

# **DRAFT 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



Prepared By:  
RS&H, Inc.  
1715 N. Westshore Blvd., Suite 600  
Tampa, FL 33607

**November 2022**

## DRAFT Location Hydraulics Report

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

Florida's Turnpike Enterprise

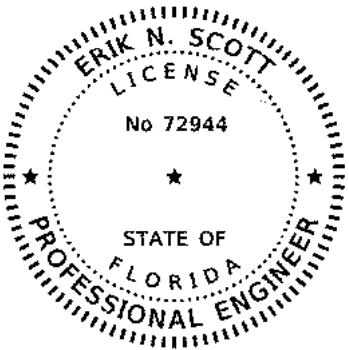
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This DRAFT Location Hydraulic Report is based solely upon the information made available to or gathered by RS&H. RS&H does not assume responsibility for conditions, which did not come to knowledge, or conditions not recognized as unacceptable at the 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



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.  
1715 N. Westshore Blvd., Suite 600  
Tampa, Florida 33607  
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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- Appendix F – Floodplain Permit Data
- Appendix G – Correspondence, Meeting Minutes, and Excerpts from Previous Permits and Studies
- Appendix H – Straight Line Diagram

## 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

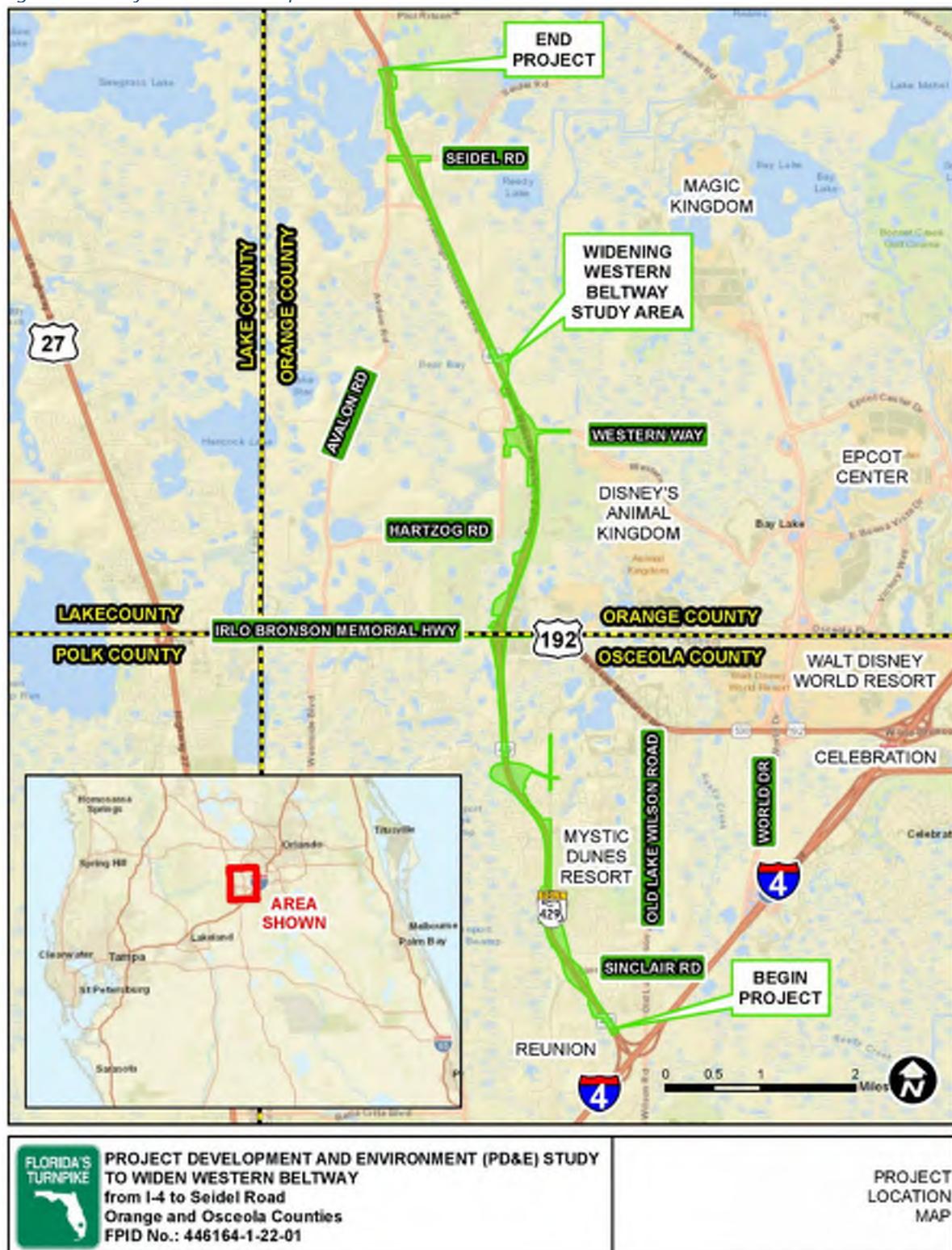
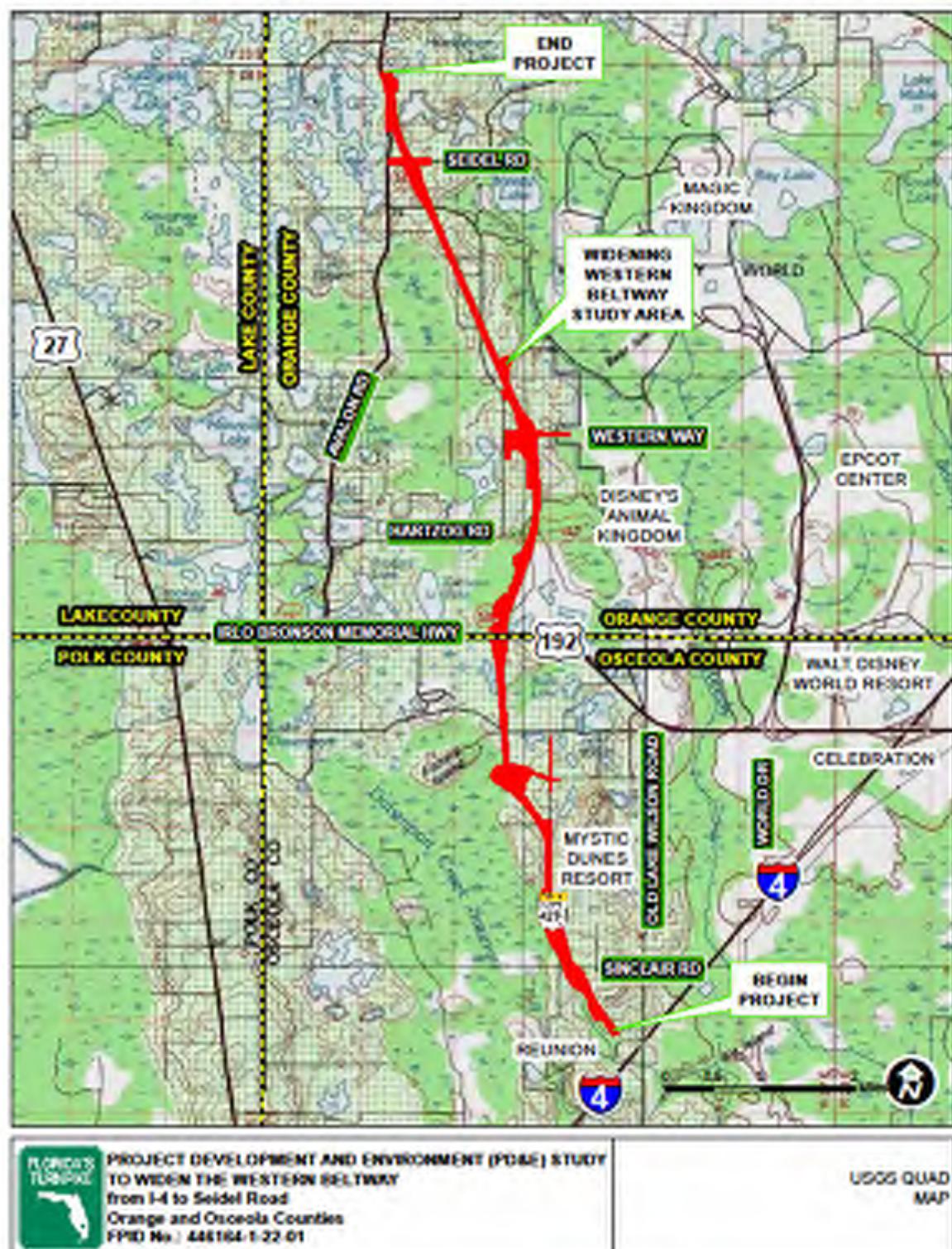


Figure 2-2: USGS Quad Map



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.

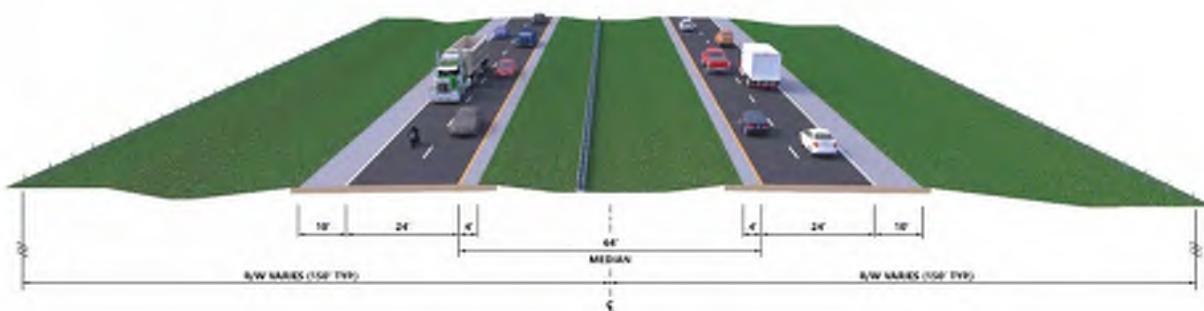
The datum used for this study is North American Vertical Datum of 1988 (NAVD-88). The datum shift from NGVD-29 is (-)0.87-ft, with NAVD-88 being the lower elevation of the two.

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

### 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**.

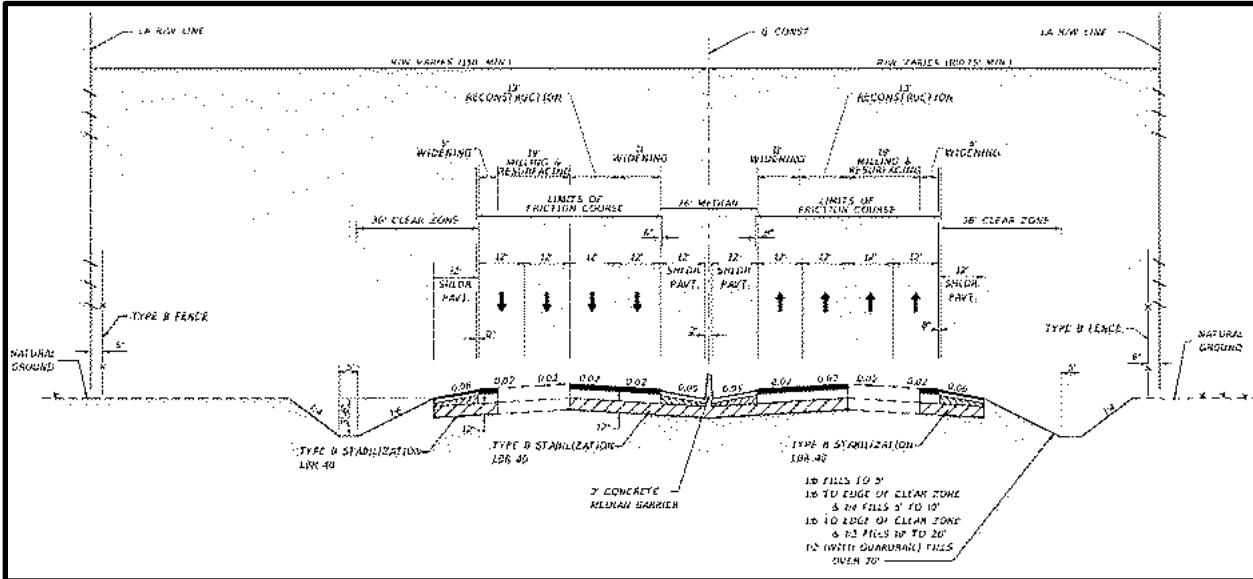
*Table 3-6: Existing Floodplain Compensation Sites*

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	301	None	Extension as part of BTU
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

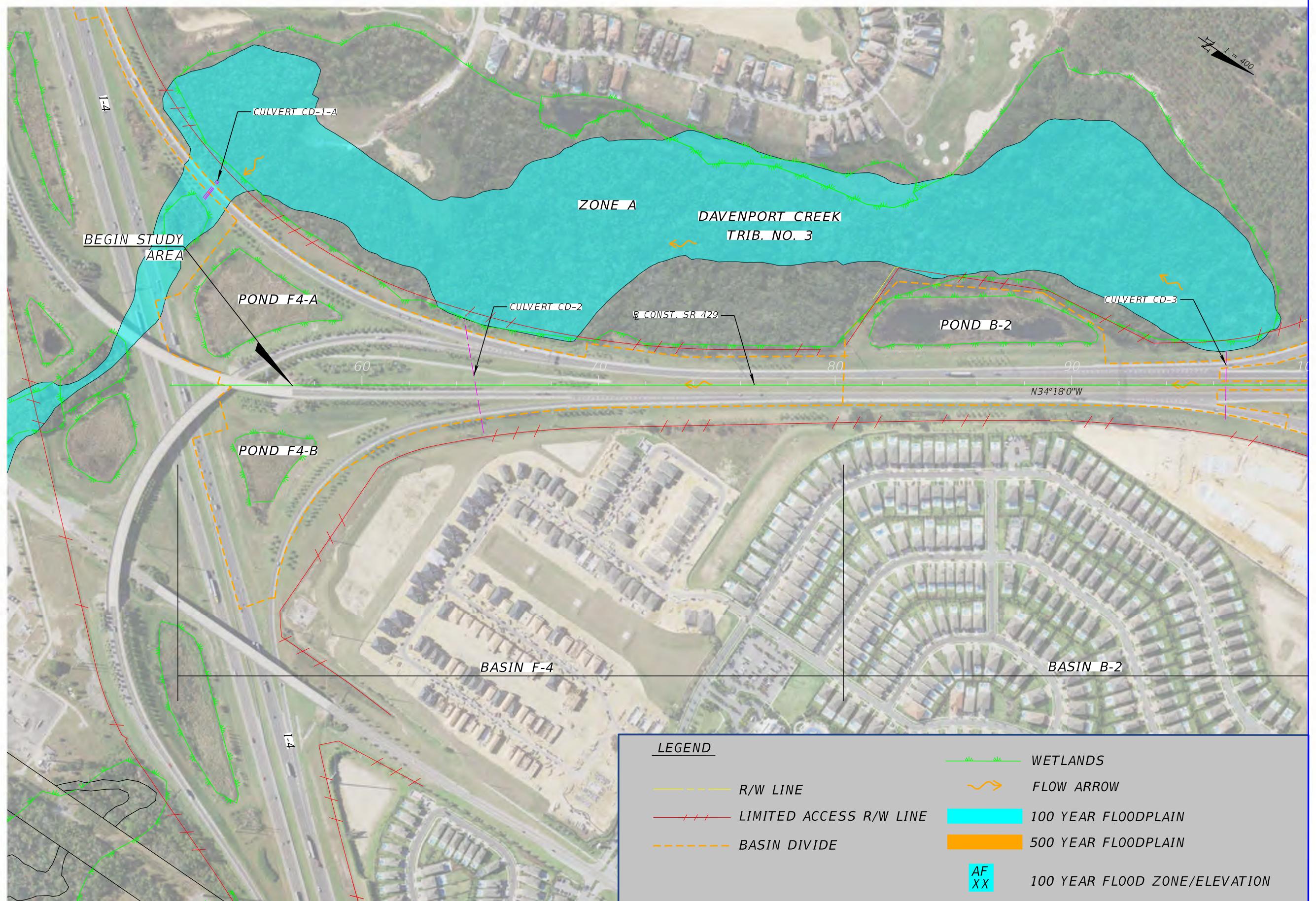
Flood Insurance Studies for Osceola and Orange NRCS Web Soil Survey

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

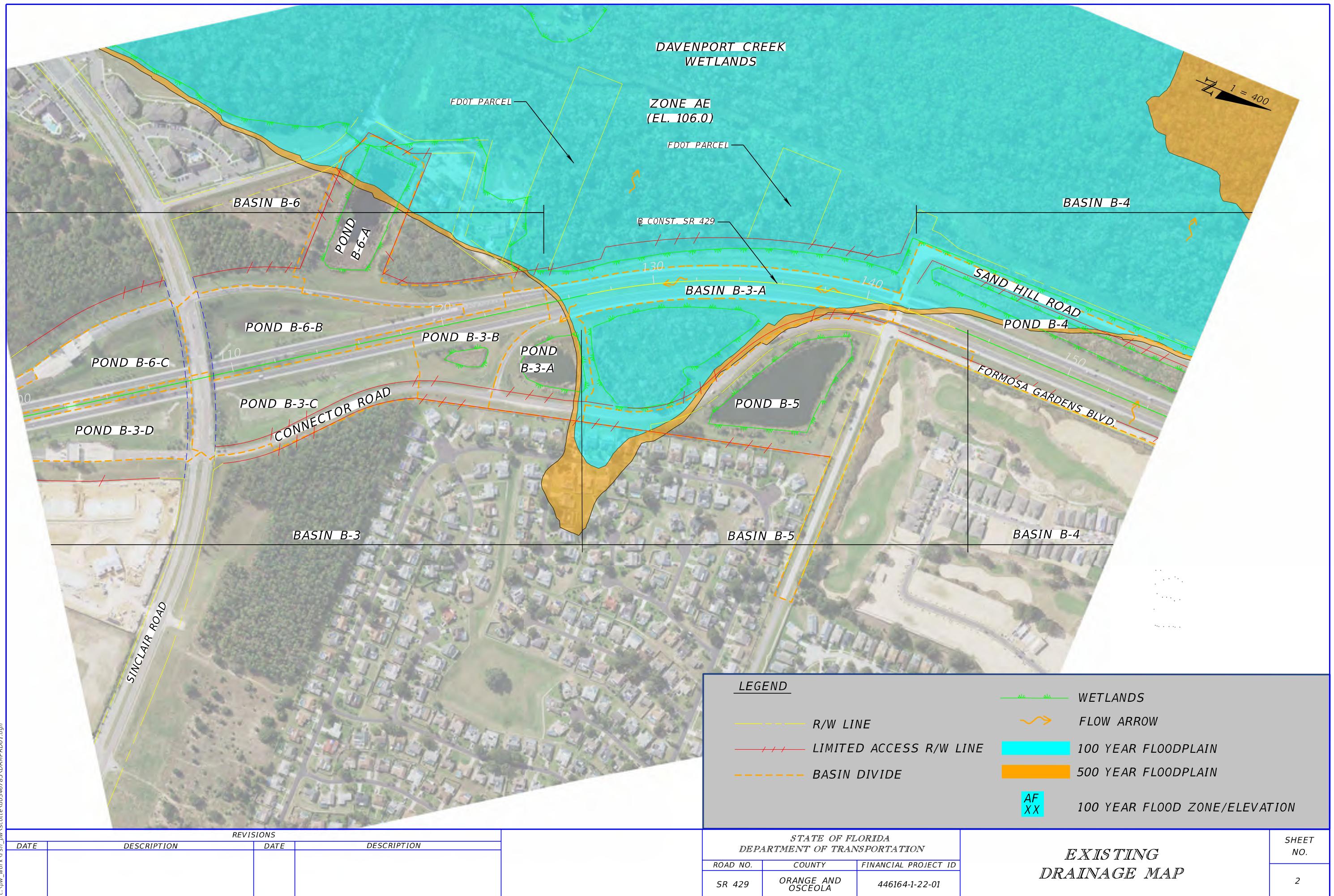
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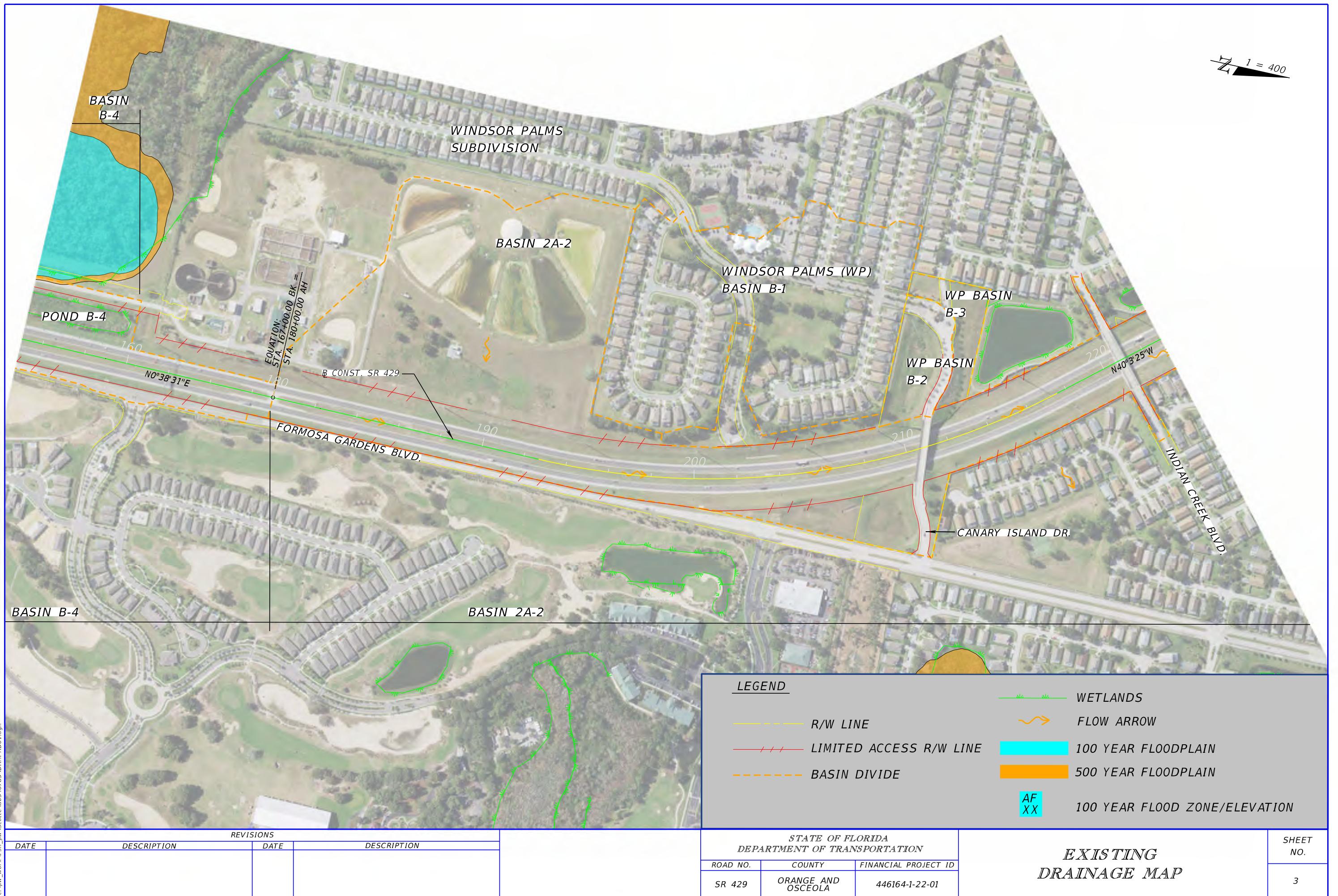
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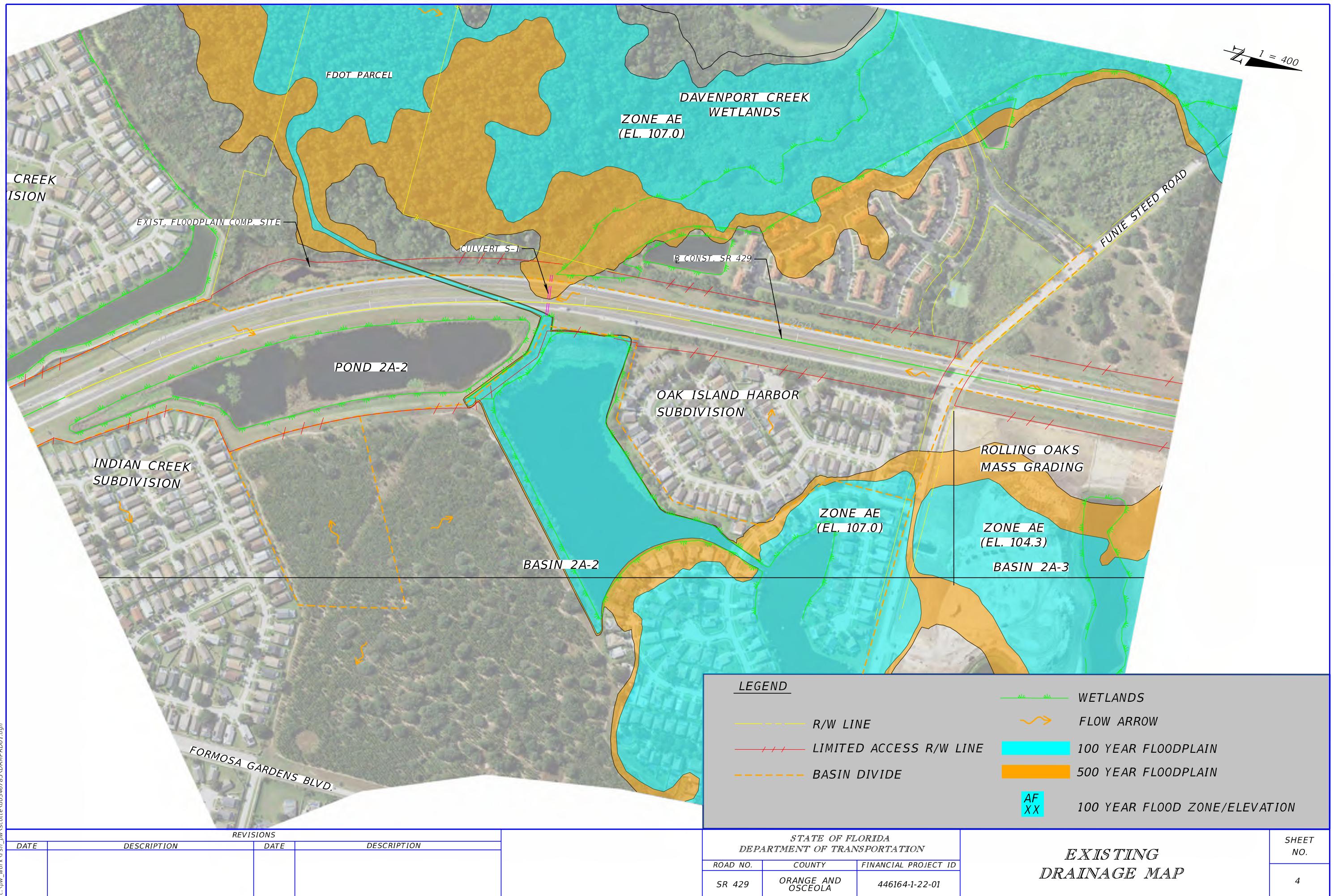
# APPENDIX A – DRAINAGE MAPS

