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Location Hydraulic Report

Florida Department of Transportation

Florida's Turnpike Enterprise

Central Polk Parkway East PD&E Study

From US 17/92 to Poinciana Connector (SR 538)

Polk and Osceola Counties, Florida

Financial Management Number: 451419-1

ETDM Number: 14524

November 2025

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EXECUTIVE SUMMARY

Florida's Turnpike Enterprise (Enterprise) is conducting a Project Development and Environment (PD&E) study to evaluate a new tolled, multi-lane, limited access highway from US 17/92 to Poinciana Connector (SR 538) known as the Central Polk Parkway East. The proposed project lies within Polk and Osceola Counties. The proposed alignment is four-lane limited access facility with two 12-foot-wide travel lanes in each direction, separated by a 50-foot-wide median, including the inside shoulders.

The purpose of this PD&E study is to evaluate engineering and environmental data and document information that will aid the Enterprise in determining the location, type, and preliminary design of the proposed improvements.

The proposed improvements will require the construction of 22 total bridges, approximately 7 of those are associated with environmentally sensitive areas such as waterbodies, wetlands, floodplains, or areas of high organic material. The installation of 15 new cross drains, replacement of 8 existing cross drains, and 4 cross drain extensions for hydraulic connectivity and to minimize environmental/floodplain encroachments.

The proposed CPP East will result in minimal impacts to the adjacent Federal Emergency Management Agency (FEMA) floodplains. There are no floodways within the project study area. The anticipated 100-year floodplain encroachments due to the proposed roadway improvements have been identified and quantified within this report. Approximately 20 floodplain encroachment locations were identified along the corridor. The impacts to the floodplain associated with the proposed improvements are classified as "Minimum Encroachments". "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.

The datum used for this study is North American Vertical Datum of 1988 (NAVD-88). The datum shift from NGVD-29 is (-)0.955-ft, with NAVD-88 being the lower elevation of the two.

A coordination meeting with the Polk County floodplain coordinator has been scheduled for November 17, 2025. No floodplain encroachments are anticipated within Osceola County. Meeting minutes will be provided following the meeting.

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1.0 Introduction

The Florida Department of Transportation (FDOT) Florida's Turnpike Enterprise (Enterprise) is conducting a Project Development and Environment (PD&E) Study to evaluate the Central Polk Parkway (CPP) East. The PD&E study area extends from US 17/92, south of the Power Line Road extension, to the future Poinciana Connector (State Road (SR) 538), with the CSX railroad delineating the western study area boundary. The purpose of this project is to meet existing and future regional travel demands by providing an additional north-south facility that will enhance mobility, increase accessibility to the regional roadway network, and improve emergency-evacuation and response efficiency. **Figure 1-1** shows the study area for the approximately eight-mile tolled, multi-lane, limited-access highway referred to as the Central Polk Parkway (CPP) East.



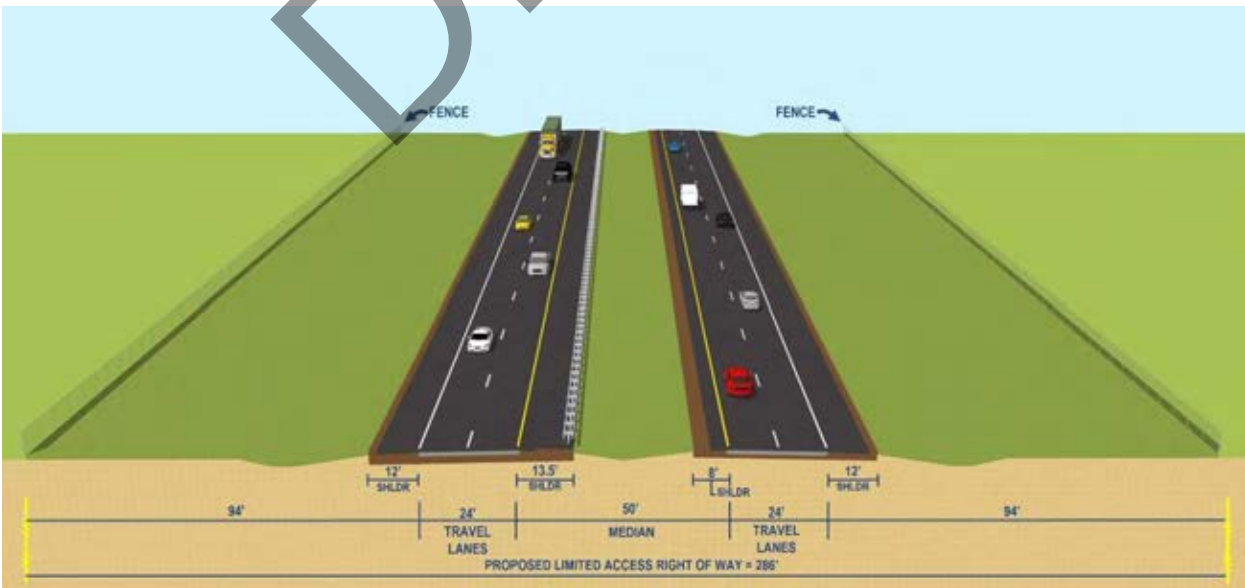
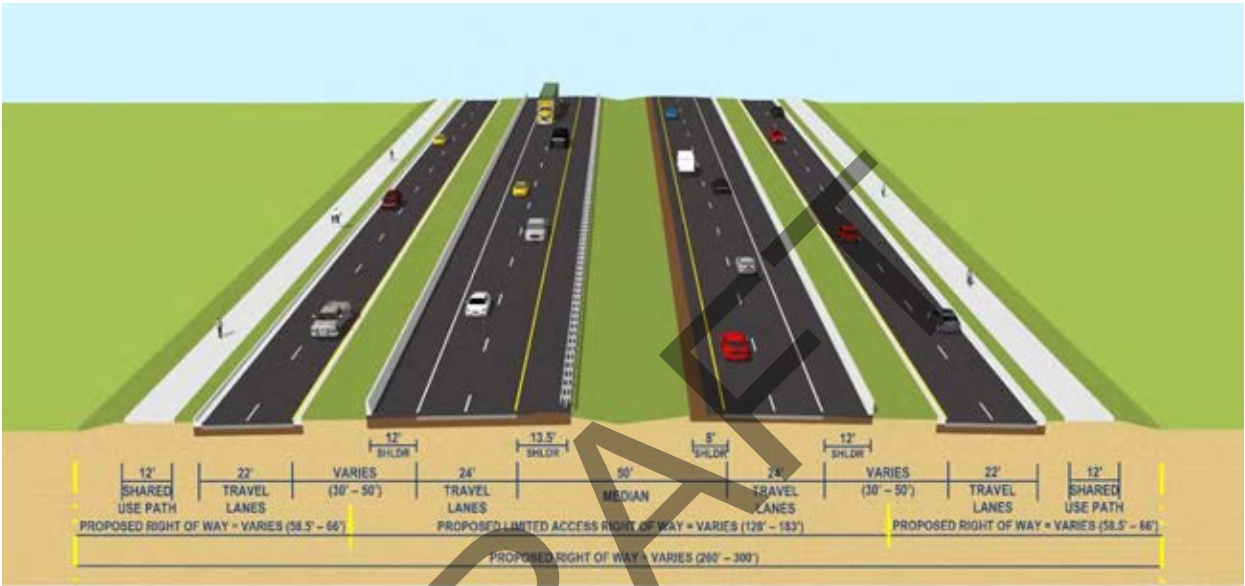
Figure 1-1: Project Location Map

2.0 Project Description

The intent of this Location Hydraulics Report (LHR) is to identify the drainage patterns through the study area and analyze cross drains and potential floodplain impacts. The LHR identifies the potential 100-year (base) floodplain encroachments resulting from the proposed roadway improvements evaluated in this study. Title 23 of the Code of Federal Regulations (CFR), 650 Subpart A, Section 650.111, states that floodplains must be protected. The intent of these regulations is to avoid both short- and long-term adverse impacts resulting from the modification of floodplains due to 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 typical section for the approximately 7.4 mile corridor is shown on **Figure 2-1** and **Figure 2-2** and features a four-lane limited access facility (CPP East) with a co-located segment and a new alignment segment. The alignment will be co-located from the beginning of the project near Powerline Road along US 17/92 for 0.8 miles to south of Ernie Caldwell Boulevard. From there the alignment will curve north as a new alignment running adjacent to the CSX railroad for 1.4 miles before curving back towards US 17/92. The alignment crosses over US 17/92 near the Providence neighborhood and parallels US 17/92 on the east side until after Ronald Reagan Parkway. The alternative ends with a connection to the future Poinciana Connector. North of Ronald Reagan Parkway, CPP East is located along the east side of US 17/92. Approximately 2,000 feet north of Ronald Reagan Parkway, CPP East curves to the north, crossing over US 17/92 and then the northbound and southbound lanes diverge. Northbound CPP East crosses over the future Poinciana Connector to tie into the outside lanes in the vicinity of the CR 532 overpass and CPP East southbound is created with a ramp that forms just south of CR 532 and crosses over US 17/92. CPP East is comprised of two 12-foot-wide travel lanes in each direction separated by a 50-foot-wide median, including the inside shoulders. In the northbound direction there is an eight-foot-wide inside shoulder and 12-foot-wide outside shoulder. In the southbound direction

there is a 13.5-foot-wide inside shoulder with guardrail and 12-foot-wide outside shoulder. The proposed limited access right-of-way is 286 feet, including 94 feet of border width on either side. A 12-foot-wide shared-use path is being evaluated between the US 17/92 and Power Line Road intersection and Ernie Caldwell Boulevard. An additional 50 feet of right-of-way is required for the shared use path footprint.



The new alignment lies within Polk and Osceola Counties, Florida. **Table 2-1** identifies the sections, townships, and ranges of the project.

Table 2-1: Section, Township, and Range

Range	Township	Section(s)
R27E	T27S	03
R27E	T26S	01,12, 13, 14 ,23, 24, 26, 27, 34, 35,
R28E	T26S	06, 07
R28E	T25S	31
R27E	T25S	36

The datum used for this study is North American Vertical Datum of 1988 (NAVD-88) The datum shift from NGVD-29 is (-) 0.955-ft, with NAVD-88 being the lower elevation of the two.

3.0 Existing Conditions

Portions of the proposed CPP East corridor will be co-located along US 17/92. The majority of the US 17/92 corridor can be described as a rural typical section with roadside swales with side drains. As the corridor becomes increasingly developed, curb and gutter and closed storm sewer systems are replacing the roadside swales.

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

Table 3-1: Project WBID's

WBID	Waterbody Name
1436	Horse (Horseshoe) Creek
3170C	Reedy Creek above Lake Russell

3.1 Soils

The soils within and adjacent the proposed alignment are very similar and correspond to sand and fine sand. Less than 15% of the soils in the area of study are characterized as muck. The Natural Resource Conservation Service (NRCS) Web Soil Surveys of Polk and Osceola Counties were used to determine the soil types within the project limits. The soils information suggests that the soil and groundwater conditions along the new corridor are favorable for roadway improvements. See **Appendix D** for the soil map and description.

3.2 Land Use

The Florida Cooperative Land Cover Map (CLC) version 3.7 (November 2023), Florida Land Use, Cover and Forms Classification System (FLUCCS) and 2024 National Land Cover Database (NLCD) were used to identify the most recent land uses. **Table 3-2** shows the distribution of land uses using the FLUCCS Classification within the area of study. See **Appendix E** for the land use map.

Table 3-2: Land Uses using FLUCCS Classification

Description	Acres	Approximate Area of Interest (AOI) (%)
Commercial and Services	78.67	3.8
Cropland and Pastureland	190.32	9.2
Road Surface	28.10	1.4
Extractive	95.13	4.6
Herbaceous	9.74	0.5
Industrial	44.87	2.2
Institutional	12.30	0.6
Lakes	82.50	4.0
Mixed Rangeland	91.98	4.5
Non-vegetated Wetlands	3.63	0.2
Nurseries and Vineyards	3.60	0.2
Open Land	90.51	4.4
Other Open Land Rural	116.25	5.6
Reservoirs	45.04	2.2
Residential High Density	65.06	3.2
Residential Low Density	302.87	14.7
Residential Medium Density	89.24	4.3
Shrub and Brushland	31.72	1.5
Streams and Waterways	0.41	0.1
Transportation	26.71	1.3
Upland Coniferous Forest	117.98	5.7
Upland Hardwood Forest	6.11	0.3
Upland Mixed Forest	26.05	1.3
Upland Shrub and Brushland	14.21	0.7
Utilities	13.64	0.7
Vegetated Non-Forested Wetlands	159.90	7.8
Wetland Coniferous Forests	21.83	1.1
Wetland Forested Mixed	106.64	5.2
Wetland Hardwood Forests	183.85	8.9

3.3 Cross Culverts

Twelve existing cross culverts were identified along the project alignment. A bridge class culvert located at Horse Creek and eleven non-qualifying culverts associated with tributaries of Reedy Creek. There is one cross drain associated with a side street (EX-111), Old Kissimmee Rd.

Existing cross drain information was obtained from the Straight Line Diagram. The Straight Line Diagram can be found in **Appendix C**.

Drainage maps depicting the existing cross drains and associated drainage basin can be found in **Appendix A**. **Table 3-3** lists the existing non-qualifying cross culverts. Cross drains with larger offsite drainage areas can be found in **Appendix B**.

Table 3-3: Existing Cross Drains

Centerline / Baseline	Station	Drainage Basin ID	Cross Drain ID	Number of Boxes	Size	Length	Outfall Type
CPP E	1042+20	B-101OFF	EX-101	1	2' X 2'	65'	Open Basin - Wetland
CPP E	1052+60	B-102OFF	EX-102	1	3' X 2'	65'	Open Basin - Wetland
CPP E	1088+60	B-103OFF	EX-103	1	4' X 3'	65'	Open Basin - Wetland
CPP E	1099+60	B-104OFF	EX-104	1	2' X 2'	70'	Open Basin - Wetland
CPP E	1108+00	B-105OFF	EX-105	1	30"	70'	Open Basin - Wetland
US 17/92	53+60	B-106OFF	EX-106	1	2' X 2'	75'	Open Basin - Wetland
US 17/92	67+60	B-107OFF	EX-107	1	2' X 2'	70'	Open Basin - Wetland
US 17/92	84+40	B-108OFF	EX-108	1	30"	65'	Open Basin - Wetland
US 17/92	92+40	B-109OFF	EX-109	1	30"	70'	Open Basin - Wetland
US 17/92	170+00	B-110OFF	EX-110	1	24"	84'	Open Basin - Wetland
CL North US 17/92	53+80	B-111OFF	EX-111	1	4' X 3'	65'	Open Basin - Wetland

3.4 Railroad Culverts

There is a railroad line that connects Kissimmee with Lakeland that is owned by CSX and operated by Amtrak. **Table 3-4** shows the list of railroad culverts identified along the CSX rail line.

Table 3-4: Railroad Culverts

Railroad Culvert ID	Latitude	Longitude	Culvert Size	Length (ft)	Stream Name
RR1	28° 10' 31.98"	-81° 35' 53.55"	Unknown	~ 20	Horse Creek
RR2	28° 12' 13.62"	-81° 35' 06.71"	Unknown	~ 20	-
RR3	28° 15' 17.58"	-81° 33' 14.65"	Unknown	~ 25	-

3.5 Bridge Structures

There are multiple bridge culverts on US 17/92 between Power Line Road and the future Poinciana Connector, but only one bridge culvert will be affected by the new alignment. **Table 3-5** shows the details of the FDOT bridge culvert located at Horse Creek. As-builts and bridge inspection excerpts for Horse Creek can be found in **Appendix I**.

Table 3-5: Bridge Culverts

Station	FDOT Culvert ID	Number of Boxes	Culvert Size	Length	Outfall / Stream Name
1058+40	160019	3	10H' x 12W'	95'	Riverine - Horse Creek

3.6 Floodplains and Floodways

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) for Polk and Osceola Counties and Southwest Florida Water Management District (SWFWMD) floodplain maps were reviewed to determine the extent of the floodplains within project limits. The current FEMA FIRMs and floodplain-related information are provided in **Appendix G**. **Table 3-6** provides a summary of the FIRMs including their effective dates.

Table 3-6: Summary of Effective FEMA FIRMs

County	Community Numbers	Map Number	Effective Date
Osceola	120189, 120261, 120577	12097C0040G	June 18, 2013
Osceola	120189, 120261, 120577	12097C0045G	June 18, 2013
Polk	120261	12105C0125H	December 22, 2016
Polk	120261	12105C0230H	December 22, 2016
Polk and Osceola	120261, 120189	12105C0235H	December 22, 2016
Polk	120261, 120266, 120410	12105C0240G	December 22, 2016

Multiple Letters of Map Revision (LOMR) were found within the project limits. These letters revise the current FIRM to document changes in floodplains, floodways, or flood elevations. **Table 3-7** provides a summary of the LOMRs found within the project limits.

Table 3-7: Summary of LOMRs within Project Limits

Map Number	Case Number	Effective Date
12105C0230H 12105C0235H	20-04-4035P	January 6, 2022
12105C0235H	21-04-1105P	April 21, 2022
12105C0230H	21-04-3985P	March 2, 2023
12105C0230H	22-04-1908P	December 22, 2022
12105C0230H	22-04-1142P	January 26, 2023
12105C0230H	23-04-0252P	October 26, 2023
12105C0230H 12105C0235H	22-04-4292P	October 26, 2023

The applicable Flood Insurance Studies (FIS) for this project are in Polk County FIS (effective September 28, 2012) and Osceola County (effective May 7, 2001). There are no regulatory floodways within this corridor. **Table 3-8** provides a summary of the floodplains within the project limits.

Table 3-8: Floodplains Within Study Area

ID	Centerline / Baseline	From Station	To Station	Side	Floodplain / Waterbody Name	FIRM Panel No.	Floodplain Zone	FEMA 100-yr Floodplain Elevation (ft)
1	CPP E	1038+60	1043+60	LT	-	12105C0240G	A	-
2	CPP E	1051+60	1052+80	LT	-	12105C0240G	A	-
3	CPP E	1057+40	1066+60	LT/RT	Horse Creek	12105C0240G	A	-
4	CPP E	1086+80	1091+20	LT/RT	-	12105C0240G	A	-
5	CPP E	1096+60	1101+80	LT	-	12105C0240G	A	-
6	CPP E	1108+20	1112+20	LT	-	12105C0240G	A	-
7	CPP E	1171+00	1177+20	LT/RT	-	12105C0240G	A	-
8	CPP E	1179+20	1185+00	LT	-	12105C0240G	A	-
9	SB Exit Ramp NB Exit Ramp	20+60 32+00	32+80 42+00	LT/RT	-	12105C0240G	A	-
10	SB Exit Ramp	39+00	42+60	LT	Wetland I	12105C0240G	AE	111.6
11	SB Exit Ramp	45+00	48+90	LT	-	12105C0240G	A	-
12	CPP E	1199+00	1203+60	RT	Basin 30	12105C0240G	AE	110.5
13	CPP E	1242+40	1251+20	LT/RT	-	12105C0240G	A	-
14	CPP E	1272+20	1276+20	LT	-	12105C0240G	A	-
15	CPP E	1279+40	1302+40	LT/RT	Oakhill Ponding Area 10	12105C0240G	AE	96.9
16	CPP E	1303+80	1325+00	LT/RT	Oakhill Ponding Area 1	12105C0240G	AE	90.4
17	CPP E SBRamp CPP E NBRamp	113+00 212+20	120+40 225+00	LT/RT	Pond 4 / Flooding Effects from Reedy Creek	12105C0240G	AE	67.0
18	CPP E SBRamp CPP E NBRamp	125+40 229+40	133+60 232+40	LT/RT	Pond 4 / Flooding Effects from Reedy Creek	12105C0240G	A	-
19	CPP E SBRamp CPP E NBRamp	146+00 248+40	150+60 253+40	LT/RT	-	12105C0240G	A	-
20	CPP E SBRamp	160+80	163+30	LT/RT	Tributary No. 1	12105C0125H	AE	-

4.0 Proposed Conditions

Section 2 describes in detail the characteristics of the CPP East alignment between Power Line Road extension and the future Poinciana Connector (SR 538). The approximate 7.4 mile new alignment features a four-lane limited access facility.

4.1 Cross Culverts

The proposed roadway improvements will require culvert extensions, replacement of aging structures, and installation of new culverts and ditches. **Table 4-1** outlines the expected improvements, modifications, and installation of new drainage components. Several culverts are proposed for replacement because they do not meet the minimum size requirement specified in the latest FDOT Drainage Manual (Box Culvert Precast 3' x 3'). Existing and proposed culverts and cross drains were evaluated for hydraulic adequacy. **Appendix F** has preliminary calculations that account for recent land use changes as well as variations in flow and culvert size. Flow rates for new cross drains and culverts were estimated based on the Rational Method for a 50-year design storm, in accordance with the 2025 FDOT Drainage Manual. Preliminary culvert sizing was based on the velocity method. Additionally, where an existing cross drain was located upstream of the study area within the same flow path as a new culvert, the existing culvert size was used to verify culvert sizing and to ensure the new culvert was not smaller than any upstream structures. For Horse Creek, as-built plans and bridge inspection report excerpt can be found in **Appendix I**.

The preliminary cross-culvert sizes shown in the table below should be further analyzed during the design phase using a more detailed methodology. The design should consider recent land use changes, culvert inspection reports, and history of road overtopping along US 17/92.

Table 4-1: Proposed Cross Drains

Centerline Alignment	Station	Size	Number of Barrels / Boxes	Culvert ID	Existing Length (ft)	Proposed Length (ft)	Proposed Improvement
CPP E	1041+40	5' X 3'	1	CD-101	65	180	Replace
CPP E	1052+40	3' x 3'	1	CD-102	65	205	Replace
CPP E	1058+40	10H' x 12W'	3	160019*	47.5	225	Replace
CPP E	1088+60	4' X 3'	1	CD-103	65	300	Extend
CPP E	1100+80	4' X 3'	1	CD-104	70	250	Replace
CPP E	1108+00	5' X 3'	2	CD-105	70	250	Replace
US 17/92	53+60	4' X 3'	1	CD-106	75	85	Replace
US 17/92	67+60	3' X 3'	1	CD-107	70	90	Replace
CPP E	1173+60	5' x 3'	4	CD-401*	-	130	New Bridge Culvert
CPP E	1182+00	24"	1	CD-402	-	150	New
SB Exit Ramp	26+80	5' x 3'	4	CD-451SB*	-	35	New Bridge Culvert
NB Exit Ramp	36+60	5' x 3'	4	CD-451NB*	-	35	New Bridge Culvert
US 17/92	84+40	30"	1	CD-108	65	80	Extend
US 17/92	92+60	30"	1	CD-109	65	95	Extend
CPP E	1249+80	4' X 3'	1	CD-601	-	150	New
CPP E	1273+80	30"	1	CD-602	-	210	New
US 17/92	170+50	6' X 4'	4	CD-110*	84	150	Replace
CPP E	1312+80	6' X 3'	1	CD-701	-	150	New
CL North US 17/92	53+80	4' X 3'	1	CD-111	65	140	Extend
US BL CPP E NBRamp	216+20	30"	1	CD-801NB	-	55	New
US BL CPP E SBRamp	114+20	30"	1	CD-801SB	-	55	New
CL North US 17/92	76+40	4' X 3'	1	CD-802CL	-	130	New
BL CPP E SBRamp	127+60	4' X 3'	1	CD-802SB	-	100	New
BL CPP E NBRamp	137+20	5' x 3'	2	CD-901NB	-	80	New
BL CPP E SBRamp	237+60	5' x 3'	2	CD-901SB	-	80	New
BL CPP E SBRamp	161+80	7' X 6'	4	CD-1001SB*	-	70	New Bridge Culvert
BL CPP E NBRamp	275+40	18"	1	CD-1002NB	-	80	New
BL CPP E SBRamp	172+80	18"	1	CD-1002SB	-	80	New

* - Denotes bridge class culvert

Table 4-2 identifies the proposed culvert, drainage basin, and outfall type.

Table 4-2: Proposed Cross Drains Basin and Outfall

Culvert ID	Drainage Basin ID	Outfall Type / ID
CD-101	B-101OFF	Open Basin - Wetland
CD-102	B-102OFF	Open Basin - Wetland
160019	B-1600190OFF	Riverine – Horse Creek
CD-103	B-103OFF	Open Basin - Wetland
CD-104	B-104OFF	Open Basin - Wetland
CD-105	B-105OFF	Open Basin - Wetland
CD-106	B-106OFF	Open Basin - Wetland
CD-107	B-107OFF	Open Basin - Wetland
CD-401	B-401OFF	Open Basin - Wetland
CD-402	B-402OFF	Open Basin - Wetland
CD-451SB	B-451OFF	Open Basin - Wetland
CD-451NB	B-451OFF	Open Basin - Wetland
CD-108	B-108OFF	Open Basin - Wetland
CD-109	B-109OFF	Open Basin - Wetland
CD-601	B-601OFF	Open Basin - Wetland
CD-602	B-1100OFF	Open Basin - Wetland
CD-110	B-1100OFF	Open Basin - Wetland
CD-701	B-702OFF	Open Basin - Wetland
CD-111	B-1110OFF	Open Basin - Wetland
CD-801NB	B-801OFF	Open Basin - Wetland
CD-801SB	B-801OFF	Open Basin - Wetland
CD-802CL	B-802OFF	Open Basin - Wetland
CD-802SB	B-802OFF	Open Basin - Wetland
CD-901NB	B-901OFF	Open Basin - Wetland
CD-901SB	B-901OFF	Open Basin - Wetland
CD-1001SB	B-1001OFF	Riverine – Unnamed Reedy Creek Trib
CD-1002NB	B-1001OFF	Open Basin - Wetland
CD-1002SB	B-1002OFF	Open Basin - Wetland

Two new crossings (CD-401 and CD-451) are located downstream of the railroad crossing RR2 (see **Table 3-4**). The proposed culvert sizes were estimated based on the dimensions of the downstream culvert at US 17/92 (FDOT bridge culvert 160187). This area contains multiple flood-prone zones, wetlands, and has undergone significant urbanization. Recent changes in drainage

patterns within this region are documented in the permit for Brensus Commercial Park @ Sunny Acres, Lots 46 and 51 (SWFWMD ERP 44530.001, Application 820930).

The adjacent floodplain located on the south side of the corridor between Station 1280+00 and 1303+00 needs to be analyzed in greater detail during the design phase as there is a natural bottle neck between US 17/92 and the existing community to the south. The existing bottle neck is not anticipated to be reduced as part of the proposed improvements; however, with the reduction of floodplain storage and being located adjacent to a large community that has begun to experience flooding during large storm events, this should be taken into consideration during design.

Another area requiring further analysis is located between US 17/92 and the Oak Hill Estates subdivision, south of the future Poinciana Parkway (formerly known as Kinney Harmon Road). This area includes the ongoing construction of a commercial development that may conflict with the CPP East alignment, as referenced in SWFWMD permit 8331.025 (Application 893614) for Marketplace at Providence, and permit 8331.024 (Application 850358) for Providence N27 Mass Grading. Upon review of the permit for the site a set of culverts are proposed between US 17/92 and the proposed community to facilitate upstream drainage around the proposed community. The proposed alignment may impact this conveyance system and should be reviewed in greater detail during design. As of our March 28, 2025, field review, the site was being cleared and grubbed.

No hydraulic analyses were conducted for culverts CD-802 and CD-1001, as they were previously sized in Project 538 (Poinciana Parkway) Segment 2, from CR 532 to US 17/92 (CFX Project Number 538-235). Lastly, bridge culvert 160019, originally constructed in 1934 and rebuilt in 2010, is nearing its 100-year service mark. The option of replacement may be considered during the design phase.

The proposed improvements will require the construction of 22 total bridges, approximately 7 of those are associated with environmentally sensitive areas such as waterbodies, wetlands, floodplains, or areas of high organic material. **Table 4-3** below lists those bridges.

Table 4-3: Proposed Bridges over Waterways/Floodplains

Centerline / Alignment	From Station	To Station	Bridge Crossing Type ¹
CPP E	1129+00	1135+40	Floodplain/wetland
CPP E	1148+80	1155+60	Floodplain/wetland
CPP E	1213+40	1228+80	Floodplain/wetland
CPP E	1253+40	1268+60	Floodplain/wetland
BL CPP E NBRamp	246+00	267+00	Riverine – Unnamed Reedy Creek Trib
BL CPP E SBRamp	145+00	152+00	Floodplain/wetland
US/92 Local	26+20	36+20	Floodplain/wetland

1. Bridges are located over low velocity wetlands. No riverine crossings are associated with bridges.

2. Bridge numbers are unavailable at this time.

4.2 Floodplains and Floodways

The anticipated floodplain impacts associated with the proposed co-located alignment with shared use path and new alignment were evaluated to determine potential effects on the 100-year floodplains and the required compensation volumes. The precise impact volume will be assessed during the design phase, once survey data, geotechnical information, and proposed cross sections become available.

Floodplain impacts will be mitigated by floodplain compensation sites using an incremental stage, “cup-for-cup” analysis. The expected encroachment amounts are included in **Table 4-4**. Floodplain impact calculations for each encroachment location are in **Appendix H**. When possible, three floodplain compensation alternatives were proposed for each encroachment location, as shown in the drainage map (**Appendix A**). Most of the floodplains within the study area are classified as FEMA Zone A, indicating areas of potential inundation without established Base Flood Elevations (BFEs). Several nearby Letters of Map Revision (LOMRs) have established BFEs through

detailed hydraulic modeling to support development. During the design phase, development of a detailed hydrologic and hydraulic (H&H) model is recommended to establish BFEs and enable pre- and post-development stage comparisons. This will help verify adequate floodplain compensation and ensure compliance with regulatory requirements.

The project will affect the 100-year floodplain through both longitudinal and transverse impacts. Longitudinal impacts stem from filling activities within floodplain zones resulting from roadway improvements, while transverse impacts arise from the extension of existing cross-drains. Longitudinal encroachments may be minimized using guardrails and retaining walls to reduce fill within sensitive areas.

Floodplain encroachments were evaluated between the seasonal high groundwater elevation and the 100-year Base Flood Elevation (BFE). For areas mapped as FEMA Zone A, where no BFE is established, approximate elevations were derived using available LiDAR data. In the vicinity of the City of Davenport, Southwest Florida Water Management District (SWFWMD) floodplain limits were used in lieu of FEMA data where applicable, as these limits are based on more recent LiDAR datasets and are considered more accurate. In these locations, the SWFWMD floodplain limits extend beyond the current FEMA effective floodplain boundaries; therefore, the larger of the two extents was used for analysis.

Floodplain compensation was evaluated using the SWFWMD "cup-for-cup" methodology, which requires that any floodplain storage volume displaced by proposed fill or encroachment be replaced with an equal volume of compensatory storage within the same basin and at corresponding elevations. HEC-RAS RAS Mapper, incorporating USGS LiDAR data, was used to develop existing floodplain profiles and establish the stage-storage relationship for both impact and compensation areas. Compensatory storage volumes were balanced incrementally between the lowest point of encroachment and the 100-year flood stage to ensure no net loss of floodplain storage capacity. This approach demonstrates that the proposed improvements maintain hydraulic connectivity and result in no increase in flood stages or adverse impacts to adjacent

properties. Floodplain cut and fill calculations, as well as supporting figures, are provided in **Appendix H**.

Anticipated floodplain impact locations resulting from the Preferred Alternative are identified below. The floodplain compensation alternative analysis matrix can be found in **Appendix H**. **Table 4-5** identifies the selected preferred floodplain compensation sites.

Floodplain Impact Location 1

This floodplain impact is located between stations 1038+60 and 1043+60 along CPP East, at the Power Line Road Extension. The anticipated impact—approximately 3.08 acre-feet—is primarily attributed to the expansion of Power Line Road. The volume of fill required for the replacement of culvert CD-101 is considered minor relative to the overall roadway improvements. The BFE for Zone A at this location is estimated at 111.50 feet, based on contour lines derived from LiDAR data and floodplain delineation provided by the Water Management District. Three potential floodplain compensation (FPC) options have been identified between stations 1035+00 and 1045+00 (FPC-1A, FPC-1B and FPC-1C), near the proposed alignment. Approximately 1.27, 1.38 and 1.69 acres are needed for proposed pond sites, FPC-1A, FPC-1B and FPC-1C, to satisfy the compensation area requirement. The preferred site is FPC 1B.

Floodplain Impact Location 2

The impacted floodplain area is located between stations 1051+60 and 1052+80 along CPP East, on the west side of culvert CD-102. The anticipated impacts are minimal, totaling approximately 0.09 acre-feet. The BFE for Zone A at this location is estimated at 109.5 feet, based on contour lines derived from LiDAR data and floodplain delineations. Three potential floodplain compensation options can be readily achieved by extending the floodplain (FPC-2A, FPC-2B and FPC-2C). The proposed compensation areas are located at the southeast corner of the impacted floodplain. Approximately 0.17, 0.14, and 0.21 acres are needed for proposed pond sites, FPC-2A, FPC-2B and FPC-2C, to satisfy the compensation area requirement. The preferred site is FPC 2A.

Floodplain Impact Location 3

The floodplain impact is located between stations 1057+40 and 1066+60 along CPP East and corresponds to floodplain areas situated just north of Horse Creek. The anticipated impacts total approximately 1.69 acre-feet. The BFE for Zone A at this location is estimated at 109 feet, based on contour lines derived from LiDAR data and floodplain delineations. Three potential floodplain compensation options are proposed by extending the floodplain (FPC-3A, FPC-3B and FPC-3C). Compensation for these encroachments may be achieved by acquiring either the southern section of the Shady Oaks Mobile Home Park or an area located south of Horse Creek near the railroad tracks. Approximately 1.08, 0.97, and 0.96 acres are needed for proposed pond sites, FPC-3A, FPC-3B and FPC-3C, to satisfy the compensation area requirement. The preferred site is FPC 3C.

Floodplain Impact Location 4

The floodplain impact is located between stations 1086+80 and 1091+20 along CPP East. This impact is associated with improvements related to the co-located segment of US 17/92 and the planned extension of culvert CD-103. The anticipated impact is approximately 1.48 acre-feet. The proposed alignment intersects floodplain areas on both the left and right sides of the centerline; however, the most substantial encroachment occurs within the left floodplain. The BFE for Zone A at this location is estimated at 109 feet, based on contour lines derived from LiDAR data and floodplain delineations. The estimated Seasonal High Groundwater Table (SHGWT) elevation was obtained from the proposed Stormwater Management Facility (SMF) 200 ALT C at 108 feet. Three potential floodplain compensation options are proposed by extending the floodplain (FPC-4A, FPC-4B and FPC-4C). Approximately 1.90, 2.22, and 1.74 acres are needed for proposed pond sites, FPC-4A, FPC-4B and FPC-4C, to satisfy the compensation area requirement. The preferred site is FPC 4B.

Floodplain Impact Location 5

The floodplain impact is located between stations 1096+60 and 1101+80 along CPP East and is associated with the south/westbound co-located lane of US 17/92. This segment also includes the replacement of culvert CD-104. The anticipated impacts total approximately 0.78 acre-feet. The

BFE for Zone A at this location is estimated at 109 feet, based on contour lines derived from LiDAR data and floodplain delineations. The estimated SHGWT elevation was obtained from the proposed SMF 200 ALT C at 108 feet. Three potential floodplain compensation options are proposed by extending the floodplain (FPC-5A, FPC-5B and FPC-5C). Approximately 1.34, 1.35, and 1.76 acres are needed for proposed pond sites, FPC-5A, FPC-5B and FPC-5C, to satisfy the compensation area requirement. The preferred site is FPC 5A.

Floodplain Impact Location 6

The floodplain impact is located between stations 1108+20 and 1112+20 along CPP East. This impact is associated with the construction of additional lanes and the proposed installation of CD-105. The BFE for Zone A at this location is estimated at 119 feet, based on contour lines derived from LiDAR data and floodplain delineations. The estimated SHGWT elevation was obtained from the proposed SMF 200 ALT B at 116 feet. The floodplain encroachments are associated with a manmade sand pit. Therefore, there will be no floodplain compensation for this location. Additional coordination with SWFWMD will be held to verify whether FPCs are required for this non-natural storage.

Floodplain Impact Locations 7 & 8

The floodplain impact is located between stations 1171+00 and 1177+20 along CPP East for location 7, and 1179+20 and 1185+00 along CPP East for location 8. These floodplain impacts lie approximately 100 feet downstream of the railroad culvert described as RR1 in **Table 3-5**. The anticipated impact for location 7 is approximately 4.87 acre-feet and for location 8 is approximately 2.96 acre-feet, and both impacts are primarily attributed to roadway construction. The BFE for Zone A at both locations is estimated at 110 feet, based on contour lines derived from LiDAR data and floodplain delineations. The estimated SHGWT elevation was obtained from the proposed SMF 400 ALT B at 108 feet for both locations. Three potential floodplain compensation options are proposed by extending the floodplain (FPC-7A, FPC-7B and FPC-7C). Approximately 6.38, 4.60 and 5.96 acres are needed for proposed pond sites, FPC-7A, FPC-7B and FPC-7C, to

satisfy the compensation area requirement for both floodplain impact locations. The preferred site is FPC 7A.

Floodplain Impact Location 9

The floodplain impact is located between stations 20+40 and 32+80 along the centerline of the southbound (SB) Exit Ramp, stations 32+00 and 37+40 along the centerline of the northbound (NB) Exit Ramp, and stations 39+80 and 41+00 of NB Exit Ramp. The anticipated impact amounts to approximately 5.12 acre-feet and is primarily associated with the proposed improvements including the installation of CD-451SB and CD-451NB. The BFE for Zone A at this location is estimated at 110.5 feet, based on LiDAR-derived contour analysis. The estimated SHGWT elevation was obtained from the proposed SMF 450 ALT C at 108.5 feet. Three potential floodplain compensation options are proposed by extending the impacted floodplain (FPC-9A, FPC-9B and FPC-9C). Approximately 3.46, 3.72, and 4.96 acres are needed for proposed pond sites, FPC-9A, FPC-9B and FPC-9C, to satisfy the compensation area requirement. The preferred site is FPC 9B.

Floodplain Impact Location 10

The floodplain impact is located between stations 39+20 and 42+40 along the centerline of the SB Exit Ramp. The anticipated impact is approximately 0.68 acre-feet and is attributed to new roadway construction. The BFE for this Zone AE is 111.6 feet. The estimated SHGWT elevation was obtained from the proposed SMF 450 ALT C at 108.5 feet. A single compensation option has been proposed (FPC-10A). Approximately 0.66 acres are needed for proposed pond site, FPC-10A, to satisfy the compensation area requirement. The preferred site is FPC 10A.

Floodplain Impact Location 11

The floodplain is located between stations 45+00 and 48+90 along the centerline of the SB Exit Ramp. The anticipated impact amounts to approximately 0.32 acre-feet and is primarily attributed to new roadway construction. The BFE for Zone A at this location is estimated at 110 feet, based on contour lines generated from LiDAR data. The estimated SHGWT elevation was obtained from the proposed SMF 450 ALT C at 108.5 feet. A single compensation option has been proposed

(FPC-11A): Expansion of the floodplain areas between stations 48+60 and 52+40 along the centerline of the SB Exit Ramp. The proposed compensation area encompasses approximately 0.54 acres. The preferred site is FPC 11A.

Floodplain Impact Location 12

This floodplain is located between stations 1199+00 and 1203+60 of the CPP East. The anticipated impact is approximately 0.79 acre-feet and attributed to the new road construction. The BFE for this Zone AE is 110.5 feet. The estimated SHGWT elevation was obtained from the proposed SMF 450 ALT C at 108.5 feet. A single compensation option (FPC-12A) was identified on the right side of the proposed alignment at the station 1205+40. The proposed compensation option is located near the dead end of Sunny Acres Road. Approximately 0.91 acres are needed for proposed pond sites to satisfy the compensation area requirement. The preferred site is FPC 12A.

Floodplain Impact Location 13

This floodplain is located between stations 1242+40 and 1251+20 along CPP East. The anticipated impact, totaling approximately 4.48 acre-feet, is associated with roadway improvements and the installation of CD-601. The BFE for Zone A at this location is estimated at 106.5 feet, based on contour lines generated from LiDAR information and floodplain delineations. Calculations for expected floodplain impacts started at elevation 101.5 feet based on the LiDAR information and absence of SHGWT elevations. Three potential floodplain compensation options are proposed by extending the impacted floodplain (FPC-13A, FPC-13B and FPC-13C). Approximately 1.93, 2.18, and 1.74 acres are needed for proposed pond sites, FPC-13A, FPC-13B and FPC-13C, to satisfy the compensation area requirement.

Floodplain Impact Location 14

This floodplain is located between stations 1272+20 and 1276+00 along CPP East. The anticipated impact, totaling approximately 6.53 acre-feet, is associated with the roadway improvements and the installation of a new culvert in CD-110. The BFE for Zone A at this location is estimated at 104.5 feet, based on contour lines generated from LiDAR data and the current crown elevation

along US 17/92. Calculations for expected floodplain impacts started at elevation 98.5 feet based on the LiDAR information and absence of SHGWT elevations. Three potential floodplain compensation options are proposed by extending the impacted floodplain (FPC-14A, FPC-14B and FPC-14C). Approximately 1.95, 3.06, and 2.16 acres are needed for proposed pond sites, FPC-14A, FPC-14B and FPC-14C, to satisfy the compensation area requirement. The preferred site is FPC 14A.

Floodplain Impact Location 15

This floodplain is located between stations 1279+40 and 1302+40 of the CPP East, where the proposed alignment crosses US 17/92. The anticipated impact amounts to approximately 6.01 acre-feet and are primarily attributed to the new road construction. The BFE for Zone AE at this location is 96.9 feet. The estimated SHGWT of 94 feet was obtained from the proposed SMF 700 ALT B. One potential floodplain compensation pond is proposed by extending the floodplain (FPC-15A) between stations 1285+20 and 1298+60. Approximately 4.20 acres are needed for proposed pond sites, FPC-15A, to satisfy the compensation area requirement. The preferred site is FPC 15A.

Floodplain Impact Location 16

This floodplain is located between stations 1303+80 and 1325+00 of the CPP East. The anticipated impact amounts to approximately 3.17 acre-feet and is primarily attributed to the new road construction. The BFE for Zone AE at this location is 90.4 feet. Calculations for expected floodplain impacts began at elevation 88.4 feet, based on LiDAR data and the absence of SHGWT elevations. One potential floodplain compensation pond is proposed by increasing the floodplain retention capacity (FPC-16A) between stations 1307+60 and 1313+00. Approximately 2.37 acres are needed for proposed pond sites, FPC-16A, to satisfy the compensation area requirement. The preferred site is FPC 16A.

Floodplain Impact Location 17

This floodplain is located between stations 212+20 and 229+20 of the CPP East NB Ramp, and between stations 113+00 and 120+40 of the CPP East SB Ramp. Both ramps connect to the future

Poinciana Connector which connects to Interstate 4 (I-4). The BFE at this location is estimated 66 feet, based elevations of Zone AE. It is recommended that the design team consider bridging this area or conducting hydraulic modeling to determine whether the anticipated impacts result in minimal to no off-site effects. The estimated lowest terrain elevation at the proposed right-of-way based on LiDAR data, is approximately 73 feet. If the actual terrain elevation exceeds 67 feet, no impacts are expected at this location. However, LiDAR data may be influenced by aquatic vegetation, and a field survey may be required to confirm the absence of impacts. A detailed assessment of this location is recommended during the design phase.

Floodplain Impact Location 18

This floodplain is located between stations 229+40 and 232+40 of the CPP East NB Ramp and between stations 125+40 and 133+60 of the CPP East of the SB Ramps. Both ramps connect to the future Poinciana Connector which connects to I-4. The anticipated impact is approximately 4.09 acre-feet and are primarily attributed to the new ramp construction. The BFE for Zone A at this location is estimated at 82.5 feet, based on contour lines generated from LiDAR data and floodplain delineations. Calculations for expected floodplain impacts began at elevation 77.5 feet, based on LiDAR data and the absence of SHGWT elevations. Two potential floodplain compensation options are proposed by extending the impacted floodplain (FPC-18A) and digging a new pond (FPC-18B). Approximately 2.54 and 1.72 acres are needed for proposed pond sites, FPC-18A and FPC-18B, to satisfy the compensation area requirement. The preferred site is FPC 18A.

Floodplain Impact Location 19

This floodplain is located between stations 248+40 and 253+40 of the CPP East NB Ramp and between stations 146+00 and 150+60 of the CPP East of the SB Ramps. Both ramps connect to the future Poinciana Connector which connects to I-4. The anticipated impact is approximately 0.65 acre-feet and is primarily attributed to the new ramp construction. The BFE for Zone A at this location is estimated at 84.5 feet, based on contour lines generated from LiDAR data and floodplain delineations. Calculations for expected floodplain impacts began at 82.5 feet, based on

SMF 900 ALT A. Two potential floodplain compensation options are proposed by digging a new pond (FPC-19A) and extending the impacted floodplain (FPC-19B). Approximately 1.43 and 1.50 acres are needed for proposed pond sites, FPC-19A and FPC-19B, to satisfy the compensation area requirement. The preferred site is FPC 19B.

Floodplain Impact Location 20

This floodplain is located between stations 160+80 and 163+30 of the CPP East SB Ramp. The anticipated impact is approximately 0.88 acre-feet and are primarily attributed to the new ramp construction and the installation of CD-1001. The BFE for Zone AE at this location is 83 feet. Calculations for expected floodplain impacts began at 78 feet, based on LiDAR data and the absence of SHGWT elevations. Two potential floodplain compensation options are proposed by extending the impacted floodplain (FPC-20A and FPC-20B). Approximately 0.86 and 0.85 acres are needed for proposed pond sites, FPC-20A and FPC-20B, to satisfy the compensation area requirement. The preferred site is FPC 20A.

