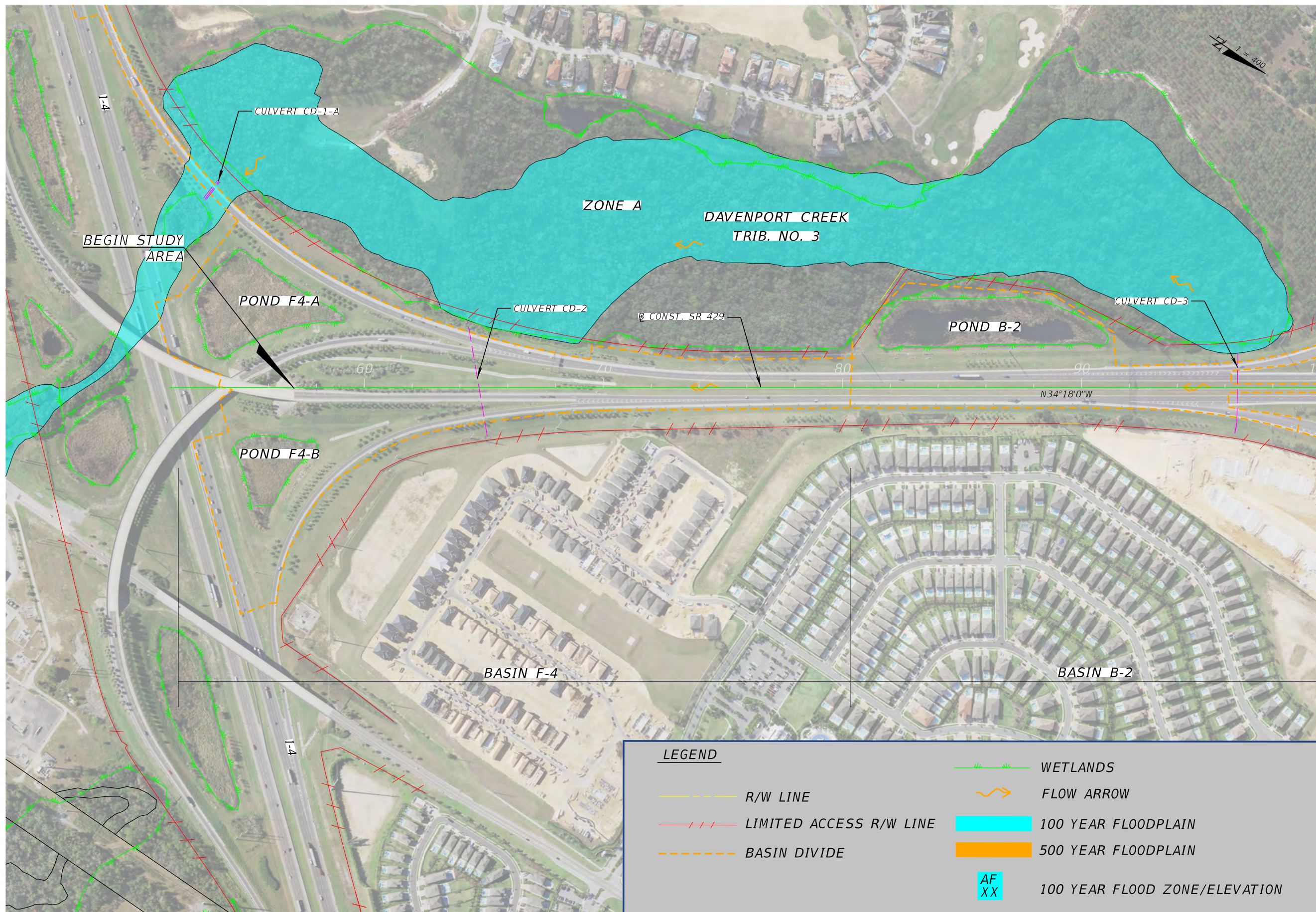
Flood Insurance Studies for Osceola and Orange NRCS Web Soil Survey

Environmental Resource Permit Applicant's Handbook Volume I (2018)

SFWMD ePermitting

SFWMD Environmental Resource Permit Applicant's Handbook Volume II (2018)

APPENDIX A – DRAINAGE MAPS



LEGEND	
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION
	R/W LINE
	LIMITED ACCESS R/W LINE
	BASIN DIVIDE

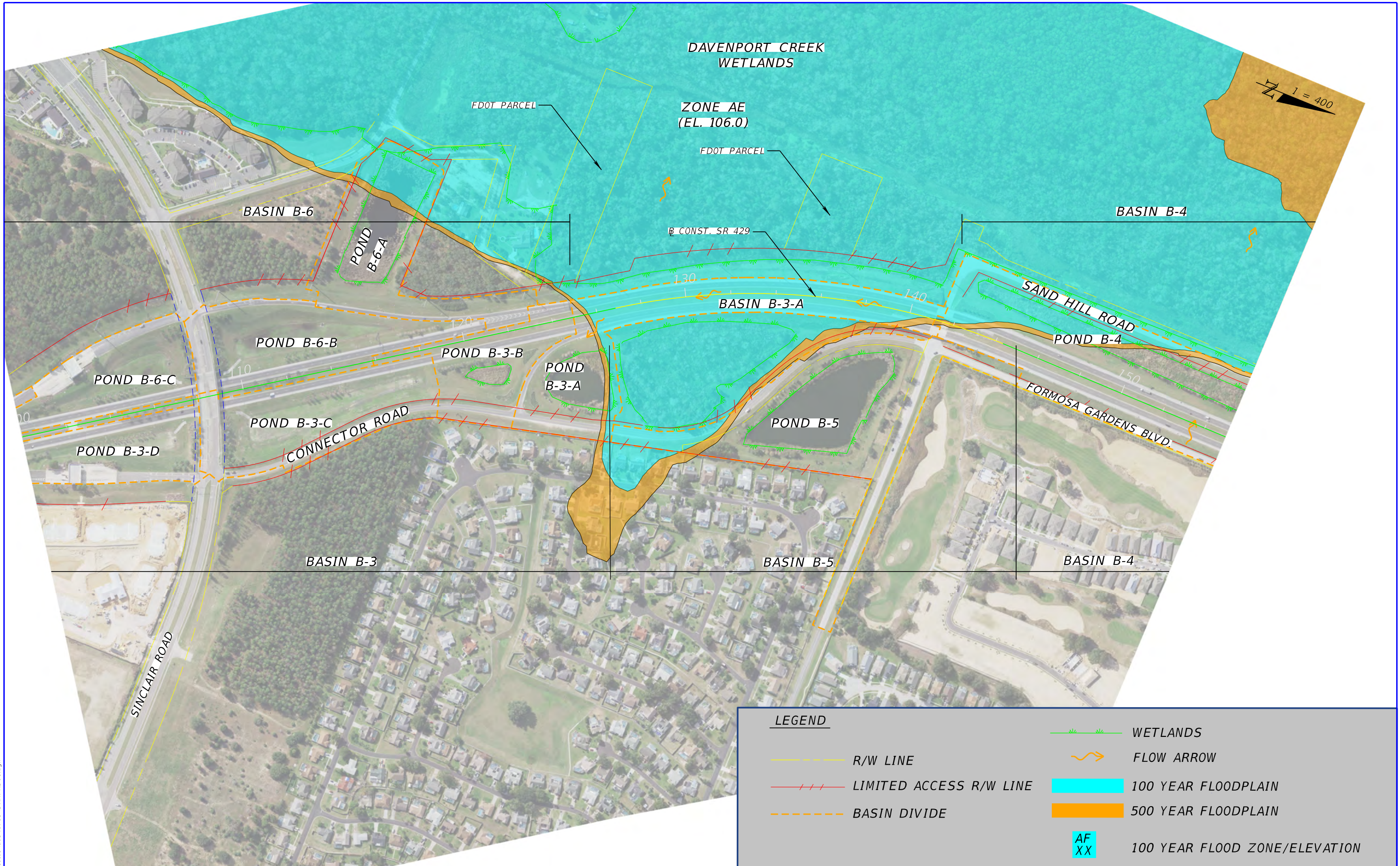
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**EXISTING
DRAINAGE MAP**

SHEET NO.
1



LEGEND

- WETLANDS
- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

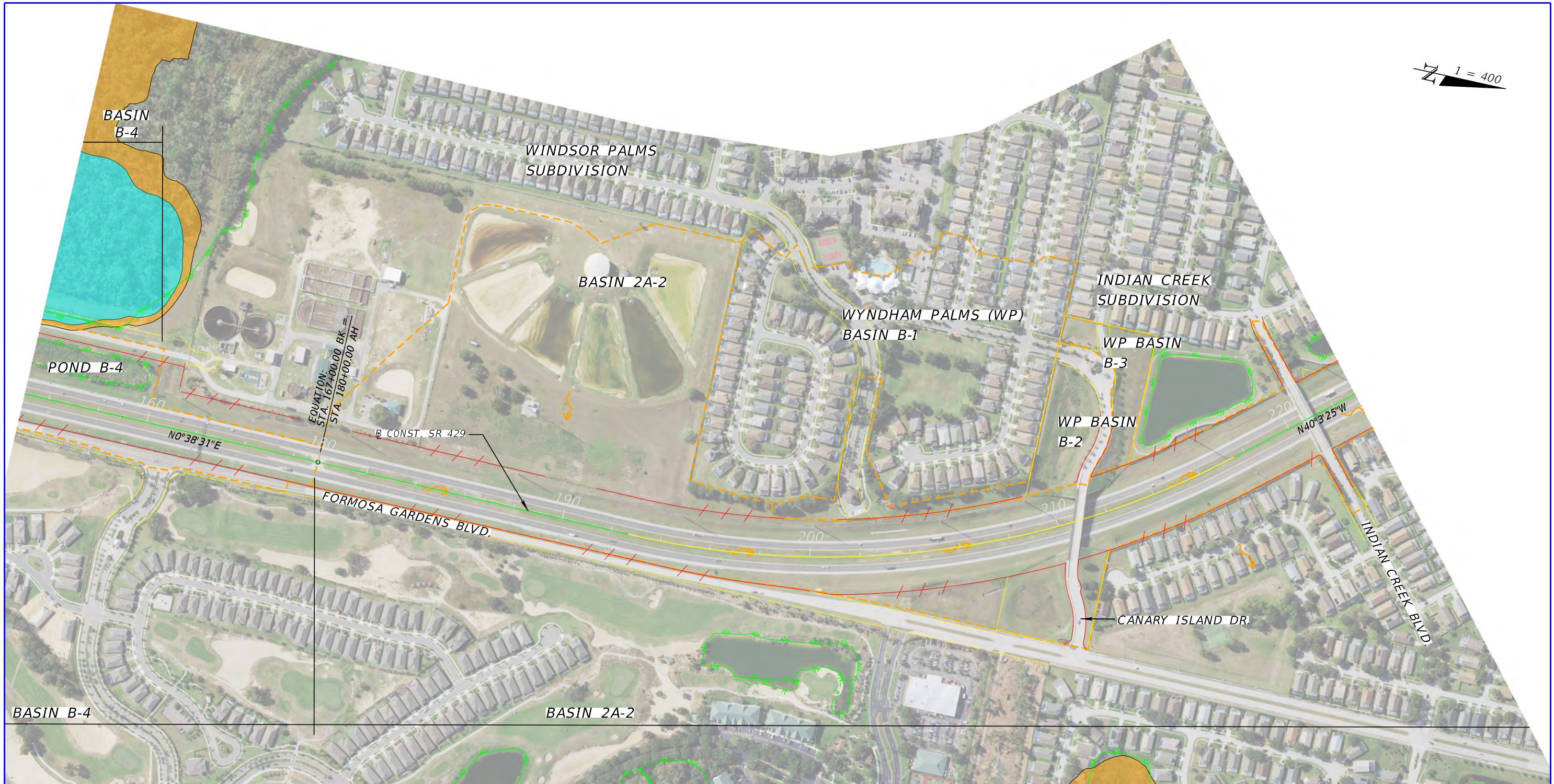
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**EXISTING
DRAINAGE MAP**

SHEET NO.
2

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LEGEND	
	WETLANDS
	R/W LINE
	LIMITED ACCESS R/W LINE
	BASIN DIVIDE
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

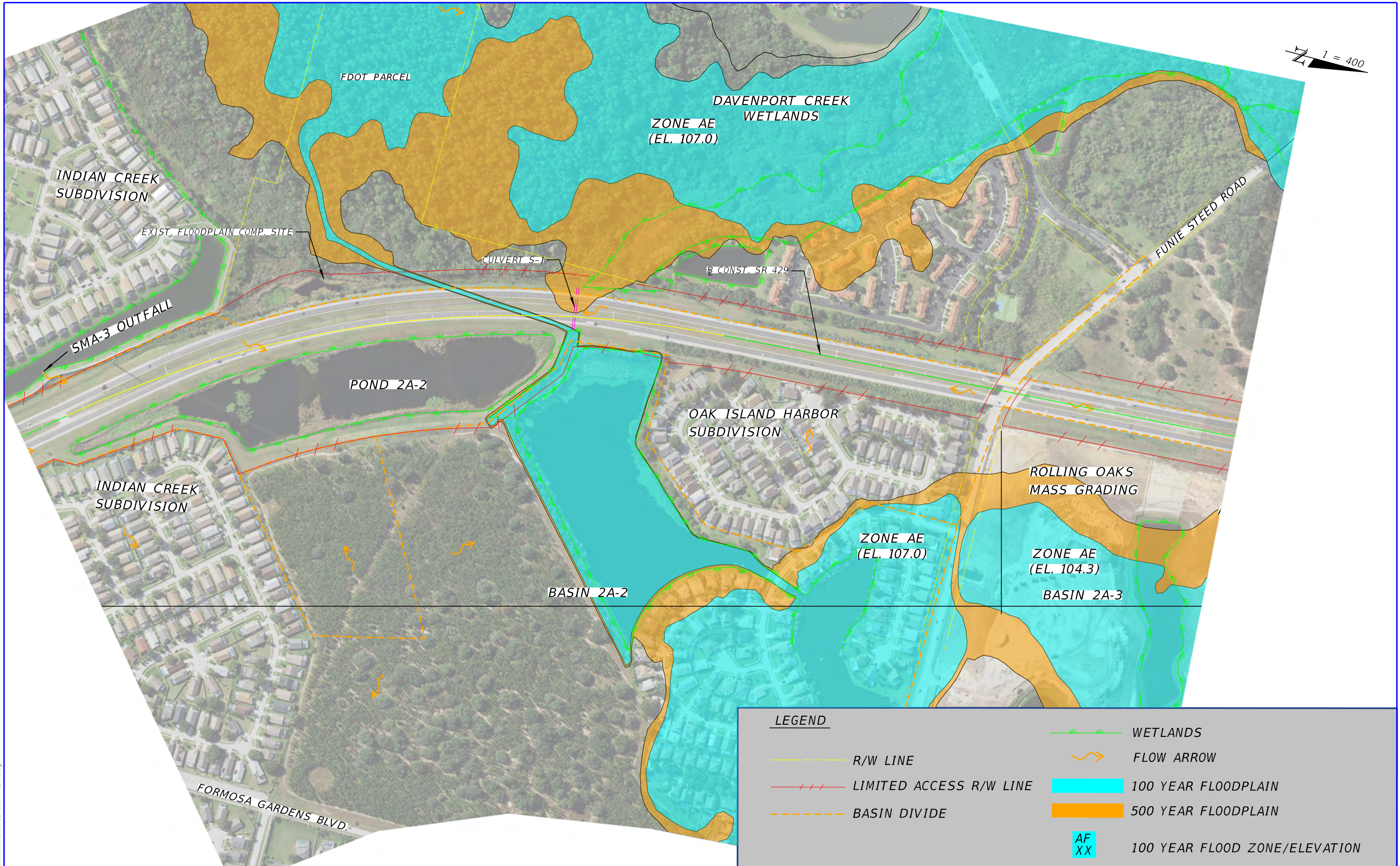
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

EXISTING DRAINAGE MAP	SHEET NO.
	3

1 = 400



LEGEND

- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

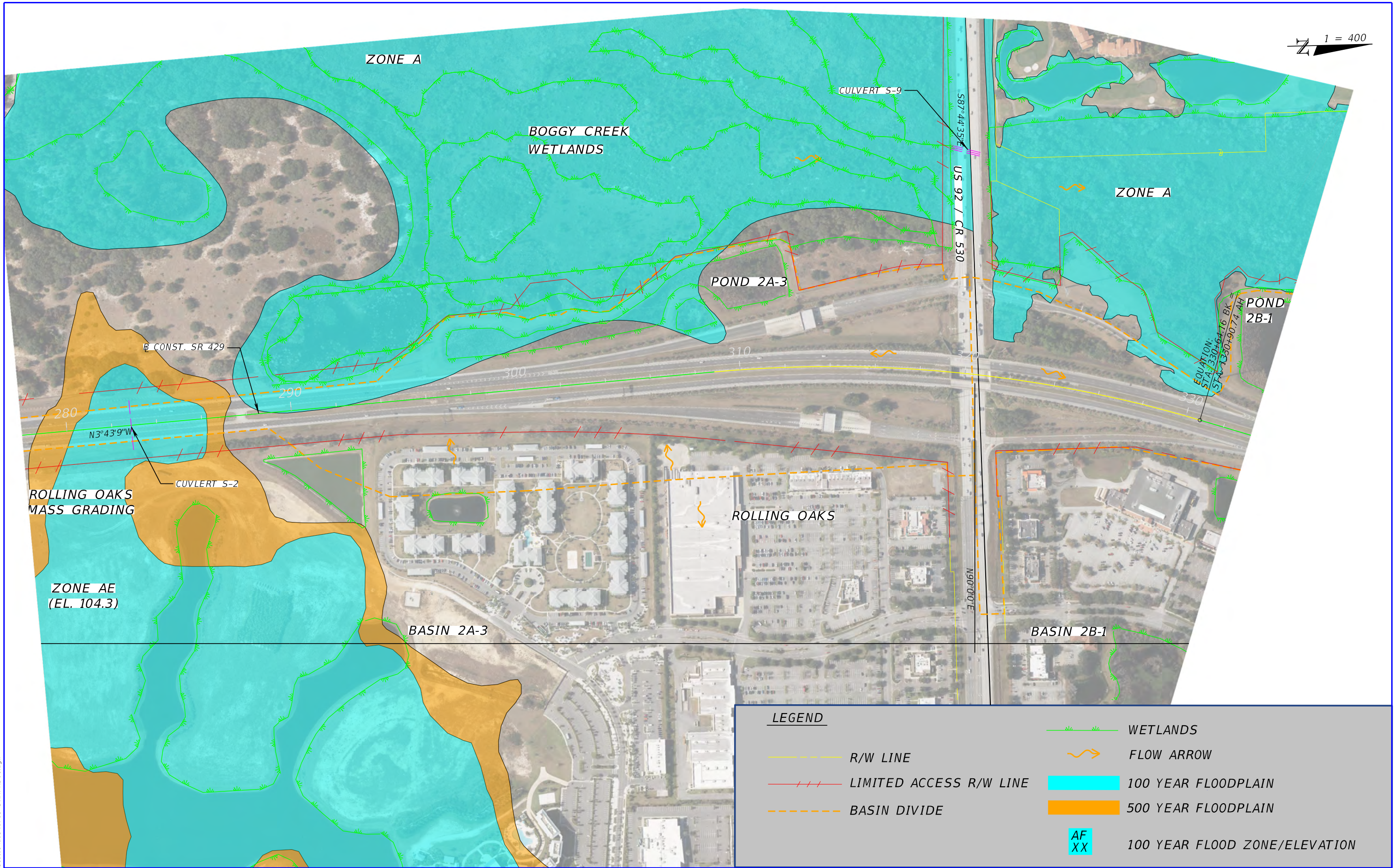
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**EXISTING
DRAINAGE MAP**

SHEET NO.
4



LEGEND

- WETLANDS
- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

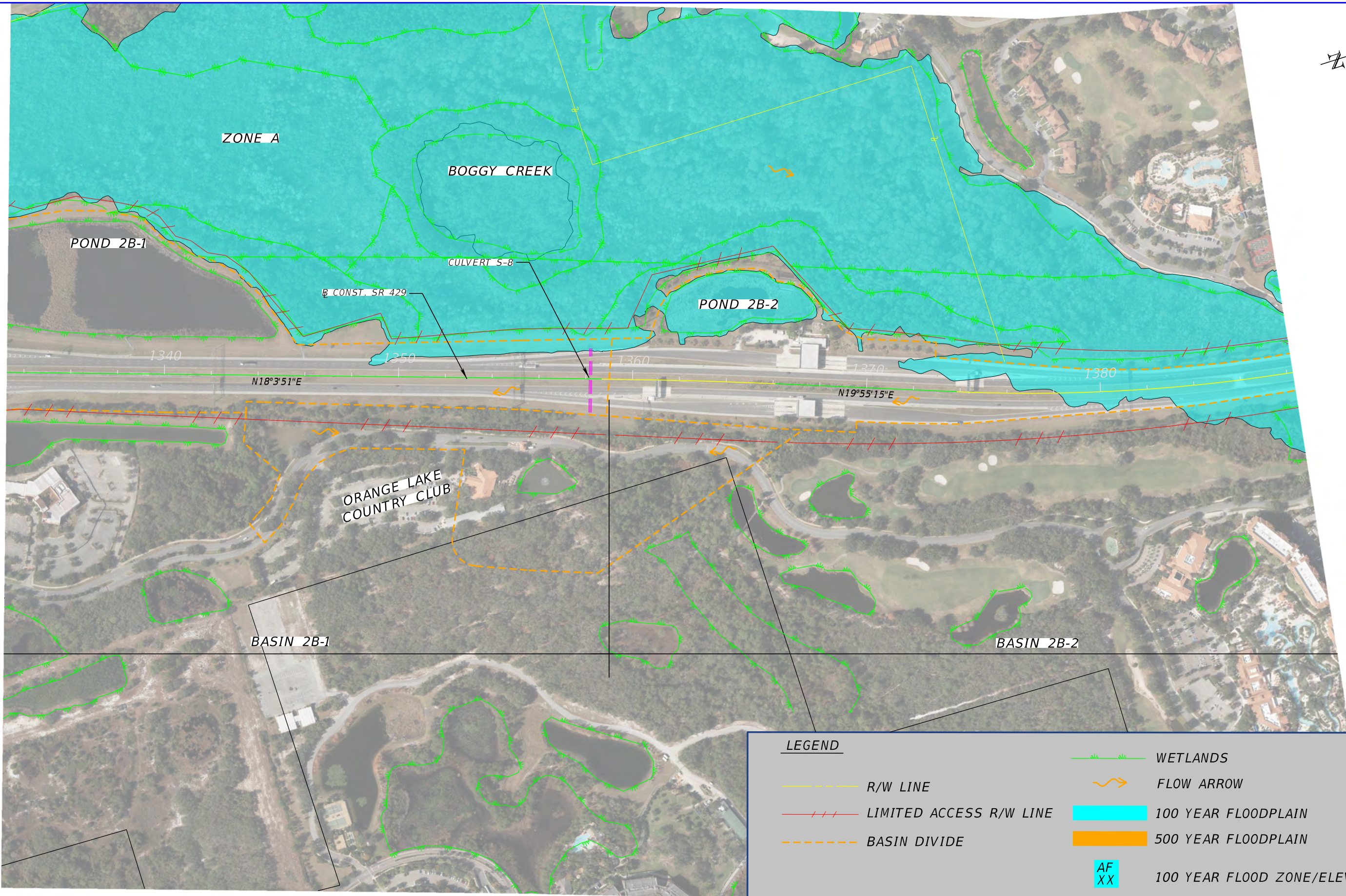
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

EXISTING DRAINAGE MAP

SHEET NO.
5

3/28/2023 8:14:34 AM ScottE c:\pw\work\sh_pw\scate\40346785\DRMP\DR01.dgn

1 = 400



LEGEND	
	WETLANDS
	FLOW ARROW
	R/W LINE
	LIMITED ACCESS R/W LINE
	BASIN DIVIDE
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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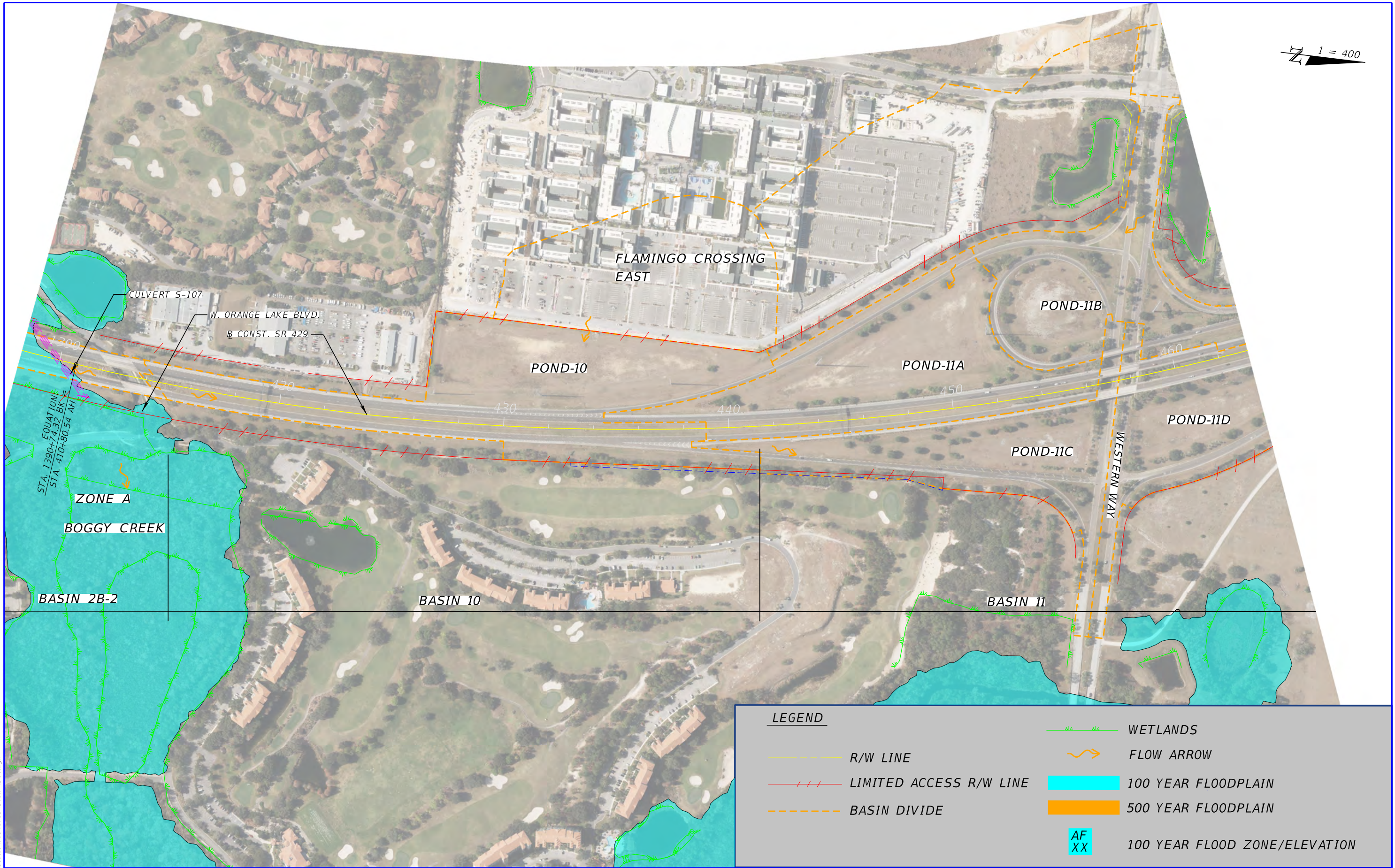
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**EXISTING
DRAINAGE MAP**

SHEET NO.
6

1 = 400



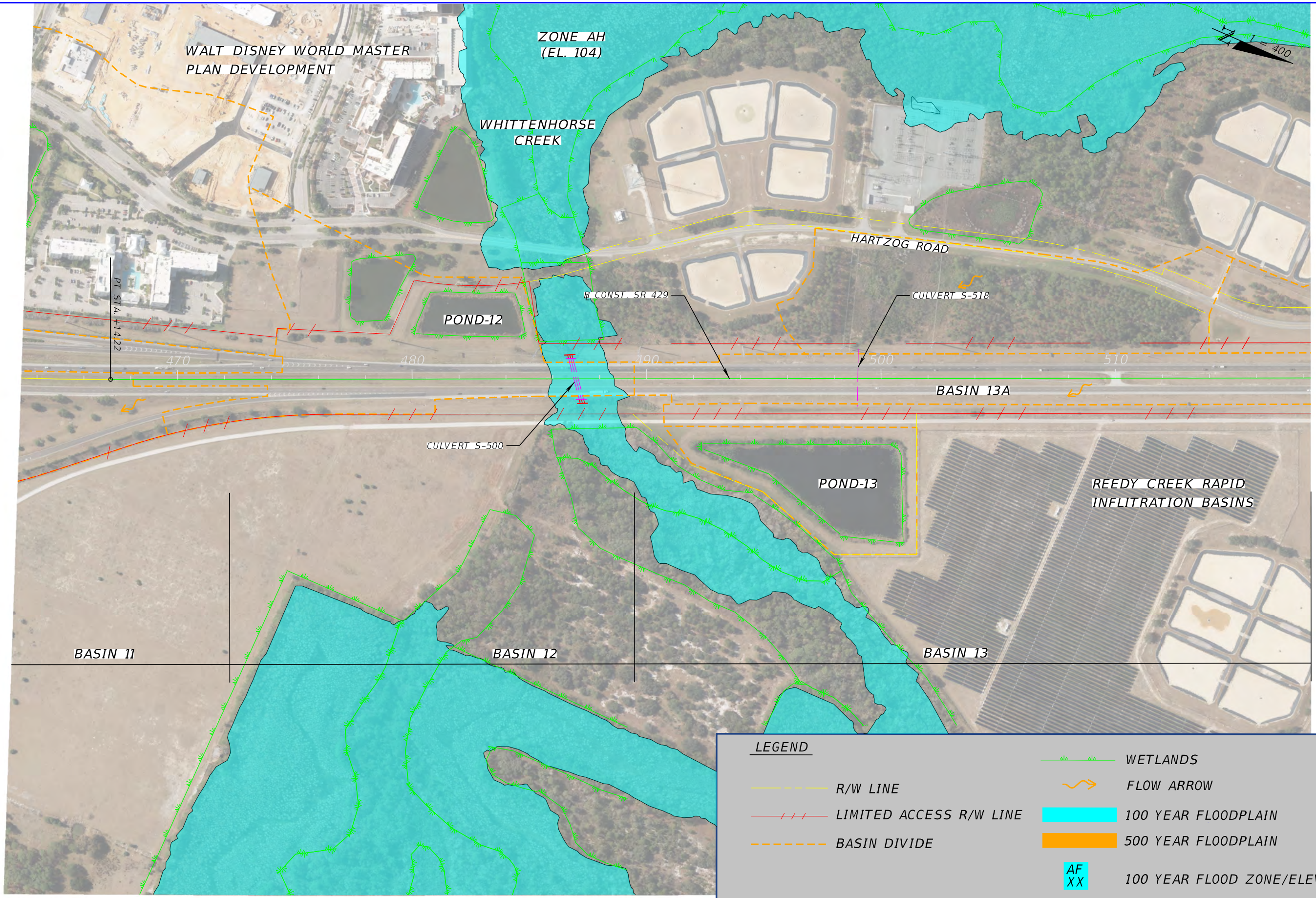
LEGEND	
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION
	R/W LINE
	LIMITED ACCESS R/W LINE
	BASIN DIVIDE

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

<p><i>EXISTING DRAINAGE MAP</i></p>	SHEET NO.
	7



LEGEND

- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION (AF XX)
- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE

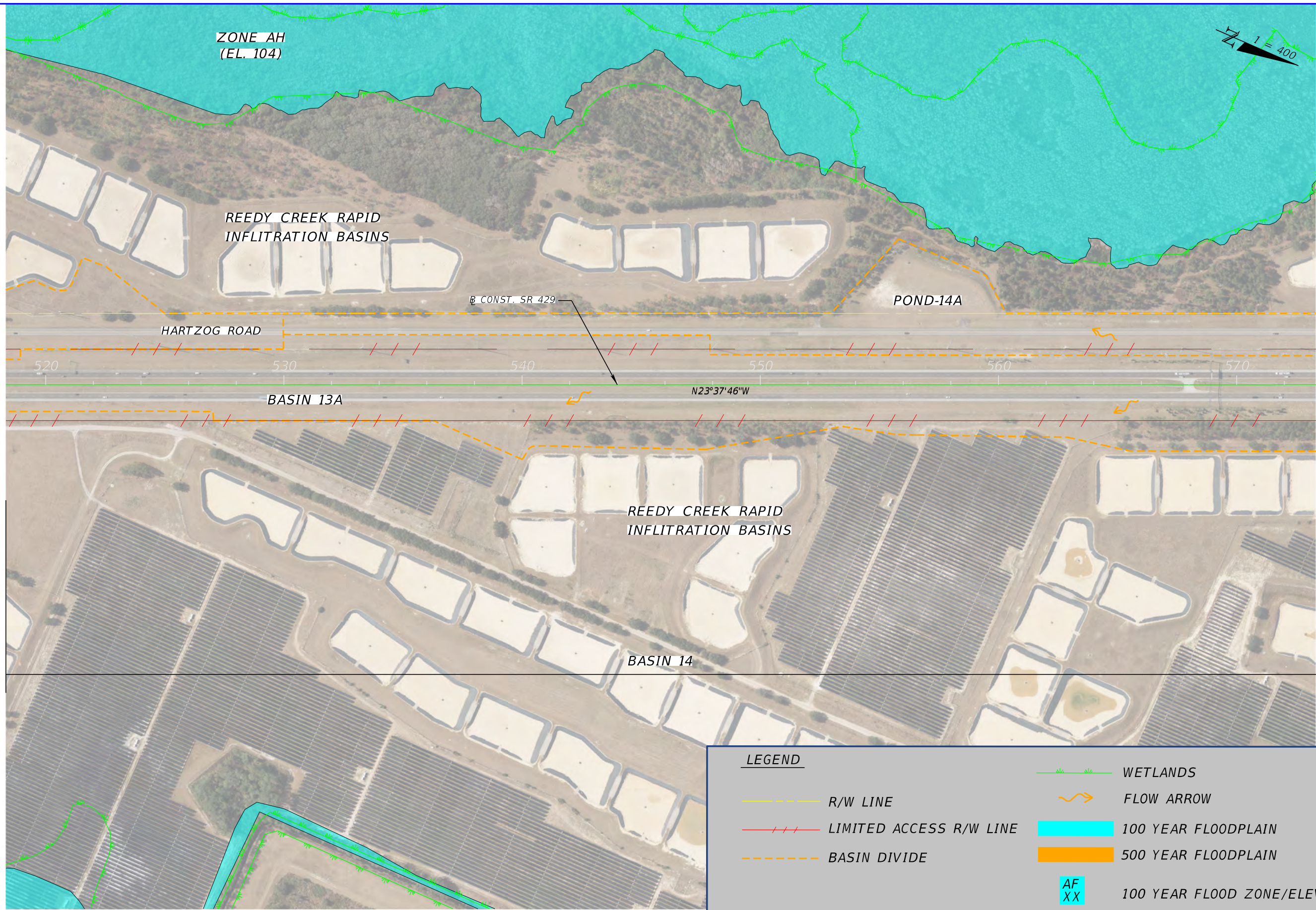
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**EXISTING
DRAINAGE MAP**