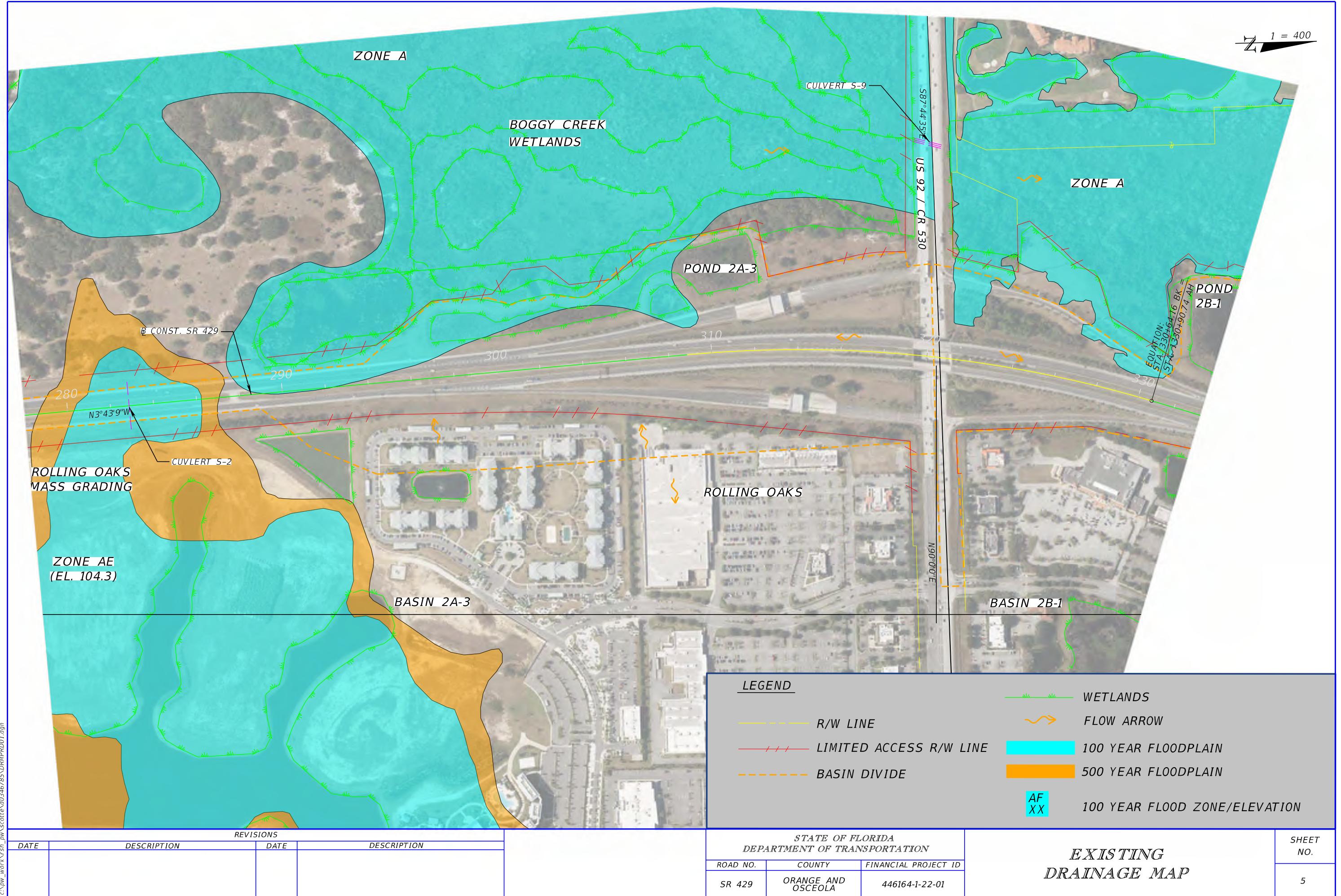


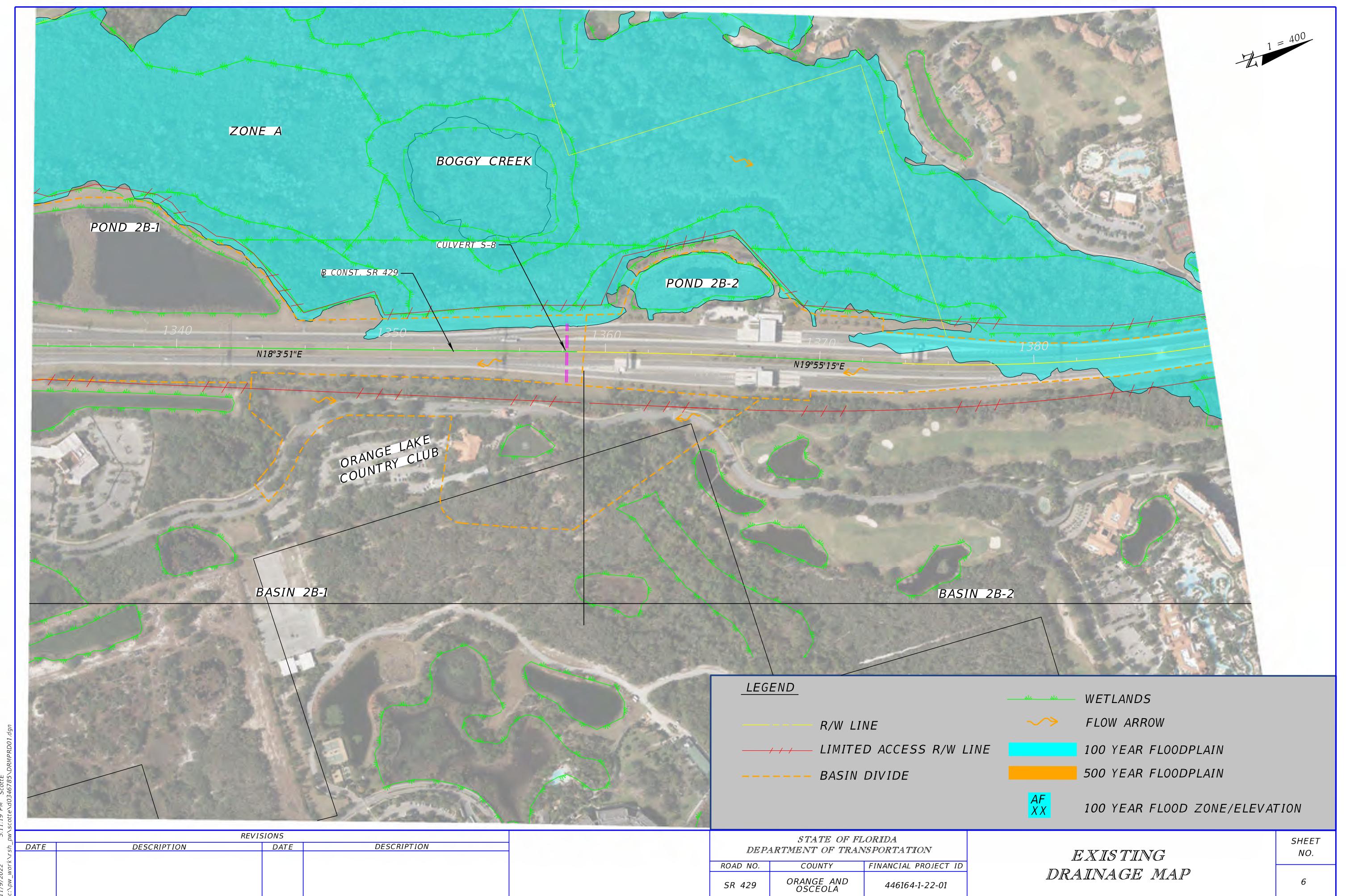
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DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
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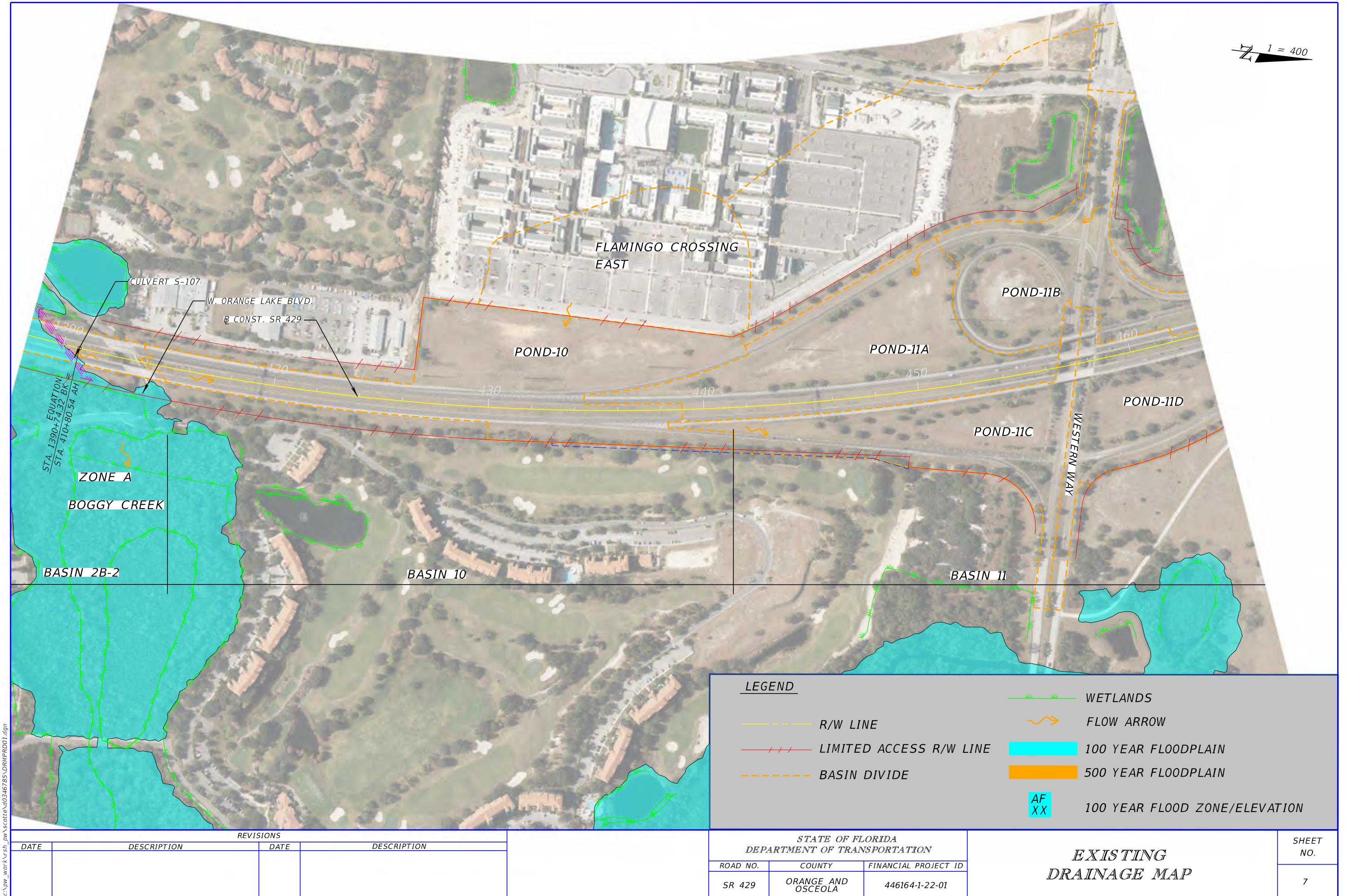


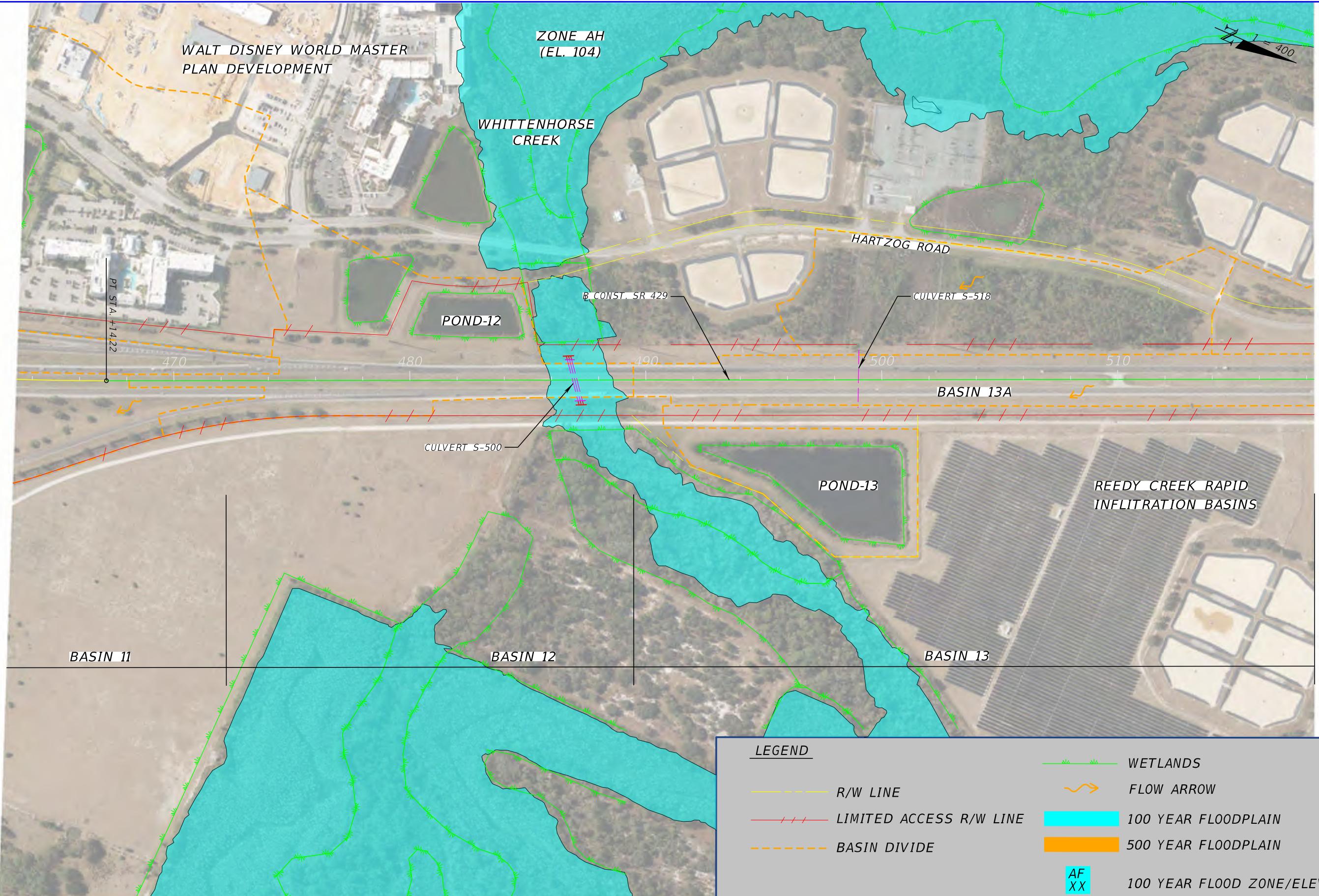












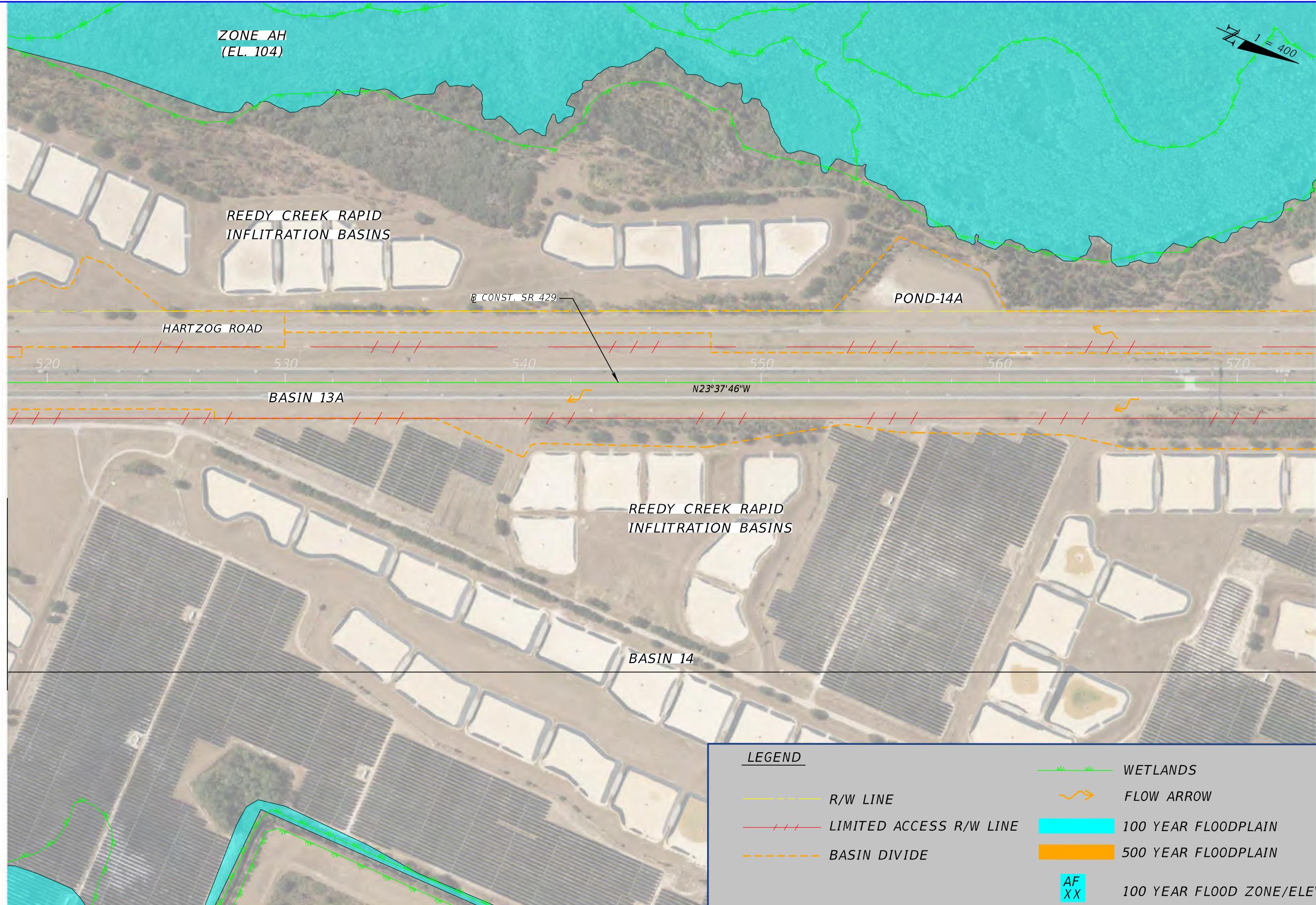
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION



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



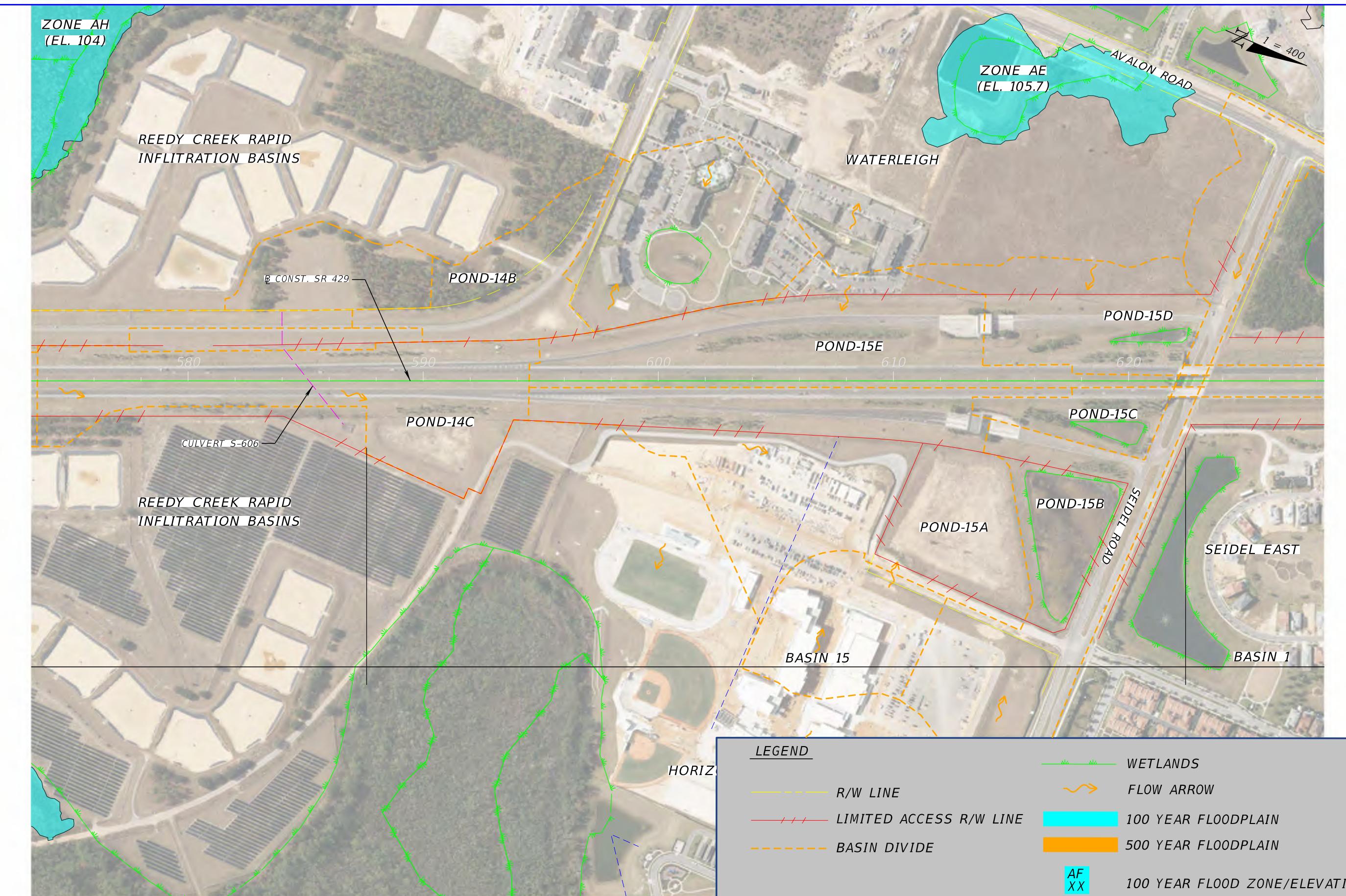
#### LEGEND

WETLANDS	— (green line)
R/W LINE	— (yellow dashed line)
LIMITED ACCESS R/W LINE	— (red dashed line)
BASIN DIVIDE	— (orange dashed line)
100 YEAR FLOODPLAIN	— (cyan shaded area)
500 YEAR FLOODPLAIN	— (orange shaded area)
100 YEAR FLOOD ZONE/ELEVATION	AF XX