Table 4-4: Mainline Floodplain Encroachment Areas

Loc ¹	Centerline Alignment	From Station	To Station	Nature of Impact	Side	FP Zone	BFE (ft)	FEMA 100-yr Floodplain Elevation (ft)	Preferred FPC Area (ac)	Encroach. Amount (ac-ft)	Type of Encroach ²
1	CPP E	1038+60	1043+60	Power Line Rd.	LT	A	111.5	-	1.38	3.08	L, T
2	CPP E	1051+60	1052+80	CD-102	LT	A	109.0	-	0.17	0.09	T
3	CPP E	1057+40	1066+60	Horse Creek	LT/RT	A	109.0	-	0.96	1.69	T
4	CPP E	1086+80	1091+20	CD-103	LT/RT	A	109.0	-	1.90	1.48	T
5	CPP E	1096+60	1101+80	CD-104	LT	A	109.0	-	1.34	0.78	T
6	CPP E	1108+20	1112+20	CD-105	LT	A	119.0	-	-	5.10	T
7	CPP E	1171+00	1177+20	RR1	LT/RT	A	110.0	-	6.38	4.87	T
8	CPP E	1179+20	1185+00	CD-402	LT	A	110.0	-	-	2.96	T
9	SB Exit Ramp NB Exit Ramp	20+60 32+00	32+80 42+00	CD-451SB CD-451NB	LT/RT	A	110.5	-	3.72	5.12	T
10	SB Exit Ramp	39+00	42+60	SB Exit Ramp 1	LT	AE	111.6	111.6	0.66	0.68	T
11	SB Exit Ramp	45+00	48+90	SB Exit Ramp 2	LT	A	110.0	-	0.54	0.32	L

Location Hydraulics Report

Loc ¹	Centerline Alignment	From Station	To Station	Nature of Impact	Side	FP Zone	BFE (ft)	FEMA 100-yr Floodplain Elevation (ft)	Preferred FPC Area (ac)	Encroach. Amount (ac-ft)	Type of Encroach ²
12	CPP E	1199+00	1203+60	Sunny Acres Rd	RT	AE	110.5	110.5	0.91	0.79	L
13	CPP E	1242+40	1251+20	CD-601	LT/RT	A	106.5	-	2.18	4.48	T
14	CPP E	1272+20	1276+20	CD-110	LT	A	104.5	-	1.95	6.53	T
15	CPP E	1279+40	1302+40	CPPE – US 17/92	LT/RT	AE	96.9	96.9	4.20	6.01	L
16	CPP E	1303+80	1325+00	CD-701	LT/RT	AE	90.4	90.4	2.37	3.17	L, T
17	CPP E SBRamp CPP E NBRamp	113+00 212+20	120+40 225+00	To I-4 ramps	LT/RT	AE	67.0	-	-	-.3	L, T
18	CPP E SBRamp CPP E NBRamp	125+40 229+40	133+60 232+40	CD-901	LT/RT	A	82.5	-	2.54	4.09	T
19	CPP E SBRamp CPP E NBRamp	146+00 248+40	150+60 253+40	Old Kissimmee Rd.	LT/RT	A	84.5	-	1.43	0.85	T
20	CPP E SBRamp	160+80	163+30	CD-1001	LT/RT	AE	79.0	79.0	0.86	0.90	T

1. Loc: Location
2. Type of Encroachment: T : Transverse, L: Longitudinal
3. BFE is lower than terrain (based on LiDAR information). This location must be analyzed in detail during the design phase

Table 4-5: Preferred Floodplain Compensation Sites Summary

Floodplain Site Name				
FPC 1B	FPC 5A	FPC 11A	FPC 15A	FPC 20A
FPC 2A	FPC 7A	FPC 12A	FPC 16A	
FPC 3C	FPC 9B	FPC 13B	FPC 18A	
FPC 4B	FPC 10A	FPC 14A	FPC 19B	

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

Coordination meetings will be held with the SWFWMD and the Polk County floodplain coordinator to discuss mitigation and modeling strategies for reducing encroachments of the existing floodplains along the corridor. No floodplain encroachments are anticipated within Osceola County. **Appendix I** for correspondence associated with the pre-application meetings.

4.6 PD&E Requirements

Below are summarized the environmental impacts and risks associated with the construction of the Preferred Alignment.

4.6.1 History of Flooding

There are no reports of flooding along US 17/92 within the project corridor. However, after Hurricanes Ian in 2022 and Milton in October 2024 and recent events in July 2025, there have been reports of flooding near Davenport that lasted for several weeks. There is no information indicating that the flooding is related to state roadways and this project is not expected to impact these areas. See **Appendix I** for newspaper articles about recent flooding events near or within the area of study.

4.6.2 Longitudinal / Transverse Encroachments

Longitudinal encroachments were identified at Locations 11, 12, and 15. Locations 1, 16, and 17 exhibit both longitudinal and transverse encroachments. The remaining locations are impacted by transverse encroachments only. All longitudinal encroachments are generally influenced by the proposed alignment, US 17/92, the existing floodplain, and encroachments associated with existing subdivisions. Ongoing development within vacant parcels makes it difficult to identify feasible alternative solutions. **Table 4-3** summarizes the type of encroachment present at each location.

4.6.3 Impact on emergency services and evacuation

The Preferred Alternative is not anticipated to reduce emergency-vehicle response times and enhance connectivity between Davenport and Intercession City. Upon completion, this segment will connect into the future Poinciana Connector, establishing a direct route to I-4 and access to primary medical centers in the Orlando and Tampa areas. Furthermore, the proposed alignment will improve the access to major highways and interstates under evacuation conditions.

4.6.4 Impact on base flood and flood risk

No major impacts on base flood elevations or flood risk are expected during the construction of the new alignment. A more detailed analysis, including hydraulic modeling, is recommended at locations 7, 15, 16, and 17. Additionally, recent construction activity in the area has affected base flood elevations in parcels near cross drains CD-108 and CD-109, as well as bridge culverts 160187 and 160120 (note: these two bridge culverts are outside the area of study).

4.6.5 Roadway profile requirements

Per the FDOT Design Manual Section 211.9, LA facilities, such as Florida's Turnpike Facilities, must have the mainline travel lanes be above the 100-year floodplain elevation. The low edge of pavement must be clear of the 100-yr base flood elevation to allow emergency vehicles to utilize the facility following a large storm event. Determination of the floodplain elevation is through the established FEMA elevation or other pertinent studies.

5.0 Conclusions and Recommendations

The proposed alignment from US 17/92, south of the Power Line Road extension, to the future Poinciana Connector (SR 538) will affect 12 existing cross drains, one being FDOT bridge culvert (FDOT 160019), which was constructed in 1934. Eight cross drains are recommended for replacement because their dimensions do not meet FDOT requirements (e.g., the existing culvert is 2'×2', while the minimum FDOT culvert size is 3'×3'), or because they cannot accommodate the additional runoff generated by the proposed alignment. The remaining culverts can be extended.

The bridge culvert over Horse Creek (FDOT 160019) is a triple-barrel 10'×12' culvert. It is not perpendicular to US 17/92 and must be extended from 47.5 feet to approximately 180 feet. We recommend replacing this bridge culvert, as it is nearing the end of its 100-year expected service life.

The new alignment will deviate from US 17/92 between Ernie Caldwell Road and the future Poinciana Connector crossing multiple floodplain areas, wetlands, and recent urban developments. The proposed improvements will require the construction of 22 total bridges, approximately 6 of those are associated with environmentally sensitive areas such as waterbodies, wetlands, floodplains, or areas of high organic material. Cross drains will be provided along the corridor to maintain hydraulic connectivity to floodplains and wetlands. The areas that could require the construction of large culverts and conduct hydrologic and hydraulic modeling include:

- Section between Ernie Caldwell Boulevard and FDOT Bridge Culvert 160187 (located on US 17/92, just north of Sunny Acres Road): Typical flow patterns in this area are toward the north and west. However, recent offsite urban development appears to have disrupted the natural connectivity of the system.
- Section between Providence Boulevard and Poinciana Parkway/Ronald Reagan Parkway: The new alignment runs parallel to US 17/92 within a constrained area that receives runoff from both the existing highway and a residential subdivision situated in a floodplain.

Additionally, aerial imagery indicates that active construction is occurring just south of Poinciana Parkway, within the vicinity of the current alignment.

- Private pond located within the CEMEX Davenport Concrete Plant: The new alignment crosses through this private pond.

The proposed alignment affects a total of 20 floodplain areas—14 in Zone A and 6 in Zone AE—with the largest encroachments occurring in the following locations:

- East and west of the intersection of the new alignment with US 17/92 near Providence Boulevard
- West side of the proposed alignment, just south of Lem Carnes Road
- New alignment between Deer Run Drive (access road to cell tower) and Wynnell Drive
- Access ramps between US 17/92 and the proposed alignment, approximately 2,000 feet north of Ernie Caldwell Boulevard

The eastern portion of the study area offers limited opportunities for floodplain compensation because much of the land is already within the floodplain. As a result, coordination with SWFWMD and local floodplain administrators will be required to determine applicable requirements and to identify feasible mitigation measures and floodplain modeling strategies along the corridor.

US 17/92 itself may not have a documented history of flooding, but several local reports highlight flooding issues in the surrounding area. Residents have observed more frequent flooding and higher water levels around their homes, which they attribute to increased urbanization and the loss of natural floodplains and wetlands.

6.0 References

FDEP Map Direct

FDOT Drainage Manual 2025

FDOT Drainage Design Guide 2024

FDOT Project Development and Environment Manual 2024

FEMA FIRM Maps for Polk and Osceola Counties

FEMA Flood Map Service Center

Flood Insurance Studies for Osceola and Polk Counties

NRCS Web Soil Survey

Environmental Resource Permit Applicant's Handbook Volume I 2024

SWFWMD ePermitting

SWFWMD Floodplain Map

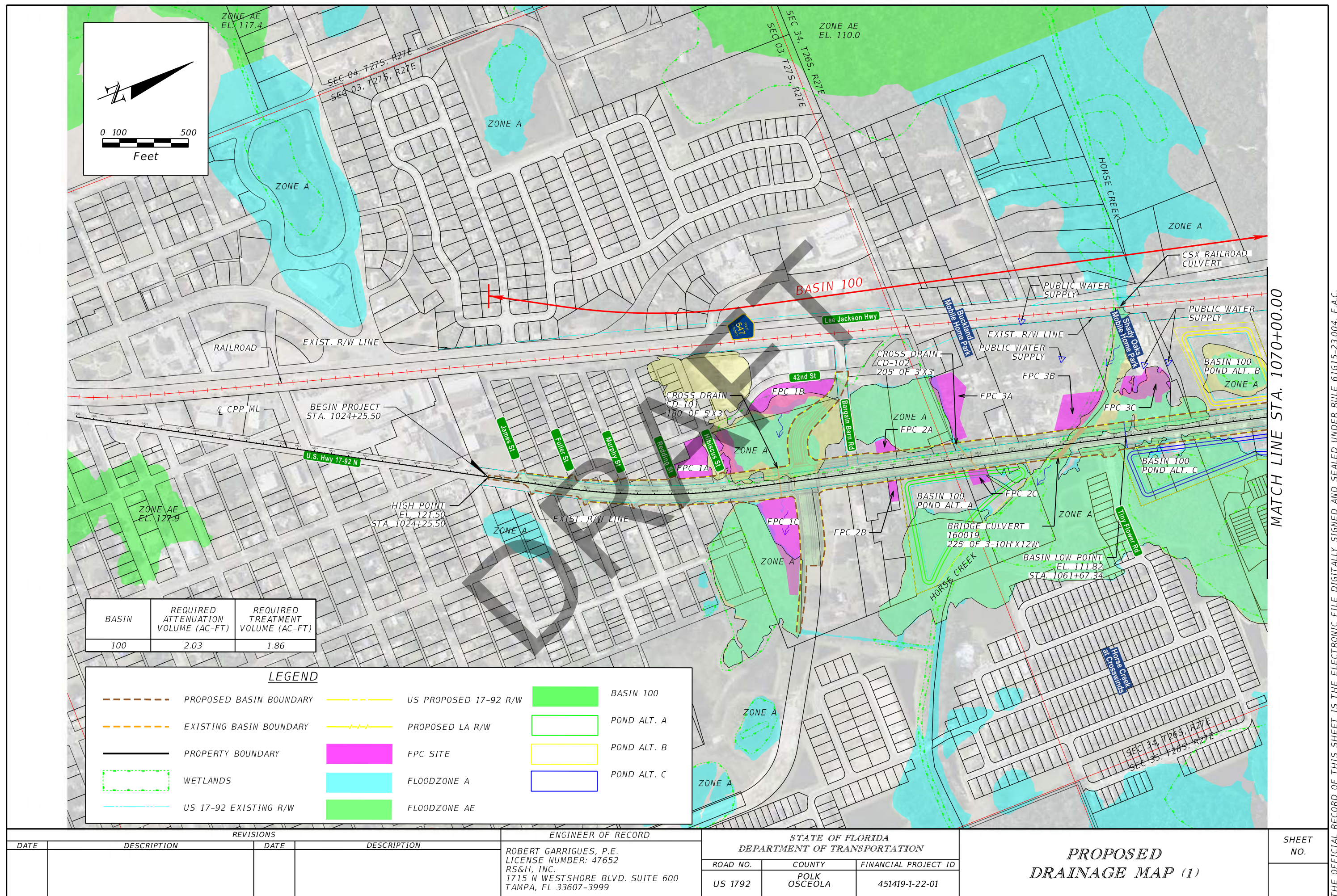
SWFWMD Environmental Resource Permit Applicant's Handbook Volume II 2018

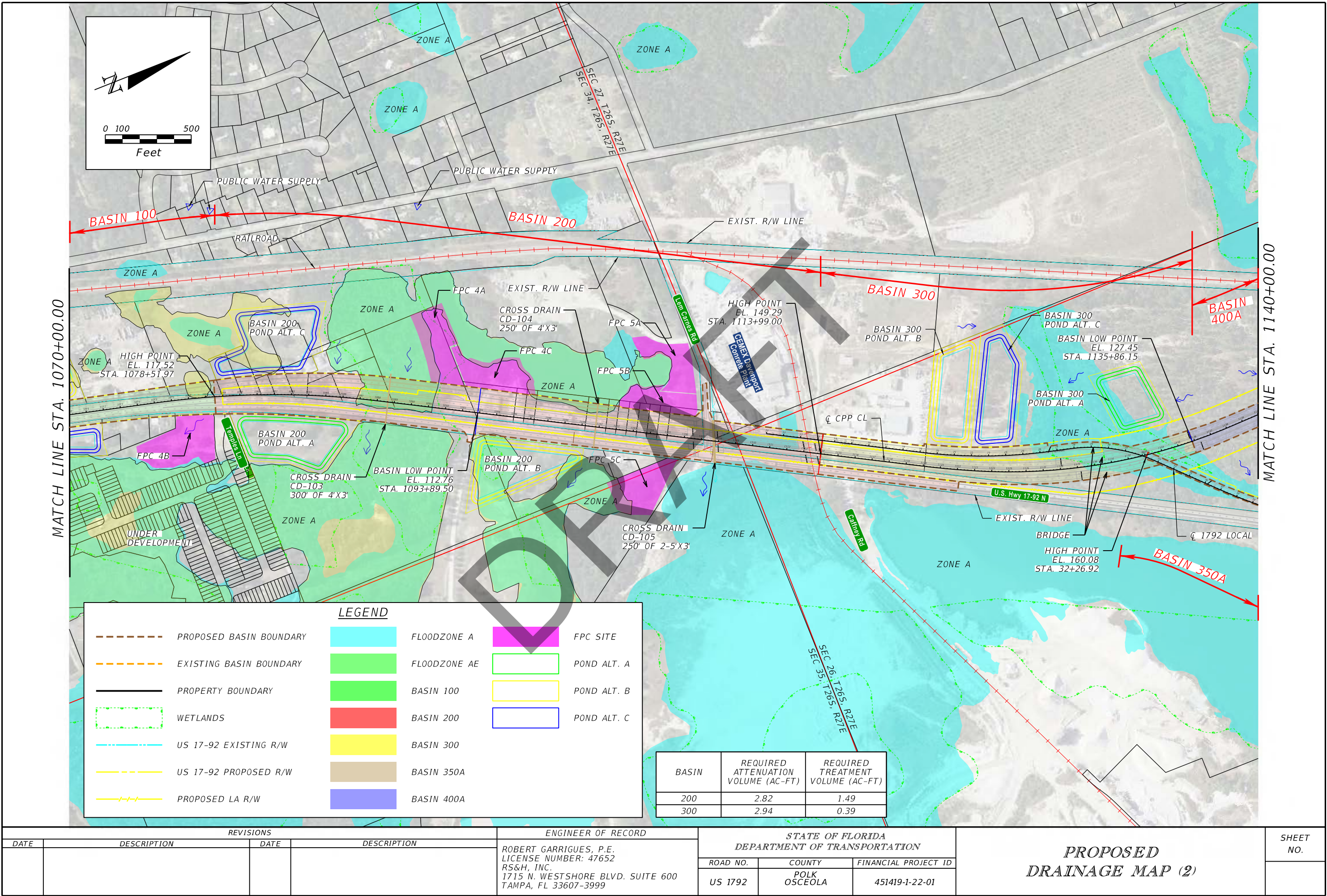
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APPENDIX A – DRAINAGE MAPS

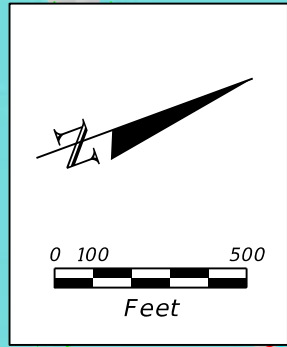
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THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



PROPOSED BASIN BOUNDARY

EXISTING BASIN BOUNDARY

PROPERTY BOUNDARY

WETLANDS

US 17-92 EXISTING R/W

US 17-92 PROPOSED R/W

PROPOSED LA R/W

FLOODZONE A

FLOODZONE AE

BASIN 350A

BASIN 350B

BASIN 400A

BASIN 400B

BASIN 450

BASIN 500

FPC SITE

POND ALT. A

POND ALT. B

POND ALT. C

MATCH LINE STA. 1140+00.00

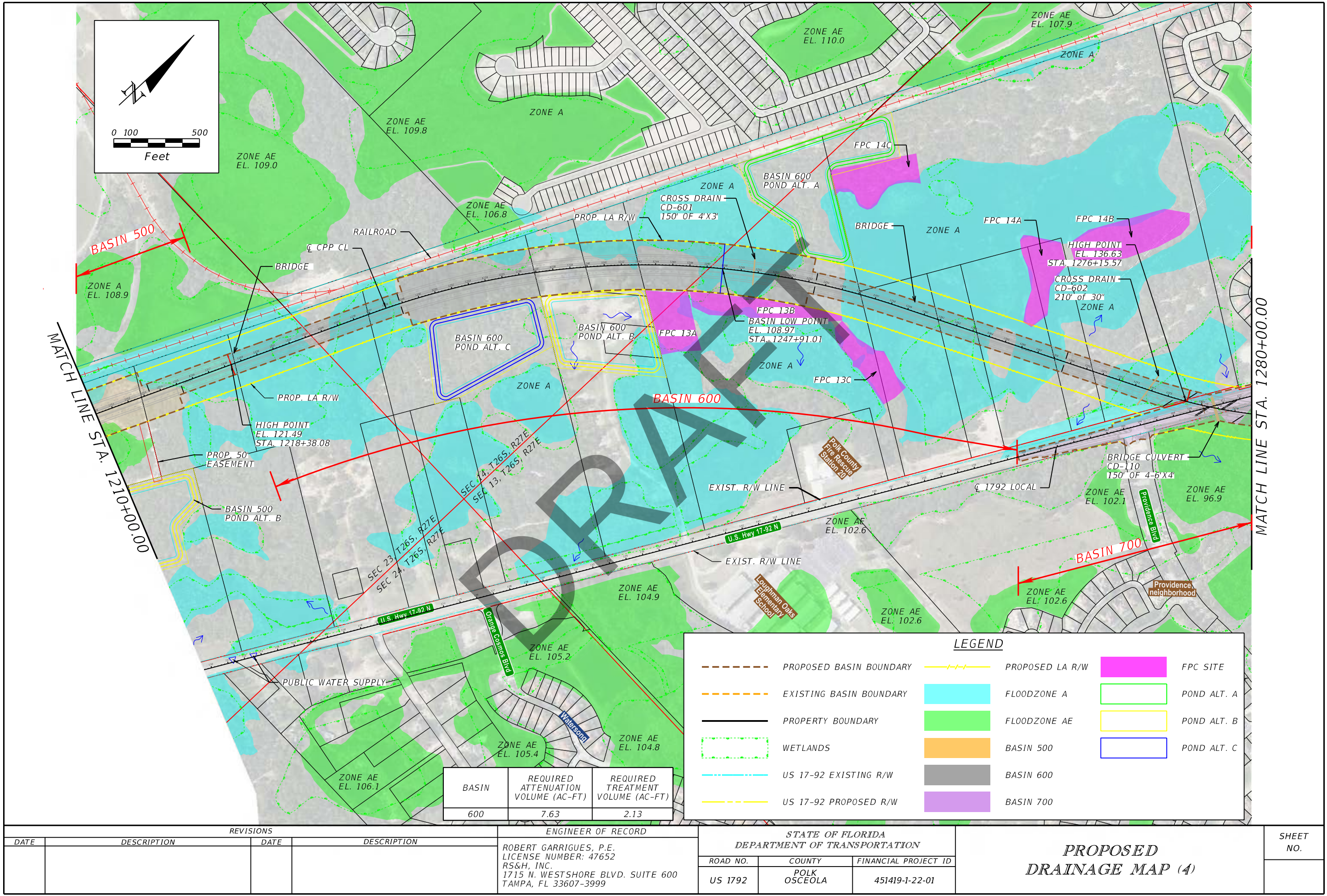
MATCH LINE STA. 1210+00.00

BASIN	REQUIRED ATTENUATION VOLUME (AC-FT)	REQUIRED TREATMENT VOLUME (AC-FT)
350A	1.62	0.51
350B	1.21	0.81
400A	4.72	0.33
400B	0.00	0.76
450	0.00	0.60
500	6.17	2.05

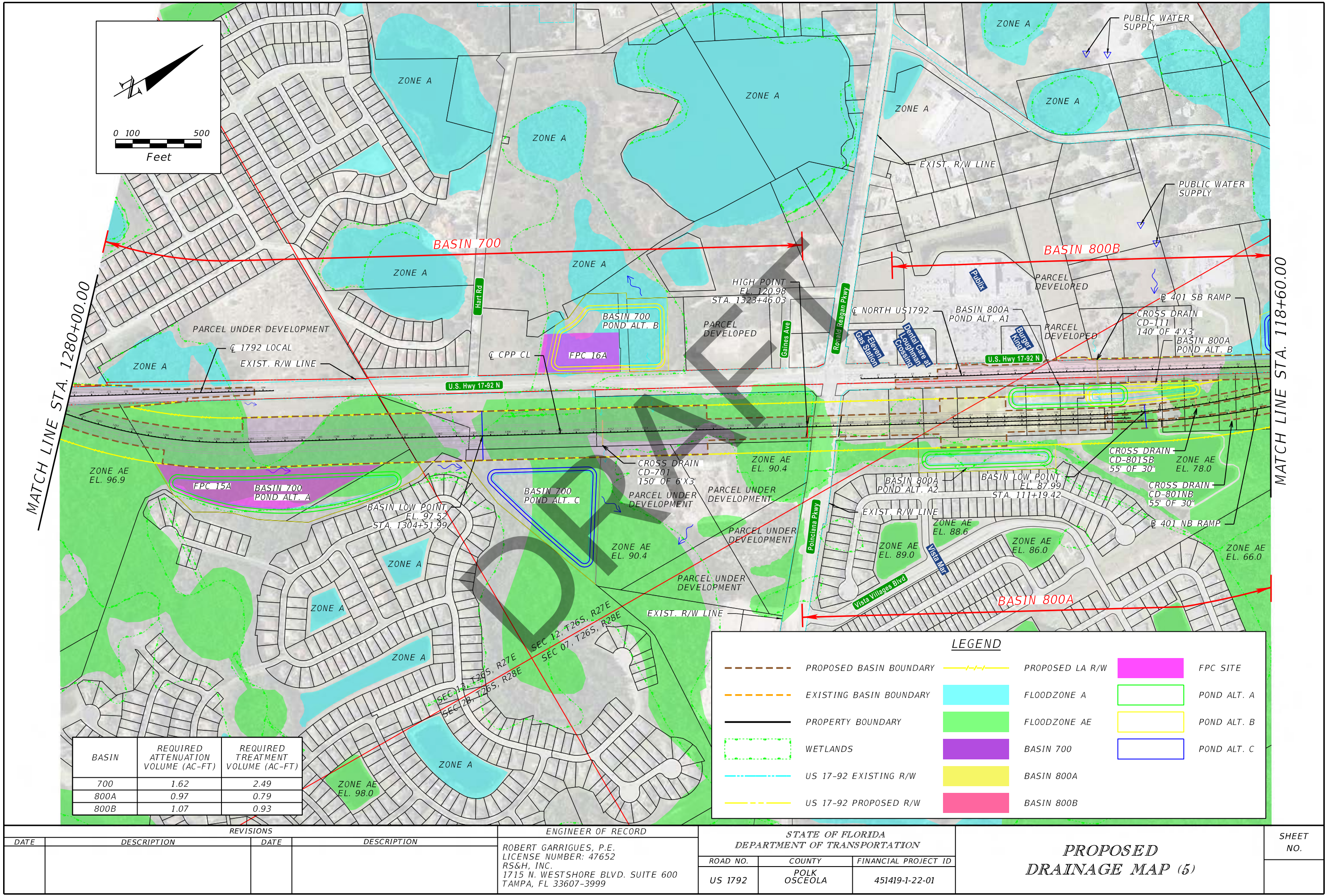
REVISIONS				ENGINEER OF RECORD		STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			PROPOSED DRAINAGE MAP (3)	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION	ROBERT GARRIGUES, P.E. LICENSE NUMBER: 47652 RS&H, INC. 1715 N. WESTSHORE BLVD. SUITE 600 TAMPA, FL 33607-3999		ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
						US 1792	POLK OSCEOLA	451419-1-22-01		

P:\FDOT\10070159000_FTE_CPP_US1792_SR538\Drainage\DRMPRD02_Prop_Drainage_Map.dgn : CL334_NEWALIGN-1 - SHEET 3 [SHEET]
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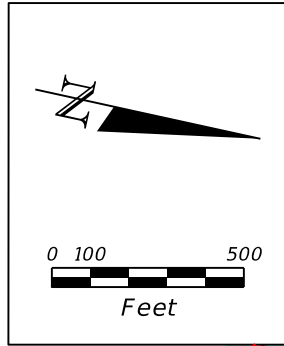
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



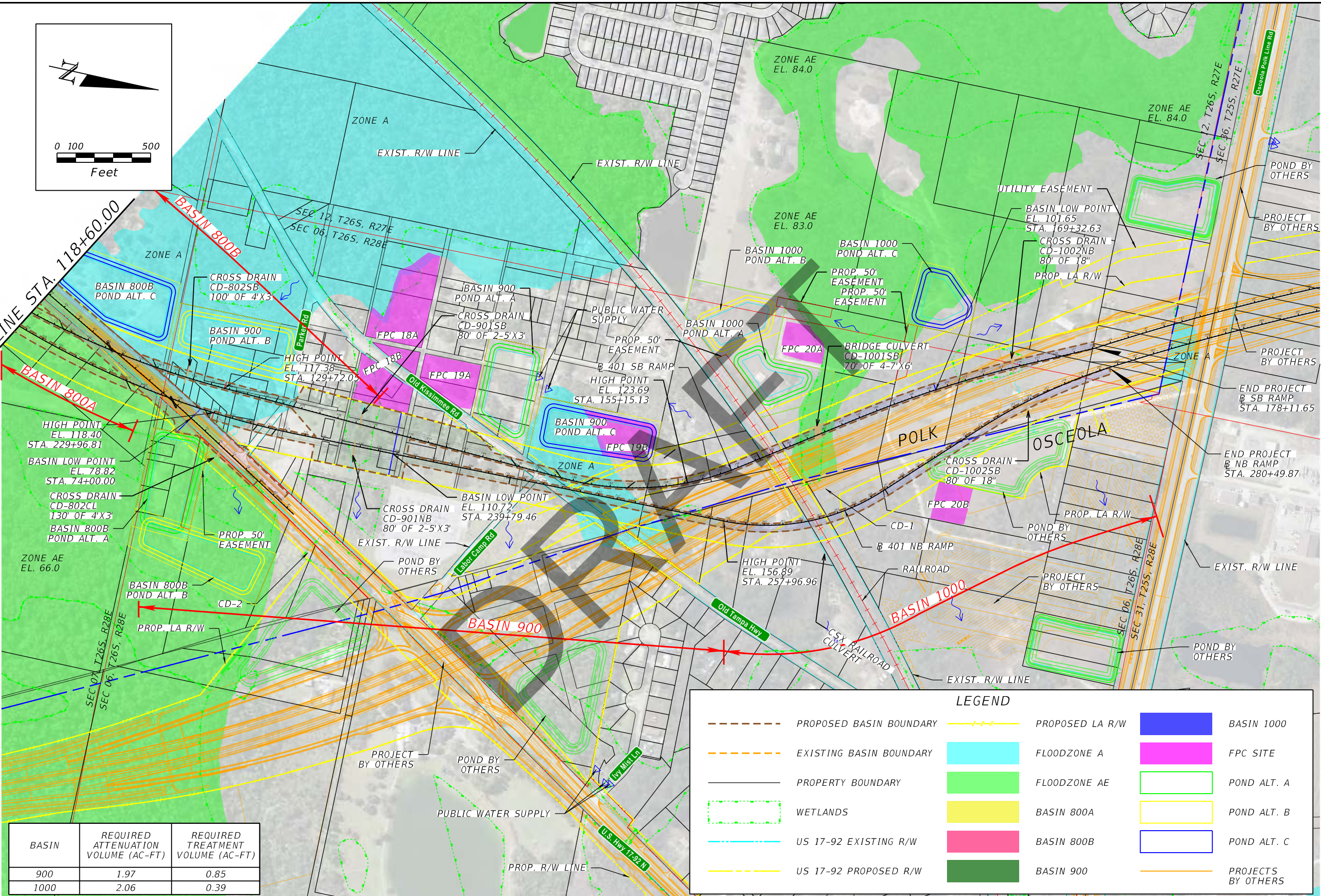
THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.



MATCH LINE STA. 118+60.00



BASIN	REQUIRED ATTENUATION VOLUME (AC-FT)	REQUIRED TREATMENT VOLUME (AC-FT)
900	1.97	0.85
1000	2.06	0.39

LEGEND

PROPOSED BASIN BOUNDARY

EXISTING BASIN BOUNDARY

PROPERTY BOUNDARY

WETLANDS

US 17-92 EXISTING R/W

US 17-92 PROPOSED R/W

PROPOSED LA R/W

FLOODZONE A

FLOODZONE AE

BASIN 800A

BASIN 800B

BASIN 900

BASIN 1000

FPC SITE

POND ALT. A

POND ALT. B

POND ALT. C

PROJECTS BY OTHERS

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

ENGINEER OF RECORD
ROBERT GARRIGUES, P.E.
LICENSE NUMBER: 47652
RS&H, INC.
1715 N. WESTSHORE BLVD. SUITE 600
TAMPA, FL 33607-3999

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
US 1792	POLK OSCEOLA	451419-1-22-01

PROPOSED
DRAINAGE MAP (6)

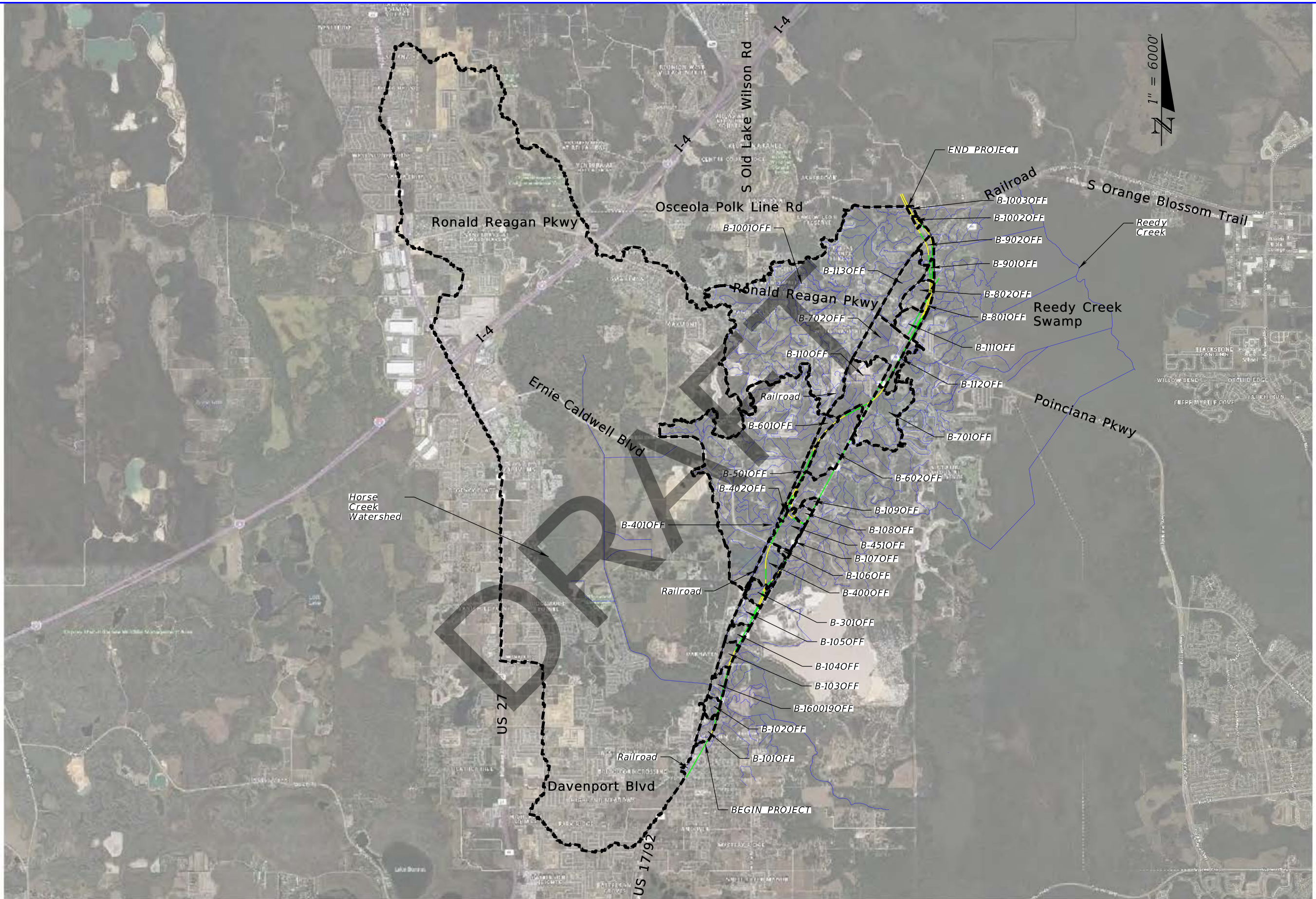
SHEET NO.

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

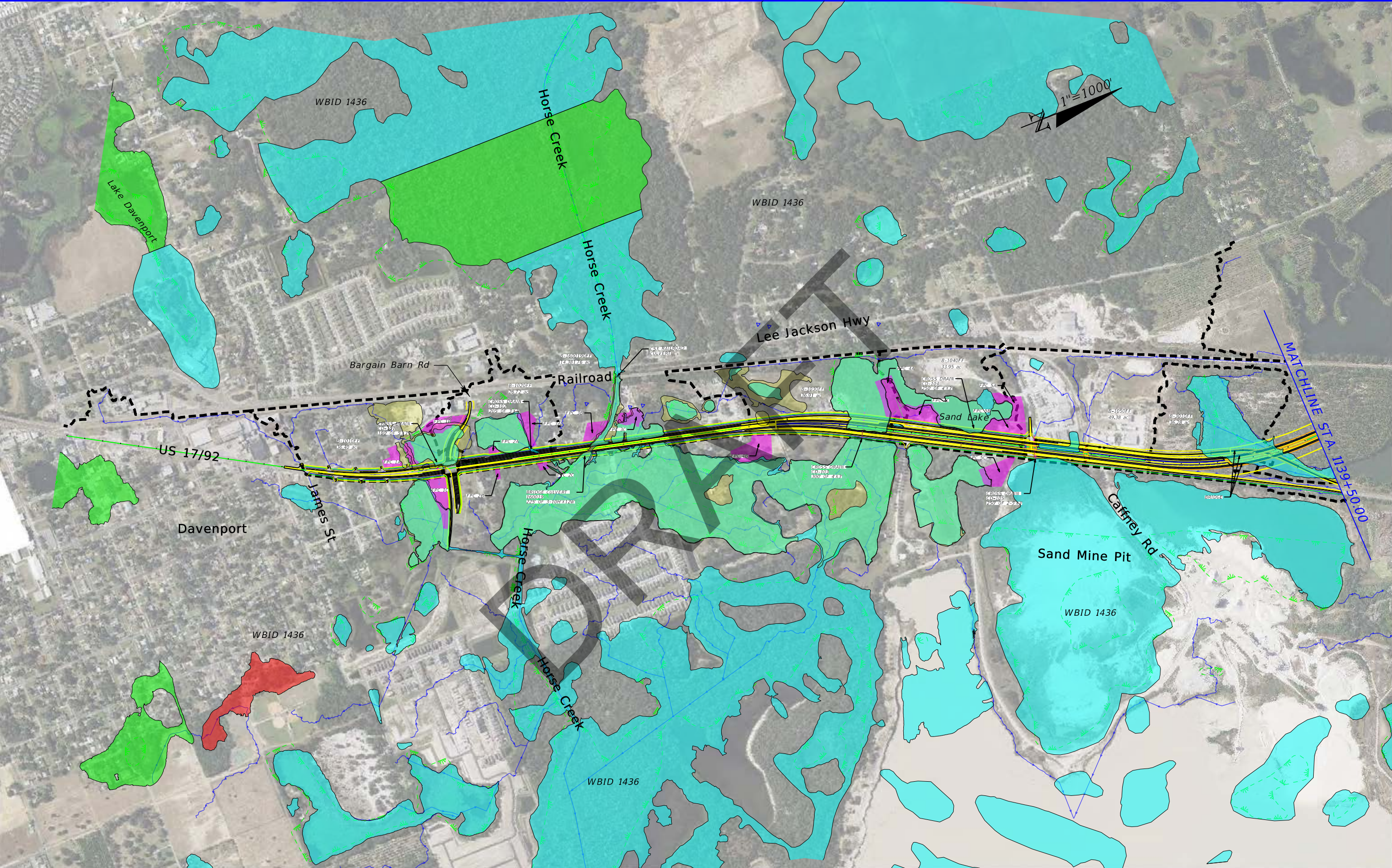
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USER: chao.ys 10/29/2025 3:17:44 PM

APPENDIX B – OFFSITE DRAINAGE BASINS

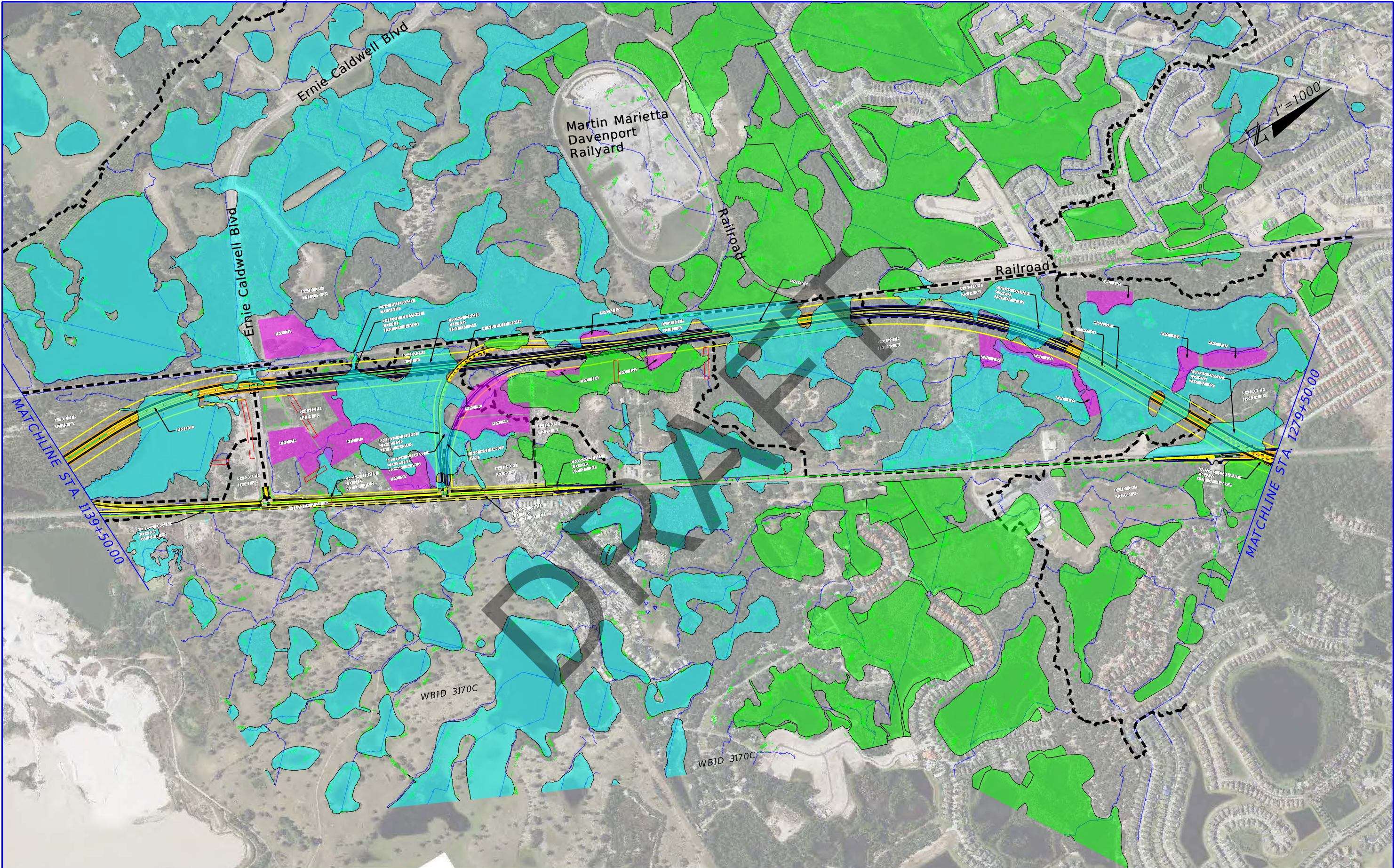




REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			OFFSITE DRAINAGE BASINS OVERALL	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION					
				ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					POLK OSCEOLA	451419-1-22-01		



REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			OFFSITE DRAINAGE BASINS	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION					
				ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					POLK AND OSCEOLA	451419-1-22-01		



REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			OFFSITE DRAINAGE BASINS	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION					
				ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
					POLK AND OSCEOLA	451419-1-22-01		

APPENDIX C - STRAIGHT LINE DIAGRAM

DRAFT

	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:
DATE	02/06/2023	03/17/2023						02	US 92/US 17	SR 600	POLK	01	16050000	2 OF 6
BY	FTE	FTE												

	2.0	INSIDE URBAN, OUTSIDE CITY * WINTER HAVEN 1<=US-17/92 1<SR 600 1<US 17/US 92												3.0
ROADWAY FEATURES														
LANE WIDTHS ARE AVERAGED														
ROADWAY COMPOSITION														
HORIZONTAL ALIGNMENT														
STRUCTURE DESCRIPTION														
DISTRICT USE														
SIS														
FUN CLASS														

	3.0	INSIDE URBAN, OUTSIDE CITY * WINTER HAVEN 1<=US-17/92 1<SR 600 1<US 17/US 92												4.0
ROADWAY FEATURES														
LANE WIDTHS ARE AVERAGED														
ROADWAY COMPOSITION														
HORIZONTAL ALIGNMENT														
STRUCTURE DESCRIPTION														
DISTRICT USE														
SIS														
FUN CLASS														

	5 YR INV	SLD REV	BMP	EMP	INV	SLD REV	FLORIDA DEPARTMENT OF TRANSPORTATION STRAIGHT LINE DIAGRAM OF ROAD INVENTORY	SECTION STATUS	INT. or US ROUTE NO.	STATE ROAD NO.	COUNTY	DISTRICT	ROADWAY ID	SHEET NO:
DATE	02/06/2023	03/17/2023						02	US 92/US 17	SR 600	POLK	01	16050000	4 OF 6
BY	FTE	FTE												
ROADWAY FEATURES	LANE WIDTHS ARE AVERAGED	6.000 6.000 6.000 6.000 6.000 6.000 6.000 6.000 6.000 6.000 6.000 6.000 6.000 6.000 6.000												
		OUTSIDE CITY & URBAN 1<=US-17/92 1<SR 600 1<US 17/US 92												
		58.0' - 24.0' 2 - 12.0' RDWY 2 - 5.0' PVD SHLD1 2 - 12.0' LWN SHLD2												
		75.0' - 24.0' 2 - 12.0' RDWY 12.0 PVD MED 5.0' PVD SHLD1 - LT 6.0' PVD SHLD1 - RT 12.0' LWN SHLD2 - LT 4.0' VG SHLD2 - RT 12.0' LWN SHLD3 - RT												
		65.0' - 24.0' 2 - 12.0' RDWY 12.0 PVD MED 4.0' PVD SHLD1 - LT 5.0' PVD SHLD1 - RT 4.0' VG SHLD2 - LT 12.0' LWN SHLD2 - RT 4.0' LWN SHLD3 - LT												
ROADWAY COMPOSITION		28/FC-2												
HORIZONTAL ALIGNMENT														
STRUCTURE DESCRIPTION		1-2' X 2' X 75' CBC												
DISTRICT USE														
SIS														
FUN CLASS		RURAL PRIN ART OTHER												
ROADWAY FEATURES	LANE WIDTHS ARE AVERAGED	7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000 7.000												
		OUTSIDE CITY & URBAN 1<=US-17/92 1<SR 600 1<US 17/US 92												
		58.0' - 24.0' 2 - 12.0' RDWY 2 - 5.0' PVD SHLD1 2 - 12.0' LWN SHLD2												
		70.0' - 24.0' 2 - 12.0' RDWY 12.0 PVD MED 2 - 5.0' PVD SHLD1 2 - 12.0' LWN SHLD2												
		7.878 7.878 7.878 7.878 7.878 7.878 7.878 7.878 7.878 7.878 7.878 7.878 7.878 7.878 7.878												
ROADWAY COMPOSITION		28/FC-2												
HORIZONTAL ALIGNMENT														
STRUCTURE DESCRIPTION		1-3' X 3' X 81' CBC												
DISTRICT USE														
SIS														
FUN CLASS		RURAL PRIN ART OTHER												