SHEET NO.
 8



LEGEND

- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

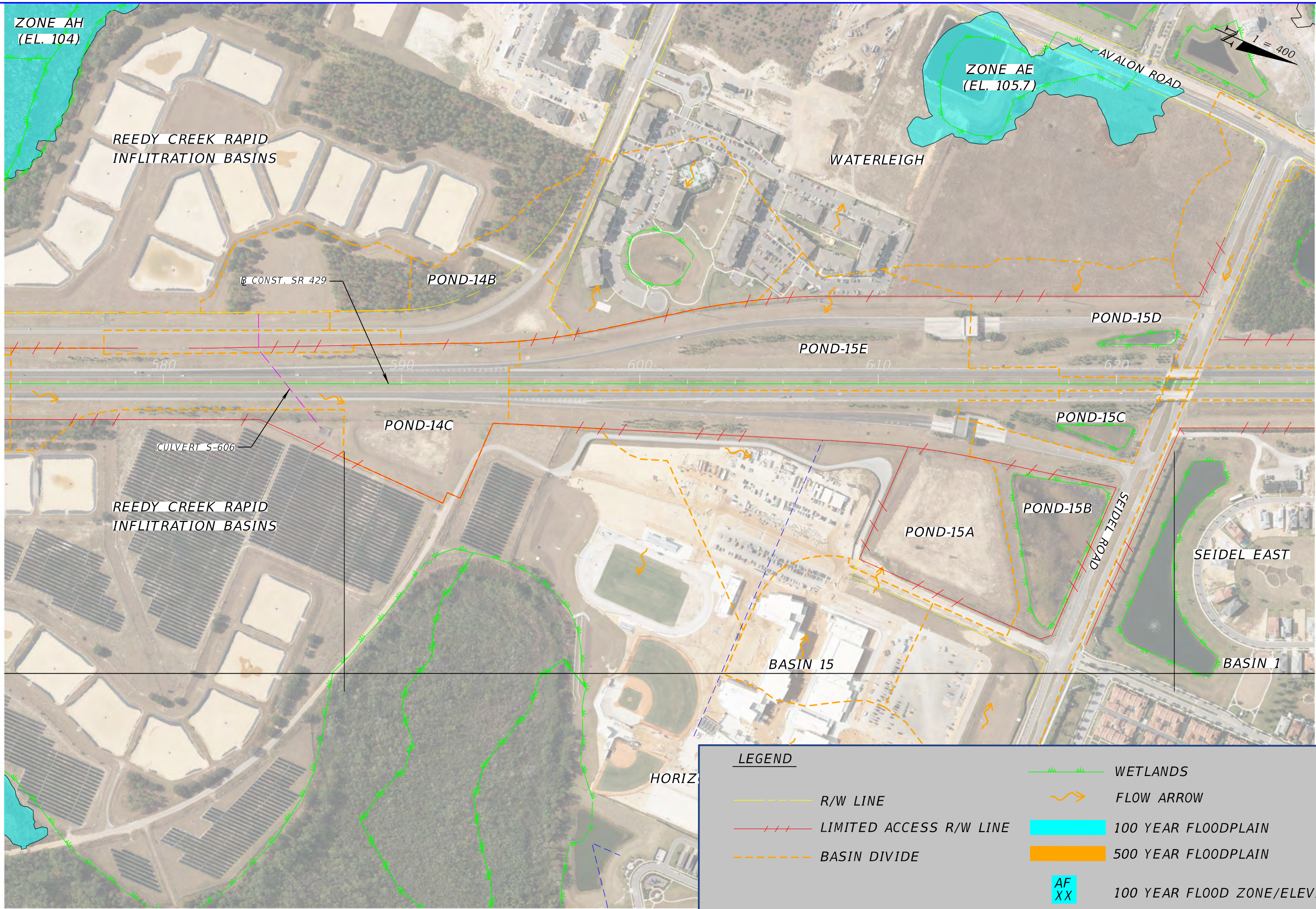
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**EXISTING
DRAINAGE MAP**

SHEET NO.
 9



3/28/2023 8:15:25 AM ScottE
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

LEGEND

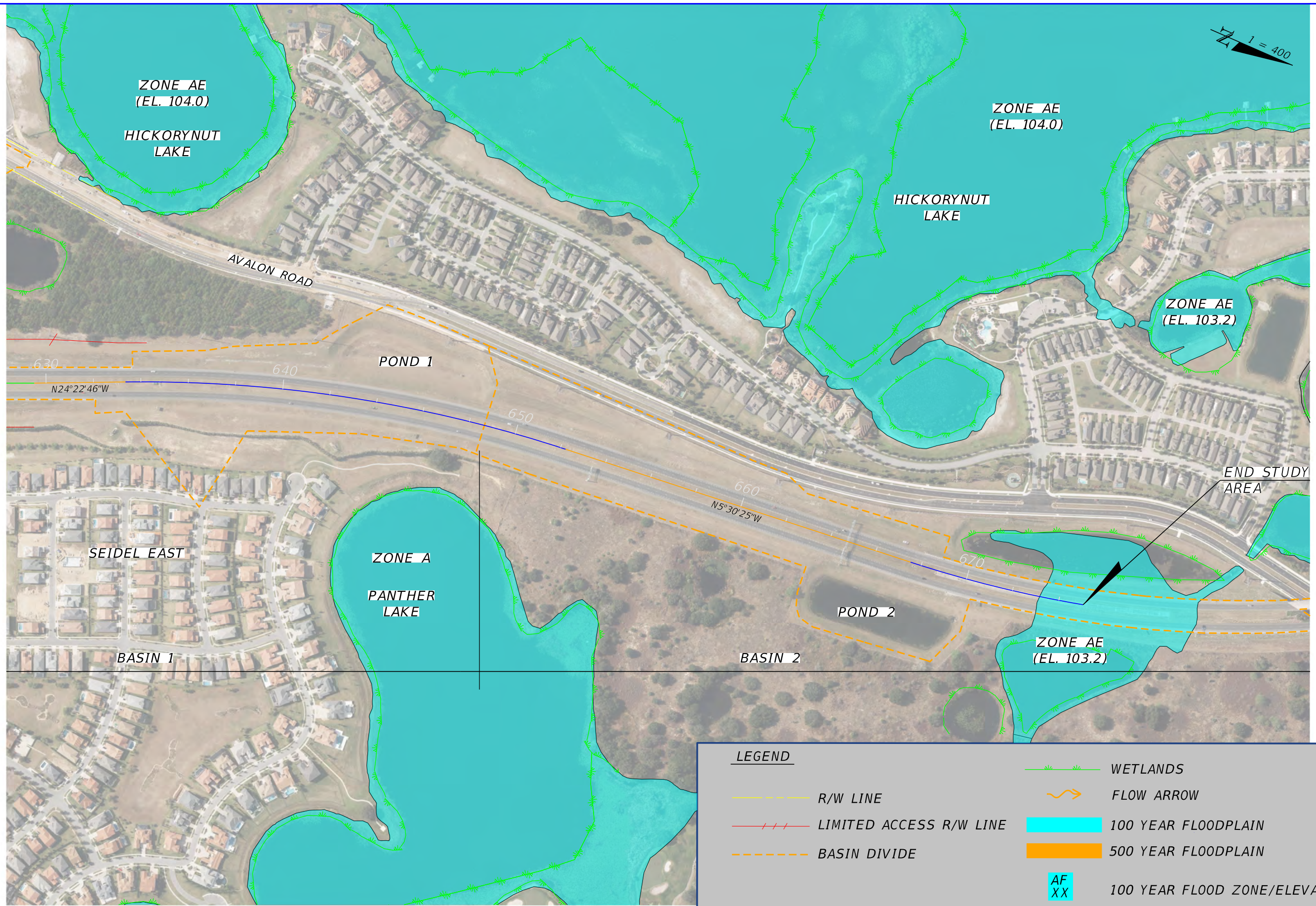
- WETLANDS
- R/W LINE
- - - LIMITED ACCESS R/W LINE
- - - BASIN DIVIDE
- ↘ FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- AF
XX 100 YEAR FLOOD ZONE/ELEVATION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**EXISTING
DRAINAGE MAP**

SHEET
NO.

10



LEGEND

- R/W LINE
- LIMITED ACCESS R/W LINE
- BASIN DIVIDE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- 100 YEAR FLOOD ZONE/ELEVATION

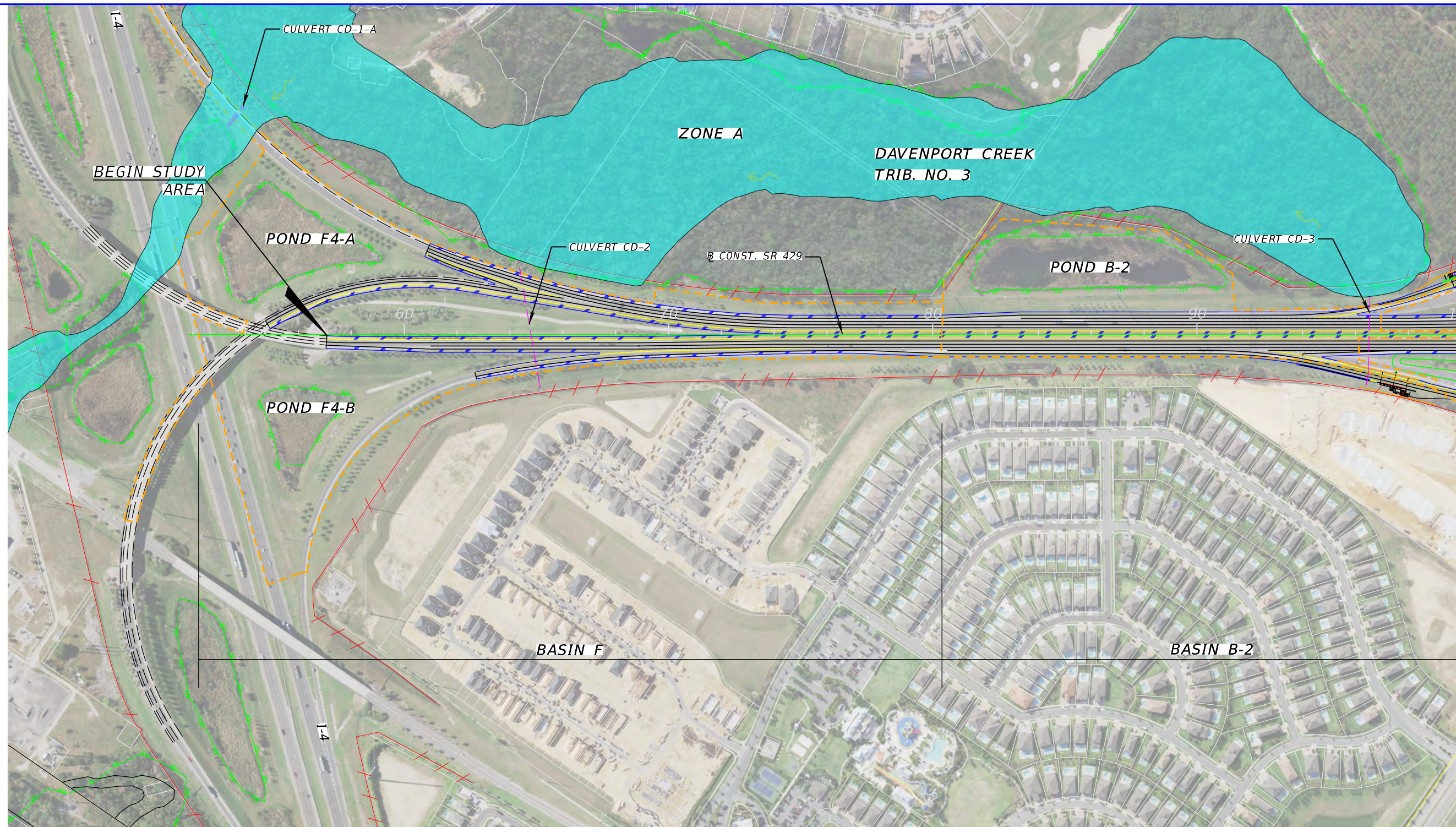
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**EXISTING
DRAINAGE MAP**

SHEET NO.
11



LEGEND

	EXIST. R/W LINE		WETLANDS
	EXIST. LA R/W LINE		FLOW ARROW
	PROP. R/W LINE		100 YEAR FLOODPLAIN
	PROP. LA R/W LINE		500 YEAR FLOODPLAIN
	BASIN DIVIDE		100 YEAR FLOOD ZONE/ELEVATION
	PARCEL LINE		

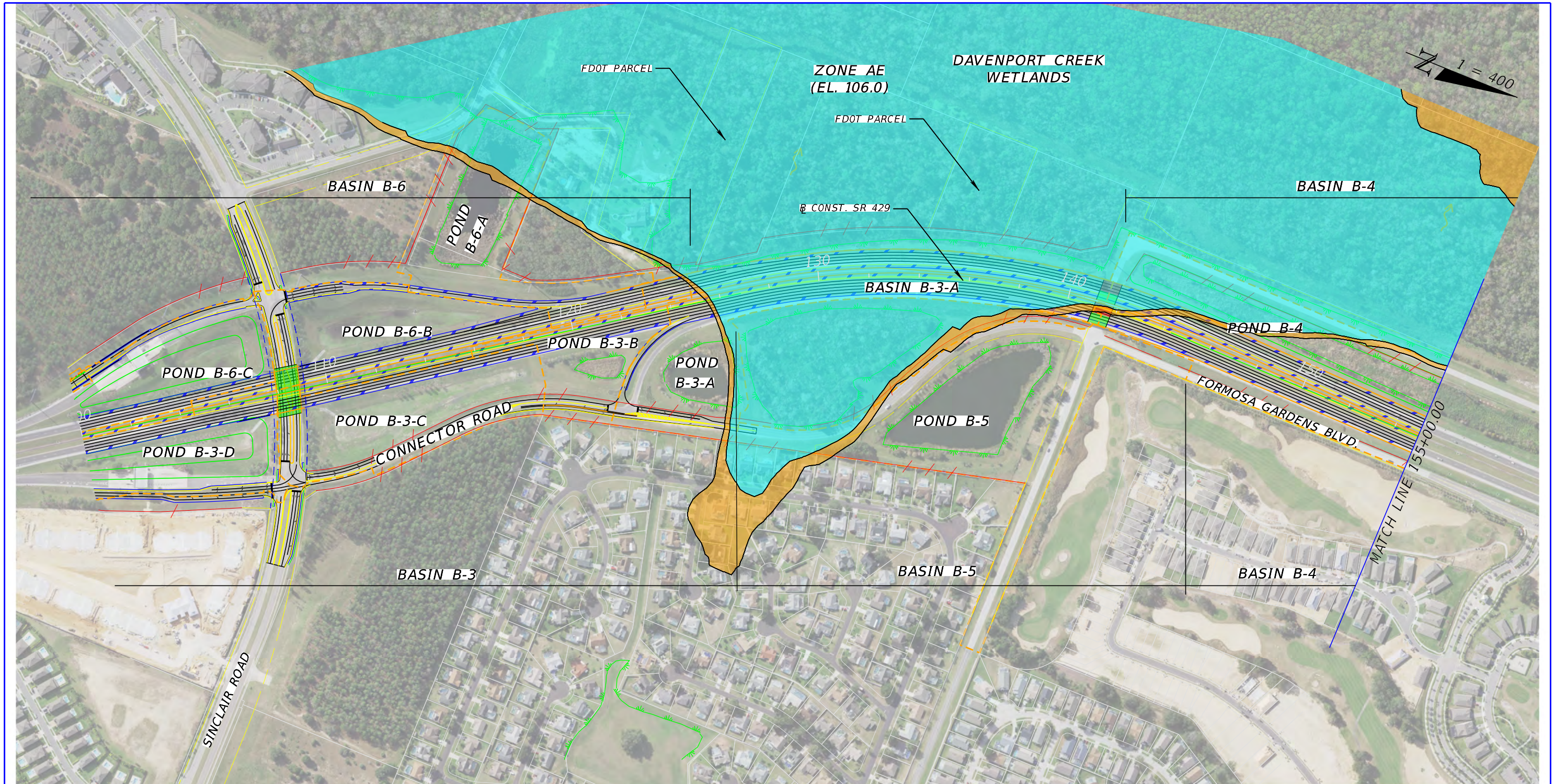
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED
DRAINAGE MAP**

SHEET NO.
12



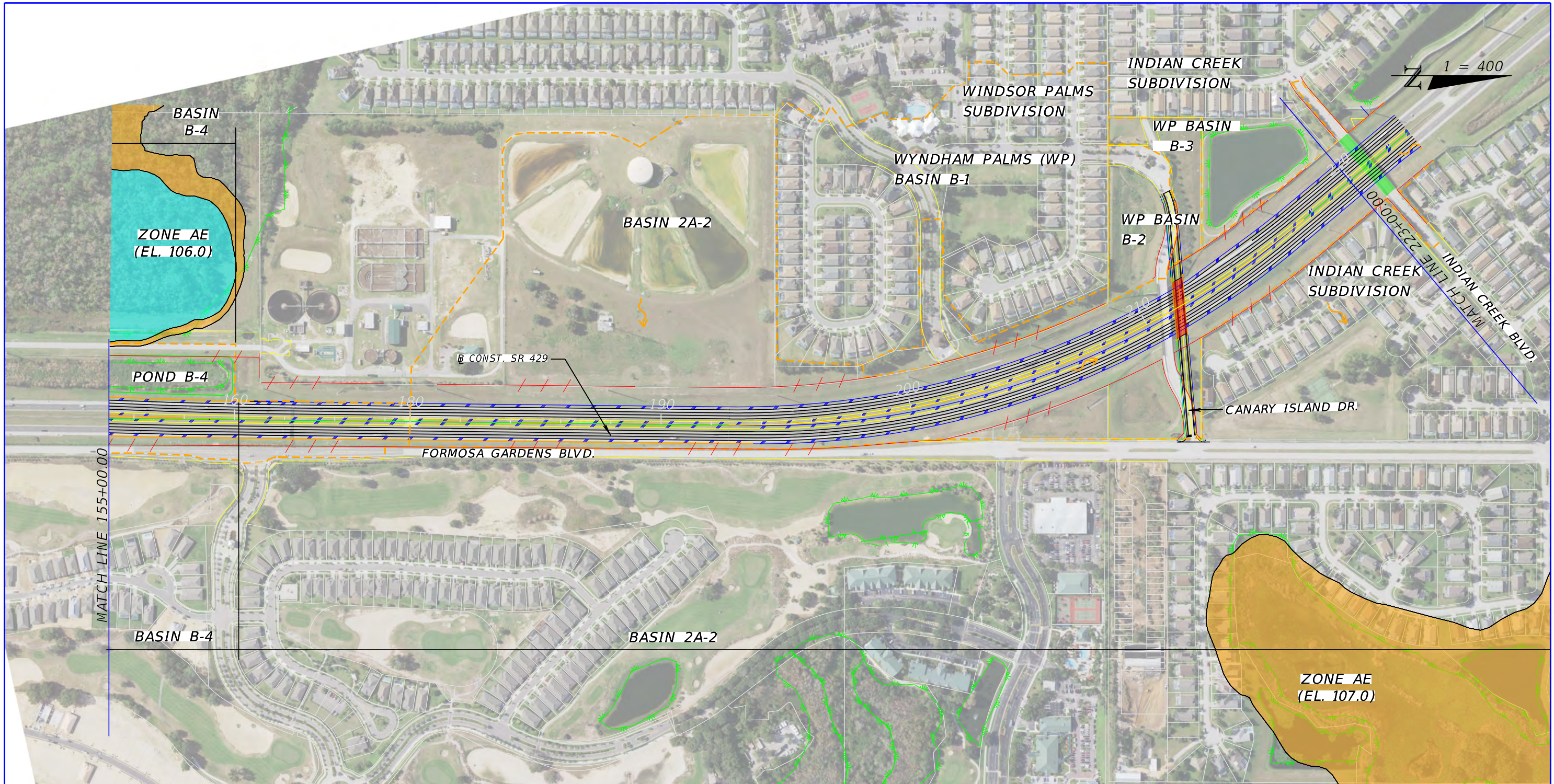
LEGEND	
	EXIST. R/W LINE
	EXIST. LA R/W LINE
	PROP. R/W LINE
	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

<p>PROPOSED DRAINAGE MAP</p>	<p>SHEET NO. 13</p>
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LEGEND

- EXIST. R/W LINE
- - - EXIST. LA R/W LINE
- PROP. R/W LINE
- - - PROP. LA R/W LINE
- - - BASIN DIVIDE
- PARCEL LINE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- AF
XX 100 YEAR FLOOD ZONE/ELEVATION

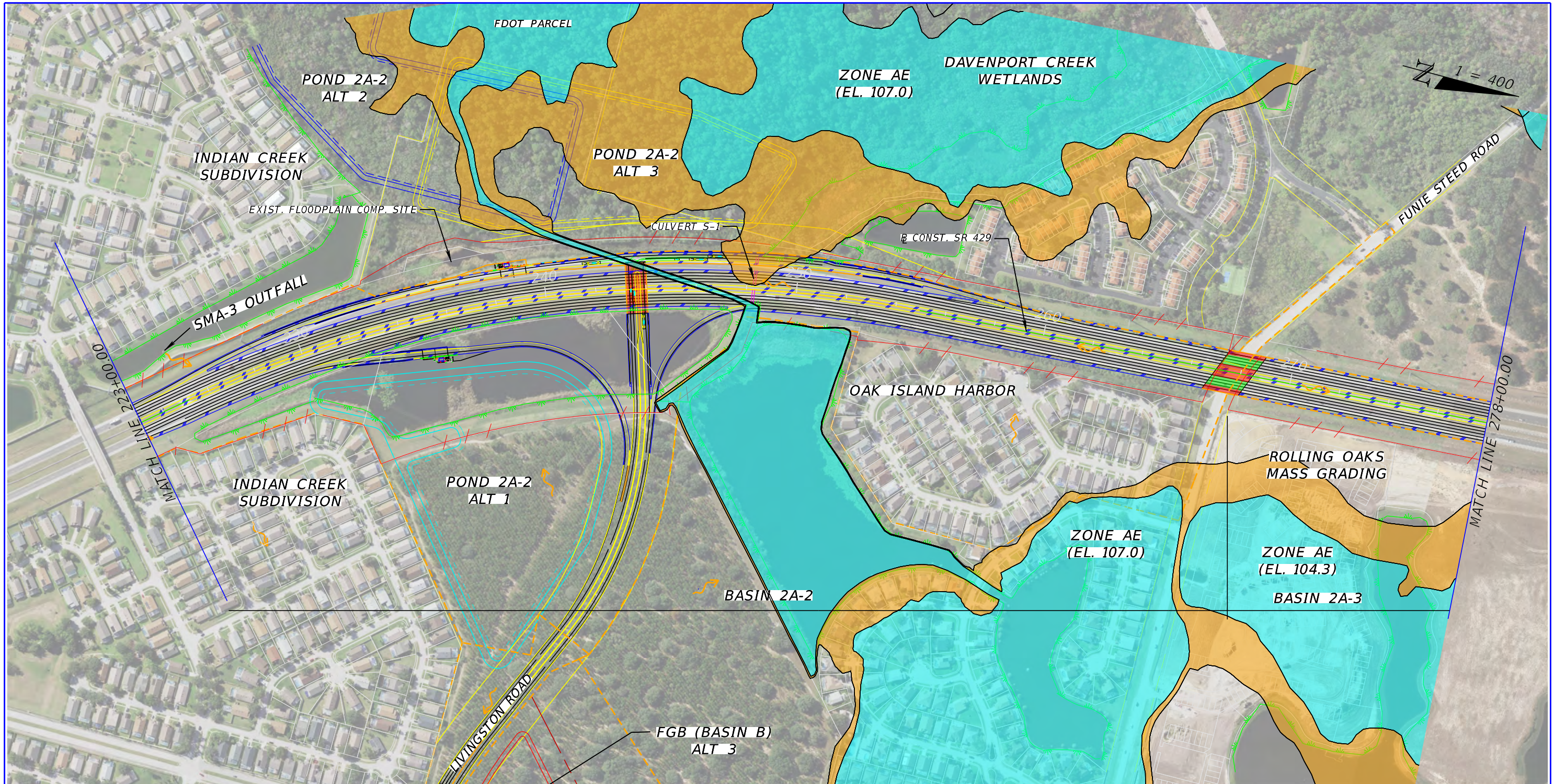
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED
DRAINAGE MAP**

SHEET NO.
14

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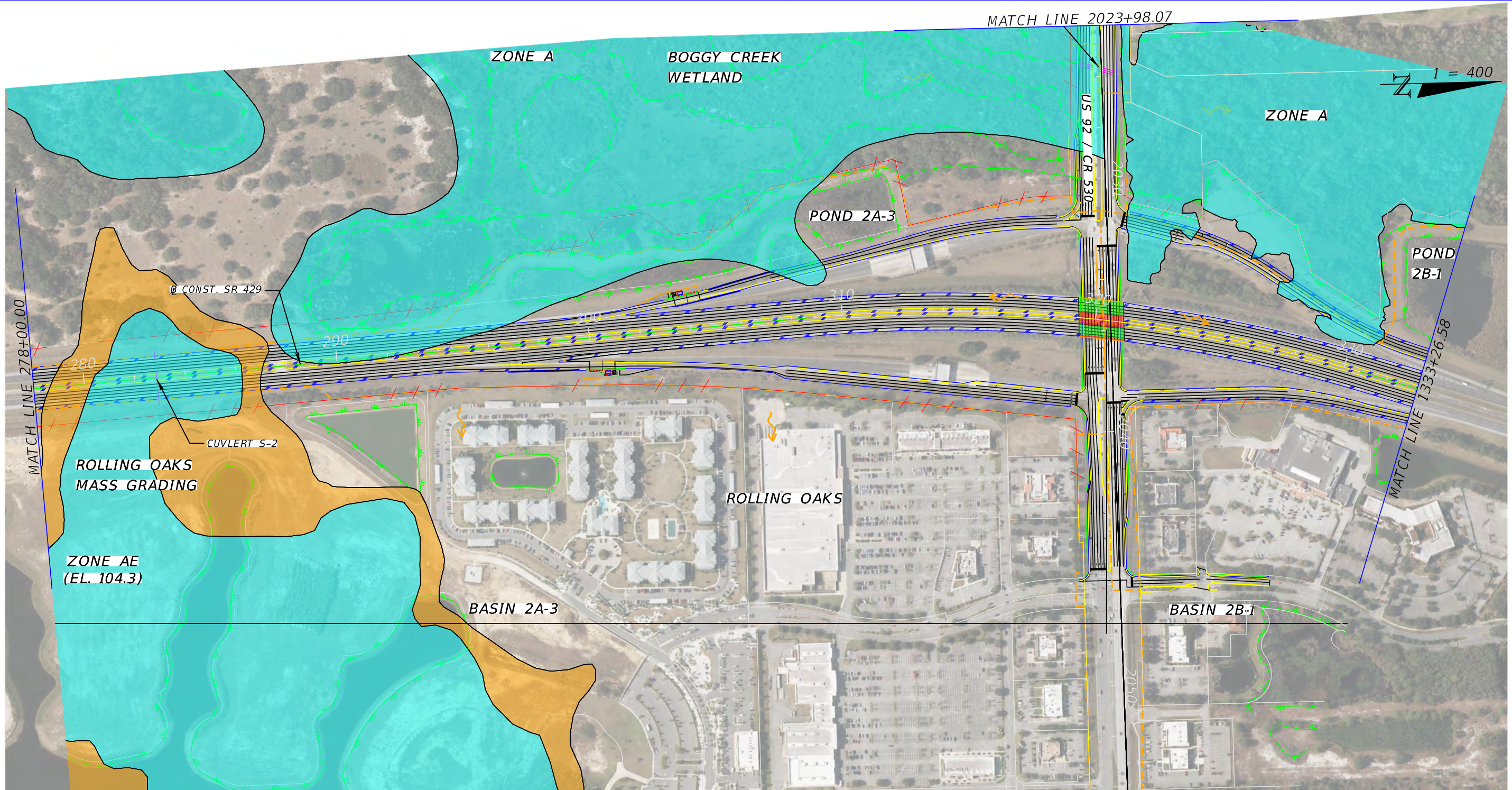
LEGEND

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- - - EXIST. LA R/W LINE
- PROP. R/W LINE
- - - PROP. LA R/W LINE
- BASIN DIVIDE
- PARCEL LINE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- AF
XX 100 YEAR FLOOD ZONE/ELEVATION

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PROPOSED DRAINAGE MAP	SHEET NO.
ROAD NO.	COUNTY	FINANCIAL PROJECT ID		15
SR 429	ORANGE AND OSCEOLA	446164-1-22-01		

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LEGEND

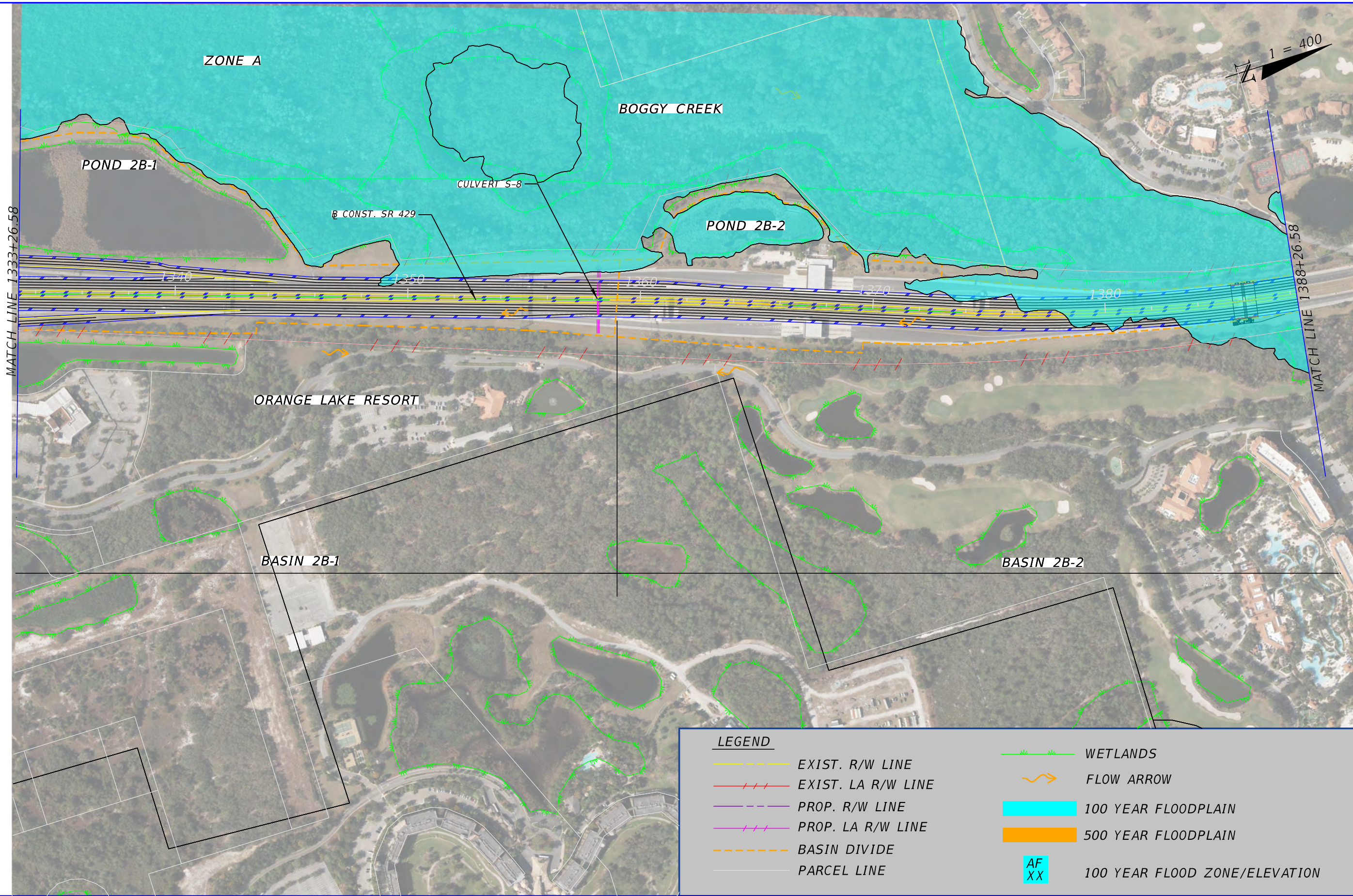
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- - - EXIST. LA R/W LINE
- PROP. R/W LINE
- - - PROP. LA R/W LINE
- BASIN DIVIDE
- PARCEL LINE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- AF
XX 100 YEAR FLOOD ZONE/ELEVATION

3/28/2023 8:16:53 AM ScottE
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REVISIONS	
DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