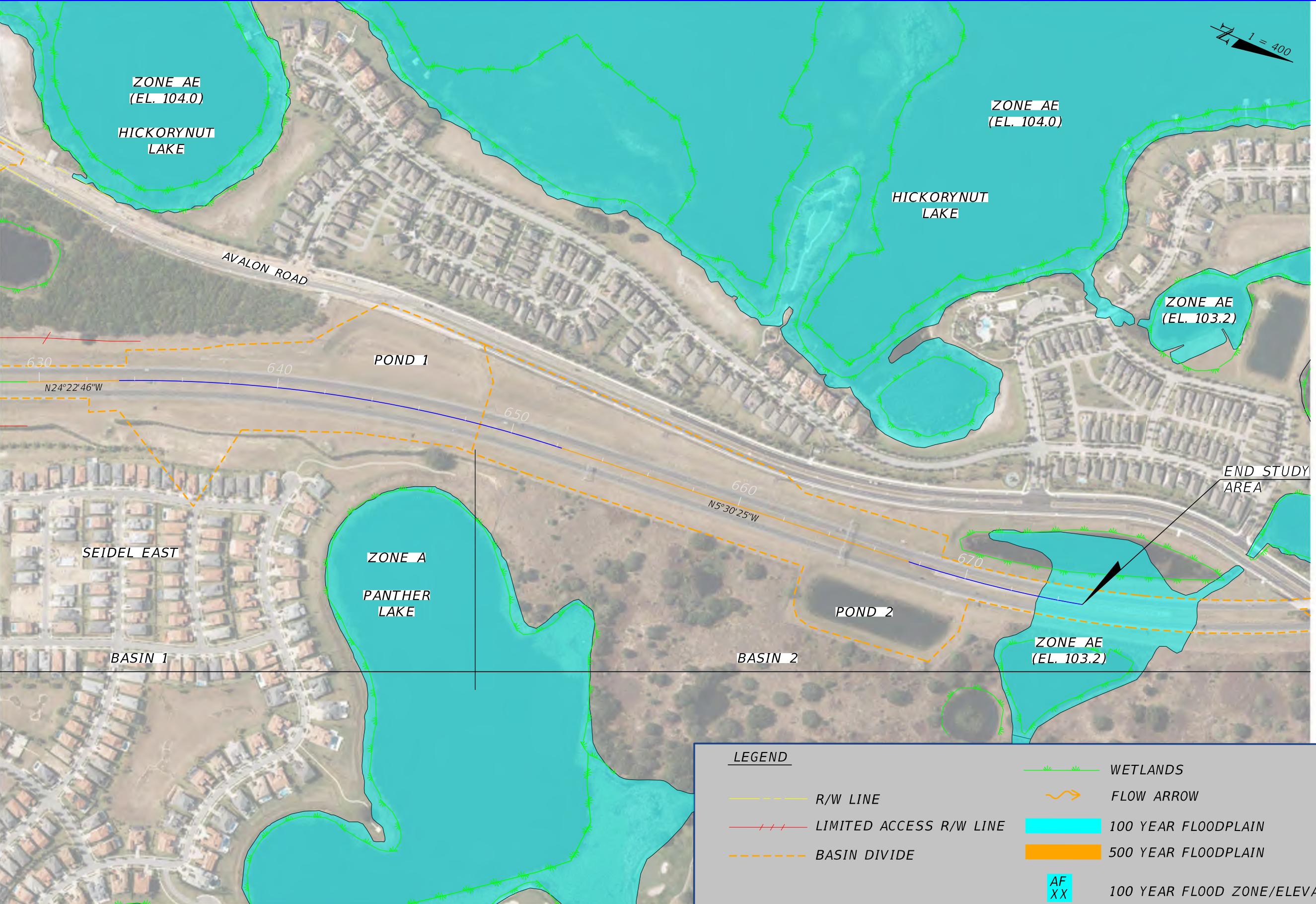
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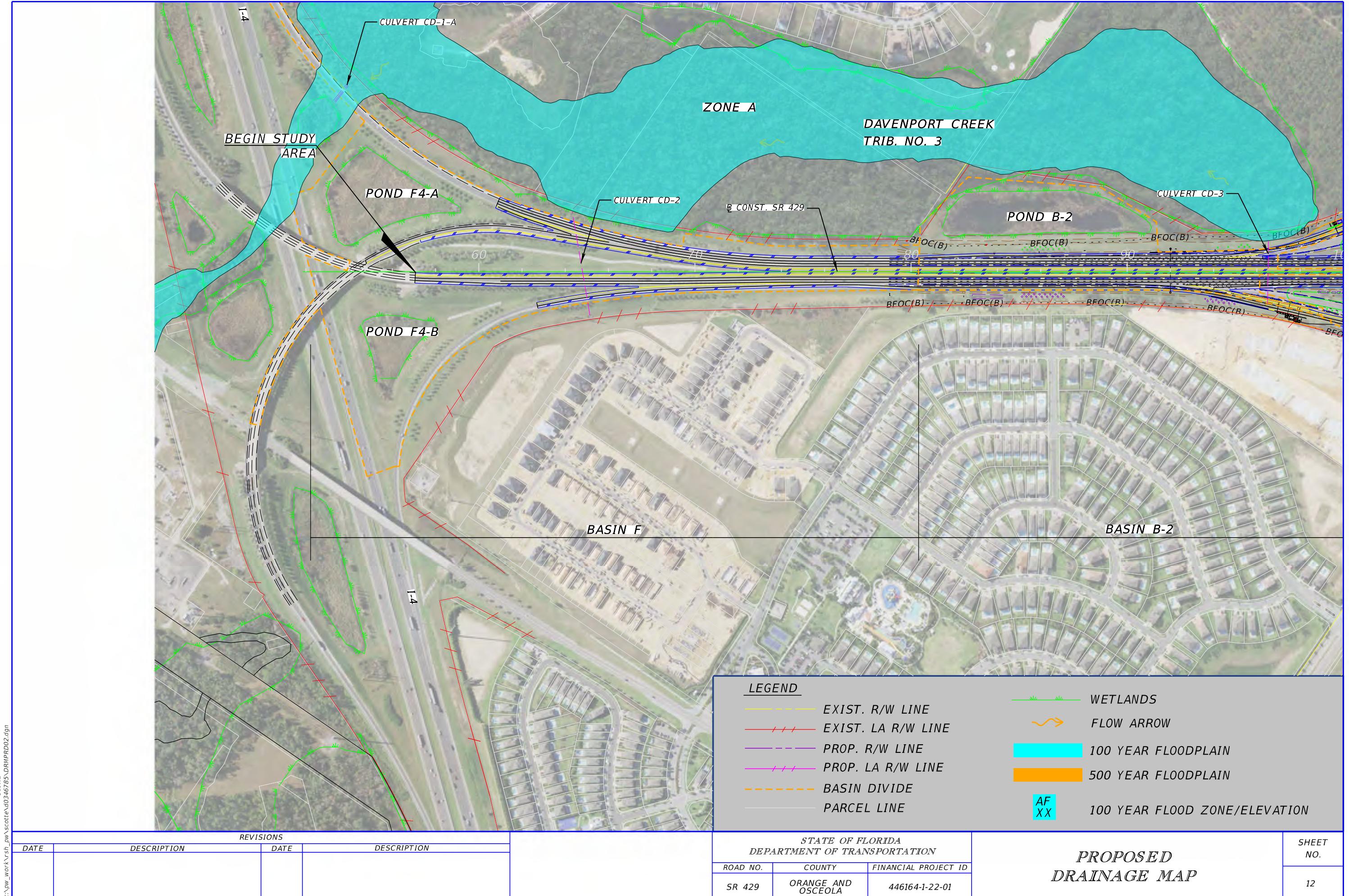
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				ROAD NO. COUNTY FINANCIAL PROJECT ID	SR 429 ORANGE AND OSCEOLA 446164-1-22-01	

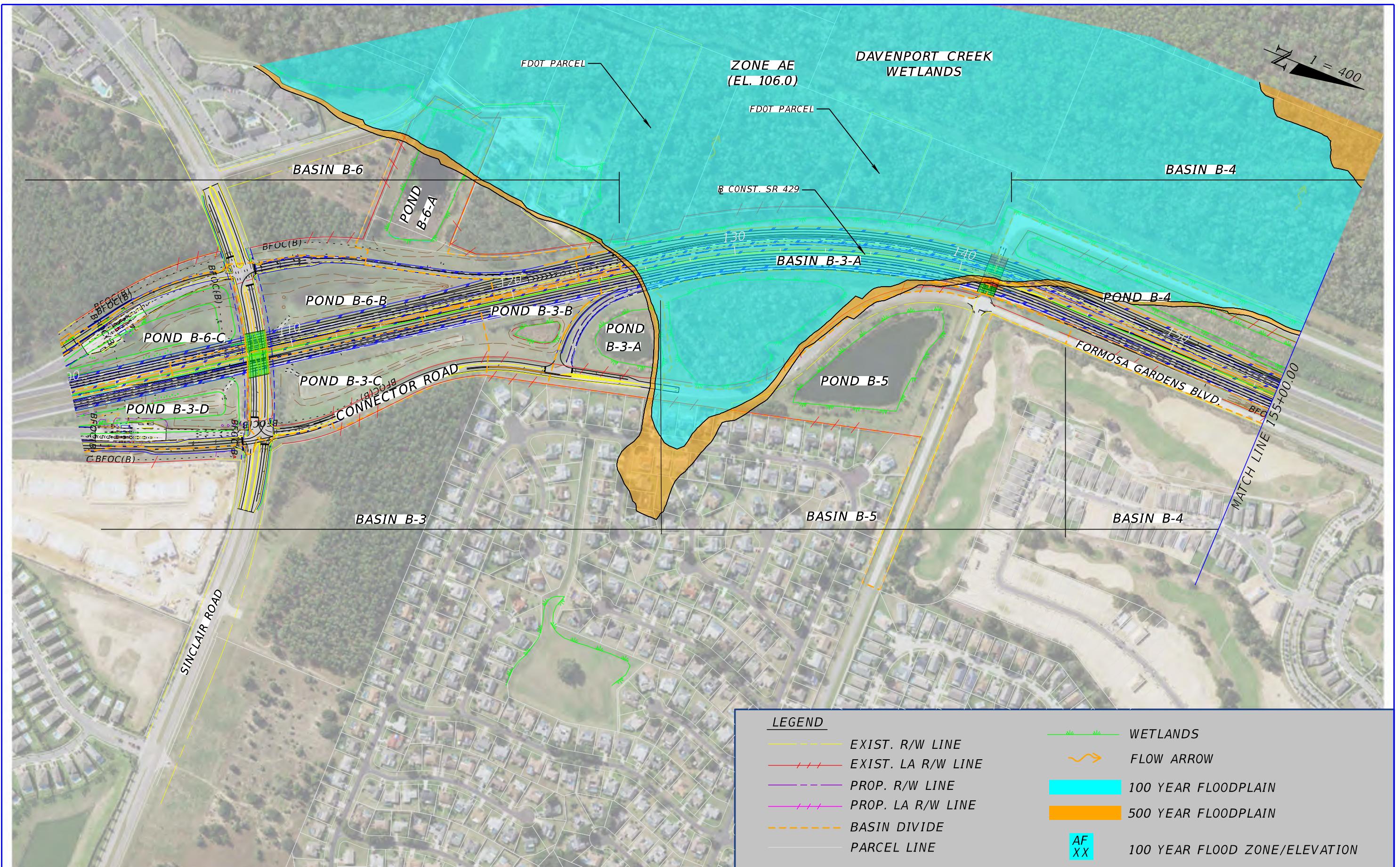


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					SR 429	ORANGE AND OSCEOLA	446164-1-22-01		



REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID	EXISTING DRAINAGE MAP	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION						
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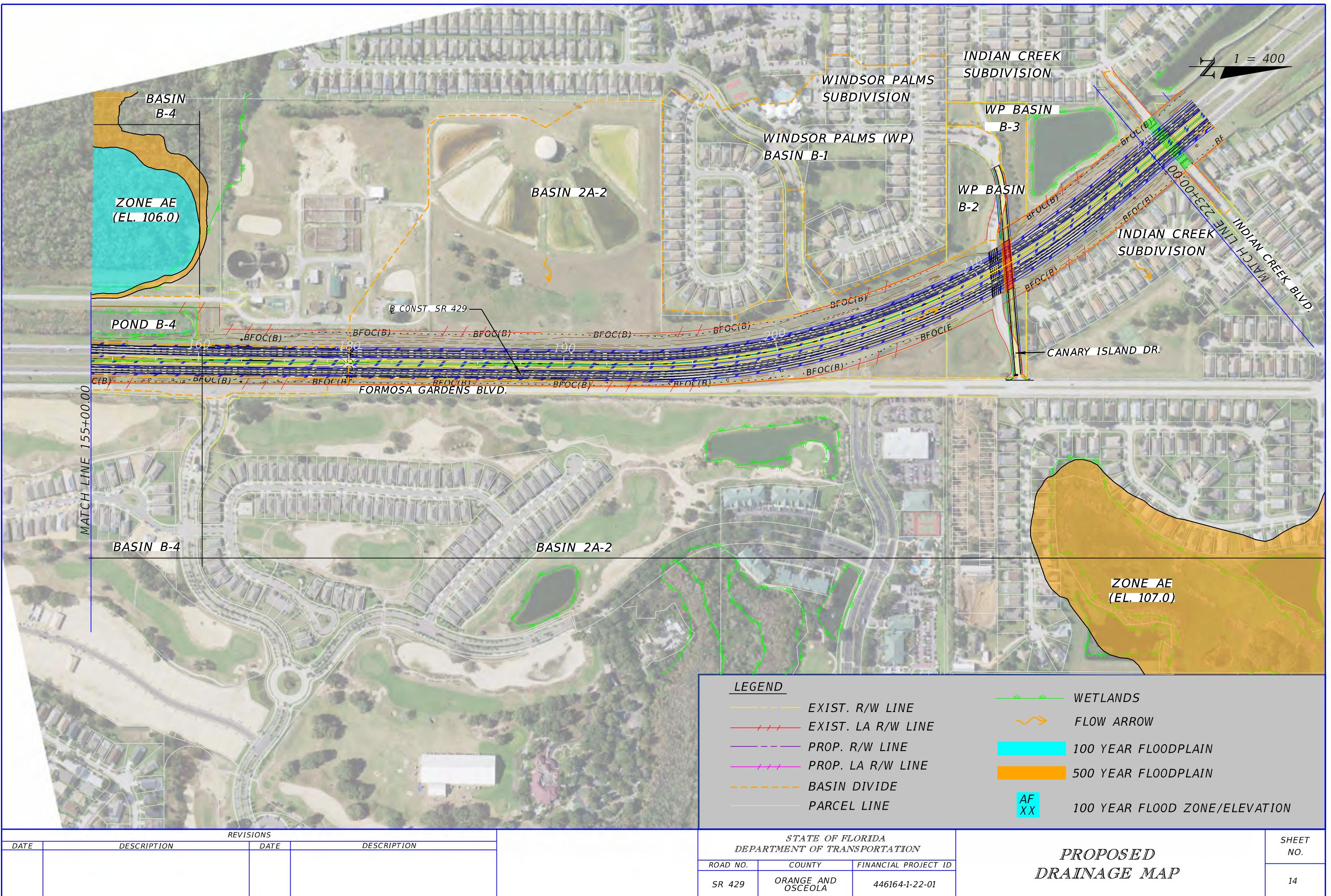


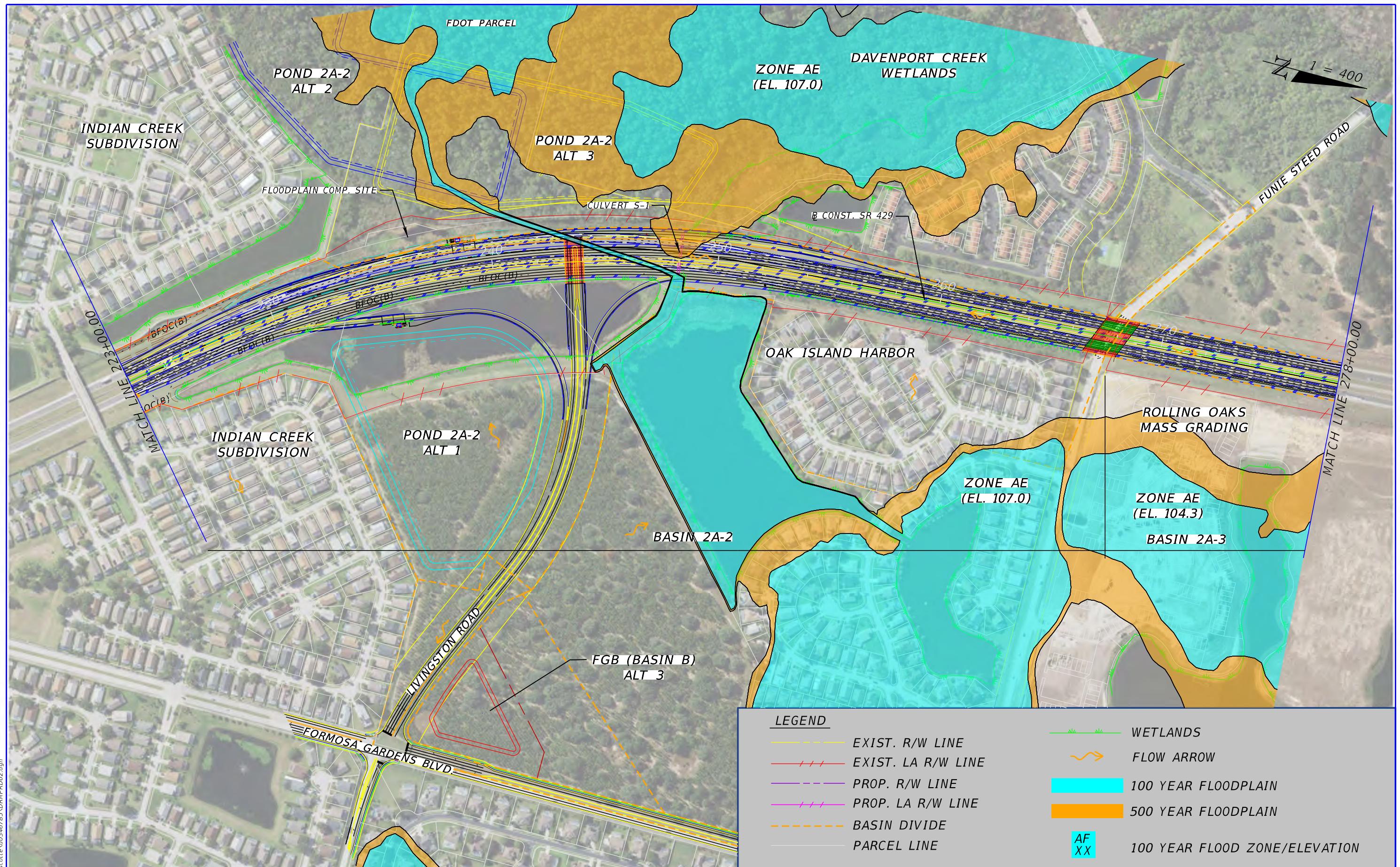
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

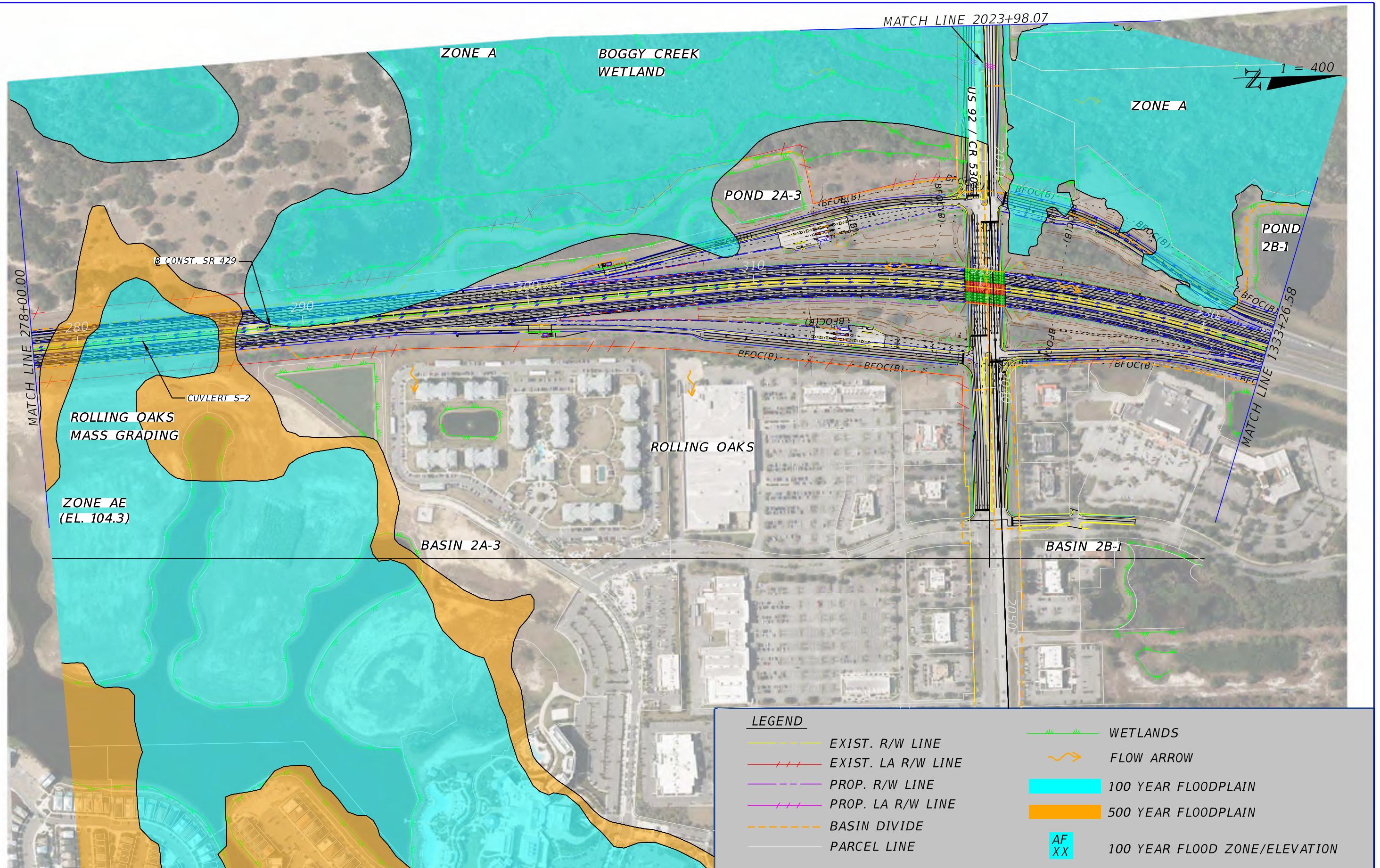
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DRAINAGE MAP**