[illegible]

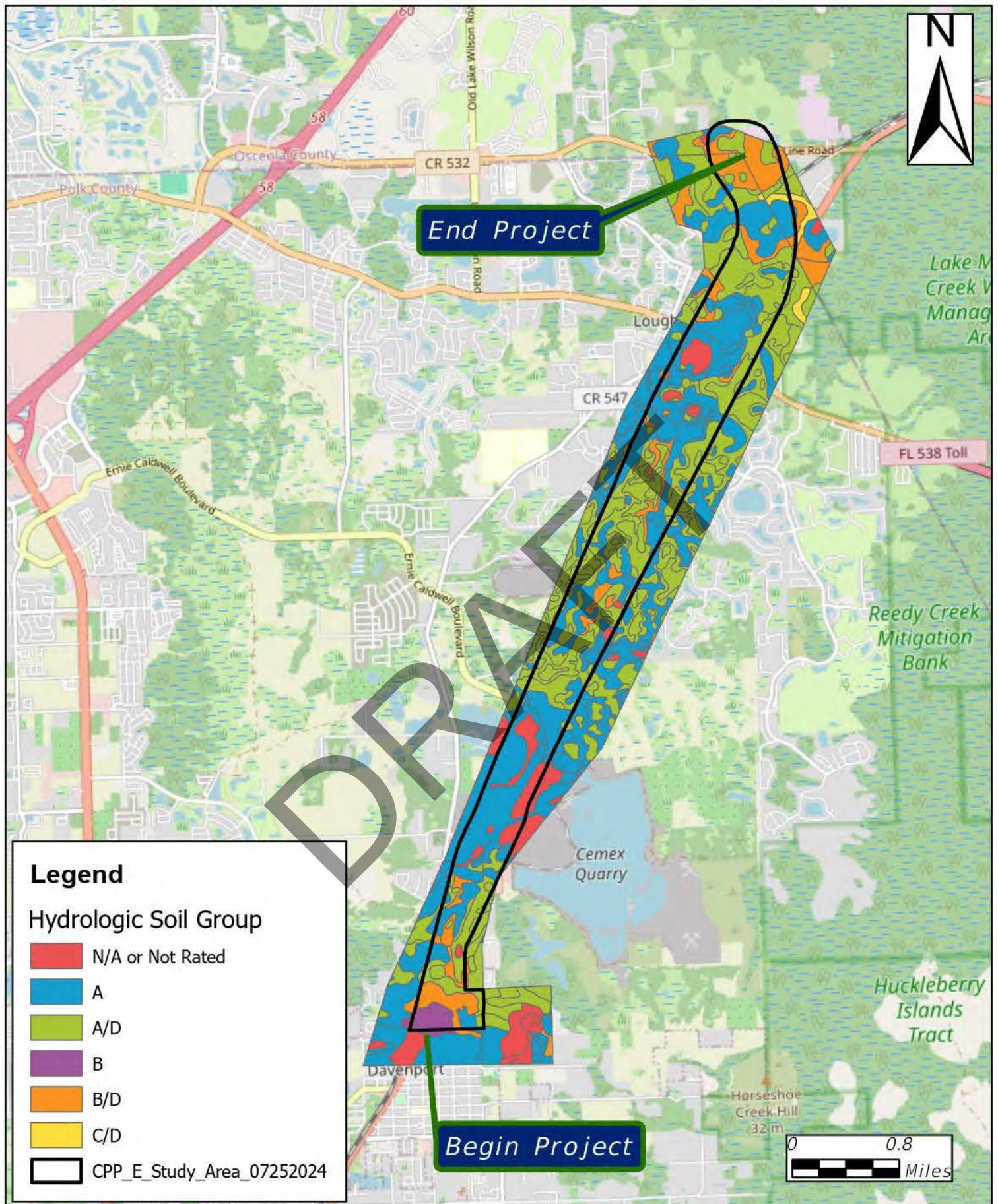
ROADWAY FEATURES	8.000 OUTSIDE CITY & URBAN 1<=US-17/92 1<SR 600 1<US 17/US 92 8.100 ORANGE COSMOS BLVD 8.325 WYNELL DR 8.482 FIRESTATION #20 8.840 PROVIDENCE BLVD
LANE WIDTHS ARE AVERAGED	8.000 70.0' - 24.0' 2 - 12.0' RDWY 12.0 PVD MED 2 - 5.0' PVD SHLD1 2 - 12.0' LWN SHLD2
ROADWAY COMPOSITION	8.000 28/FC-2
HORIZONTAL ALIGNMENT	
STRUCTURE DESCRIPTION	8.188 8.192 #0120 21.1' CB 8.916 1 - 24" X 54" CC
DISTRICT USE	
SIS	
FUN CLASS	RURAL PRIN ART OTHER

STATION	ROADWAY	COMPOSITION	HORIZONTAL ALIGNMENT	STRUCTURE DESCRIPTION	DISTRICT USE	SIS	FUN CLASS
9.000	OUTSIDE CITY & URBAN 1<=US-17/92 1<SR 600 1<US 17/US 92						
9.037	58.0' - 24.0' 2 - 12.0' RDWY 2 - 5.0' PVD SHLD1 2 - 12.0' LWN SHLD2	28/FC-2					
9.219	70.0' - 24.0' 2 - 12.0' RDWY 12.0' PVD MED 2 - 5.0' PVD SHLD1 2 - 12.0' LWN SHLD2	28/FC-2					
9.523	55.0' - 24.0' 2 - 12.0' RDWY 2 - 5.0' PVD SHLD1 12.0' LWN SHLD2 - LT 9.0' LWN SHLD2 - RT	28/FC-2					
9.581	66.0' - 24.0' 2 - 12.0' RDWY 30.0' PVD MED 2 - 4.0' PVD SHLD1 2 - 2.0' C&G SHLD2	28/FC-2					
9.652	80.0' - 12.0'L+13.0'R 1 - 12.0'L + 1 - 13.0'R RDWY 31.0' CB&VEG MED 5.0' WARN INSHLD1 - LT 2.0' C&G INSHLD1 - RT 2.0' C&G INSHLD2 - LT 4.0' PVD SHLD1 - LT 16.0' WARN SHLD1 - RT 2 - 2.0' C&G SHLD2	28/FC-2					
9.736	89.0' - 12.0'L+24.0'R 1 - 12.0'L + 2 - 12.0'R RDWY 41.0' TFSP MED 2 - 1.0' PVD INSHLD1 2 - 4.0' PVD SHLD1 2 - 2.0' C&G SHLD2	28/FC-2					
9.806	77.0' - 24.0'L+12.0'R 2 - 12.0'L + 1 - 12.0'R RDWY 29.0' TFSP MED 2 - 1.0' PVD INSHLD1 2 - 4.0' PVD SHLD1 2 - 2.0' C&G SHLD2	28/FC-2					
9.895	89.0' - 24.0'L+12.0'R 2 - 12.0'L + 1 - 12.0'R RDWY 29.0' CB&VEG MED 2 - 2.0' C&G INSHLD1 4.0' PVD SHLD1 - LT 16.0' WARN SHLD1 - RT 2 - 2.0' C&G SHLD2	28/FC-2					

APPENDIX D – SOILS MAP

DRAFT





Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637

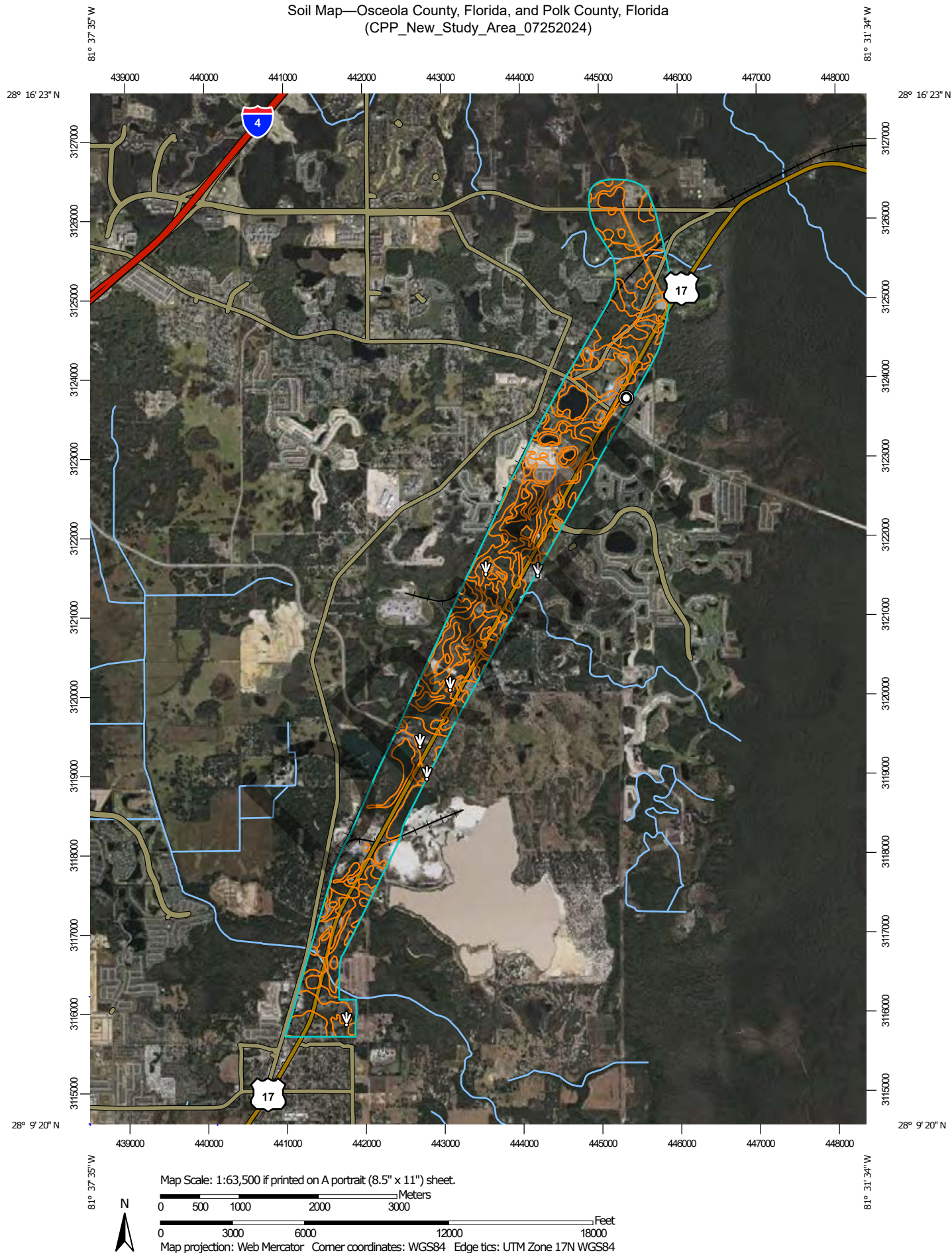
Soils

Central Polk Parkway East PD&E Study - LHR

FPID: 451419-1-22-01

Date: 9/2/2025

Soil Map—Osceola County, Florida, and Polk County, Florida
(CPP_New_Study_Area_07252024)



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Osceola County, Florida

Survey Area Data: Version 22, Aug 22, 2024

Soil Survey Area: Polk County, Florida

Survey Area Data: Version 22, Aug 23, 2024

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: Nov 25, 2020—Mar 21, 2022

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

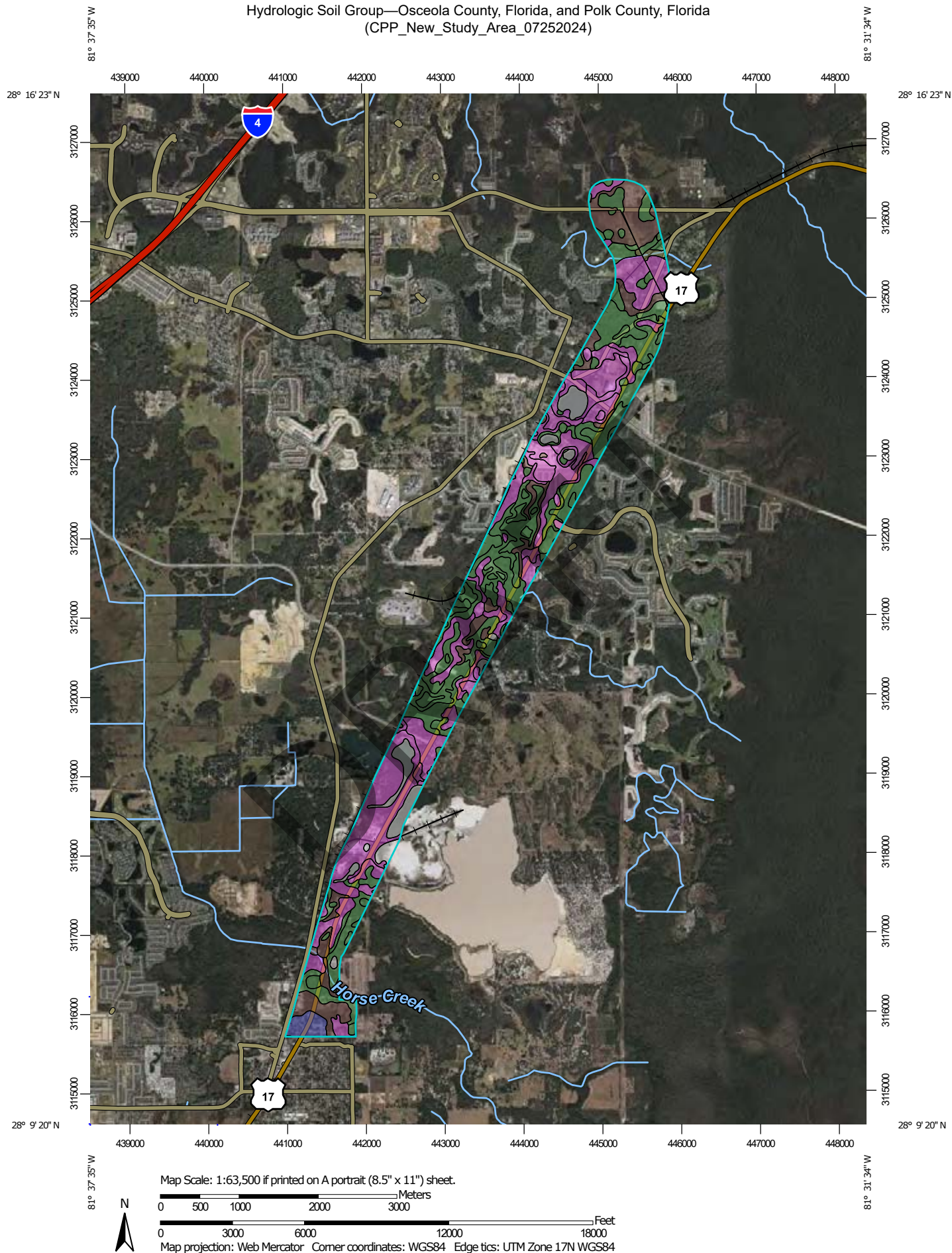
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	Basinger fine sand, 0 to 2 percent slopes	2.5	0.1%
12	Floridana fine sand, frequently ponded, 0 to 1 percent slopes	7.0	0.3%
16	Immokalee fine sand, 0 to 2 percent slopes	68.9	3.3%
22	Myakka fine sand, 0 to 2 percent slopes	5.0	0.2%
32	Placid fine sand, frequently ponded, 0 to 1 percent slopes	27.2	1.3%
38	Riviera fine sand, 0 to 2 percent slopes	3.6	0.2%
39	Riviera fine sand, frequently ponded, 0 to 1 percent slopes	1.2	0.1%
41	Satellite sand, 0 to 2 percent slopes	31.3	1.5%
99	Water	1.0	0.1%
Subtotals for Soil Survey Area		147.9	7.2%
Totals for Area of Interest		2,059.0	100.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Candler sand, 0 to 5 percent slopes	45.3	2.2%
12	Neilhurst sand, 1 to 5 percent slopes	186.3	9.0%
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	140.3	6.8%
15	Tavares fine sand, 0 to 5 percent slopes	197.6	9.6%
16	Urban land, 0 to 2 percent slopes	0.2	0.0%
17	Smyrna and Myakka fine sands	140.8	6.8%
19	Floridana mucky fine sand, frequently ponded, 0 to 1 percent slopes	1.3	0.1%
21	Immokalee sand	180.3	8.8%
22	Pomello fine sand	14.0	0.7%
23	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	18.5	0.9%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
25	Placid and Myakka fine sands, depressional	136.6	6.6%
30	Pompano fine sand	81.9	4.0%
31	Adamsville fine sand, 0 to 2 percent slopes	33.1	1.6%
35	Hontoon muck, frequently ponded, 0 to 1 percent slopes	34.2	1.7%
36	Basinger mucky fine sand, frequently ponded, 0 to 1 percent slopes	141.3	6.9%
37	Placid fine sand, frequently flooded	37.7	1.8%
46	Astatula sand, 0 to 5 percent slopes	178.4	8.7%
47	Zolfo fine sand, 0 to 2 percent slopes	10.8	0.5%
58	Udorthents, excavated	4.8	0.2%
59	Arents-Urban land complex, 0 to 5 percent slopes	3.2	0.2%
70	Duette fine sand	18.5	0.9%
74	Narcoossee sand	33.1	1.6%
77	Satellite sand, 0 to 2 percent slopes	78.6	3.8%
88	Astatula sand, 5 to 12 percent slopes	78.0	3.8%
89	Astatula sand, 12 to 20 percent slopes	4.9	0.2%
99	Water	111.3	5.4%
Subtotals for Soil Survey Area		1,911.1	92.8%
Totals for Area of Interest		2,059.0	100.0%

Hydrologic Soil Group—Osceola County, Florida, and Polk County, Florida (CPP_New_Study_Area_07252024)



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

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

Soil Rating Lines

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

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Osceola County, Florida

Survey Area Data: Version 22, Aug 22, 2024

Soil Survey Area: Polk County, Florida

Survey Area Data: Version 22, Aug 23, 2024

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: Nov 25, 2020—Mar 21, 2022

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
5	Basinger fine sand, 0 to 2 percent slopes	A/D	2.5	0.1%
12	Floridana fine sand, frequently ponded, 0 to 1 percent slopes	C/D	7.0	0.3%
16	Immokalee fine sand, 0 to 2 percent slopes	B/D	68.9	3.3%
22	Myakka fine sand, 0 to 2 percent slopes	A/D	5.0	0.2%
32	Placid fine sand, frequently ponded, 0 to 1 percent slopes	A/D	27.2	1.3%
38	Riviera fine sand, 0 to 2 percent slopes	A/D	3.6	0.2%
39	Riviera fine sand, frequently ponded, 0 to 1 percent slopes	A/D	1.2	0.1%
41	Satellite sand, 0 to 2 percent slopes	A	31.3	1.5%
99	Water		1.0	0.1%
Subtotals for Soil Survey Area			147.9	7.2%
Totals for Area of Interest			2,059.0	100.0%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
3	Candler sand, 0 to 5 percent slopes	A	45.3	2.2%
12	Neilhurst sand, 1 to 5 percent slopes	A	186.3	9.0%
13	Samsula muck, frequently ponded, 0 to 1 percent slopes	A/D	140.3	6.8%
15	Tavares fine sand, 0 to 5 percent slopes	A	197.6	9.6%
16	Urban land, 0 to 2 percent slopes		0.2	0.0%
17	Smyrna and Myakka fine sands	A/D	140.8	6.8%
19	Floridana mucky fine sand, frequently ponded, 0 to 1 percent slopes	C/D	1.3	0.1%
21	Immokalee sand	B/D	180.3	8.8%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
22	Pomello fine sand	A	14.0	0.7%
23	Ona-Ona, wet, fine sand, 0 to 2 percent slopes	B/D	18.5	0.9%
25	Placid and Myakka fine sands, depressional	A/D	136.6	6.6%
30	Pompano fine sand	A/D	81.9	4.0%
31	Adamsville fine sand, 0 to 2 percent slopes	A/D	33.1	1.6%
35	Hontoon muck, frequently ponded, 0 to 1 percent slopes	A/D	34.2	1.7%
36	Basinger mucky fine sand, frequently ponded, 0 to 1 percent slopes	A/D	141.3	6.9%
37	Placid fine sand, frequently flooded	A/D	37.7	1.8%
46	Astatula sand, 0 to 5 percent slopes	A	178.4	8.7%
47	Zolfo fine sand, 0 to 2 percent slopes	A	10.8	0.5%
58	Udorthents, excavated		4.8	0.2%
59	Arents-Urban land complex, 0 to 5 percent slopes	A	3.2	0.2%
70	Duette fine sand	A	18.5	0.9%
74	Narcoossee sand	B	33.1	1.6%
77	Satellite sand, 0 to 2 percent slopes	A	78.6	3.8%
88	Astatula sand, 5 to 12 percent slopes	A	78.0	3.8%
89	Astatula sand, 12 to 20 percent slopes	A	4.9	0.2%
99	Water		111.3	5.4%
Subtotals for Soil Survey Area			1,911.1	92.8%
Totals for Area of Interest			2,059.0	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

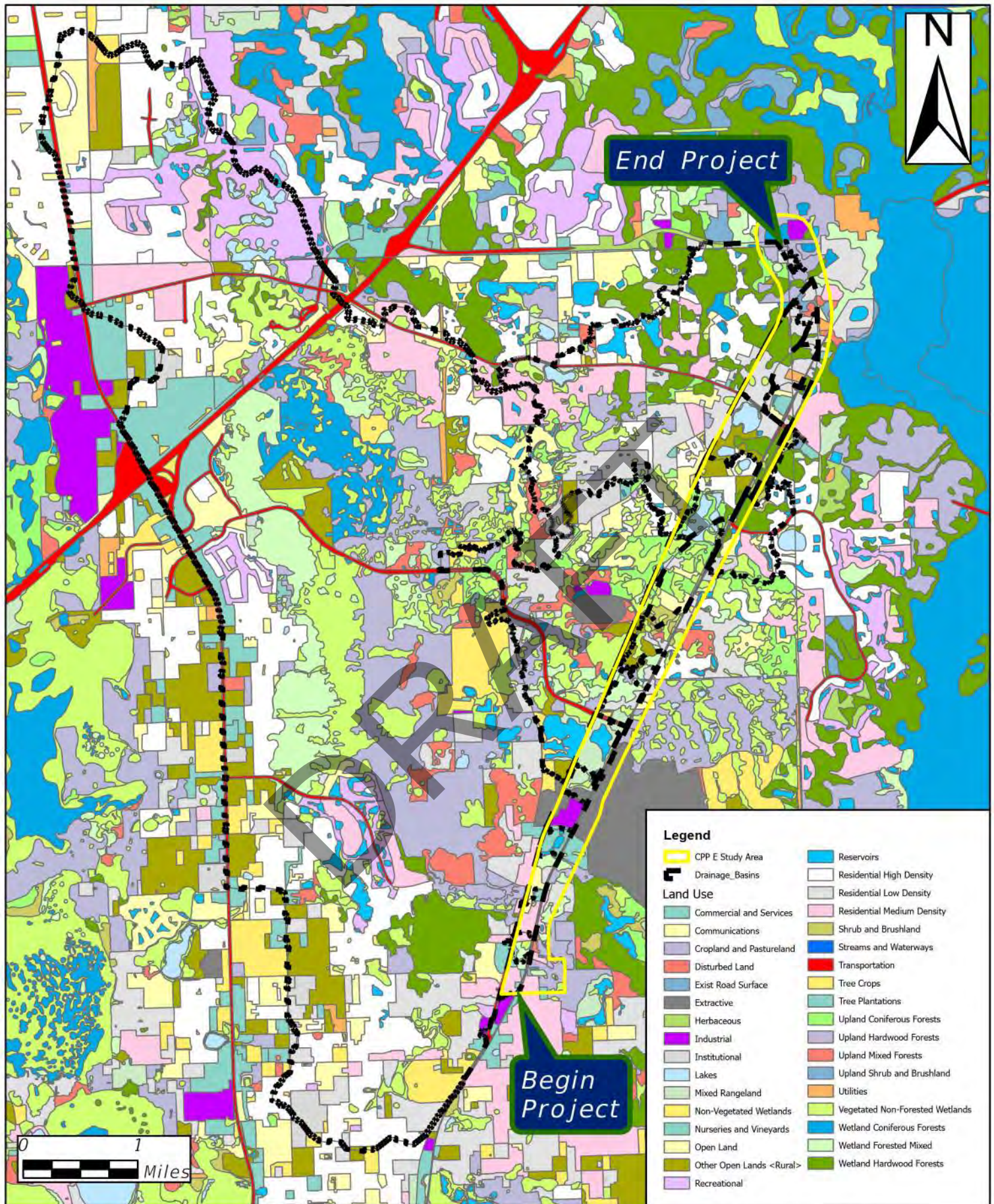
Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX E – LAND USE MAP

DRAFT





Patel, Greene & Associates, LLC
12570 Telecom Drive
Temple Terrace, FL 33637

Land Use Map

Central Polk Parkway East PD&E Study - LHR

FPID: 451419-1-22-01

Date: 9/2/2025

APPENDIX F – CROSS DRAIN CALCULATIONS



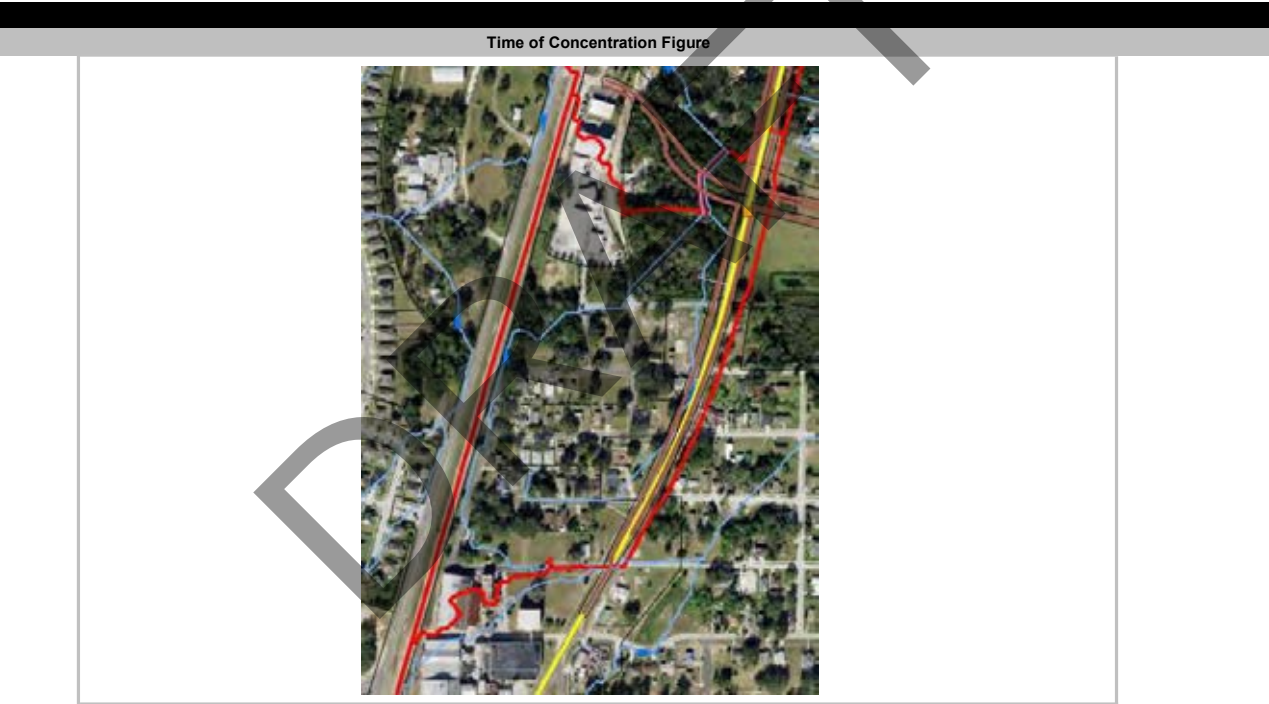
Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for **B-101OFF / CD-101**

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.008 ft/ft				
Elevation 1	123.0	ft			
Elevation 2	122.2	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		11.00	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	122.2	ft			
Elevation 2	109.7	ft			
Watercourse Slope (S)	0.007 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	1,864 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		18.63	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
			N/A	min	
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for B-101OFF / CD-101			
Kirprich Equation (rural watersheds)			
Length of Travel (L)	0.00	ft	Applicable No Assumptions and Comments
Elevation 1	0.0	ft	
Elevation 2	0.0	ft	
Slope (S)	#DIV/0!	ft/ft	Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres
Fs	0		
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A min	Fs- surface coefficient
			1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels
			2.0 for grassed surfaces
			0.4 for concrete or asphalt surfaces 0.2 for concrete channels
Total Time of Concentration			

Total Tc (T_{t1}+T_{t2}+T_{t3+ etc}) 29.63 min



Patel, Greene & Associates, LLC

Designed By: CY
 Date: 7/11/2025
 Checked By: CC
 Date: 8/26/2025

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
 Cross Culverts Analysis

PROPOSED CROSS DRAIN B-101OFF / CD-101 STATION: CPP E 1041+40

AREAS (A)	Area (ac)	C	(A*C)
Pavement	3.46	0.95	3.29
SFR: Duplexes, Sandy Soils, Flat (0-2%)	19.51	0.40	7.81
Commercial and Industrial, Sandy Soils, Flat (0-2%)	7.37	0.73	5.34
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	0.82	0.18	0.14
Woodlands, Sandy Soils, Flat (0-2%)	3.48	0.13	0.43
Pond WS	0.23	1.00	0.23
Parking and Building	1.53	0.95	1.46
SUM	36.40		17.01
COMPOSITE C COEFFICIENT	0.47		
Return Period	50 year	(select)	
C VALUE ADJUSTMENT	0.56		

RAINFALL INTENSITIES (I)			
	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)	
	30	2.58	
	60	3.49	
Tc =	29.63	min	(From Tc worksheet)
I =	2.57	in/hr	

DESIGN DISCHARGES (Q)			
Q =	CIA		
=	52.44	cfs	

SIZE PIPE FOR V =			
	4	FT/S	
A =	Q / V	Q =	52.44 cfs
		V =	4.00 ft/s
A =	13.11	ft ²	
Dcalc =	49.03	inches	
D =	--	inches	
		CBC Option	5' X 3'
			15 ft ²

Notes: Proposed size 5' x 3', while existing is 2' x 2'.
 Needs to be replaced with proposed size and length 180 ft.

Subject: **FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538**

Time of Concentration Calculations for **B-102OFF / CD-102**

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)		100 ft			
Design frequency	50				
Design frequency rainfall (i)		9.14 in/hr			
Land slope (s)		0.012 ft/ft			
Elevation 1	113.0	ft			
Elevation 2	111.8	ft			
$T_{t1} = \frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * S^{0.3}}$			9.74	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	111.8	ft			
Elevation 2	106.1	ft			
Watercourse Slope (S)		0.006 ft/ft			
Velocity (V)	$V = 20.328 S^{0.5}$	1.53 ft/s			
Flow length (L)		1,000 ft			
$T_{t2} = \frac{L}{60 (v)}$			10.90	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$	0.00 ft/s			
Flow length (L)		0 ft			
$T_{t3} = \frac{L}{60 (v)}$					
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)		0 ft/s	Comments: Manually enter V		
Flow length (L)		0 ft			
$T_{t4} = \frac{L}{60 (v)}$					
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$	#DIV/0! ft/s			
Flow length (L)		0 ft			
$T_{t4} = \frac{L}{60 (v)}$			N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for B-102OFF / CD-102

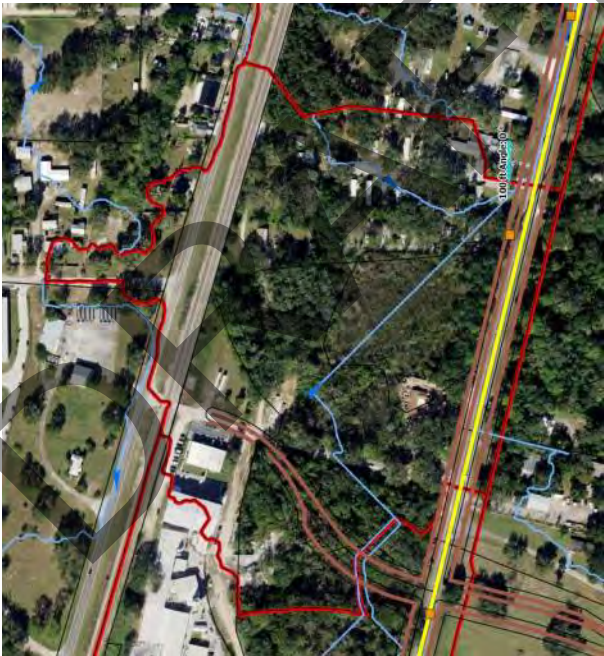
Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range fom 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
T _{t5} =	$0.0078 * Fs * L^{0.77}$		N/A	min		
	$S^{0.385}$					

Total Time of Concentration

Total Tc (T_{t1}+T_{t2}+T_{t3}+ etc)

20.64 min

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY
 Date: 7/11/2025
 Checked By: CC
 Date: 8/26/2025

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
 Cross Culverts Analysis

PROPOSED CROSS DRAIN B-102OFF / CD-102 STATION: CPP E 1052+60

AREAS (A)	Area (ac)	C	(A*C)
Pavement	2.44	0.95	2.32
SFR: Duplexes, Sandy Soils, Flat (0-2%)	7.96	0.40	3.18
Commercial and Industrial, Sandy Soils, Flat (0-2%)	2.53	0.73	1.84
Woodlands, Sandy Soils, Flat (0-2%)	7.97	0.13	1.00
Pond WS	3.47	1.00	3.47
Parking and Building	2.35	0.95	2.23
SUM	26.73 ac		14.04
COMPOSITE C COEFFICIENT	0.53		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.63		

RAINFALL INTENSITIES (I)			
	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)	
	15	1.63	
	30	2.58	
Tc =	20.64	min	(From Tc worksheet)
I =	1.99	in/hr	

DESIGN DISCHARGES (Q)			
Q =	CIA		
=	33.48	cfs	

SIZE PIPE FOR V =			
	4	FT/S	
A =	Q / V	Q =	33.48 cfs
		V =	4.00 ft/s
A =	8.37	ft ²	
Dcalc =	39.18	inches	
D =	--	inches	
		CBC Option	3' X 3' 9 ft ²

Notes: Proposed size 3' x 3', while existing is 3' x 2'. Needs to be replaced with proposed size and length 205 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-160019OFF / 160019

Overland Flow				Applicable	No	Assumptions and Comments
Surface Description	Dense grass			Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24					
Flow length (L)	100 ft					
Design frequency	50					
Design frequency rainfall (i)	9.14 in/hr					
Land slope (s)	0.009 ft/ft					
Elevation 1	117.3	ft				
Elevation 2	116.4	ft				
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$	N/A	min			
Shallow Concentrated Flow				Applicable	No	Assumptions and Comments
Flow type	Pavement and small gullies			Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$					
Elevation 1	116.4	ft				
Elevation 2	97.7	ft				
Watercourse Slope (S)	0.013 ft/ft					
Velocity (V)	$V = 20.328 S^{0.5}$	2.28	ft/s			
Flow length (L)	1,480 ft					
$T_{t2} =$	$\frac{L}{60 (v)}$	N/A	min			
Shoulder Gutter Flows				Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft		Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft				
Top Width of Shoulder gutter (T)	3.50	ft				
Manning's roughness coef. (n)	0.012					
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$	0.00	ft/s			
Flow length (L)	0 ft					
$T_{t3} =$	$\frac{L}{60 (v)}$	N/A	min			
Channel Flow (known velocity)				Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s			Comments: Manually enter V		
Flow length (L)	0 ft					
$T_{t4} =$	$\frac{L}{60 (v)}$	N/A	min			
Channel Flow (Channel Geometry)				Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²		Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft				
Hydraulic Radius= A/P (R)	#DIV/0!	ft				
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Longitudinal slope (S)	#DIV/0!	ft/ft				
Manning's roughness coef. (n)	0					
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$	#DIV/0!	ft/s			
Flow length (L)	0 ft					
$T_{t4} =$	$\frac{L}{60 (v)}$	N/A	min			

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-160019OFF / 160019

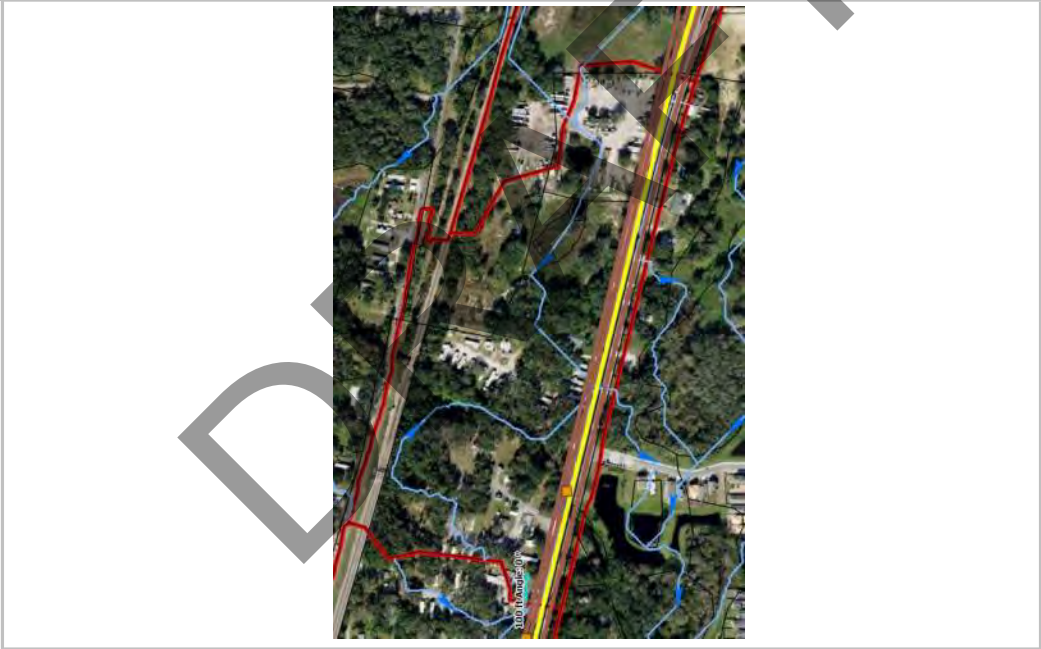
Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration

Total Tc (T_{t1}+T_{t2}+T_{t3}+ etc)

0.00 min

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY

Date: 7/11/2025

Checked By: AM

Date: 7/11/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-160019OFF / 160019 STATION: CPP E 1058+40

AREAS (A)	Area (ac)	C	(A*C)
Pavement	4.34	0.95	4.12
SFR: Duplexes, Sandy Soils, Flat (0-2%)	21.16	0.40	8.46
Commercial and Industrial, Sandy Soils, Flat (0-2%)	3.90	0.73	2.83
Bare Earth, Sandy Soils, Flat (0-2%)	5.24	0.40	2.10
Woodlands, Sandy Soils, Flat (0-2%)	0.04	0.13	0.01
Pond WS	0.87	1.00	0.87
Parking and Building	1.85	0.95	1.76
SUM	37.40 ac		20.14
COMPOSITE C COEFFICIENT	0.54		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.65		

RAINFALL INTENSITIES (I)		
Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)	
15	1.63	
30	2.58	
Tc = 0 min		(From Tc worksheet)
I = 0.68 in/hr		

DESIGN DISCHARGES (Q)		
Q =	CIA	
=	2500.00	cfs
		PER PLANS

SIZE PIPE FOR V =	4.5	FT/S		
A =	Q / V		Q = 2500.00	cfs
			V = 4.50	ft/s
A =	555.56	ft ²		
Dcalc =	319.15	inches	CBC Option	3 -10'W X 12'H
D =	--	inches		360 ft ²

Notes: Proposed size is triple 10'x12' culverts based on existing bridge culverts, but recommend to replace the bridge since it is near the 100-year expected service life, and culvert length 180 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
 Time of Concentration Calculations for **B-103OFF / CD-103**

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.015 ft/ft				
Elevation 1	112.7	ft			
Elevation 2	111.3	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		9.20	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	111.3	ft			
Elevation 2	105.8	ft			
Watercourse Slope (S)	0.004 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	1,400 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		18.41	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
			N/A	min	
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for			B-103OFF / CD-103			
Kirprich Equation (rural watersheds)			Applicable	No	Assumptions and Comments	
T ₁₅ =	Length of Travel (L)	0.00	ft	Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range fom 1.2 acres to 112 acres		
	Elevation 1	0.0	ft			
	Elevation 2	0.0	ft			
	Slope (S)	#DIV/0!	ft/ft	Fs- surface coefficient		
	Fs	0				
	$\frac{0.0078 * F_s * L^{0.77}}{S^{0.385}}$		N/A			min
						1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels
Total Time of Concentration						

Total Tc (T_{t1}+T_{t2}+T_{t3+ etc})

27.61 min



Patel, Greene & Associates, LLC

Designed By: CY
 Date: 7/11/2025
 Checked By: CC
 Date: 8/26/2025

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
 Cross Culverts Analysis

PROPOSED CROSS DRAIN B-103OFF / CD-103 STATION: CPP E 1088+60

AREAS (A)	Area (ac)	C	(A*C)
Pavement	5.68	0.95	5.39
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	3.82	0.33	1.24
SFR: Duplexes, Sandy Soils, Flat (0-2%)	0.56	0.40	0.22
Commercial and Industrial, Sandy Soils, Flat (0-2%)	0.92	0.73	0.67
Bare Earth, Sandy Soils, Flat (0-2%)	15.70	0.40	6.28
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	0.42	0.18	0.07
Pond WS	0.28	1.00	0.28
Woodlands, Sandy Soils, Flat (0-2%)	9.54	0.13	1.19
SUM	36.91 ac		13.88
COMPOSITE C COEFFICIENT		0.38	
Return Period	50 year (select)		
C VALUE ADJUSTMENT		0.45	

RAINFALL INTENSITIES (I)	
Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
15	1.63
30	2.58
Tc = 27.61 min	(From Tc worksheet)
I = 2.43 in/hr	

DESIGN DISCHARGES (Q)	
Q = CIA	
= 40.44 cfs	

SIZE PIPE FOR V = 4 FT/S	
A = Q / V	Q = 40.44 cfs
	V = 4.00 ft/s
A = 10.11 ft ²	
Dcalc = 43.05 inches	CBC Option 4' X 3'
D = inches	12 ft ²

Notes: Calculated size 4' x 3' CBC, while existing is 4' x 3', no need to be changed. Extend length to 300 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-104OFF / CD-104

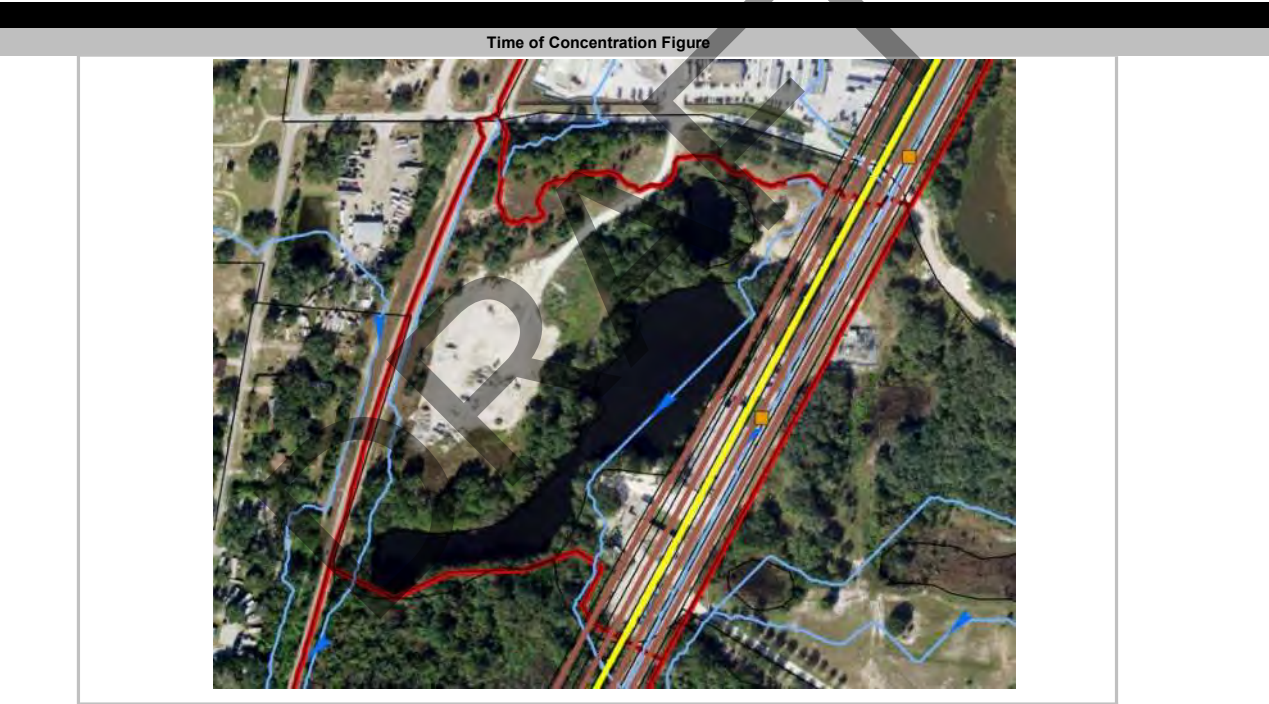
Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.018 ft/ft				
Elevation 1	119.2	ft			
Elevation 2	117.4	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		8.70	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	117.4	ft			
Elevation 2	115.3	ft			
Watercourse Slope (S)	0.003 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	700 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		10.38	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for			B-104OFF / CD-104			
Kirprich Equation (rural watersheds)			Applicable	No	Assumptions and Comments	
T ₁₅ =	Length of Travel (L)	0.00	ft	Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range fom 1.2 acres to 112 acres		
	Elevation 1	0.0	ft			
	Elevation 2	0.0	ft			
	Slope (S)	#DIV/0!	ft/ft	Fs- surface coefficient		
	Fs	0				
	$\frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A			min
			1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels			
			2.0 for grassed surfaces			
			0.4 for concrete or asphalt surfaces 0.2 for concrete channels			
Total Time of Concentration						