PROPOSED DRAINAGE MAP	SHEET NO.
	16



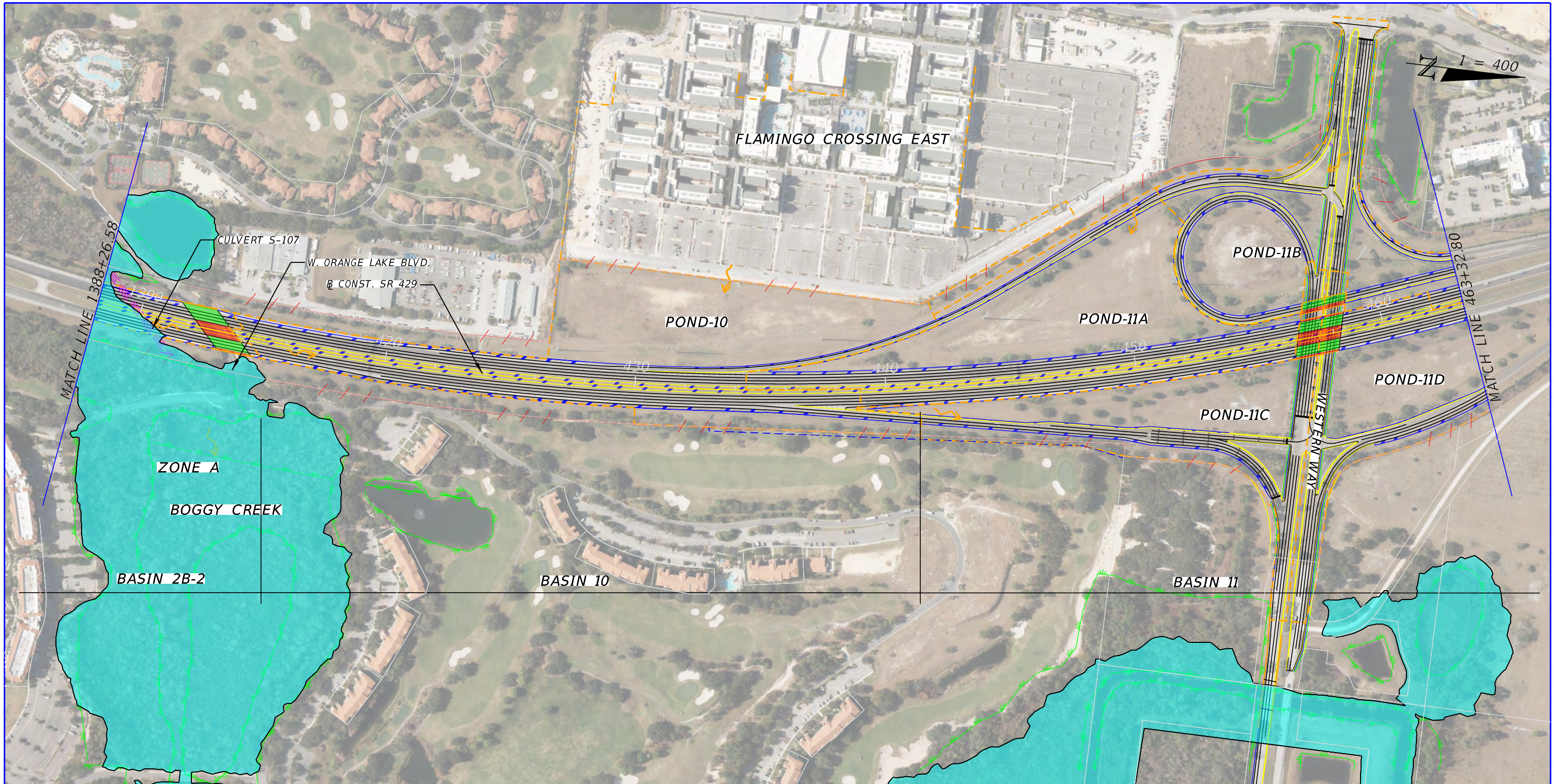
LEGEND	
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	EXIST. LA R/W LINE
	PROP. R/W LINE
	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

PROPOSED DRAINAGE MAP	SHEET NO. 17
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LEGEND

- EXIST. R/W LINE
- - - EXIST. LA R/W LINE
- PROP. R/W LINE
- - - PROP. LA R/W LINE
- BASIN DIVIDE
- PARCEL LINE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- AF
XX 100 YEAR FLOOD ZONE/ELEVATION

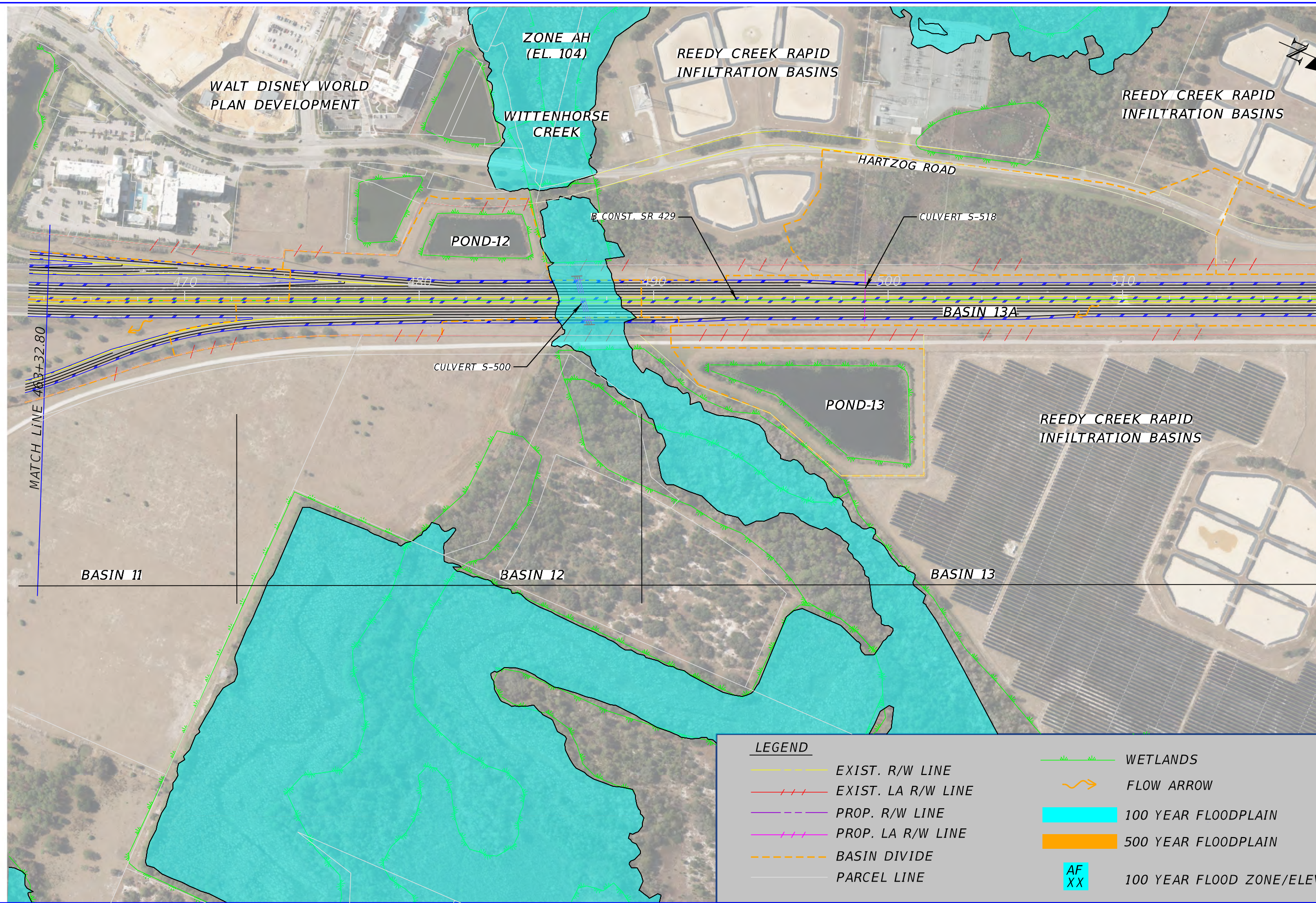
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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED
DRAINAGE MAP**

SHEET NO.
18



1 = 400

MATCH LINE 463+32.80

MATCH LINE 518+32.80

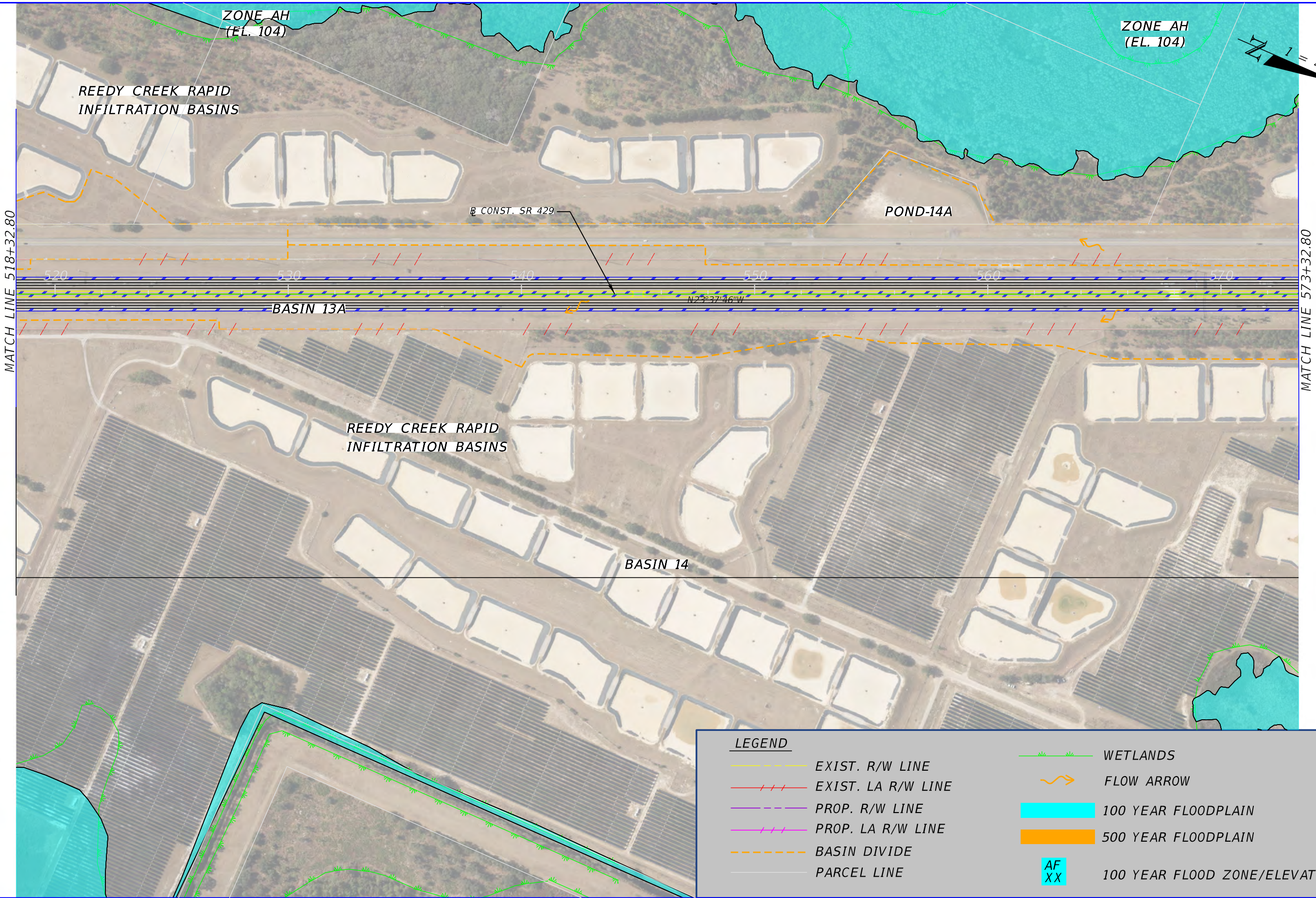
LEGEND	
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	EXIST. LA R/W LINE
	PROP. R/W LINE
	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

<p>PROPOSED DRAINAGE MAP</p>	<p>SHEET NO. 19</p>
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LEGEND

- EXIST. R/W LINE
- - - EXIST. LA R/W LINE
- - - PROP. R/W LINE
- - - PROP. LA R/W LINE
- - - BASIN DIVIDE
- PARCEL LINE
- WETLANDS
- FLOW ARROW
- 100 YEAR FLOODPLAIN
- 500 YEAR FLOODPLAIN
- AF
XX 100 YEAR FLOOD ZONE/ELEVATION

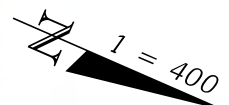
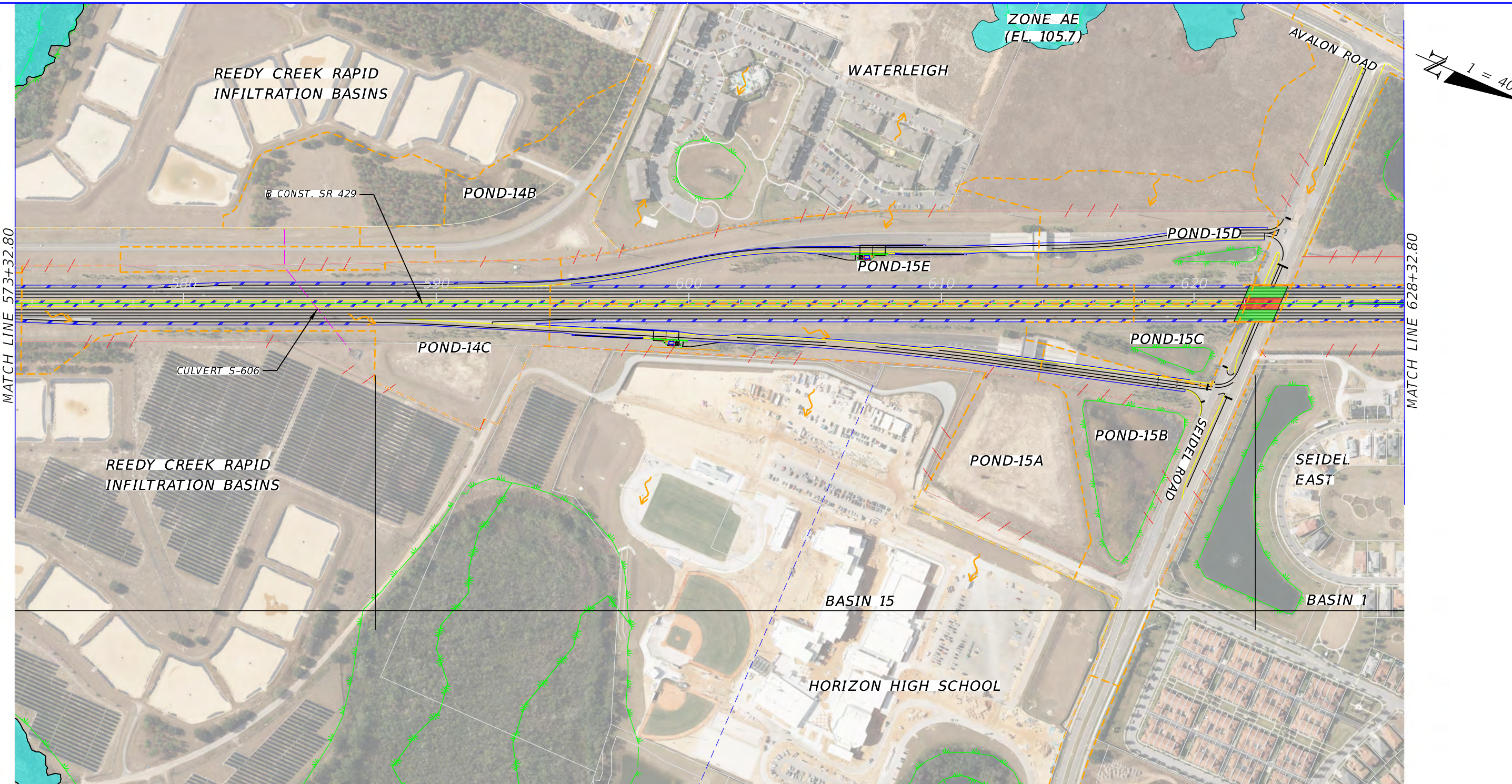
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REVISIONS	
DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED
DRAINAGE MAP**

SHEET NO.
20



LEGEND	
	EXIST. R/W LINE
	EXIST. LA R/W LINE
	PROP. R/W LINE
	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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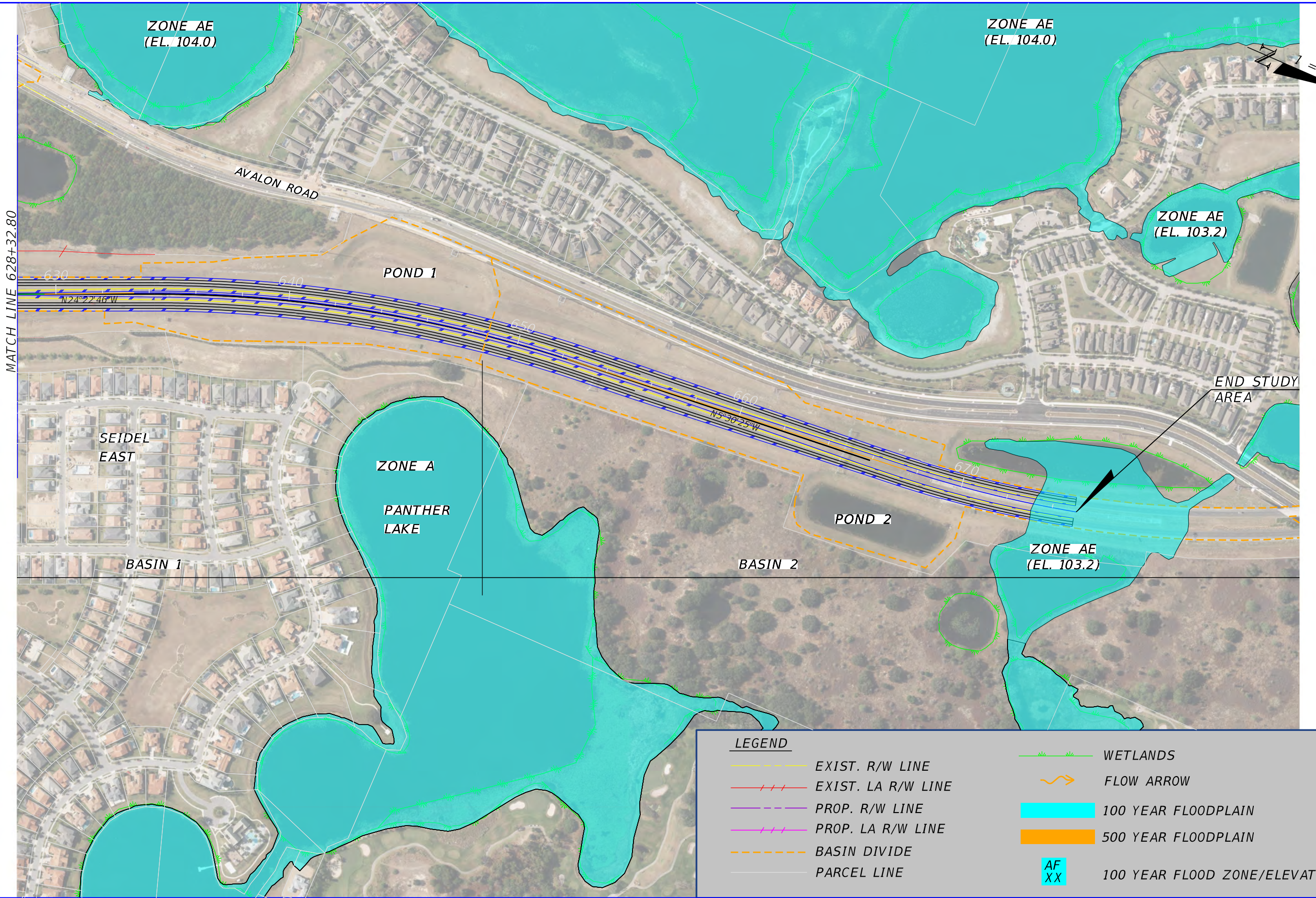
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED
DRAINAGE MAP**

SHEET
NO.

21



MATCH LINE 628+32.80

1" = 400'

LEGEND	
	EXIST. R/W LINE
	EXIST. LA R/W LINE
	PROP. R/W LINE
	PROP. LA R/W LINE
	BASIN DIVIDE
	PARCEL LINE
	WETLANDS
	FLOW ARROW
	100 YEAR FLOODPLAIN
	500 YEAR FLOODPLAIN
	100 YEAR FLOOD ZONE/ELEVATION

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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

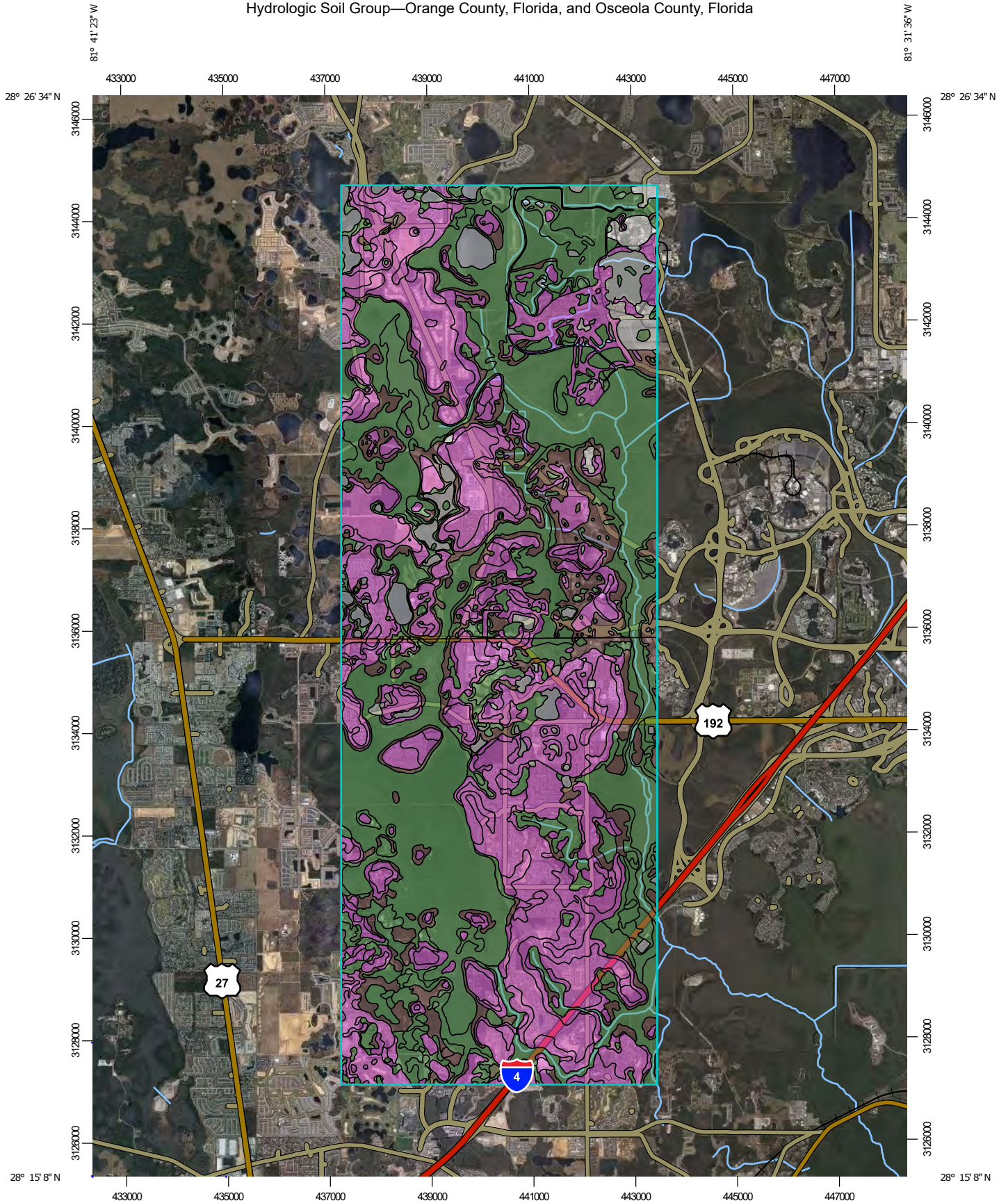
**PROPOSED
DRAINAGE MAP**

SHEET
NO.

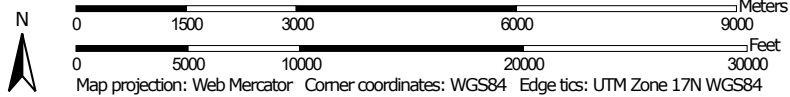
22

APPENDIX B – SOIL MAPS

Hydrologic Soil Group—Orange County, Florida, and Osceola County, Florida




Map Scale: 1:103,000 if printed on A portrait (8.5" x 11") sheet.



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: Orange County, Florida
 Survey Area Data: Version 18, Aug 27, 2021

Soil Survey Area: Osceola County, Florida
 Survey Area Data: Version 19, Aug 27, 2021

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Jan 28, 2020—Mar 13, 2020

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Arents, nearly level	A	667.5	2.5%
2	Archbold fine sand, 0 to 5 percent slopes	A	96.0	0.4%
3	Basinger fine sand, frequently ponded, 0 to 1 percent slopes	A/D	750.4	2.8%
4	Candler fine sand, 0 to 5 percent slopes	A	1,756.6	6.5%
5	Candler fine sand, 5 to 12 percent slopes	A	346.5	1.3%
6	Candler-Apopka fine sands, 5 to 12 percent slopes	A	30.3	0.1%
20	Immokalee fine sand	B/D	1,547.8	5.7%
33	Pits		6.9	0.0%
34	Pomello fine sand, 0 to 5 percent slopes	A	619.6	2.3%
37	St. Johns fine sand	B/D	177.2	0.7%
40	Samsula muck, frequently ponded, 0 to 1 percent slopes	A/D	195.8	0.7%
41	Samsula-Hontoon-Basinger association, depressional	A/D	3,718.3	13.8%
42	Sanibel muck	A/D	741.4	2.7%
44	Smyrna-Smyrna, wet, fine sand, 0 to 2 percent slopes	A/D	487.5	1.8%
46	Tavares fine sand, 0 to 5 percent slopes	A	338.2	1.3%
47	Tavares-Millhopper fine sands, 0 to 5 percent slopes	A	763.8	2.8%
50	Urban land, 0 to 2 percent slopes		317.0	1.2%
54	Zolfo fine sand, 0 to 2 percent slopes	A	159.6	0.6%
99	Water		886.9	3.3%
Subtotals for Soil Survey Area			13,607.3	50.3%
Totals for Area of Interest			27,026.1	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Adamsville sand, 0 to 2 percent slopes	A	193.9	0.7%
5	Basinger fine sand, 0 to 2 percent slopes	A/D	181.2	0.7%
6	Basinger fine sand, depressional, 0 to 1 percent slopes	A/D	228.7	0.8%
7	Candler sand, 0 to 5 percent slopes	A	3,384.7	12.5%
8	Candler sand, 5 to 12 percent slopes	A	1,386.8	5.1%
15	Hontoon muck, frequently ponded, 0 to 1 percent slopes	A/D	3,797.3	14.1%
16	Immokalee fine sand, 0 to 2 percent slopes	B/D	1,257.3	4.7%
17	Kaliga muck, frequently ponded, 0 to 1 percent slopes	C/D	10.4	0.0%
22	Myakka fine sand, 0 to 2 percent slopes	A/D	394.1	1.5%
24	Narcoossee fine sand, 0 to 2 percent slopes	A	40.1	0.1%
28	Paola sand, 0 to 5 percent slopes	A	11.1	0.0%
31	Pits		21.2	0.1%
32	Placid fine sand, frequently ponded, 0 to 1 percent slopes	A/D	322.4	1.2%
34	Pomello fine sand, 0 to 5 percent slopes	A	334.5	1.2%
35	Pomona fine sand, 0 to 2 percent slopes	B/D	8.2	0.0%
37	Pompano fine sand, frequently ponded, 0 to 1 percent slopes	A/D	480.3	1.8%
38	Riviera fine sand, 0 to 2 percent slopes	A/D	105.8	0.4%
39	Riviera fine sand, frequently ponded, 0 to 1 percent slopes	A/D	37.5	0.1%
40	Samsula muck, frequently ponded, 0 to 1 percent slopes	A/D	123.3	0.5%
41	Satellite sand, 0 to 2 percent slopes	A	36.2	0.1%
42	Smyrna fine sand, 0 to 2 percent slopes	A/D	197.1	0.7%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
43	St. Lucie fine sand, 0 to 5 percent slopes	A	7.9	0.0%
44	Tavares fine sand, 0 to 5 percent slopes	A	672.4	2.5%
46	Wauchula fine sand	A/D	5.9	0.0%
99	Water		180.2	0.7%
Subtotals for Soil Survey Area			13,418.3	49.6%
Totals for Area of Interest			27,026.1	100.0%

Description

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.

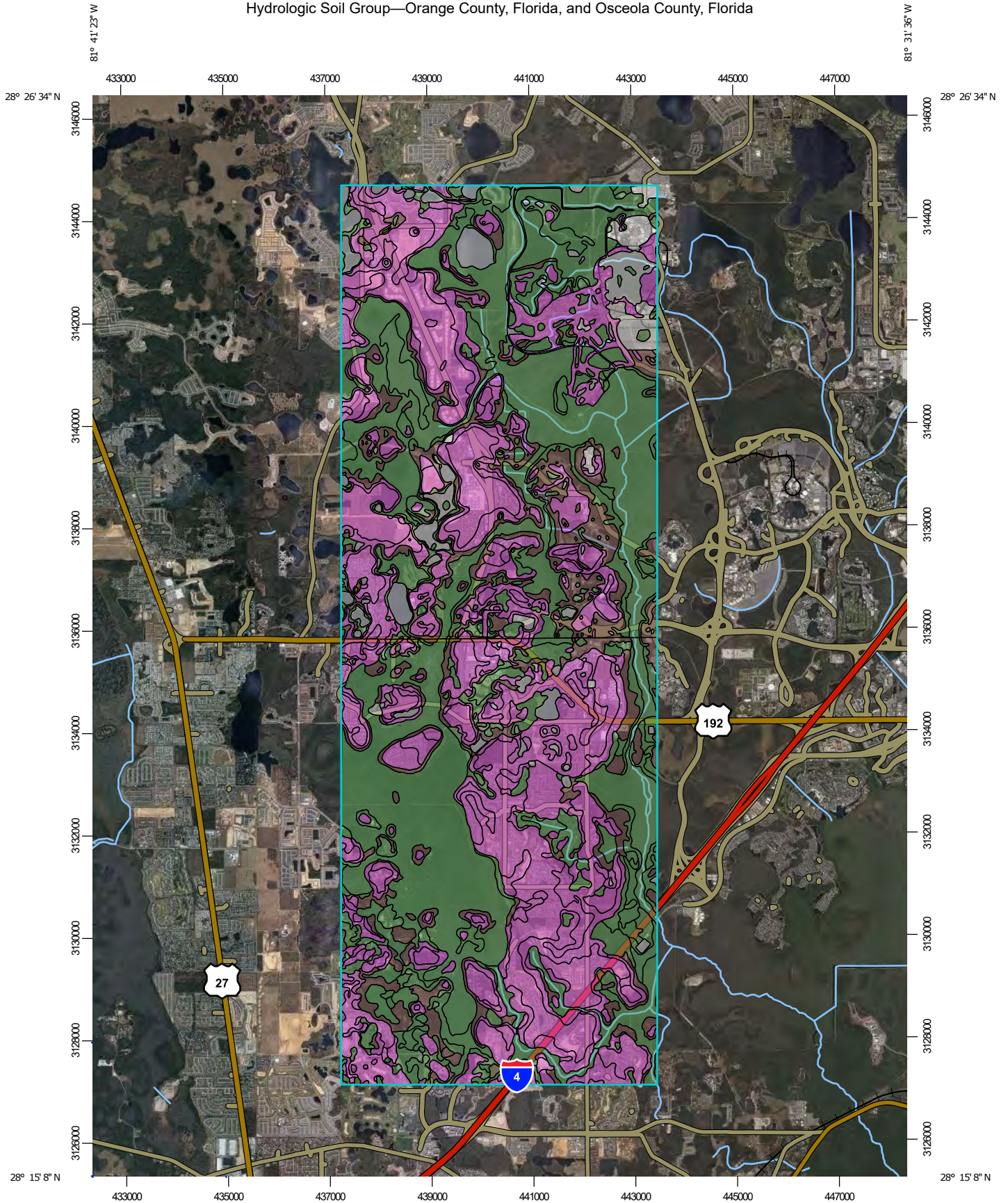
Rating Options

Aggregation Method: Dominant Condition

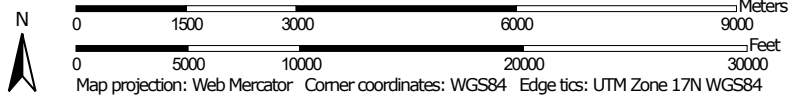
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Hydrologic Soil Group—Orange County, Florida, and Osceola County, Florida




Map Scale: 1:103,000 if printed on A portrait (8.5" x 11") sheet.