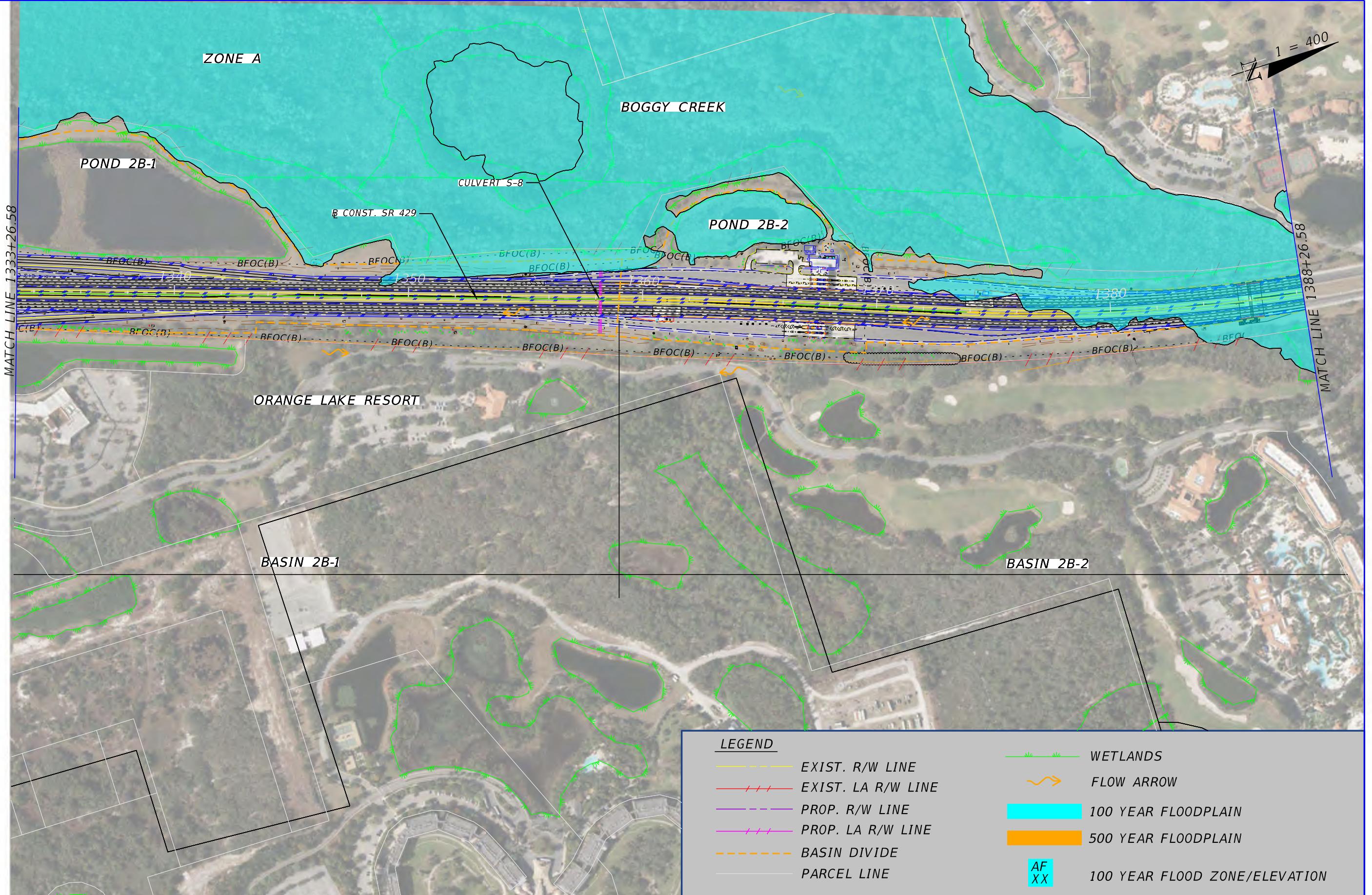
SHEET  
NO.  
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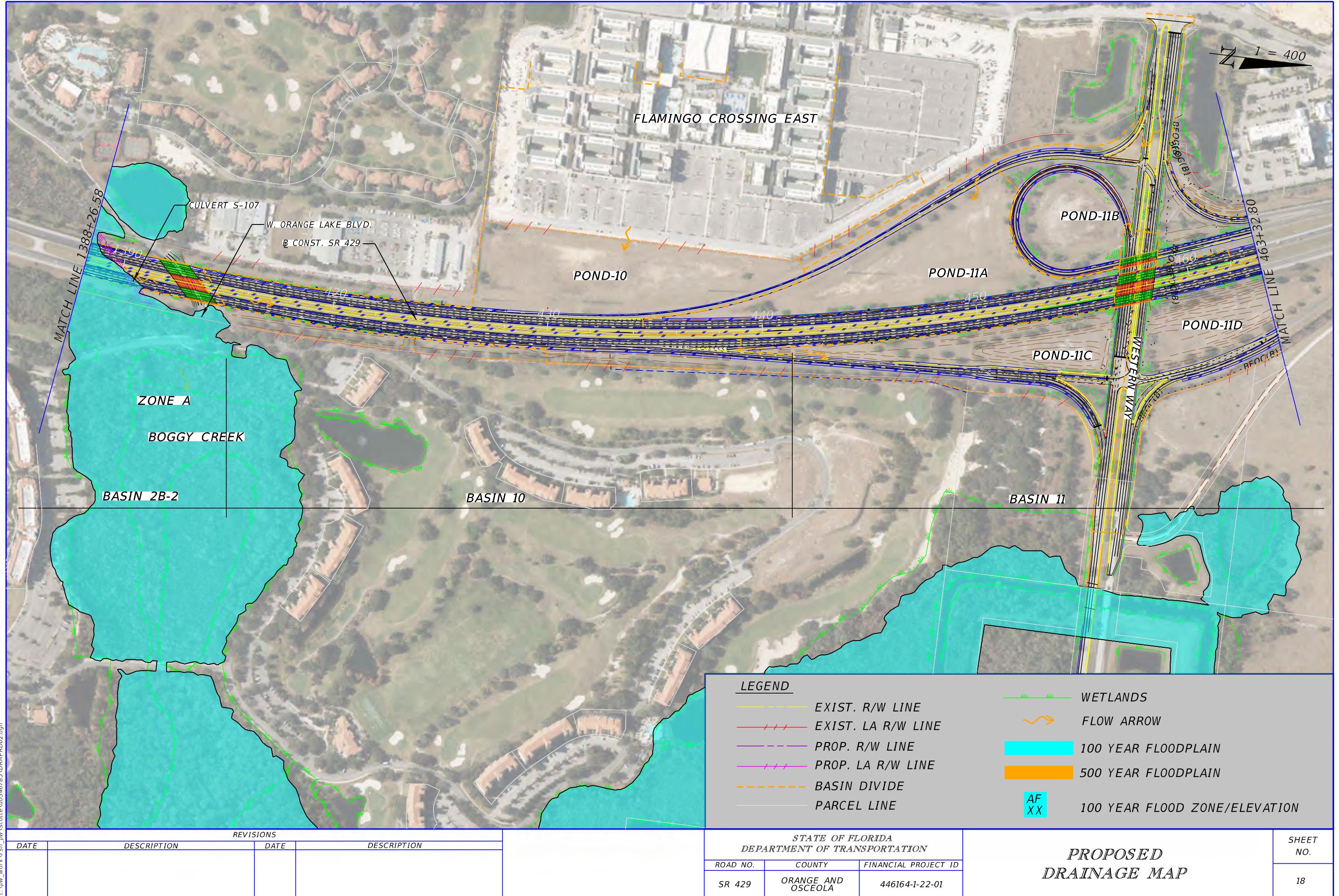


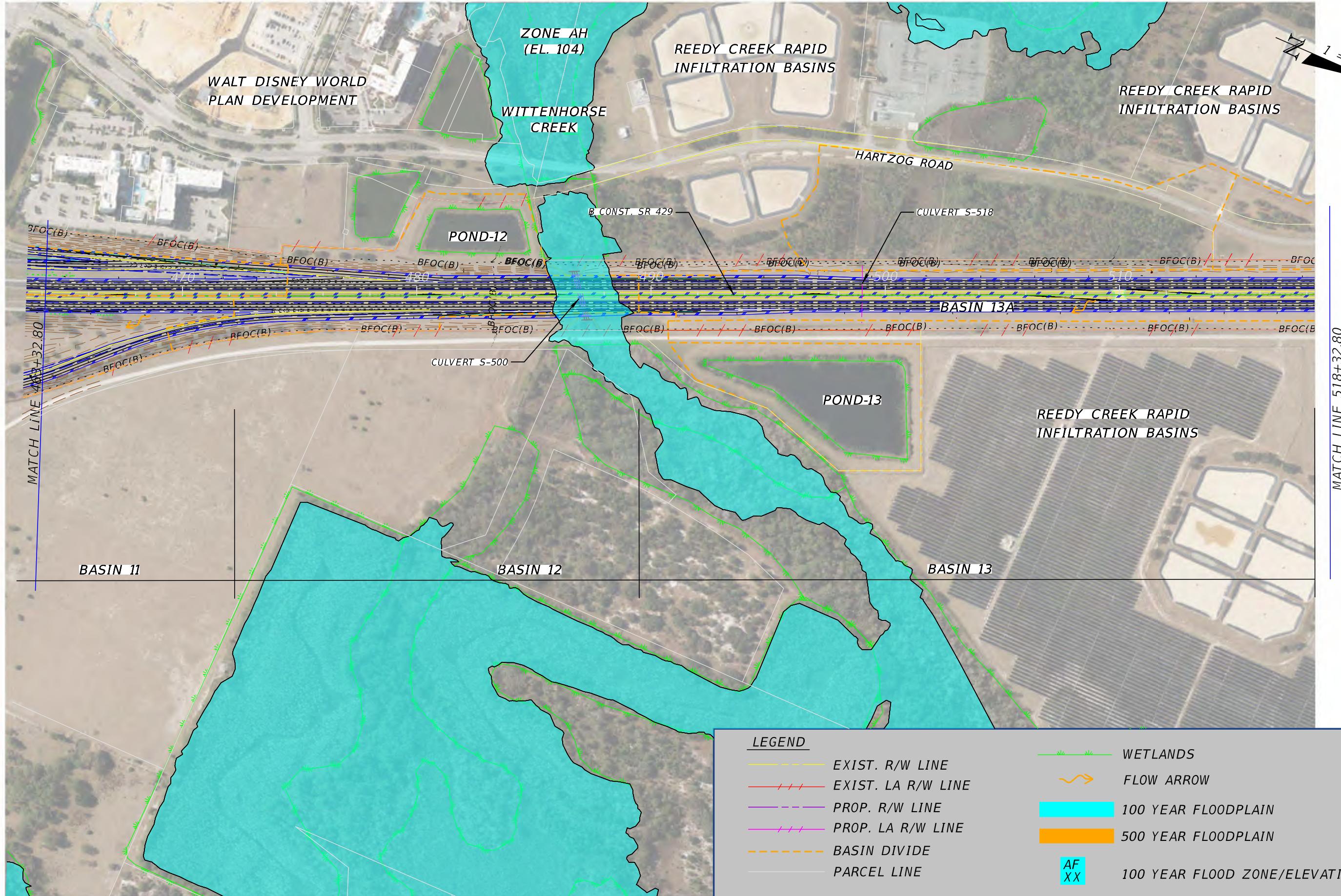


REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	PROPOSED DRAINAGE MAP	SHEET NO.
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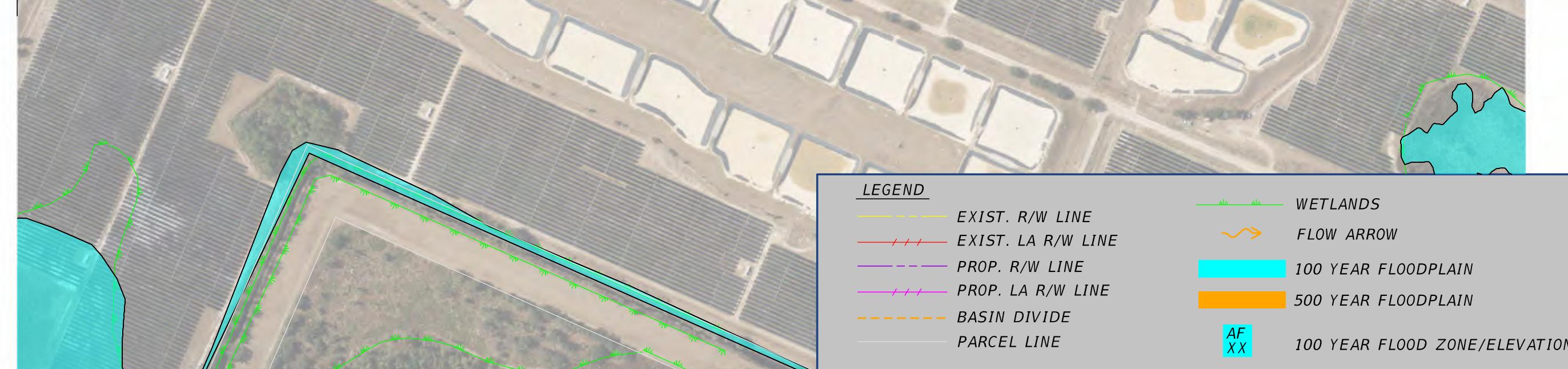
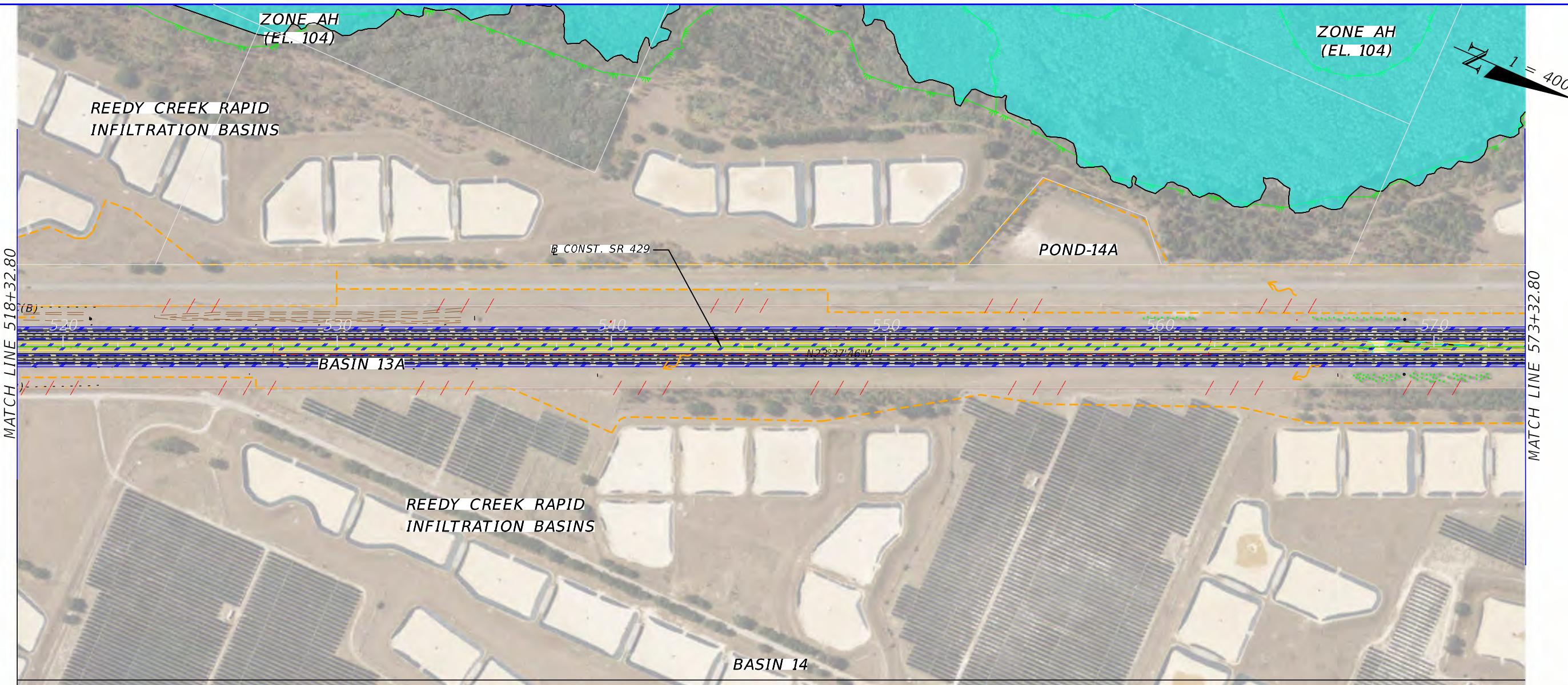


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DATE	DESCRIPTION	DATE	DESCRIPTION

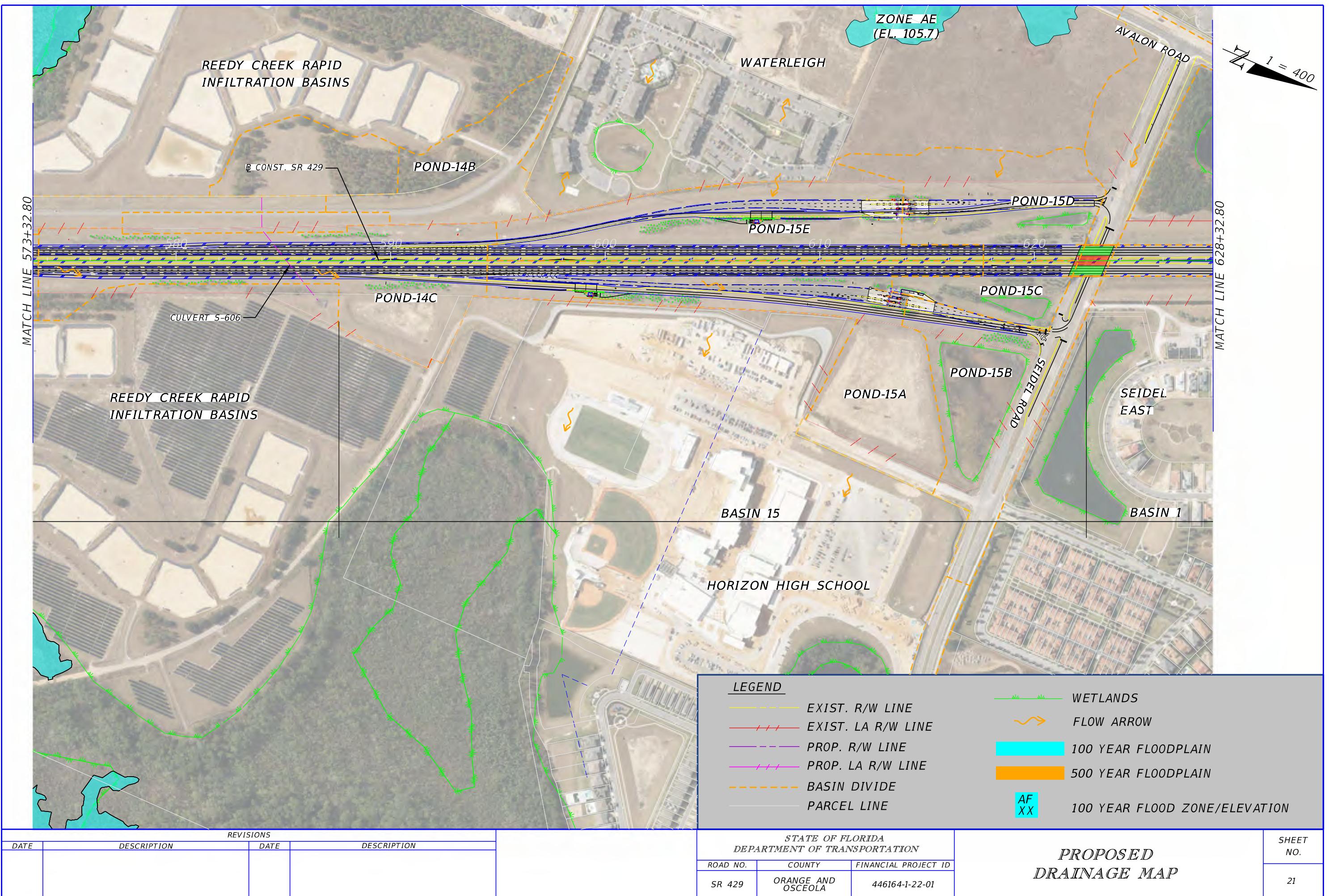
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ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

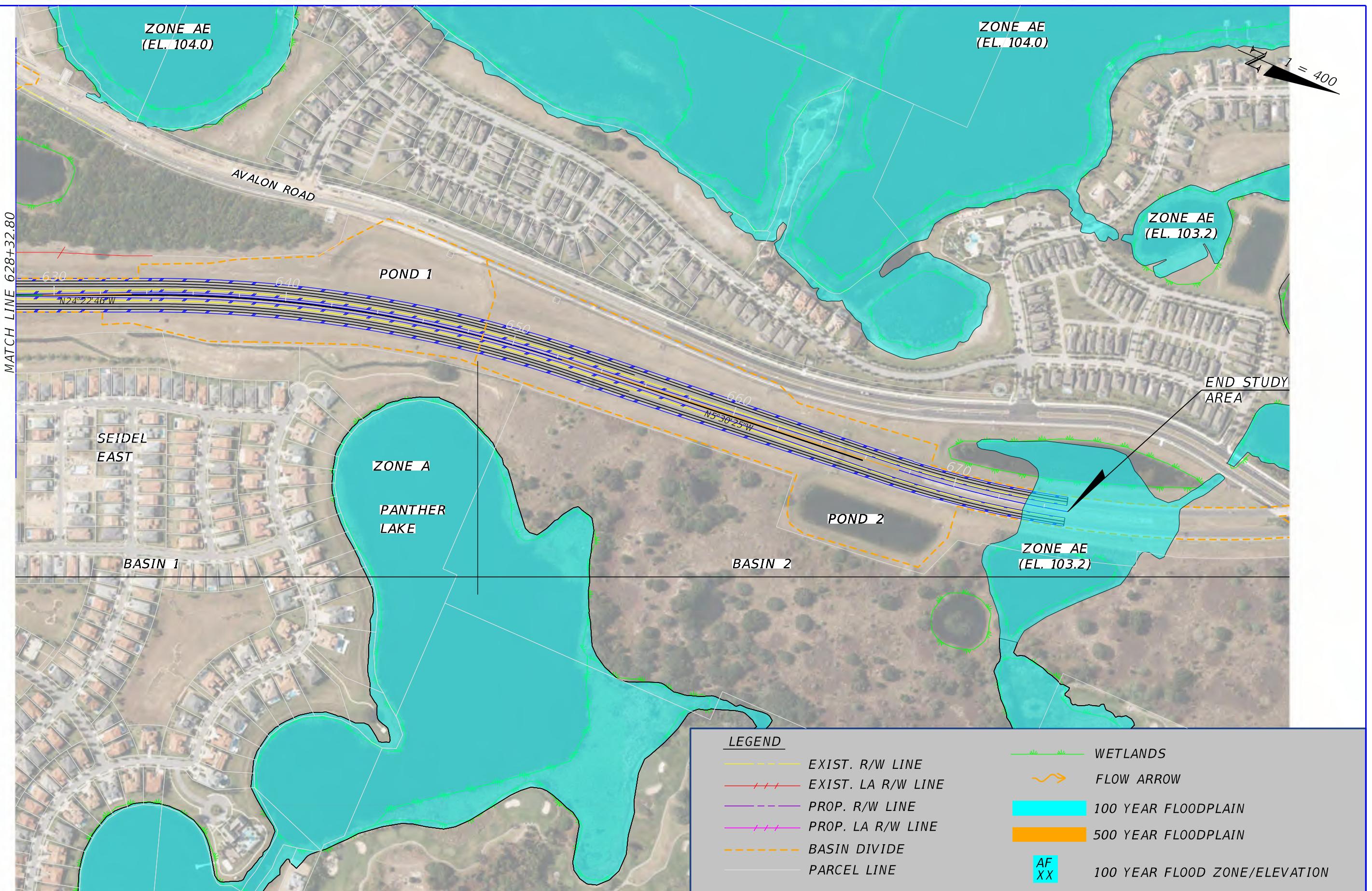
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SHEET  
NO.  
19



REVISIONS		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PROPOSED DRAINAGE MAP		SHEET NO.
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				SR 429	ORANGE AND OSCEOLA	446164-1-22-01	





REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

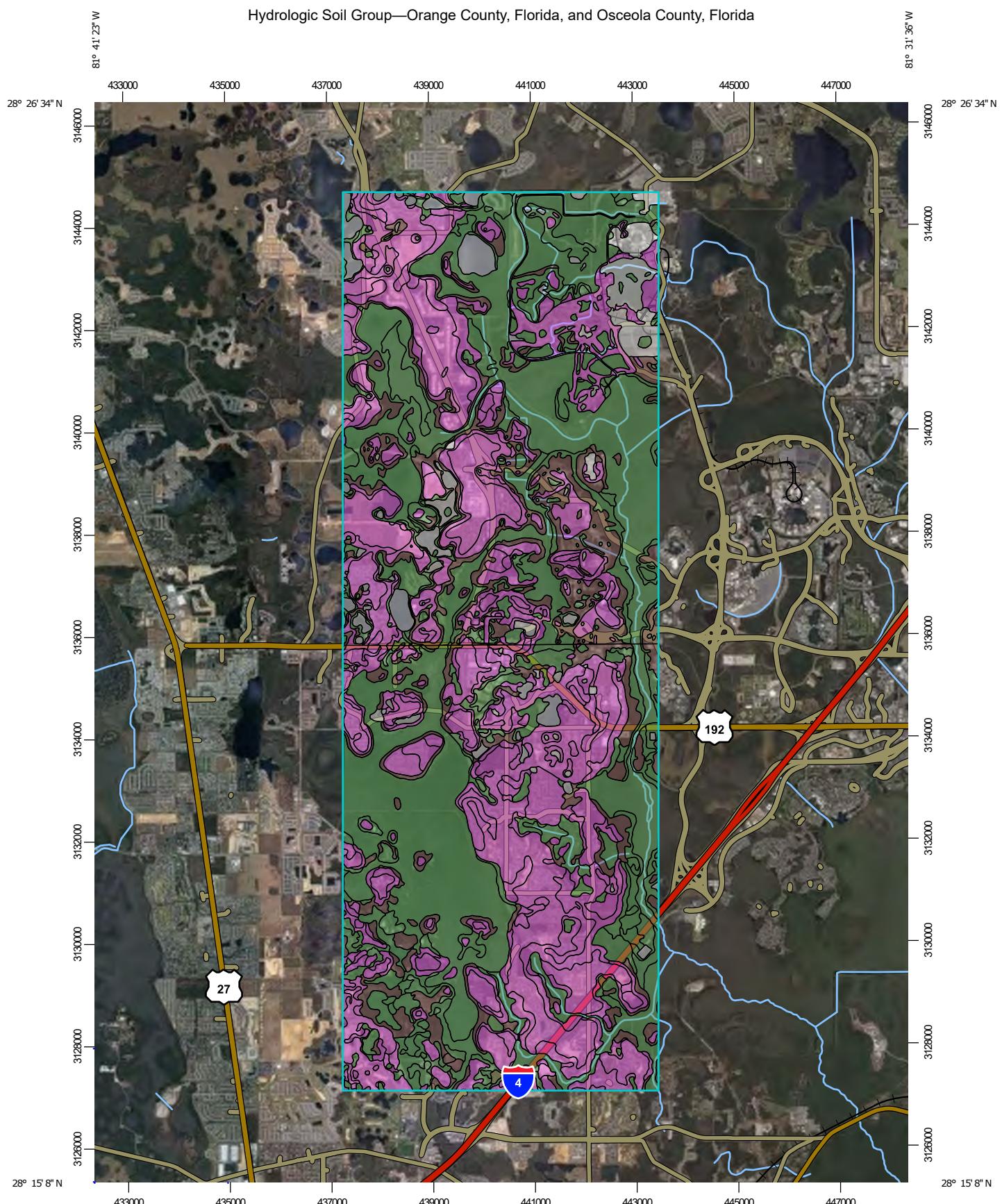
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 429	ORANGE AND OSCEOLA	446164-1-22-01