Total Tc (T_{t1}+T_{t2}+T_{t3}+ etc)

19.08 min



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/26/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-104OFF / CD-104 STATION: CPP E 1099+60

AREAS (A)	Area (ac)	C	(A*C)
Pavement	5.52	0.95	5.25
SFR: Duplexes, Sandy Soils, Flat (0-2%)	0.23	0.40	0.09
Commercial and Industrial, Sandy Soils, Flat (0-2%)	20.86	0.73	15.12
Bare Earth, Sandy Soils, Flat (0-2%)	0.02	0.40	0.01
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	0.02	0.18	0.00
Pond WS	7.22	1.00	7.22
Woodlands, Sandy Soils, Flat (0-2%)	0.07	0.13	0.01
SUM	33.95	ac	20.47
COMPOSITE C COEFFICIENT	0.60		
Return Period	50 year	(select)	
C VALUE ADJUSTMENT	0.72		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	19.08	min
I =	1.89	in/hr
		(From Tc worksheet)

DESIGN DISCHARGES (Q)		
Q =	CIA	
=	46.40	cfs

SIZE PIPE FOR V =	4	FT/S		
A =	Q / V		Q =	46.40 cfs
			V =	4.00 ft/s
A =	11.60	ft ²		
Dcalc =	46.12	inches	CBC Option	4' X 3'
D =		inches		12 ft ²

Notes: Proposed size 4' x 3', while existing is 2' x 2'. Needs to be replaced with proposed size and length 250 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
 Time of Concentration Calculations for B-105OFF / CD-105

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.088 ft/ft				
Elevation 1	134.2	ft			
Elevation 2	125.4	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		5.36	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	125.4	ft			
Elevation 2	116.7	ft			
Watercourse Slope (S)	0.004 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	2,000 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		24.81	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-105OFF / CD-105

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration

Total Tc (T _{t1} +T _{t2} +T _{t3+ etc})	30.17 min
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Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-105OFF / CD-105 STATION: CPP E 1108+00

AREAS (A)	Area (ac)	C	(A*C)
Pavement	5.35	0.95	5.08
Commercial and Industrial, Sandy Soils, Flat (0-2%)	28.03	0.73	20.32
Bare Earth, Sandy Soils, Flat (0-2%)	14.27	0.40	5.71
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	1.73	0.18	0.30
SUM	49.38 ac		31.11
COMPOSITE C COEFFICIENT	0.63		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.76		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	30	2.58
	60	3.49
Tc =	30.17 min	(From Tc worksheet)
I =	2.59 in/hr	

DESIGN DISCHARGES (Q)
Q = CIA
= 96.51 cfs

SIZE PIPE FOR V =	4	FT/S
A =	Q / V	Q = 96.51 cfs V = 4.00 ft/s
A =	24.13 ft ²	
Dcalc =	66.51 inches	CBC Option
D =	60.00 inches	2-5' X 3' 30 ft ²

Notes: Proposed size double 5' x 3', while existing is 30" circular culvert. Needs to be replaced with proposed size culvert and length 250 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-106OFF / CD-106

Overland Flow			Applicable	Yes	Assumptions and Comments		
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)				
Manning's roughness coef. (n)	0.24						
Flow length (L)	100 ft						
Design frequency	50						
Design frequency rainfall (i)	9.14 in/hr						
Land slope (s)	0.028 ft/ft						
T _{t1} =	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		7.54 min				
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments		
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.				
Equation	V = 20.328 S ^{0.5}						
Elevation 1	138.8 ft						
Elevation 2	114.9 ft						
Watercourse Slope (S)	0.010 ft/ft						
Velocity (V)	V = 20.328 S ^{0.5}						
Flow length (L)	2,300 ft						
T _{t2} =	L		18.50 min				
60 (v)							
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments		
Longitudinal slope (S)	0.0000 ft/ft		Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.				
Cross slope (Sx)	0.00 ft/ft						
Top Width of Shoulder gutter (T)	3.50 ft						
Manning's roughness coef. (n)	0.012						
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$					0.00 ft/s	
Flow length (L)	0 ft						
T _{t3} =	L		N/A min				
60 (v)							
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A		
velocity (V)	0 ft/s		Comments: Manually enter V				
Flow length (L)	0 ft						
T _{t4} =	L					N/A min	
60 (v)							
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments		
Area (A)	0.00 ft ²		Comments: Equation 2.2-8 Drainage Design Guide January 2021.				
Wetted Perimeter (P)	0.00 ft						
Hydraulic Radius= A/P (R)	#DIV/0! ft						
Elevation 1	0.0 ft						
Elevation 2	0.0 ft						
Longitudinal slope (S)	#DIV/0! ft/ft						
Manning's roughness coef. (n)	0						
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0! ft/s				
Flow length (L)	0 ft						
T _{t4} =	L		N/A min				
60 (v)							

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-106OFF / CD-106

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			
Total Time of Concentration						

Total Tc (T_{t1}+T_{t2}+T_{t3+ etc}) 26.04 min

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY

Date: 7/11/2025

Checked By: CC

Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-106OFF / CD-106 STATION: US 17/92 53+60

AREAS (A)	Area (ac)	C	(A*C)
Pavement	4.46	0.95	4.23
Bare Earth, Sandy Soils, Flat (0-2%)	4.03	0.40	1.61
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	18.25	0.18	3.19
Pond WS	3.28	1.00	3.28
Parking and Building	1.17	0.95	1.11
SUM	31.19 ac		13.44
COMPOSITE C COEFFICIENT	0.43		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.52		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	26.04 min	(From Tc worksheet)
I =	2.33 in/hr	

DESIGN DISCHARGES (Q)		
Q =	CIA	
=	37.55 cfs	

SIZE PIPE FOR V =	4 FT/S	
A =	Q / V	Q = 37.55 cfs
		V = 4.00 ft/s
A =	9.39 ft ²	
Dcalc =	41.49 inches	CBC Option 4' X 3'
D =	-- inches	12 ft ²

Notes: Proposed size 4' x 3', while existing is 2' x 2'. Needs to be replaced with proposed size and length 85 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-107OFF / CD-107

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.015 ft/ft				
Elevation 1	118.0	ft			
Elevation 2	116.5	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		9.16	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	116.5	ft			
Elevation 2	107.4	ft			
Watercourse Slope (S)	0.009 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	1,000 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		8.59	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
			N/A	min	
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for			B-107OFF / CD-107			
Kirprich Equation (rural watersheds)			Applicable	No	Assumptions and Comments	
T ₁₅ =	Length of Travel (L)	0.00	ft	Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range fom 1.2 acres to 112 acres		
	Elevation 1	0.0	ft			
	Elevation 2	0.0	ft			
	Slope (S)	#DIV/0!	ft/ft	Fs- surface coefficient		
	Fs	0				
	$\frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A			min
						1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels
				2.0 for grassed surfaces		
			0.4 for concrete or asphalt surfaces 0.2 for concrete channels			
Total Time of Concentration						

Total Tc (T_{t1}+T_{t2}+T_{t3+ etc})

17.75 min



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/29/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-107OFF / CD-107 STATION: US 17/92 67+60

AREAS (A)	Area (ac)	C	(A*C)
Pavement	1.35	0.95	1.28
Bare Earth, Sandy Soils, Flat (0-2%)	4.32	0.40	1.73
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	10.14	0.18	1.78
Pond WS	3.11	1.00	3.11
SUM	18.92 ac		7.90
COMPOSITE C COEFFICIENT	0.42		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.50		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	17.75 min	(From Tc worksheet)
I =	1.80 in/hr	

DESIGN DISCHARGES (Q)
Q = CIA
= 17.09 cfs

SIZE PIPE FOR V =	4	FT/S
A =	Q / V	Q = 17.09 cfs V = 4.00 ft/s
A =	4.27	ft ²
Dcalc =	27.99 inches	
D =	30.00 inches	
		CBC Option Minimum Culvert Size 3'X3'

Notes: Proposed size 3'x3', while existing is 2' x 2'. Needs to be replaced with proposed size and length 90 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
 Time of Concentration Calculations for **B-108OFF / CD-108**

Overland Flow			Applicable	Yes	Assumptions and Comments	
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)			
Manning's roughness coef. (n)	0.24					
Flow length (L)	100 ft					
Design frequency	50					
Design frequency rainfall (i)	9.14 in/hr					
Land slope (s)	0.028 ft/ft					
$T_{t1} = \frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$			7.54 min			
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments	
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.			
Equation	$V = 20.328 S^{0.5}$					
Elevation 1	112.4 ft					
Elevation 2	106.6 ft					
Watercourse Slope (S)	0.007 ft/ft					
Velocity (V)	1.73 ft/s					
Flow length (L)	800 ft					
$T_{t2} = \frac{L}{60 (v)}$			7.72 min			
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments	
Longitudinal slope (S)	0.0000 ft/ft		Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.			
Cross slope (Sx)	0.00 ft/ft					
Top Width of Shoulder gutter (T)	3.50 ft					
Manning's roughness coef. (n)	0.012					
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$					0.00 ft/s
Flow length (L)	0 ft					
$T_{t3} = \frac{L}{60 (v)}$			N/A min			
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A	
velocity (V)	0 ft/s		Comments: Manually enter V			
Flow length (L)	0 ft					
$T_{t4} = \frac{L}{60 (v)}$						N/A min
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments	
Area (A)	0.00 ft ²		Comments: Equation 2.2-8 Drainage Design Guide January 2021.			
Wetted Perimeter (P)	0.00 ft					
Hydraulic Radius= A/P (R)	#DIV/0! ft					
Elevation 1	0.0 ft					
Elevation 2	0.0 ft					
Longitudinal slope (S)	#DIV/0! ft/ft					
Manning's roughness coef. (n)	0					
$velocity (V) = \frac{1.486 * S^{0.5} * R^{0.67}}{n}$			#DIV/0! ft/s			
Flow length (L)	0 ft					
$T_{t4} = \frac{L}{60 (v)}$			N/A min			

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-108OFF / CD-108

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration

Total Tc (T_{t1}+T_{t2}+T_{t3}+ etc)

15.26 min

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-108OFF / CD-108 STATION: US 17/92 84+40

AREAS (A)	Area (ac)	C	(A*C)
Pavement	2.15	0.95	2.04
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	6.33	0.33	2.06
MFR: Apartments, townhouses, and condominiums, Sandy Soils, Flat (0-2%)	0.09	0.53	0.05
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	2.92	0.18	0.51
Bare Earth, Sandy Soils, Flat (0-2%)	2.13	0.40	0.85
Pond WS	0.67	1.00	0.67
Woodlands, Sandy Soils, Flat (0-2%)	6.09	0.13	0.76
SUM	20.39 ac		6.94
COMPOSITE C COEFFICIENT	0.34		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.41		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	15.26 min	(From Tc worksheet)
I =	1.65 in/hr	

DESIGN DISCHARGES (Q)	
Q =	CIA
=	13.72 cfs

SIZE PIPE FOR V =	4	FT/S
A =	Q / V	Q = 13.72 cfs V = 4.00 ft/s
A =	3.43	ft ²
Dcalc =	25.08	inches
D =	30.00	inches

Notes: If assume water flows through PCD-402, and then flows through PCD-451, finally passes EX-108 culvert, existing 30" CC should be upgraded based on the large drainage areas contributing to the culvert. The total flow is (5547.95+165.45+13.72) 5727.12 cfs. However, if water passing the PCD-451 and then keeps flowing north, the exist 30" CC should be working. No changes in size needed, extend to 80 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for **B-109OFF / CD-109**

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.027 ft/ft				
Elevation 1	113.5	ft			
Elevation 2	110.8	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		7.64	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	110.8	ft			
Elevation 2	105.8	ft			
Watercourse Slope (S)	0.006 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	900 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		9.93	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for			B-109OFF / CD-109		
Kirprich Equation (rural watersheds)			Applicable	No	Assumptions and Comments
T ₁₅ =	Length of Travel (L)	0.00	ft	Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range fom 1.2 acres to 112 acres	
	Elevation 1	0.0	ft		
	Elevation 2	0.0	ft		
	Slope (S)	#DIV/0!	ft/ft	Fs- surface coefficient	
	Fs	0			
	$\frac{0.0078 * F_s * L^{0.77}}{S^{0.385}}$	N/A	min		
				1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels	
			2.0 for grassed surfaces		
			0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Total Time of Concentration					

Total Time of Concentration	
Total Tc (T _{t1} +T _{t2} +T _{t3} + etc)	17.57 min



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-109OFF / CD-109 STATION: US 17/92 92+60

AREAS (A)	Area (ac)	C	(A*C)
Pavement	1.24	0.95	1.18
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	0.95	0.33	0.31
MFR: Apartments, townhouses, and condominiums, Sandy Soils, Flat (0-2%)	0.09	0.53	0.05
Bare Earth, Sandy Soils, Flat (0-2%)	3.22	0.40	1.29
Woodlands, Sandy Soils, Flat (0-2%)	7.28	0.13	0.91
SUM	12.78 ac		3.73
COMPOSITE C COEFFICIENT	0.29		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.35		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	17.57 min	(From Tc worksheet)
I =	1.79 in/hr	

DESIGN DISCHARGES (Q)		
Q =	CIA	
=	8.03 cfs	

SIZE PIPE FOR V =	4 FT/S		
A =	Q / V	Q = 8.03 cfs	
		V = 4.00 ft/s	
A =	2.01 ft ²		
Dcalc =	19.19 inches		
D =	24.00 inches		

Notes: Existing 30" CC, no need to change and extend to 95 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for **B-110OFF / CD-110**

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.028 ft/ft				
$T_{t1} = \frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$			7.53 min		
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	129.5 ft				
Elevation 2	100.8 ft				
Watercourse Slope (S)	0.010 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	2,900 ft				
$T_{t2} = \frac{L}{60 (v)}$			23.93 min		
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000 ft/ft		Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00 ft/ft				
Top Width of Shoulder gutter (T)	3.50 ft				
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} = \frac{L}{60 (v)}$			N/A min		
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} = \frac{L}{60 (v)}$			N/A min		
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00 ft ²		Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00 ft				
Hydraulic Radius= A/P (R)	#DIV/0! ft				
Elevation 1	0.0 ft				
Elevation 2	0.0 ft				
Longitudinal slope (S)	#DIV/0! ft/ft				
Manning's roughness coef. (n)	0				
$velocity (V) = \frac{1.486 * S^{0.5} * R^{0.67}}{n}$			#DIV/0! ft/s		
Flow length (L)	0 ft				
$T_{t4} = \frac{L}{60 (v)}$			N/A min		

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-110OFF / CD-110

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration

Total Tc (T_{t1}+T_{t2}+T_{t3}+ etc)

31.46 min

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY

Date: 7/11/2025

Checked By: CC

Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-110OFF / CD-110 STATION: US 17/92 169+80

AREAS (A)	Area (ac)	C	(A*C)
Pavement	4.54	0.95	4.31
MFR: Apartments, townhouses, and condominiums, Sandy Soils, Flat (0-2%)	83.58	0.53	43.88
Bare Earth, Sandy Soils, Flat (0-2%)	3.12	0.40	1.25
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	2.50	0.18	0.44
Woodlands, Sandy Soils, Flat (0-2%)	30.56	0.13	3.82
Pond WS	58.92	1.00	58.92
Parking and Building	0.84	0.95	0.80
SUM	184.06 ac		113.42
COMPOSITE C COEFFICIENT	0.62		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.74		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	30	2.59
	60	3.49
Tc =	31.46 min	(From Tc worksheet)
I =	2.63 in/hr	

DESIGN DISCHARGES (Q)	
Q =	CIA
=	358.46 cfs

SIZE PIPE FOR V =	4	FT/S
A =	Q / V	Q = 358.46 cfs
		V = 4.00 ft/s
A =	89.61	ft ²
Dcalc =	128.18	inches
D =	---	inches
		CBC Option 4- 6' X 4' 96 ft ²

Notes: Calculated is four-barrel 6'x4' CBC, while existing is 24" CC. Needs to be replaced with proposed size and length 125 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-111OFF / CD-111

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.009 ft/ft				
Elevation 1	107.3	ft			
Elevation 2	106.4	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		10.62	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	106.4	ft			
Elevation 2	86.8	ft			
Watercourse Slope (S)	0.009 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	2,300 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		20.44	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-111OFF / CD-111

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration

Total Tc (T_{t1}+T_{t2}+T_{t3+ etc}) 31.06 min

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-111OFF / CD-111 STATION: CL North US 17/92 53+80

AREAS (A)	Area (ac)	C	(A*C)
Pavement	8.07	0.95	7.66
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	19.11	0.33	6.21
SFR: Duplexes, Sandy Soils, Flat (0-2%)	0.42	0.40	0.17
Commercial and Industrial, Sandy Soils, Flat (0-2%)	12.13	0.73	8.80
Bare Earth, Sandy Soils, Flat (0-2%)	10.93	0.40	4.37
Pond WS	3.09	1.00	3.09
Woodlands, Sandy Soils, Flat (0-2%)	3.08	0.13	0.39
Parking and Building	2.29	0.95	2.18
SUM	59.14		32.87
COMPOSITE C COEFFICIENT	0.56		
Return Period	50 year	(select)	
C VALUE ADJUSTMENT	0.67		

RAINFALL INTENSITIES (I)	
Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
30	2.58
60	3.49
Tc = 31.06 min	(From Tc worksheet)
I = 2.61 in/hr	

DESIGN DISCHARGES (Q)	
Q = CIA	
= 103.04	cfs

SIZE PIPE FOR V = 4 FT/S	
A = Q / V	Q = 103.04 cfs
	V = 4.00 ft/s
A = 25.76	ft ²
Dcalc = 68.72	inches
D = 2- 4' x 3'	CBC Option
	24 ft ²

Notes: The calculated size is double 4'x3' CBC and existing is 4'x3' CBC. Since FDOT's work will not impact the west drainage areas, this culvert will be kept as the current size and extend length to 100 ft. More details may need to be discussed when it comes to design phase.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for **B-402OFF / CD-402**

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.010 ft/ft				
Elevation 1	131.2	ft			
Elevation 2	130.1	ft			
$T_{t1} = \frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$	10.22 min				
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	130.1	ft			
Elevation 2	108.2	ft			
Watercourse Slope (S)	0.002 ft/ft				
Velocity (V)	0.80 ft/s				
Flow length (L)	14,000 ft				
$T_{t2} = \frac{L}{V}$	289.95 min				
60 (v)					
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) = $\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$	0.00 ft/s				
Flow length (L)	0 ft				
$T_{t3} = \frac{L}{V}$	N/A min				
60 (v)					
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} = \frac{L}{V}$	N/A min				
60 (v)					
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) = $\frac{1.486 * S^{0.5} * R^{0.67}}{n}$	#DIV/0! ft/s				
Flow length (L)	0 ft				
$T_{t4} = \frac{L}{V}$	N/A min				
60 (v)					

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-402OFF / CD-402

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			
Total Time of Concentration						

Total Tc (T_{t1}+T_{t2}+T_{t3+ etc}) 300.17 min



Patel, Greene & Associates, LLC

Designed By: CY

Date: 7/11/2025

Checked By: CC

Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN

B-402OFF / CD-402

STATION:

CPP E 1173+60

AREAS (A)	Area (ac)	C	(A*C)
Pavement	0.13	0.95	0.12
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	122.73	0.33	39.89
MFR: Apartments, townhouses, and condominiums, Sandy Soils, Flat (0-2%)	42.07	0.53	22.09
Commercial and Industrial, Sandy Soils, Flat (0-2%)	77.81	0.73	56.41
Bare Earth, Sandy Soils, Flat (0-2%)	242.03	0.40	96.81
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	187.35	0.18	32.79
Woodlands, Sandy Soils, Flat (0-2%)	201.54	0.13	25.19
Pond WS	499.23	1.00	499.23
Parking and Building	40.50	0.95	38.48
SUM	1413.40 ac		811.01
COMPOSITE C COEFFICIENT	0.57		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.69		

RAINFALL INTENSITIES (I)		
Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)	
180	4.96	
360	6.07	
Tc = 300.17 min	(From Tc worksheet)	
I = 5.70 in/hr		

DESIGN DISCHARGES (Q)
Q = CIA
= 5548.32 cfs

SIZE PIPE FOR V =		4	FT/S		
A =	Q / V			Q =	5548.32 cfs
				V =	4.00 ft/s
A =	1387.08		ft2		
Dcalc =	504.30		inches	Proposed CBC	4-5'X3'
D =			inches		60 ft2

Notes: Watershed size is larger than 300 ac, rational method is not suitable here. The proposed culvert sizes were estimated using the dimensions of the downstream culvert at US 17/92 (FDOT Bridge 160187).

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
 Time of Concentration Calculations for B-403OFF / CD-403

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.005 ft/ft				
Elevation 1	113.4	ft			
Elevation 2	112.8	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		12.31	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	112.8	ft			
Elevation 2	107.7	ft			
Watercourse Slope (S)	0.007 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	700 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		6.71	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
			N/A	min	
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for				B-403OFF / CD-403		
Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
T ₁₅ =	Length of Travel (L)	0.00	ft	Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range fom 1.2 acres to 112 acres		
	Elevation 1	0.0	ft			
	Elevation 2	0.0	ft			
	Slope (S)	#DIV/0!	ft/ft	Fs- surface coefficient		
	Fs	0				
	$\frac{0.0078 * F_s * L^{0.77}}{S^{0.385}}$					
	N/A					
				1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels		
				2.0 for grassed surfaces		
				0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Total Time of Concentration						

Total Tc (T _{t1} +T _{t2} +T _{t3+ etc})	19.02 min
--	-----------



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-403OFF / CD-403 STATION: CPP E 1182+00

AREAS (A)	Area (ac)	C	(A*C)
Pavement	1.83	0.95	1.74
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	1.89	0.18	0.33
Woodlands, Sandy Soils, Flat (0-2%)	0.43	0.13	0.05
Pond WS	2.10	1.00	2.10
SUM	6.24 ac		4.22
COMPOSITE C COEFFICIENT	0.68		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.81		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	19.02 min	(From Tc worksheet)
I =	1.88 in/hr	

DESIGN DISCHARGES (Q)
Q = CIA
= 9.54 cfs

SIZE PIPE FOR V =	4	FT/S
A =	Q / V	Q = 9.54 cfs V = 4.00 ft/s
A =	2.38	ft2
Dcalc =	20.91	inches
D =	24.00	inches

Notes: Proposed 24" CC, length 125 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-451OFF / CD-451

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.013 ft/ft				
Elevation 1	122.1	ft			
Elevation 2	120.7	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		9.44	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	120.7	ft			
Elevation 2	108.5	ft			
Watercourse Slope (S)	0.005 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	2,400 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		27.58	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
			N/A	min	
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-451OFF / CD-451

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration

Total Tc (T_{t1}+T_{t2}+T_{t3+ etc}) 37.02 min

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-451OFF / CD-451 STATION: SB Exit Ramp 26+80

AREAS (A)	Area (ac)	C	(A*C)
Pavement	7.46	0.95	7.09
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	16.11	0.33	5.24
Bare Earth, Sandy Soils, Flat (0-2%)	1.54	0.40	0.62
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	14.06	0.18	2.46
Woodlands, Sandy Soils, Flat (0-2%)	0.88	0.13	0.11
Pond WS	31.11	1.00	31.11
Parking and Building	2.89	0.95	2.75
SUM	74.05	ac	49.37
COMPOSITE C COEFFICIENT	0.67		
Return Period	50 year	(select)	
C VALUE ADJUSTMENT	0.80		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	30	2.58
	60	3.49
Tc =	37.02	min
I =	2.79	in/hr
		(From Tc worksheet)

DESIGN DISCHARGES (Q)		
Q =	CIA	
=	165.45	cfs

SIZE PIPE FOR V =	4	FT/S		
A =	Q / V		Q =	165.45 cfs
			V =	4.00 ft/s
A =	41.36	ft ²		
Dcalc =	87.08	inches	CBC Option	4-5' X 3'
D =	--	inches		60 ft ²

Notes: The proposed culvert sizes were estimated using the dimensions of the downstream culvert at US 17/92 (FDOT Bridge 160187).

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
 Time of Concentration Calculations for B-601OFF / CD-601

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.007 ft/ft				
Elevation 1	107.0 ft				
Elevation 2	106.3 ft				
$T_{t1} = \frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		11.60 min			
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	106.3 ft				
Elevation 2	102.8 ft				
Watercourse Slope (S)	0.003 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$	1.10 ft/s			
Flow length (L)		1,200 ft			
$T_{t2} = \frac{L}{60(v)}$		18.19 min			
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000 ft/ft		Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00 ft/ft				
Top Width of Shoulder gutter (T)	3.50 ft				
Manning's roughness coef. (n)	0.012				
velocity (V) = $\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$		0.00 ft/s			
Flow length (L)		0 ft			
$T_{t3} = \frac{L}{60(v)}$		N/A min			
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)		0 ft/s	Comments: Manually enter V		
Flow length (L)		0 ft			
$T_{t4} = \frac{L}{60(v)}$		N/A min			
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00 ft ²		Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00 ft				
Hydraulic Radius= A/P (R)	#DIV/0! ft				
Elevation 1	0.0 ft				
Elevation 2	0.0 ft				
Longitudinal slope (S)	#DIV/0! ft/ft				
Manning's roughness coef. (n)	0				
velocity (V) = $\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0! ft/s			
Flow length (L)		0 ft			
$T_{t4} = \frac{L}{60(v)}$		N/A min			

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-601OFF / CD-601

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration	
Total Tc (T _{t1} +T _{t2} +T _{t3} + etc)	29.79 min



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-601OFF / CD-601 STATION: CPP E 1249+80

AREAS (A)	Area (ac)	C	(A*C)
Pavement	4.85	0.95	4.61
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	0.87	0.33	0.28
MFR: Apartments, townhouses, and condominiums, Sandy Soils, Flat (0-2%)	0.01	0.53	0.00
Woodlands, Sandy Soils, Flat (0-2%)	11.10	0.13	1.39
Pond WS	8.31	1.00	8.31
SUM	25.14 ac		14.60
COMPOSITE C COEFFICIENT	0.58		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.70		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	29.79 min	(From Tc worksheet)
I =	2.57 in/hr	

DESIGN DISCHARGES (Q)	
Q =	CIA
=	44.96 cfs

SIZE PIPE FOR V =	4	FT/S	
A =	Q / V		Q = 44.96 cfs
			V = 4.00 ft/s
A =	11.24	ft ²	
Dcalc =	45.40	inches	
D =		inches	CBC Option 4' X 3' 12 ft ²

Notes: Proposed culvert size is 4'X3' CBC, length 200 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for **CD-602**

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.060 ft/ft				
Elevation 1	115.0 ft				
Elevation 2	109.0 ft				
$T_{t1} = \frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		6.01 min			
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Short-grass pasture		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 6.962 S^{0.5}$				
Elevation 1	109.0 ft				
Elevation 2	98.0 ft				
Watercourse Slope (S)	0.023 ft/ft				
Velocity (V)	$V = 6.962 S^{0.5}$	1.06 ft/s			
Flow length (L)		479 ft			
$T_{t2} = \frac{L}{V}$		7.57 min			
	60 (v)				
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000 ft/ft		Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00 ft/ft				
Top Width of Shoulder gutter (T)	3.50 ft				
Manning's roughness coef. (n)	0.012				
velocity (V) = $\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$		0.00 ft/s			
Flow length (L)		0 ft			
$T_{t3} = \frac{L}{V}$		N/A min			
	60 (v)				
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)		0 ft/s	Comments: Manually enter V		
Flow length (L)		0 ft			
$T_{t4} = \frac{L}{V}$		N/A min			
	60 (v)				
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00 ft ²		Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00 ft				
Hydraulic Radius= A/P (R)	#DIV/0! ft				
Elevation 1	0.0 ft				
Elevation 2	0.0 ft				
Longitudinal slope (S)	#DIV/0! ft/ft				
Manning's roughness coef. (n)	0				
velocity (V) = $\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0! ft/s			
Flow length (L)		0 ft			
$T_{t4} = \frac{L}{V}$		N/A min			
	60 (v)				

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for			CD-602		
Kirprich Equation (rural watersheds)			Applicable	No	Assumptions and Comments
T ₁₅ =	Length of Travel (L)	0.00	ft	Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range fom 1.2 acres to 112 acres	
	Elevation 1	0.0	ft		
	Elevation 2	0.0	ft		
	Slope (S)	#DIV/0!	ft/ft	Fs- surface coefficient	
	Fs	0			
	$\frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$	N/A	min		
				1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels	
			2.0 for grassed surfaces		
			0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Total Time of Concentration					

Total Time of Concentration	
Total Tc (T_{t1}+T_{t2}+T_{t3}+ etc)	13.58 min



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN

CD-602

STATION:

CPP E 1249+80

AREAS (A)	Area (ac)	C	(A*C)
Pavement	0.00	0.95	0.00
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	0.00	0.33	0.00
MFR: Apartments, townhouses, and condominiums, Sandy Soils, Flat (0-2%)	4.42	0.53	2.32
Woodlands, Sandy Soils, Flat (0-2%)	4.21	0.13	0.53
Pond WS	7.37	1.00	7.37
SUM	16.00 ac		10.22
COMPOSITE C COEFFICIENT	0.64		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.77		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	13.58 min	(From Tc worksheet)
I =	1.54 in/hr	

DESIGN DISCHARGES (Q)	Q =	CIA	cfs
		18.88	

SIZE PIPE FOR V =	4	FT/S	
A =	Q / V		Q = 18.88 cfs V = 4.00 ft/s
A =	4.72	ft ²	
Dcalc =	29.42	inches	
D =	30.00	inches	CBC Option

Notes: Proposed culvert size is a 30", length 210 ft.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for **B-701OFF / CD-701**

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.028 ft/ft				
$T_{t1} = \frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$			7.54 min		
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	110.4 ft				
Elevation 2	98.2 ft				
Watercourse Slope (S)	0.004 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	2,800 ft				
$T_{t2} = \frac{L}{60 (v)}$			34.69 min		
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000 ft/ft		Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00 ft/ft				
Top Width of Shoulder gutter (T)	3.50 ft				
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} = \frac{L}{60 (v)}$			N/A min		
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} = \frac{L}{60 (v)}$			N/A min		
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00 ft ²		Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00 ft				
Hydraulic Radius= A/P (R)	#DIV/0! ft				
Elevation 1	0.0 ft				
Elevation 2	0.0 ft				
Longitudinal slope (S)	#DIV/0! ft/ft				
Manning's roughness coef. (n)	0				
$velocity (V) = \frac{1.486 * S^{0.5} * R^{0.67}}{n}$			#DIV/0! ft/s		
Flow length (L)	0 ft				
$T_{t4} = \frac{L}{60 (v)}$			N/A min		

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-701OFF / CD-701

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration

Total Tc (T_{t1}+T_{t2}+T_{t3+ etc}) 42.23 min

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-701OFF / CD-701 STATION: CPP E 1312+80

AREAS (A)	Area (ac)	C	(A*C)
Pavement	4.14	0.95	3.93
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	29.45	0.33	9.57
MFR: Apartments, townhouses, and condominiums, Sandy Soils, Flat (0-2%)	51.60	0.53	27.09
Rooftops and pavement, Sandy Soils, Flat (0-2%)	17.25	0.95	16.39
Bare Earth, Sandy Soils, Flat (0-2%)	23.10	0.40	9.24
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	4.12	0.18	0.72
Woodlands, Sandy Soils, Flat (0-2%)	14.93	0.13	1.87
Pond WS	79.45	1.00	79.45
Parking and Building	8.67	0.95	8.24
SUM	232.70 ac		156.49
COMPOSITE C COEFFICIENT	0.67		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.81		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	30	2.58
	60	3.49
Tc =	42.23 min	(From Tc worksheet)
I =	2.95 in/hr	

DESIGN DISCHARGES (Q)
Q = CIA
= 554.16 cfs

SIZE PIPE FOR V =	4	FT/S
A =	Q / V	Q = 554.16 cfs V = 4.00 ft/s
A =	138.54	ft ²
Dcalc =	159.38	inches
D =		inches
Proposed CBC	6' X 3'	18 ft ²

Notes: Basin area is greater than 200 ac, so rational method to calculate the culvert size is not suitable here. Proposed 6' x 3' CBC is from other existing plan/ study. More details should be analyzed during design phase.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for B-801OFF / CD-801

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.023 ft/ft				
Elevation 1	79.8	ft			
Elevation 2	77.5	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		7.98	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	77.5	ft			
Elevation 2	73.4	ft			
Watercourse Slope (S)	0.004 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	1,000 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		12.82	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
			N/A	min	
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for			B-801OFF / CD-801			
Kirprich Equation (rural watersheds)			Applicable	No	Assumptions and Comments	
T ₁₅ =	Length of Travel (L)	0.00	ft	Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range fom 0.56% , area range fom 1.2 acres to 112 acres		
	Elevation 1	0.0	ft			
	Elevation 2	0.0	ft			
	Slope (S)	#DIV/0!	ft/ft	Fs- surface coefficient		
	Fs	0				
	$\frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A			min
			1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels			
			2.0 for grassed surfaces			
			0.4 for concrete or asphalt surfaces 0.2 for concrete channels			
Total Time of Concentration						

Total Tc (T _{t1} +T _{t2} +T _{t3+ etc})	20.80 min
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Patel, Greene & Associates, LLC

Designed By: CY

Date: 7/11/2025

Checked By: AM

Date: 7/11/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN

B-801OFF / CD-801

STATION:

US BL CPP E NBRamp 216+20

AREAS (A)	Area (ac)	C	(A*C)
Pavement	4.65	0.95	4.41
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	3.02	0.33	0.98
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	0.27	0.18	0.05
Pond WS	0.33	1.00	0.33
Woodlands, Sandy Soils, Flat (0-2%)	3.79	0.13	0.47
SUM	12.07 ac		6.25
COMPOSITE C COEFFICIENT	0.52		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.62		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	20.8 min	(From Tc worksheet)
I =	2.00 in/hr	

DESIGN DISCHARGES (Q)	
Q =	CIA
=	14.97 cfs

SIZE PIPE FOR V =	4	FT/S	
A =	Q / V		Q = 14.97 cfs
			V = 4.00 ft/s
A =	3.74	ft ²	
Dcalc =	26.20	inches	
D =	30.00	inches	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

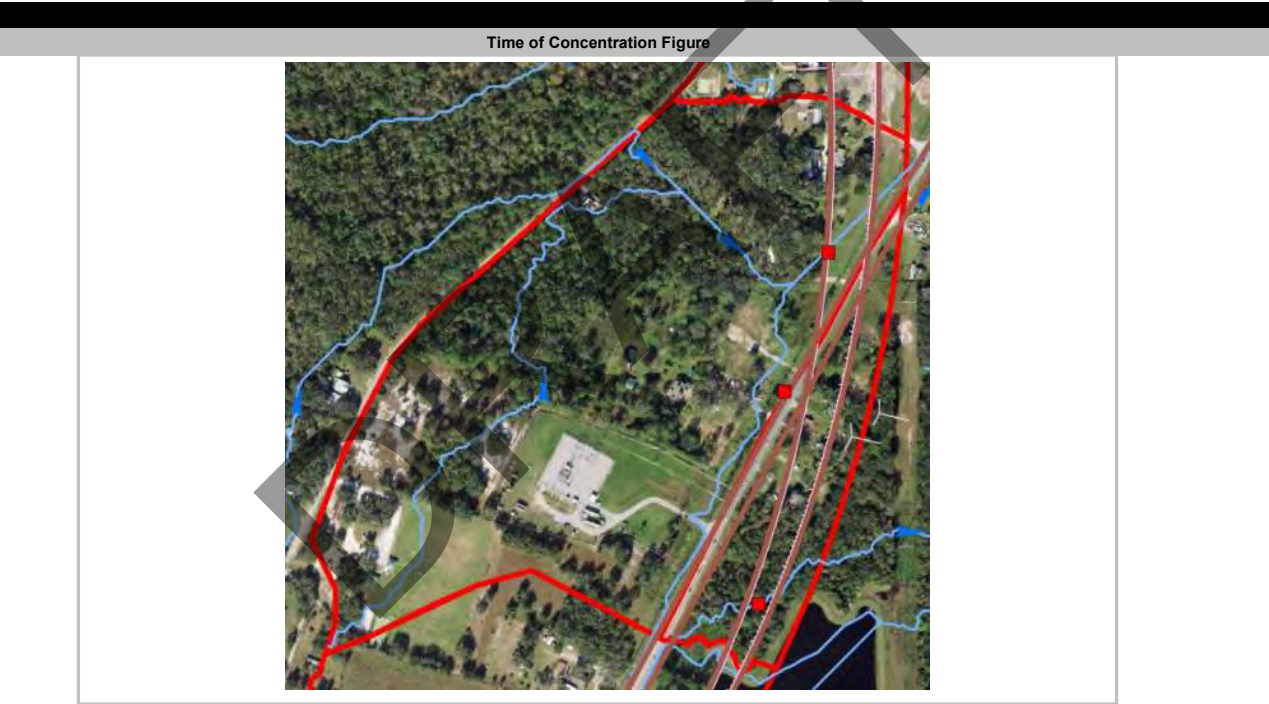
Time of Concentration Calculations for B-802OFF / CD-802

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.004 ft/ft				
Elevation 1	101.2 ft				
Elevation 2	100.8 ft				
$T_{t1} = \frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		13.64 min			
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	100.8 ft				
Elevation 2	79.6 ft				
Watercourse Slope (S)	0.008 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$	1.77 ft/s			
Flow length (L)		2,800 ft			
$T_{t2} = \frac{L}{60(V)}$		26.35 min			
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000 ft/ft		Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00 ft/ft				
Top Width of Shoulder gutter (T)	3.50 ft				
Manning's roughness coef. (n)	0.012				
velocity (V) = $\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$		0.00 ft/s			
Flow length (L)		0 ft			
$T_{t3} = \frac{L}{60(V)}$		N/A min			
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)		0 ft/s	Comments: Manually enter V		
Flow length (L)		0 ft			
$T_{t4} = \frac{L}{60(V)}$		N/A min			
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00 ft ²		Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00 ft				
Hydraulic Radius= A/P (R)	#DIV/0! ft				
Elevation 1	0.0 ft				
Elevation 2	0.0 ft				
Longitudinal slope (S)	#DIV/0! ft/ft				
Manning's roughness coef. (n)	0				
velocity (V) = $\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0! ft/s			
Flow length (L)		0 ft			
$T_{t4} = \frac{L}{60(V)}$		N/A min			

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-802OFF / CD-802

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			
Total Time of Concentration						

Total Tc (T_{t1}+T_{t2}+T_{t3+ etc}) 39.99 min



Patel, Greene & Associates, LLC

Designed By: CY

Date: 7/11/2025

Checked By: AM

Date: 7/11/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN

B-802OFF / CD-802

STATION:

CL North US 17/92 76+40

AREAS (A)	Area (ac)	C	(A*C)
Pavement	2.30	0.95	2.19
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	15.84	0.33	5.15
SFR: Smaller lots, Sandy Soils, Flat (0-2%)	17.08	0.40	6.83
Pond WS	4.08	1.00	4.08
Woodlands, Sandy Soils, Flat (0-2%)	11.18	0.13	1.40
Parking and Building	7.77	0.95	7.38
SUM	58.25		27.02
COMPOSITE C COEFFICIENT	0.46		
Return Period	50 year	(select)	
C VALUE ADJUSTMENT	0.56		

RAINFALL INTENSITIES (I)		
	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	30	2.58
	60	3.49
Tc =	39.99	min
I =	2.88	in/hr
		(From Tc worksheet)

DESIGN DISCHARGES (Q)		
Q =	CIA	
=	93.49	cfs

SIZE PIPE FOR V =	4	FT/S		
A =	Q / V		Q =	93.49 cfs
			V =	4.00 ft/s
A =	23.37	ft ²		
Dcalc =	65.46	inches	Proposed CBC	4' X 3'
D =		inches		12 ft ²

Notes: Calculated size is 4'x3', matching the proposed size from other existing study.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-901OFF / CD-901

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.007 ft/ft				
Elevation 1	82.5	ft			
Elevation 2	81.8	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		11.60	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	81.8	ft			
Elevation 2	75.1	ft			
Watercourse Slope (S)	0.007 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	900 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		8.58	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$				
	N/A				
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-901OFF / CD-901

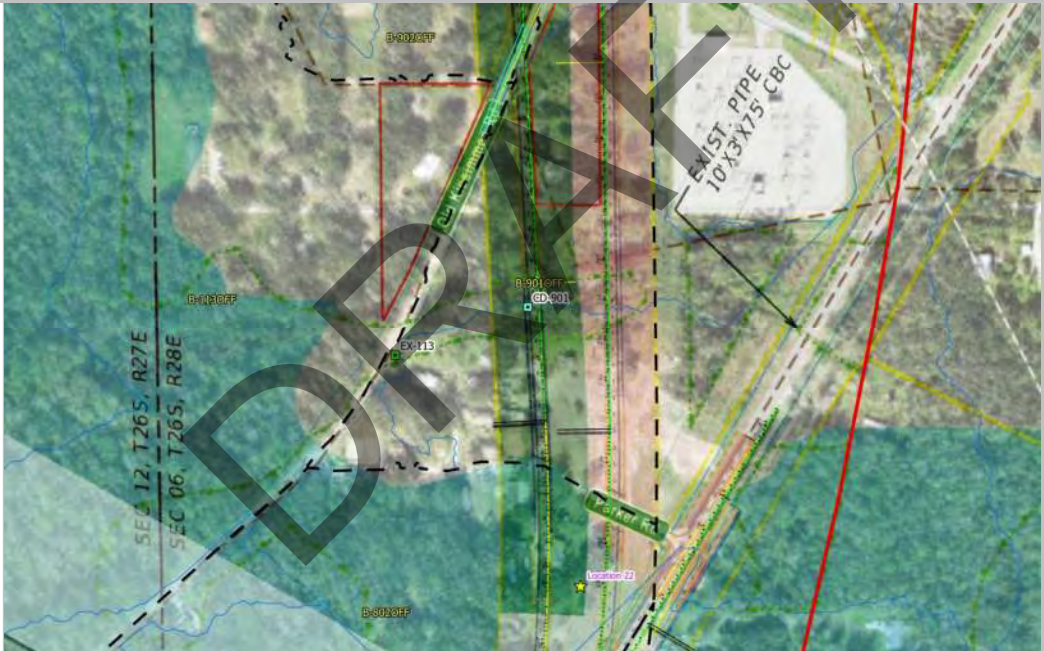
Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration

Total Tc (T_{t1}+T_{t2}+T_{t3}+ etc)

20.18 min

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-901OFF / CD-901 STATION: BL CPP E NBRamp 137+20

AREAS (A)	Area (ac)	C	(A*C)
Pavement	2.59	0.95	2.46
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	11.40	0.33	3.71
Bare Earth, Sandy Soils, Flat (0-2%)	0.15	0.40	0.06
Woodlands, Sandy Soils, Flat (0-2%)	1.41	0.13	0.18
SUM	15.55 ac		6.41
COMPOSITE C COEFFICIENT	0.41		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.49		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	20.18 min	(From Tc worksheet)
I =	1.96 in/hr	

DESIGN DISCHARGES (Q)
Q = CIA
= 15.05 cfs

SIZE PIPE FOR V =	4	FT/S
A =	Q / V	Q = 15.05 cfs V = 4.00 ft/s
A =	3.76	ft ²
Dcalc =	26.27	inches
D =	30.00	inches
		Proposed CBC 2-5' X 3' 30 ft ²

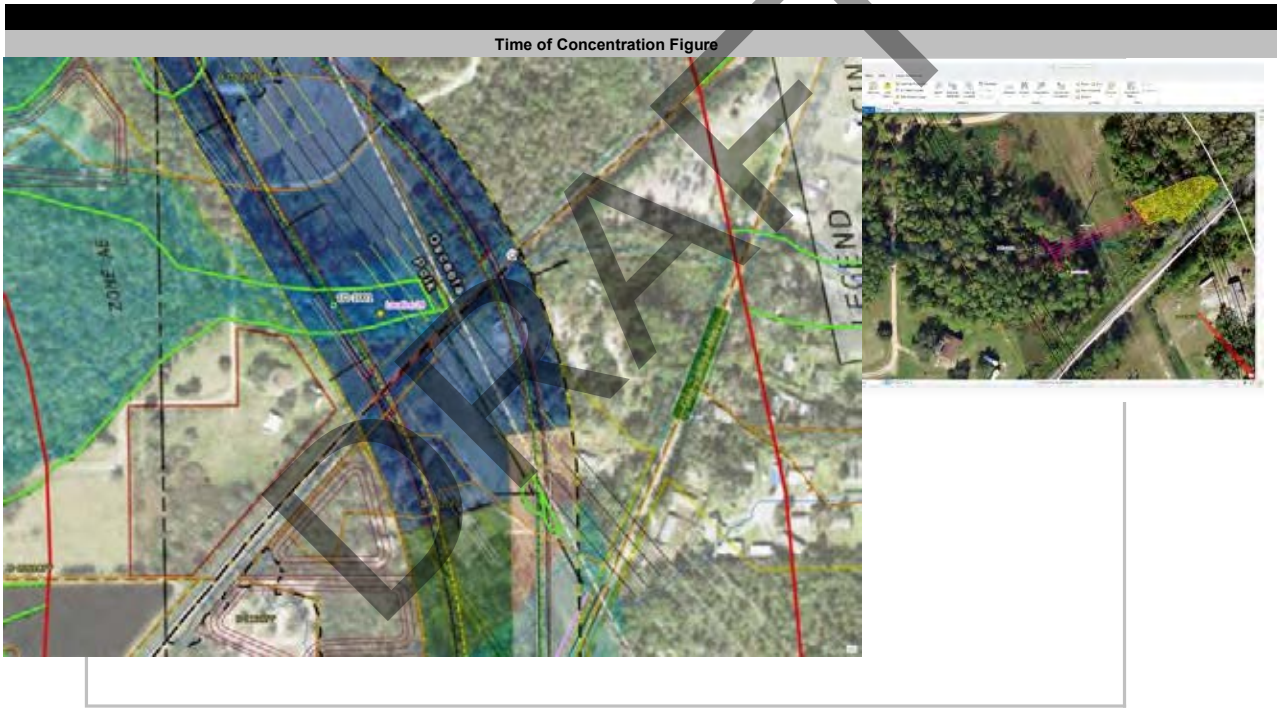
Notes: Proposed size from other existing study is 10'x3'.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
 Time of Concentration Calculations for B-1001OFF / CD-1001

Overland Flow				Applicable	No	Assumptions and Comments
Surface Description	Dense grass			Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24					
Flow length (L)	100 ft					
Design frequency	50					
Design frequency rainfall (i)	9.14 in/hr					
Land slope (s)	0.014 ft/ft					
Elevation 1	88.0	ft				
Elevation 2	86.6	ft				
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$	N/A	min			
Shallow Concentrated Flow				Applicable	No	Assumptions and Comments
Flow type	Pavement and small gullies			Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$					
Elevation 1	87.5	ft				
Elevation 2	85.0	ft				
Watercourse Slope (S)	0.005 ft/ft					
Velocity (V)	$V = 20.328 S^{0.5}$	1.39	ft/s			
Flow length (L)	540 ft					
$T_{t2} =$	$\frac{L}{60 (v)}$	N/A	min			
Shoulder Gutter Flows				Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft		Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft				
Top Width of Shoulder gutter (T)	3.50	ft				
Manning's roughness coef. (n)	0.012					
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$	0.00	ft/s			
Flow length (L)	0 ft					
$T_{t3} =$	$\frac{L}{60 (v)}$	N/A	min			
Channel Flow (known velocity)				Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s			Comments: Manually enter V		
Flow length (L)	0 ft					
$T_{t4} =$	$\frac{L}{60 (v)}$	N/A	min			
Channel Flow (Channel Geometry)				Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²		Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft				
Hydraulic Radius= A/P (R)	#DIV/0!	ft				
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Longitudinal slope (S)	#DIV/0!	ft/ft				
Manning's roughness coef. (n)	0					
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$	#DIV/0!	ft/s			
Flow length (L)	0 ft					
$T_{t4} =$	$\frac{L}{60 (v)}$	N/A	min			

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for B-1001OFF / CD-1001			
Kirprich Equation (rural watersheds)			
$T_{t5} = \frac{0.0078 * F_s * L^{0.77}}{S^{0.385}}$	Length of Travel (L)	0.00	ft
	Elevation 1	0.0	ft
	Elevation 2	0.0	ft
	Slope (S)	#DIV/0!	ft/ft
	Fs	0	
			N/A min
Total Time of Concentration			
Total Tc ($T_{t1} + T_{t2} + T_{t3+}$ etc)		0.00 min	



Patel, Greene & Associates, LLC

Designed By: CY
Date: 7/11/2025
Checked By: CC
Date: 8/25/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-1001OFF / CD-1001 STATION: BL CPP E NBRamp 263+20

AREAS (A)	Area (ac)	C	(A*C)
Pavement	3.57	0.95	3.39
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	286.13	0.33	92.99
SFR: Duplexes, Sandy Soils, Flat (0-2%)	251.19	0.40	100.48
MFR: Apartments, townhouses, and condominiums, Sandy Soils, Flat (0-2%)	378.51	0.53	198.72
Commercial and Industrial, Sandy Soils, Flat (0-2%)	44.65	0.73	32.37
Bare Earth, Sandy Soils, Flat (0-2%)	175.44	0.40	70.18
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	175.55	0.18	30.72
Woodlands, Sandy Soils, Flat (0-2%)	519.60	0.13	64.95
Pond WS	286.28	1.00	286.28
Parking and Building	23.46	0.95	22.29
SUM	2144.39 ac		902.37
COMPOSITE C COEFFICIENT	0.42		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.50		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.77
	30	2.83
Tc =	NA min	(From Tc worksheet)
I =	#VALUE! in/hr	

DESIGN DISCHARGES (Q)	CIA	cfs
Q =	NA	
=		

SIZE PIPE FOR V =	4	FT/S	Q =	NA	cfs
A =	Q / V		V =	4.00	ft/s
A =	#VALUE!	ft2			
Dcalc =	#VALUE!	inches	Proposed CBC	4 - 7'x6'	
D =		inches			168 ft2

Notes: Proposed size is from other existing plan/study which is 4-barrel 7'x6' culverts.