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: Orange County, Florida
 Survey Area Data: Version 18, Aug 27, 2021

Soil Survey Area: Osceola County, Florida
 Survey Area Data: Version 19, Aug 27, 2021

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

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

Date(s) aerial images were photographed: Jan 28, 2020—Mar 13, 2020

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Arents, nearly level	A	667.5	2.5%
2	Archbold fine sand, 0 to 5 percent slopes	A	96.0	0.4%
3	Basinger fine sand, frequently ponded, 0 to 1 percent slopes	A/D	750.4	2.8%
4	Candler fine sand, 0 to 5 percent slopes	A	1,756.6	6.5%
5	Candler fine sand, 5 to 12 percent slopes	A	346.5	1.3%
6	Candler-Apopka fine sands, 5 to 12 percent slopes	A	30.3	0.1%
20	Immokalee fine sand	B/D	1,547.8	5.7%
33	Pits		6.9	0.0%
34	Pomello fine sand, 0 to 5 percent slopes	A	619.6	2.3%
37	St. Johns fine sand	B/D	177.2	0.7%
40	Samsula muck, frequently ponded, 0 to 1 percent slopes	A/D	195.8	0.7%
41	Samsula-Hontoon-Basinger association, depressional	A/D	3,718.3	13.8%
42	Sanibel muck	A/D	741.4	2.7%
44	Smyrna-Smyrna, wet, fine sand, 0 to 2 percent slopes	A/D	487.5	1.8%
46	Tavares fine sand, 0 to 5 percent slopes	A	338.2	1.3%
47	Tavares-Millhopper fine sands, 0 to 5 percent slopes	A	763.8	2.8%
50	Urban land, 0 to 2 percent slopes		317.0	1.2%
54	Zolfo fine sand, 0 to 2 percent slopes	A	159.6	0.6%
99	Water		886.9	3.3%
Subtotals for Soil Survey Area			13,607.3	50.3%
Totals for Area of Interest			27,026.1	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Adamsville sand, 0 to 2 percent slopes	A	193.9	0.7%
5	Basinger fine sand, 0 to 2 percent slopes	A/D	181.2	0.7%
6	Basinger fine sand, depressional, 0 to 1 percent slopes	A/D	228.7	0.8%
7	Candler sand, 0 to 5 percent slopes	A	3,384.7	12.5%
8	Candler sand, 5 to 12 percent slopes	A	1,386.8	5.1%
15	Hontoon muck, frequently ponded, 0 to 1 percent slopes	A/D	3,797.3	14.1%
16	Immokalee fine sand, 0 to 2 percent slopes	B/D	1,257.3	4.7%
17	Kaliga muck, frequently ponded, 0 to 1 percent slopes	C/D	10.4	0.0%
22	Myakka fine sand, 0 to 2 percent slopes	A/D	394.1	1.5%
24	Narcoossee fine sand, 0 to 2 percent slopes	A	40.1	0.1%
28	Paola sand, 0 to 5 percent slopes	A	11.1	0.0%
31	Pits		21.2	0.1%
32	Placid fine sand, frequently ponded, 0 to 1 percent slopes	A/D	322.4	1.2%
34	Pomello fine sand, 0 to 5 percent slopes	A	334.5	1.2%
35	Pomona fine sand, 0 to 2 percent slopes	B/D	8.2	0.0%
37	Pompano fine sand, frequently ponded, 0 to 1 percent slopes	A/D	480.3	1.8%
38	Riviera fine sand, 0 to 2 percent slopes	A/D	105.8	0.4%
39	Riviera fine sand, frequently ponded, 0 to 1 percent slopes	A/D	37.5	0.1%
40	Samsula muck, frequently ponded, 0 to 1 percent slopes	A/D	123.3	0.5%
41	Satellite sand, 0 to 2 percent slopes	A	36.2	0.1%
42	Smyrna fine sand, 0 to 2 percent slopes	A/D	197.1	0.7%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
43	St. Lucie fine sand, 0 to 5 percent slopes	A	7.9	0.0%
44	Tavares fine sand, 0 to 5 percent slopes	A	672.4	2.5%
46	Wauchula fine sand	A/D	5.9	0.0%
99	Water		180.2	0.7%
Subtotals for Soil Survey Area			13,418.3	49.6%
Totals for Area of Interest			27,026.1	100.0%

Description

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:

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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.

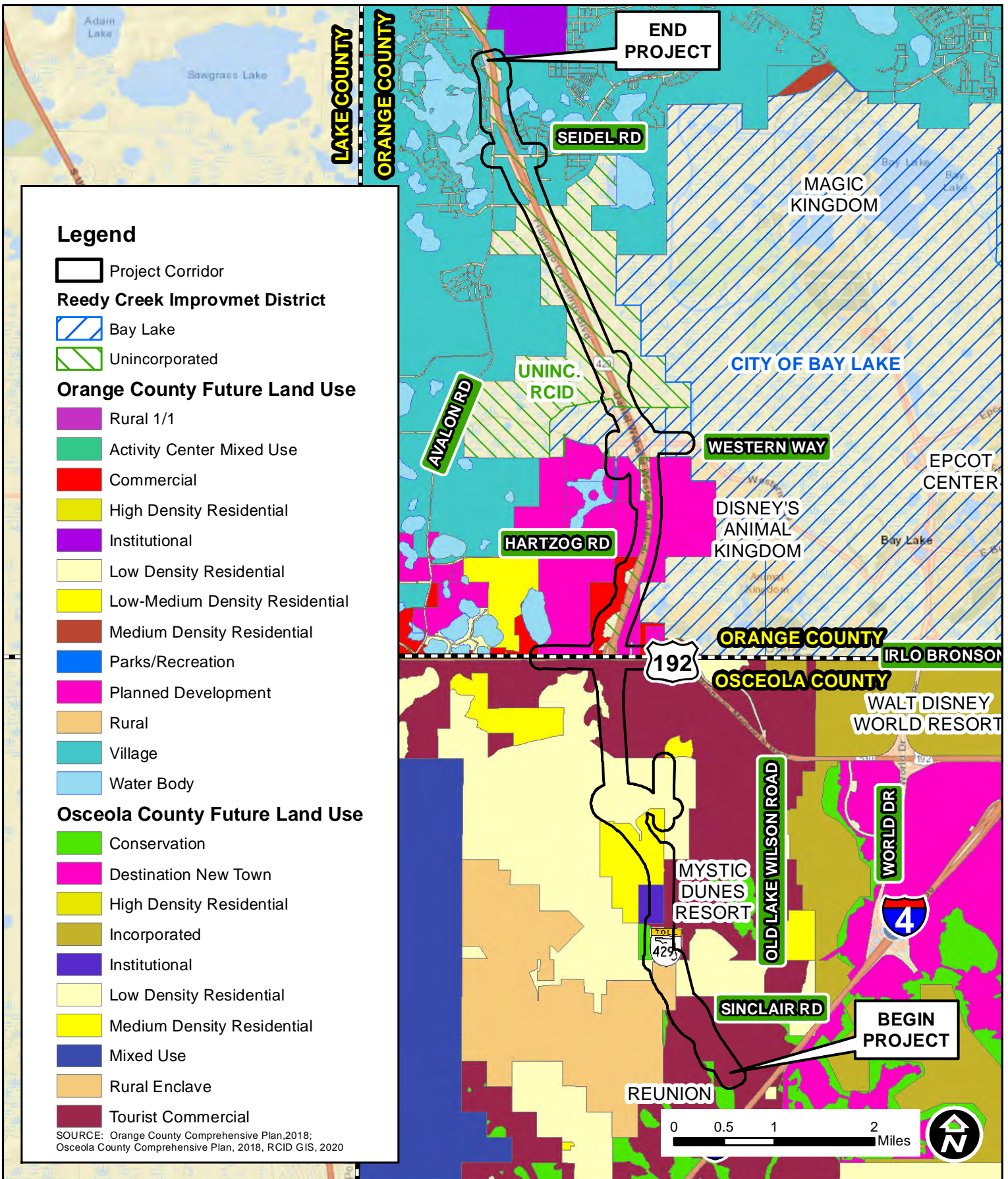
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX C – LAND USE MAP



FLORIDA'S TURNPIKE

PROJECT DEVELOPMENT AND ENVIRONMENT (PD&E) STUDY TO WIDEN THE WESTERN BELTWAY from I-4 to Seidel Road
Orange and Osceola Counties
FPID No.: 446164-1-22-01

FUTURE LAND USE MAP

APPENDIX D – FEMA MAPS

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify 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, NNGS12
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.

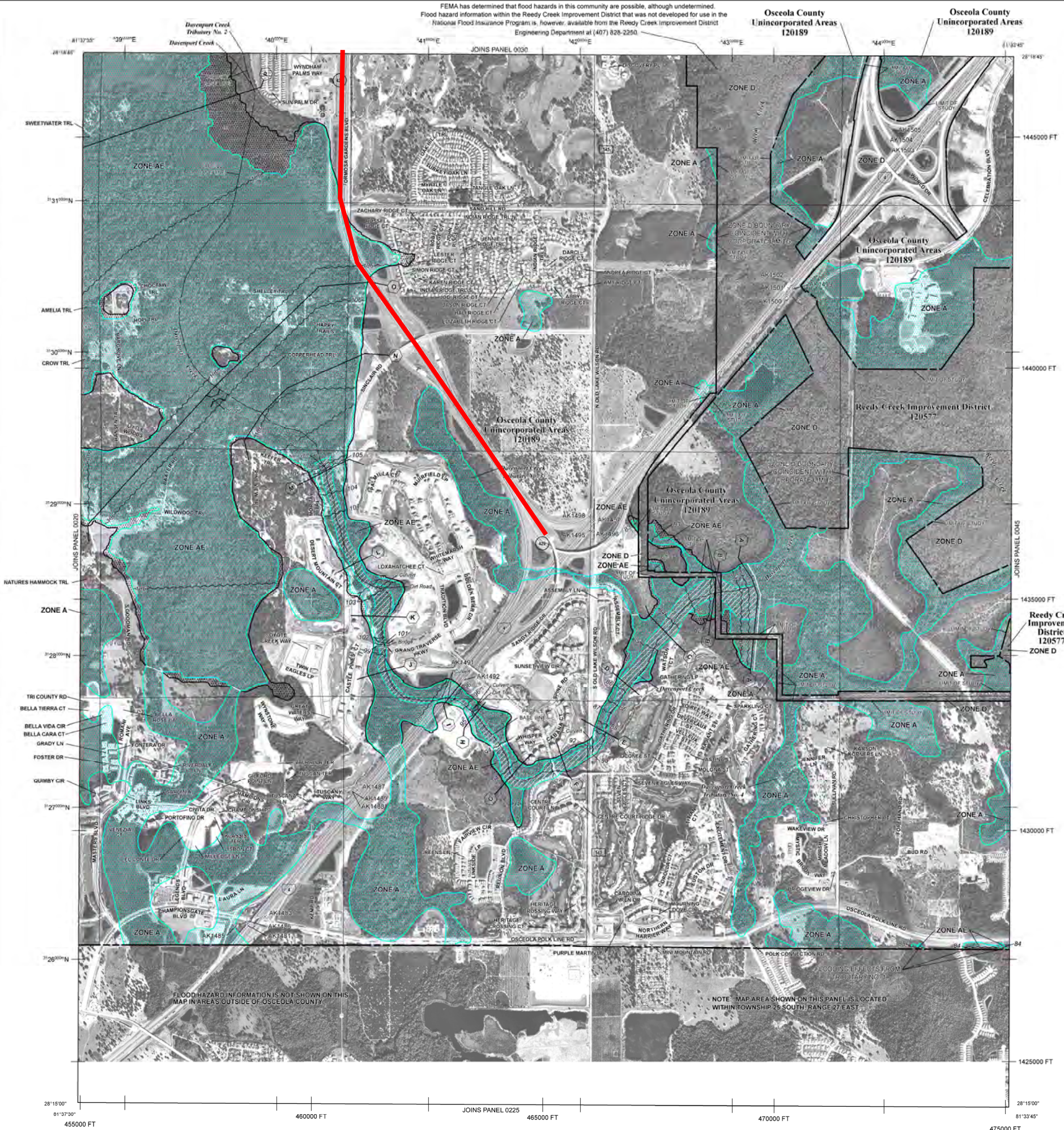
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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 (1-877-336-2271) 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.

FEMA has determined that flood hazards in this community are possible, although undetermined. Flood hazard information within the Reedy Creek Improvement District that was not developed for use in the National Flood Insurance Program is, however, available from the Reedy Creek Improvement District Engineering Department at (407) 828-2250.



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 Zone A, AE, AH, AO, AR, AR9, 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 identified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE AR9** 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
- 513 Base Flood Elevation value where uniform within zone; elevation in feet
- * Referenced to the North American Vertical Datum of 1988
- Transsect line
- 67°03'00" 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83). Within Hemisphere
- 478°00"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, M1.5 Bench mark (see explanation in Notes to Users section of this FIS report)
- Silver 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, 2011. 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 1-800-638-6020.

MAP SCALE 1" = 1000'

0 500 1,000 1,500 2,000 FEET
0 500 1,000 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0040G

FIRM

FLOOD INSURANCE RATE MAP

OSCEOLA COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 40 OF 900

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSCEOLA COUNTY	120189	0040	G
REEDY CREEK IMPROVEMENT DISTRICT	120577	0040	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 12097C0040G

MAP REVISED JUNE 18, 2013

Federal Emergency Management Agency

FLOOD HAZARD INFORMATION IS NOT SHOWN ON THIS MAP IN AREAS OUTSIDE OF OSCEOLA COUNTY.

NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 25 SOUTH, RANGE 27 EAST.

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify 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.

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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.

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.

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NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3252
(301) 713-3242

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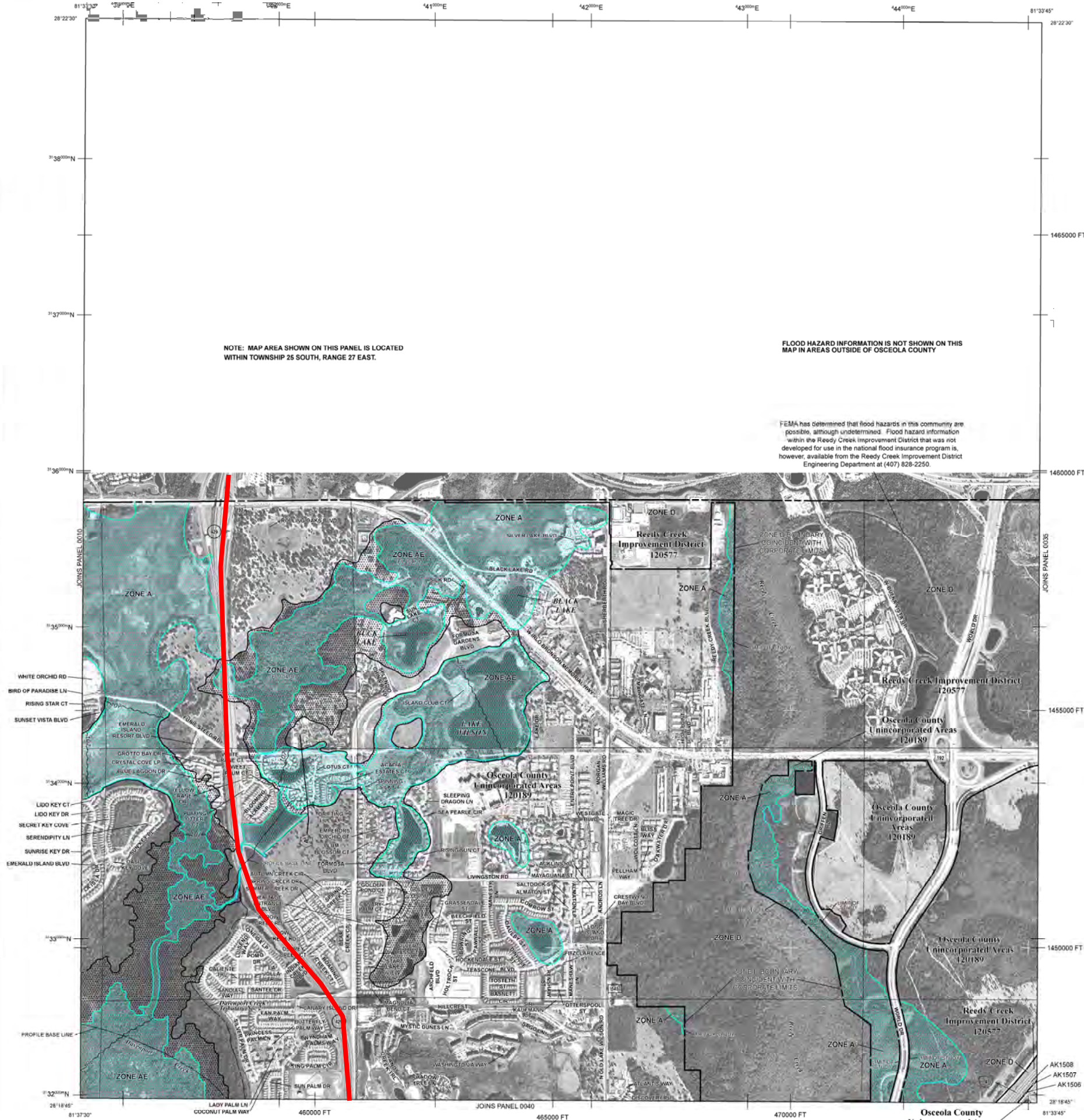
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Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community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

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NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 25 SOUTH, RANGE 27 EAST.

FLOOD HAZARD INFORMATION IS NOT SHOWN ON THIS MAP IN AREAS OUTSIDE OF OSCEOLA COUNTY

FEMA has determined that flood hazards in this community are possible, although undetermined. Flood hazard information within the Reedy Creek Improvement District that was not developed for use in the national flood insurance program is, however, available from the Reedy Creek Improvement District Engineering Department at (407) 828-2250.

LEGEND

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

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- 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 AR** 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 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

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OTHER AREAS

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

OTHER PROTECTED AREAS (OPAs)

CBS 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 U boundary
- CBS and OPA boundary
- Boundary dividing Special Flood Hazard Areas and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- Base Flood Elevation line and value; elevation in feet
- Base Flood Elevation value where uniform within zone; elevation in feet (EL 987)

Other Symbols:

- Referenced to the North American Vertical Datum of 1988
- Cross section line
- Transect line
- Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 1000-meter Universal Transverse Mercator grid ticks, zone 17
- 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 0901), Transverse Mercator projection
- Bench mark (see explanation in Notes to Users section of this FIRM panel)
- Silver 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 9, 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 1-800-638-6020.

MAP SCALE 1" = 1000'

NFIP

PANEL 0030G

FIRM

FLOOD INSURANCE RATE MAP

OSCEOLA COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 30 OF 900

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSCEOLA COUNTY	120189	0030	G
REEDY CREEK IMPROVEMENT DISTRICT	120577	0030	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 12097C0030G

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 shown on this map apply only to 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 tables 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 State Plane Florida East FIPS Zone 0901. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM 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:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

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 Orange County, Florida.

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.

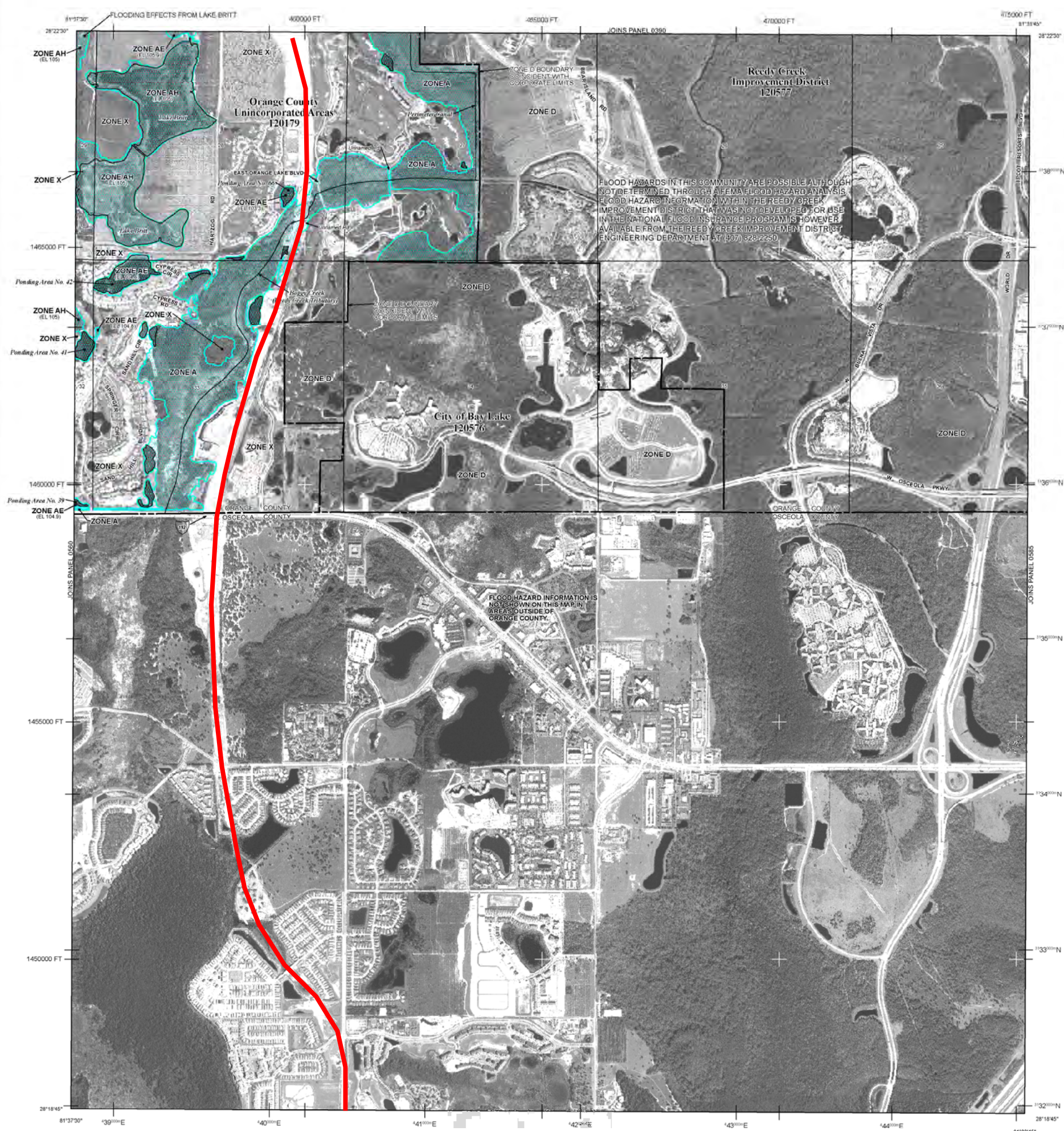
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/nfp/>.

NGVD29 to NAVD88 Vertical Datum Conversion Table (feet)				
Watershed Name	Minimum Conversion	Maximum Conversion	Average Conversion	Maximum Offset
Big Econlochatchee River	-1.03	-1.15	-1.09	0.06
Boggy Creek	-0.91	-1.01	-0.96	0.05
Cypress Creek	-0.87	-0.91	-0.89	0.02
Howell Branch	-0.96	-1.05	-0.98	0.07
Lake Apopka	-0.87	-0.97	-0.91	0.06
Lake Hart	-0.97	-1.07	-1.02	0.05
Little Econlochatchee River	-0.92	-1.07	-1.01	0.09
Little Weeiva River	-0.91	-1.02	-0.95	0.07
Reedy Creek	-0.88	-0.89	-0.88	0.02
Shingle Creek	-0.88	-0.95	-0.91	0.04
St. Johns River	-1.08	-1.33	-1.19	0.14
Weeiva River	-0.88	-1.01	-0.94	0.07



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

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, ASB, 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 Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently destroyed. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

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

ZONE AV 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 of 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 (NAVD 88)

A-A Cross section line
B-B Transsect line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
1000-meter Universal Transverse Mercator grid ticks, zone 17
5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPS2000 = 901), Transverse Mercator projection
Bench mark (see explanation in Notes to Users section of this FIRM panel)
River Mile
M1.5
MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 6, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
SEPTEMBER 25, 2009 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.

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" = 1000'

500 0 500 1,000 1,500 2,000 FEET
150 0 150 300 450 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0580F

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

PANEL 580 OF 750
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BAY LAKE, CITY OF	120576	0580	F
ORANGE COUNTY	120179	0580	F
REEDY CREEK IMPROVEMENT DISTRICT	120577	0580	F

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 12095C0580F

MAP REVISED SEPTEMBER 25, 2009
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 shown on this map apply only to 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 State Plane Florida East FIPS Zone 0901. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM 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:

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National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

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 Orange County, Florida.

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.

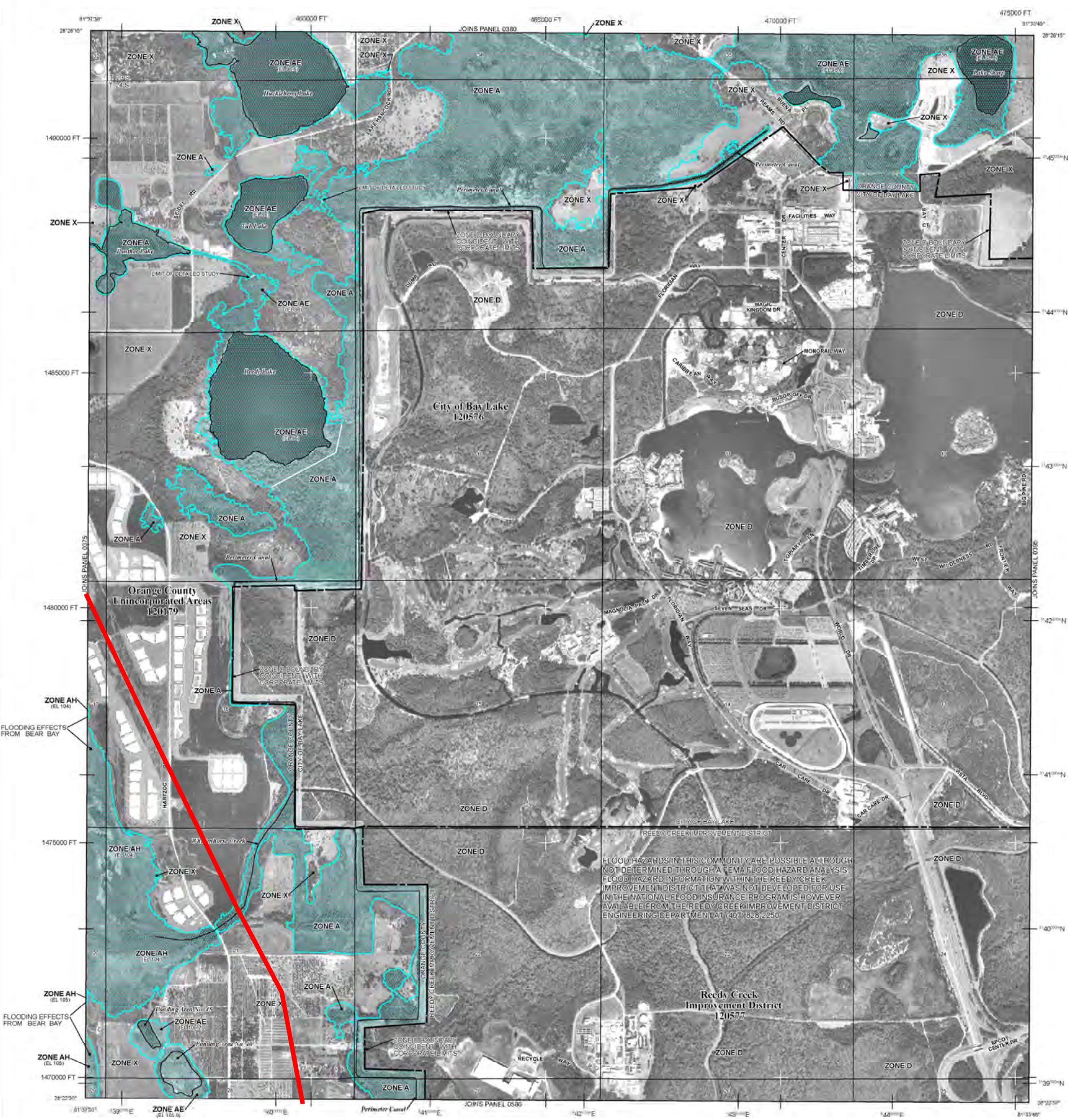
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If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/nflp/>.

Watershed Name	Minimum Conversion	Maximum Conversion	Average Conversion	Maximum Offset
Big Econlockhatchee River	-1.03	-1.15	-1.09	0.06
Boggy Creek	-0.91	-1.01	-0.96	0.05
Cypress Creek	-0.87	-0.91	-0.89	0.02
Hosnell Branch	-0.95	-1.05	-0.96	0.07
Lake Apopka	-0.87	-0.97	-0.91	0.06
Lake Hart	-0.97	-1.07	-1.02	0.05
Little Econlockhatchee River	-0.92	-1.07	-1.01	0.09
Little Wee-wee River	-0.91	-1.02	-0.96	0.07
Reedy Creek	-0.86	-0.89	-0.88	0.02
Shingle Creek	-0.88	-0.95	-0.91	0.04
St. Johns River	-1.08	-1.33	-1.19	0.14
Wee-wee River	-0.88	-1.01	-0.94	0.07



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

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, AP, 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 Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently identified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE AP 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 floodways in 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 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 (NAVD 88)

— Cross section line
--- Transsect line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
1000-meter Universal Transverse Mercator grid ticks, zone 17
5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPS ZONE = 901), Transverse Mercator projection
Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5
MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 6, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
SEPTEMBER 25, 2009 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.

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" = 1000'

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0390F

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

PANEL 390 OF 750
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BAY LAKE, CITY OF	120576	0390	F
ORANGE COUNTY	120179	0390	F
REEDY CREEK IMPROVEMENT DISTRICT	120577	0390	F

Notes 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
12095C0390F

MAP REVISED
SEPTEMBER 25, 2009
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 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 State Plane Florida East FIPS Zone 0901. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM 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:

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Base map information shown on this FIRM was provided in digital format by Orange County, Florida.

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.

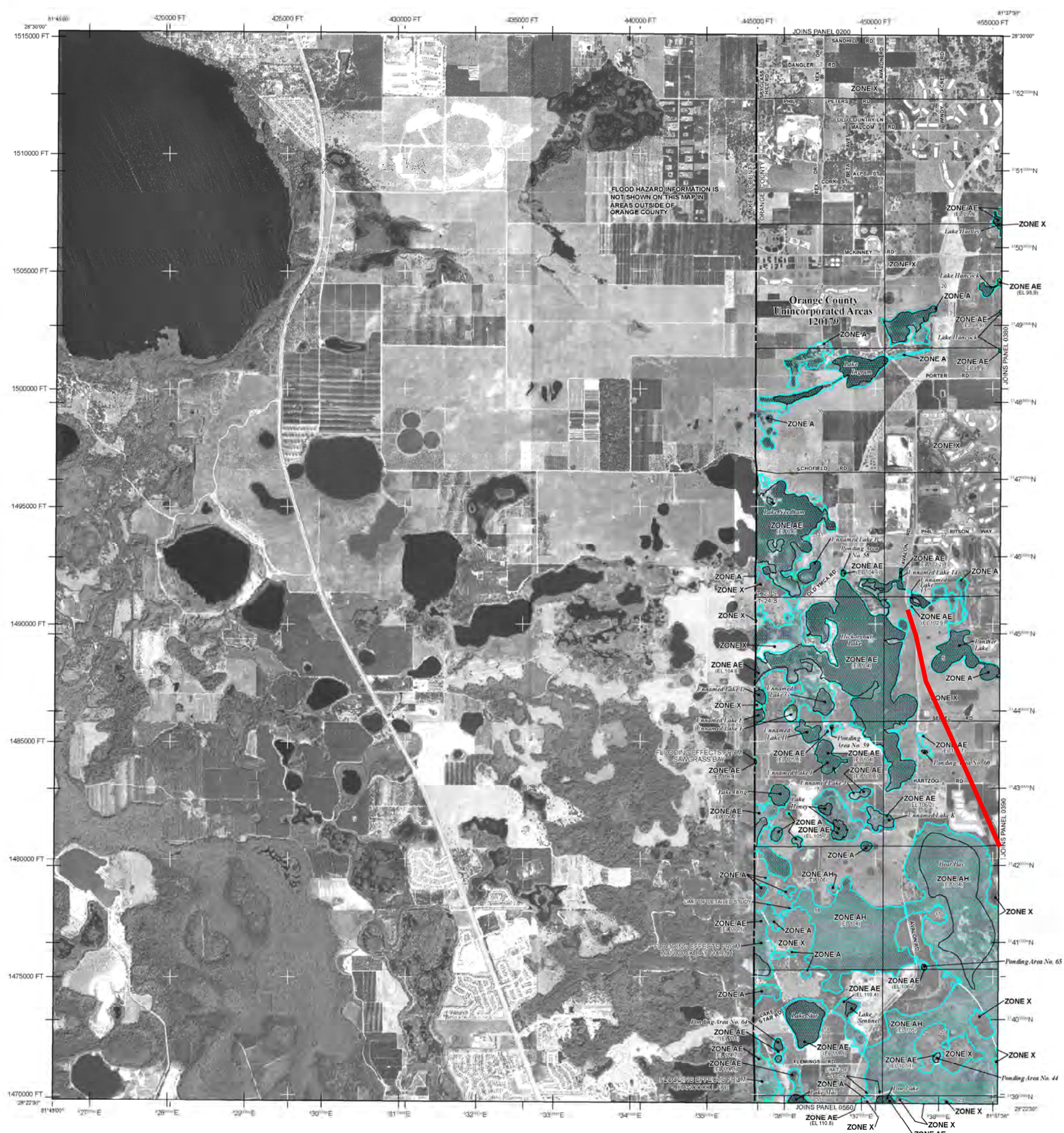
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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Watershed Name	Minimum Conversion	Maximum Conversion	Average Conversion	Maximum Offset
Big Econochoatchee River	-1.03	-1.15	-1.09	0.06
Boggy Creek	-0.91	-1.01	-0.96	0.05
Cypress Creek	-0.87	-0.91	-0.89	0.02
Hoseli Branch	-0.95	-1.05	-0.98	0.07
Lake Apopka	-0.87	-0.97	-0.91	0.06
Lake Hart	-0.97	-1.07	-1.02	0.05
Little Econochoatchee River	-0.92	-1.07	-1.01	0.09
Little Weeja River	-0.91	-1.02	-0.95	0.07
Reedy Creek	-0.89	-0.93	-0.91	0.02
Shingle Creek	-0.88	-0.95	-0.91	0.04
St. Johns River	-1.06	-1.33	-1.19	0.14
Weeja River	-0.88	-1.01	-0.94	0.07



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (10-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, AP, 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 AEH 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 Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently identified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE AR3 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 D Areas determined to be outside the 0.2% annual chance floodplain; 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
Zone X boundary
CBRS and OPA boundary
Boundary defining 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 (NAVD 88)

A-A Cross section line
B-B Transsect line
97°07'30" 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
475' 1000-meter Universal Transverse Mercator grid ticks, zone 17
8000000 FT 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 901), Transverse Mercator projection
DX5610, X Bench mark (see explanation in Notes to Users section of this FIRM panel)
M 1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index:
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP: DECEMBER 6, 2009
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
SEPTEMBER 23, 2009 - To update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.

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 1-800-638-6420.