**PROPOSED  
DRAINAGE MAP**

SHEET  
NO.  
22

## APPENDIX B – SOIL MAPS

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



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

5/17/2022  
Page 1 of 6

## MAP LEGEND

### Area of Interest (AOI)

Area of Interest (AOI)

C

C/D

D

Not rated or not available

### 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

#### 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%
<b>Subtotals for Soil Survey Area</b>			<b>13,607.3</b>	<b>50.3%</b>
<b>Totals for Area of Interest</b>			<b>27,026.1</b>	<b>100.0%</b>

<b>Map unit symbol</b>	<b>Map unit name</b>	<b>Rating</b>	<b>Acres in AOI</b>	<b>Percent of AOI</b>
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%
<b>Subtotals for Soil Survey Area</b>			<b>13,418.3</b>	<b>49.6%</b>
<b>Totals for Area of Interest</b>			<b>27,026.1</b>	<b>100.0%</b>

## 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*

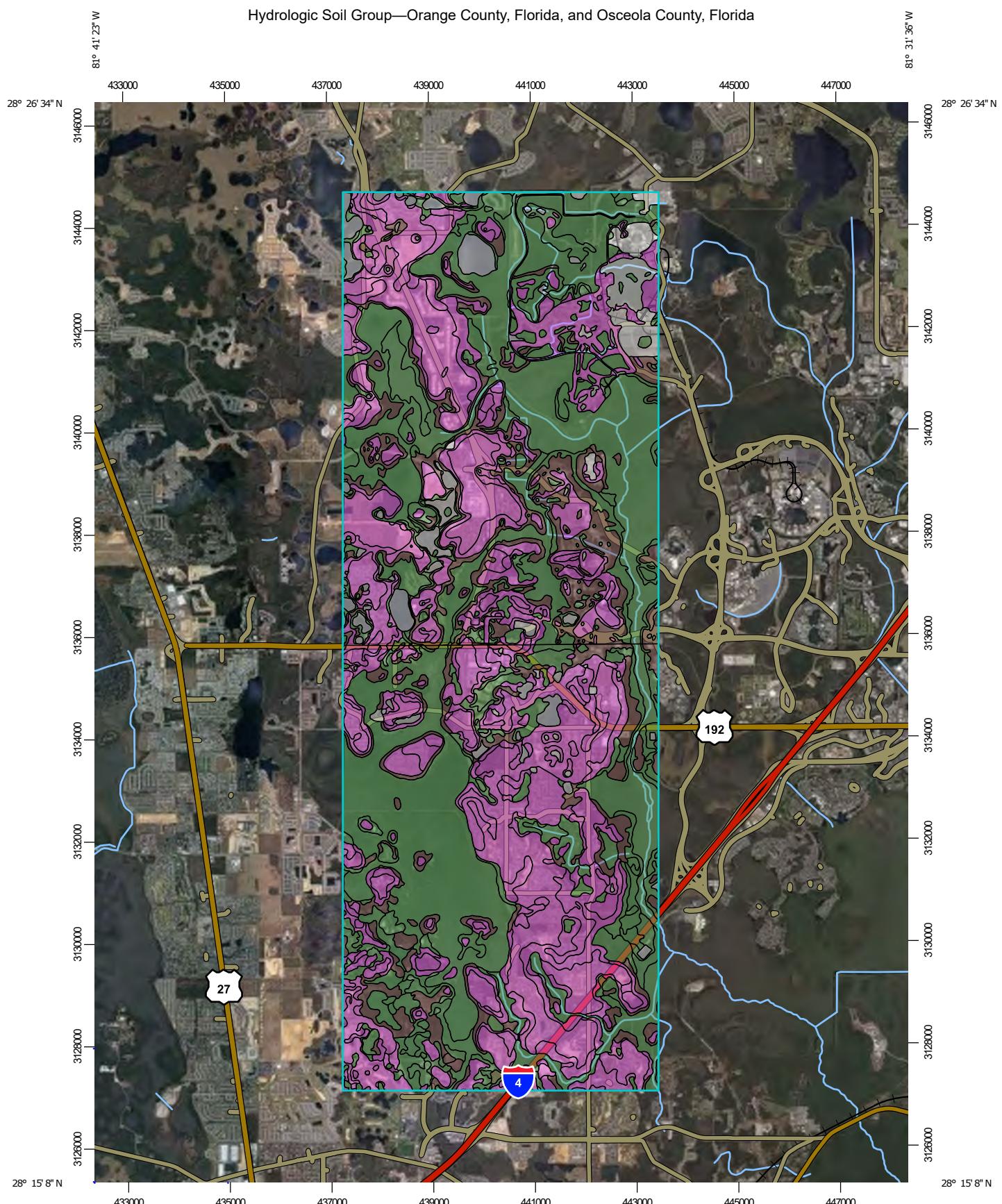


*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*



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



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

5/17/2022  
Page 1 of 6

## MAP LEGEND

### Area of Interest (AOI)

Area of Interest (AOI)

C

C/D

D

Not rated or not available

### 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

### 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)

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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%
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33	Pits		6.9	0.0%
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47	Tavares-Millhopper fine sands, 0 to 5 percent slopes	A	763.8	2.8%
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<b>Map unit symbol</b>	<b>Map unit name</b>	<b>Rating</b>	<b>Acres in AOI</b>	<b>Percent of AOI</b>
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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%
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<b>Subtotals for Soil Survey Area</b>			<b>13,418.3</b>	<b>49.6%</b>
<b>Totals for Area of Interest</b>			<b>27,026.1</b>	<b>100.0%</b>

## Description

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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*

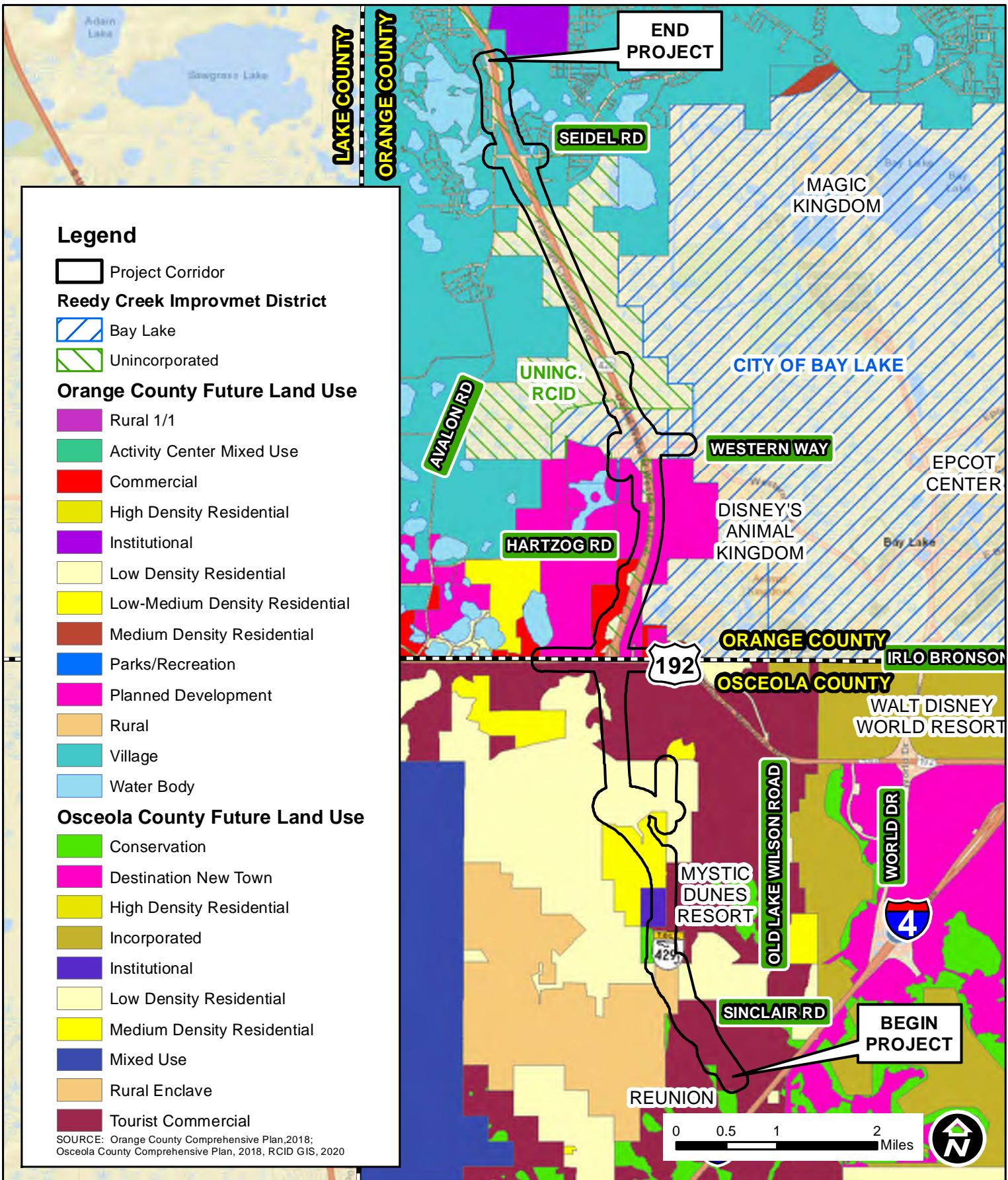


*Component Percent Cutoff: None Specified*

*Tie-break Rule: Higher*



## APPENDIX C – LAND USE MAP



**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 all areas subject to flooding, particularly from local drainage sources of short size. The community map repository should be consulted for detailed information on local drainage sources.

To obtain more detailed information in areas where Base Flood Elevations (BFEs) shown on this map apply only forward or backward, particularly from local drainage sources, users are encouraged to consult the Flood Profiles and Fluvial Data tables, Summary of Salvage Elevations tables, and/or the Summary of Flood Insurance Rate Maps tables contained in the FIRM report. These tables show the elevations of the base flood elevation, the elevation of the 1% annual chance flood, and the elevation of the 10% annual chance flood.

Coastal Base Flood Elevations (CBFES) shown on this map apply only forward or backward from the coastal boundary. Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Salvage Elevations table in the Flood Insurance Study report for this jurisdiction. Elevation shown in the Summary of Salvage Elevations table should be used for construction and floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the roadways were computed as cross sections and interpolated between cross sections. The roadways were based on hydrologic computations with regard to requirements of the National Flood Insurance Program. Roadway widths and other pertinent boundary 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 at the preparation of this map was Transverse Mercator State Plane Florida East FIPS 0001. The horizontal datum was NAD83 HARN, GRS1985 spherical differences in station, spherical projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight posterior differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of the 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 additional information concerning the National Geodetic Vertical Datum of 1988 and the National Geodetic Survey, write to NGS/NIMA/NOAA/NGVD2008, or contact the National Geodetic Survey at the following address:

National Geodetic Survey  
NGVD2012  
National Geodetic Survey  
SSMC-2, #900  
1115 East-West Highway  
Silver Spring, Maryland 20910-3000  
(301) 777-2042

To obtain current elevation, description, and/or location information for beach marks shown on this map, please contact the Information Services branch of the National Geodetic Survey at (301) 777-3332 or visit its website at <http://beachmarks.noaa.gov>.

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

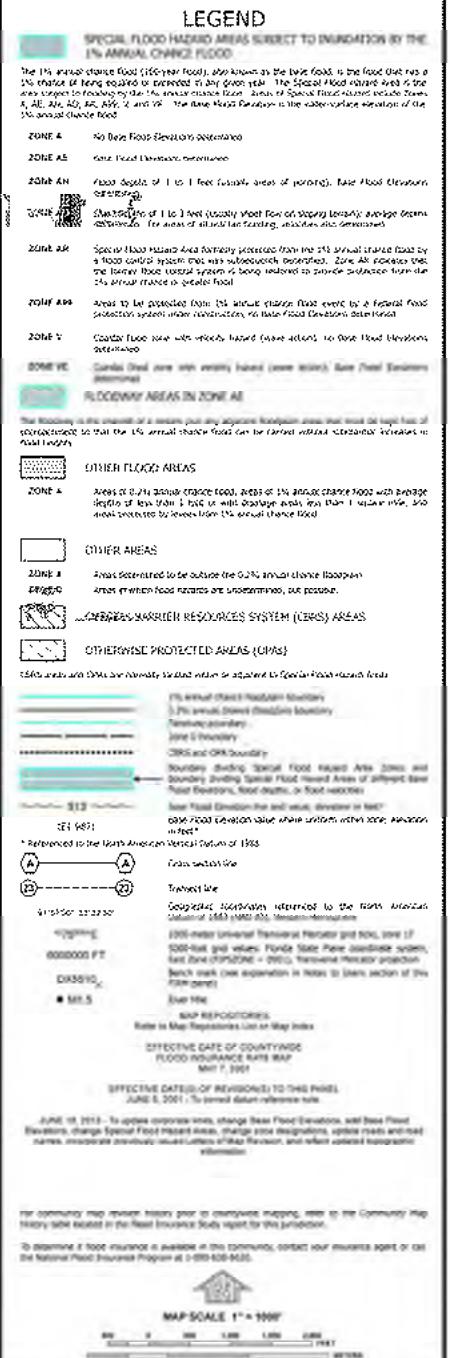
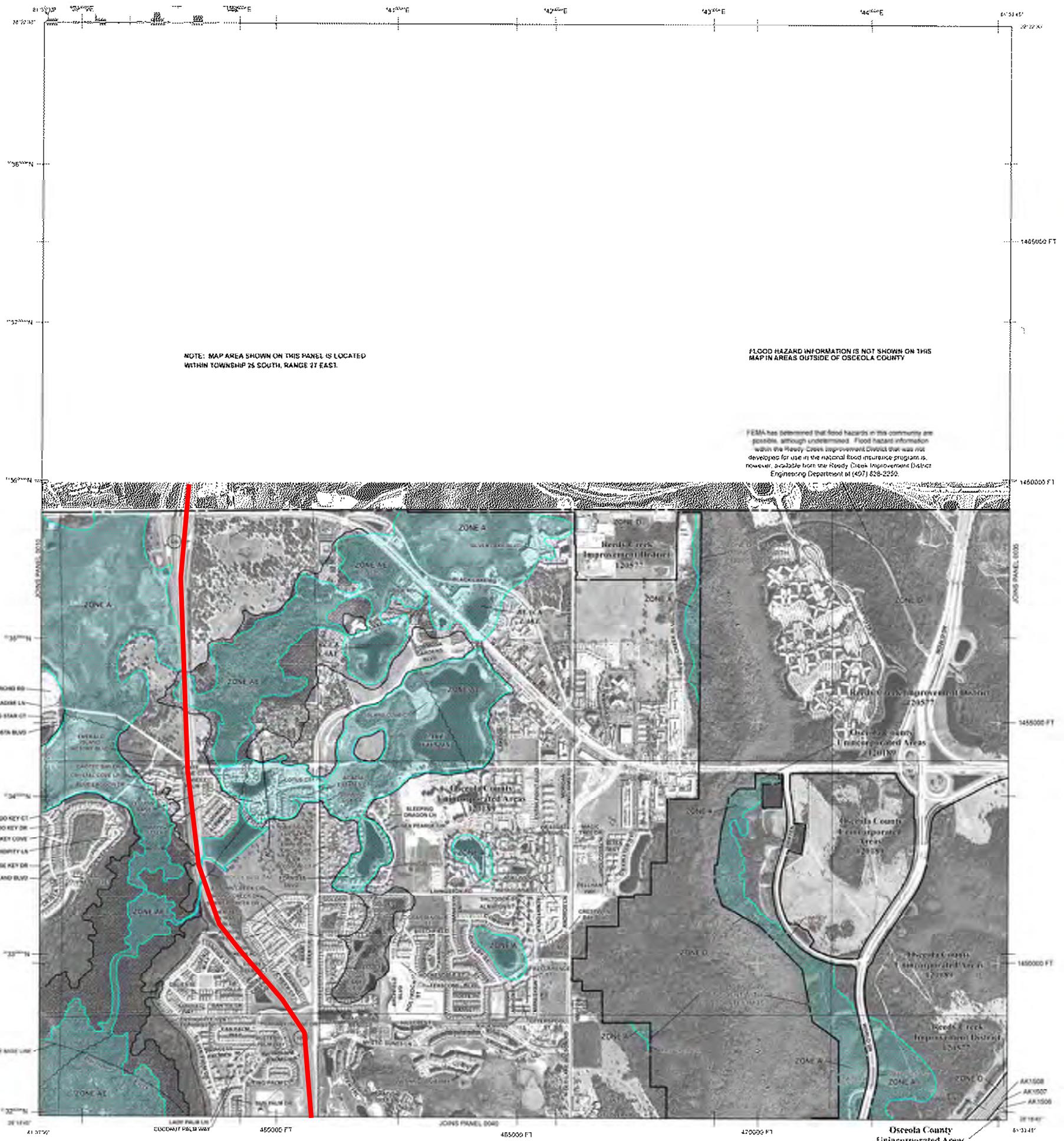
This map reflects 2006 revised BFE up-to-date stream channel configurations. Stream lines shown on the previous FIRM for this jurisdiction, the boundaries and Zonings that were transferred from the previous FIRM may have been adapted to conform to these new stream channel configurations. As a result, the Flood Profiles and Fluvial Data tables in the Flood Insurance Study report (which contains automated 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 containing National Flood Insurance Program data 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 digital 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 (1-877-362-6227) or visit the FEMA Map Service website at [www.fema.gov/fms](http://www.fema.gov/fms). Available products may include previously issued Letters of Map Change, Flood Insurance Study, Preliminary and Final 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 line" depicted on this map represent the hydraulically interesting boundaries 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 SAHA.



**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)

COMMUNITY	NUMBER	POSTAL ZIP CODE
OSCEOLA COUNTY	0030	32765
REED CREEK IMPROVEMENT DISTRICT		

**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 minor size. The community map repository should be consulted for updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **Rooftop elevations** have been determined, users are encouraged to consult the Flood Profiling and Determination of BFE Data and Analysis Summary of Estimated Elevation Tables contained in the Flood Insurance Study (FIS) report associated with this FIRM. Users should be aware that BFEs shown on the FIRM represent flooded areas above flood 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.

**Critical Base Flood Elevations** shown on this map apply only landward of S.G. 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 Estimated Elevation tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Estimated Elevation tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **Rooftops** were computed at cross sections and interpolated between cross sections. The rooftops 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 **Road 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 StatePlane Florida First FIPS Zone 0001. The horizontal datum was NAD83 GRS1990 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:

Special Reference System Division  
National Geodetic Survey, NOAA  
Silver Spring Metro Center  
1105 East-West Highway  
Silver Spring, Maryland 20910  
(301) 713-2342

To obtain current elevation, description, and/or location information for **Levee** marks shown on this map, please contact the Information Services Branch of the National Oceanic and Atmospheric Administration at (800) 733-2322 or visit its website at <http://www.ndbc.noaa.gov>.

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

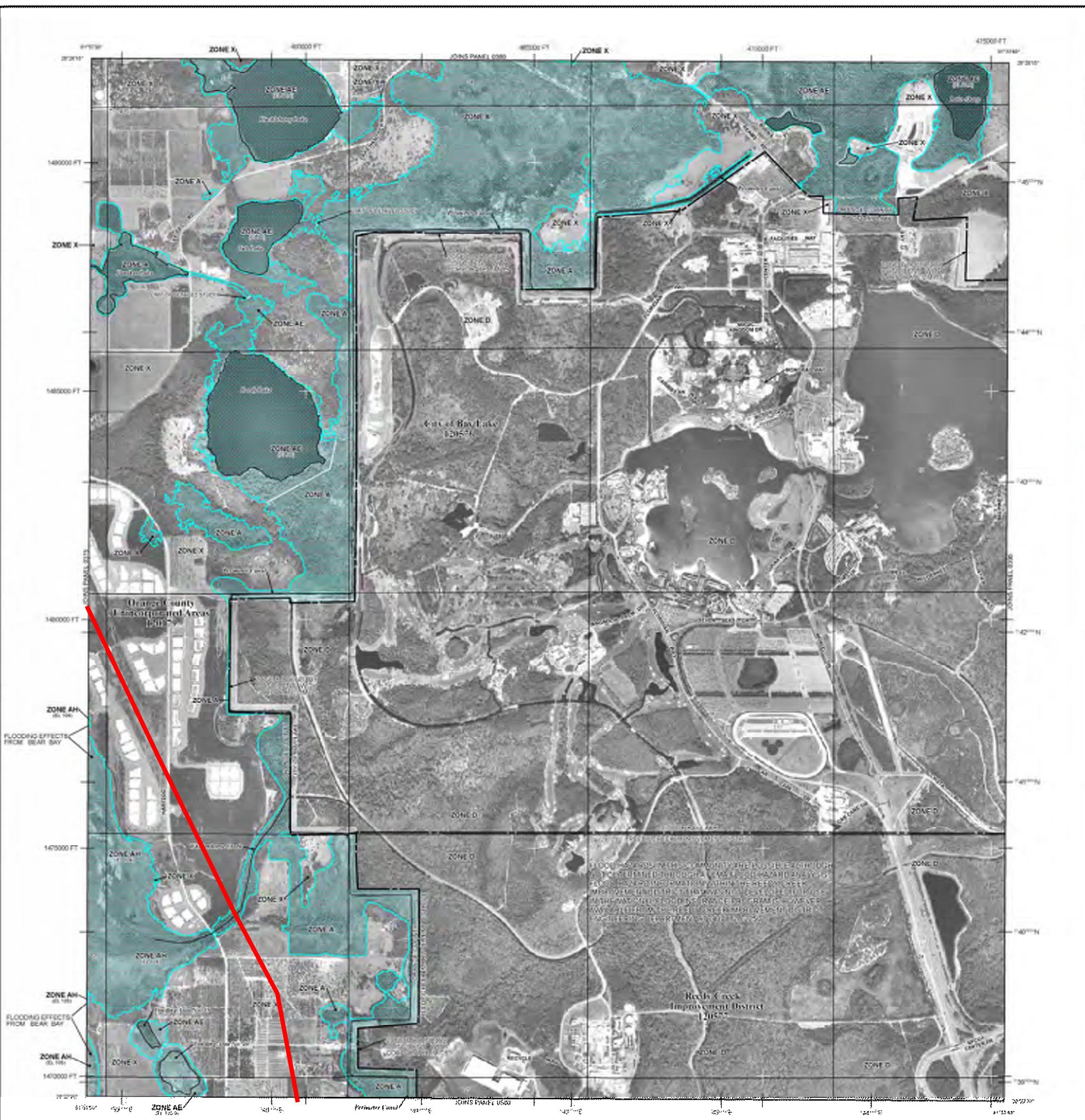
This map reflects more detailed and up-to-date stream channel configurations than those shown in the previous FIRM for this jurisdiction. Stream channels and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profile and Floodway Data tables in the Flood Insurance Study report (which contain authoritative hydrologic 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 community tables containing National Flood Insurance Program data for each community as well as a listing of the parcels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-336-9616 for information on availability and layout of this panel, community map repository addresses, and community tables containing National Flood Insurance Program data for each community as well as a listing of the parcels on which each community is located.

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/nfip>.



**NFIP**  
**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
MI LAKE CITY OF	130518	3900	+
ORANGE COUNTY	130519	3900	-
REEDY CREEK IMPROVEMENT DISTRICT	130577	3900	-

**MAP NUMBER**  
**12095C0390F**

**MAP REVISED**  
**SEPTEMBER 25, 2000**

**Federal Emergency Management Agency**

SEPTEMBER 25, 2000 (Map Update) - to change Base Flood Elevation. It effects the entire county to incorporate revised Letters of Map Revision, to update map format, to keep revised and most recent to incorporate previously issued Letters of Map Revision, to reflect updated topographic information, and to incorporate previously issued Letters of Map Amendment.



# APPENDIX E – FLOODPLAIN CALCULATIONS

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: 3  
Alignment: SR 429  
Beginning Station: 287+80  
End Station: 296+00  
Side: LT

Elevation (ft)	Area (ac)	Incremental Volume (ac-ft)	Cumulative Volume (ac-ft)	Comments
105.0	0.14		0.00	SHWT = 100.80 (Permitted Pond 2A-3)
		0.14		
106.0	0.14		0.14	
		0.14		
107.0	0.14		0.28	100-year BFE

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

<b>RS&amp;H, Inc.</b>
<b>FPID: 44616412201</b>
<b>FLOODPLAIN IMPACT VOLUME CALCULATIONS</b>

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

<b>Elevation (ft)</b>	<b>Area (ac)</b>	<b>Incremental Volume (ac-ft)</b>	<b>Cumulative Volume (ac-ft)</b>	<b>Comments</b>
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: JW 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

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.