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-1002OFF / CD-1002

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.005 ft/ft				
Elevation 1	87.6	ft			
Elevation 2	87.1	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		12.98 min		
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	87.1	ft			
Elevation 2	85.8	ft			
Watercourse Slope (S)	0.003 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	400 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		5.71 min		
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A min		
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A min		
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0! ft/s		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A min		

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-1002OFF / CD-1002

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration

Total Tc (T_{t1}+T_{t2}+T_{t3}+ etc)

18.69 min

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY

Date: 7/11/2025

Checked By: AM

Date: 7/11/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-1002OFF / CD-1002 STATION: BL CPP E NBRamp 275+40

AREAS (A)	Area (ac)	C	(A*C)
Pavement	0.75	0.95	0.71
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	0.43	0.33	0.14
SFR: Smaller lots, Sandy Soils, Flat (0-2%)	1.60	0.40	0.64
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	2.75	0.18	0.48
SUM	5.53 ac		1.97
COMPOSITE C COEFFICIENT	0.36		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.43		

RAINFALL INTENSITIES (I)	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	18.69 min	(From Tc worksheet)
I =	1.86 in/hr	

DESIGN DISCHARGES (Q)
Q = CIA
= 4.41 cfs

SIZE PIPE FOR V =	4	FT/S
A =	Q / V	Q = 4.41 cfs
		V = 4.00 ft/s
A =	1.10	ft2
Dcalc =	14.22	inches
D =	18.00	inches

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Time of Concentration Calculations for

B-1003OFF / CD-1003

Overland Flow			Applicable	Yes	Assumptions and Comments
Surface Description	Dense grass		Comments: Equation 2.2-4 Drainage Design Guide January 2024. Manning roughness coefficient for overland flow (See Table B-1 in Appendix B, Hydrology Design Aids)		
Manning's roughness coef. (n)	0.24				
Flow length (L)	100 ft				
Design frequency	50				
Design frequency rainfall (i)	9.14 in/hr				
Land slope (s)	0.005 ft/ft				
Elevation 1	88.5	ft			
Elevation 2	88.1	ft			
$T_{t1} =$	$\frac{0.93 * L^{0.6} * n^{0.6}}{i^{0.4} * s^{0.3}}$		13.07	min	
Shallow Concentrated Flow			Applicable	Yes	Assumptions and Comments
Flow type	Pavement and small gullies		Comments: Equation 2.2-5 Drainage Design Guide January 2024. Refer to Figure B-3 in Appendix B of the Drainage Design Guide for K values.		
Equation	$V = 20.328 S^{0.5}$				
Elevation 1	88.1	ft			
Elevation 2	86.7	ft			
Watercourse Slope (S)	0.002 ft/ft				
Velocity (V)	$V = 20.328 S^{0.5}$				
Flow length (L)	810 ft				
$T_{t2} =$	$\frac{L}{60 (v)}$		16.03	min	
Shoulder Gutter Flows			Applicable	No	Assumptions and Comments
Longitudinal slope (S)	0.0000	ft/ft	Comments: Equation 2.2-6 Drainage Design Guide January 2021. For Triangular gutter see equation 2.2-7 in the Drainage Design Guide.		
Cross slope (Sx)	0.00	ft/ft			
Top Width of Shoulder gutter (T)	3.50	ft			
Manning's roughness coef. (n)	0.012				
velocity (V) =	$\frac{1.12 * S^{0.5} * S_x^{0.67} * T^{0.67}}{n}$				
Flow length (L)	0 ft				
$T_{t3} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (known velocity)			Applicable	No	Assumptions, Comments, Figure of A
velocity (V)	0 ft/s		Comments: Manually enter V		
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	
Channel Flow (Channel Geometry)			Applicable	No	Assumptions and Comments
Area (A)	0.00	ft ²	Comments: Equation 2.2-8 Drainage Design Guide January 2021.		
Wetted Perimeter (P)	0.00	ft			
Hydraulic Radius= A/P (R)	#DIV/0!	ft			
Elevation 1	0.0	ft			
Elevation 2	0.0	ft			
Longitudinal slope (S)	#DIV/0!	ft/ft			
Manning's roughness coef. (n)	0				
velocity (V) =	$\frac{1.486 * S^{0.5} * R^{0.67}}{n}$		#DIV/0!	ft/s	
Flow length (L)	0 ft				
$T_{t4} =$	$\frac{L}{60 (v)}$		N/A	min	

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Time of Concentration Calculations for B-1003OFF / CD-1003

Kirprich Equation (rural watersheds)				Applicable	No	Assumptions and Comments
Length of Travel (L)	0.00	ft		Comments: Equation 2.2-9 Drainage Design Guide January 2021. Use for rural areas, steep well-drained soils, timber cover 0-56%, area range from 1.2 acres to 112 acres Fs- surface coefficient 1.0 for natural basins with well defined channels, overland flow on bare earth, and mowed grass roadside channels 2.0 for grassed surfaces 0.4 for concrete or asphalt surfaces 0.2 for concrete channels		
Elevation 1	0.0	ft				
Elevation 2	0.0	ft				
Slope (S)	#DIV/0!	ft/ft				
Fs	0					
$T_{t5} = \frac{0.0078 * Fs * L^{0.77}}{S^{0.385}}$		N/A	min			

Total Time of Concentration

Total Tc (T _{t1} +T _{t2} +T _{t3+ etc})	29.10 min
--	-----------

Time of Concentration Figure



Patel, Greene & Associates, LLC

Designed By: CY

Date: 7/11/2025

Checked By: AM

Date: 7/11/2025

Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Cross Culverts Analysis

PROPOSED CROSS DRAIN B-1003OFF / CD-1003 STATION: BL CPP E NBRamp 284+80

AREAS (A)	Area (ac)	C	(A*C)
Pavement	0.92	0.95	0.88
SFR: 1/2-acre lots and larger, Sandy Soils, Flat (0-2%)	0.81	0.33	0.26
Pasture, grass, and farmland, Sandy Soils, Flat (0-2%)	3.95	0.18	0.69
SUM	5.69 ac		1.83
COMPOSITE C COEFFICIENT	0.32		
Return Period	50 year (select)		
C VALUE ADJUSTMENT	0.39		

RAINFALL INTENSITIES (I)		
	Atlas 14 Duration (min)	Atlas 14 PDS-based precipitation intensity (in/hr)
	15	1.63
	30	2.58
Tc =	29.1 min	(From Tc worksheet)
I =	2.52 in/hr	

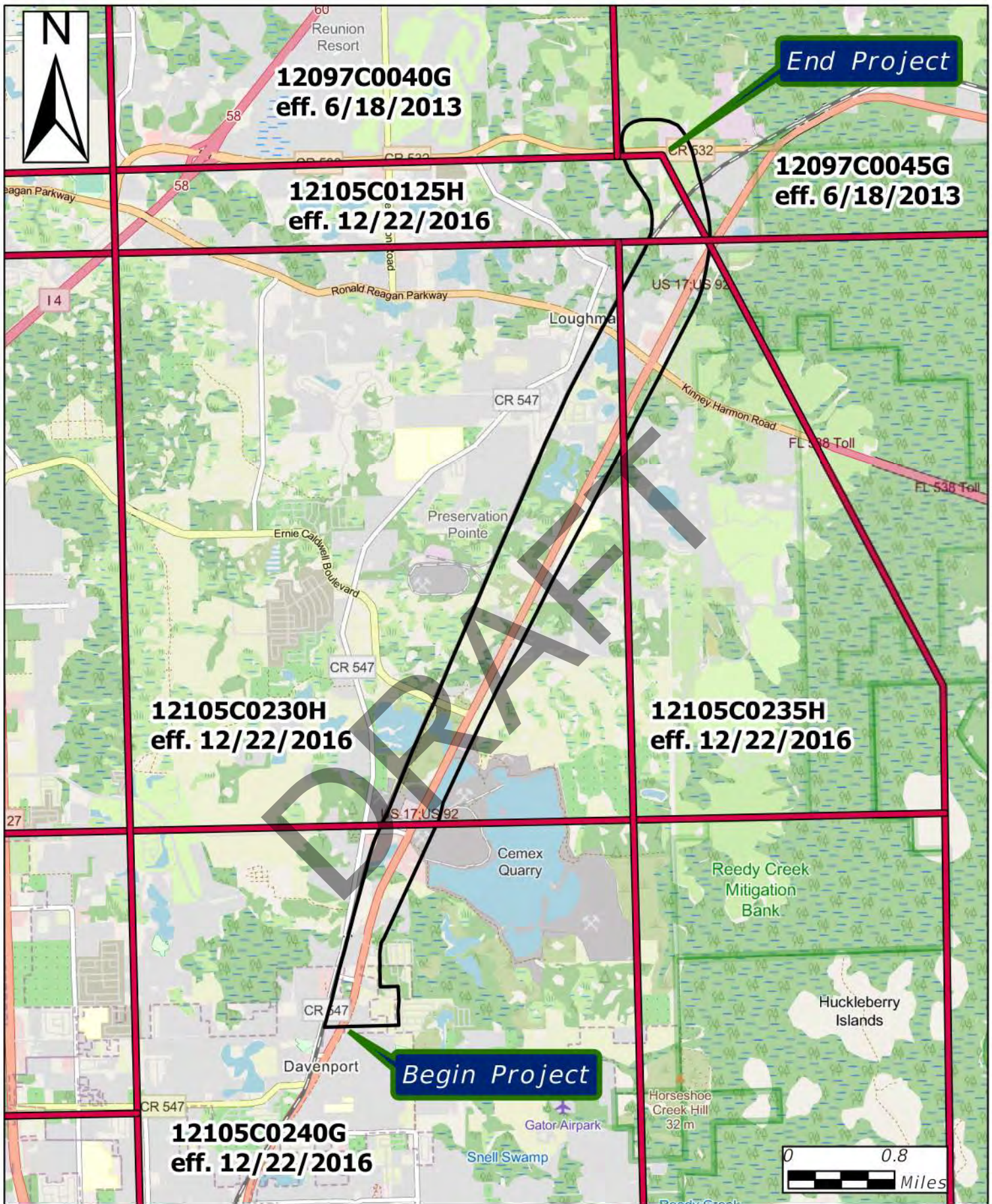
DESIGN DISCHARGES (Q)		
Q =	CIA	
=	5.55 cfs	

SIZE PIPE FOR V =			FT/S
A =	Q / V	Q =	5.55 cfs
		V =	4.00 ft/s
A =	1.39		
Dcalc =	15.95		inches
D =	18.00		inches

APPENDIX G – FLOODPLAIN MAPS

DRAFT





NOTES TO USERS

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

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

Coastal Base Flood Elevations (BFEs) shown on this map apply only to landward of 0.5 North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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

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

The projection used in the preparation of this map was Transverse Mercator State Plane Florida East 18° 00' 00". The horizontal datum was NAD83 HARN, GRS1985 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of 1988s for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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

NGS Information Services
NADAL, NAD83
National Geodetic Survey
OSMD-3, #2232
1315 East West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (201) 713-2242 or visit its website at <http://www.ngs.noaa.gov>.

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

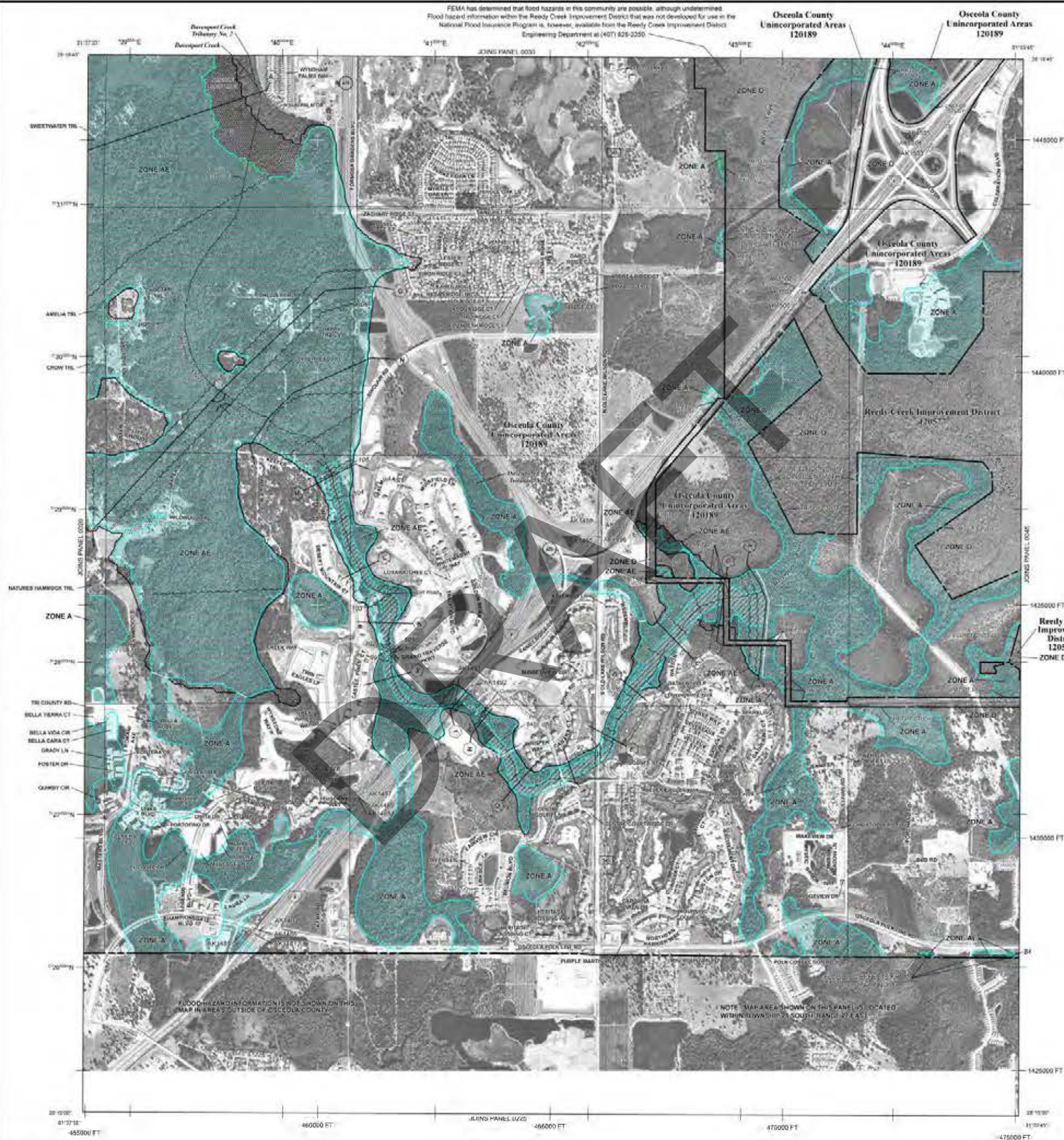
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result,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

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

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program 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 historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Mapping Information at 1-877-FEMA-MAP (1-877-366-6271) or visit the FEMA Map Service Center website at <http://www.msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information Center.

The "profile base lines" depicted on this map represent the hydraulic modeling 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 SFHA.



LEGEND

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

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

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevation determined.

ZONE AH Flood depths of 1 to 3 feet (mostly areas of parking); Base Flood Elevation determined.

ZONE AO Flood depths of 1 to 3 feet (mostly areas on sloping terrain); average depths determined. For areas of about ten floodings, velocities also determined.

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

ZONE AR1 Areas to be protected from the 1% annual chance flood event by a Federal flood protection system under construction, or Base Flood Elevation determined.

ZONE V Coastal flood zone with velocity hazard (water action); no Base Flood Elevation determined.

ZONE VE Coastal flood zone with velocity hazard (water action); Base Flood Elevation determined.

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood (500-year flood) with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

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

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

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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

0.2% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas and floodplains, flood depths, or flood velocities
Base Flood Elevation line and value; elevation in feet
Base Flood Elevation value where profiles within zones extend to flow

Reference to the North American Vertical Datum of 1988

11° 00' 00" N
81° 00' 00" W
600000 FT
DX8510
1:50,000

Cross section line
Thames River
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83). Western hemisphere
2000-meter Universal Transverse Mercator grid zone, zone 17
2000-foot grid values: Florida State Plane coordinate system, East Zone (FIPS2004E = 0001), Transverse Mercator projection
Bench mark (see elevation in Notes to Users section of this FIRM panel)
State Map
MAP INFORMATION
Refer to Map Repository List on Map Index
EFFECTIVE DATE OF COUNTYWIDE FIRM
May 7, 2011
EFFECTIVE DATES OF REVISIONS TO THIS PANEL
JUNE 18, 2013
JUNE 18, 2013 - To update corporate limits, change Base Flood Elevations, add Base Flood Elevations, change Special Flood Hazard Areas, change zone designations, update maps and notes, incorporate previously issued Letters of Map Revision, and reflect updated topographic information.

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

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-636-6633.

MAP SCALE 1" = 1000'

0 100 200 300 400 500 600 700 800 900 1000 FEET

NFIP **PANEL 0040G**

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

PANEL 40 OF 900
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	NUMBER	PANEL	SHEET
OSCEOLA COUNTY	120189	0040	01
REEDY CREEK IMPROVEMENT DISTRICT	120577	0040	02

Map Number
12097C0040G
MAP REVISED
JUNE 18, 2013

Federal Emergency Management Agency

NOTES TO USERS

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

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

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

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

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

The projection used in the preparation of this map was Transverse Mercator State Plane Florida East FIPS 5001. The horizontal datum was NAD83 HARN, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

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

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSHC-3, #020
1315 East West Highway
Silver Spring, Maryland 20910-3383
(301) 715-5242

To obtain current elevation, description, and/or location information for bench marks shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 715-5242 or visit its website at <http://www.ngs.noaa.gov/>.

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

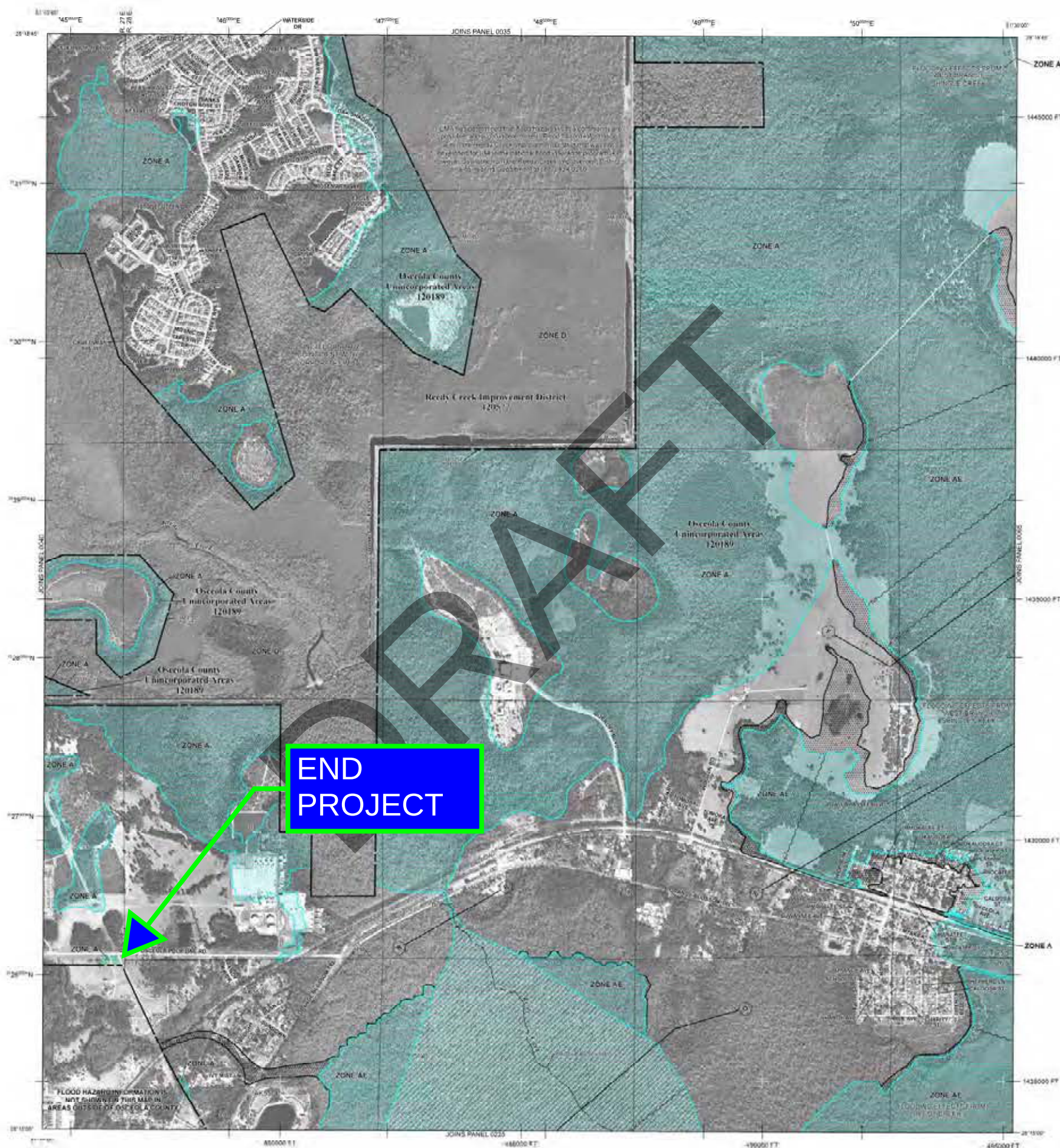
This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result,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

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

Please refer to the separately printed Map Index for an overview map of the county showing the layout of map panels, community map repository addresses, and a listing of communities with National Flood Insurance Program Areas for each community as well as a listing of the panels in which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Mapping Information Exchange at 1-877-FEMA-5040 (1-877-356-2627) or visit the FEMA Map Service website at <http://www.mf.fema.gov/>. Available products may include previously issued letters of Map Change, a Flood Insurance Study Report and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information Exchange.

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



LEGEND

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

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

- ZONE A:** No Special Flood Elevations determined.
- ZONE AE:** Base Flood Elevation determined.
- ZONE AH:** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevation determined.
- ZONE AO:** Flood depths of 1 to 3 feet (usually areas of ponding); average depths determined. The areas of all-out for flooding, velocities also determined.
- ZONE AV:** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently abandoned. Zone AV indicates that the former flood control system is being retained to provide protection from the 1% annual chance or greater flood.
- ZONE AH:** Areas to be protected from the 1% annual chance flood event to a specified flood protection system water conductivity, no Base Flood Elevation determined.
- ZONE V:** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevation determined.
- ZONE VE:** Coastal flood zone with velocity hazard (wave action); Base Flood Elevation determined.

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

ZONE X: Areas of 0.2% annual chance flood, areas of 0.1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from the 1% annual chance flood.

OTHER AREAS

ZONE X: Areas determined to be subject to the 0.2% annual chance floodplain.

ZONE G: Areas in which flood heights are undetermined, not provided.

FINANCIAL ASSISTANCE REPAIRS SYSTEM (FARS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

OPAs and OFAs are generally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone A boundary
- OPAs and OFAs boundary
- Boundary dividing Special Flood Hazard Area (SFHA) and boundary dividing Special Flood Hazard Area of different Base Flood Elevation, flood depth, or flood velocity
- Base Flood Elevation line and value; elevation in feet
- Base Flood Elevation value below uniform water depth elevation in feet

Referenced to the North American Vertical Datum of 1988

Color section line

Traverse line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Universal Transverse Mercator

1000-meter Universal Transverse Mercator grid lines, zone 17

5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPS 5001) + 1983, Transverse Mercator projection

Bench mark (see explanation in Notes to Users section of this FIRM panel)

Water line

MAP REPOSITORIES

Refer to Map Repository List for Map Index

EFFECTIVE DATE OF COUNTY-WIDE FLOOD INSURANCE RATE MAP

MAY 7, 2009

EFFECTIVE DATE OF REVISION TO THIS PANEL

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

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

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6635.

MAP SCALE 1" = 1000'

Graphic scale bar showing distances in feet and miles.

NFIP **PANEL 0045G**

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

PANEL 45 OF 900
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	DATE	SHEET
OSCEOLA COUNTY	12097C0045G	JUN 18, 2013	1
FLORIDA COAST GUARDIANSHIP DISTRICT	12097C0045G	JUN 18, 2013	1

APPROVED BY: The Map Number after the slash (//) is used when showing that the community has been revised. When shown, the date of the revision is also shown.

MAP NUMBER
12097C0045G
MAP REVISED
JUNE 18, 2013

Federal Emergency Management Agency

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

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

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

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

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

Base map information shown on this FIRM was provided in digital format by the Southwest Florida Water Management District. The original orthophotographic base imagery was provided in color with a one-foot pixel resolution at a scale of 1" = 100' from photography flown January - March 2005.

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

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

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

For information on available products associated with this FORM visit the **MapService Center (MSC)** website at <http://msc.bnsf.com>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

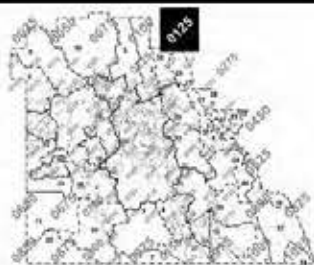
If you have questions about this map, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange (FMIX) at 1-877-FEMA-MAP (1-877-355-2677) or visit the FEMA website at <http://www.fema.gov/businessinfo>.

The projection used in the preparation of this map was State Plane Florida West. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or State Plane Zone used in the production of FIRM for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not reflect the accuracy of this FIRM.

Base Flood Elevation (BFEs) on this map are referenced to the North American Vertical Datum of 1989. 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 1989, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

Example Station Offset Calculation
using station offset table below
NAVD83 + NAVD23 + (station offset value)

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



Waterhead ^a	Duration Offset (hr)	Study Type	Total Rainfall Volume (in)		Rate of Model
			1 Day 100 yr	Multi-Day 100 yr	
1 Arkansas River	-0.2	Hydrologic Deficit/Excess	11.0	10.2	1/1/1979
2 Big Lost Creek	-1.00	hydrologic/geomorphic	10.0	10.0	
3 Big Lost Creek	-1.00	hydrologic/geomorphic	10.0	10.0	
4 Chickasaw/Chick	-0.00	geomorphic	10.0	10.0	
5 Chickasaw Creek	-0.00	geomorphic	10.0	10.0	
6 Chittawab Creek	-0.00	hydrologic/geomorphic	11.0	10.0	10/1/1979
7 Clinch Creek	0.00	hydrologic/geomorphic	10.0	10.0	
8 Clinch Creek	0.00	hydrologic/geomorphic	10.0	10.0	
9 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
10 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
11 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
12 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
13 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
14 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
15 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
16 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
17 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
18 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
19 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
20 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
21 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
22 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
23 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
24 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
25 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
26 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
27 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
28 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
29 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
30 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
31 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
32 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
33 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
34 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
35 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
36 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
37 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
38 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
39 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
40 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
41 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
42 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
43 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
44 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
45 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
46 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
47 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
48 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
49 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
50 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
51 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
52 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
53 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
54 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
55 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
56 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
57 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
58 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
59 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
60 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
61 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.0	
62 Clinch Creek	-0.00	hydrologic/geomorphic	10.0	10.	



This design Flood Insurance Rate Map (FIRM) was prepared through a cooperative agreement between the Southwest Florida Water Management District (SWFWMD) and the South Florida Water Management District (SFWMD). Both County Emergency Management Agencies (EMAs) and the adjacent communities within Polk County.



END
PROJECT

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

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

ZONE A: No Base Flood Elevation determined.

ZONE AE: Base Flood Elevation determined.

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

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

ZONE AR: Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently dismantled. Zone AR equates to the Special Flood Hazard Area which, when restored to provide protection from the 1% annual chance or greater flood.

ZONE A99: Areas to be protected from the average annual flood event by a higher flood protection system under construction; no Base Flood Elevation determined.

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

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

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

ZONE B: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

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

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

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are commonly located within or adjacent to Special Flood Hazard Areas:

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
Zone B and X boundary
Boundary defining Special Flood Hazard Areas Zone AE and Zone AR and boundary defining Special Flood Hazard Areas of different Base Flood Elevations, Flood depths, or flood velocities
Base Flood Elevation line and values, elevation in feet
Base Flood Elevation value plus uniform vertical offset; elevation in feet
Reference to the North American Vertical Datum of 1988
Cross section line
Terrain line
Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Mean Sea Level
2000 United States National Meridian grid lines, zone 17
TERRITORY: Florida State Plane coordinate system, NAD 83 (FIPS46-1) (NAD83), Transverse Mercator projection
Bench mark (see explanation in Notes to Users section of the 1984 map)

State
County
Township Range
Section - Forty defining boundary of flow accumulation or hydrologic connectivity. The first two characters of the junction name represents the specific watershed (as shown in the map, one smaller line to which the junction is bound) inside this boundary system, within an elevation threshold, are also shown.

MAP REVISIONS
Basis for Map Revisions: USGS map
EFFECTIVE DATE OF COUNTY/STATE FLOOD INSURANCE RATE MAP
NOV 20, 2000
EFFECTIVE DATES OF REVISIONS TO FIRM PANEL
September 20, 2011 - An revision of elevation, refer to the State Flood Insurance Values contained within the Flood Insurance Study (FIS) which accompanies this FISB.
December 31, 2010 - For reasons of validity, refer to the State Flood Insurance Values contained within the Flood Insurance Study (FIS) which accompanies this FISB.

For community map revision history prior to community mapping, refer to the Community Map History (also located in the Flood Insurance Study report) for the jurisdiction.
To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6820.

MAP SCALE 1" = 1000'

0 0.500 1.000 1.500 2.000 FEET
0 0.5 1 1.5 2 KILOMETERS

NATIONAL FLOOD INSURANCE PROGRAM	PANEL 0125H			
	FIRM			
	FLOOD INSURANCE RATE MAP			
	POLK COUNTY,			
	FLORIDA			
	AND INCORPORATED AREAS			
	PANEL 125 OF 1025			
	(SEE MAP INDEX FOR FIRM PANEL LAYOUT)			
	COMMUNITY			
	POLK COUNTY			
NUMBER 12105C0125H		PANEL 0125H		
MAP NUMBER 12105C0125H		MAP REVISED DECEMBER 22, 2016		
Federal Emergency Management Agency				

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not constitute a warranty of any kind, and it is not to be used for any purpose other than that for which it was prepared. The community may request that the map be updated or that additional flood hazard information be added.

To obtain more detailed information on areas where Base Flood Elevations (BFEs) and Floodway Data are shown, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Floodway Data tables contained within the Flood Insurance Study (FIS) report that accompanies this FIS. Users should be aware that BFEs shown on the FIS report represent modeled 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 this FIS report should be updated in conjunction with the FIS for purposes of administration and flood insurance management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only to landward of 0.0 North American Vertical Datum of 1988 (NAVD83) users of this FIS should be aware that coastal flood elevations are also provided in the Summary of Floodway Data and/or Summary of Floodway Data tables contained within the Flood Insurance Study report for this jurisdiction. Floodway data and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

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

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

Base map information shown on this FIS report was provided in digital form by the Southwest Florida Water Management District. The original orthorectified base map information was provided in color with a one-foot pixel resolution at a scale of 1" = 100' from photography from January - March 2006.

This map reflects more detailed and up-to-date stream channel configurations than those shown on the previous FIS for this jurisdiction. The floodways and floodways that have been transferred from the previous FIS may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which 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 Communities with corresponding National Flood Insurance Program data for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIS, visit the MapService Center (MSC) website at <http://www.fema.gov>. Available products may include preliminary Flood Insurance Study, Flood Insurance Study Report, and digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have questions about this map, how to order products, or the National Flood Insurance Program in general, please call the FEMA Information Exchange (FIMX) at 1-877-FEMA-5047 (1-877-366-5047) or visit the FEMA website at <http://www.fema.gov/business>.

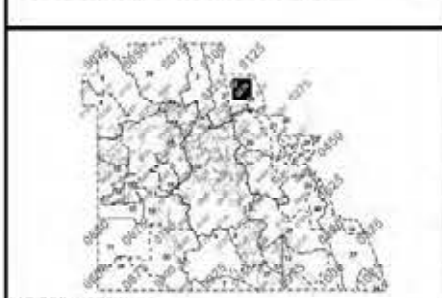
DATUM INFORMATION

The projection used in the preparation of this map was State Plane Florida West. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid projection or other datum used in the production of 1:100,000 scale jurisdictional maps may result in slight positional differences in map features across jurisdiction boundaries. These differences do not reflect the accuracy of this FIS.

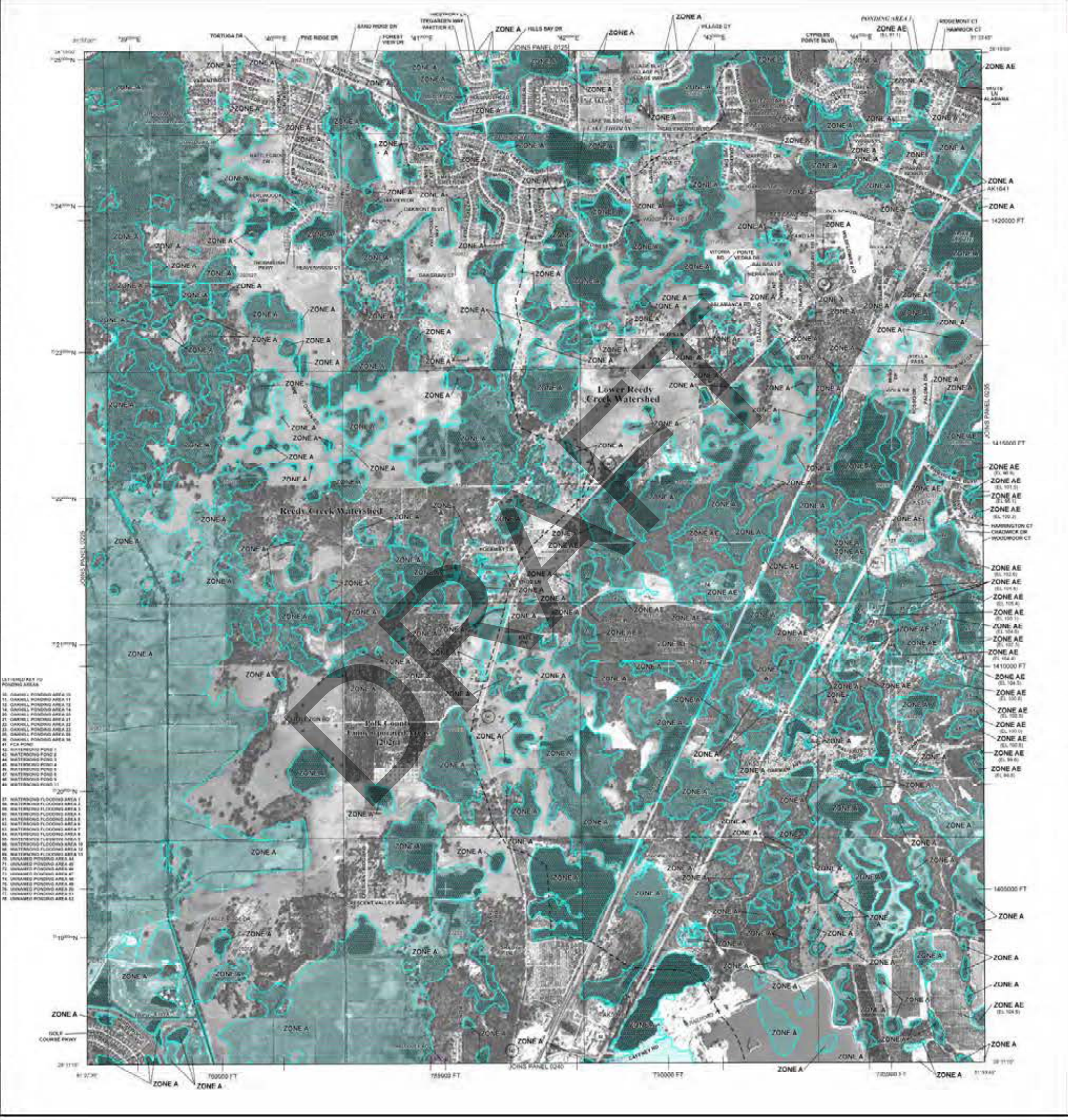
Base Flood Elevation (BFE) on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to elevation and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 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:

National Geodetic Survey
National Geodetic Survey
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

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



Watershed	Surface Area (sq. mi.)	Study Type	Total Rainfall Volume (in.)	One Day 5 Day Multi-Day	Date of Study
1. Alachua Creek	1.0	Historical Data/Model	11.9	150	10/10/00
2. Big Creek East	0.99	Historical Data/Model	11.9	150	10/10/00
3. Big Creek West	0.99	Historical Data/Model	11.9	150	10/10/00
4. Big Creek	0.99	Historical Data/Model	11.9	150	10/10/00
5. Big Creek	0.99	Historical Data/Model	11.9	150	10/10/00
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99. Big Creek	0.99	Historical Data/Model	11.9	150	10/10/00
100. Big Creek	0.99	Historical Data/Model	11.9	150	10/10/00



LEGEND

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

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

ZONE A: No Base Flood Elevation determined.
ZONE AE: Base Flood Elevation determined.
ZONE AH: Flood depths of 1 to 3 feet (above water of ponding). Base Flood Elevation determined.
ZONE AG: Flood depths of 1 to 3 feet (above water of ponding). Average depths determined. The area of about the flooding, whether also determined.
ZONE AR: Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently destroyed. Zone AR indicates that the former flood control system is being retained to provide protection from the 1% annual chance or greater flood.
ZONE AX: Areas to be protected from the 1% annual chance flood event by a flood control system that was subsequently destroyed. Zone AX indicates that the former flood control system is being retained to provide protection from the 1% annual chance or greater flood.
ZONE VE: Coastal flood zone with velocity hazard (water action). Base Flood Elevation determined.
ZONE V: Coastal flood zone with velocity hazard (water action). Base Flood Elevation determined.

FLOODWAY AREAS IN ZONE AE

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

OTHER FLOOD AREAS

ZONE X: Areas of 0.2% annual chance flood, areas of 0.1% annual chance flood, and areas of 0.05% annual chance flood, and areas of 0.02% annual chance flood.
ZONE B: Areas determined to be outside the 1% annual chance floodplain.
ZONE D: Areas in which flood heights are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

OPAs are areas that are not subject to flooding by the 1% annual chance flood, but are subject to flooding by the 1% annual chance flood.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
0.1% annual chance floodplain boundary
0.05% annual chance floodplain boundary
0.02% annual chance floodplain boundary
Base Flood Elevation line and value; elevation in feet
Base Flood Elevation value when water surface elevation is in feet

STATIONING
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
11+00
12+00
13+00
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NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

POLK COUNTY, FLORIDA AND INCORPORATED AREAS

PANEL 0230H

PANEL 230 OF 1025

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY: POLK COUNTY
NUMBER: 12105C0230H
SHEET: 1025 OF 1025

MAP NUMBER: 12105C0230H
MAP REVISED: DECEMBER 22, 2016

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 or small size. The community map repository should be consulted for possible updates or additional flood hazard information.

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

Coastal Base Flood Elevations (CBFEs) shown on this map apply only to landward of 0.5 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 Floodway Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Floodway Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

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

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

Base map information shown on this FIRM was provided in digital format by the Southern Florida Water Management District. The original orthorectified base map was provided in color with a one-foot pixel resolution at a scale of 1" = 100' from photography flown January - March 2005.

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

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

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

For information on available products associated with this FIRM visit the MapService Center (MSC) website at www.fema.gov/mfsc. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have questions about this map, how to order products, or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange (FMIX) at 1-877-FEMA-MAP (1-877-368-6297) or visit the FEMA website at <http://www.fema.gov/national>.

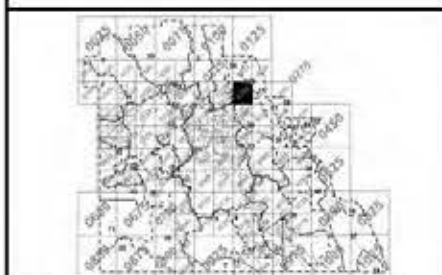
DATUM INFORMATION

The projection used in the preparation of this map was State Plane Florida West. The horizontal datum was NAD83, GRS1980 spheroid. Subsequent to datum adjustment, projection of State Plane Zone used in the production of FIS for this jurisdiction may result in slight positional differences in map features across jurisdiction boundaries. These differences do not reflect the accuracy of this FIRM.