MAP SCALE 1" = 2000'

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0375F

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

PANEL 375 OF 750
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
ORANGE COUNTY 120175 0375 F

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 12095C0375F

MAP REVISED SEPTEMBER 25, 2009
Federal Emergency Management Agency

APPENDIX E – FLOODPLAIN CALCULATIONS

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify 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, NNGS12
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.

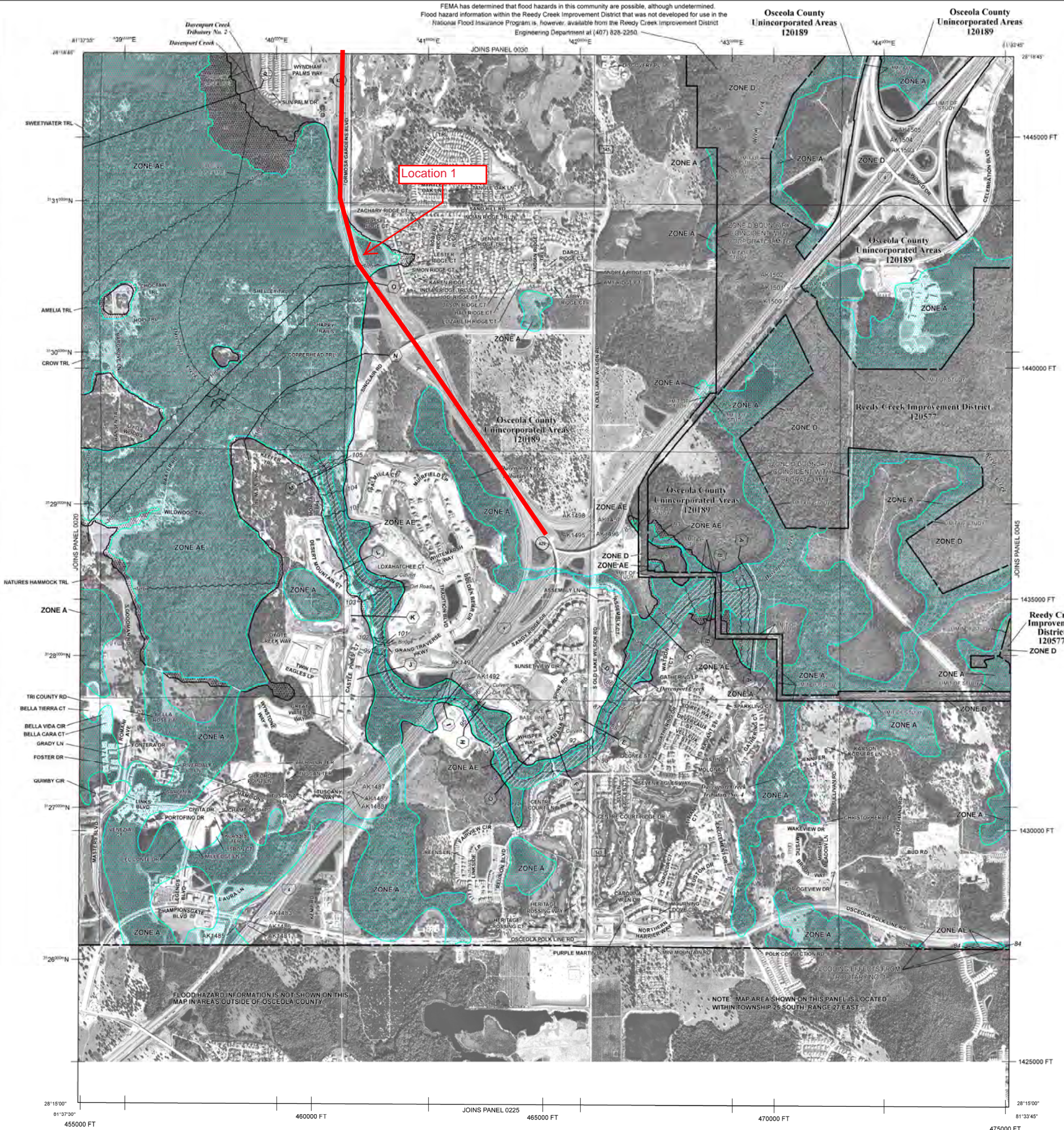
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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 (1-877-336-2271) 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.

FEMA has determined that flood hazards in this community are possible, although undetermined. Flood hazard information within the Reedy Creek Improvement District that was not developed for use in the National Flood Insurance Program is, however, available from the Reedy Creek Improvement District Engineering Department at (407) 828-2250.



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 Zone A, AE, AH, AO, AR, AR9, 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 identified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE AR9** 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
- 513 Base Flood Elevation value where elevation within zone; elevation in feet
- * Referenced to the North American Vertical Datum of 1988
- Transsect line
- 67°03'00" 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83). Within Hemisphere
- 478°00"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 FIS report)
- M1.5 Siver 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, 2011 - 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 1-800-638-6020.

MAP SCALE 1" = 1000'

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0040G

FIRM

FLOOD INSURANCE RATE MAP

OSCEOLA COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 40 OF 900

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSCEOLA COUNTY	120189	0040	G
REEDY CREEK IMPROVEMENT DISTRICT	120577	0040	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 12097C0040G

MAP REVISED JUNE 18, 2013

Federal Emergency Management Agency

455000 FT 460000 FT 465000 FT 470000 FT 475000 FT

28°15'00" 28°15'30" 28°16'00"

81°37'30" 81°38'00" 81°38'30" 81°39'00" 81°39'30"

JOINS PANEL 0225 JOINS PANEL 0230 JOINS PANEL 0235

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify 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, NIMS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3252
(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.

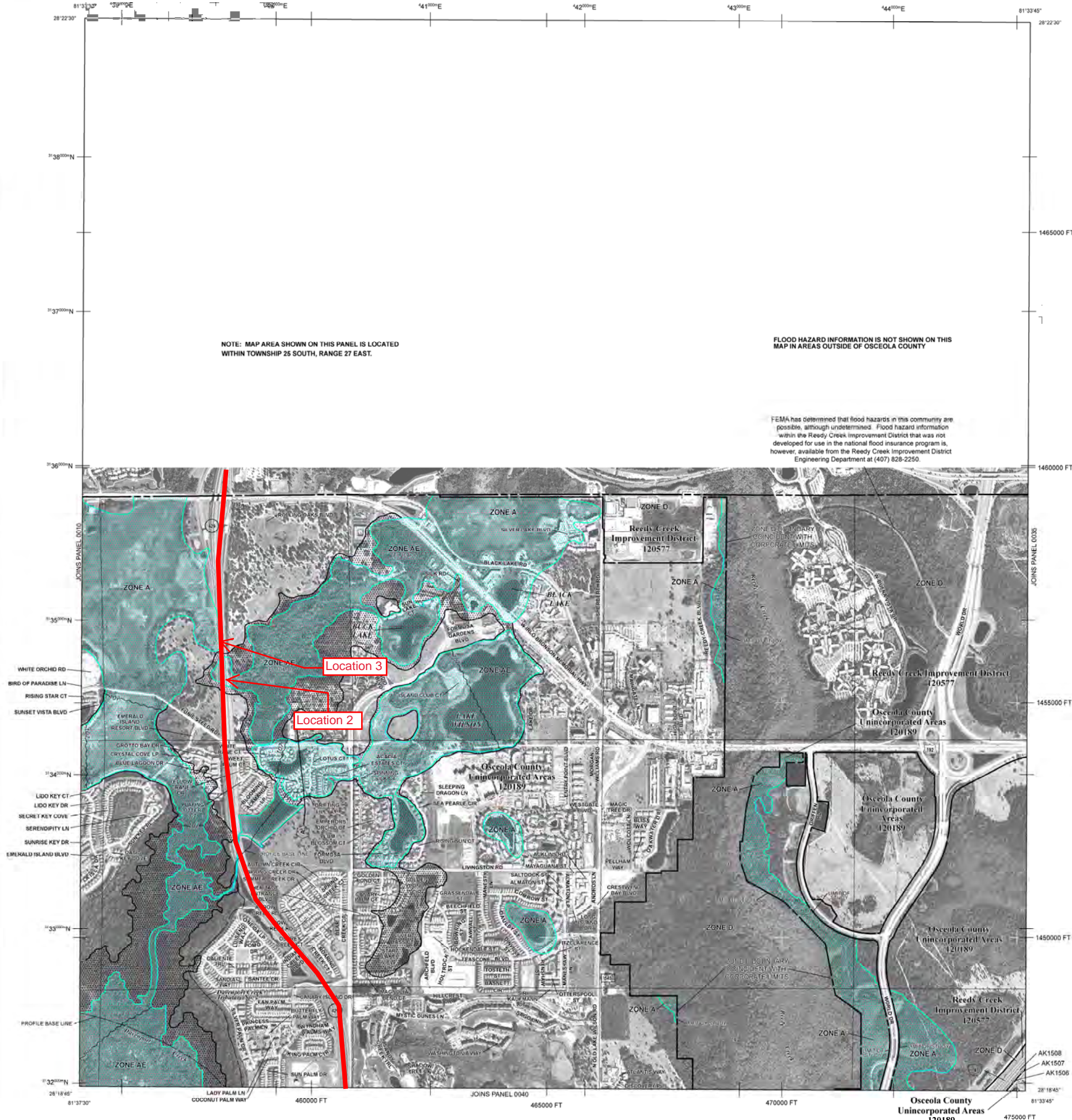
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, 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 (1-877-326-2271) 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.



NOTE: MAP AREA SHOWN ON THIS PANEL IS LOCATED WITHIN TOWNSHIP 25 SOUTH, RANGE 27 EAST.

FLOOD HAZARD INFORMATION IS NOT SHOWN ON THIS MAP IN AREAS OUTSIDE OF OSCEOLA COUNTY

FEMA has determined that flood hazards in this community are possible, although undetermined. Flood hazard information within the Reedy Creek Improvement District that was not developed for use in the national flood insurance program is, however, available from the Reedy Creek Improvement District Engineering Department at (407) 828-2250.

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 AR** 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 deteriorated. 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 U** Areas in which flood hazards are undetermined, but possible.

OTHER PROTECTED AREAS (OPAs)

CBS 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 U boundary
- CBS and OPA boundary
- Boundary dividing Special Flood Hazard Areas and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- Base Flood Elevation line and value; elevation in feet
- Base Flood Elevation value where uniform within zone; elevation in feet (EL 987)

Referenced to the North American Vertical Datum of 1988

- Transverse line
- Transect line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

1000-meter Universal Transverse Mercator grid ticks, zone 17 5000-foot grid values; Florida State Plane coordinate system, East Zone (FIPSZONE = 0901), Transverse Mercator projection

Bench mark (see explanation in Notes to Users section of this FIS report)

DX5510

1/8" = 1 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, 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 1-800-638-6020.

MAP SCALE 1" = 1000'

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0030G

FIRM

FLOOD INSURANCE RATE MAP

OSCEOLA COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 30 OF 900

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
OSCEOLA COUNTY	120189	0030	G
REEDY CREEK IMPROVEMENT DISTRICT	120577	0030	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 12097C0030G

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 shown on this map apply only to 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 tables 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 State Plane Florida East FIPS Zone 0901. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM 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:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

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 Orange County, Florida.

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.

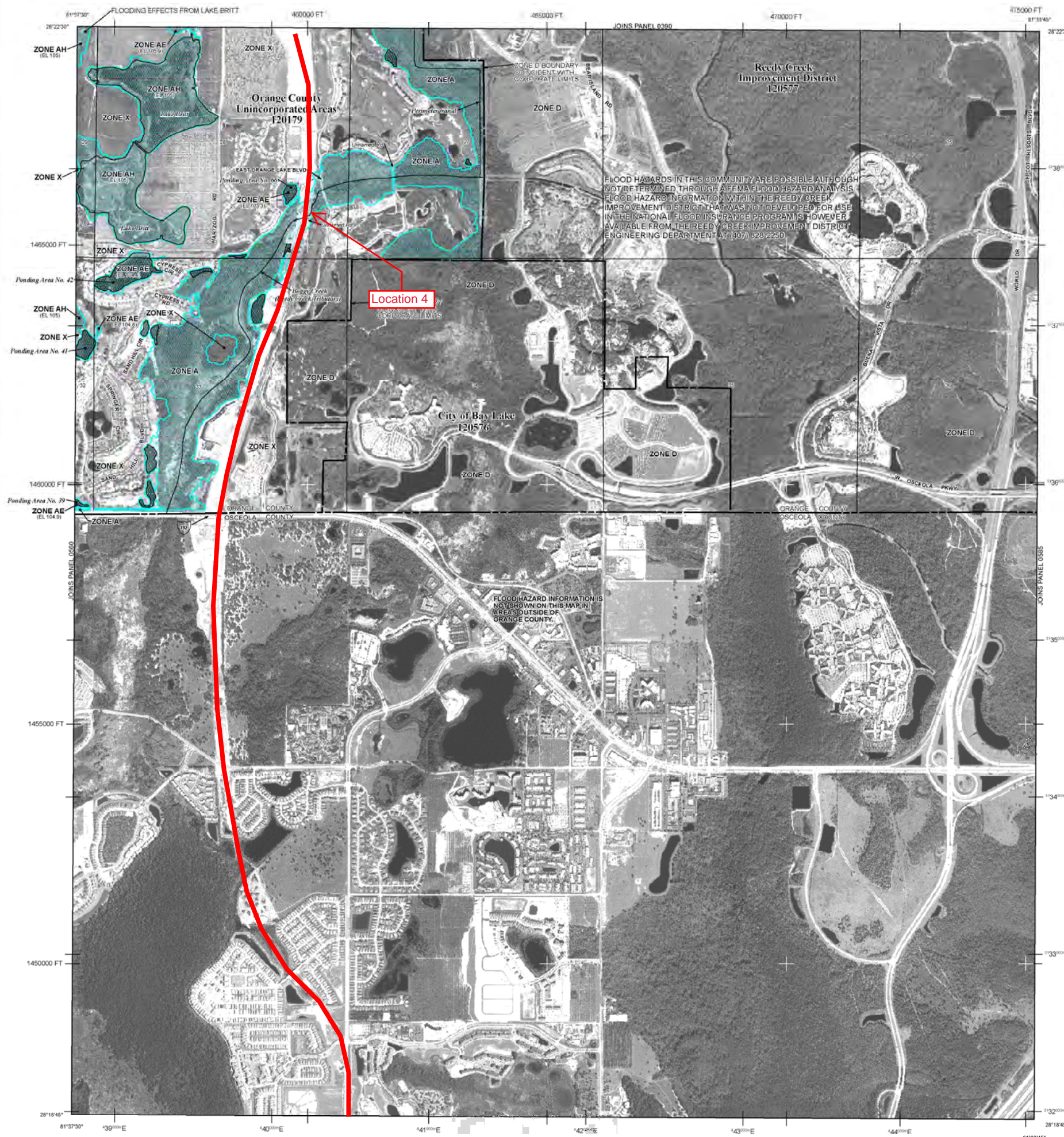
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which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

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/mfp/>.

NGVD29 to NAVD88 Vertical Datum Conversion Table (feet)

Watershed Name	Minimum Conversion	Maximum Conversion	Average Conversion	Maximum Offset
Big Econlockhatchee River	-1.03	-1.15	-1.09	0.06
Boggy Creek	-0.91	-1.01	-0.96	0.05
Cypress Creek	-0.87	-0.91	-0.89	0.02
Howell Branch	-0.96	-1.05	-0.98	0.07
Lake Apopka	-0.87	-0.97	-0.91	0.06
Lake Hart	-0.97	-1.07	-1.02	0.05
Little Econlockhatchee River	-0.92	-1.07	-1.01	0.09
Little Weeiva River	-0.91	-1.02	-0.95	0.07
Reedy Creek	-0.88	-0.89	-0.88	0.02
Shingle Creek	-0.88	-0.95	-0.91	0.04
St. Johns River	-1.08	-1.33	-1.19	0.14
Weeiva River	-0.88	-1.01	-0.94	0.07



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

The 1% annual chance flood (10-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, ASB, 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 Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently destroyed. Zone AO indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE ASB 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 of 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 (NAVD 88)

A A
Cross section line

97°07'30" 32°22'30"
475°00"E
6000000 FT
DX5510 X
River Mile
M1.5

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 6, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
SEPTEMBER 25, 2009 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.

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" = 1000'

500 0 500 1,000 1,500 2,000
FEET
150 0 150 300 450
METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0580F

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

PANEL 580 OF 750
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BAY LAKE, CITY OF	120576	0580	F
ORANGE COUNTY	120179	0580	F
REEDY CREEK IMPROVEMENT DISTRICT	120577	0580	F

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
12095C0580F

MAP REVISED
SEPTEMBER 25, 2009
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 shown on this map apply only to 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 State Plane Florida East FIPS Zone 0901. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM 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:

Spatial Reference System Division
National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

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 Orange County, Florida.

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.

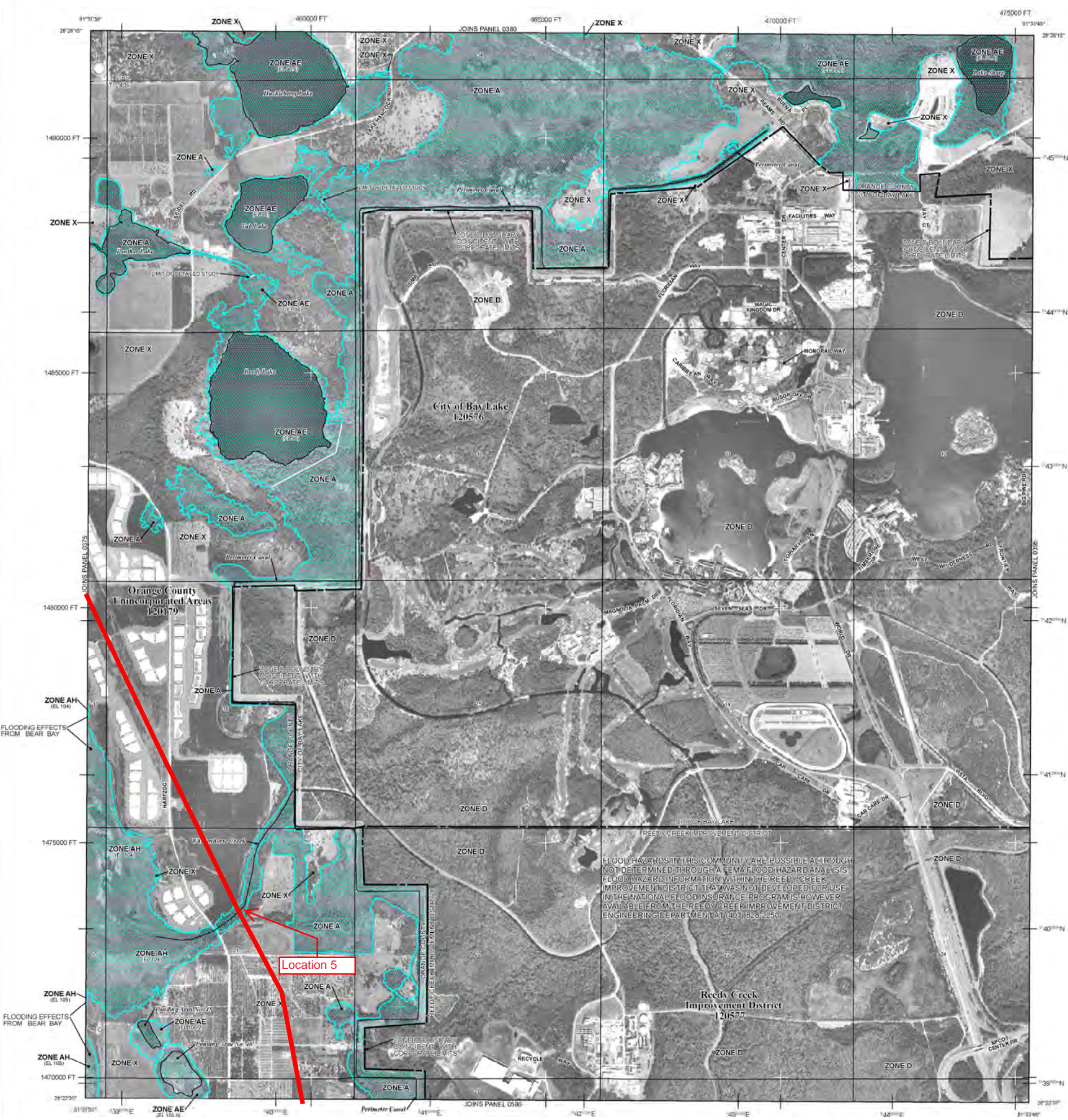
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

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.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by fax at 1-800-358-9620 and its website at <http://www.msc.fema.gov>.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/nfip/>.

Watershed Name	Minimum Conversion	Maximum Conversion	Average Conversion	Maximum Offset
Big Econlockhatchee River	-1.03	-1.15	-1.09	0.06
Boggy Creek	-0.91	-1.01	-0.96	0.05
Cypress Creek	-0.87	-0.91	-0.89	0.02
Hosnell Branch	-0.95	-1.05	-0.96	0.07
Lake Apopka	-0.87	-0.97	-0.91	0.06
Lake Hart	-0.97	-1.07	-1.02	0.05
Little Econlockhatchee River	-0.92	-1.07	-1.01	0.09
Little Weeava River	-0.91	-1.02	-0.96	0.07
Reedy Creek	-0.86	-0.89	-0.88	0.02
Shingle Creek	-0.88	-0.95	-0.91	0.04
St. Johns River	-1.08	-1.33	-1.19	0.14
Weeava River	-0.88	-1.01	-0.94	0.07



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

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, ASR, 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 Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently identified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE ASR 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 floodways in 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 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 (NAVD 88)

— Cross section line
--- Transsect line
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
1000-meter Universal Transverse Mercator grid ticks, zone 17
5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPS ZONE = 901), Transverse Mercator projection
Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5
MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
DECEMBER 6, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
SEPTEMBER 25, 2009 - to update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.

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MAP SCALE 1" = 1000'

0 500 1,000 1,500 2,000 FEET
0 500 1,000 1,500 METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0390F

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

PANEL 390 OF 750
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BAY LAKE, CITY OF	120576	0390	F
ORANGE COUNTY	120179	0390	F
REEDY CREEK IMPROVEMENT DISTRICT	120577	0390	F

Notes 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
12095C0390F

MAP REVISED
SEPTEMBER 25, 2009
Federal Emergency Management Agency

NOTES TO USERS

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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:

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National Geodetic Survey, NOAA
Silver Spring Metro Center
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3191

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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.

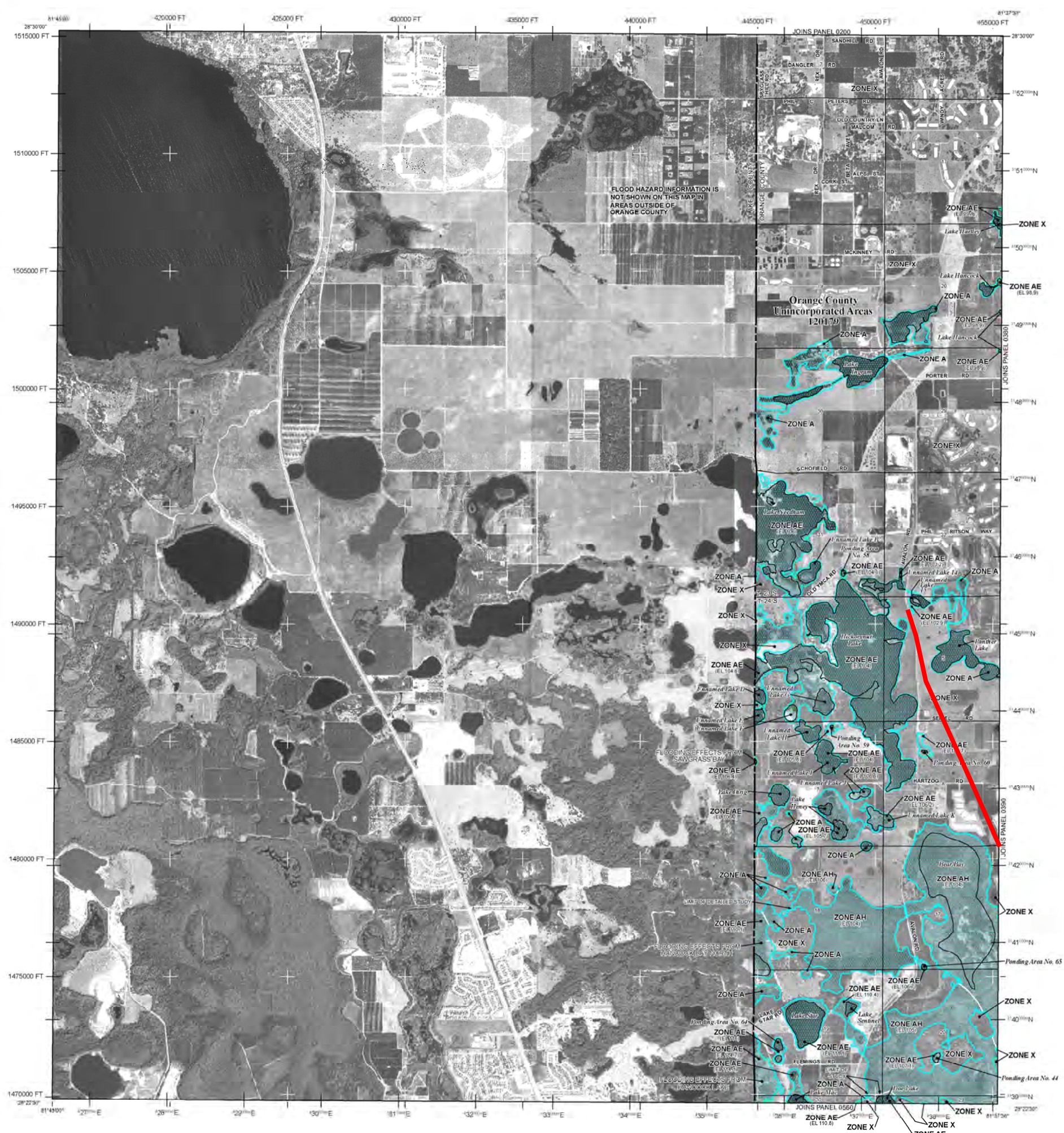
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Watershed Name	Minimum Conversion	Maximum Conversion	Average Conversion	Maximum Offset
Big Econochoatchee River	-1.03	-1.15	-1.09	0.06
Boggy Creek	-0.91	-1.01	-0.96	0.05
Cypress Creek	-0.87	-0.91	-0.89	0.02
Hoseli Branch	-0.95	-1.05	-0.98	0.07
Lake Apopka	-0.87	-0.97	-0.91	0.06
Lake Hart	-0.97	-1.07	-1.02	0.05
Little Econochoatchee River	-0.92	-1.07	-1.01	0.09
Little Weeja River	-0.91	-1.02	-0.95	0.07
Reedy Creek	-0.89	-0.90	-0.88	0.02
Shingle Creek	-0.88	-0.95	-0.91	0.04
St. Johns River	-1.06	-1.33	-1.19	0.14
Weeja River	-0.88	-1.01	-0.94	0.07



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD EVENT

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, AP, 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 AE 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 Area of special flood hazard formerly protected from the 1% annual chance flood event by a flood control system that was subsequently identified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE ARB 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 D Areas determined to be outside the 0.2% annual chance floodplain; 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
Zone X boundary
CBRS and OPA boundary
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 (NAVD 88)

A-A Cross section line
B-B Transsect line
97°07'30" 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
475' 1000-meter Universal Transverse Mercator grid ticks, zone 17
8000000 FT 5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 901), Transverse Mercator projection
DX5610, X Bench mark (see explanation in Notes to Users section of this FIRM panel)
M 1.5 River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index:
EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP: DECEMBER 6, 2009
EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL:
SEPTEMBER 23, 2009 - To update corporate limits, to change Base Flood Elevations, to add Base Flood Elevations, to add Special Flood Hazard Areas, to change Special Flood Hazard Areas, to delete Special Flood Hazard Areas, to update map format, to add roads and road names, to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.

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 1-800-638-6420.

MAP SCALE 1" = 2000'

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0375F

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

PANEL 375 OF 750
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX
ORANGE COUNTY 120175 0375 F

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 12095C0375F

MAP REVISED SEPTEMBER 25, 2009
Federal Emergency Management Agency

RS&H, Inc.
FPID: 44616412201
FLOODPLAIN IMPACT VOLUME CALCULATIONS

By: AB
Date: 10/18/2022
Checked: ENS
Date: 11/9/2022

Location: 1
Alignment: SR 429
Beginning Station: 125+60
End Station: 141+00
Side: LT

Elevation (ft)	Area (ac)	Incremental Volume (ac-ft)	Cumulative Volume (ac-ft)	Comments
101.4	0.59		0.00	SHWT = 101.37 (permit)
		0.37		
102.0	0.59		0.37	
		0.59		
103.0	0.59		0.96	
		0.59		
104.0	0.59		1.55	
		0.59		
105.0	0.59		2.14	
		0.59		
106.0	0.59		2.73	100-year BFE (Zone AE)

Note: Permit data associated with ERP No. 49-187636001

RS&H, Inc.
FPID: 44616412201
FLOODPLAIN IMPACT VOLUME CALCULATIONS

By: AB
Date: 10/18/2022
Checked: ENS
Date: 11/9/2022

Location: 5
Alignment: SR 429
Beginning Station: 485+60
End Station: 489+20
Side: LT/RT

Elevation (ft)	Area (ac)	Incremental Volume (ac-ft)	Cumulative Volume (ac-ft)	Comments
100.0	0.06		0.00	SHWT = 100.00 (permit)
		0.06		
101.0	0.06		0.06	
		0.06		
102.0	0.06		0.11	
		0.01		
102.2	0.06		0.12	100-year BFE (permit)

Note: Permit data associated with ERP No. 49-187636001

APPENDIX F – FLOODPLAIN PERMIT DATA

Section IV Floodplain Analysis

Note:
ALL ELEVATIONS ARE NAVD '88 DATUM
(NAVD '88 EL 0.00 = NGVD '29 EL 0.87
For example: 95.00 shown in the plans is equal
to 95.87 NGVD '29.

FLOODPLAIN ENCROACHMENT AND MITIGATION.

This section addresses the floodplain encroachment and mitigation based on the post development conditions. The proposed Beltway Section 1 will encroach into two FEMA 100-year floodplains associated with Davenport Tributary and Davenport Creek Swamp.

Davenport Tributary Floodplain

In the vicinity of I-4 the interchange ramps will cross and encroach upon the 100-year floodplain associated with Davenport Tributary. The Davenport Tributary is shown as a 100-year floodplain on FEMA flood hazard map No. 1201890025C dated 11/20/96. No 100-year elevations are shown on the FEMA Map. The 100-year elevations were determined from cross drain calculations (CD-1), I-4 drainage map, and comparing the FEMA 100-year floodplain limits to USGS quad sheet contours and project cross section data. Seasonal High Water elevations were estimated from stain lines on culverts and existing ground elevations at wetland lines. See Appendix 3 – Design High Waters.

The proposed project encroaches into the 100-year floodplain of Davenport Tributary at seven locations.

Ramp C embankment, from Sta. 421+74 to Sta. 436+00, encroaches into the 100-year floodplain associated with Wetland 1-6. The 100-year elevation was estimated from the High Water data taken from I-4 drainage map adjusted for NAVD 88. SHW was taken from a stain line on the 42-inch cross drain at Sta. 135+00 BL I-4. Wetland 1-6 discharges to Davenport Tributary.

CR 545 embankment, from Sta. 608+00 to Sta. 611+00, encroaches into the 100-year floodplain associated with Wetland 1-1 as CR 545 crosses Davenport Tributary. The 100-year elevation was taken from the CD-1 calculations. The SHW was taken from stain line on the downstream end of CD-1D under CR 545.

Pond F-2-B north berm encroaches slightly into the 100-year floodplain associated with Wetland 1-2 and the Davenport Tributary. The 100-year elevation was taken from the CD-1 calculations. The SHW was interpolated between the SHW determined from stain lines on the I-4 box culvert and the culvert under CR 545.

Ramp A embankment, from Sta. 245+00 to Sta. 257+00, encroaches into the 100-year floodplain associated with wetland 1-3. The 100-year high water is taken from the CD-1 calculations. The SHW is taken from a stain line on the I-4 box culvert.

Ramp A embankment, from Sta. 257+00 to Sta. 270+05, encroaches into the 100-year floodplain associated with wetland 1-3. The 100-year elevation is interpolated between the 100 year High water from the CD-1 calculations and the 100-year elevation estimated at the upper end of the Davenport Tributary. The SHW is taken as existing ground elevation at the wetland line.

The Beltway, from Sta. 93+00 to Sta. 99+00, encroaches upon the 100-year floodplain of the upper end of the Davenport Tributary. The 100-year elevation was estimated from comparing the FEMA flood hazard maps to the USGS contour map and adjusting these elevations to NAVD 88 project datum. SHW was estimated from elevations of existing ground at wetland lines.

Encroachment volumes were computed using the average end area method from roadway or pond berm sections taken through the encroachment sections. Encroachment calculations are found in Volume II.

Mitigation for these encroachments is provided in seven storm water ponds that discharge to Davenport Tributary, Ponds F-2-A, F-2-B, F-4-A, F-4-B, F-7, G-1, and B-2. Floodplain mitigation volume is computed as the volume in these ponds between the control elevation and the 100-year tail water at the pond. Mitigation volume calculations follow the encroachment calculations in Volume II.

Encroachment and mitigation volumes in the Davenport Tributary Basin are summarized in Table IV-1. There is a net gain in 100-year floodplain volume in the Davenport Tributary Basin. Encroachment and mitigation volumes are computed for each location then totaled for Davenport Tributary floodplain. The encroachment locations and mitigation locations within this floodplain are located sufficiently close so there will be no significant increase in flood stages due to localized loss of floodplain storage.

There is no official floodway associated with the Davenport Tributary floodplain. The project will add a new crossing of Davenport Tributary for Ramp A and will replace the existing triple 30-inch pipes under CR 545 to triple 42-inch pipes. Cross drain calculations for the CD-1 system of three cross drains in series demonstrate that the existing conveyance for the 100 year flow in Davenport Tributary will be maintained through the project with less than 0.1 foot of rise in 100-year high water upstream of the interchange. Descriptions of proposed cross drains are found in Section V. Cross drain calculations are found in Volume II.