EPN: 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

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

49-187636001

**Section IV – Flood Plain Impact**

IV-2

**Table 1 – Continued**

Station	Fill		Excavation	
	Area ft <sup>2</sup>	Volume ac-ft	Area ft <sup>2</sup>	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

49-187636001

## Section IV – Flood Plain Impact

IV-3

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)

$\Delta(\text{Runoff Vol}_{\text{pre}} - \text{Storage Vol}_{\text{pre}}) = 64.3 - 63.6 = 0.7 \text{ ac-ft}$  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 ac-ft – 0.7 ac-ft (predevelopment) – 20.4 (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

49-187636001

### 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	103.52
	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
	338+84.84	1124.27	102.07	103.07
	1338+84.08	1124.27	102.07	103.07
RV03045	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**

IV-5

**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**

IV-6

**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 where 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 <sup>2</sup>	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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**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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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	
<b>Section 3</b>		
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

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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)

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

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## **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 ft <sup>2</sup>	Volume ac-ft	Area ft <sup>2</sup>	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 ft <sup>2</sup>	Volume ac-ft	Area ft <sup>2</sup>	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 Flood plain storage

Assume:

$$SHWT = 100.0'$$

$$100\text{yr EL} = 102.2'$$

Area includes Row only

Elevation	Area (ac)	Volume (ac-Lt)	Cumulative Volume (ac-Lt)
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-Lt

## 2) Determine Pre development Runoff -

$$\text{Basin 12 Pre Runoff} = 9.73 \text{ ac-Lt} \quad (\text{from attached calc})$$

$$\text{Basin 13 Pre Runoff} = \underline{23.04 \text{ ac-Lt}} \quad (\text{from attached calc})$$

$$\text{Total Pre Runoff} = 32.77 \text{ ac-Lt}$$

## 3) Determine if Basin is Exporter or Importer

Since  $32.77 \text{ ac-Lt} > 7.23 \text{ ac-Lt}$ , then Basin is exporter.

## 4) Determine Post development Runoff -

$$\text{Basin 12 Post Runoff} = \cancel{9.73 \text{ ac-Lt}} - 17.23 \text{ ac-Lt}$$

$$\text{Basin 13 Post Runoff} = 57.63 \text{ ac-Lt}$$

$$\text{Total Post Runoff} = 74.86 \text{ ac-Lt} \quad 49-187636001$$

## 5) Determine Required Detention Volume -

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$$\text{Post Runoff} - \text{Pre Runoff} = \text{Req'd Volume}$$

$$74.86 \text{ ac-Lt} - 32.77 \text{ ac-Lt} = 42.09 \text{ ac-Lt}$$

**HDR Computation****HDR**

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

6) Determine Total Volume of Available Pond Storage -

$$\text{Pond 12} = 10.7 \text{ ac-ft}$$

$$\text{Pond 13} = \frac{44.3 \text{ ac-ft}}{55.0 \text{ ac-ft}} \text{ of available storage.}$$

⇒ Since Available Storage (55.0 ac-ft) > Reg'd Det Vol (42.05 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

cc  
5-21-01

\*\*\*\*\* 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 qc.Lt

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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)			
<b>*** Group: BASE      Node: WHITTEN *</b>									
71.529	99.70	0.03	0.00	1.15	0.00	0.00	4.34	0.00	22.8220
71.779	99.70	0.03	0.00	1.13	0.00	0.00	4.19	0.00	22.9336
72.029	99.70	0.03	0.00	1.10	0.00	0.00	4.05	0.00	23.0418
72.279	99.70	0.03	0.00	1.06	0.00	0.00	3.92	0.00	23.1465

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

USE 23.04 ac-ft

CL  
5-21-01

W-6

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CL  
5-21-01WESTERN 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 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
71.584	99.70	0.02	0.00	0.00	0.00	0.00	18.29	0.00	57.0085
71.669	99.70	0.02	0.00	0.00	0.00	0.00	18.21	0.00	57.1367
71.751	99.70	0.02	0.00	0.00	0.00	0.00	18.13	0.00	57.2600
71.833	99.70	0.02	0.00	0.00	0.00	0.00	18.05	0.00	57.3827
71.919	99.70	0.02	0.00	0.00	0.00	0.00	17.97	0.00	57.5093
72.001	99.70	0.02	0.00	0.00	0.00	0.00	17.89	0.00	57.6309
72.086	99.70	0.02	0.00	0.00	0.00	0.00	17.81	0.00	57.7564
72.168	99.70	0.02	0.00	0.00	0.00	0.00	17.72	0.00	57.8769
72.253	99.70	0.02	0.00	0.00	0.00	0.00	17.62	0.00	58.0011
72.335	99.70	0.02	0.00	0.00	0.00	0.00	17.51	0.00	58.1203
72.417	99.70	0.02	0.00	0.00	0.00	0.00	17.39	0.00	58.2387

USE 57.63 ac-ft

5-21-01

IV-8

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## 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 aerials showing the historical depressional areas modeled in the pre-developed conditions.

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cc  
5-24-01

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	
13B2	105.1	3.3	N/A	N/A	POND 13	44.3
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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# 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

KEVIN J. THIBAULT, 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 (PD&E)  
Rax Jung (Project Dev. Engineer/EMO)  
Philip Stein (Environmental)  
Annemarie Hammond (Environmental Permits Coordinator)  
Erin Yao (Drainage Engineer)

##### FDEP

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

##### FTE/GEC

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

##### RS&H Team

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

##### FDOT Central Office

Jonathan Turner (Project Delivery Coordinator)

##### FDOT District 5

Casey Lyon (Env. Permits Coordinator)

#### II. Introductions

The meeting started with FDOT District 5 discussed their projects with FDEP. After attendees were introduced, Stephanie Underwood explained the purpose of the meeting was to initiate pre-application coordination with the Florida Department of Environmental Protection for the two Project Development and Environment (PD&E) studies.

#### III. PowerPoint presentation

Erik Scott explained the two projects with a PowerPoint presentation and separate exhibits (attached). Discussion is summarized below.

##### 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 and Reedy Creek Improvement District (RCID) permitted SR 429 in 2001. 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 development adjacent to SR 429.
- The project study area is located within two impaired WBIDs, Davenport Creek for bacteria and Whittenhorse Creek for dissolved oxygen. In addition, the project study is located within the Lake Okeechobee Subwatershed BMAP. FTE believes that 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 but will need to be discussed further during the design phase.
- Attenuation will be provided per FDEP criteria for open and closed basins, with consideration for RCID 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 Environmental Resource Permit (ERP) for widening of Western Beltway (SR 429) will be handled by FDEP. This includes the 404 permit.
- Wetland lines from the previous permit will be used as much as possible in areas that are not new interchanges. 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 species is minimal along the existing roadway; however, there is suitable sand skink habitat to be considered especially 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 for species involvement occurred in 2021.
- There were no questions, but if any questions arise, additional coordination can occur.

**Poinciana Parkway Extension PD&E Study:**

- The PD&E study was summarized, including existing conditions; the proposed new six-lane expressway on new alignment; and interchanges at CR 532, I-4, and Sinclair Road. The new

alignment crosses Davenport Creek on bridge structure.

- There are two alternatives, but the worst-case Alternative 1 was discussed.
- FTE clarified with FDEP that they anticipated that SFWMD would be responsible for issuing the ERP and FDEP would be responsible for reviewing and issuing the 404 permit.
- The team depicted the wetlands and conservation areas within the study area.
- Wetland lines from the previous permits will be used as much as possible in existing roadway areas; new wetland lines will be set in the new alignment area. Direct wetland impacts range from 131 acres to 141 acres for the alternatives. Approximately 130 acres of direct impacts will be minimized with bridges and MSE walls.
- Conservation easements for RCID and Reunion are present within and adjacent to 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.
- 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 as a result of the survey. Suitable sand skink habitat is located within the project study area and sand skink tracks were observed during pedestrian transects.
- We will coordinate with FWC for state-listed species.
- Mitigation banks are located within the available service area for this project to offset any unavoidable wetland impacts. FDEP confirmed with FTE that mitigation banks should be utilized for wetland mitigation as the 1<sup>st</sup> priority and followed by other options after this measure. Impacts to conservation easements should be a last resort. Should the release of a Conservation Easement or an impact to a Conservation Easement be necessary, FDEP has asked that FTE coordinate with FDEP early in the design development given the process is different than that of mitigation banks.
- FTE indicated that the avoidance and minimization measures mentioned previously is standard and considered adequate; FDEP indicated that FTE is on the right track

**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 off 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

**FTE/RCID AGENCY COORDINATION MEETING #2 MINUTES, FPID NO: 446164 AND 446581**  
Widen Western Beltway and Poinciana Parkway Extension PD&E Studies

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.

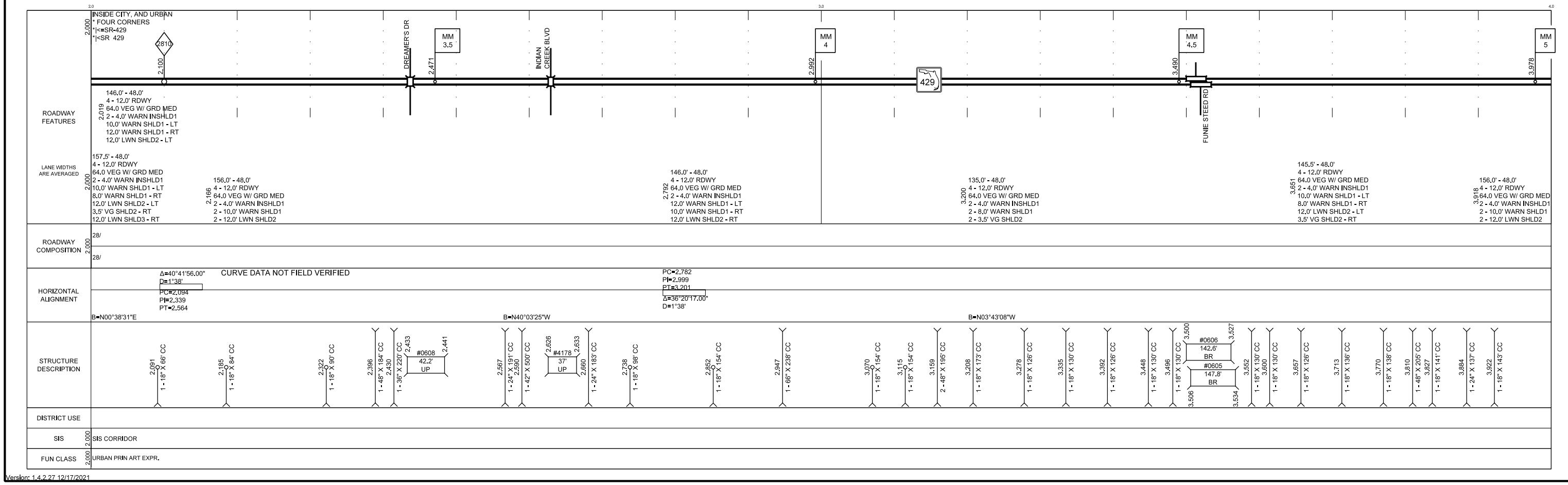
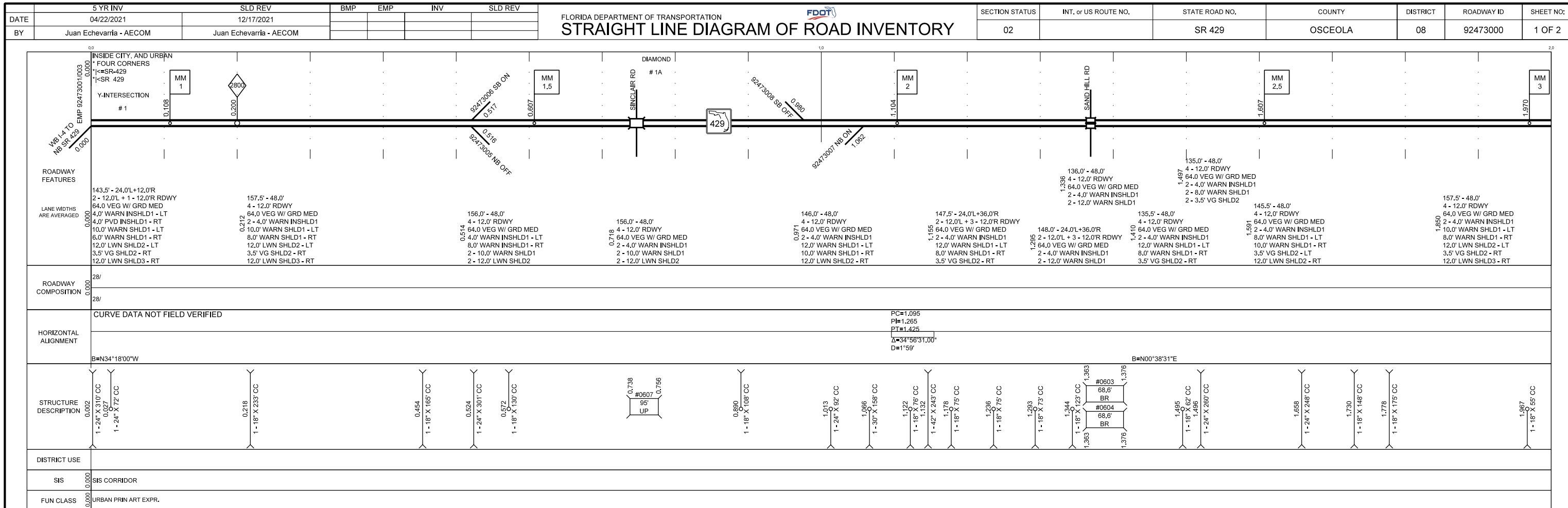
It was noted that Disney was not invited to the Reunion Coordination meeting scheduled for March 10, 2022.

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.

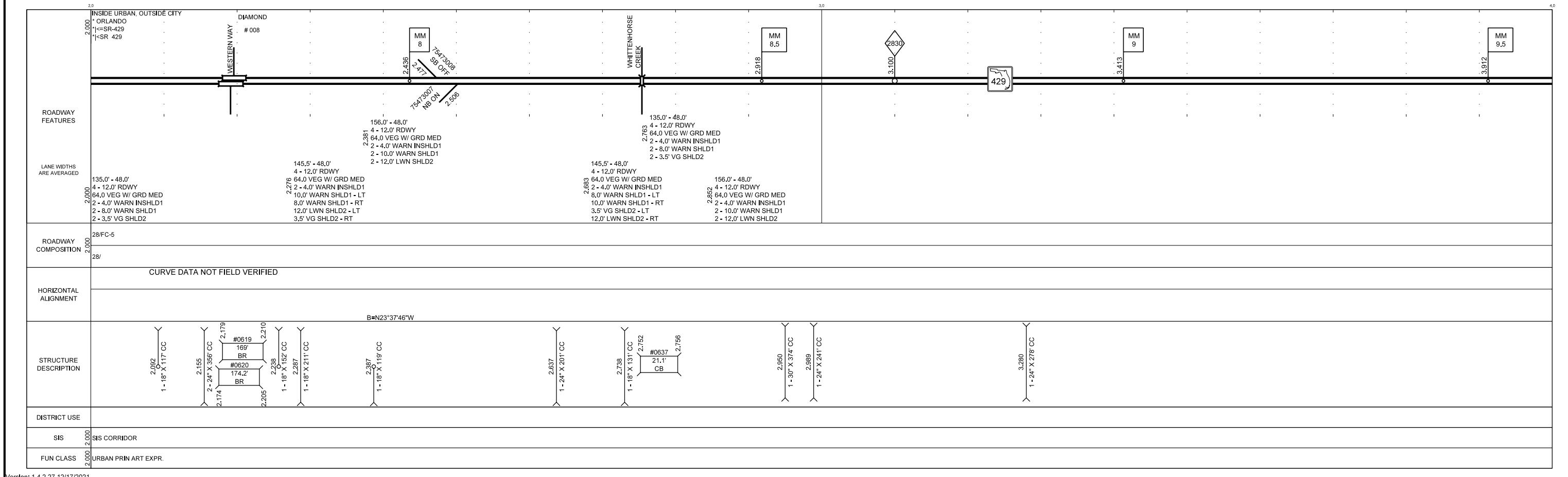
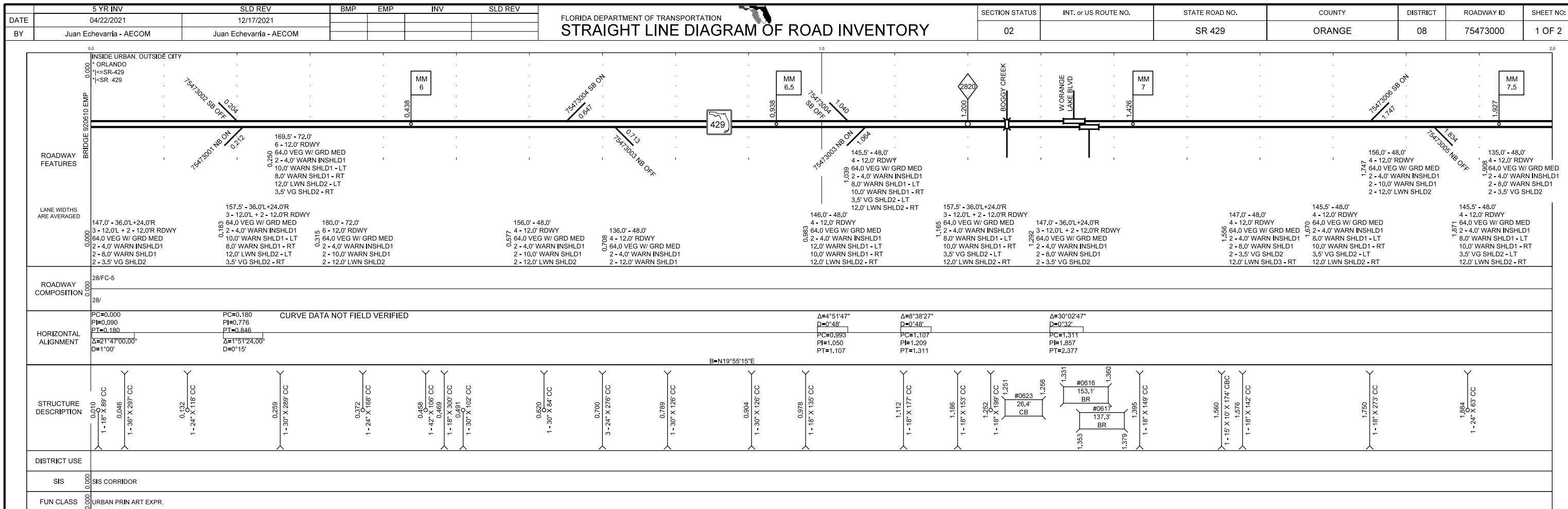
# APPENDIX H – STRAIGHT LINE DIAGRAM



DATE	5 YR INV 04/22/2021	SLD REV 12/17/2021	BMP	EMP	INV	SLD REV	FLORIDA DEPARTMENT OF TRANSPORTATION <b>FDOT</b> <b>STRAIGHT LINE DIAGRAM OF ROAD INVENTORY</b>	SECTION STATUS 02	INT. or US ROUTE NO.	STATE ROAD NO. SR 429	COUNTY OSCEOLA	DISTRICT 08	ROADWAY ID 92473000	SHEET NO: 2 OF 2
BY	Juan Echevarria - AECOM	Juan Echevarria - AECOM												
ROADWAY FEATURES														
LANE WIDTHS ARE AVERAGED														
ROADWAY COMPOSITION	4.000	4.000	28/	28/										
HORIZONTAL ALIGNMENT			CURVE DATA NOT FIELD VERIFIED		PC#4.296 PI#4.412 PT#4.528									
					$\Delta=21^{\circ}47'00.00''$ $D=1^{\circ}00'$									
STRUCTURE DESCRIPTION	4.000	4.000	1 - 18' X 178' CC 4.112	1 - 18' X 179' CC 4.196	1 - 18' X 148' CC 4.249	1 - 18' X 73' CC 4.433	1 - 18' X 131' CC 4.489	1 - 18' X 90' CC 4.495	1 - 24' X 372' CC 4.494	#0609 163.7' BR	#0610 163.7' BR			
DISTRICT USE														
SIS	4.000	4.000	SIS CORRIDOR											
FUN CLASS			URBAN PRIN ART EXPR.											

END MP: 004.528  
NET ROADWAY ID LENGTH: 4.528

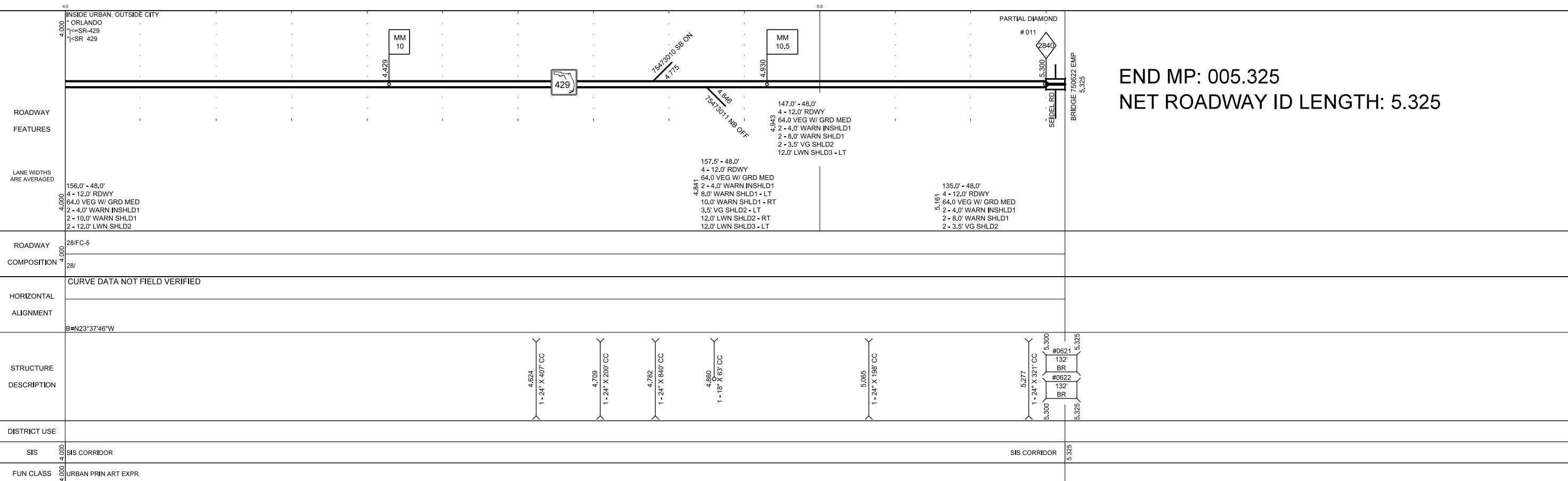
FLORIDA DEPARTMENT OF TRANSPORTATION  
STRAIGHT LINE DIAGRAM OF ROAD INVENTORY



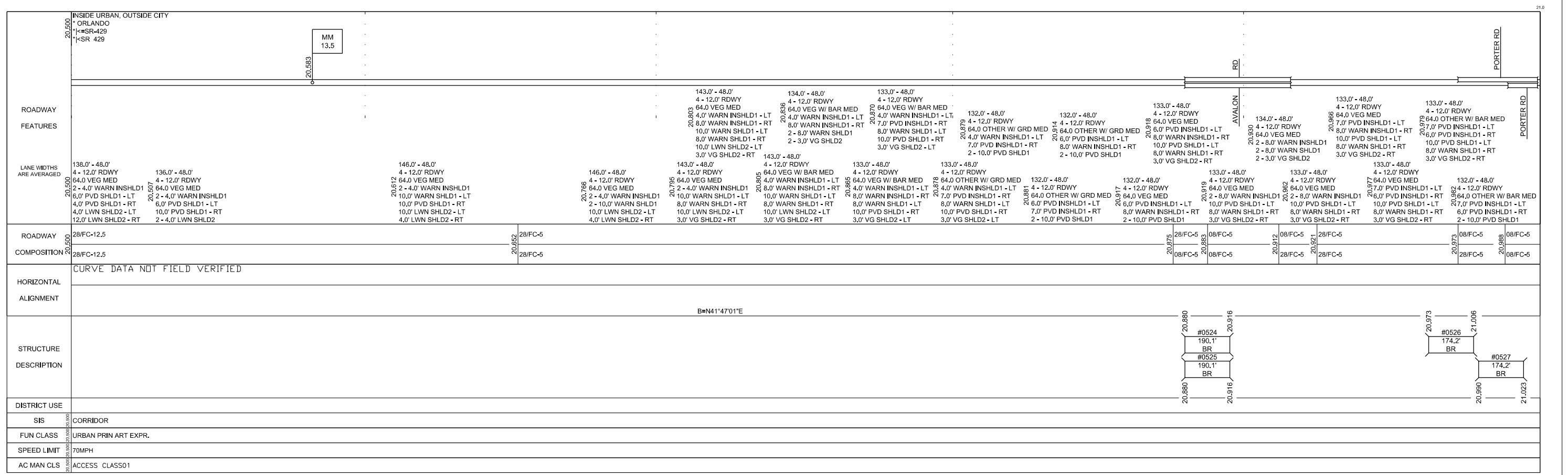
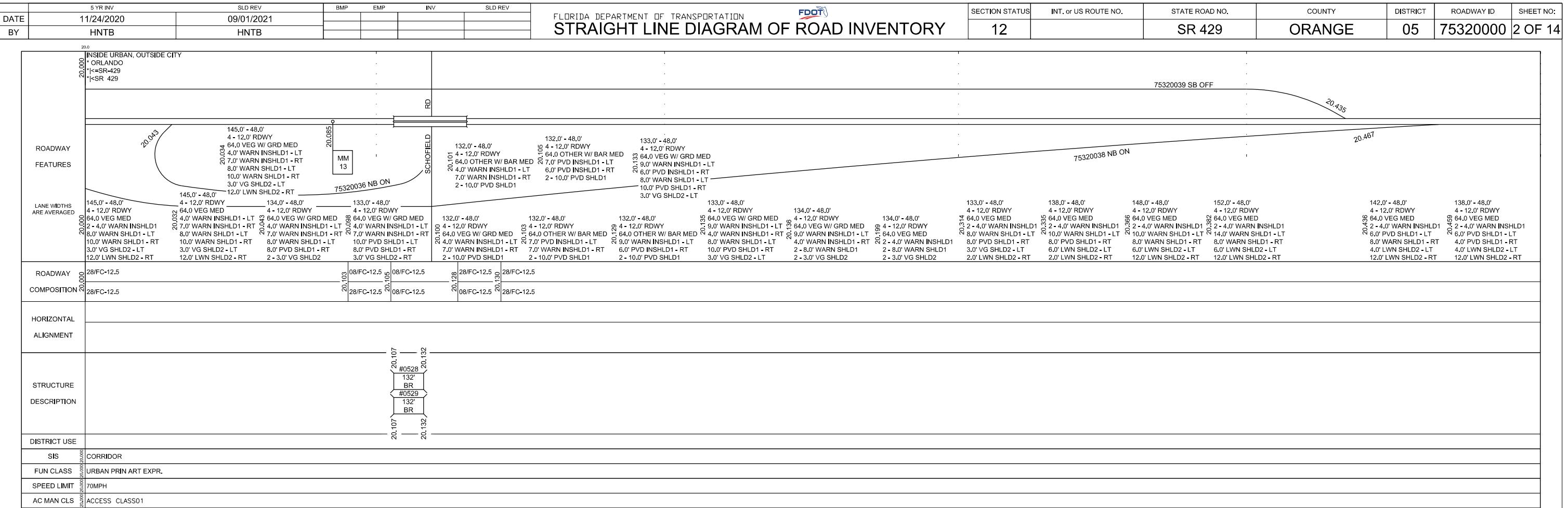
	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV
DATE	04/22/2021	12/17/2021				
BY	Juan Echevarria - AECOM	Juan Echevarria - AECOM				