Base Flood Elevation (BFE) 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 1955 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov> or contact the National Geodetic Survey at the following address:

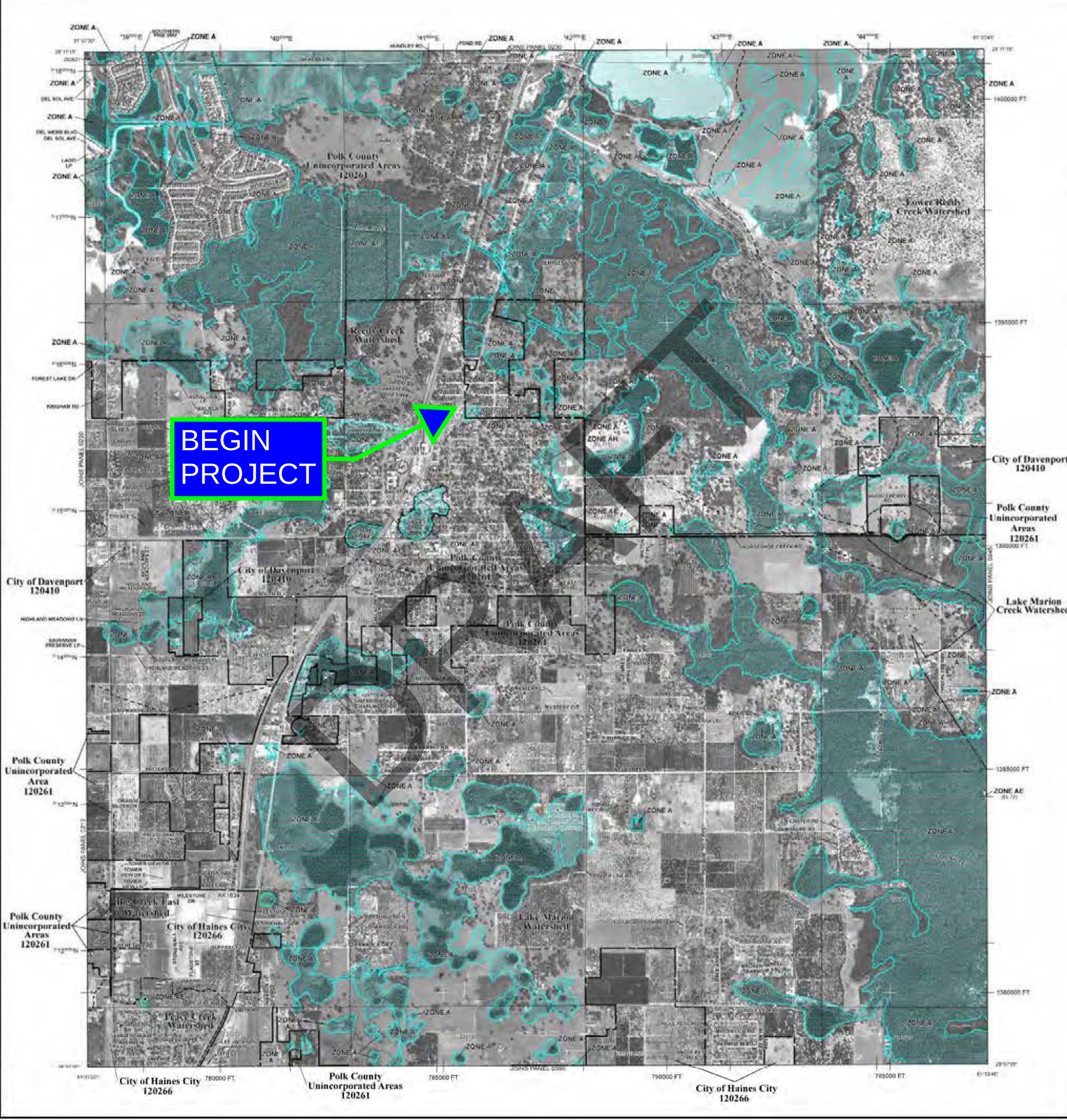
NGS Information Services
National Geodetic Survey, NOAA
NHD12
2500 N. 17th Street
Ft. Belvoir, VA 22061-4302
1515 East West Highway
Silver Spring, Maryland 20910-3202
(301) 713-3242

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



Watershed	Details Effect (%)	Study Type	Total Rainfall Volume (in) 1 Day 3 Day Multi-Day 100yr 100yr 100yr	Date of Map
1. Alachua Creek	0.0	Historical Data/Model	10.0	10/10/05
2. Big Lake Creek	0.0	Historical Data/Model	10.0	10/10/05
3. Big Lake River	0.0	Historical Data/Model	10.0	10/10/05
4. Brevard Creek	0.0	Historical Data/Model	10.0	10/10/05
5. Calhoun Creek	0.0	Historical Data/Model	10.0	10/10/05
6. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
7. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
8. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
9. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
10. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
11. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
12. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
13. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
14. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
15. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
16. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
17. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
18. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
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27. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
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37. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
38. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
39. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05
40. Calhoun River	0.0	Historical Data/Model	10.0	10/10/05

* All data are County estimates only.
** Multi-Day rainfall used only for specific flood events, refer to FIS report.



LEGEND



NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0240G

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

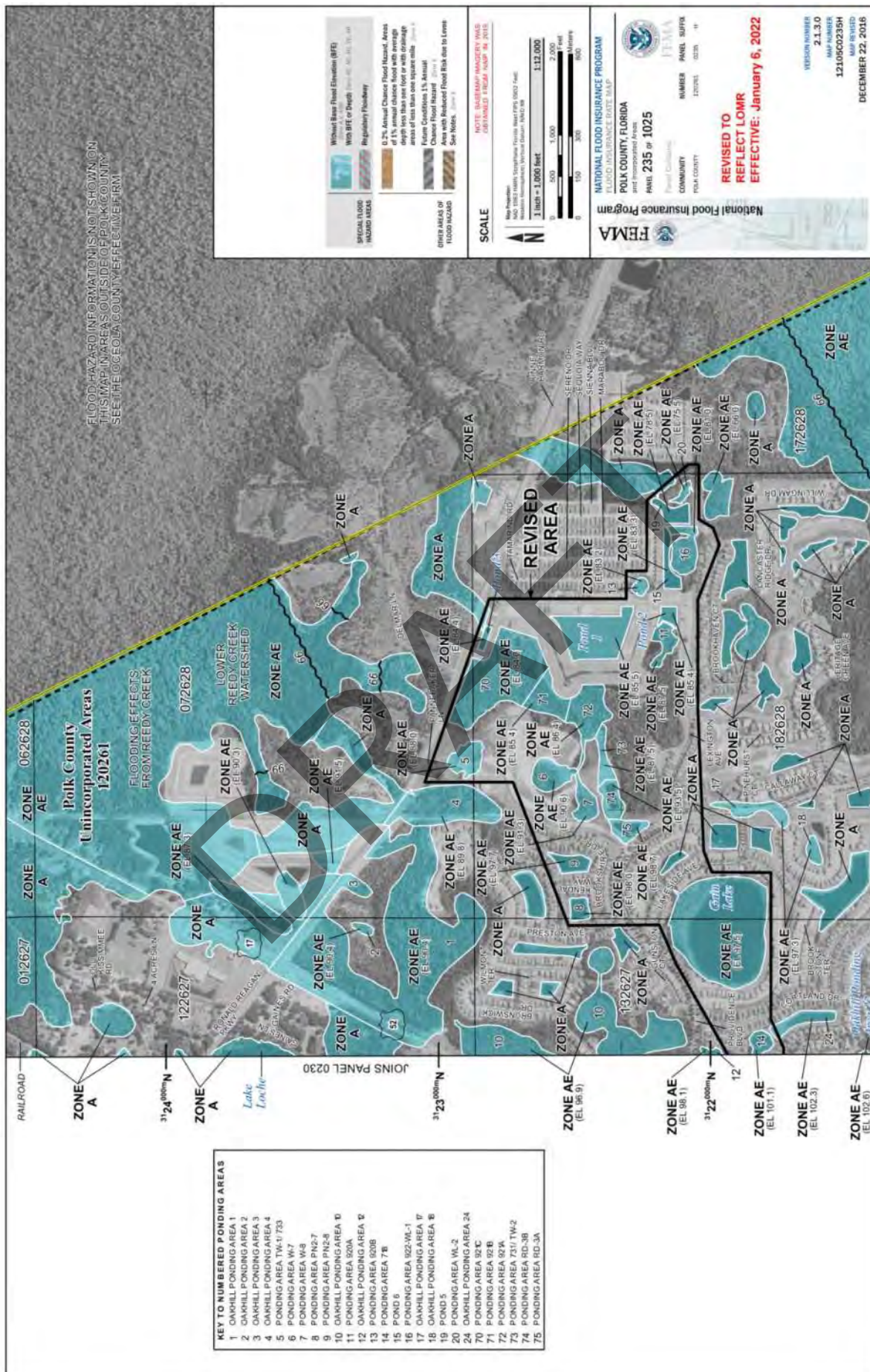
PANEL 240 OF 1025
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

COMMUNITY	MINUTE	PANEL	SHEET
DAVENPORT, CITY OF	0240G	0240G	01
HAINES CITY, CITY OF	0240G	0240G	02
POLK COUNTY	0240G	0240G	03

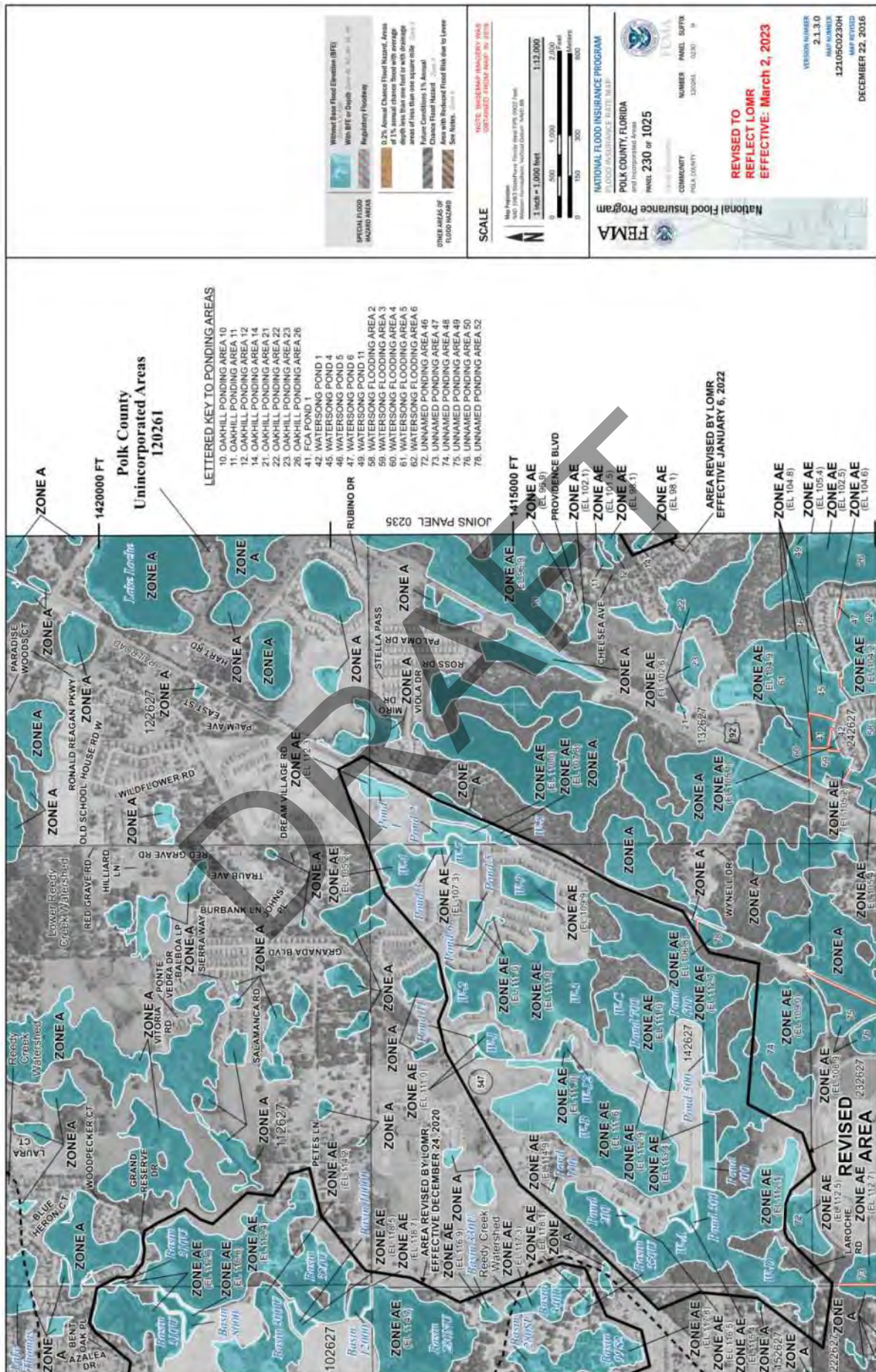
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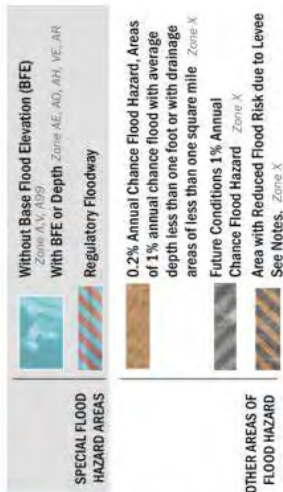
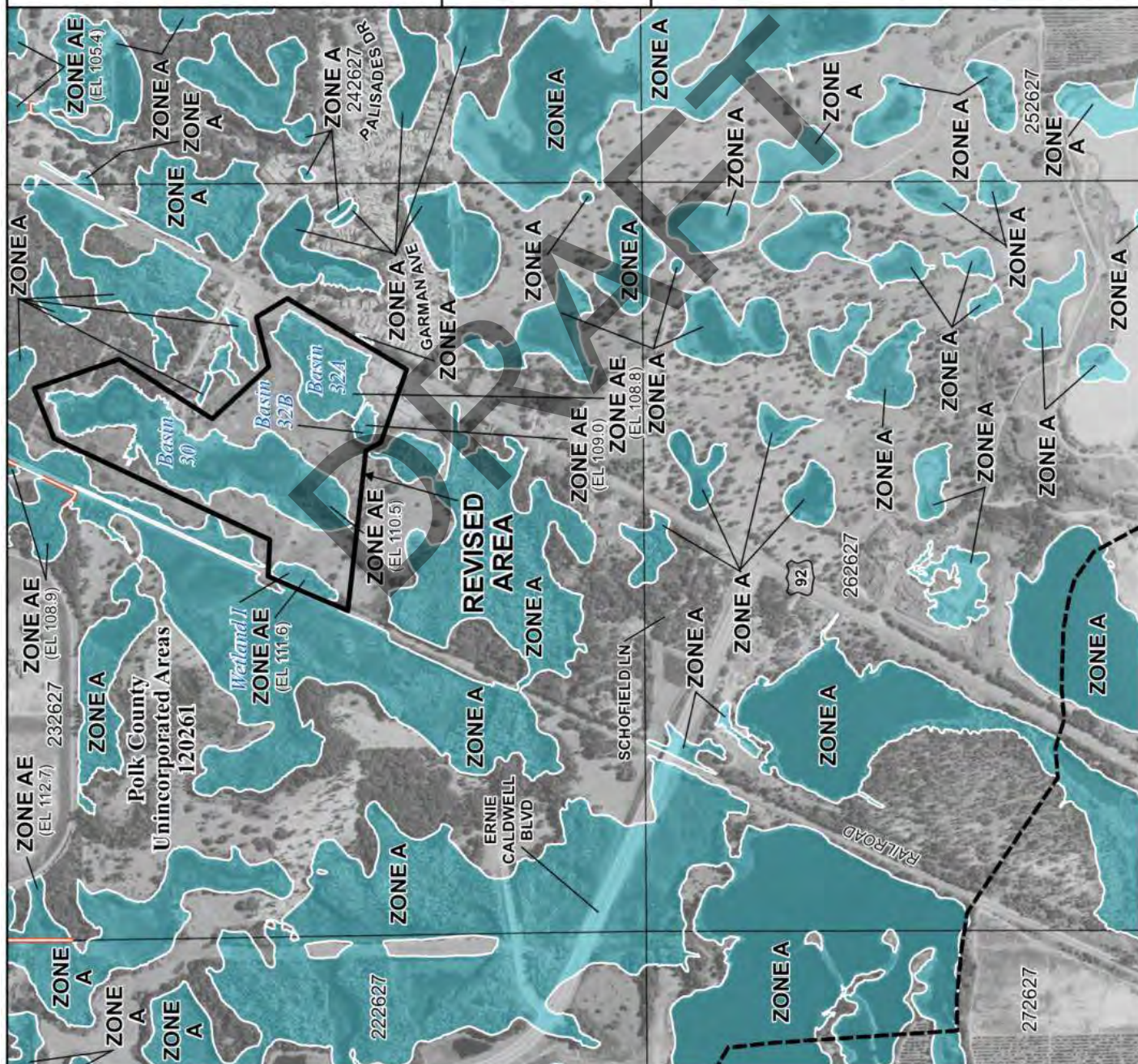
MAP REVISED
DECEMBER 22, 2016

Federal Emergency Management Agency









NOTE: BASEMAP IMAGERY WAS OBTAINED FROM NAIP IN 2019.

SCALE

Map Projection:
NAD 1983 StatePlane Florida West FIPS 0902 Feet;
Western Hemisphere, Vertical Datum: NVD 88



1 inch = 1,000 feet

1:12,000

0 500 1,000 2,000 Feet

0 150 300 600 Meters

FEMA
National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

POLK COUNTY, FLORIDA
and Incorporated Areas

PANEL 230 of 1025

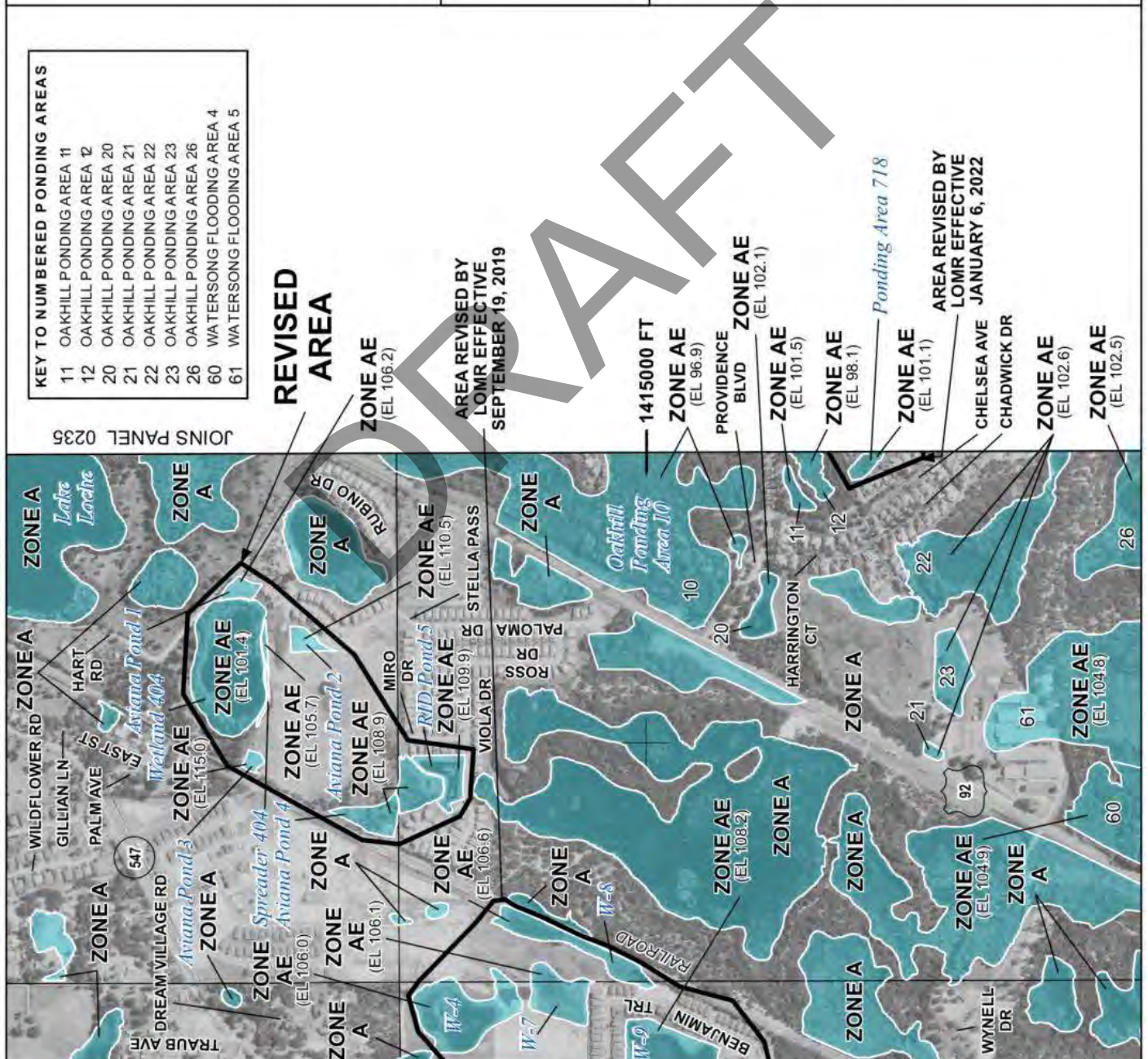
Panel Contains:
COMMUNITY
POLK COUNTY

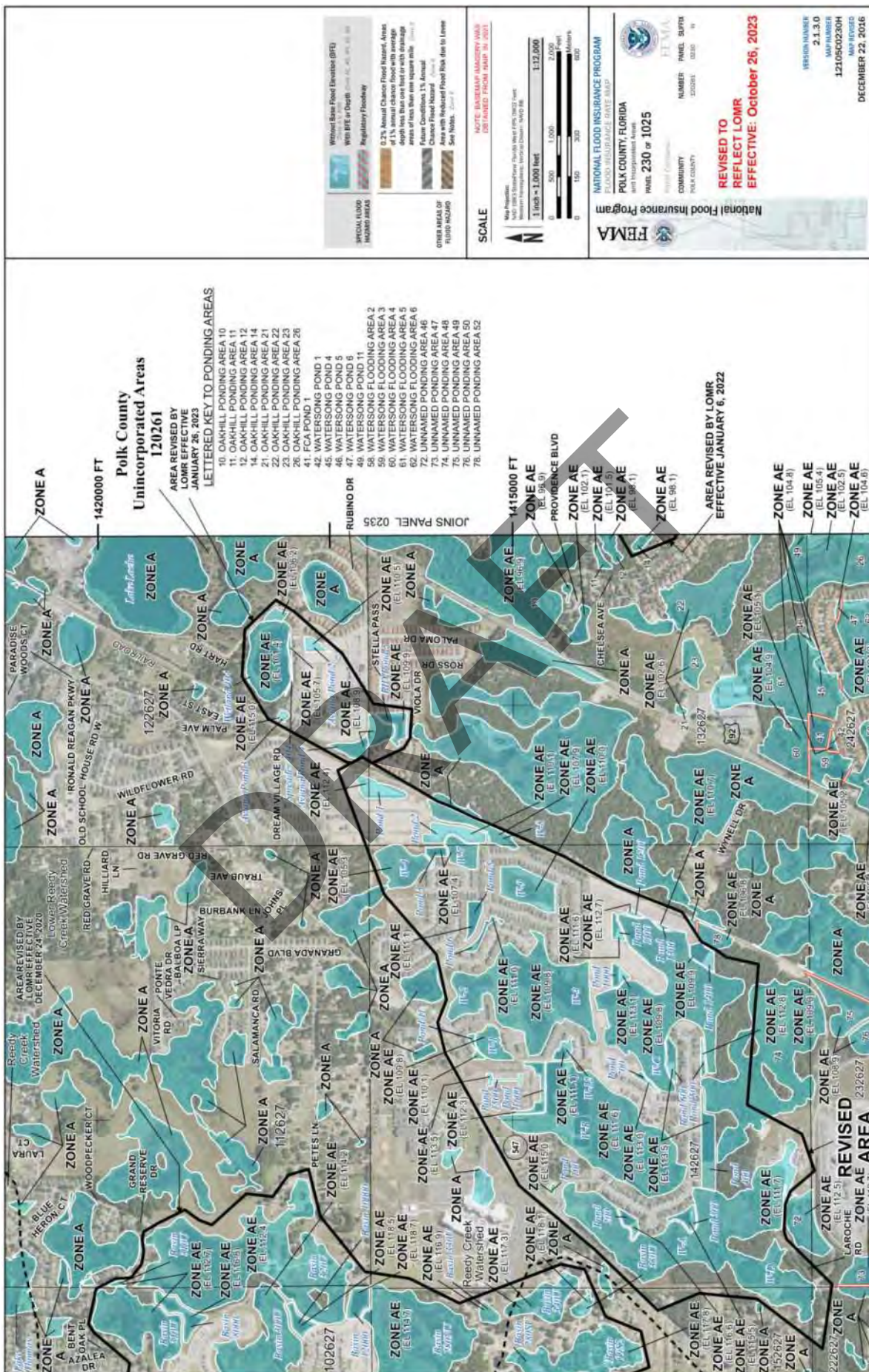
NUMBER
120261

PANEL SUFFIX
0230 H

REVISED TO
REFLECT LOMR
EFFECTIVE: December 22, 2022

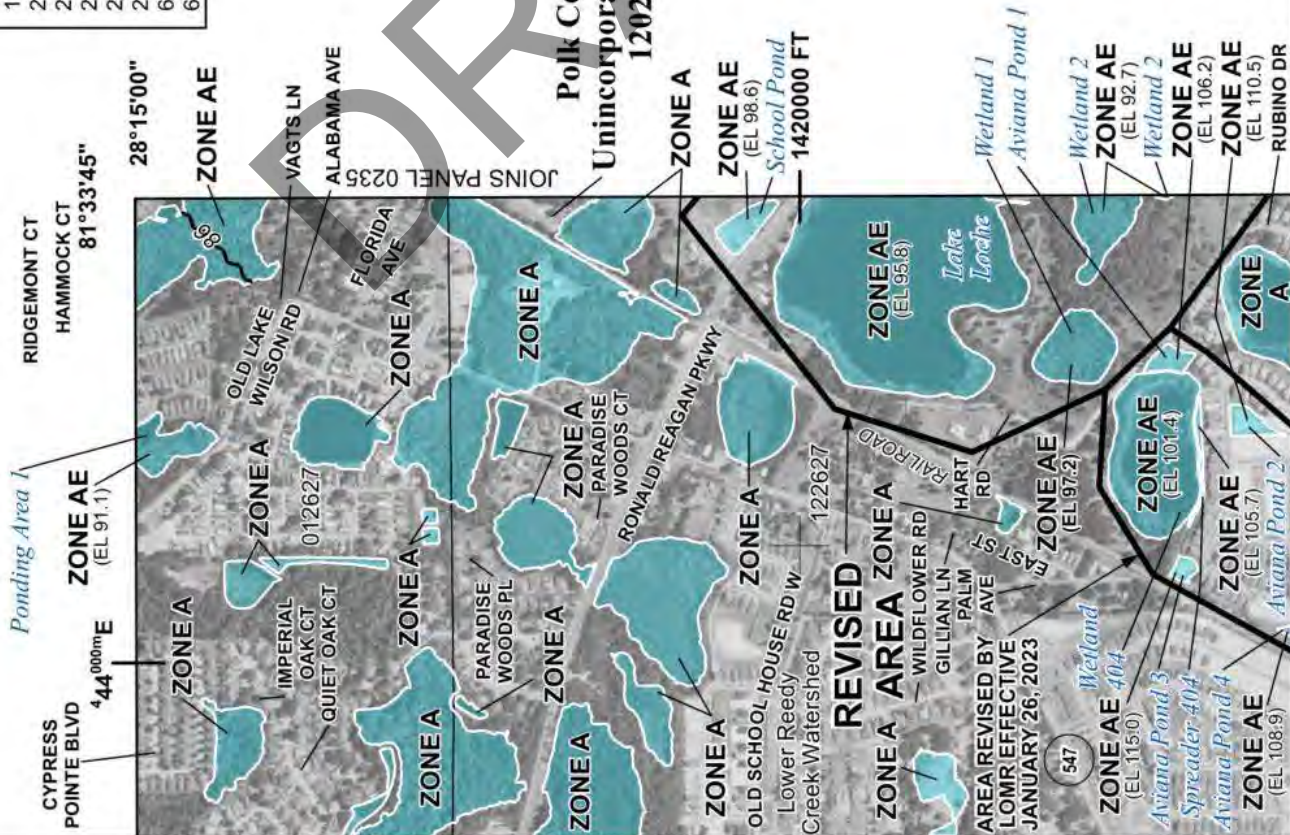
VERSION NUMBER
2.1.3.0
MAP NUMBER
12105C0230H
MAP REVISED
DECEMBER 22, 2016





KEY TO NUMBERED PONDING AREAS

- 11 OAKHILL PONDING AREA 11
- 12 OAKHILL PONDING AREA 12
- 20 OAKHILL PONDING AREA 20
- 21 OAKHILL PONDING AREA 21
- 22 OAKHILL PONDING AREA 22
- 23 OAKHILL PONDING AREA 23
- 26 OAKHILL PONDING AREA 26
- 60 WATERSONG FLOODING AREA 4
- 61 WATERSONG FLOODING AREA 5



Without Base Flood Elevation (BFE)
Zone A, AE, AH, VE, etc.

Regulatory Floodway

0.2% Annual Chance Flood Hazard. Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile. Zone X

Future Conditions 1% Annual Chance Flood Hazard. Zone X

Area with Reduced Flood Risk due to Levee See Notes. Zone X

SPECIAL FLOOD HAZARD AREAS

OTHER AREAS OF FLOOD HAZARD

SCALE

NOTE: BASEMAP IMAGERY WAS OBTAINED FROM NAIP IN 2021.

Map Projection:
NAD 1983 NAD83 StatePlane Florida West FIPS 9902 Feet:
Western Hemisphere, Vertical Datum: NAVD 88

1 inch = 1,000 feet

1:12,000

0 500 1,000 2,000 Feet

0 150 300 600 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

POLK COUNTY, FLORIDA
and Incorporated Areas

PANEL 230 OF 1025

Panel Contain(s):

COMMUNITY	NUMBER	PANEL SUFFIX
POLK COUNTY	120261	0230 H

REVISED TO REFLECT LOMR EFFECTIVE: October 26, 2023

VERSION NUMBER 2.1.3.0

MAP NUMBER 12105C0230H

MAP REVISED DECEMBER 22, 2016



Layers

- ☒ Parcels
- ☒ Floodplains
 - ☒ Floodplain Boundaries
 - ☒ FLOODPLAIN
 - ☒ NEW DEVELOPMENT AREAS
 - ☒ TRANSITION ZONES
- ☒ DFIRM and FEMA data
 - ☒ FEMA Effective Flood Zones (DFIRM)
 - ☒ 1% Annual Chance Flood Hazard
 - ☒ Regulatory Floodway
 - ☒ Area of Undetermined Flood Hazard
 - ☒ 0.2% Annual Chance Flood Hazard
 - ☒ Area with Reduced Risk Due to Levee



Begin Project

APPENDIX H – FLOODPLAIN ENCROACHMENT ANALYSIS



FPC 1			
Alternative	FPC 1A	FPC 1B	FPC 1C
Location/Address	Redding St. & US Highway 17/92, Davenport, 33837, Polk County - Lat/Long 28°10'5"N 81°35'53"W	US Highway 17/92 Davenport, 33837, Polk County - Lat/Long 28°10'12"N 81°35'56"W	Stewart Rd, Davenport, 33837, Polk County - Lat/Long 28°10'9"N 81°35'49"W
Parcel size (ac)	6.43	1.74	4.90
Pond size with tie downs (ac)	1.27	1.38	1.69
Parcel number	27-27-03-721000-006220, 27-27-03-717000-000032	27-27-03-717000-000033	27-27-03-713500-010131
Current parcel owner	BRIGGS TREE SERVICE LLC, FRERICKS EDWARD DUANE REVOCABLE TRUST	CM HOLDINGS CFL INC	JMBI REAL ESTATE LLC
Estimated Parcel Value (2025, Total)			
Estimated Parcel Value (2025, per ac)			
Estimated Right-of-Way Cost			
Estimated Construction Cost	\$101,324	\$134,824	\$126,530
Estimated TOTAL Cost	\$101,324	\$134,824	\$126,530
Current Land-Use	Commercial/Industrial, Low Acres	Commercial/Industrial	Residential, Submerged Land
Soil Type	Narcoossee sand - Type B	Immokalee sand - Type B/D	Immokalee sand - Type B/D
Approximate Ground Elevation (ft)	113.80	113.50	110.20
Approximate SHWTE (ft)	107.50	107.50	107.50
Proposed Outfall	Horse Creek	Horse Creek	Horse Creek
Wetland/Surface Water Impacts (ac)	None	None	None
Listed Species Impacts	None	None	None
Site Contamination Probability	Medium	Medium	Low
Archaeological impacts probability	TBD	TBD	TBD
Construction/Maintenance Concerns	Requires a permanent easement	Requires a permanent easement	
Utility Conflicts	TBD	TBD	TBD
Public Opinion	-	-	-
Aesthetics	-	-	-
Notes	-		
Rankings	Ranking: #3	Ranking: #1	Ranking: #2

FPC 2			
Alternative	FPC 2A	FPC 2B	FPC 2C
Location/Address	1003 HWY 17 92 N. Davenport, 33837, Polk County - Lat/Long 28°10'16"N 81°35'50"W	US Highway 17/92 Davenport, 33837, Polk County - Lat/Long 28°10'16"N 81°35'47"W	1106 HWY 17 92 N, Davenport, 33837, Polk County - Lat/Long 28°10'20"N 81°35'46"W
Parcel size (ac)	2.70	0.22	0.58
Pond size with tie downs (ac)	0.17	0.14	0.21
Parcel number	27-27-03-717000-000043	27-27-03-713500-010034	27-26-34-000000-024150
Current parcel owner	BLUE BLOOD BROTHERS INVESTMENT LLC	FEBO JOSE MERCADO	BATTAGLIA FRANK & HAUSCHILDT ANNA SARA
Estimated Parcel Value (2025, Total)			
Estimated Parcel Value (2025, per ac)			
Estimated Right-of-Way Cost			
Estimated Construction Cost	\$12,862	\$16,657	\$13,332
Estimated TOTAL Cost	\$12,862	\$16,657	\$13,332
Current Land-Use	Residential & Low Acres	Residential	Residential
Soil Type	Samsula muck, frequently ponded, Adamsville fine sand - Type A/D	Adamsville fine sand - Type A/D	Immokalee sand - Type B/D
Approximate Ground Elevation (ft)	110.00	116.20	109.60
Approximate SHWTE (ft)	107.50	107.50	107.50
Proposed Outfall	Horse Creek	Horse Creek	Horse Creek
Wetland/Surface Water Impacts (ac)	0.14 ac Wetlands	None	None
Listed Species Impacts	None	None	None
Site Contamination Probability	Low	Low	Low
Archaeological impacts probability	TBD	TBD	TBD
Construction/Maintenance Concerns			
Utility Conflicts	TBD	TBD	TBD
Public Opinion	-	-	-
Aesthetics	-	-	-
Notes	-		
Rankings	Ranking: #1	Ranking: #3	Ranking: #2

FPC 3			
Alternative	FPC 3A	FPC 3B	FPC 3C
Location/Address	1111 US HIGHWAY 17/92 N. Davenport, 33837, Polk County - Lat/Long 28°10'21"N 81°35'49"W	1111 US HIGHWAY 17/92 N, Davenport, 33837, Polk County - Lat/Long 28°10'27"N 81°35'48"W	1215 US HIGHWAY 17/92 N, Davenport, 33837, Polk County - Lat/Long 28°10'33"N 81°35'39"W
Parcel size (ac)	3.83	8.85	6.10
Pond size with tie downs (ac)	1.08	0.97	0.96
Parcel number	27-26-34-000000-024060	27-26-34-000000-024040	27-26-34-000000-024030
Current parcel owner	MUSA MHP 3 LLC	MUSA MHP 3 LLC	PROCTOR BRENDA S
Estimated Parcel Value (2025, Total)			
Estimated Parcel Value (2025, per ac)			
Estimated Right-of-Way Cost			
Estimated Construction Cost	\$92,869	\$95,384	\$83,663
Estimated TOTAL Cost	\$92,869	\$95,384	\$83,663
Current Land-Use	Commercial/Industrial	Commercial/Industrial	Commercial/Industrial
Soil Type	Samsula muck, frequently ponded, Adamsville fine sand - Type A/D	Tavares fine sand - Type A	Ona-Ona, wet, fine sand, Immokalee sand - Type B/D
Approximate Ground Elevation (ft)	111.45	111.20	109.50
Approximate SHWTE (ft)	106.00	106.00	106.00
Proposed Outfall	Horse Creek	Horse Creek	Horse Creek
Wetland/Surface Water Impacts (ac)	None	None	None
Listed Species Impacts	None	Potential Skink Habitat	None
Site Contamination Probability	Medium	Medium	Medium
Archaeological impacts probability	TBD	TBD	TBD
Construction/Maintenance Concerns			
Utility Conflicts	TBD	TBD	TBD
Public Opinion	-	-	-
Aesthetics	-	-	-
Notes	-		
Rankings	Ranking: #3	Ranking: #2	Ranking: #1

FPC 4			
Alternative	FPC 4A	FPC 4B	FPC 4C
Location/Address	US Highway 17/92 N. Davenport, 33837, Polk County - Lat/Long 28°10'58"N 81°35'37"W	3002 TEMPLES CROSSING BLVD, 33837, Polk County - Lat/Long 28°10'43"N 81°35'38"W	115 LEM CARNES RD & 1825 & 1905 HWY 17/92 N, Davenport, 33837, Polk County - Lat/Long 28°11'1"N 81°35'35"W
Parcel size (ac)	24.47	4.47	18.81
Pond size with tie downs (ac)	1.90	2.22	1.74
Parcel number	27-26-34-000000-012040, 27-26-34-000000-011060	27-26-34-160881-002110	27-26-34-000000-011060, 27-26-34-710700-001020, 27-26-34-710700-001050
Current parcel owner	LAGU LLC, CEMEX CONSTRUCTION MATERIALS FLORIDA LLC	CW TEMPLES LLC	CEMEX CONSTRUCTION MATERIALS FLORIDA LLC, LAGU LLC
Estimated Parcel Value (2025, Total)			
Estimated Parcel Value (2025, per ac)			
Estimated Right-of-Way Cost			
Estimated Construction Cost	\$170,652	\$211,538	\$185,199
Estimated TOTAL Cost	\$170,652	\$211,538	\$185,199
Current Land-Use	Commercial/Industrial, Low Acres	Miscellaneous	Commercial/Industrial, Submerged Land
Soil Type	Neilhurst sand, Smyrna and Myakka fine sands - Type A, A/D	Tavares fine sand, Smyrna and Myakka fine sands - Type A, A/D	Neilhurst sand, Smyrna and Myakka fine sands, Astatula sand - Type A, A/D
Approximate Ground Elevation (ft)	111.00	110.00	113.60
Approximate SHWTE (ft)	108.00	108.00	108.00
Proposed Outfall	Horse Creek	Horse Creek	Horse Creek
Wetland/Surface Water Impacts (ac)	0.85 Wetlands	None	0.16 Wetlands
Listed Species Impacts	None	Potential Skink Habitat	Potential Skink Habitat
Site Contamination Probability	Medium	Low	Medium
Archaeological impacts probability	TBD	TBD	TBD
Construction/Maintenance Concerns	Requires a permanent easement	Requires a permanent easement	
Utility Conflicts	TBD	TBD	TBD
Public Opinion	-	-	-
Aesthetics	-	-	-
Notes	-		
Rankings	Ranking: #2	Ranking: #1	Ranking: #3
Note: FPC 4B estimated parcel value based on 2022 sale price.			

FPC 5			
Alternative	FPC 5A	FPC 5B	FPC 5C
Location/Address	LEM CARNES RD. Davenport, 33837, Polk County - Lat/Long 28°11'11"N 81°35'31"W	LEM CARNES RD. Davenport, 33837, Polk County - Lat/Long 28°11'9"N 81°35'29"W	1850 US HIGHWAY 17/92, Davenport, 33897, Polk County - Lat/Long 28°11'6"N 81°35'24"W
Parcel size (ac)	5.05	24.68	131.48
Pond size with tie downs (ac)	1.34	1.35	1.76
Parcel number	27-26-34-000000-011010	27-26-34-000000-011010, 27-26-34-000000-011060, 27-26-34-710700-001150, 27-26-34-710700-001160, 27-26-34-710700-001170, 27-26-34-710700-001180, 27-26-34-710700-001190, 27-26-34-710700-001200	27-26-35-000000-021010
Current parcel owner	CEMEX CONSTRUCTION MATERIALS FLORIDA LLC	CEMEX CONSTRUCTION MATERIALS FLORIDA LLC	STANDARD SAND & SILICA CO
Estimated Parcel Value (2025, Total)			
Estimated Parcel Value (2025, per ac)			
Estimated Right-of-Way Cost			
Estimated Construction Cost	\$197,536	\$185,208	\$223,179
Estimated TOTAL Cost	\$197,536	\$185,208	\$223,179
Current Land-Use	Commercial/Industrial, Low Acres	Commercial/Industrial, Low Acres	Residential, Sand Unmined, Low Acres
Soil Type	Neilhurst sand - Type A	Neilhurst sand - Type A	Astatula sand, Placid and Myakka fine sands, depressional - Type A, A/D
Approximate Ground Elevation (ft)	118.00	118.00	124.00
Approximate SHWTE (ft)	108.00	108.00	108.00
Proposed Outfall	Horse Creek	Horse Creek	Horse Creek
Wetland/Surface Water Impacts (ac)	None	0.10 ac Wetlands	None
Listed Species Impacts	None	None	Potential Skink Habitat
Site Contamination Probability	Medium	Low	Low
Archaeological impacts probability	TBD	TBD	TBD
Construction/Maintenance Concerns	Requires a permanent easement		Requires a permanent easement
Utility Conflicts	TBD	TBD	TBD
Public Opinion	-	-	-
Aesthetics	-	-	-
Notes		-	
Rankings	Ranking: #1	Ranking: #2	Ranking: #3

FPC 7			
Alternative	FPC 7A	FPC 7B	FPC 7C
Location/Address	HIGHWAY 547 N. Davenport, 33837, Polk County - Lat/Long 28°12'8"N 81°35'13"W	2200 US HIGHWAY 17/92 N. Davenport, 33837, Polk County - Lat/Long 28°12'3"N 81°35'1"W	210 & 140 SCHOFIELD LN & US HIGHWAY 17/92 N, Davenport, 33837, Polk County - Lat/Long 28°12'7"N 81°34'57"W
Parcel size (ac)	192.70	243.87	24.50
Pond size with tie downs (ac)	6.46	4.67	5.96
Parcel number	27-26-23-000000-014010	27-26-26-000000-011000	27-26-23-000000-042010, 27-26-23-000000-042030, 27-26-23-000000-042020
Current parcel owner	STANDARD SAND & SILICA CO	STANDARD SAND & SILICA CO	DAVENPORT LAKES PROPERTIES LLC, STANLEY THOMAS & STANLEY PATIENCE LUCY & PITTORE NICOLE, CARNES DAVID G
Estimated Parcel Value (2025, Total)			
Estimated Parcel Value (2025, per ac)			
Estimated Right-of-Way Cost			
Estimated Construction Cost	\$685,279	\$597,820	\$398,160
Estimated TOTAL Cost	\$685,279	\$597,820	\$398,160
Current Land-Use	Pasture, Marsh, Swamp	Commercial/Industrial, Pasture, Sand-Mined Out, Marsh	Residential, Commercial/ Industrial, Low Acres
Soil Type	Tavares fine sand, Smyrna and Myakka fine sands, Placid and Myakka fine sands, depressional - Type A, A/D	Smyrna and Myakka fine sands, Astatula sand - Type A, A/D	Smyrna and Myakka fine sands - Type A/D
Approximate Ground Elevation (ft)	114.00	113.00	109.20
Approximate SHWTE (ft)	108.00	108.00	108.00
Proposed Outfall	Reedy Creek	Reedy Creek	Reedy Creek
Wetland/Surface Water Impacts (ac)	0.38 ac Wetlands	0.51 ac Wetlands	3.47 ac Wetlands
Listed Species Impacts	Potential Skink Habitat, Gopher Tortoise Habitat	Potential Skink Habitat, Gopher Tortoise Habitat	None
Site Contamination Probability	Medium	No	Medium
Archaeological impacts probability	TBD	TBD	TBD
Construction/Maintenance Concerns	Requires a permanent easement	Requires a permanent easement	Requires a permanent easement
Utility Conflicts	TBD	TBD	TBD
Public Opinion	-	-	-
Aesthetics	-	-	-
Notes	-		
Rankings	Ranking: #1	Ranking: #2	Ranking: #3

FPC 9			
Alternative	FPC 9A	FPC 9B	FPC 9C
Location/Address	3231 & 3301 US HIGHWAY 17/92 N. Davenport, 33837, Polk County - Lat/Long 28°12'10"N 81°34'50"W	3517 & 3521 HWY 17/92 N, Davenport, 33837, Polk County - Lat/Long 28°12'23"N 81°34'54"W	3517 & 3521 & 3617 HWY 17/92 N, Davenport, 33837, Polk County - Lat/Long 28°12'23"N 81°34'54"W
Parcel size (ac)	8.84	30.73	43.09
Pond size with tie downs (ac)	3.46	3.72	4.96
Parcel number	27-26-23-000000-024060, 27-26-23-000000-024090, 27-26-23-000000-024100	27-26-13-704000-000490, 27-26-13-704000-000480, 27-26-13-704000-000470	27-26-13-704000-000490, 27-26-13-704000-000480, 27-26-13-704000-000470, 27-26-13-704000-000460
Current parcel owner	CONROY TRUST, GRAHAM JAMES ROY JR, FRERRICKS DUANE	DANNY & DANNY ENTERPRISE LLC	DANNY & DANNY ENTERPRISE LLC, BRENSUS LLC
Estimated Parcel Value (2025, Total)			
Estimated Parcel Value (2025, per ac)			
Estimated Right-of-Way Cost			
Estimated Construction Cost	\$287,069	\$350,271	\$451,419
Estimated TOTAL Cost	\$287,069	\$350,271	\$451,419
Current Land-Use	Residential	Commercial/Industrial, Low Acres, Conservation	Commercial/Industrial, Low Acres, Conservation
Soil Type	Smyrna and Myakka fine sands, Astatula sand - Type A, A/D	Tavares fine sand, Smyrna and Myakka fine sands, Placid and Myakka fine sands, depressional - Type A, A/D	Tavares fine sand, Smyrna and Myakka fine sands, Placid and Myakka fine sands, depressional - Type A, A/D
Approximate Ground Elevation (ft)	110.00	112.00	112.00
Approximate SHWTE (ft)	108.50	108.50	108.50
Proposed Outfall	Reedy Creek	Reedy Creek	Reedy Creek
Wetland/Surface Water Impacts (ac)	1.94 ac Wetlands	0.20 ac Wetlands	0.20 ac Wetlands
Listed Species Impacts	None	Potential Skink Habitat	Potential Skink Habitat
Site Contamination Probability	Medium	No	No
Archaeological impacts probability	TBD	TBD	TBD
Construction/Maintenance Concerns	Requires a permanent easement		Requires a permanent easement
Utility Conflicts	TBD	TBD	TBD
Public Opinion	-	-	-
Aesthetics	-	-	-
Notes			
Rankings	Ranking: #3	Ranking: #1	Ranking: #2