Davenport Creek Swamp Floodplain

North of Sinclair Road, the Beltway and Ramps E & F will encroach into the 100-year floodplain associated with Davenport Creek Swamp. The Davenport Creek Swamp is shown as a 100-year floodplain on FEMA flood hazard map 1201890025C dated 11/20/96. No 100-year elevations are shown on the FEMA map. The 100-year elevations were estimated from comparing the FEMA 100-year floodplain area to USGS quad sheet contours and adjusting the elevation to the NAVD 1988 project datum. Seasonal High Water elevations were estimated from existing ground elevations at the wetland lines or from vegetative indicators in the wetlands.

The proposed project encroaches into the 100-year floodplain of Davenport Creek Swamp at five locations.

The Beltway embankment, between Sta. 123+00 and Sta. 142+12 BL SR 429, encroaches into the 100-year floodplain associated with Wetland 1-9.

WWTP Access Road and Pond B-4, between Sta. 142+12 and Sta. 152+00 BL SR 429, encroaches into the 100-year floodplain associated with Wetland 1-7 and Davenport Creek Swamp.

WWTP Access Road and Pond B-4, between Sta. 152+00 and Sta. 160+00 BL SR 429, encroaches into the 100-year floodplain associated with Wetland 1-7 and Davenport Creek Swamp.

The Sinclair to Sand Hill Connector Road, between Sta. 925+00 to 937+00 BL Connector Road, encroaches into the 100-year floodplain associated with Wetland 1-7 and Davenport Creek Swamp.

The Pond B-6 berm, between Sta. 18+00 and 21+00, BL Sinclair ROW encroaches into the 100-year floodplain associated with Wetland 1-10 and Davenport Creek Swamp.

Encroachment volumes were computed using the average end area method from roadway or pond berm sections taken through the encroachment sections. Encroachment calculations are found in Volume II.

Mitigation for these floodplain encroachments will be provided in five storm water ponds (B-3-A, B-3-B, B-4, B-5, and B-6-A) between the control elevation and the 100-year tail water. Mitigation volume calculations follow the encroachment calculations in Volume II.

Encroachment and mitigation volumes in Davenport Creek Swamp are summarized in Table IV-2. There is a net gain in 100-year floodplain volume in the Davenport Creek Swamp Basin. The encroachment locations and mitigation locations within this

floodplain are located sufficiently close so there will be no significant increase in flood stages due to localized loss of floodplain storage.

There is no official floodway associated with the Davenport Creek Swamp floodplain. The project encroaches into the flood fringe of the floodplain and does not cross the main flow path.

FPN: 403497_2_32_01
 PROJ: W. Beltway / I-4 Interchange
 SUBJ: Floodplain Encroachment / Mitigation Summary

SHT ___ OF ___ PN: C100003822.00
 BY: SEY DATE: 5-25-01
 CK: JTW DATE: 5-25-01

ENCROACHMENT SITES	FLOODPLAIN ASSOCIATED WITH	S.H.W. ELEV. (Ft ngvd)	100 YR ELEV. (Ft ngvd)	ENCROACHMENT VOLUME (Ac Ft)
Ramp C Sta. 421+74 to 436+00	Davenport Tributary	85.3	88.3	9.88
CR 545 Sta. 608+00 to 611+00	Davenport Tributary	87.8	90.2	0.21
Pond F-2-B North Berm (BOB 100.2)	Davenport Tributary	91.8	95.0	0.05
Ramp A Sta. 245+00 to 257+00	Davenport Tributary	93.5	96.3	3.88
Ramp A Sta. 257+00 to 270+05	Davenport Tributary	95.0	98.2	12.33
Pond B-2 Berm Sta. 82+00 to 91+00	Davenport Tributary	99.0	100.7	0.02
Beltway Sta. 93+00 to 99+00	Davenport Tributary	100.0	102.0	0.95
TOTAL ENCROACHMENT VOLUME	Davenport Tributary			27.32

MITIGATION SITES		CONTROL ELEV. (Ft ngvd)	100 YR ELEV. (Ft ngvd)	MITIGATION VOLUME (Ac Ft)
Pond F-2A	Davenport Tributary	93.2	95.0	3.12
Pond F-2B	Davenport Tributary	93.2	95.0	1.39
Pond F-4A	Davenport Tributary	93.5	96.25	9.32
Pond F-4B	Davenport Tributary	93.5	96.25	4.54
Pond F-7	Davenport Tributary	93.0	95.0	4.88
Pond G-1	Davenport Tributary	85.3	88.3	8.57
Pond B-2	Davenport Tributary	99.0	100.7	6.26
TOTAL MITIGATION VOLUME	Davenport Tributary			38.08

NET CHANGE IN 100 YR FLOOD PLAIN VOLUME	Davenport Tributary			10.77
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Note:
 ALL ELEVATIONS ARE NAVD '88 DATUM
 (NAVD '88 EL 0.00 = NGVD '29 EL 0.87)
 For example: 95.00 shown in the plans is equa
 to 95.87 NGVD '29.

CPN: 403497_2_32_01
 PROJ: W, Beltway / I-4 Interchange
 SUBJ: Floodplain Encroachment / Mitigation Summary

SHT ___ OF ___ PN: C100003822.00
 BY: SEY DATE: 5-24-01
 CK: JTW DATE: 5-24-01

ENCROACHMENT SITES	FLOODPLAIN ASSOCIATED WITH	S.H.W. ELEV. (Ft ngvd)	100 YR ELEV. (Ft ngvd)	ENCROACHMENT VOLUME (Ac Ft)
Beltway Sta. 123+00 to 142+12	Davenport Creek	100.5	105.0	36.23
Access Road & Pond B-4 Sta. 142+12 to 152+00	Davenport Creek	101.0	105.5	14.35
Access Road & Pond B-4 Sta. 152+00 to 160+00	Davenport Creek	101.5	105.8	-0.47
Connector Road 925+00 to 937+00	Davenport Creek	101.0	105.0	1.72
Pond B-6 Sta. 18+00 to 21+00	Davenport Creek	99.5	104.1	3.03
TOTAL ENCROACHMENT VOLUME	Davenport Creek			54.86

MITIGATION SITES		CONTROL ELEV. (Ft ngvd)	100 YR ELEV. (Ft ngvd)	MITIGATION VOLUME (Ac Ft)
Pond B-3A	Davenport Creek	101.0	105.0	6.15
Pond B-3B	Davenport Creek	101.0	105.0	2.53
Pond B-4	Davenport Creek	101.0	105.5	17.48
Pond B-5	Davenport Creek	101.0	105.0	16.00
Pond B-6	Davenport Creek	99.5	104.1	16.61
TOTAL MITIGATION VOLUME	Davenport Creek			58.77

NET CHANGE IN 100 YEAR FLOODPLAIN VOLUME	Davenport Creek			3.91
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Note:
 ALL ELEVATIONS ARE NAVD '88 DATUM
 (NAVD '88 EL 0.00 = NGVD '29 EL 0.87)
 For example: 95.00 shown in the plans is equal to 95.87 NGVD '29.

Section IV

Flood Plain Impact

Davenport Creek Flood Plain Impacts

A portion of the proposed alignment impacts the Davenport Creek flood plain in the vicinity of Stations 221+00 – 251+00. The 100-year flood plain elevation for this area is 107 NAVD. Proposed is compensating storage that will offset the impacts so as the net fill and runoff volume displaced/created will be less than the predevelopment 100-year conditions. This is accomplished using an excavated area adjacent to the proposed pond (stations 234+00 – 240+00 left side) and enlarging the proposed stormwater treatment pond so that the combination of the two ponds will provide an equivalent amount of volume that is displaced by the fill required for the proposed roadway. Table 1 provides the estimated impacts to the Davenport Creek flood plain based on the proposed roadway and the excavated area adjacent the roadway. These volumes were computed using a normal seasonal high water table elevation of 101.5 and a peak 100-year stage of 107.0.

Table 1 – Davenport Creek Impacts

Station	Fill		Excavation	
	Area ft ²	Volume ac-ft	Area ft ²	Volume ac-ft
221+00.00	0		0	
		0.52		0.00
222+00.00	457		0	
		1.22		0.00
223+00.00	610		0	
		1.94		0.00
224+00.00	1084		0	
		2.67		0.00
225+00.00	1245		0	
		2.98		0.00
226+00.00	1350		0	
		3.16		0.00
227+00.00	1400		0	
		3.34		0.00
228+00.00	1510		0	
		3.43		0.00
229+00.00	1480		0	
		3.51		0.00
230+00.00	1580		0	
		3.88		0.00
231+00.00	1800		0	
		3.64		0.00
232+00.00	1375		0	
		2.71		0.00
233+00.00	982		0	
		1.59		0.00
234+00.00	407		0	
		0.47		2.35
235+00.00	0		2047	

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Section IV – Flood Plain Impact

Table 1 – Continued

Station	Fill		Excavation	
	Area ft ²	Volume ac-ft	Area ft ²	Volume ac-ft
		0.00		5.05
236+00.00	0		2352	
		0.00		5.35
237+00.00	0		2309	
		0.00		4.45
238+00.00	0		1568	
		0.00		2.50
239+00.00	0		610	
		0.08		0.70
240+00.00	70		0	
		0.42		0.00
241+00.00	295		0	
		1.07		0.00
242+00.00	637		0	
		2.16		0.00
243+00.00	1244		0	
		3.08		0.00
244+00.00	1442		0	
		3.46		0.00
245+00.00	1570		0	
		3.58		0.00
246+00.00	1552		0	
		3.40		0.00
247+00.00	1410		0	
		3.08		0.00
248+00.00	1275		0	
		2.77		0.00
249+00.00	1142		0	
		2.50		0.00
250+00.00	1040		0	
		2.05		0.00
251+00.00	750		0	
		0.86		0.00
252+00.00	0		0	
Total		63.6		20.4

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Section IV – Flood Plain Impact

Using the SFWMD Flood Plain Analysis (Importer/Exporter)

Site Predevelopment Runoff Volume (basin 2) = 64.3 ac-ft

Basin 2

CN =	60.5
Soil Storage (in) =	6.53
Rainfall (in) =	14.40
Runoff (in) =	8.74
Area (acres) =	88.31
Runoff Vol. (ac-ft) =	64.3

Site Predevelopment Storage = 63.6 ac-ft (see table 1)

$\Delta(\text{Runoff Vol}_{\text{pre}} - \text{Storage Vol}_{\text{pre}}) = 64.3 - 63.6 = 0.7$ ac-ft site is Exporter

Total Post Development Runoff Volume

CN =	69.5
Soil Storage (in) =	4.40
Rainfall (in) =	14.4
Runoff (in) =	10.20
Area (acres) =	134.54
Runoff Vol. (ac-ft) =	114.4

Required Storage

$114.4 \text{ ac-ft} - 0.7 \text{ ac-ft (predevelopment)} - 20.4 \text{ (post development Table 1)} = 93.3$

Pond 2A-2 Stage Storage

Stage (ft)	Area (acres)	Volume (acre-ft)
101.5	11.94	0.00
106.0	13.88	58.10
107.0	16.09	73.08
108.0	16.85	89.55
108.5	17.21	98.07

Total Available storage @ 108.50 = 98.1 ac-ft > 93.3 ac-ft OK Stage 108.2

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West Boggy Creek Flood Plain Impacts

A portion of the Section 2B and the southern portion of Section 3 impact floodplain adjacent to the West Boggy Creek. The flood plain within this creek varies from elevation 102.7 (north of SR 530) to elevation 101.8 at the end of Section 2B. These flood plain elevations are based on information in the report performed for and accepted by Orange County by Singhoffen & Associates. The title of the study is Reedy Creek & Cypress Creek Drainage Basins, Stormwater Management Master Plan, Prepared for Orange County Board of County Commissioners (RCCCD). Table 2 contains a summary of the flood plain elevations for each station along the alignment based on a linear interpolation between nodes and stations along the roadway.

Table 2 – Flood Elevations West Boggy Creek

Node Name	Station	Offset Left (ft)	Peak Stage NAVD (ft)	Peak Stage NGVD (ft)
RV03015	319+42.98	986.22	102.72	103.72
	320+00.00		102.71	103.71
	321+00.00		102.69	103.69
	322+00.00		102.66	103.66
	323+00.00		102.64	103.64
	324+00.00		102.62	103.62
	325+00.00		102.60	103.60
	326+00.00		102.57	103.57
	327+00.00		102.55	103.55
	328+00.00		102.53	103.53
	RV03040	328+41.85	1119.37	102.52
329+00.00			102.49	103.49
330+00.00			102.45	103.45
331+00.00			102.41	103.41
332+00.00			102.37	103.37
333+00.00			102.32	103.32
334+00.00			102.28	103.28
335+00.00			102.24	103.24
336+00.00			102.19	103.19
337+00.00			102.15	103.15
338+00.00			102.11	103.11
RV03045	338+84.84	1124.27	102.07	103.07
	1338+84.08	1124.27	102.07	103.07
	1339+00.00		102.07	103.07
	1340+00.00		102.06	103.06
	1341+00.00		102.06	103.06
	1342+00.00		102.05	103.05
	1343+00.00		102.05	103.05
	1344+00.00		102.04	103.04
1345+00.00		102.04	103.04	

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Section IV – Flood Plain Impact

Table 2 – Continued

Node Name	Station	Offset Left (ft)	Peak Stage NAVD (ft)	Peak Stage NGVD (ft)
	1346+00.00		102.03	103.03
	1347+00.00		102.03	103.03
	1348+00.00		102.02	103.02
RV03055	1348+36.33	537.98	102.02	103.02
	1349+00.00		102.02	103.02
	1350+00.00		102.02	103.02
	1351+00.00		102.02	103.02
	1352+00.00		102.02	103.02
	1353+00.00		102.02	103.02
	1354+00.00		102.01	103.01
	1355+00.00		102.01	103.01
	1356+00.00		102.01	103.01
	1357+00.00		102.01	103.01
	1358+00.00		102.01	103.01
RV03060	1358+58.92	178.30	102.01	103.01
	1359+00.00		102.00	103.00
	1360+00.00		101.99	102.99
	1361+00.00		101.97	102.97
	1362+00.00		101.96	102.96
RV03065	1362+37.09	645.66	101.95	102.95
	1363+00.00		101.95	102.95
	1364+00.00		101.95	102.95
	1365+00.00		101.95	102.95
	1366+00.00		101.94	102.94
	1367+00.00		101.94	102.94
RV03070	1367+93.33	828.46	101.94	102.94
	1368+00.00		101.94	102.94
	1369+00.00		101.92	102.92
	1370+00.00		101.91	102.91
	1371+00.00		101.89	102.89
	1372+00.00		101.87	102.87
	1373+00.00		101.85	102.85
RV03075	1373+84.63	687.91	101.84	102.84
	1374+00.00		101.84	102.84
	1375+00.00		101.83	102.83
	1376+00.00		101.81	102.81
	1377+00.00		101.80	102.80
	1378+00.00		101.79	102.79
	1379+00.00		101.78	102.78
	1379+95.90		101.76	102.76
	1380+00.00		101.76	102.76
RV03085	1381+84.00	285.55	101.74	102.74
	400+00.26		101.76	102.76
	401+00.00		101.75	102.75
RV03085	401+90.24	285.55	101.74	102.74
	402+00.00		101.74	102.74
RV03090	402+92.40	298.38	101.71	102.71
	403+00.00		101.69	102.69

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Section IV – Flood Plain Impact

Table 2 – Continued

Node Name	Station	Offset Left (ft)	Peak Stage NAVD (ft)	Peak Stage NGVD (ft)
	404+00.00		101.45	102.45
	405+00.00		101.20	102.20
	406+00.00		100.96	101.96
	407+00.00		100.71	101.71
	408+00.00		100.47	101.47
	409+00.00		100.22	101.22
	410+00.00		99.98	100.98
	410+80.00		99.78	100.78
	411+00.00		99.73	100.73
	412+00.00		99.49	100.49
	412+22.81		99.43	100.43
	413+00.00		99.24	100.24
	413+28.82		99.17	100.17
RV03095	413+32.88	255.99	99.16	100.16
	414+00.00		99.11	100.11
	415+00.00		99.03	100.03
	416+00.00		98.95	99.95
	417+00.00		98.87	99.87
	418+00.00		98.79	99.79
	419+00.00		98.71	99.71
RV03105	419+46.76	1117.42	98.67	99.67

The flood elevations from Table 2 were used to establish the flood plain impacts based on the proposed sections for the roadway. Table 3 summarizes these impacts based on a fill analysis for the roadway and any proposed pond impact.

Table 3 – West Boggy Creek Flood Plain Impacts Sections 2B/3

Station	Fill	
	Area ft ²	Volume ac-ft
321+00.00	0	
		0.32
322+00.00	283	
		0.81
324+00.00	72	
		0.63
327+00.00	110	
		0.20
328+00.00	68	
		0.25
329+00.00	146	
		0.46

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Section IV – Flood Plain Impact

Table 3 – Continued

330+00.00	253	
		0.31
331+00.00	14	
331+00 = 1331+00		
1331+00.00	14	
		0.34
1333+00.00	133	
		0.65
1334+00.00	433	
		0.88
1335+00.00	337	
		3.09
1343+00.00	0	
		0.01
1345+00.00	6	
		1.17
1349+00.00	249	
		0.70
1350+00.00	362	
		0.75
1351+00.00	292	
		0.57
1352+00.00	206	
		0.51
1353+00.00	239	
		0.54
1354+00.00	228	
		0.56
1355+00.00	260	
		0.59
1356+00.00	255	
		0.72
1357+00.00	375	
		0.90
1358+00.00	411	
		0.74
1359+00.00	235	
		1.08
1363+00.00	0	
		0.00
1364+00.00	1	
		0.00

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Section IV – Flood Plain Impact

Table 3 – Continued

1365+00.00	0	
		0.05
1374+00.00	5	
		0.03
1375+00.00	17	
		0.03
1376+00.00	6	
		0.02
1377+00.00	15	
		0.08
1378+00.00	55	
		0.28
1379+00.00	192	
		0.53
1380+00.00	272	
Section 3		
1380+00=400+00		
400+00.00	272	
		0.58
401+00.00	231	
		0.42
402+00.00	137	
		0.40
403+00.00	211	
		0.54
404+00.00	261	
		0.63
405+00.00	287	
		0.69
406+00.00	315	
		2.10
408+00.00	600	
		1.34
409+00.00	566	
		1.09
410+00.00	381	
		0.65
411+00.00	184	
		0.24
412+00.00	21	
		0.01
412+30.00	0	
Total		26.50

49-187636001

Using the SFWMD Flood Plain Analysis (Importer/Exporter)

Predevelopment Runoff Volume (Appendix B, B-13) = 55.2 ac-ft

Basin 5

CN = 63.90
 P (in) = 14.40
 S (in) = 5.65
 R (in) = 9.31
 Area (acres) = 71.19

Volume (acre-ft) = 55.22

Site Predevelopment Storage = 26.5 ac-ft (see table 3)

$\Delta(\text{Runoff Vol}_{\text{pre}} - \text{Storage Vol}_{\text{pre}}) = 55.2 - 26.5 = 28.7$ ac-ft site is Exporter

Post Development Runoff Volume 2B-1 = 47.41 ac-ft

Basin 2B-1

P (in) = 14.40
 S (in) = 2.65
 R (in) = 11.65

Volume (acre-ft) = 47.41

Post Development Runoff Volume 2B-2 = 29.78 ac-ft

Basin 2B-2

P (in) = 14.40
 S (in) = 0.83
 R (in) = 13.45

Volume (acre-ft) = 29.78

Total Post Development Runoff Volume = 77.2 ac-ft

Required Detention Volume = 77.2 ac-ft - 28.7 ac-ft = 48.5 ac-ft

Ponds 2B-1 and 2B-2

Stage Storage

Stage (ft)	2B-1 Area (acres)	2B-2 Area (acres)	Total Area (acres)	Volume (acre-ft)
100.4	11.49	2.57	14.06	0.0
104	12.56	3.10	15.66	53.5
105	14.11	3.88	17.99	70.32

Total Volume of storage available in the Stormwater Management System is 70.32 ac-ft > 48.5 ac-ft

49-187638001

SECTION IV

Floodplains

FLOODPLAINS

WHITTENHORSE CREEK FLOOD PLAIN IMPACTS

A portion of the proposed alignment impacts the Whittenhorse Creek flood plain within Basins 12 & 13, between stations 484+00 and 490+00. The 100-year flood plain elevation for this area is 102.2 NAVD. Proposed is compensating storage that will offset the impacts so as the net fill and runoff volume displaced/created will be less than the predevelopment 100-year conditions. This is accomplished using two ponds, Pond 12 and Pond 13, will provide an equivalent amount of volume that is displaced by the fill required for the proposed roadway. Table IV-1 provides the estimated impacts to the Whittenhorse Creek flood plain based on the proposed roadway embankment and the excavation associated with the roadway. These volumes were computed using a normal seasonal high water table elevation of 100.0 and a peak 100-year stage of 102.2.

Table IV-1 - Whittenhorse Creek Impacts

Station	Fill		Excavation	
	Area ft2	Volume ac-ft	Area ft2	Volume ac-ft
484+00	0		0	
		0.08		0.04
485+00	69		35	
		0.48		0.05
486+00	348		12	
		0.84		0.02
487+00	388		6	
		0.87		0.01
488+00	373		7	
		0.55		0.06
489+00	105		44	
		0.12		0.05
490+00	0		0	
Total		2.94		0.24

Total Impacts: 2.71 ac-ft

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BOGGY Creek Flood Plain Impacts

The proposed Western Beltway crossing at Boggy Creek, within Section 3, will impact approximately 8.7 ac-ft of floodplain encroachment. There will also be floodplain encroachment for the Boggy Creek crossing in Sections 2a & 2b. Compensation for this loss of storage for all the sections will be handled by the, Western Beltway, Part C - Section 2a & 2b and excepts of their calculations have been included. Calculations determining the amount of impacts for Section 3 are presented within this section as a reference only.

Table IV-2 - Boggy Creek Impacts

Station	Fill		Excavation	
	Area ft2	Volume ac-ft	Area ft2	Volume ac-ft
400+00	272		0	
		0.58		0.00
401+00	231		0	
		0.42		0.00
402+00	137		0	
		0.40		0.00
403+00	211		0	
		0.54		0.00
404+00	261		0	
		0.63		0.00
405+00	287		0	
		0.69		0.00
406+00	315		0	
		2.10		0.00
408+00	600		0	
		1.34		0.00
409+00	566		0	
		1.09		0.00
410+00	381		0	
		0.65		0.00
411+00	184		0	
		0.24		0.00
412+00	21		0	
		0.01		0.00
412+30	0		0	
Total		8.68		0.00

Total Impacts: 8.68 ac-ft

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SECTION IV
Whittenhorse Creek
Floodplain Compensation Calculations

HDR Computation

HDR

Project	Western Beltway	Computed	GTP	Date	5/18/2001
Subject	Whitten horse Creek Flood Plain Compensation	Checked	✓	Date	5-21-01
Task		Sheet	1	Of	2

1) Pre development Floodplain storage

Assume:

SHWT = 100.0'

100% EL = 102.2'

Area includes Row only

Elevation	Area (ac)	Volume (ac-ft)	Cumulative Volume (ac-ft)
100	1.46	0	0
101	2.08	1.74	1.74
102	2.81	2.45	4.19
102.2	3.27	3.04	<u>7.23</u>

Total Available Storage =

7.23 ac-ft

2) Determine Pre development Runoff -

Basin 12 Pre Runoff = 9.73 ac-ft (from attached calcs)

Basin 13 Pre Runoff = 23.04 ac-ft (from attached calcs)

Total Pre Runoff = 32.77 ac-ft

3) Determine if Basin is Exporter or Importer

Since 32.77 ac-ft > 7.23 ac-ft, then Basin is exporter.

4) Determine Post development Runoff -

Basin 12 Post Runoff = ~~9.73 ac-ft~~ 17.23 ac-ft

Basin 13 Post Runoff = 57.63 ac-ft

Total Post Runoff = 74.86 ac-ft 49-187636001

5) Determine Required Detention Volume -

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Post Runoff - Pre Runoff = Req'd Volume

74.86 ac-ft - 32.77 ac-ft = 42.09 ac-ft

HDR Computation

HDR

Project	Western Beltway	Computed	GTP	Date	5/18/2001
Subject	Whittenhorse Creek Flood Plain Comp.	Checked	CC	Date	5-21-01
Task		Sheet	2	Of	2

6) Determine Total Volume of Available Pond Storage -

Pond 12 = 10.7 ac-ft

Pond 13 = 44.3 ac-ft

55.0 ac-ft of available storage.

⇒ Since Available Storage (55.0 ac-ft) > Reg'd Det Vol (42.09 ac-ft),
then there is an adequate amount of Flood Plain Comp.

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WESTERN BELTWAY (SR 429) PART C SECTION 3
BASIN 12 PREDEVELOPMENT - FLOODPLAIN COMPENSATION CALCS
05/18/01; 9:11 am

***** Basin Summary - 100Y72H *****

Basin Name: 12PRE
 Group Name: BASE
 Node Name: 12PRE
 Hydrograph Type: UH

Unit Hydrograph: UH323
 Peaking Factor: 323.00
 Spec Time Inc (min): 10.00
 Comp Time Inc (min): 10.00
 Rainfall File: FDOT-72
 Rainfall Amount (in): 14.40
 Storm Duration (hr): 72.00
 Status: ONSITE
 Time of Conc. (min): 75.00
 Lag Time (hr): 0.00
 Area (acres): 17.00
 Vol of Unit Hyd (in): 1.00
 Curve Number: 50.00
 DCIA (%): 0.00

Time Max (hrs): 60.17
 Flow Max (cfs): 8.56
 Runoff Volume (in): 6.87
 Runoff Volume (cf): 423774 = 9.73 ac-ft

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WESTERN BELTWAY (SR 429) PART C SECTION 3
 BASIN 13 PREDEVELOPMENT CALCS - FLOODPLAIN COMPENSATION CALCS
 05/18/01; 9:9 am

***** Node Time Series by Node - 100Y72H *****

Time (hrs)	Stage (ft)	Surface Ar.(ac)	<-----Inflow----->					Link Outflow (cfs)	Cumulative Volume In (ac.ft)	Cumulative Volume Out (ac.ft)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)	Link Q (cfs)			
*** Group: BASE		Node: WHITTEN *								
71.529	99.70	0.03	0.00	1.15	0.00	0.00	4.34	0.00	22.8220	0.0000
71.779	99.70	0.03	0.00	1.13	0.00	0.00	4.19	0.00	22.9336	0.0000
72.029	99.70	0.03	0.00	1.10	0.00	0.00	4.05	0.00	23.0418	0.0000
72.279	99.70	0.03	0.00	1.06	0.00	0.00	3.92	0.00	23.1465	0.0000

* Pre Basin 13A2 contributing runoff was not included in this run.

USE 23.04 ac-ft

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5-21-01

IV-6

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.20)
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5-21-01

WESTERN BELTWAY (SR 429) PART C SECTION 3
BASIN 12 POSTDEVELOPMENT CALCS - FLOODPLAIN COMPENSATION CALCS
05/18/01: 1:20 pm

***** Basin Summary - 100Y72H *****

Basin Name: BASIN12
Group Name: BASE
Node Name: POND12
Hydrograph Type: UH

Unit Hydrograph: UH323
Peaking Factor: 323.00
Spec Time Inc (min): 9.33
Comp Time Inc (min): 9.33
Rainfall File: FDOT-72
Rainfall Amount (in): 14.40
Storm Duration (hr): 72.00
Status: ONSITE
Time of Conc. (min): 70.00
Lag Time (hr): 0.00
Area (acres): 20.10
Vol of Unit Hyd (in): 1.00
Curve Number: 70.00
DCIA (%): 0.00

Time Max (hrs): 60.04
Flow Max (cfs): 12.87
Runoff Volume (in): 10.28
Runoff Volume (cf): 750320 = 17.23 ac-ft

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WESTERN BELTWAY (SR 429) PART C SECTION 3
 BASIN 13 POSTDEVELOPMENT CALCS - FLOODPLAIN COMPENSATION CALCS
 05/18/01 1:30 pm

***** Node Time Series by Node - 100Y72H *****

Time (hrs)	Stage (ft)	Surface Ar.(ac)	<-----Inflow----->				Link Q (cfs)	Link Outflow (cfs)	Cumulative Volume In (ac.ft)	Cumulative Volume Out (ac.ft)
			Base Q (cfs)	Onsite (cfs)	Offsite (cfs)	Bndry Q (cfs)				
*** Group: BASE		Node: WHITTEN								
71.502	99.70	0.02	0.00	0.00	0.00	0.00	18.38	0.00	56.8841	0.0000
71.584	99.70	0.02	0.00	0.00	0.00	0.00	18.29	0.00	57.0085	0.0000
71.669	99.70	0.02	0.00	0.00	0.00	0.00	18.21	0.00	57.1367	0.0000
71.751	99.70	0.02	0.00	0.00	0.00	0.00	18.13	0.00	57.2600	0.0000
71.833	99.70	0.02	0.00	0.00	0.00	0.00	18.05	0.00	57.3827	0.0000
71.919	99.70	0.02	0.00	0.00	0.00	0.00	17.97	0.00	57.5093	0.0000
72.001	99.70	0.02	0.00	0.00	0.00	0.00	17.89	0.00	57.6309	0.0000
72.086	99.70	0.02	0.00	0.00	0.00	0.00	17.81	0.00	57.7564	0.0000
72.168	99.70	0.02	0.00	0.00	0.00	0.00	17.72	0.00	57.8769	0.0000
72.253	99.70	0.02	0.00	0.00	0.00	0.00	17.62	0.00	58.0011	0.0000
72.335	99.70	0.02	0.00	0.00	0.00	0.00	17.51	0.00	58.1203	0.0000
72.417	99.70	0.02	0.00	0.00	0.00	0.00	17.39	0.00	58.2387	0.0000

USE 57.63 ac-ft

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8-8

HISTORIC STORAGE

Portions of the proposed alignment impact existing depressional areas, to different degrees, throughout the project limits. Depressions 11A, 13B2, 13B3, 15B, 15C, 15D, 15E, 15F, and 15G will be eliminated with the proposed roadway construction. The compensated volume in the post condition exceeds the volume at the peak stage in the depressional areas in all depressions that will be eliminated. Other depressions within the project corridor will be impacted but the peak stage will not be adversely affected due to the contributing area that will be removed due to the roadway. Table IV-3 provides a summary of the estimated impacts to the existing depressional areas based on the proposed roadway embankment and the excavation associated with the roadway. The following pages are aeriels showing the historical depressional areas modeled in the pre-developed conditions.

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TABLE IV-3 - Historic Storage Summary						
PRE			POST			
Node Name	Peak Stage 25Y/72H (ft)	Volume at Peak Stage ac-ft	Node Name	Peak Stage 25Y/72H (ft)	Compensating Volume Location	Compensated Volume ac-ft
10DEP	118.5	9.2	POND10	114.6	Pond 10	25.4
11A	103.9	4.4	N/A	N/A	PONDS 11B, 11C, 11D	29.2
13B1	104.0	6.1	13B	103.3	Pond 13	44.3
13B2	105.1	3.3	N/A	N/A	POND 13	
13B3	109.4	0.5				
15A	103.0	4.9	DPR15	101.2	DPR 15	2.5
15B	118.6	0.4	N/A	N/A	POND 15E	5.0
15C	113.1	0.1	N/A	N/A	PONDS 15B, 15C, 15D	28.6
15D	111.4	0.1				
15G	103.3	3.8				
15E	119.1	0.5	N/A	N/A	POND 15A	16.5
15F	118.1	0.1				
15H	100.9	18.7	15H	100.8	15H	18.3
15I	106.94	0.8	15I	106.95	15I	0.8
15J	104.7	12.0	15J	103.7	15J	10.2

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Historic Storage.xls, 5/22/2001, 8:30 AM

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APPENDIX G – CORRESPONDENCE, MEETINGS



Florida Department of Transportation

RON DESANTIS
GOVERNOR

Florida's Turnpike Enterprise
P.O. Box 613069, Ocoee, FL 34761
407-532-3999

JARED W. PERDUE, P.E.
SECRETARY

MEETING MINUTES

FTE/FDEP PRE-APP COORDINATION MEETING

Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4

FPID No.: 446581-1-22-01

Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road

FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida

Monday, April 11, 2022, 9:00 am

I. Attendees:

FTE

Henry Pinzon, PE (PD&E)
Rax Jung, PhD, PE (Project Dev. Engineer/EMO)
Philip Stein (Environmental)
Annemarie Hammond (Env. Permits Coordinator)
Erin Yao, PE (Drainage Engineer)

FDEP ERP/S404

Teayann Duclos, MS (Environmental Manager)
Jennipher Walton (Env. Specialist)
Leo Anglero (ERP/Stormwater)
Allan Popak, PG (Environmental Specialist)
Lindsay Furr (Environmental Consultant)
Jill Farris (Environmental Consultant)

FTE/GEC

Stephanie Underwood, PE (PM/HNTB GEC)
Fred Gaines, PWS (Permitting/Atkins GEC)
Adriana Kirwan, PE (Drainage/HNTB GEC)
Tiffany Crosby (Senior Scientist/Atkins GEC)

RS&H Team

Douglas Reed, PE (RS&H PM)
Erik Scott, PE (RS&H Drainage)
Sarah Johnson, MS (KHA/Environmental)

FDOT Central Office

Jonathan Turner (Project Delivery Coordinator)

FDOT District 5

Casey Lyon, MS (Env. Permits Coordinator)

Introductions

The meeting started with FDOT District 5 staff discussing their projects with Florida Department of Environmental Protection (FDEP). Next on the agenda are FDOT Florida's Turnpike Enterprise (FTE) projects. FTE, FTE General Engineering Consultant (GEC), FDOT Central Office, FDEP and FTE Project Consultant attendees were introduced, FTE/GEC staff explained the purpose of the meeting was to initiate pre-application coordination for the two FTE Project Development and Environment (PD&E) studies, Poinciana Parkway Extension (SR 538) and Widen Western Beltway (SR 429).

PowerPoint presentation

RS&H staff explained the two projects with a PowerPoint presentation and separate exhibits (attached). Discussion is summarized below.

446164-1 Widen Western Beltway PD&E Study:

- The PD&E study was summarized, including existing conditions and the proposed

widening of SR 429 from four to eight-lanes from north of I-4 to Seidel Road.

Improvements are also proposed at the existing interchanges at Sinclair Road, US 192, Western Way, and Seidel Road. A new interchange is proposed at Livingston Road. It was noted that this is early in the process in the PD&E phase, and not the Design phase, so a permit application is not imminent.