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	ORANGE	08	75473000	2 OF 2



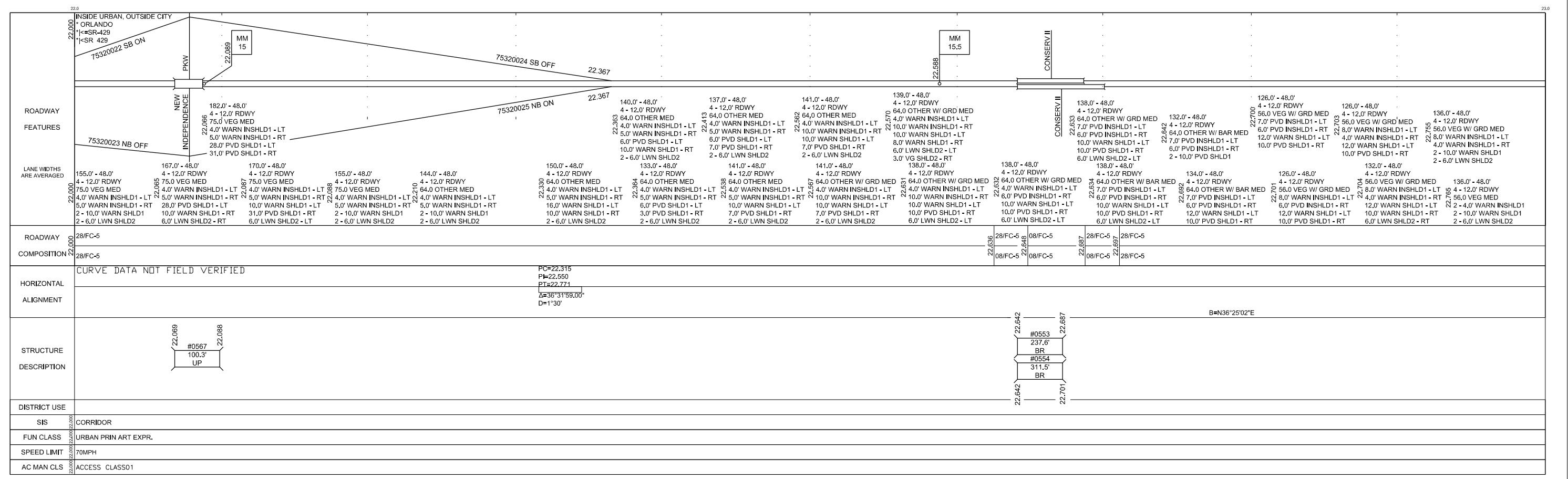
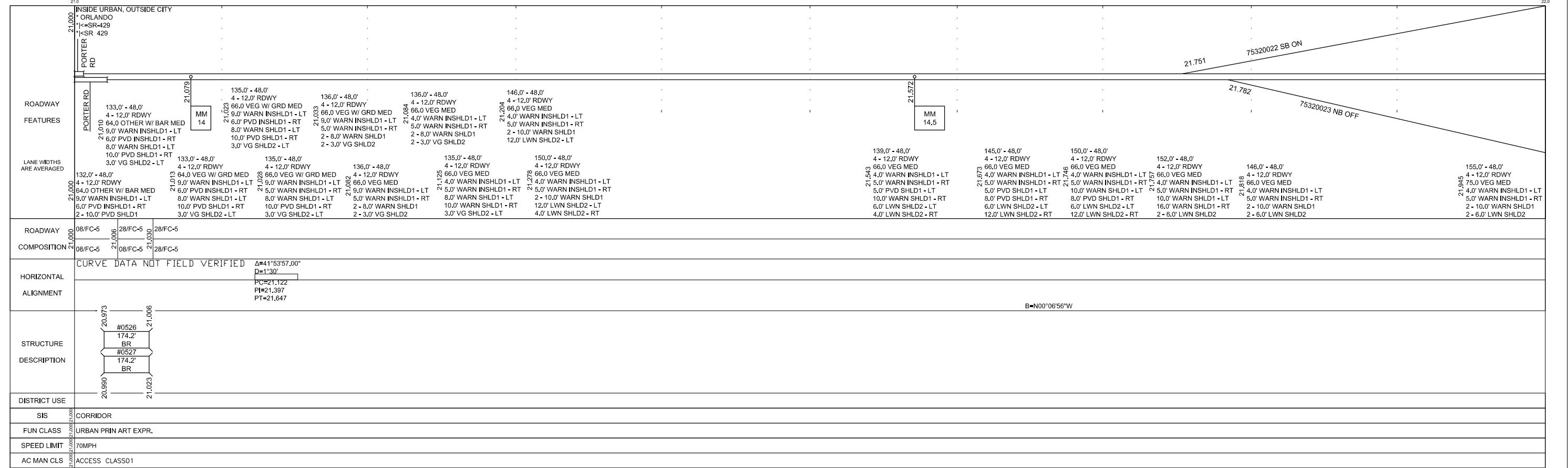


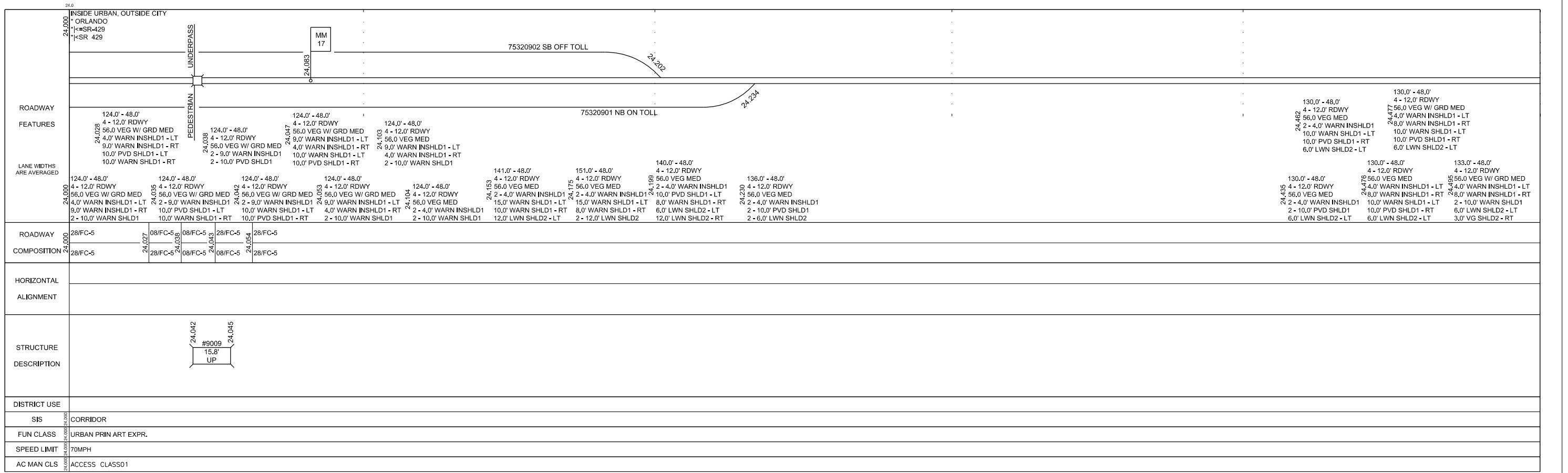
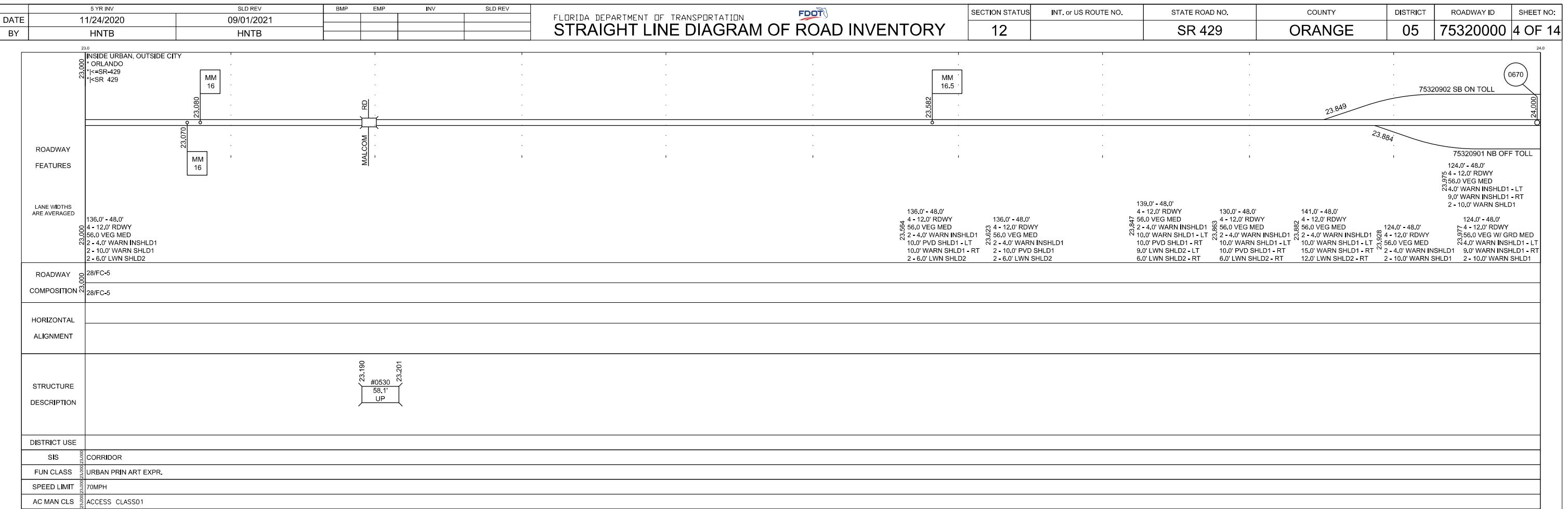


DATE	11/24/2020	SLD REV	BMP	EMP	INV	SLD REV
BY	HNTB					

FLORIDA DEPARTMENT OF TRANSPORTATION  
FDOT  
**STRAIGHT LINE DIAGRAM OF ROAD INVENTORY**

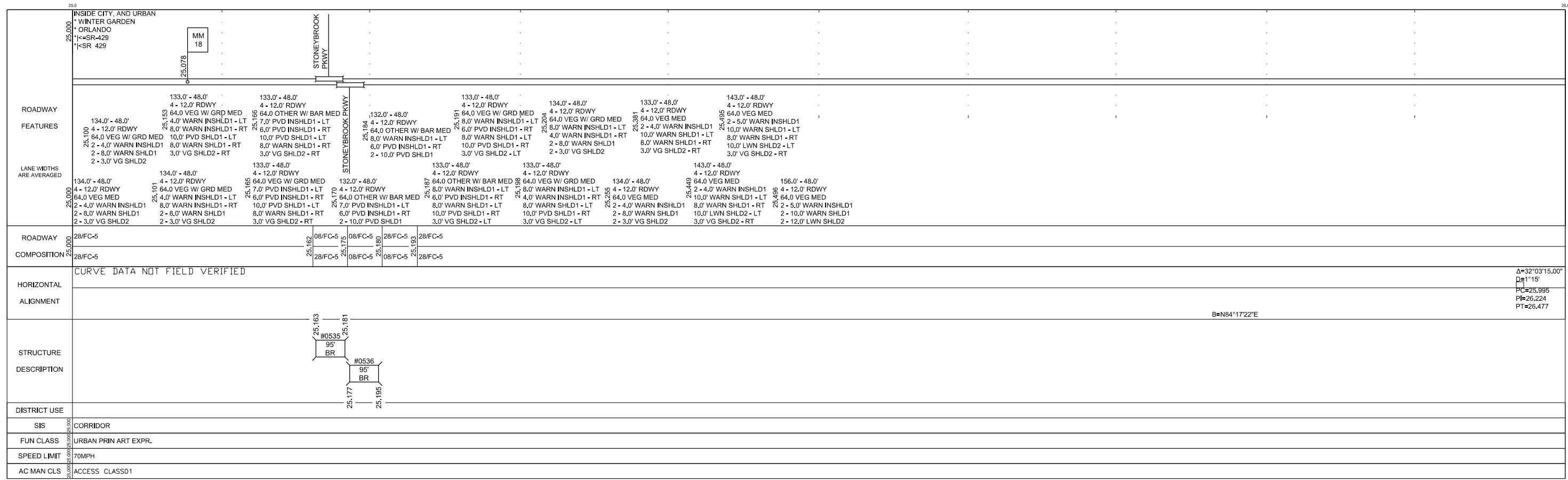
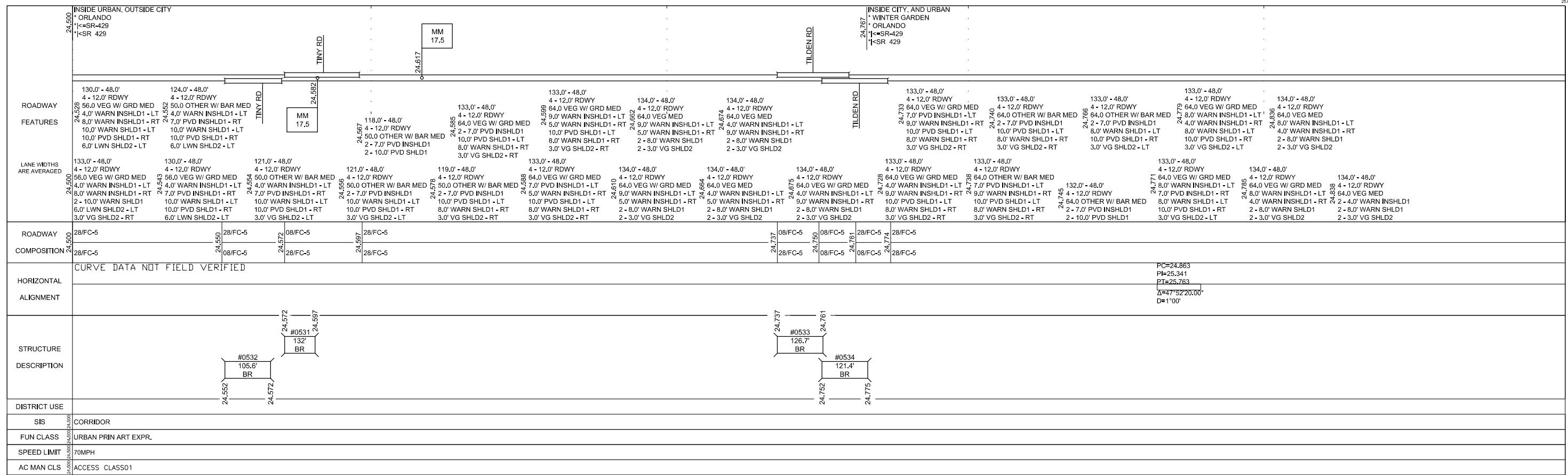
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12		SR 429	ORANGE	05	75320000	3 OF 14





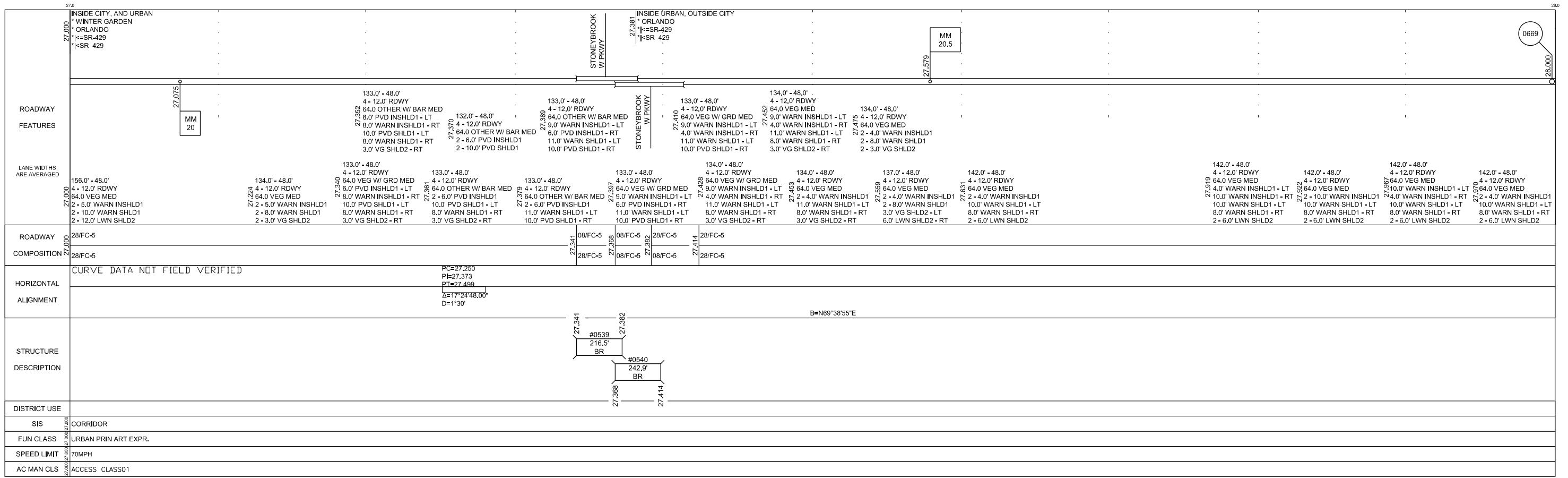
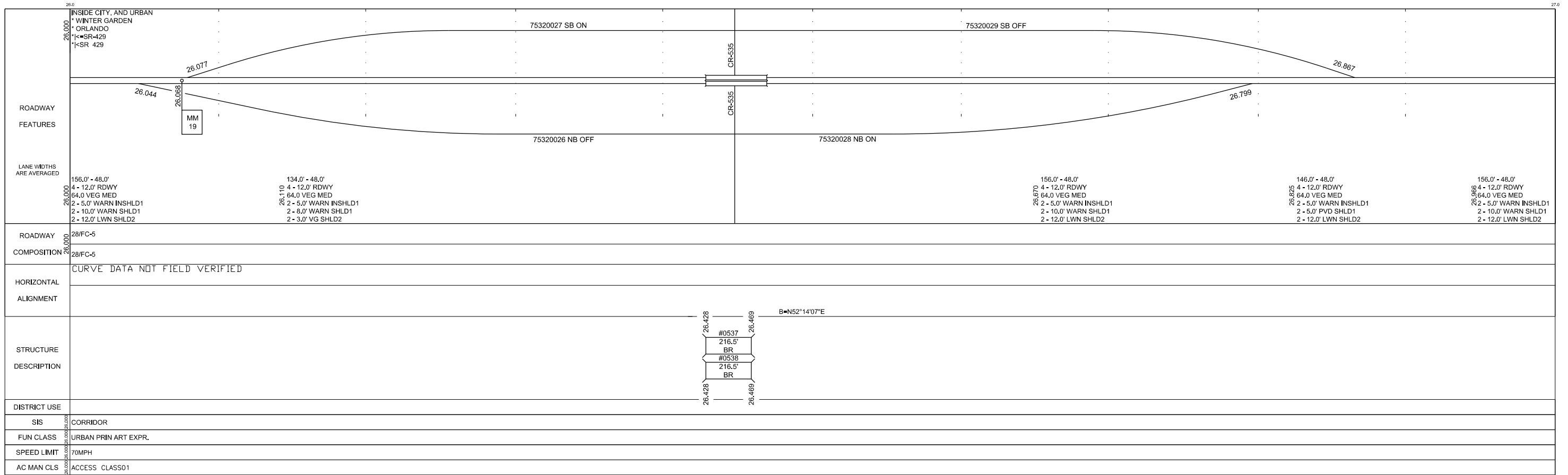
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	11/24/2020		09/01/2021													
BY	HNTB		HNTB							12		SR 429	ORANGE	05	75320000	5 OF 14

FLORIDA DEPARTMENT OF TRANSPORTATION  
FDOT  
STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

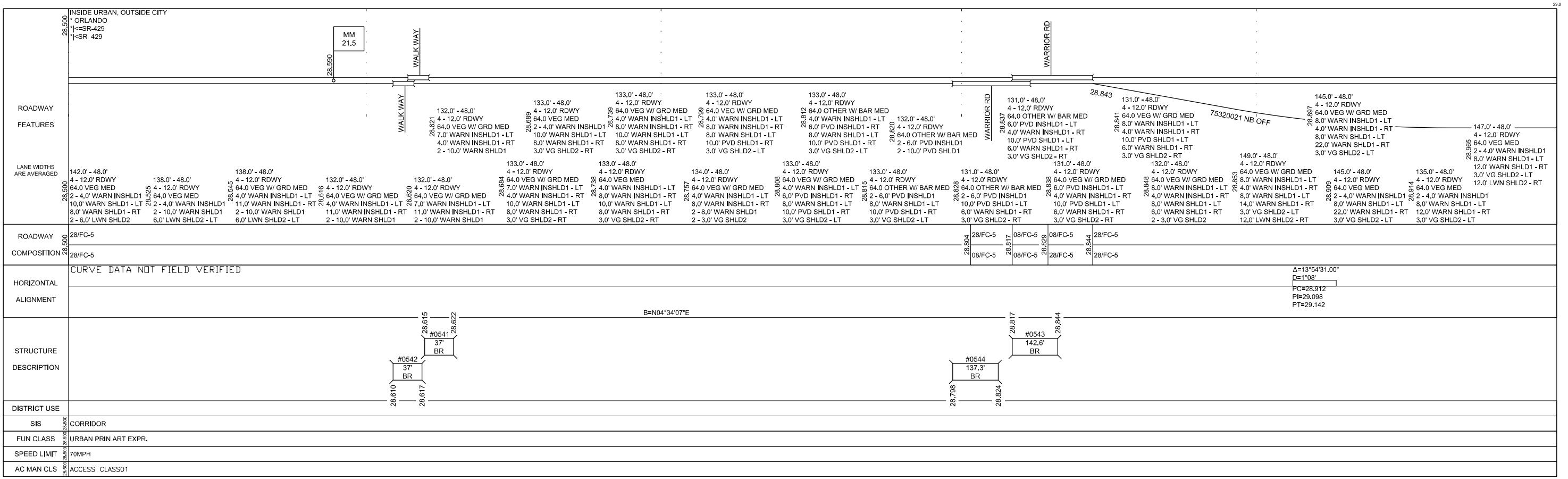


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	11/24/2020	09/01/2021												
BY	HNTB	HNTB												