FPC 10	
Alternative	FPC 10A
Location/Address	US Highway 17/92 N, Davenport, 33837, Polk County - Lat/Long 28°12'31"N 81°34'51"W
Parcel size (ac)	25.10
Pond size with tie downs (ac)	0.66
Parcel number	27-26-13-704000-000520
Current parcel owner	DV92 LLC
Estimated Parcel Value (2025, Total)	
Estimated Parcel Value (2025, per ac)	
Estimated Right-of-Way Cost	
Estimated Construction Cost	\$41,388
Estimated TOTAL Cost	\$41,388
Current Land-Use	Commercial/Industrial, Low Acres
Soil Type	Tavares fine sand - Type A
Approximate Ground Elevation (ft)	110.00
Approximate SHWTE (ft)	108.50
Proposed Outfall	Reedy Creek
Wetland/Surface Water Impacts (ac)	None
Listed Species Impacts	Potential Skink Habitat
Site Contamination Probability	Medium
Archaeological impacts probability	TBD
Construction/Maintenance Concerns	
Utility Conflicts	TBD
Public Opinion	-
Aesthetics	-
Notes	-
Rankings	Ranking: #1

FPC 11	
Alternative	FPC 11A
Location/Address	US Highway 17/92 N, Davenport, 33837, Polk County - Lat/Long 28°12'37"N 81°34'53"W
Parcel size (ac)	25.10
Pond size with tie downs (ac)	0.54
Parcel number	27-26-13-704000-000520
Current parcel owner	DV92 LLC
Estimated Parcel Value (2025, Total)	
Estimated Parcel Value (2025, per ac)	
Estimated Right-of-Way Cost	
Estimated Construction Cost	\$36,590
Estimated TOTAL Cost	\$36,590
Current Land-Use	Commercial/Industrial, Low Acres
Soil Type	Tavares fine sand, Smyrna and Myakka fine sands - Type A, A/D
Approximate Ground Elevation (ft)	111.40
Approximate SHWTE (ft)	108.50
Proposed Outfall	Reedy Creek
Wetland/Surface Water Impacts (ac)	None
Listed Species Impacts	Potential Skink Habitat
Site Contamination Probability	Medium
Archaeological impacts probability	TBD
Construction/Maintenance Concerns	
Utility Conflicts	TBD
Public Opinion	-
Aesthetics	-
Notes	-
Rankings	Ranking: #1

FPC 12

Alternative	FPC 12A
Location/Address	US Highway 17/92 N, Davenport, 33837, Polk County - Lat/Long 28°12'41"N 81°34'46"W
Parcel size (ac)	25.10
Pond size with tie downs (ac)	0.91
Parcel number	27-26-13-704000-000520
Current parcel owner	DV92 LLC
Estimated Parcel Value (2025, Total)	
Estimated Parcel Value (2025, per ac)	
Estimated Right-of-Way Cost	
Estimated Construction Cost	\$67,984
Estimated TOTAL Cost	\$67,984
Current Land-Use	Commercial/Industrial, Low Acres
Soil Type	Tavares fine sand - Type A
Approximate Ground Elevation (ft)	111.50
Approximate SHWTE (ft)	108.50
Proposed Outfall	Reedy Creek
Wetland/Surface Water Impacts (ac)	None
Listed Species Impacts	Potential Skink Habitat
Site Contamination Probability	Medium
Archaeological impacts probability	TBD
Construction/Maintenance Concerns	Requires a permanent easement
Utility Conflicts	TBD
Public Opinion	-
Aesthetics	-
Notes	-
Rankings	Ranking: #1

FPC 13			
Alternative	FPC 13A	FPC 13B	FPC 13C
Location/Address	US Highway 17/92 N. Davenport, 33837, Polk County - Lat/Long 28°13'13"N 81°34'26"W	US Highway 17/92 N. Davenport, 33837, Polk County - Lat/Long 28°13'18"N 81°34'22"W	US Highway 17/92 N. Davenport, 33837, Polk County - Lat/Long 28°13'20"N 81°34'14"W
Parcel size (ac)	50.90	50.90	61.16
Pond size with tie downs (ac)	1.93	2.18	1.74
Parcel number	27-26-13-704000-000171	27-26-13-704000-000171	27-26-13-704000-000171, 27-26-13-704000-000150
Current parcel owner	STANDARD SAND & SILICA CO	STANDARD SAND & SILICA CO	STANDARD SAND & SILICA CO, VIVEK INVESTMENT CORPORATION
Estimated Parcel Value (2025, Total)			
Estimated Parcel Value (2025, per ac)			
Estimated Right-of-Way Cost			
Estimated Construction Cost	\$189,124	\$225,219	\$170,565
Estimated TOTAL Cost	\$189,124	\$225,219	\$170,565
Current Land-Use	Residential, Low Acres, Conservation	Residential, Low Acres, Conservation	Residential, Low Acres, Conservation
Soil Type	Smyrna and Myakka fine sands, Basinger mucky fine sand, frequently ponded - Type A/D	Smyrna and Myakka fine sands, Basinger mucky fine sand, frequently ponded - Type A/D	Smyrna and Myakka fine sands, Basinger mucky fine sand, frequently ponded, Immokalee sand - Type A/D, B/D
Approximate Ground Elevation (ft)	107.00	106.50	105.60
Approximate SHWTE (ft)	101.50	101.50	101.50
Proposed Outfall	Reedy Creek	Reedy Creek	Reedy Creek
Wetland/Surface Water Impacts (ac)	None	0.1 ac Wetlands	None
Listed Species Impacts	None	None	None
Site Contamination Probability	No	No	No
Archaeological impacts probability	TBD	TBD	TBD
Construction/Maintenance Concerns			Requires a permanent easement
Utility Conflicts	TBD	TBD	TBD
Public Opinion	-	-	-
Aesthetics	-	-	-
Notes	-		
Rankings	Ranking: #3	Ranking: #1	Ranking: #2

FPC 14			
Alternative	FPC 14A	FPC 14B	FPC 14C
Location/Address	US Highway 17/92 N. Davenport, 33837, Polk County - Lat/Long 28°13'31"N 81°34'12"W	US Highway 17/92 N. Davenport, 33837, Polk County - Lat/Long 28°13'35"N 81°34'10"W	US Highway 17/92 N. Davenport, 33837, Polk County - Lat/Long 28°13'28"N 81°34'23"W
Parcel size (ac)	82.31	66.96	66.96
Pond size with tie downs (ac)	1.95	3.06	2.16
Parcel number	27-26-13-704000-000110, 27-26-13- 704000-000120, 27-26-13-704000- 000071	27-26-13-704000-000071	27-26-13-704000-000071
Current parcel owner	HOWARD N D & HOWARD EDITH, VIVEK INVESTMENT CORPORATION	VIVEK INVESTMENT CORPORATION	VIVEK INVESTMENT CORPORATION
Estimated Parcel Value (2025, Total)			
Estimated Parcel Value (2025, per ac)			
Estimated Right-of-Way Cost			
Estimated Construction Cost	\$284,934	\$485,645	\$287,478
Estimated TOTAL Cost	\$284,934	\$485,645	\$287,478
Current Land-Use	Residential, Low Acres, Conservation	Residential, Low Acres, Conservation	Residential, Low Acres, Conservation
Soil Type	Basinger mucky fine sand, frequently ponded, Immokalee sand - Type A/D, B/D	Basinger mucky fine sand, frequently ponded, Immokalee sand - Type A/D, B/D	Smyrna and Myakka fine sands, Basinger mucky fine sand, frequently ponded, Astatula sand- Type A, A/D
Approximate Ground Elevation (ft)	106.40	108.50	107.80
Approximate SHWTE (ft)	98.50	98.50	98.50
Proposed Outfall	Reedy Creek	Reedy Creek	Reedy Creek
Wetland/Surface Water Impacts (ac)	None	0.1 ac Wetlands	0.25 ac Wetlands
Listed Species Impacts	None	None	None
Site Contamination Probability	No	No	Medium
Archaeological impacts probability	TBD	TBD	TBD
Construction/Maintenance Concerns	Requires a permanent easement	Requires a permanent easement	Requires a permanent easement
Utility Conflicts	TBD	TBD	TBD
Public Opinion	-	-	-
Aesthetics	-	-	-
Notes	-		
Rankings	Ranking: #1	Ranking: #2	Ranking: #3

FPC 15	
Alternative	FPC 15A
Location/Address	US Highway 17/92 N. Davenport, 33837, Polk County Lat/Long 28°13'41"N 81°33'45"W
Parcel size (ac)	19.86
Pond size with tie downs (ac)	4.20
Parcel number	27-26-12-702000-011020
Current parcel owner	APPLIED BUILDING DEVELOPMENT COMPANY
Estimated Parcel Value (2025, Total)	
Estimated Parcel Value (2025, per ac)	
Estimated Right-of-Way Cost	
Estimated Construction Cost	\$328,156
Estimated TOTAL Cost	\$328,156
Current Land-Use	Low Acres, Conservation
Soil Type	Samsula muck, frequently ponded, Satellite sand, Astatula sand - Type A/D, A
Approximate Ground Elevation (ft)	96.00
Approximate SHWTE (ft)	94.00
Proposed Outfall	Reedy Creek
Wetland/Surface Water Impacts (ac)	4.20 ac Wetlands
Listed Species Impacts	None
Site Contamination Probability	Low
Archaeological impacts probability	TBD
Construction/Maintenance Concerns	
Utility Conflicts	TBD
Public Opinion	-
Aesthetics	-
Notes	-
Rankings	Ranking: #1

FPC 16	
Alternative	FPC 16A
Location/Address	US Highway 17/92 N. Davenport, 33837, Polk County Lat/Long 28°14'00"N 81°33'43"W
Parcel size (ac)	6.82
Pond size with tie downs (ac)	2.37
Parcel number	27-26-12-702000-012020
Current parcel owner	DAVENPORT SELF STORAGE II LLC
Estimated Parcel Value (2025, Total)	
Estimated Parcel Value (2025, per ac)	
Estimated Right-of-Way Cost	
Estimated Construction Cost	\$185,705
Estimated TOTAL Cost	\$185,705
Current Land-Use	Commercial/ Industrial, Low Acres
Soil Type	Samsula muck, frequently ponded, Hontoon muck, frequently ponded - Type A/D
Approximate Ground Elevation (ft)	91.40
Approximate SHWTE (ft)	88.40
Proposed Outfall	Reedy Creek
Wetland/Surface Water Impacts (ac)	2.37 ac Wetlands
Listed Species Impacts	None
Site Contamination Probability	Medium
Archaeological impacts probability	TBD
Construction/Maintenance Concerns	
Utility Conflicts	TBD
Public Opinion	-
Aesthetics	-
Notes	-
Rankings	Ranking: #1

FPC 18		
Alternative	FPC 18A	FPC 18B
Location/Address	201, 219, 223, 229 CENTER St. Davenport, 33896, Polk County - Lat/Long 28°14'53"N 81°33'21"W	6746, 6750 OLD KISSIMMEE RD. Davenport, 33896, Polk County - Lat/Long 28°14'53"N 81°33'17"W
Parcel size (ac)	4.07	2.09
Pond size with tie downs (ac)	2.54	1.72
Parcel number	28-26-06-932800-005010, 28-26-06-932800-004012, 28-26-06-932800-004030, 28-26-06-932800-004040	28-26-06-932800-006042, 28-26-06-932800-006041, 28-26-06-932800-006030
Current parcel owner	YALENKO LLC, ALLEN LENNARD KEITH & ALLEN TEREATHER, BINET MARLON, DOUD KAYLA & BALDO DAVID	TISSIR LLC, CHURCH OF GOD & PILLAR OF ZION CHURCH, LEWIS DEBRA FAY
Estimated Parcel Value (2025, Total)		
Estimated Parcel Value (2025, per ac)		
Estimated Right-of-Way Cost		
Estimated Construction Cost	\$300,394	\$153,166
Estimated TOTAL Cost	\$300,394	\$153,166
Current Land-Use	Residential, Low Acres	Commercial/Industrial, Residential, Low Acres
Soil Type	Samsula muck, frequently ponded, Immokalee Sand, Placid and Myakka fine sands, depressional, Satellite sand - Type A/D, B/D, A	Immokalee Sand, Placid and Myakka fine sands, depressional, Satellite sand - Type A/D, B/D, A
Approximate Ground Elevation (ft)	83.50	80.80
Approximate SHWTE (ft)	77.50	77.50
Proposed Outfall	Reedy Creek	Reedy Creek
Wetland/Surface Water Impacts (ac)	0.30 ac Wetlands	0.52 ac Wetlands
Listed Species Impacts	Potential Skink Habitat	Potential Skink Habitat
Site Contamination Probability	No	No
Archaeological impacts probability	TBD	TBD
Construction/Maintenance Concerns	Requires a permanent easement	Requires a permanent easement
Utility Conflicts	TBD	TBD
Public Opinion	-	-
Aesthetics	-	-
Notes	-	
Rankings	Ranking: #1	Ranking: #2

FPC 19		
Alternative	FPC 19A	FPC 19B
Location/Address	6805 OLD KISSIMMEE RD & GRASS ST. Davenport, 33896, Polk County - Lat/Long 28°14'56"N 81°33'18"W	OLD KISSIMMEE RD, Davenport, 33837, Polk County - Lat/Long 28°15'6"N 81°33'18"W
Parcel size (ac)	1.45	8.06
Pond size with tie downs (ac)	1.43	1.50
Parcel number	28-26-06-932800-002050, 28- 26-06-932800-002041	28-26-06-000000-043020
Current parcel owner	PERRY BRENDA P, JACKSON KATHRYN & JACKSON BARBARA JEAN	BETTS HERCULES SR
Estimated Parcel Value (2025, Total)		
Estimated Parcel Value (2025, per ac)		
Estimated Right-of-Way Cost		
Estimated Construction Cost	\$114,569	\$120,514
Estimated TOTAL Cost	\$114,569	\$120,514
Current Land-Use	Residential	Residential, Conservation
Soil Type	Satellite sand - Type A	Satellite sand - Type A
Approximate Ground Elevation (ft)	84.50	85.50
Approximate SHWTE (ft)	82.50	82.50
Proposed Outfall	Reedy Creek	Reedy Creek
Wetland/Surface Water Impacts (ac)	None	None
Listed Species Impacts	Potential Skink Habitat	Potential Skink Habitat
Site Contamination Probability	Low	Medium
Archaeological impacts probability	TBD	TBD
Construction/Maintenance Concerns	Requires a permanent easement	Requires a permanent easement
Utility Conflicts	TBD	TBD
Public Opinion	-	-
Aesthetics	-	-
Notes	-	
Rankings	Ranking: #2	Ranking: #1

FPC 20		
Alternative	FPC 20A	FPC 20B
Location/Address	STATE ROAD 532, Davenport, 33896, Polk County - Lat/Long 28°15'15"N 81°33'25"W	OSCEOLA POLK LINE RD DAVENPORT FL 33896, Osceola County - Lat/Long 28°15'24"N 81°33'18"W
Parcel size (ac)	4.53	4.82
Pond size with tie downs (ac)	0.86	0.85
Parcel number	28-26-06-000000-034030	06-26-28-0000-0075-0000
Current parcel owner	BARTLETT FRANCIS E & BARTLETT GAIL LYNNETTE	STATE OF FLA DOT
Estimated Parcel Value (2025, Total)		
Estimated Parcel Value (2025, per ac)		
Estimated Right-of-Way Cost		
Estimated Construction Cost	\$94,991	\$101,465
Estimated TOTAL Cost	\$320,264	\$556,685
Current Land-Use	Marsh, Pasture	Vacant Commercial
Soil Type	Satellite sand - Type A	Immokalee fine sand - Type B/D
Approximate Ground Elevation (ft)	83.50	84.50
Approximate SHWTE (ft)	78.00	78.00
Proposed Outfall	Reedy Creek	Reedy Creek
Wetland/Surface Water Impacts (ac)	None	None
Listed Species Impacts	Potential Skink Habitat	None
Site Contamination Probability	Medium	Medium
Archaeological impacts probability	TBD	TBD
Construction/Maintenance Concerns	Requires a permanent easement	Requires a permanent easement
Utility Conflicts	TBD	TBD
Public Opinion	-	-
Aesthetics	-	-
Notes	-	
Rankings	Ranking: #1	Ranking: #2

Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

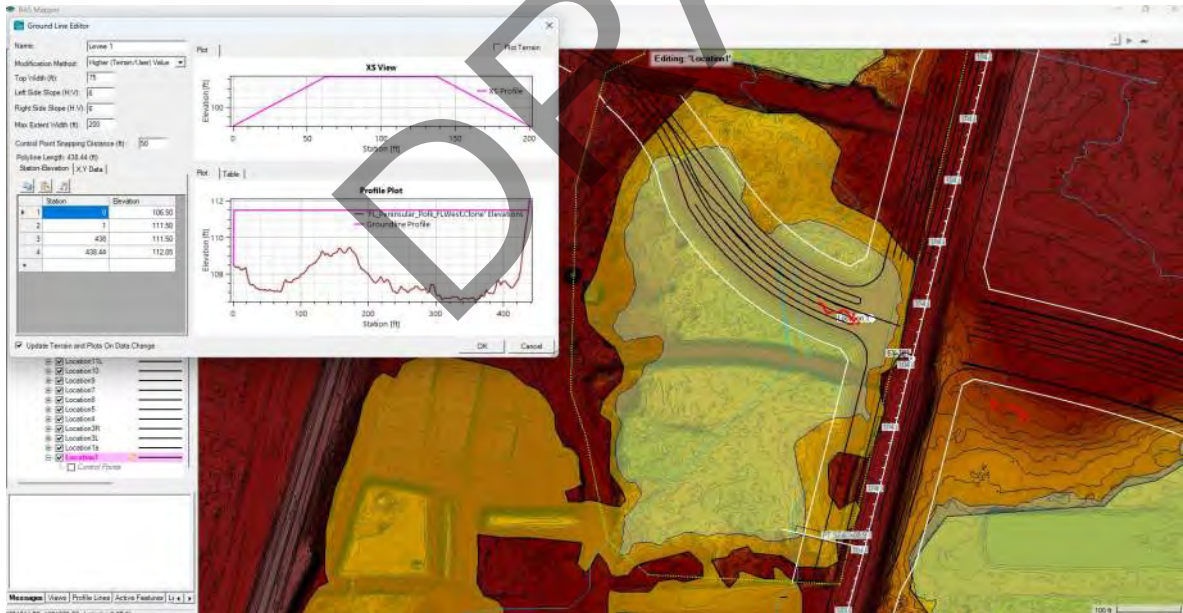
Location 1A

Floodplain Elevation 111.5 Based on floodplain delineation and LiDAR information
SHGWT Elevations 107.5 ft from Basin 100 Alt A
Floodplain Zone A BFE Elevation -

				Cut			
				Compensation			
Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cumulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cumulative Volume (acre-ft)	Cummulative Volume (acre-ft)
107.50	0.62	0.00	0.00	0.77	0.81	4.69	3.09
108.50	0.76	0.69	0.69	0.84	0.81	3.88	2.28
109.50	0.78	0.77	1.46	0.78	0.76	3.07	1.47
110.50	0.81	0.80	2.26	0.74	0.71	2.31	0.71
111.50	0.83	0.82	3.08	0.68	0.66	1.60	0.00
112.50				0.63	0.53	0.95	0.00
113.50				0.42	0.32	0.42	0.00
114.50				0.21	0.11	0.11	0.00
115.50				0.00	0.00		
Total				3.08			
				3.09			
				0.01 ac-ft			

Net Floodplain Impact (-)/Creation (+)
within Station Range indicated due to
proposed improvements.

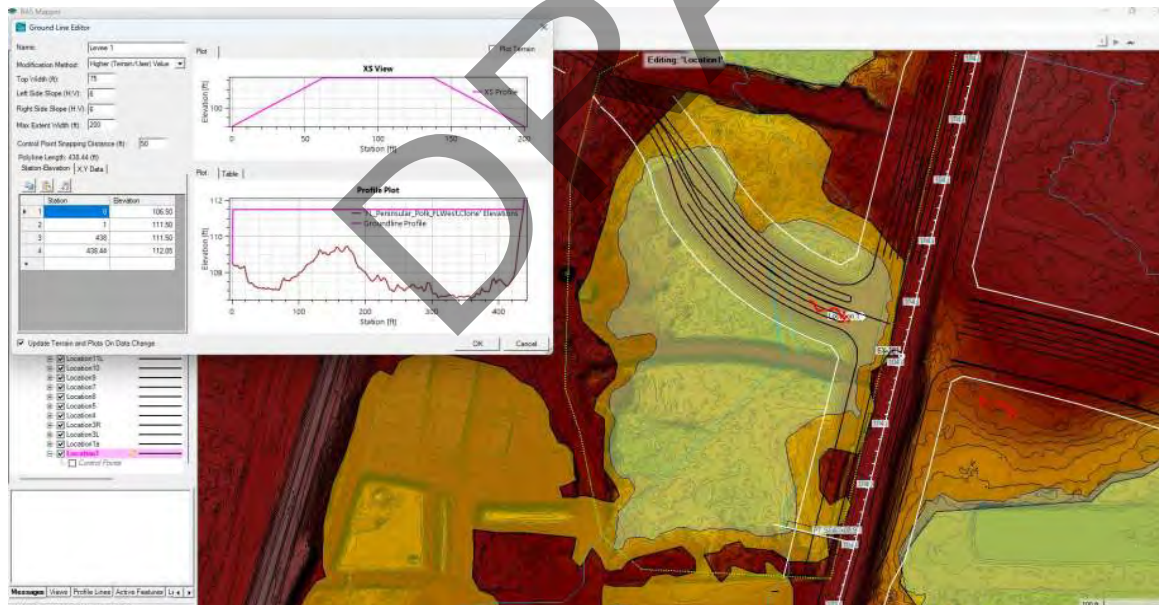
Notes: Cut condition assumes a 1:4 side slope.



Floodplain Elevation	<u>111.5</u>	Based on floodplain delineation and LiDAR information
SHGWT Elevations	<u>107.5 ft from Basin</u>	100 Alt A
Floodplain Zone	A	BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut			
				Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Compensation Cummulative Volume (acre-ft)
107.50	0.62	0.00	0.00	0.86	0.91	4.65	3.91
108.50	0.76	0.69	0.69	0.95	0.99	3.75	3.00
109.50	0.78	0.77	1.46	1.03	1.08	2.76	2.01
110.50	0.81	0.80	2.26	1.12	0.94	1.68	0.94
111.50	0.83	0.82	3.08	0.75	0.56	0.75	0.00
112.50				0.37	0.19	0.19	
113.50				0.00	0.00		
				Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.			
Total			3.08			3.91	0.83 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

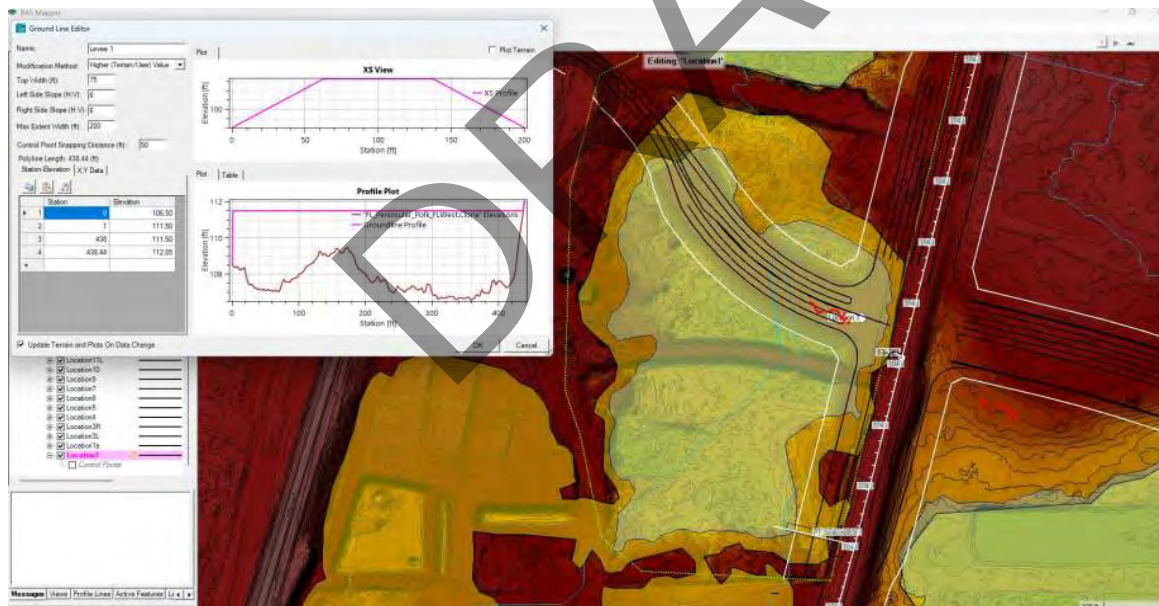
Location 1C

Floodplain Elevation 111.5 Based on floodplain delineation and LiDAR information
 SHGW Elevations 107.5 ft from Basin 100 Alt A
 Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cumulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cumulative Volume (acre-ft)	Cut Compensation Cumulative Volume (acre-ft)
107.50	0.62	0.00	0.00	1.17	1.24	3.19	3.19
108.50	0.76	0.69	0.69	1.30	1.09	1.95	1.95
109.50	0.78	0.77	1.46	0.87	0.65	0.87	0.87
110.50	0.81	0.80	2.26	0.43	0.22	0.22	0.22
111.50	0.83	0.82	3.08	0.00	0.00	0.00	0.00
Total							0.11 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 2A

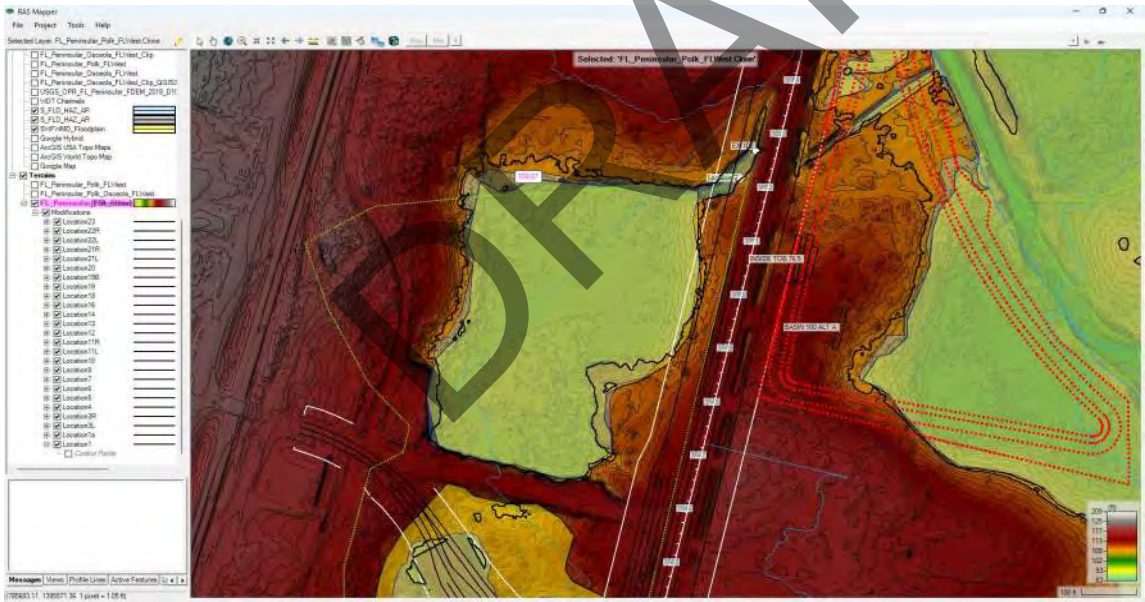
Floodplain Elevation 109.5 Based on floodplain delineation and LiDAR information

SHGWT Elevations 107.5 ft from Basin 100 Alt A

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
107.50	0.02	0.00	0.00	0.12	0.13	0.34	0.27
108.50	0.05	0.04	0.04	0.13	0.14	0.22	0.14
109.50	0.06	0.06	0.09	0.15	0.08	0.08	0.00
110.50				0.00	0.00	0.00	0.00
Total							Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.
				0.09		0.27	0.18 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Floodplain Impact Analysis Worksheet

Location 2B

Floodplain Elevation

109.5

Based on floodplain delineation and LiDAR information

SHGWT Elevations

107.5 ft from Basin 100 Alt A

Floodplain Zone

A

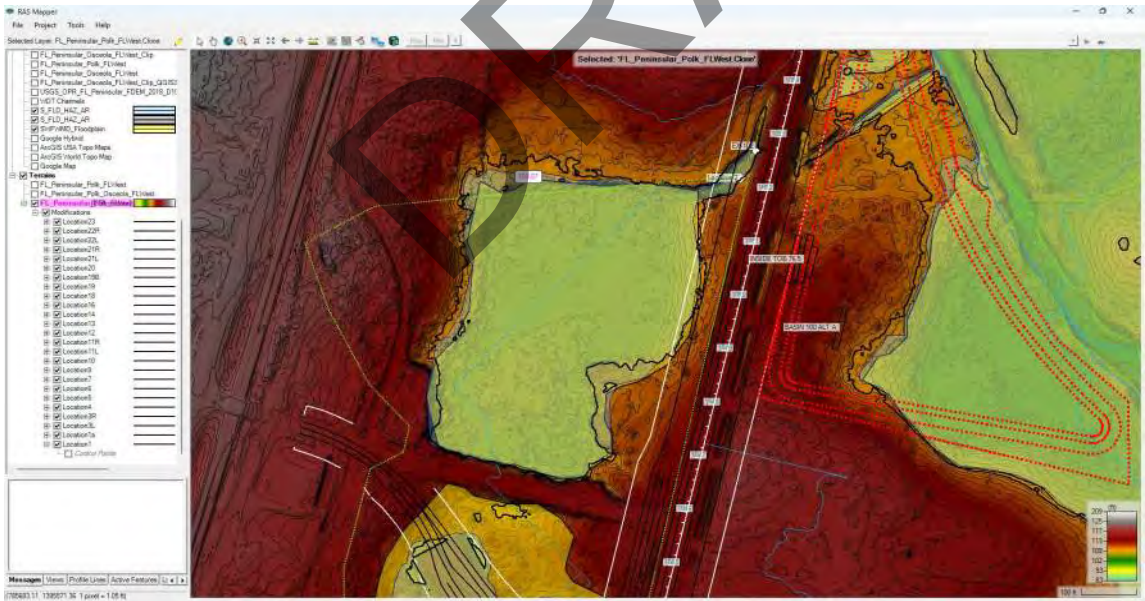
BFE Elevation

-

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
107.50	0.02	0.00	0.00	0.04	0.05	0.68	0.10
108.50	0.05	0.04	0.04	0.05	0.05	0.63	0.05
109.50	0.06	0.06	0.09	0.05	0.06	0.58	0.00
110.50				0.06	0.07	0.53	0.00
111.50				0.07	0.07	0.46	0.00
112.50				0.09	0.08	0.40	0.00
113.50				0.10	0.10	0.32	0.00
114.50				0.11	0.11	0.22	0.00
115.50				0.12	0.12	0.12	0.00
116.50				0.00			0.00
Total				0.09		0.10	0.01 ac-ft

Net Floodplain Impact (-)/Creation (+)
within Station Range indicated due to
proposed improvements.

Notes: Cut condition assumes a 1:2 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 2C

Floodplain Elevation

109.5

 Based on floodplain delineation and LiDAR information

SHGWT Elevations

107.5 ft from Basin 100 Alt A

Floodplain Zone

A

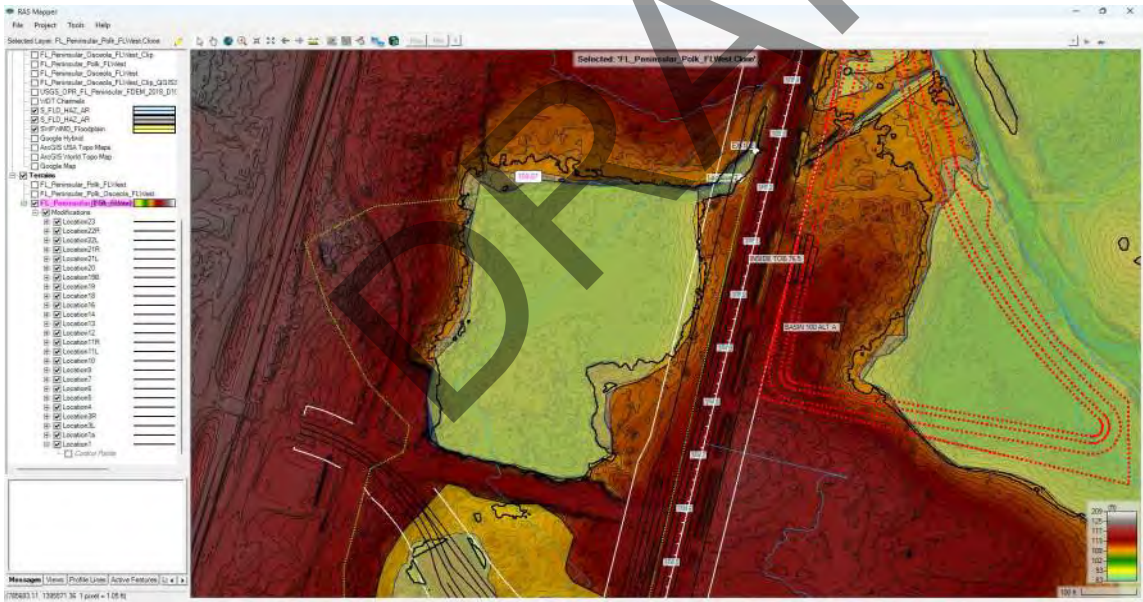
 BFE Elevation

-

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
107.50	0.02	0.00	0.00	0.13	0.15	0.24	0.24
108.50	0.05	0.04	0.04	0.17	0.09	0.09	0.09
109.50	0.06	0.06	0.09	0.00	0.00	0.00	0.00
Total				0.09		0.24	0.15 ac-ft

Net Floodplain Impact (-)/Creation (+)
within Station Range indicated due to
proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 3A

Floodplain Elevation 109.0 Based on floodplain delineation and LiDAR information

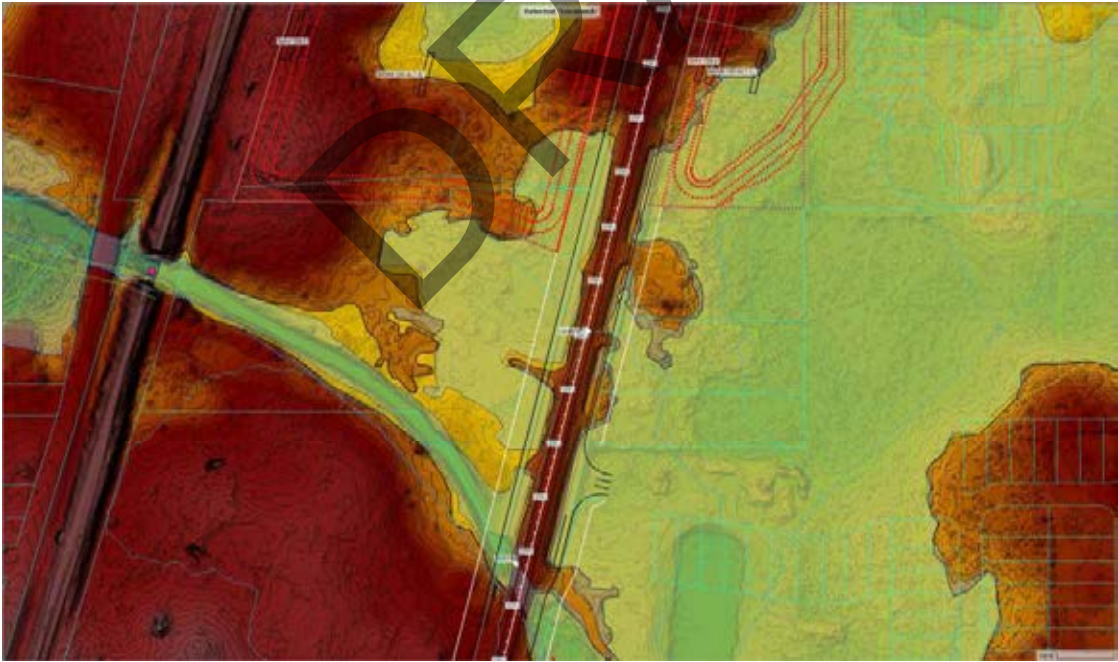
SHGWT Elevations 106 ft from Basin 100 Alt B

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
106.00	0.14	0.00	0.00	0.69	0.73	2.82	2.25
107.00	0.33	0.24	0.24	0.77	0.81	2.09	1.52
108.00	0.84	0.59	0.82	0.85	0.71	1.28	0.71
109.00	0.90	0.87	1.69	0.57	0.43	0.57	0.00
110.00				0.28	0.14	0.14	0.00
111.00				0.00	0.00	0.00	0.00
Total						2.25	0.56 ac-ft

Net Floodplain Impact (-)/Creation (+)
within Station Range indicated due to
proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject:FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 3B

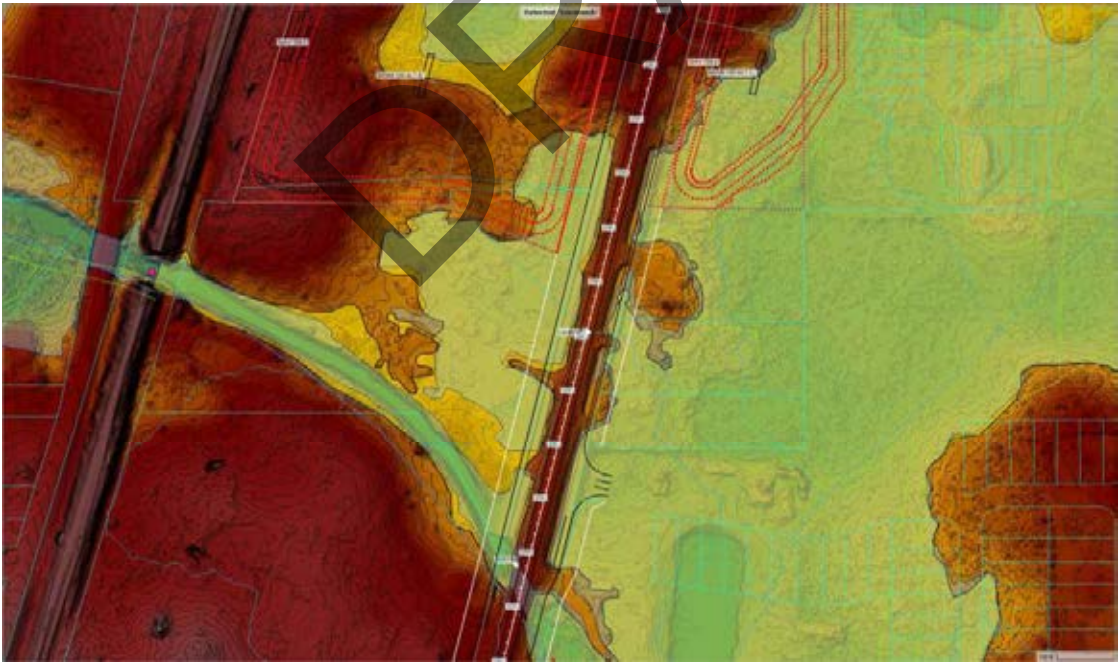
Floodplain Elevation109.0Based on floodplain delineation and LiDAR information

SHGWT Elevations106 ft from Basin 100 Alt B

Floodplain ZoneABFE Elevation-

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
106.00	0.14	0.00	0.00	0.50	0.53	3.31	2.29
107.00	0.33	0.24	0.24	0.55	0.57	2.79	1.76
108.00	0.84	0.59	0.82	0.59	0.62	2.22	1.19
109.00	0.90	0.87	1.69	0.64	0.58	1.60	0.58
110.00				0.51	0.45	1.03	0.00
111.00				0.38	0.32	0.58	0.00
112.00				0.26	0.20	0.26	0.00
113.00				0.13	0.07	0.07	0.00
114.00				0.00	0.00		
115.00							
Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.							
Total			1.69			2.29	0.60 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 3C

Floodplain Elevation 109.0 Based on floodplain delineation and LiDAR information

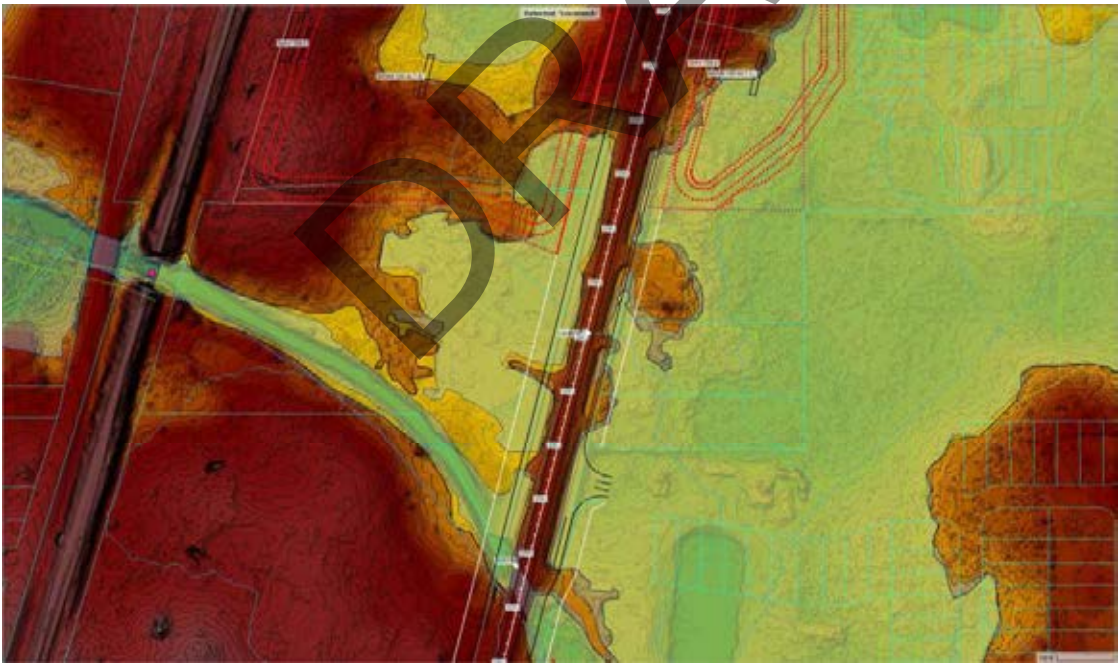
SHGWT Elevations 106 ft from Basin 100 Alt B

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
106.00	0.14	0.00	0.00	0.57	0.62	2.58	2.15
107.00	0.33	0.24	0.24	0.67	0.72	1.96	1.53
108.00	0.84	0.59	0.82	0.76	0.81	1.24	0.81
109.00	0.90	0.87	1.69	0.86	0.43	0.43	0.00
110.00				0.00	0.00		
Total						2.15	0.46 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 4A

Floodplain Elevation 109.0 Based on floodplain delineation and LiDAR information

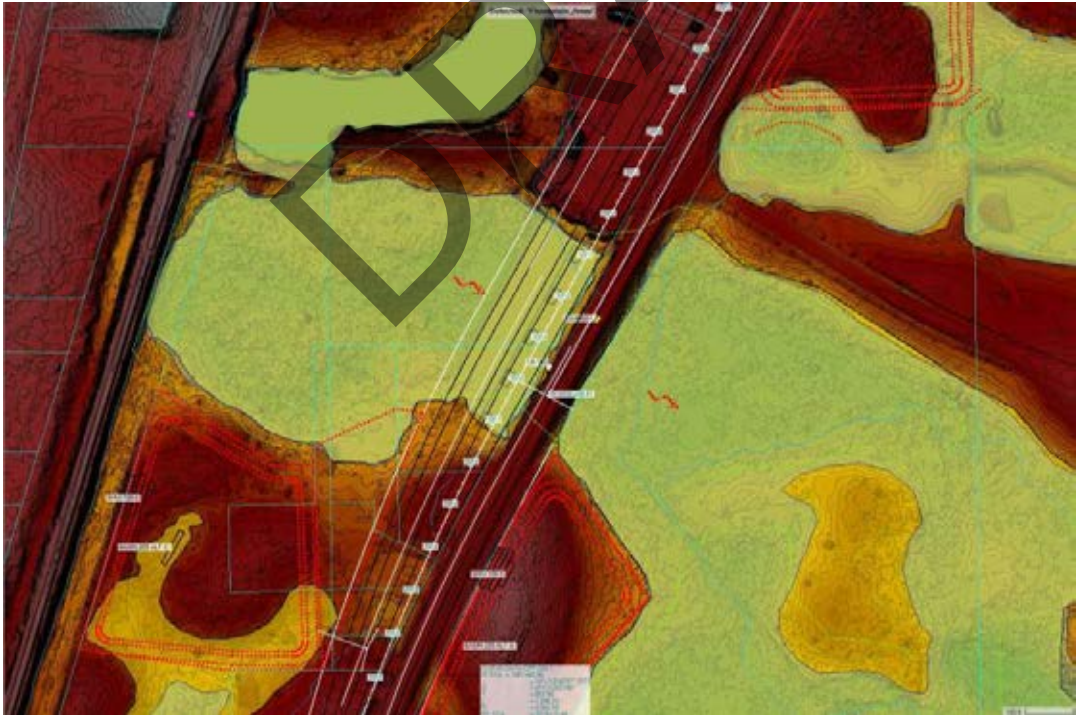
SHGWT Elevations 108 ft from Basin 200 ALT C

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
105.00	0.00						
106.00	0.51						
107.00	1.23						
108.00	1.46			1.49	1.53	5.43	1.53
109.00	1.50	1.48	1.48	1.56	1.41	3.90	
110.00				1.25	1.10	2.50	
111.00				0.94	0.78	1.40	
112.00				0.62	0.47	0.62	
113.00				0.31	0.16	0.16	
114.00				0.00	0.00	0.00	
Total						1.53	0.04 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 4B