- FDEP Environmental Resource Permit (ERP) and Reedy Creek Improvement District (RCID – discharge volume) permitted SR 429 in 2001 as a four-lane roadway facility with stormwater management ponds and control structures sized for six-lanes. FTE is coordinating with RCID.
- The existing water quality volume was calculated based on the criteria of 1-inch over the contributing basin or 2.5-inches over the impervious area. For most of the basins the 1-inch over the contributing area was the controlling factor for the required water quality. This is due in part because the existing corridor was located within a rural corridor and offsite areas were included in the contributing basin calculation. Since 2001, some of the offsite areas have been developed with new, offsite ponds. Therefore, when adding the additional pavement along SR 429 for the eight-lane configuration, most of the basins still have sufficient water quality volume provided in the existing ponds. For any basins lacking the required water quality volume within the existing permitted ponds, the difference will be accommodated by adjusting the existing control structures or providing additional pond area.
- Basin boundaries will be revised to reflect the existing development adjacent to SR 429.
- Portions of the project study area is located within two impaired WBIDs (Water Basin Identification), Davenport Creek for bacteria (fecal coliform) and Whittenhorse Creek for dissolved oxygen. In addition, the project study area is located within the Lake Okeechobee Sub-watershed BMAP. FTE stated that the impaired WBID additional treatment is not required given FDOT BMPs include a series of treatment trains and their facilities do not directly discharge into the impaired waterbodies. FDEP stated that additional treatment considerations may not be necessary because they are moving away from the 50% additional treatment volume requirement, but these criteria will need to be discussed further during the design phase.
- Attenuation will be provided per FDEP ERP criteria for open and closed basins, with consideration for RCID (discharge volume) requirements. FDEP agreed this stormwater approach is reasonable.
- The corridor has floodplains associated with Boggy Creek and Whittenhorse Creek. There is one existing Floodplain Compensation site located north of Indian Creek Boulevard adjacent to the southbound lanes. Though encroachments are anticipated, they will be minimal. Encroachments will be mitigated by compensation sites or by using the importer/exporter method.
- FTE confirmed with FDEP that the ERP for any proposed widening of Western Beltway (SR 429) will be handled by FDEP. FDEP agreed.
- Since there are no federal retained Waters of the US, FTE understands that FDEP S404 will permit any proposed impacts. FDEP S404 agreed.
- Wetland lines from the previous permit will be used as much as possible in areas that are not new interchanges. FDEP agreed, although FDEP staff will need to field review wetland delineation. Direct wetland impacts are approximately 10 acres.
- Conservation easements are located within the project study area.

- Wetlands and conservation easements impacts will be avoided and minimized as much as possible. Some minimization methods considered include bridging or MSE walls.
- Impacts to most listed species is minimal along the existing roadway; however, there is suitable sand skink habitat to be considered within the new interchange area.
- Mitigation banks are located within the available service area for this project to offset any unavoidable wetland impacts.
- Coordination with USFWS occurred in 2021 and will continue as needed.
- FDEP indicated there were no questions, and additional coordination can occur as the project progresses.

446581-1 Poinciana Parkway Extension PD&E Study:

- The PD&E study was summarized, including existing conditions. The proposed new six-lane expressway will be a new alignment with interchanges at CR 532 and I-4. The new alignment crosses Davenport Creek on bridge structure.
- There are two build alternatives and the no-build alternative being analyzed for the PD&E study. The worst-case Alternative 1 was presented and discussed in the meeting.
- FTE clarified with FDEP that they anticipated that SFWMD would be responsible for issuing the new Individual ERP permit and FDEP would be responsible for reviewing and issuing the Section 404 permit. FDEP ERP/S404 agreed.
- Waters of the US limits and conservation areas within the study area were shown.
- Wetland lines from the previous permits will be used as much as possible in existing roadway areas, while new wetland lines will be set in the new alignment area. Direct wetland impacts range from 131 acres to 141 acres for the concept alternatives. Direct impacts will be further minimized with bridges and MSE walls.
- SFWMD conservation easements for Disney/RCID and Reunion are present within and adjacent to the project study area.
- Wetlands and conservation easement impacts will be avoided and minimized as much as possible. Some minimization methods considered include bridging or MSE walls.
- It was stated that FTE has already met with USFWS in October 2020 and again in October 2021. A scrub jay survey was completed in October 2021, however; there were no observations of scrub-jays during the survey. Suitable sand skink habitat is located within the project study area and sand skink tracks were observed.
- FTE will coordinate with FWC for state-listed species involvement, as appropriate.
- Mitigation banks are located within the available service area for this project to offset any unavoidable wetland impacts. FDEP S404 confirmed with FTE that mitigation banks should be utilized for wetland mitigation as the 1st priority and followed by other options (In-lieu Fee then Conservation Easements). Impacts to conservation easements should be a last resort. Should proposed mitigation be a Conservation Easement, FDEP has asked that FTE coordinate with FDEP early in the design development given the process is different than that of using mitigation banks.

MEETING MINUTES
FTE/RCID AGENCY COORDINATION MEETING
Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
FPID No.: 446581-1-22-01
Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road
FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida
Wednesday, May 19, 2021, 1:00 pm

I. Attendees:

Henry Pinzon (FTE PD&E)	Erin Yao (FTE/Drainage)	Rax Jung (FTE Project Dev. Eng./EMO)	Douglas Reed (RS&H PM)
Stephanie Underwood (FTE PM)	Doug Zang (FTE/Environmental)	Annemarie Hammond (FTE/Env. Permit Coordinator)	Erik Scott (RS&H Drainage)
Ramon Breton (KHA, DPM 446581)	Fred Gaines (FTE/Permitting)	Clif Tate (KHA/Engineering)	Sarah Johnson (KHA/Environmental)
Adriana Kirwan (FTE/Drainage)		Kate Kolbo (RCID Planning/Engineering)	

II. Introductions

Stephanie introduced the Florida Turnpike Enterprise (FTE) staff and explained the purpose of the meeting was to coordinate with the Reedy Creek Improvement District (RCID). RS&H team staff was introduced followed by the RCID staff. John Classe (RCID District Administrator and Sam Dewes (RCID Roadway) were not in attendance.

III. PowerPoint presentation

Doug Reed went through a PowerPoint presentation (attached), which was sent to RCID after the meeting. Discussion is summarized below.

- a. Slide 7: Kate Kolbo explained that there are no set procedures if the Wildlife Management Conservation Area (WMCA) is impacted. It was set up in 1966 as a major floodway to never be impacted. Although two crossings were anticipated, including I-4. Poinciana Parkway would also be an exemption. However, there cannot be any adverse impacts to the existing flow rates. Most flows are north to south, except for Reunion which flows south to north. Major cross drains will be required along the utility "stair step" area to maintain flows.

Sarah Johnson pointed out the two graphics were slightly different and asked which one is correct. Kate Kolbo will send the CADD file for the correct WMCA limits to Stephanie Underwood, who will distribute it to the team. Kate mentioned that they use a different datum and they will convert it to NAVD88 before sending.

Fred Gaines asked if any easements had been transferred to other owners. Kate responded that none had been transferred.

- b. Slide 15: Kate indicated that the system is well defined. The cross section is fixed, canals cannot be widened, and drainage structures cannot be modified. Therefore, the flow cannot be increased. Any additional runoff must flow elsewhere. Stephanie Underwood suggested pre-post flows should be ok. Kate responded that it may not

be, depending on the definition of pre-post, but she will send the stipulations to Stephanie. The Reedy Creek system is based on 13 cfm/sq mile, and they are already exceeding that volume. Anything over that will require a fee. Kate mentioned that I-4 Beyond the Ultimate (BtU) project is attenuating to below the pre-post volume.

Fred Gaines mentioned that Turnpike had already paid a fee for SR 429 during the original construction.

Erik Scott asked about the permit process. Kate responded that a SFWMD permit application should be sent to RCID first for review and approval before being submitted to South Florida Water Management District (SFWMD). RCID will then send SFWMD a letter explaining the negotiation points and expressing support.

Kate mentioned that RCID uses a different rainfall distribution than SFWMD with a 50 yr/72 hr event. Erik asked about the unit hydrograph, and Kate will send Stephanie the RCID drainage person's contact information who can provide the information.

Erik mentioned we anticipate staying below the 290 cfs that was used previously. Kate will pull the permit and modifications can be worked through. Kate also mentioned they would require an initial 30-day review period to provide comments or questions. The Turnpike's team will provide information for RCID to feed into the model. Kate also mentioned they will review the projects even if outside the RCID boundary as long as it is within the watershed.

Erik asked if there were any other entities that were interested in taking additional water. Kate responded that there were none.

Fred asked if RCID can provide conceptual approval since this is PD&E and we are not submitting an actual permit until a later phase. Kate responded that conceptual approval can be granted.

The bottom line was reiterated:

- Stay out of the WMCA, and
- Do not discharge more flow into RCID

IV. Action Items

- a. Doug Reed will prepare meeting minutes. (done)
- b. Kate Kolbo will send the CADD files for the correct WMCA limits and flow stipulations. (done)

MEETING MINUTES
FTE/RCID AGENCY COORDINATION MEETING #2
Poinciana Parkway Extension PD&E Study from CR 532 to North of I-4
FPID No.: 446581-1-22-01
Western Beltway (SR 429) Widening PD&E Study from North of I-4 to Seidel Road
FPID No.: 446164-1-22-01

Osceola and Orange Counties County, Florida
Thursday, March 3, 2022, 10:00 am

I. Attendees:

Henry Pinzon (FTE PD&E)	Todd Rimmer (Walt Disney Planning)	Rax Jung (FTE Project Dev. Eng./EMO)	Douglas Reed (RS&H PM)
Stephanie Underwood (FTE PM)	Emam Emam (FTE/Planning/Traffic)	Philip Stein (FTE/Environmental)	Erik Scott (RS&H Drainage)
Ramon Breton (KHA, DPM 446581)	Fred Gaines (FTE/Permitting)	Clif Tate (KHA/Engineering)	Matt Betancourt (RS&H Public Inv.)
Katherine Luetzow (RCID)	Sarah Johnson (KHA/Env)	Kate Kolbo (RCID Planning/Eng)	Rick Langlass (RS&H DPM/Eng.)
Sandy Morales (RCID)			

II. Introductions

Stephanie introduced the Florida Turnpike Enterprise (FTE) staff and explained the purpose of the meeting was to continue coordination with the Reedy Creek Improvement District (RCID) on the two PD&E studies. The RS&H team and RCID was also introduced.

III. PowerPoint presentation

Doug Reed went through a PowerPoint presentation. Discussion is summarized below.

Poinciana Parkway Extension PD&E Study and Drainage Design:

Erik Scott outlined the anticipated worst—case encroachment into Whittenhorse Creek with the proposed 8-lane typical. Kate Kolbo requested the hydraulic model FTE is using to evaluate the HGL. RS&H does not anticipate any changes to the Boggy Creek culvert. Davenport Creek will be bridged

Kate Kolbo indicated that FTE is not required to use a specific hydraulic model, but all modeling (electronic executable files) would need to be submitted for RCID review.

Todd Rimmer indicated that the CADD files would be requested from Mattamy Homes for the Celebration Island Village site plan.

Erik Scott requested the RCID model for use. Kate Kolbo agreed to send it after the meeting.

Kate Kolbo suggested the permit request should be submitted to RCID before submitting to the South Florida Water Management District (SFWMD).

The fee structure of \$4.15 per acre/csm is still applicable. The \$200/acre is also still

applicable for the portion of the project located within the RCID boundary if runoff drains into RCID. The original permits will be reviewed and fees will be assessed based on the improvements.

It was noted that the easements are water management first and foremost, then wildlife conservation.

Todd Rimmer asked if the two Poinciana Parkway Extension alternatives operate similarly. The response was yes, the configuration differs, but operations are similar. Todd also suggested the relocation of utilities be included in the evaluation and footprint.

Historical storage must be preserved as this area serves a large area of Osceola and Orange counties. Flood storage is critical.

Kate Kolbo will send the latest GIS files for the most up to date information on the jurisdictional and water management conservation area limits. A separate meeting can be set up to go through the information.

Widen Western Beltway PD&E Study:

Todd Rimmer indicated they are looking at 2040 traffic models for Western Way due to its connection into Lake County. Emam Emam indicated he can share the Synchro files which have been coordinated with District 5 and FDOT Central Office.

Bike and pedestrian facilities can be removed from Western Way since other means (i.e. shuttles) are being incorporated by Disney for bike and pedestrian accommodations. This will ultimately be safer due to the free flow ramp movements.

RCID is evaluating widening Western Way to six lanes. Funding is included in the 10-year plan.

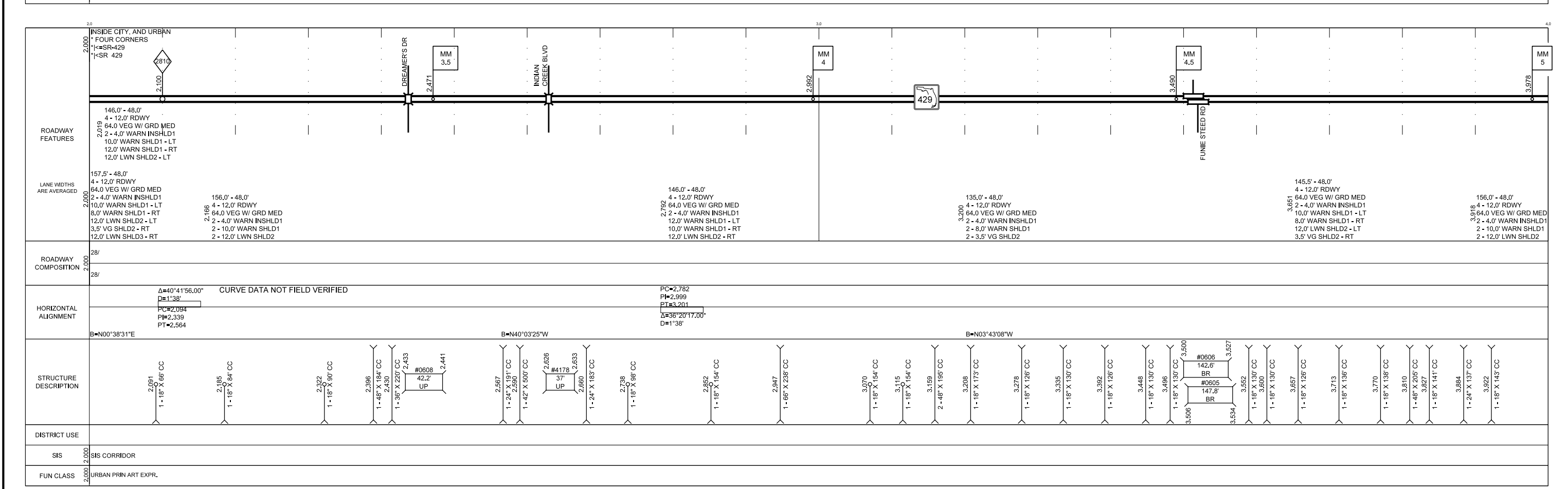
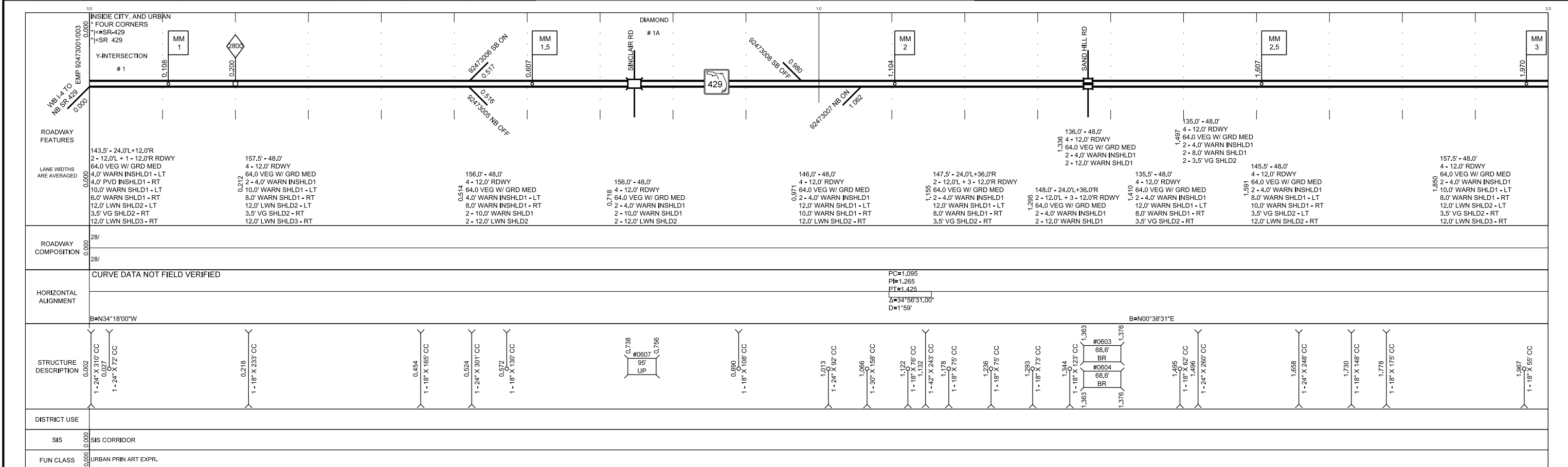
It was noted that Disney was not invited to the Reunion Coordination meeting scheduled for March 10, 2022.

In general, it was agreed that Poinciana Parkway Extension Alternative 2 has reduced direct and indirect impacts to RCID resources compared to Alternative 1.

IV. Action Items

- a. Doug Reed will prepare meeting minutes. (done)
- b. Kate Kolbo will send the RCID model.
- c. Stephanie Underwood will send the HEC-RAS and Synchro models.

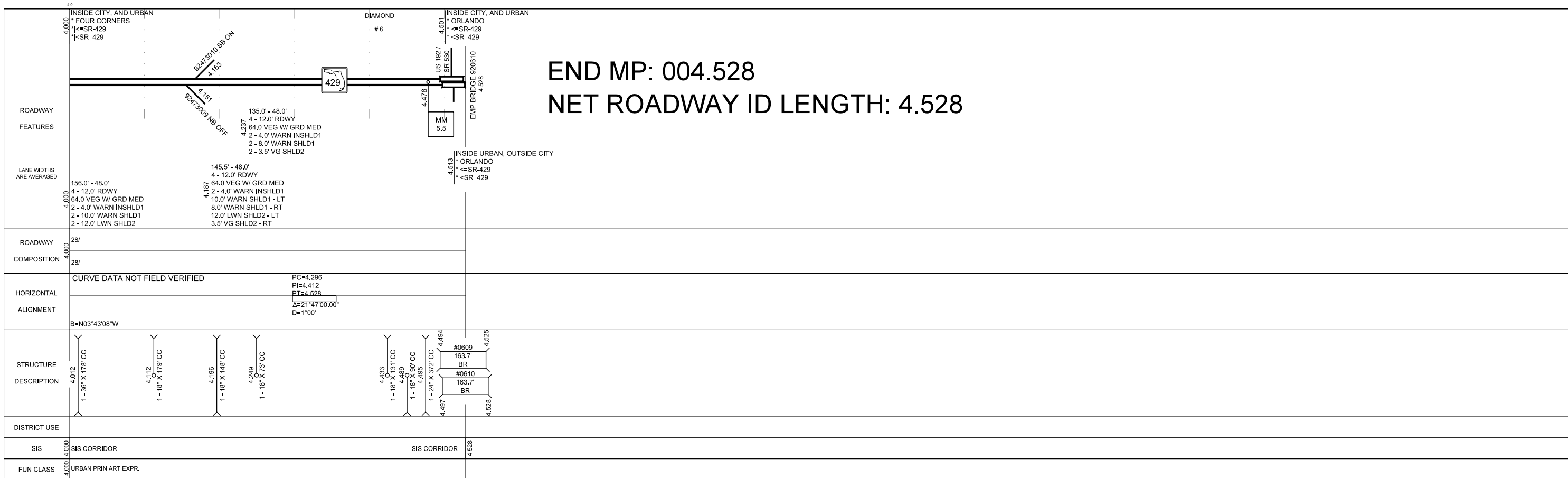
APPENDIX H – STRAIGHT LINE DIAGRAM



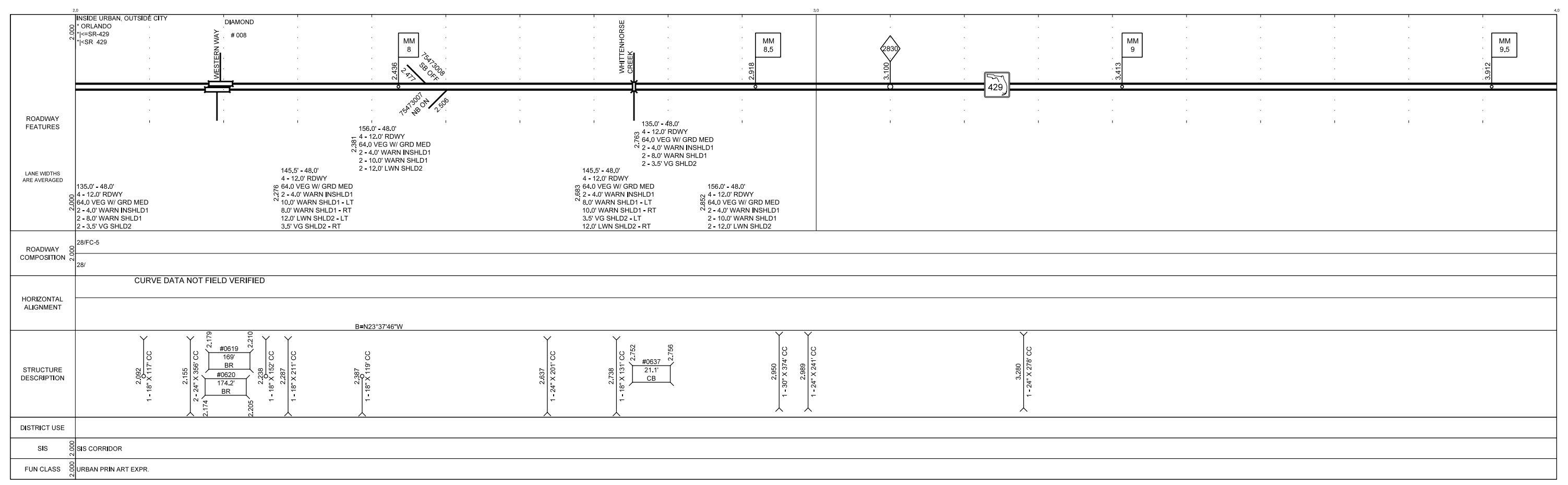
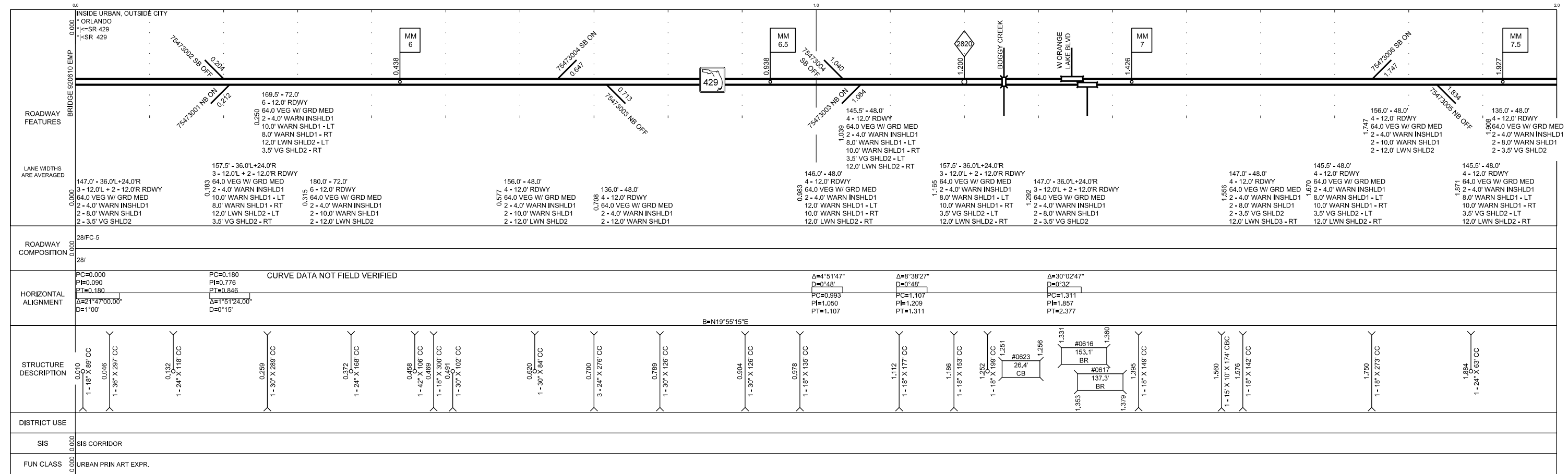
5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE 04/22/2021	12/17/2021				
BY Juan Echevarria - AECOM	Juan Echevarria - AECOM				

FLORIDA DEPARTMENT OF TRANSPORTATION
STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO.
02		SR 429	OSCEOLA	08	92473000	2 OF 2



FLORIDA DEPARTMENT OF TRANSPORTATION
STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

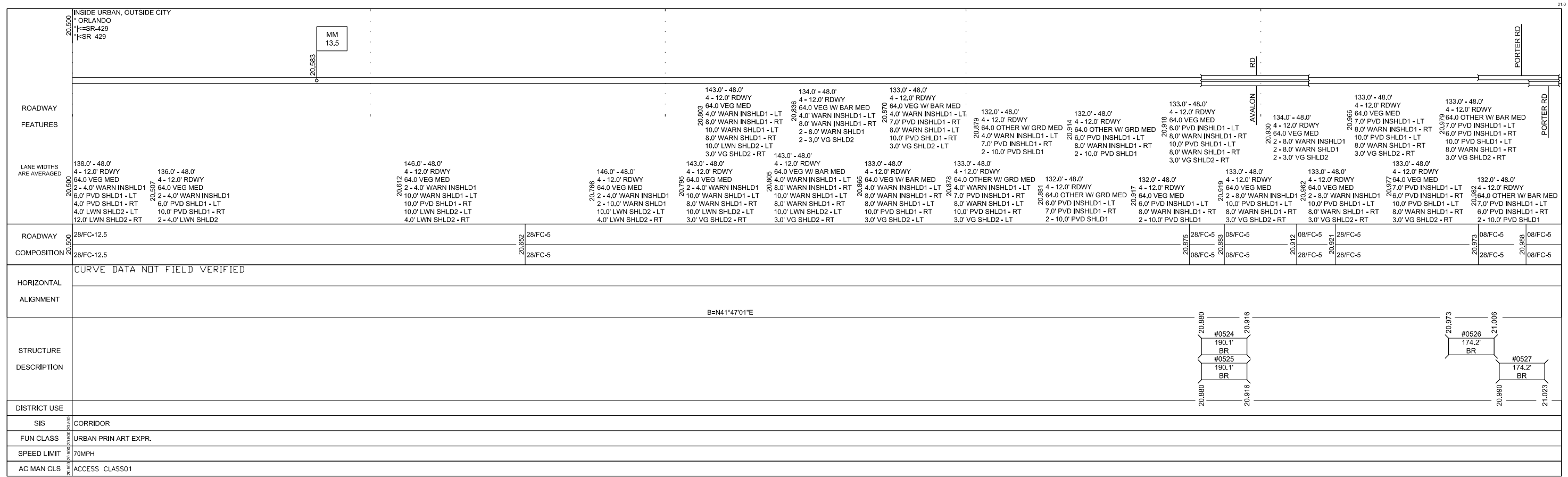
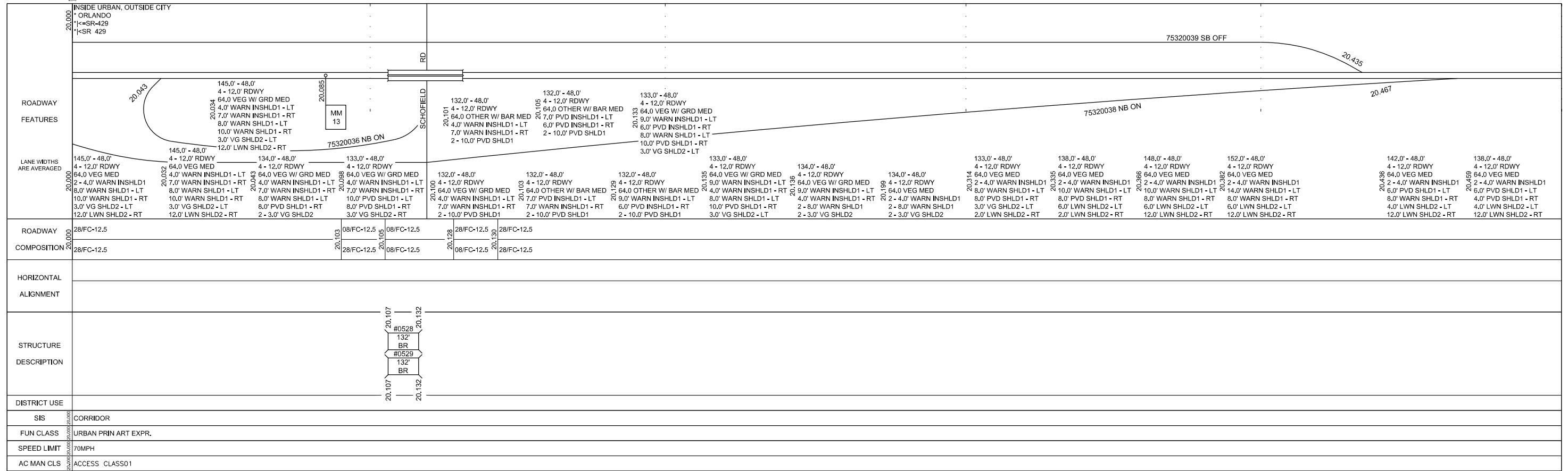


DATE	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV	FLORIDA DEPARTMENT OF TRANSPORTATION	SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
BY	Juan Echevarria - AECOM	Juan Echevarria - AECOM					STRAIGHT LINE DIAGRAM OF ROAD INVENTORY	02		SR 429	ORANGE	08	75473000	2 OF 2

ROADWAY FEATURES	<p>INSIDE URBAN, OUTSIDE CITY</p> <p>ORLANDO</p> <p>1<SR-429</p> <p>1<SR 429</p> <p>MM 10</p> <p>4.429</p> <p>75473010 SB ON</p> <p>4.775</p> <p>MM 10.5</p> <p>4.930</p> <p>147.0' - 48.0'</p> <p>4 - 12.0' RDWY</p> <p>64.0 VEG W/ GRD MED</p> <p>2 - 4.0' WARN INSHLD1</p> <p>2 - 8.0' WARN SHLD1</p> <p>2 - 3.5' VG SHLD2</p> <p>12.0' LWN SHLD3 - LT</p> <p>PARTIAL DIAMOND # 011</p> <p>2840</p> <p>5.300</p> <p>SEDEL RD</p> <p>BRIDGE 750622 EMP</p> <p>5.325</p> <p>END MP: 005.325</p> <p>NET ROADWAY ID LENGTH: 5.325</p>
LANE WIDTHS ARE AVERAGED	<p>156.0' - 48.0'</p> <p>4 - 12.0' RDWY</p> <p>64.0 VEG W/ GRD MED</p> <p>2 - 4.0' WARN INSHLD1</p> <p>2 - 10.0' WARN SHLD1</p> <p>2 - 12.0' LWN SHLD2</p> <p>157.5' - 48.0'</p> <p>4 - 12.0' RDWY</p> <p>64.0 VEG W/ GRD MED</p> <p>2 - 4.0' WARN INSHLD1</p> <p>8.0' WARN SHLD1 - LT</p> <p>10.0' WARN SHLD1 - RT</p> <p>3.5' VG SHLD2 - LT</p> <p>12.0' LWN SHLD2 - RT</p> <p>12.0' LWN SHLD3 - LT</p> <p>135.0' - 48.0'</p> <p>4 - 12.0' RDWY</p> <p>64.0 VEG W/ GRD MED</p> <p>2 - 4.0' WARN INSHLD1</p> <p>2 - 8.0' WARN SHLD1</p> <p>2 - 3.5' VG SHLD2</p>
ROADWAY COMPOSITION	<p>28/FC-5</p> <p>28/</p>
HORIZONTAL ALIGNMENT	<p>CURVE DATA NOT FIELD VERIFIED</p> <p>B=N23°37'46"W</p>
STRUCTURE DESCRIPTION	<p>4.624</p> <p>1 - 24' X 407' CC</p> <p>4.709</p> <p>1 - 24' X 200' CC</p> <p>4.782</p> <p>1 - 24' X 840' CC</p> <p>4.860</p> <p>1 - 18' X 63' CC</p> <p>5.065</p> <p>1 - 24' X 198' CC</p> <p>5.277</p> <p>1 - 24' X 321' CC</p> <p>5.300</p> <p>#0621</p> <p>132'</p> <p>BR</p> <p>#0622</p> <p>132'</p> <p>BR</p> <p>5.325</p>
DISTRICT USE	
SIS	<p>SIS CORRIDOR</p> <p>SIS CORRIDOR</p>
FUN CLASS	<p>URBAN PRIN ART EXPR.</p>