FLORIDA DEPARTMENT OF TRANSPORTATION  
FDOT  
STRAIGHT LINE DIAGRAM OF ROAD INVENTORY

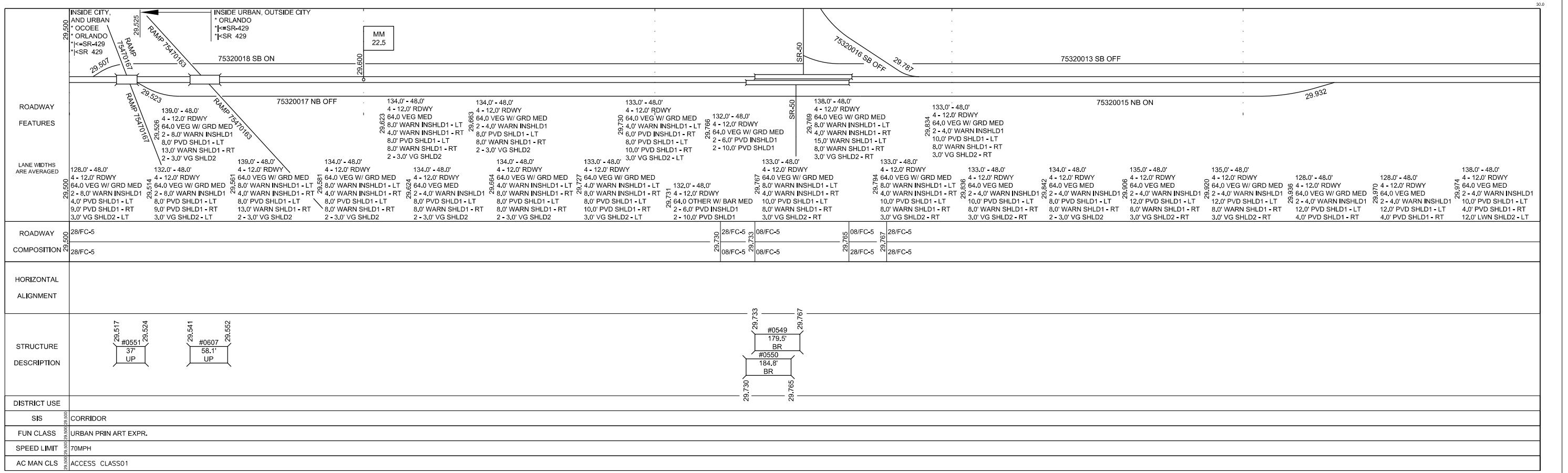
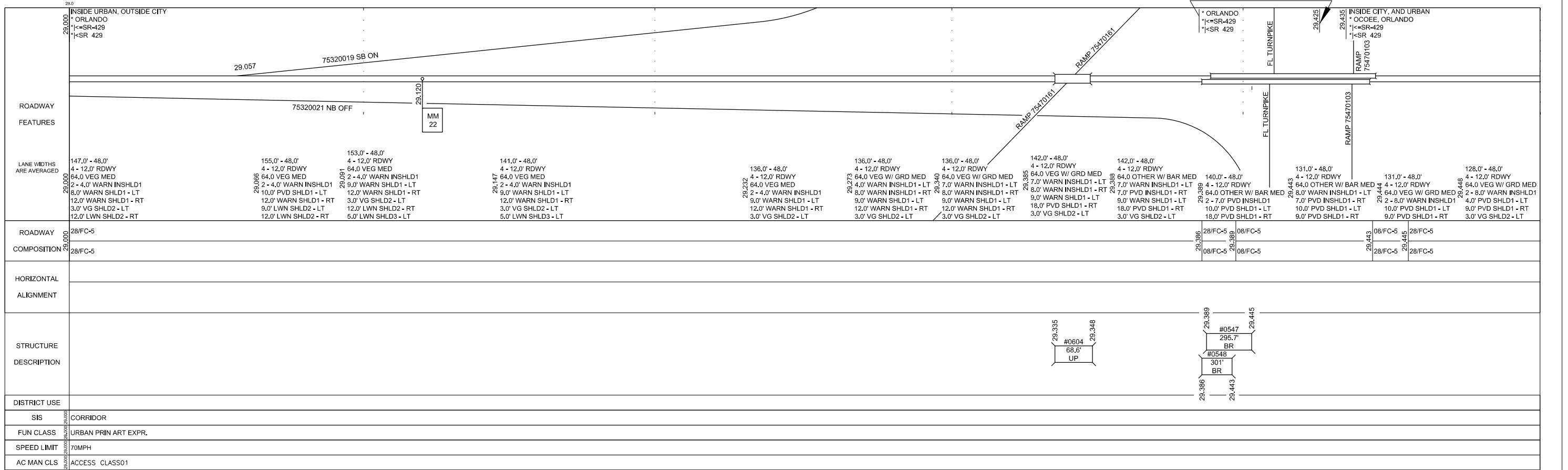


DATE BY	5 YR INV 11/24/2020	SLD REV 09/01/2021	BMP	EMP	INV	SLD REV	FLORIDA DEPARTMENT OF TRANSPORTATION <b>FDOT</b> <b>STRAIGHT LINE DIAGRAM OF ROAD INVENTORY</b>	SECTION STATUS 12	INT. or US ROUTE NO. SR 429	STATE ROAD NO. ORANGE	COUNTY ORANGE	DISTRICT 05	ROADWAY ID 75320000	SHEET NO: 7 OF 14
	HNTB	HNTB												
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LANE WIDTHS ARE AVERAGED	28.000	142.0' - 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 2 - 6.0' LWN SHLD2												
ROADWAY COMPOSITION	28.000	28/FC-5												
HORIZONTAL ALIGNMENT	28.000	28/FC-5												
STRUCTURE DESCRIPTION		CURVE DATA NOT FIELD VERIFIED $\Delta=65^{\circ}04'49.00''$ $D=2'00''$ PC=28.107 PI=28.439 PT=28.694												
DISTRICT USE														
SIS		CORRIDOR												
FUN CLASS		URBAN PRIN ART EXPR.												
SPEED LIMIT		70MPH												
AC MAN CLS		ACCESS CLASS01												



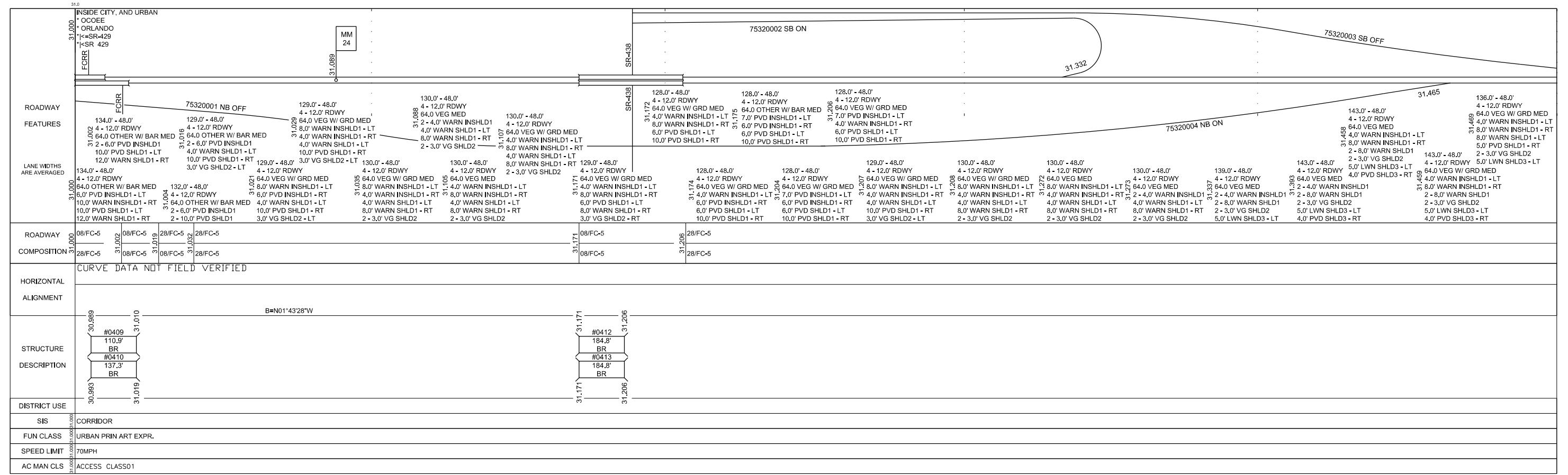
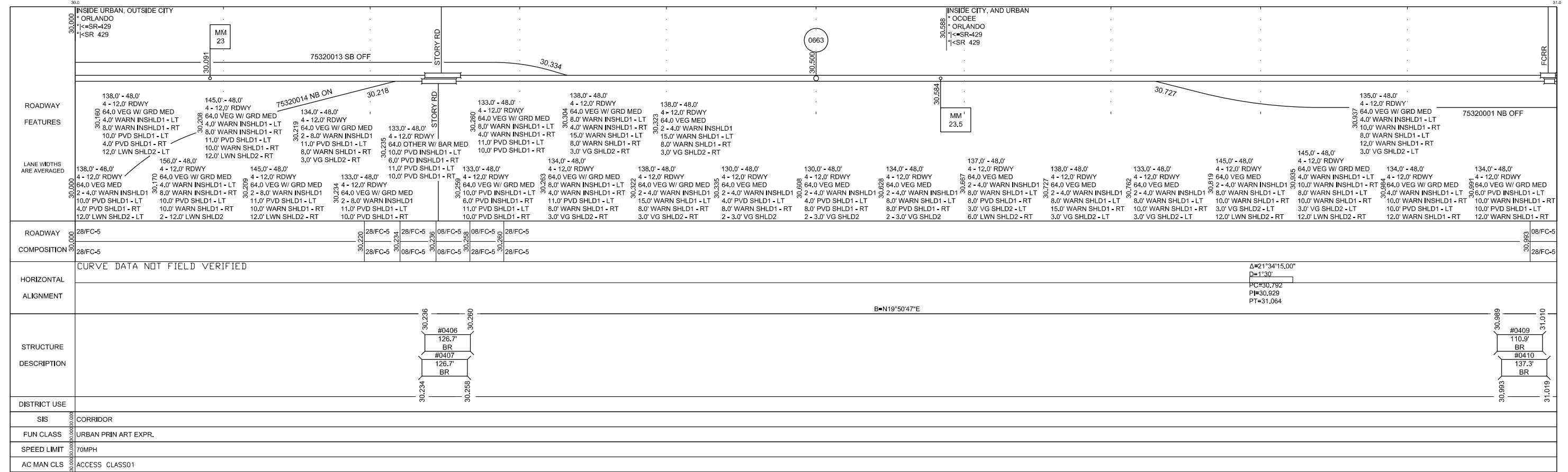
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BY	HNTB	09/01/2021					12		SR 429	ORANGE	05	75320000	8 OF 14

**FLORIDA DEPARTMENT OF TRANSPORTATION**  
**FDOT**  
**STRAIGHT LINE DIAGRAM OF ROAD INVENTORY**



DATE	5 YR INV		SLD REV		BMP		EMP		INV		SLD REV		SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
	11/24/2020																		
BY	HNTB		09/01/2021										12		SR 429	ORANGE	05	75320000	9 OF 14

FLORIDA DEPARTMENT OF TRANSPORTATION  
FDOT  
**STRAIGHT LINE DIAGRAM OF ROAD INVENTORY**



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

FLORIDA DEPARTMENT OF TRANSPORTATION  
FDOT  
**STRAIGHT LINE DIAGRAM OF ROAD INVENTORY**

SECTION STATUS

INT. or US ROUTE NO.

STATE ROAD NO.

COUNTY

DISTRICT

ROADWAY ID

SHEET NO:

12

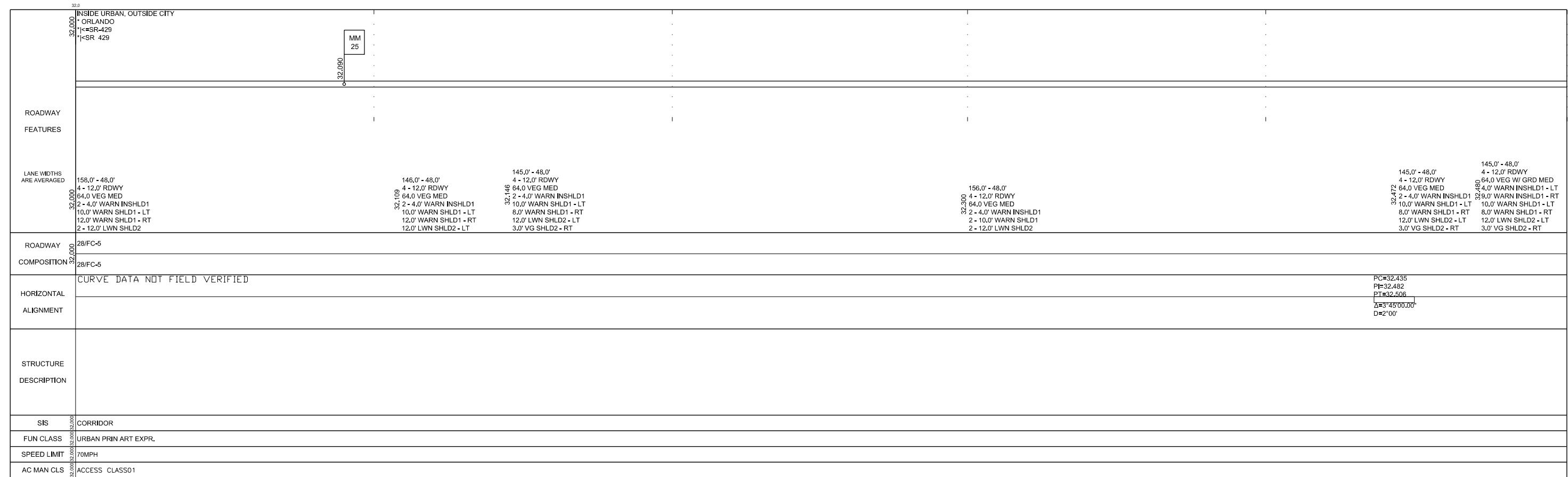
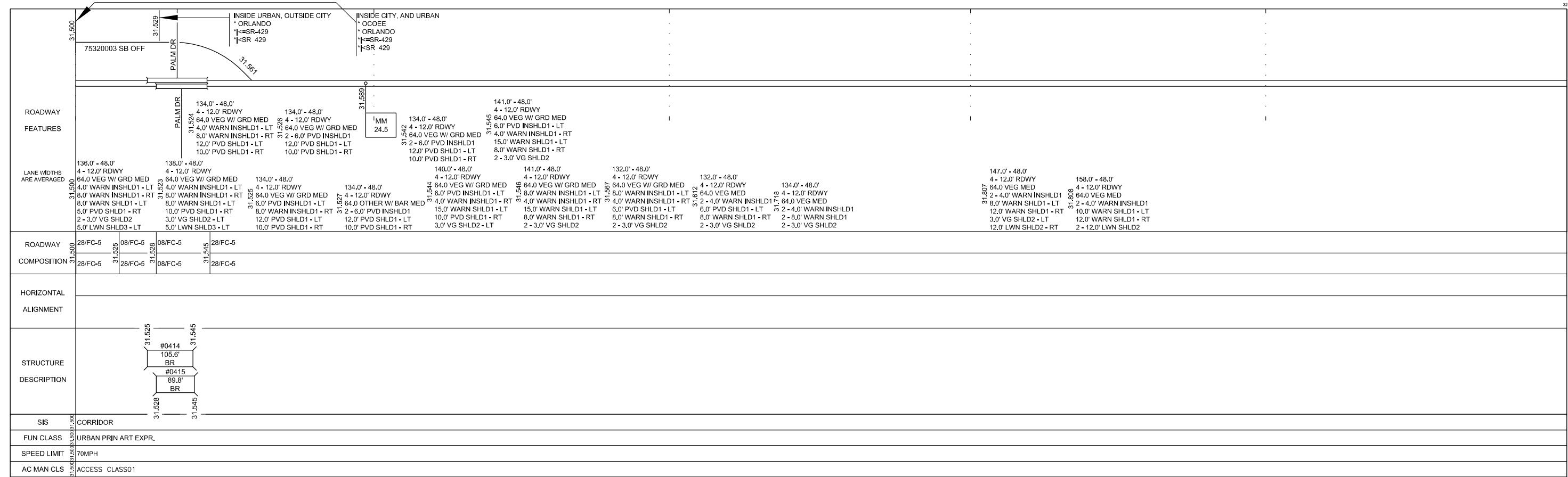
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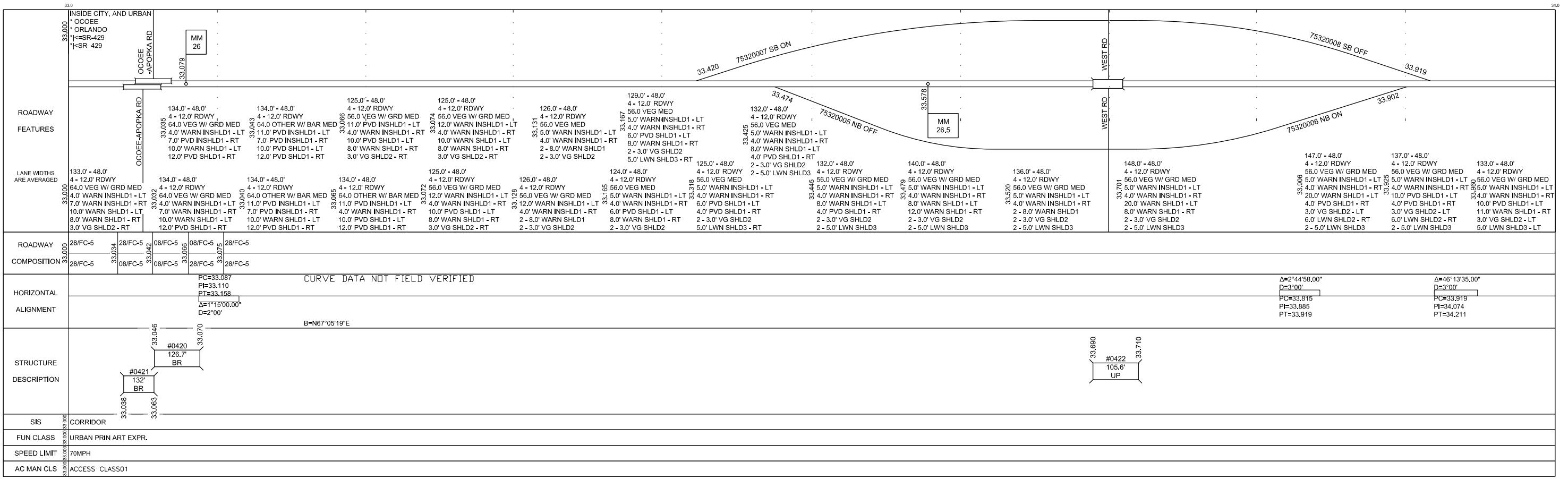
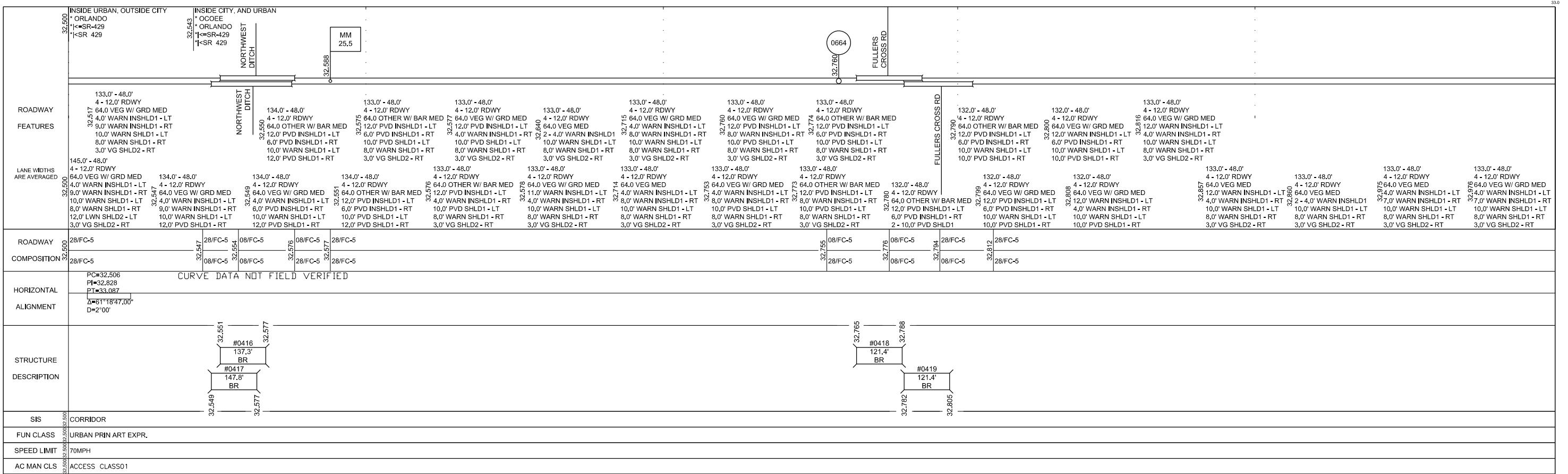
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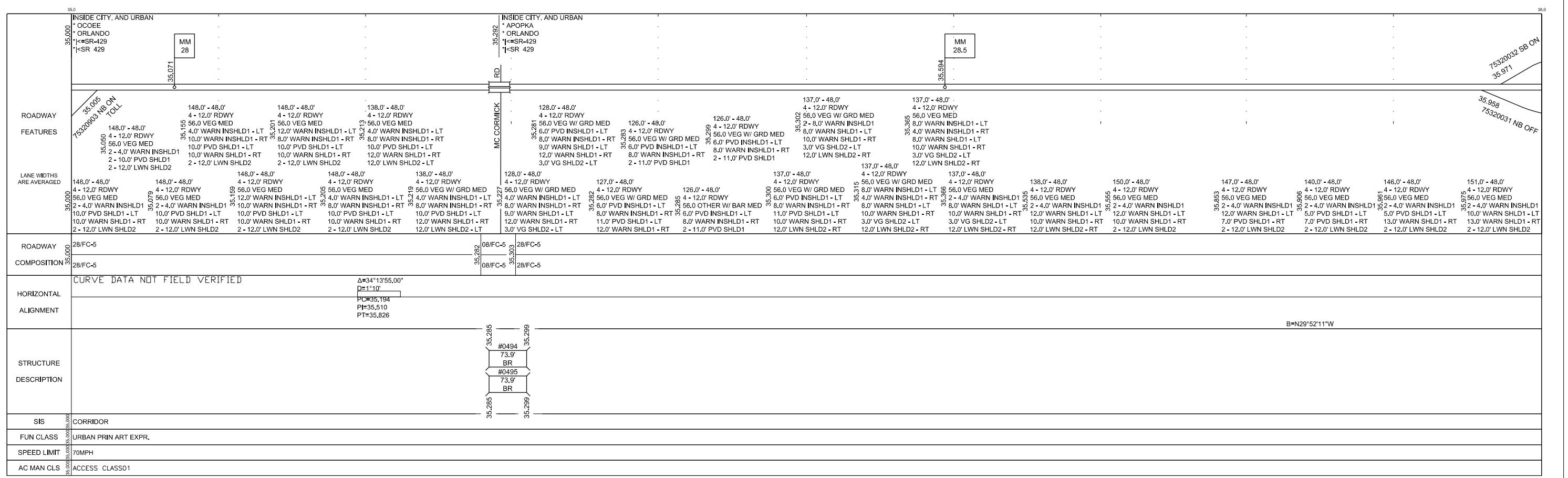
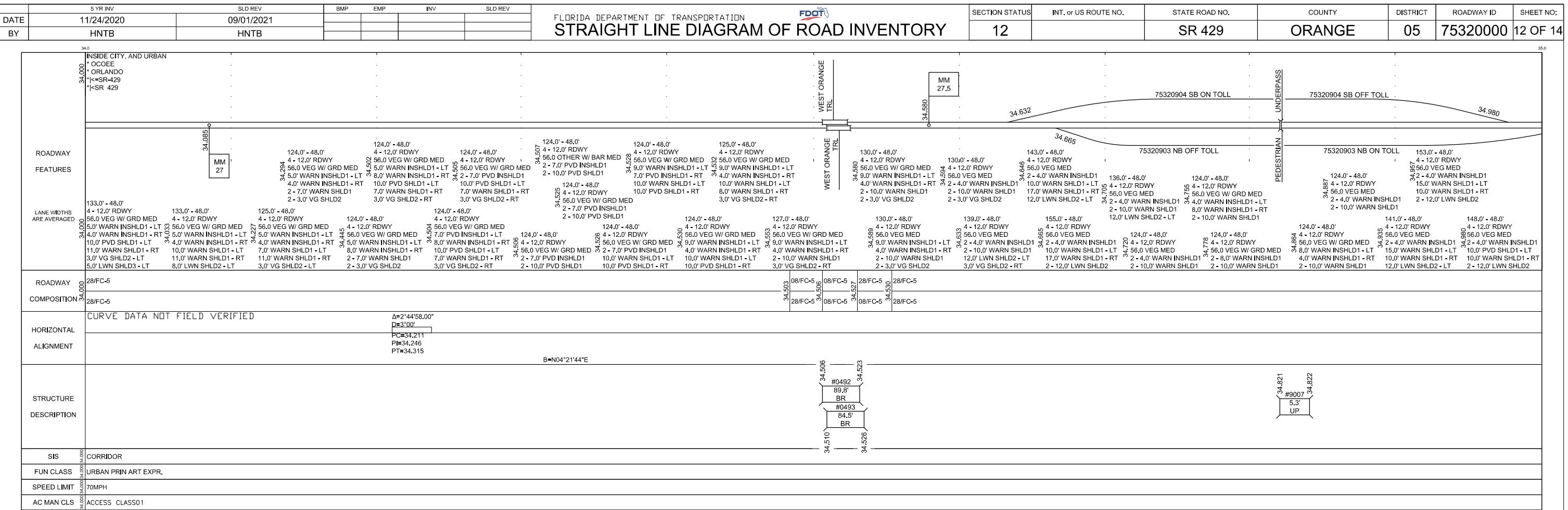
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DATE	5 YR INV 11/24/2020	SLD REV 09/01/2021	BMP	EMP	INV	SLD REV	SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
BY	HNTB	HNTB					12		SR 429	ORANGE	05	75320000	11 OF 14

**FLORIDA DEPARTMENT OF TRANSPORTATION**  
**FDOT**  
**STRAIGHT LINE DIAGRAM OF ROAD INVENTORY**







DATE	5 YR INV 11/24/2020	SLD REV 09/01/2021	BMP	EMP	INV	SLD REV	FLORIDA DEPARTMENT OF TRANSPORTATION	FDO	SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
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