ROADWAY	END OF BR 750622 18,000 INSIDE URBAN, OUTSIDE CITY * ORLANDO * SR 429 * SR 429 												
FEATURES													
LANE WIDTHS ARE AVERAGED	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' WARN INSHLD1 - LT 4.0' WARN INSHLD1 - RT 8.0' PVD SHLD1 - LT 10.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	136.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' WARN INSHLD1 - LT 4.0' WARN INSHLD1 - RT 8.0' PVD SHLD1 - LT 10.0' WARN SHLD1 - RT 2 - 3.0' VG SHLD2	136.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 2 - 4.0' WARN INSHLD1 8.0' WARN SHLD1 - LT 10.0' WARN SHLD1 - RT 2 - 3.0' VG SHLD2	135.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 8.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 3.0' VG SHLD2 - LT 2.0' LWN SHLD2 - RT	136.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 2 - 4.0' WARN INSHLD1 8.0' WARN SHLD1 - LT 10.0' WARN SHLD1 - RT 2 - 10.0' WARN SHLD1	135.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 8.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 3.0' VG SHLD2 - LT 2 - 2.0' LWN SHLD2	135.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 8.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 3.0' VG SHLD2 - LT 2 - 2.0' LWN SHLD2	135.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 8.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 3.0' VG SHLD2 - LT 2 - 2.0' LWN SHLD2	135.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 8.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 3.0' VG SHLD2 - LT 2 - 2.0' LWN SHLD2	135.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 8.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 3.0' VG SHLD2 - LT 2 - 2.0' LWN SHLD2	135.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 8.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 3.0' VG SHLD2 - LT 2 - 2.0' LWN SHLD2	135.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 8.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 3.0' VG SHLD2 - LT 2 - 2.0' LWN SHLD2	135.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 8.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 3.0' VG SHLD2 - LT 2 - 2.0' LWN SHLD2
ROADWAY	28/FC-5												
COMPOSITION	28/FC-5												
HORIZONTAL	CURVE DATA NOT FIELD VERIFIED												
ALIGNMENT	PC=18.188 PI=18.346 PT=18.534 Δ=18°28'01.00" D=1'00" B=N23°37'46"W B=N05°08'44"W Δ=26°20'38.00" D=1'15" PC=18.804 PI=19.003 PT=19.236												
STRUCTURE DESCRIPTION													
DISTRICT USE													
SIS	CORRIDOR												
FUN CLASS	URBAN PRIN ART EXPR.												
SPEED LIMIT	70MPH												
AC MAN CLS	ACCESS CLASS01												

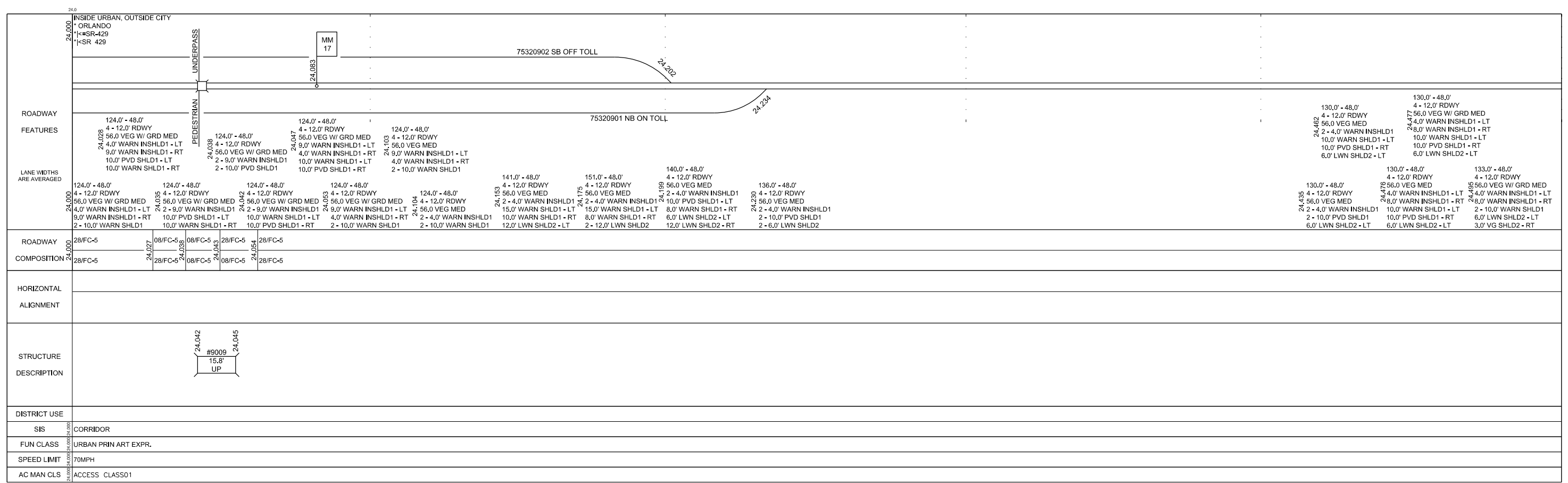
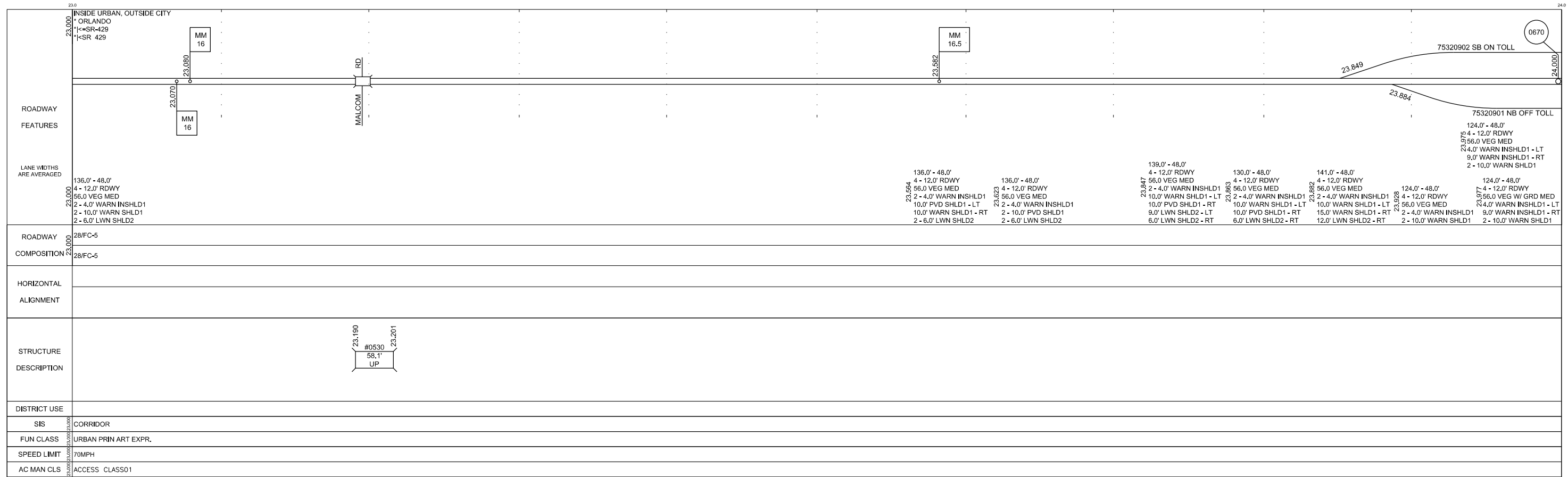
ROADWAY	INSIDE URBAN, OUTSIDE CITY * ORLANDO * SR 429 * SR 429 													
FEATURES	AVALON RD OLD YMCA RD 													
LANE WIDTHS ARE AVERAGED	134.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 2 - 8.0' WARN SHLD1 2 - 3.0' VG SHLD2	134.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' WARN INSHLD1 - LT 8.0' PVD SHLD1 - LT 10.0' WARN SHLD1 - RT 2 - 8.0' WARN SHLD1 2 - 3.0' VG SHLD2	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT	133.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 8.0' PVD INSHLD1 - LT 8.0' WARN INSHLD1 - RT 10.0' PVD SHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - RT
ROADWAY	28/FC-5													
COMPOSITION	28/FC-5													
HORIZONTAL	CURVE DATA NOT FIELD VERIFIED													
ALIGNMENT	PC=19.516 PI=20.212 PT=20.714 Δ=73°16'23.00" D=1'08" B=N31°29'22"W													
STRUCTURE DESCRIPTION	#0522 253.4' BR #0523 242.9' BR #0520 147.8' BR #0521 137.3' BR													
DISTRICT USE														
SIS	CORRIDOR													
FUN CLASS	URBAN PRIN ART EXPR.													
SPEED LIMIT	70MPH													
AC MAN CLS	ACCESS CLASS01													

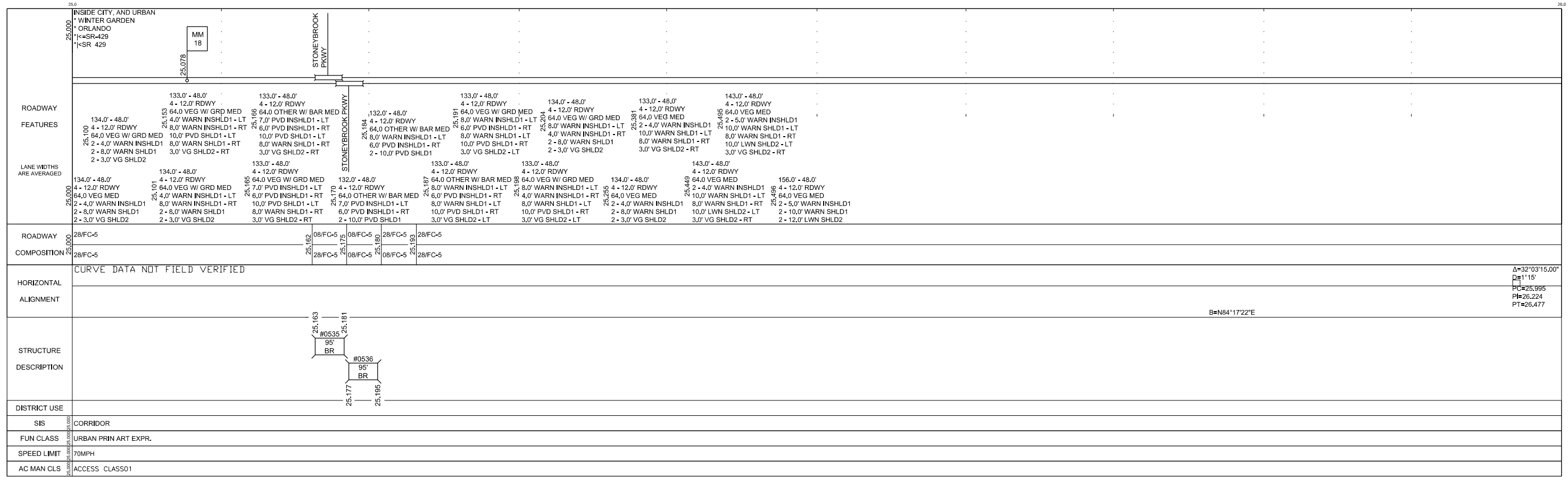
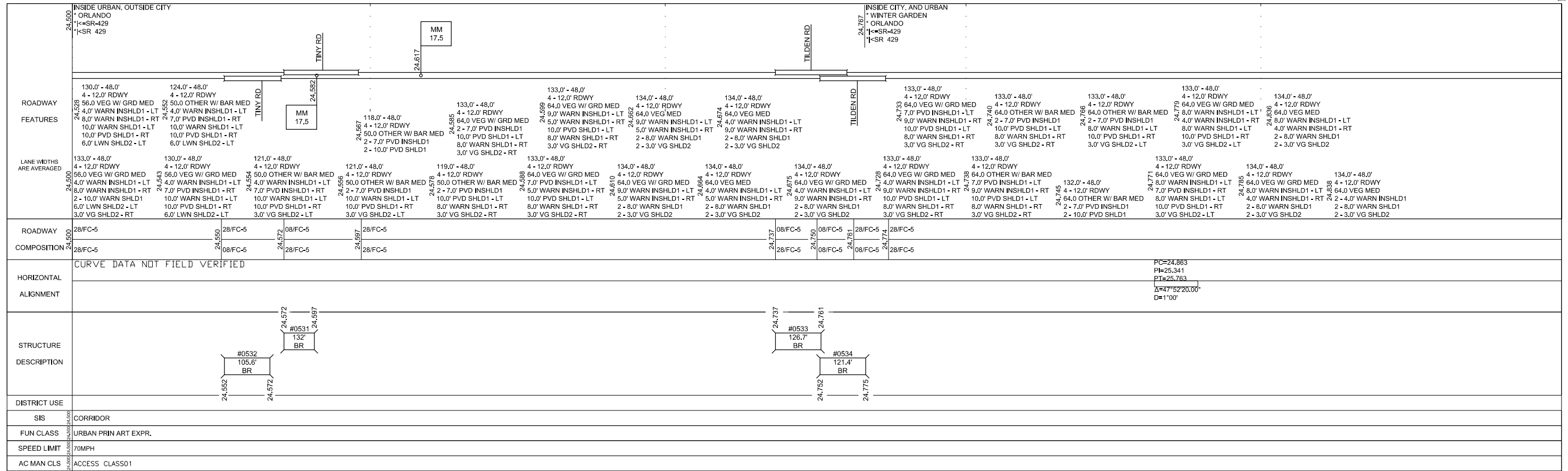


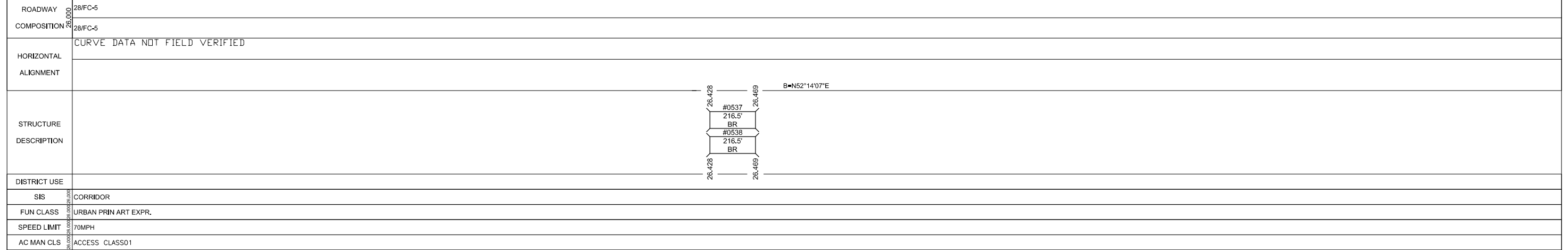
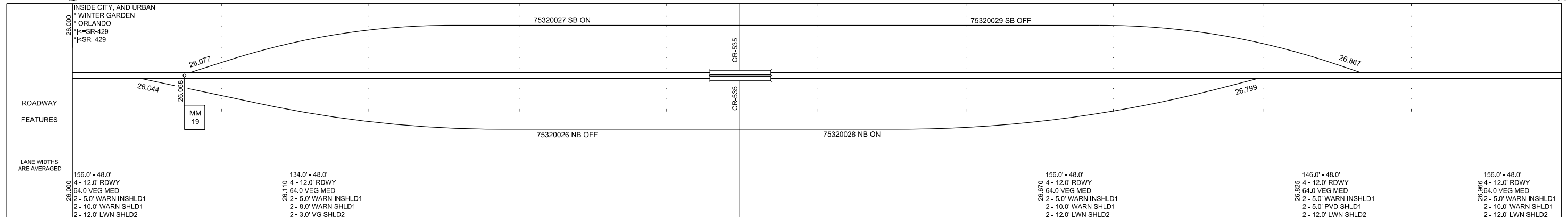
DATE	11/24/2020	SLD REV	09/01/2021
BY	HNTB	SLD REV	

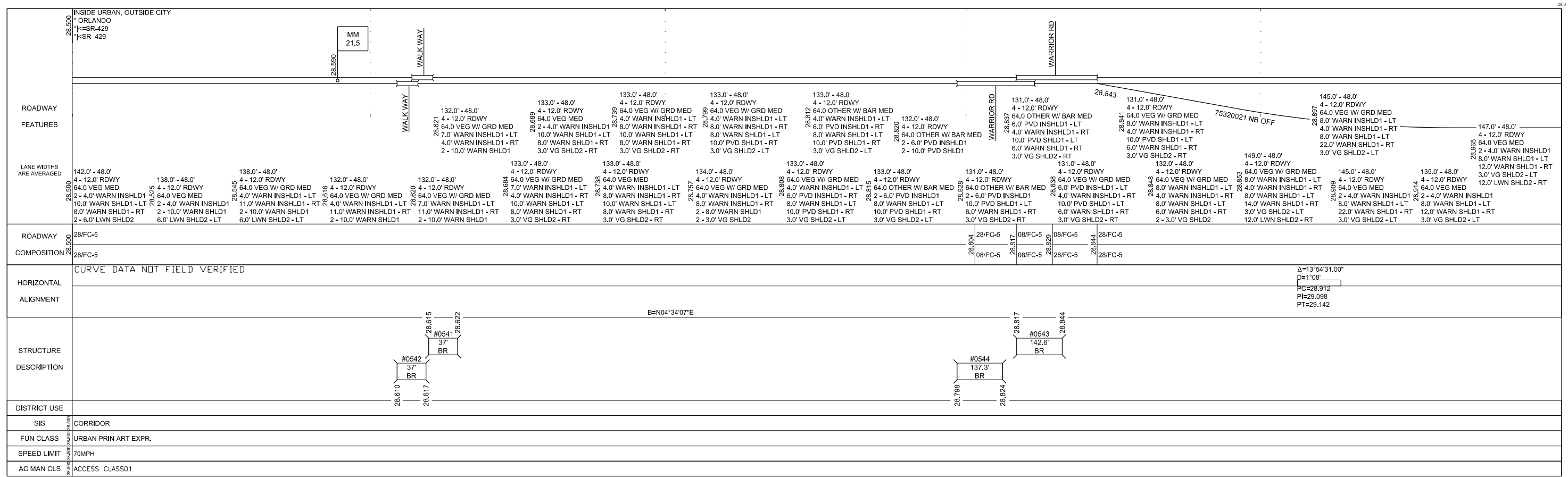
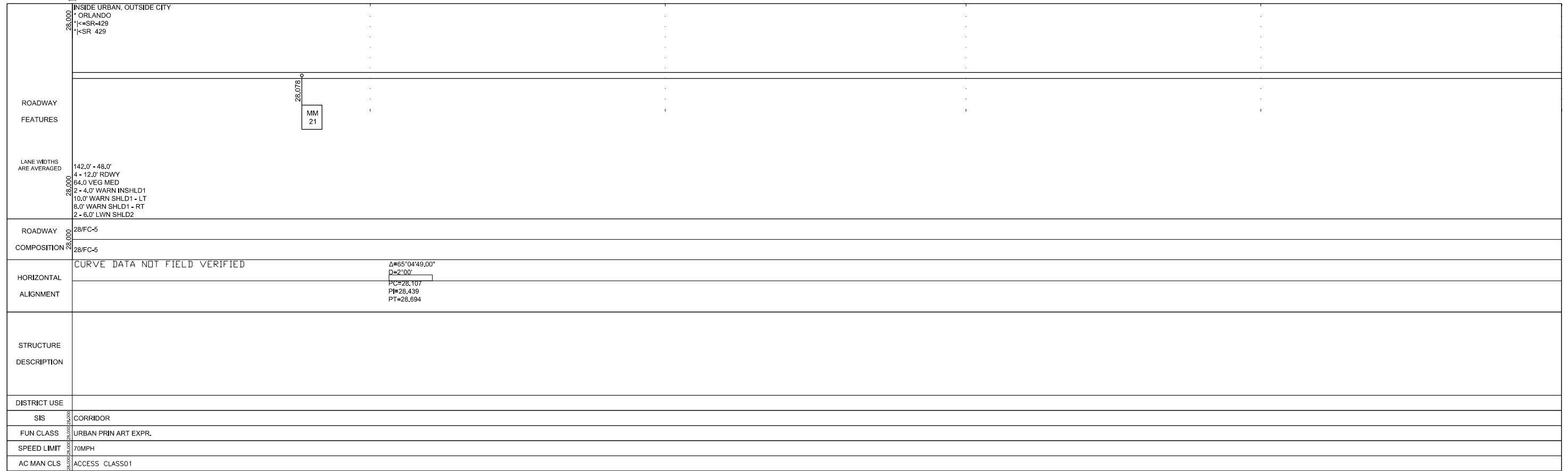
FLORIDA DEPARTMENT OF TRANSPORTATION
STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

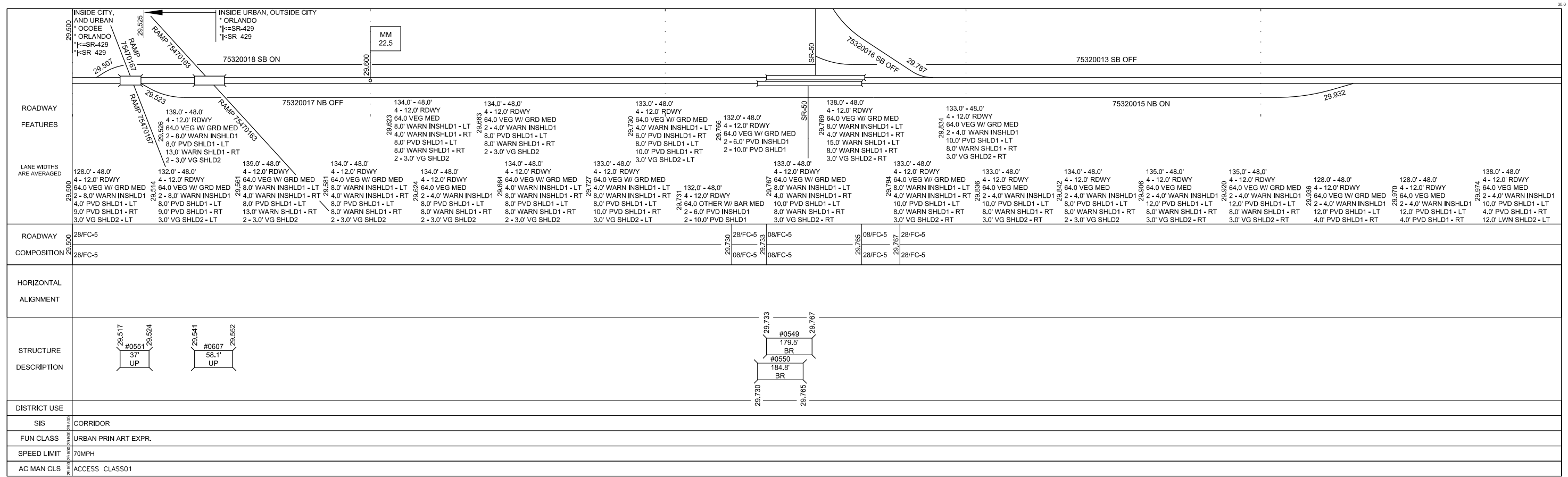
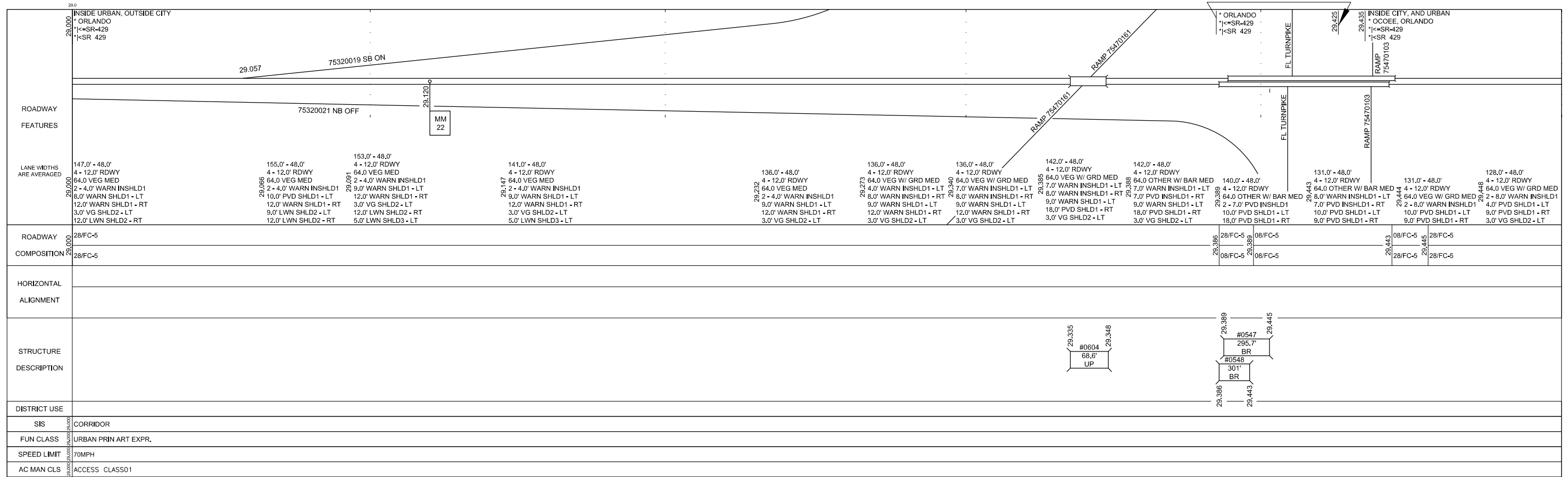
SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO.
12		SR 429	ORANGE	05	75320000	4 OF 14

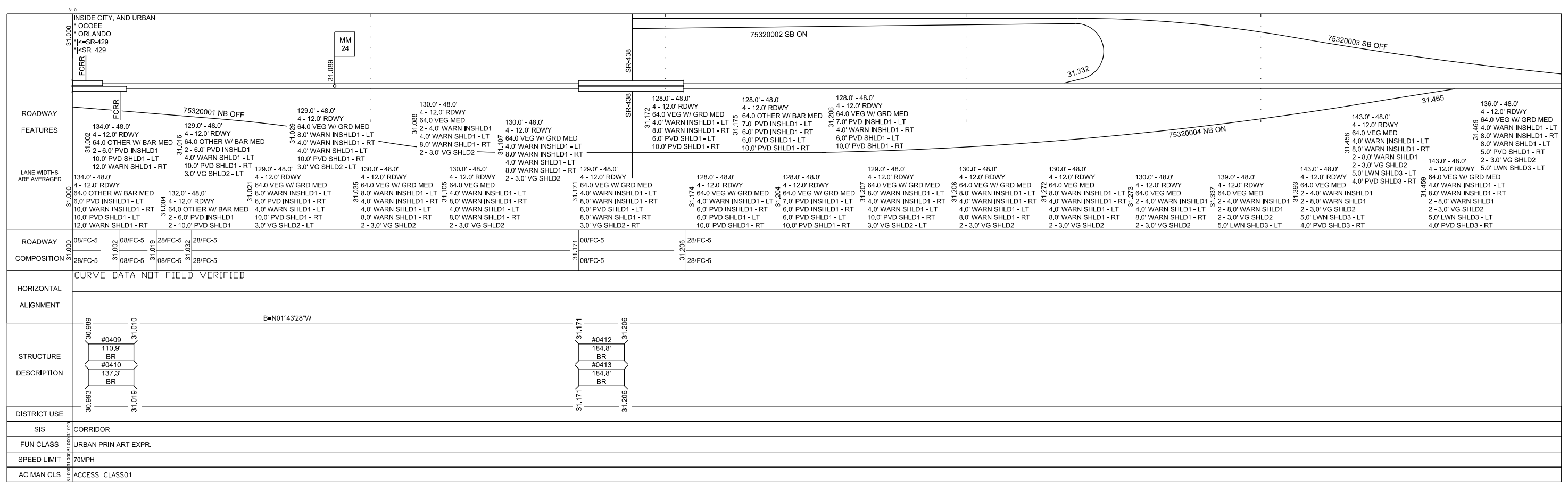
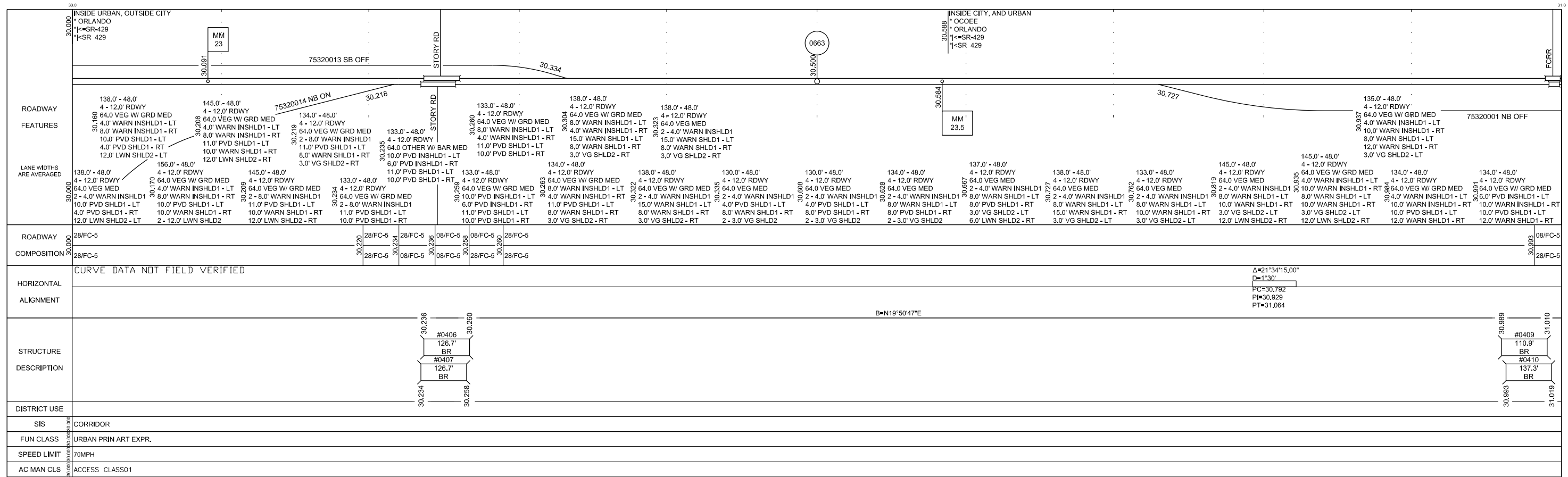












5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE 11/24/2020	09/01/2021				
BY HNTB	HNTB				

FLORIDA DEPARTMENT OF TRANSPORTATION
STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO.
12		SR 429	ORANGE	05	75320000	10 OF 14

ROADWAY	INSIDE URBAN, OUTSIDE CITY * ORLANDO * SR-429 * SR 429										INSIDE CITY, AND URBAN * OCOEE * ORLANDO * SR-429 * SR 429																																																																																																			
FEATURES	PALM DR 75320003 SB OFF 31,529 31,561										MM 24,5																																																																																																			
LANE WIDTHS ARE AVERAGED	136.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 4.0' WARN INSHLD1 - LT 8.0' WARN SHLD1 - RT 5.0' PVD SHLD1 - RT 2 - 3.0' VG SHLD2 5.0' LWN SHLD3 - LT										138.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 4.0' WARN INSHLD1 - LT 8.0' WARN SHLD1 - RT 5.0' PVD SHLD1 - RT 3.0' VG SHLD2 - LT 5.0' LWN SHLD3 - LT										134.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 4.0' WARN INSHLD1 - LT 8.0' PVD INSHLD1 - LT 10.0' PVD SHLD1 - RT 12.0' PVD SHLD1 - LT 10.0' PVD SHLD1 - RT										140.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 6.0' PVD INSHLD1 - LT 4.0' WARN INSHLD1 - RT 15.0' WARN SHLD1 - LT 10.0' PVD SHLD1 - RT 3.0' VG SHLD2 - LT										141.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 6.0' PVD INSHLD1 - LT 4.0' WARN INSHLD1 - RT 15.0' WARN SHLD1 - LT 8.0' WARN SHLD1 - RT 2 - 3.0' VG SHLD2										132.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 4.0' WARN INSHLD1 - LT 8.0' WARN INSHLD1 - RT 6.0' PVD SHLD1 - LT 2 - 3.0' VG SHLD2										132.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 2 - 4.0' WARN INSHLD1 - LT 8.0' WARN SHLD1 - RT 3.0' VG SHLD2 - LT 2 - 3.0' VG SHLD2										147.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 2 - 4.0' WARN INSHLD1 8.0' WARN SHLD1 - LT 12.0' WARN SHLD1 - RT 12.0' LWN SHLD2 - LT 12.0' LWN SHLD2 - RT										158.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 2 - 4.0' WARN INSHLD1 8.0' WARN SHLD1 - LT 10.0' WARN SHLD1 - LT 10.0' WARN SHLD1 - RT 2 - 12.0' LWN SHLD2																													
ROADWAY	28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5																													
COMPOSITION	28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5																			
HORIZONTAL ALIGNMENT																																																																																																														
STRUCTURE DESCRIPTION	#0414 105.6' BR										#0415 89.8' BR																																																																																																			
SIS	CORRIDOR																																																																																																													
FUN CLASS	URBAN PRIN ART EXPR.																																																																																																													
SPEED LIMIT	70MPH																																																																																																													
AC MAN CLS	ACCESS CLASS01																																																																																																													

ROADWAY	INSIDE URBAN, OUTSIDE CITY * ORLANDO * SR-429 * SR 429										MM 25																																																																																																			
FEATURES																																																																																																														
LANE WIDTHS ARE AVERAGED	158.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 2 - 4.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 12.0' WARN SHLD1 - RT 2 - 12.0' LWN SHLD2										146.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 2 - 4.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 12.0' WARN SHLD1 - RT 12.0' LWN SHLD2 - LT										145.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 2 - 4.0' WARN INSHLD1 10.0' WARN SHLD1 - LT 8.0' WARN SHLD1 - RT 12.0' LWN SHLD2 - LT 3.0' VG SHLD2 - RT										156.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG MED 2 - 4.0' WARN INSHLD1 2 - 10.0' WARN SHLD1 2 - 12.0' LWN SHLD2										145.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 4.0' WARN INSHLD1 - LT 8.0' WARN SHLD1 - RT 10.0' WARN SHLD1 - LT 12.0' LWN SHLD2 - LT 3.0' VG SHLD2 - RT										145.0' - 48.0' 4 - 12.0' RDWY 64.0 VEG W/ GRD MED 4.0' WARN INSHLD1 - LT 8.0' WARN SHLD1 - RT 10.0' WARN SHLD1 - LT 12.0' LWN SHLD2 - LT 3.0' VG SHLD2 - RT																																																											
ROADWAY	28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5																													
COMPOSITION	28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5										28/FC-5																													
HORIZONTAL ALIGNMENT	CURVE DATA NOT FIELD VERIFIED																																																																																																													
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AC MAN CLS	ACCESS CLASS01																																																																																																													

DATE	11/24/2020	SLD REV	09/01/2021
BY	HNTB	HNTB	

FLORIDA DEPARTMENT OF TRANSPORTATION
STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

SECTION STATUS	12	INT. or US ROUTE NO.		STATE ROAD NO.	SR 429	COUNTY	ORANGE	DISTRICT	05	ROADWAY ID	75320000	SHEET NO.	11 OF 14
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