Floodplain Elevation 109.0 Based on floodplain delineation and LiDAR information

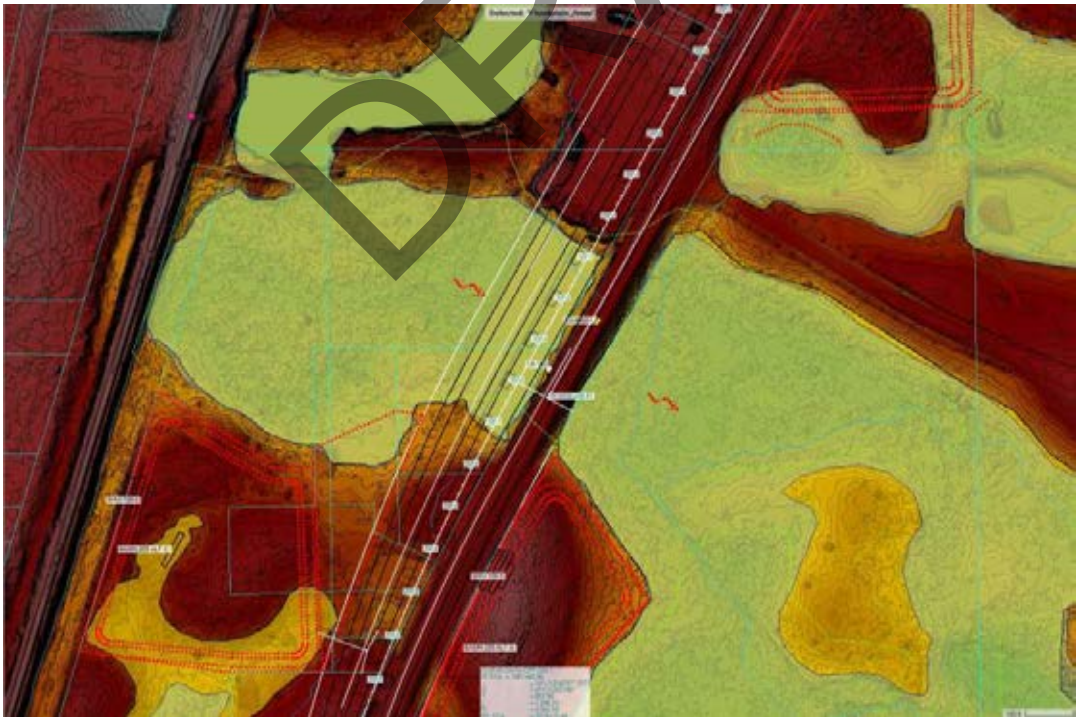
SHGWT Elevations 108 ft from Basin 200 ALT C

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
105.00	0.00						
106.00	0.51						
107.00	1.23						
108.00	1.46			1.72	1.76	7.13	1.76
109.00	1.50	1.48	1.48	1.79	1.64	5.38	
110.00				1.49	1.34	3.74	
111.00				1.19	1.05	2.40	
112.00				0.90	0.75	1.35	
113.00				0.60	0.45	0.60	
114.00				0.30	0.15	0.15	
115.00				0.00	0.00	0.00	
Total						1.76	0.28 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 4C

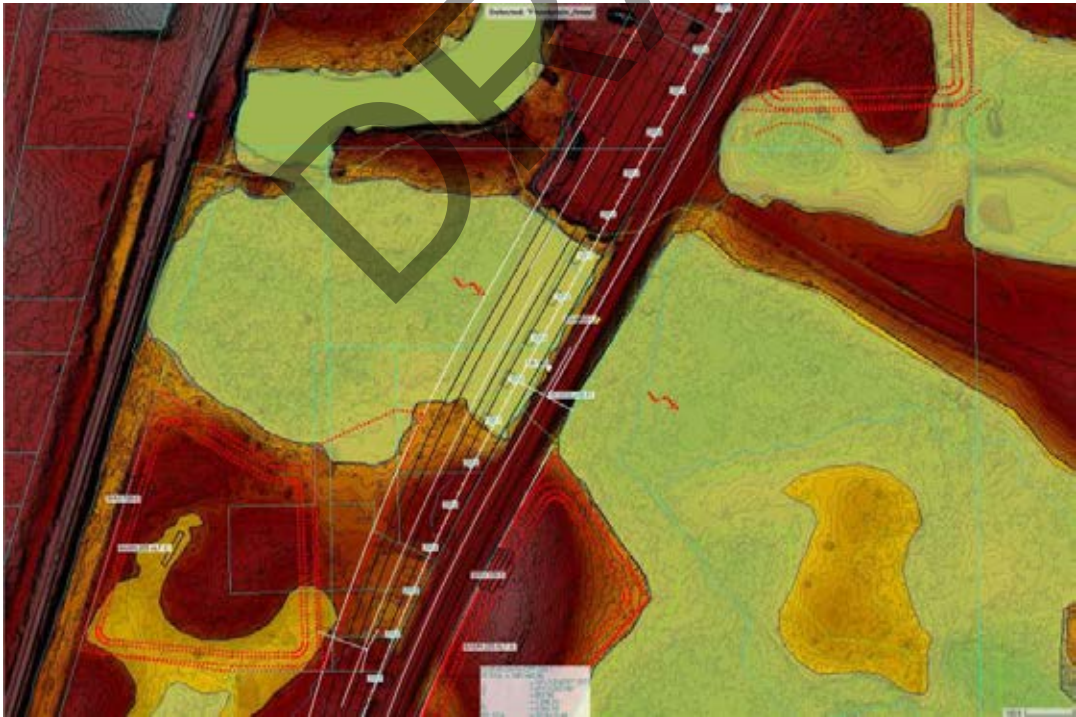
Floodplain Elevation 109.0 Based on floodplain delineation and LiDAR information

SHGWT Elevations 108 ft from Basin 200 ALT C

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
105.00	0.00						
106.00	0.51						
107.00	1.23						
108.00	1.46			1.46	1.48	6.85	1.48
109.00	1.50	1.48	1.48	1.50	1.52	5.37	
110.00				1.54	1.39	3.85	
111.00				1.23	1.08	2.47	
112.00				0.92	0.77	1.39	
113.00				0.62	0.47	0.62	
114.00				0.31	0.16	0.16	
115.00				0.00	0.00	0.00	
Total							0.00 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 5A

Floodplain Elevation 109.0 Based on floodplain delineation and LiDAR information

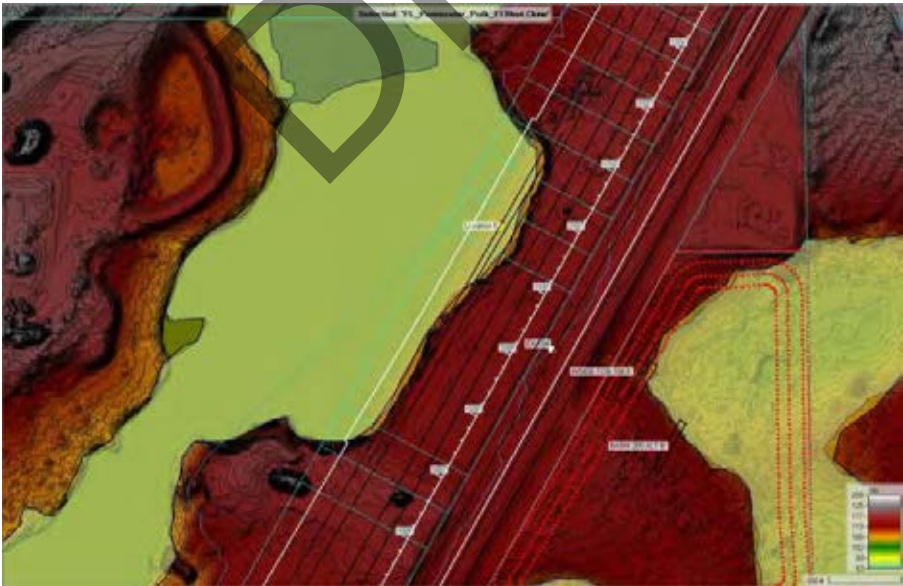
SHGWT Elevations 108 ft from Basin 200 ALT C

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
104.00	0.97						
105.00	0.97						
106.00	0.92						
107.00	0.86						
108.00	0.81						
109.00	0.75	0.78	0.78	0.83	0.86	8.84	0.86
110.00				0.88	0.91	7.98	
111.00				0.93	0.96	7.08	
112.00				0.98	1.01	6.12	
113.00				1.03	1.06	5.12	
114.00				1.08	1.11	4.06	
115.00				1.14	1.17	2.95	
116.00				1.19	0.99	1.79	
117.00				0.79	0.60	0.80	
118.00				0.40	0.20	0.20	
				0.00	0.00		
Total						0.86	0.08 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 5B

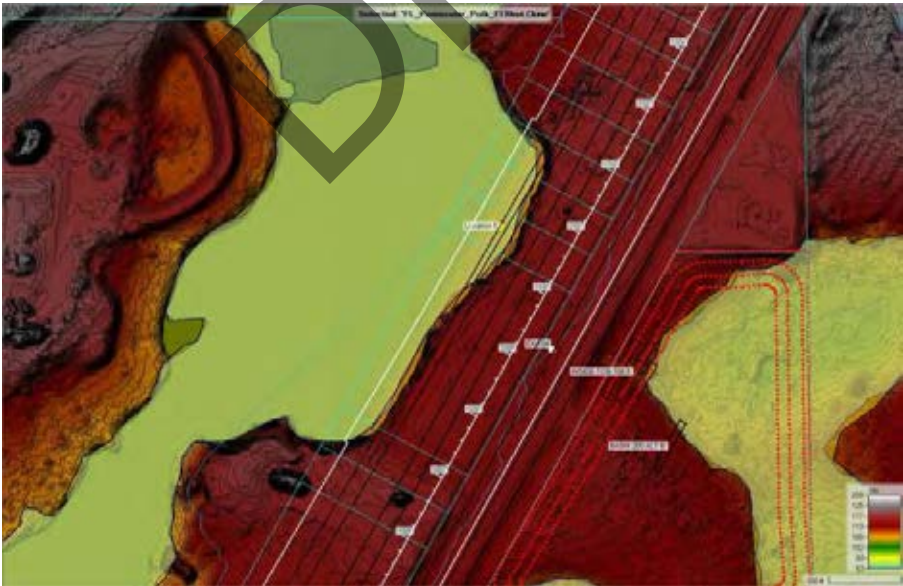
Floodplain Elevation 109.0 Based on floodplain delineation and LiDAR information

SHGWT Elevations 108 ft from Basin 200 ALT C

Floodplain Zone A BFE Elevation -

				Cut			
Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Compensation Cummulative Volume (acre-ft)
104.00	0.97						
105.00	0.97						
106.00	0.92						
107.00	0.86						
108.00	0.81						
109.00	0.75	0.78	0.78	0.79	0.82	8.01	0.82
110.00				0.85	0.88	7.19	
111.00				0.90	0.93	6.31	
112.00				0.96	0.99	5.38	
113.00				1.01	1.04	4.40	
114.00				1.07	1.10	3.36	
115.00				1.13	0.99	2.26	
116.00				0.85	0.71	1.27	
117.00				0.56	0.42	0.56	
118.00				0.28	0.14	0.14	
				0.00	0.00		
Total							Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.
				0.78	0.82	0.04 ac-ft	

Notes: Cut condition assumes a 1:4 side slope.



Subject:

FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538

Floodplain Impact Analysis Worksheet

Location 5C

Floodplain Elevation

109.0

Based on floodplain delineation and LiDAR information

SHGWT Elevations

108 ft from Basin 200 ALT C

Floodplain Zone

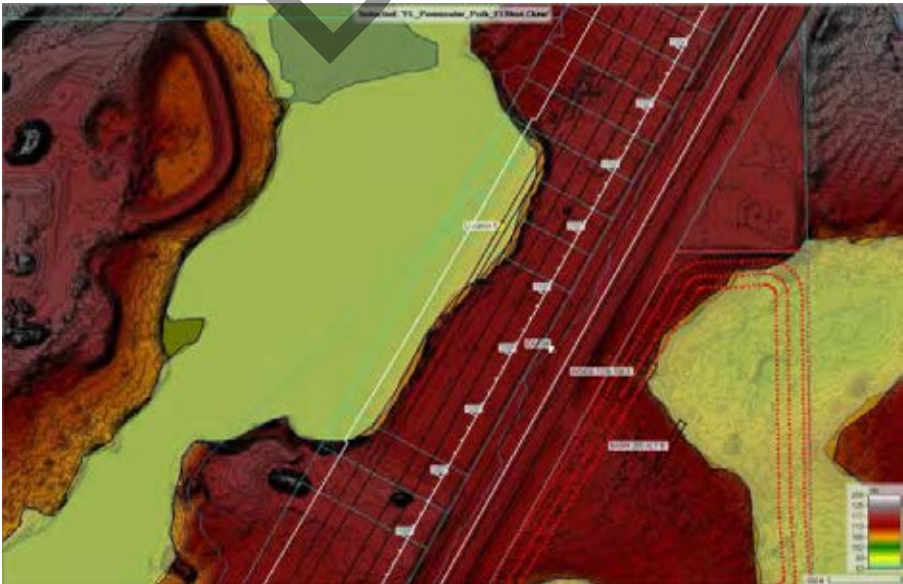
A

BFE Elevation

-

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
104.00	0.97						
105.00	0.97						
106.00	0.92						
107.00	0.86						
108.00	0.81			0.83	0.86	9.26	0.86
109.00	0.75	0.78	0.78	0.89	0.92	8.40	
110.00				0.95	0.98	7.48	
111.00				1.00	0.96	6.50	
112.00				0.92	0.89	5.54	
113.00				0.85	0.81	4.66	
114.00				0.77	0.73	3.85	
115.00				0.69	0.66	3.12	
116.00				0.62	0.58	2.46	
117.00				0.54	0.50	1.88	
118.00				0.46	0.42	1.38	
119.00				0.38	0.35	0.96	
120.00				0.31	0.27	0.62	
121.00				0.23	0.19	0.35	
122.00				0.15	0.12	0.16	
123.00				0.08	0.04	0.04	
124.00				0.00	0.00		
Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.							
Total			0.78			0.86	0.08 ac-ft

Notes: Cut condition assumes a 1:3 side slope.



Patel, Greene & Associates, LLC

Designed By: CY
Date: 10/17/2025
Checked By: AM
Date: 10/20/2025

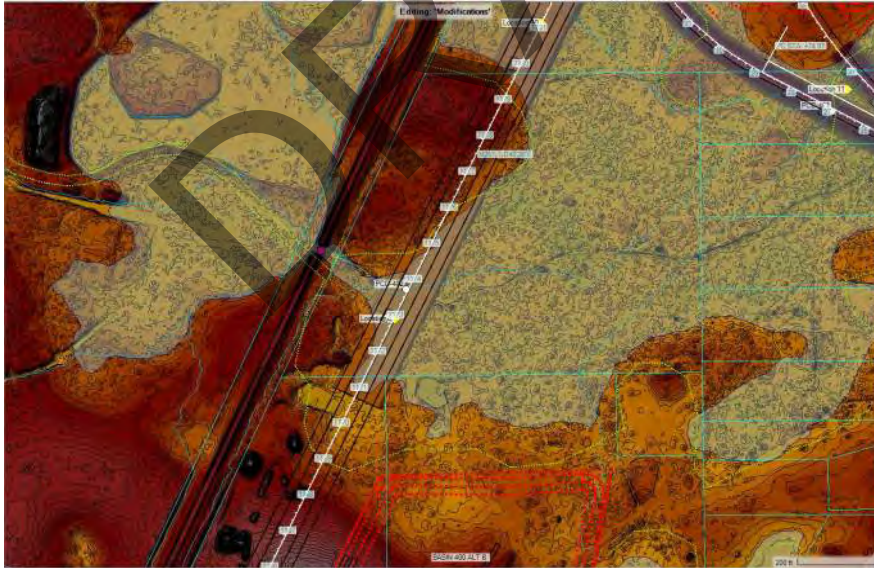
Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 7A

Floodplain Elevation	<u>110.0</u>	Based on floodplain delineation and LiDAR information
SHGWT Elevations	<u>108 ft from Basin 400 ALT B</u>	
Floodplain Zone	<u>A</u>	BFE Elevation -

				Cut			
Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
108.00	1.92			5.23	5.33	25.27	10.84
109.00	2.52	2.22	2.22	5.42	5.52	19.94	5.52
110.00	2.78	2.65	4.87	5.61	5.71	14.43	
111.00				5.81	4.84	8.72	
112.00				3.87	2.91	3.88	
113.00				1.94	0.97	0.97	
114.00				0.00	0.00	0.00	
115.00							
				Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.			
Total		4.87				10.84	5.97 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 7B

Floodplain Elevation 110.0 Based on floodplain delineation and LiDAR information

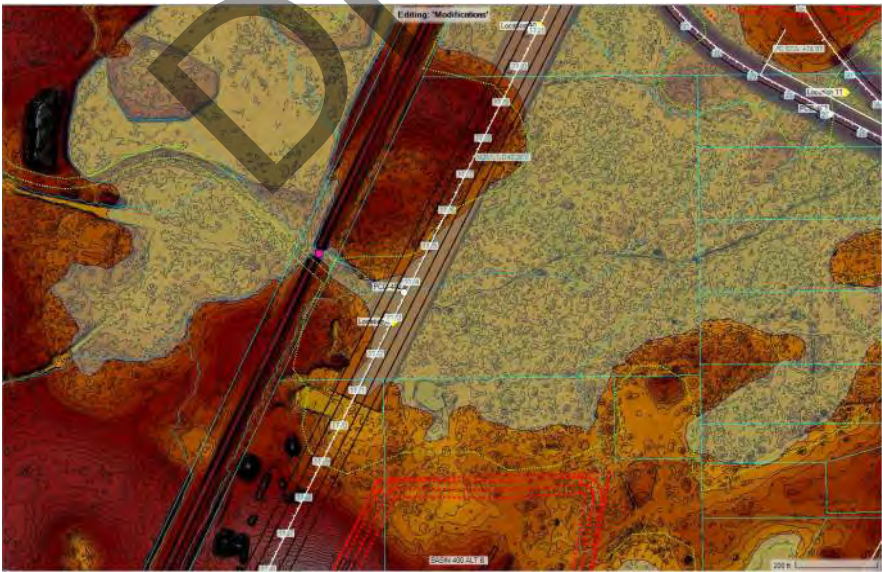
SHGWT Elevations 108 ft from Basin 400 ALT B

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
108.00	1.92			3.70	3.74	24.93	7.56
109.00	2.52	2.22	2.22	3.78	3.82	21.19	3.82
110.00	2.78	2.65	4.87	3.86	3.65	17.37	
111.00				3.43	3.22	13.73	
112.00				3.00	2.79	10.51	
113.00				2.57	2.36	7.73	
114.00				2.14	1.93	5.37	
115.00				1.72	1.51	3.44	
116.00				1.29	1.08	1.94	
117.00				0.86	0.65	0.86	
118.00				0.43	0.22	0.22	
119.00				0.00	0.00	0.00	
120.00							
Total							

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 7C

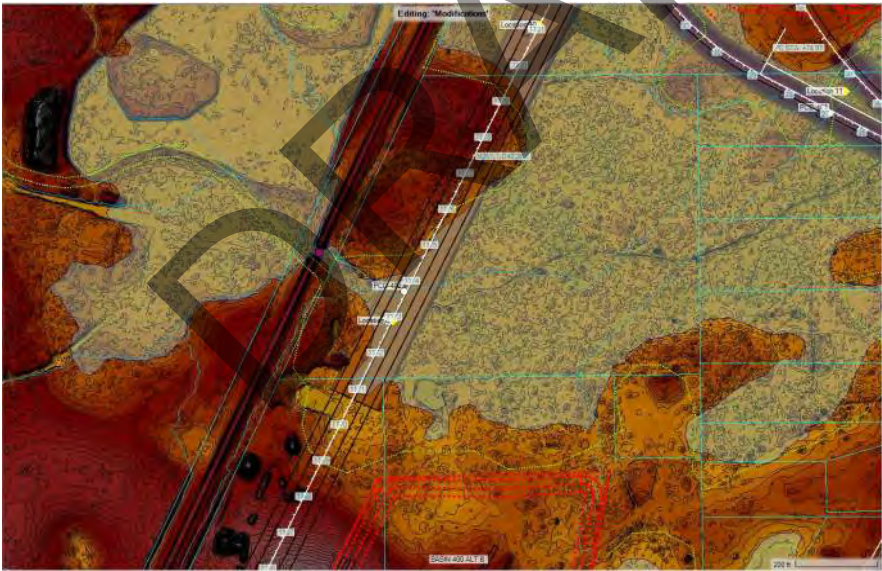
Floodplain Elevation 110.0 Based on floodplain delineation and LiDAR information

SHGWT Elevations 108 ft from Basin 400 ALT B

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
108.00	1.92			5.14	5.35	8.12	8.12
109.00	2.52	2.22	2.22	5.55	2.78	2.78	2.78
110.00	2.78	2.65	4.87	0.00	0.00	0.00	
111.00							
112.00							
113.00							
114.00							
115.00							
				Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.			
Total			4.87			8.12	3.25 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 8A

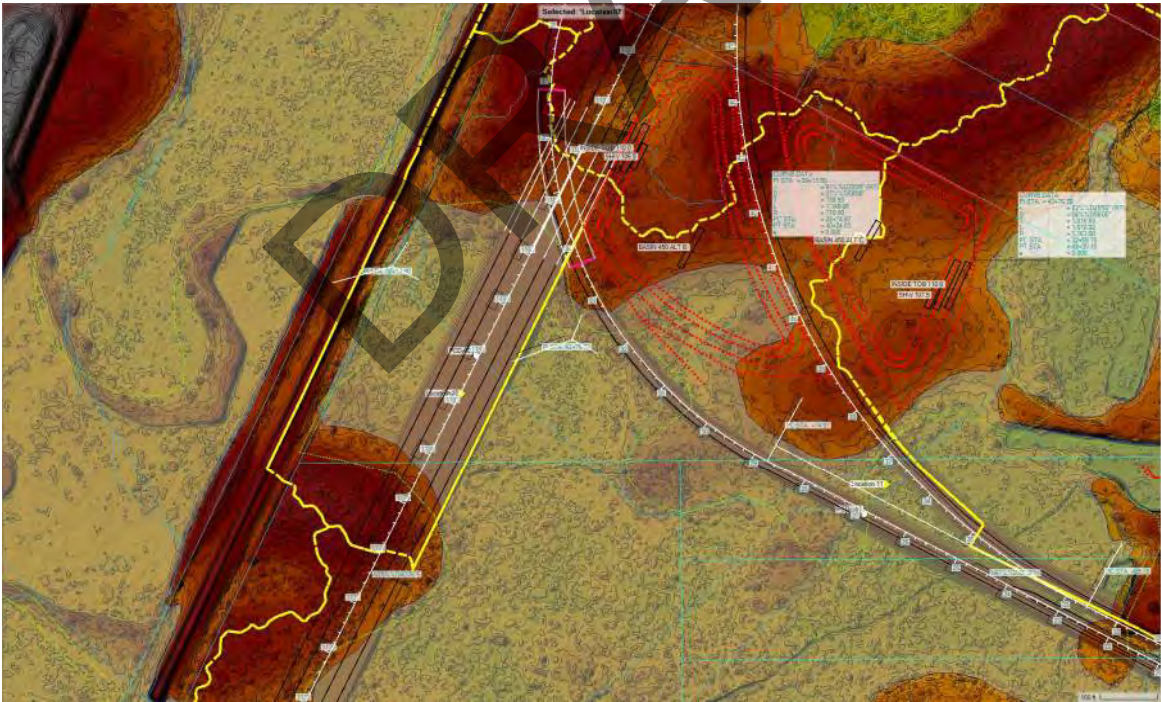
Floodplain Elevation 110.0 Based on floodplain delineation and LiDAR information

SHGWT Elevations 108 ft from Basin 400 ALT B

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
106.00	0.00			0.18			
107.00	0.30			0.26			
108.00	0.71	0.51	0.51	0.33			
109.00	1.31	1.01	1.52	0.41			
110.00	1.57	1.44	2.96	0.49			
111.00				0.24			
112.00				0.00			
				FPC Area 8 is combined with FPC 7			
				Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.			
Total			2.96			0.00	-2.96 ac-ft

Notes: Cut condition assumes a 1:3 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 8B

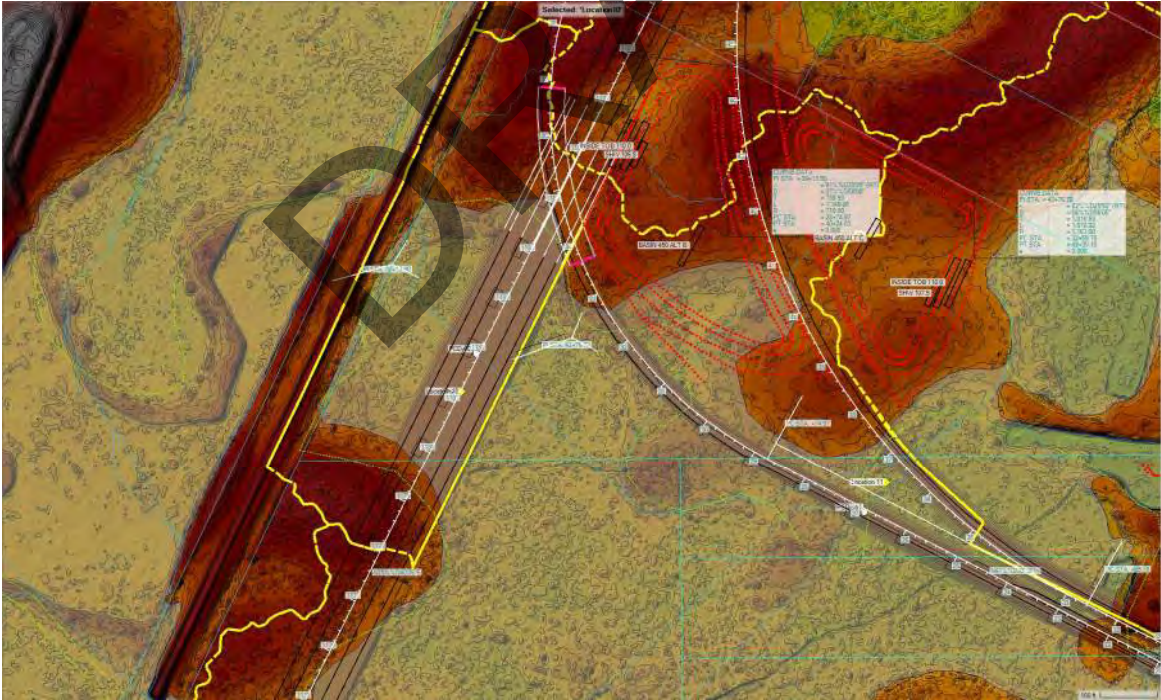
Floodplain Elevation 110.0 Based on floodplain delineation and LiDAR information

SHGWT Elevations 108 ft from Basin 400 ALT B

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
106.00	0.00			0.36			
107.00	0.30			0.41			
108.00	0.71	0.51	0.51	0.46			
109.00	1.31	1.01	1.52	0.51			
110.00	1.57	1.44	2.96	0.34			
111.00				0.17			
112.00				0.00			
				FPC Area 8 is combined with FPC 7			
				Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.			
Total			2.96			0.00	-2.96 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 8C

Floodplain Elevation 110.0 Based on floodplain delineation and LiDAR information

SHGWT Elevations 108 ft from Basin 400 ALT B

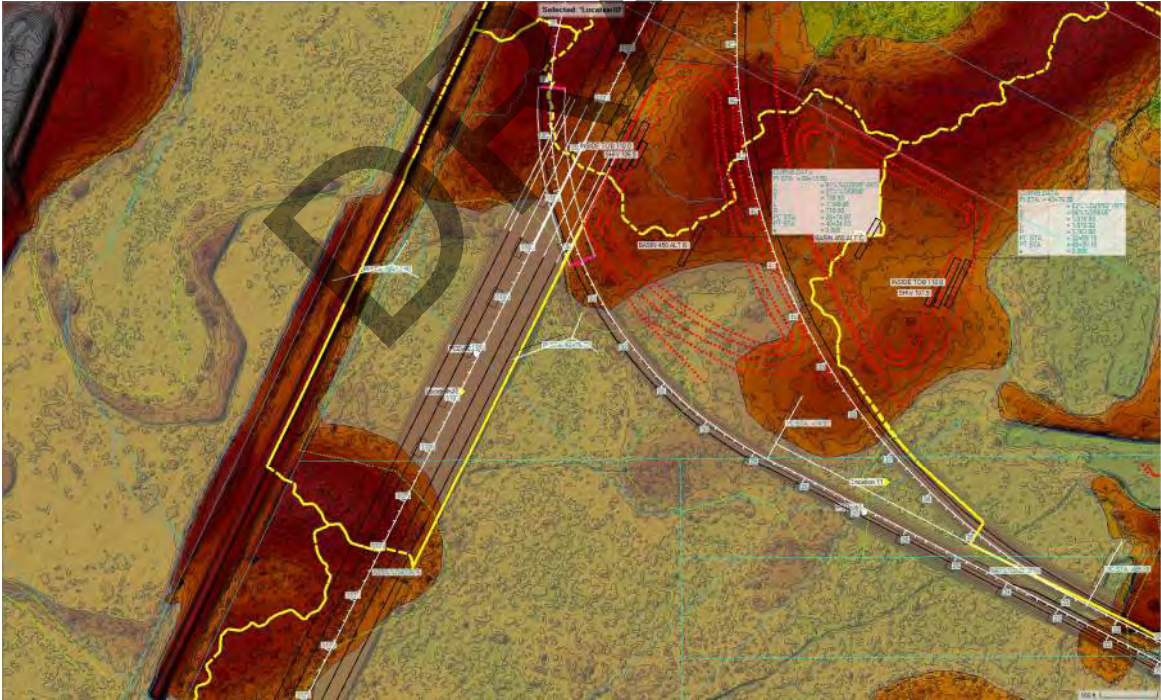
Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
106.00	0.00			0.13			
107.00	0.30			0.18			
108.00	0.71	0.51	0.51	0.23			
109.00	1.31	1.01	1.52	0.28			
110.00	1.57	1.44	2.96	0.33			
111.00				0.16			
112.00				0.00			
113.00							
Total						0.00	-2.96 ac-ft

FPC Area 8 is combined with FPC 7

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:3 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 9A

Floodplain Elevation 110.5 Based on floodplain delineation and LiDAR information

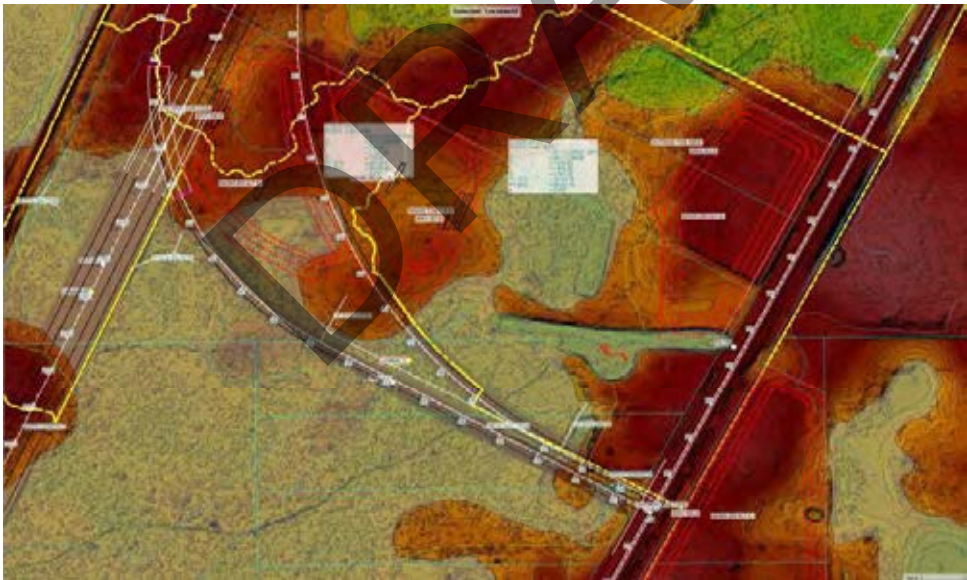
SHGWT Elevations 108.5 ft from Basin 450 ALT C

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
108.50	0.45			2.65	2.73	8.35	5.19
109.50	3.26	1.86	1.86	2.81	2.46	5.62	2.46
110.50	3.26	3.26	5.12	2.11	1.76	3.16	
111.50				1.40	1.05	1.40	
112.50				0.70	0.35	0.35	
113.50				0.00	0.00		
Total						5.19	0.07 ac-ft

Net Floodplain Impact (-)/Creation (+)
within Station Range indicated due to
proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 9B

Floodplain Elevation 110.5 Based on floodplain delineation and LiDAR information

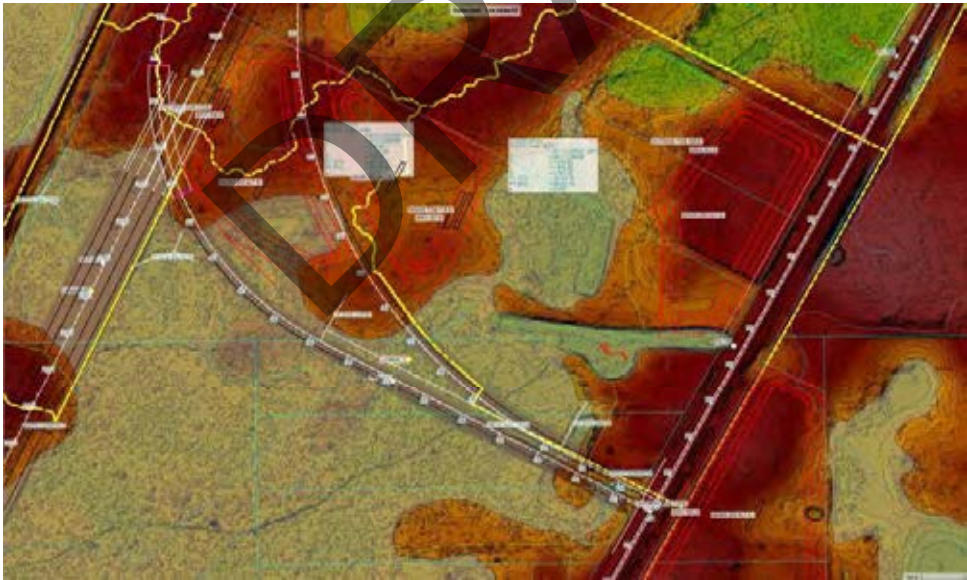
SHGWT Elevations 108.5 ft from Basin 450 ALT C

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
108.50	0.45			2.65	2.74	11.68	5.66
109.50	3.26	1.86	1.86	2.83	2.92	8.94	2.92
110.50	3.26	3.26	5.12	3.01	2.64	6.02	
111.50				2.26	1.88	3.38	
112.50				1.50	1.13	1.50	
113.50				0.75	0.38	0.38	
114.50				0.00	0.00	0.00	
Total						5.66	0.55 ac-ft

Net Floodplain Impact (-)/Creation (+)
within Station Range indicated due to
proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 9C

Floodplain Elevation 110.5 Based on floodplain delineation and LiDAR information

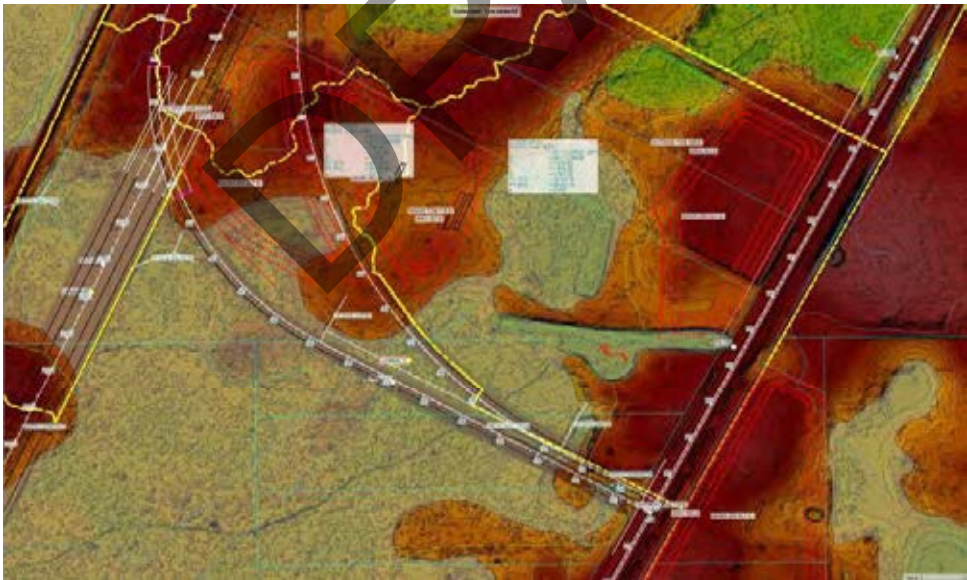
SHGWT Elevations 108.5 ft from Basin 450 ALT C

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
108.50	0.45			3.84	3.95	14.56	8.13
109.50	3.26	1.86	1.86	4.06	4.18	10.61	4.18
110.50	3.26	3.26	5.12	4.29	3.58	6.44	
111.50				2.86	2.15	2.86	
112.50				1.43	0.72	0.72	
113.50				0.00	0.00	0.00	
Total							3.01 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 10A

Floodplain Elevation 111.6 Based on BFE

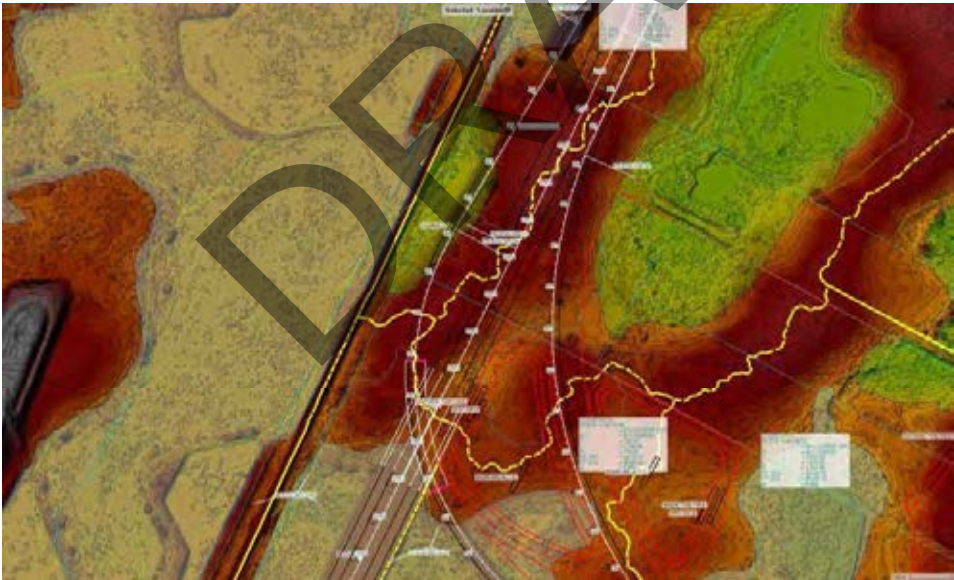
SHGWT Elevations 108.5 ft from Basin 450 ALT C

Floodplain Zone AE BFE Elevation 111.6

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
108.60	0.00			0.25	0.32	0.72	0.72
109.60	0.20	0.10	0.10	0.39	0.30	0.40	0.40
110.60	0.30	0.25	0.35	0.20	0.10	0.10	0.10
111.60	0.35	0.33	0.68	0.00	0.00	0.00	
Total						0.72	0.04 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 11A

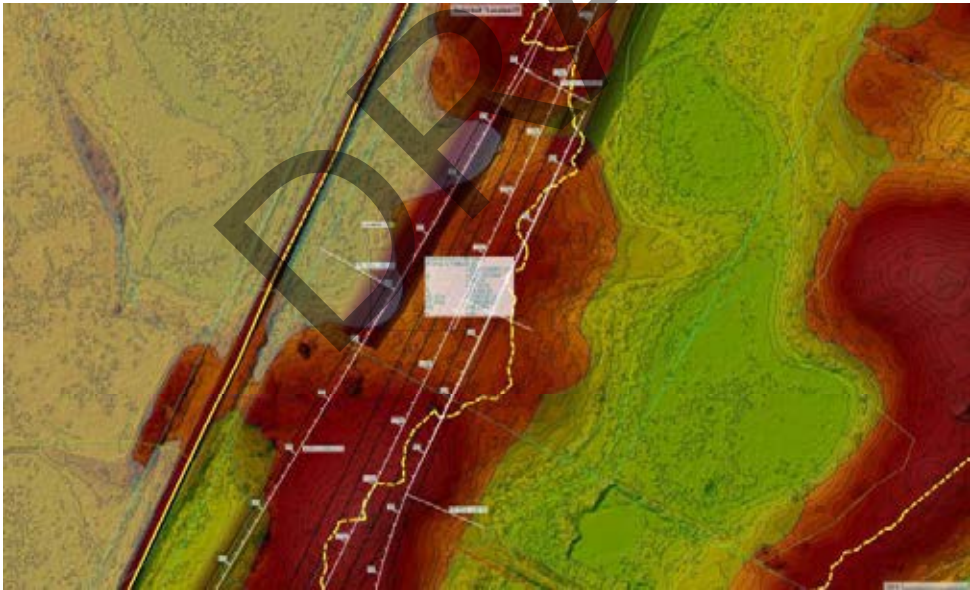
Floodplain Elevation 110.0 Based on floodplain delineation and LiDAR information

SHGWT Elevations 108.5 ft from Basin 450 ALT C

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
108.50	0.10			0.33	0.37	0.77	0.67
109.50	0.17	0.14	0.14	0.40	0.30	0.40	0.30
110.50	0.19	0.18	0.32	0.20	0.10	0.10	
111.50				0.00	0.00	0.00	
				Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.			
Total			0.32			0.67	0.35 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 12A

Floodplain Elevation 110.5 Based on BFE

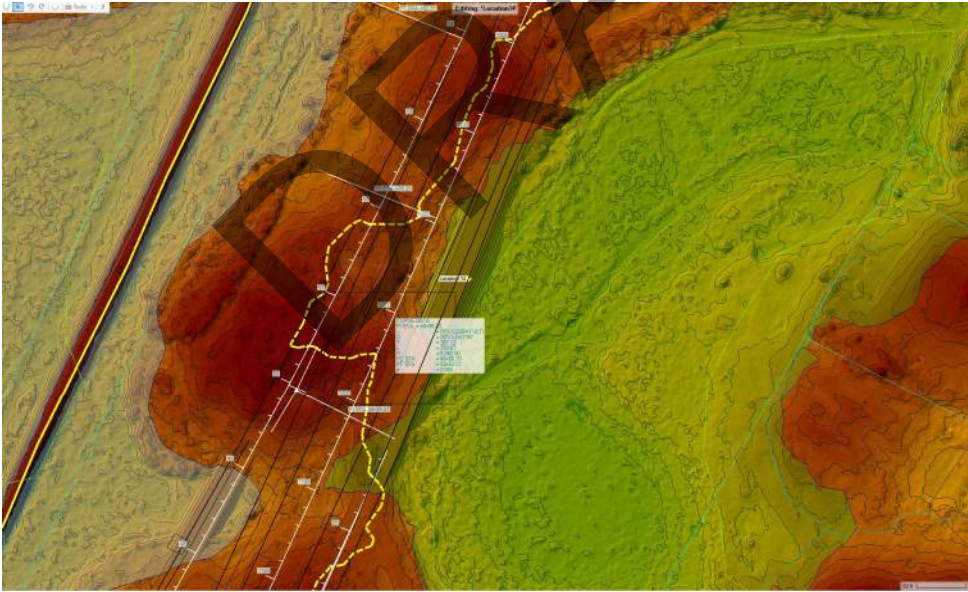
SHGWT Elevations 108.5 ft from Basin 450 ALT C

Floodplain Zone AE BFE Elevation 110.5

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
108.50	0.20			0.40	0.47	1.72	1.06
109.50	0.40	0.30	0.30	0.53	0.60	1.26	0.60
110.50	0.58	0.49	0.79	0.66	0.50	0.66	
111.50				0.33	0.17	0.17	
112.50				0.00	0.00	0.00	
Total						1.06	0.27 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 13A

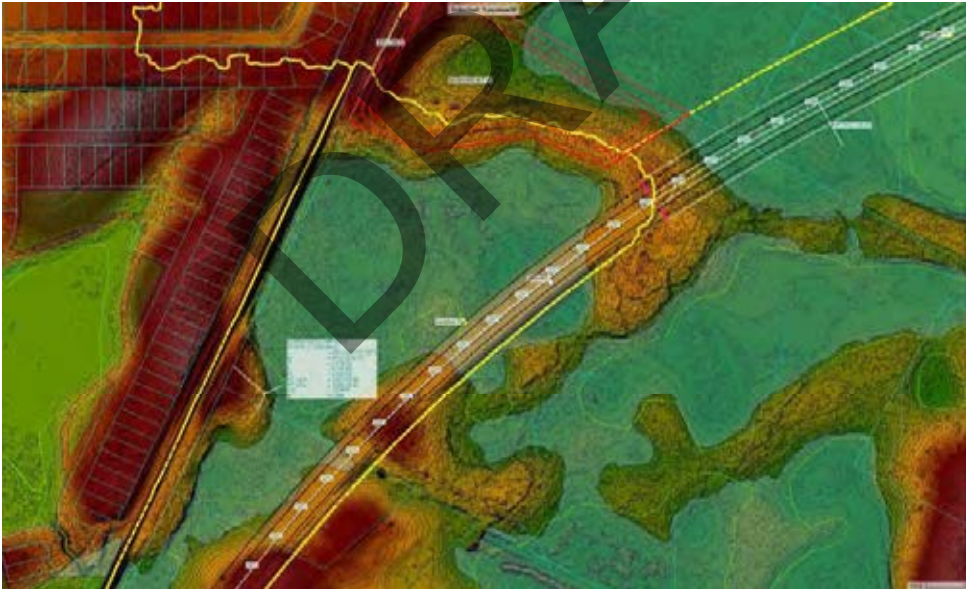
Floodplain Elevation 106.5 Based on floodplain delineation and LiDAR information

SHGWT Elevations - Calculations start at 101.5 ft based on existing ground due to lack of SHGWT elevations

Floodplain Zone A BFE Elevation -

				Cut			
Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Compensation Cummulative Volume (acre-ft)
101.50	0.00	0.00	0.00	1.32	1.37	6.54	5.94
102.50	0.88	0.44	0.44	1.41	1.45	5.18	4.58
103.50	0.90	0.89	1.33	1.49	1.34	3.73	3.13
104.50	1.00	0.95	2.28	1.19	1.04	2.39	1.79
105.50	1.10	1.05	3.33	0.89	0.75	1.35	0.75
106.50	1.20	1.15	4.48	0.60	0.45	0.60	
107.50				0.30	0.15	0.15	
108.50				0.00			
Total							Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.
							1.46 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 13B

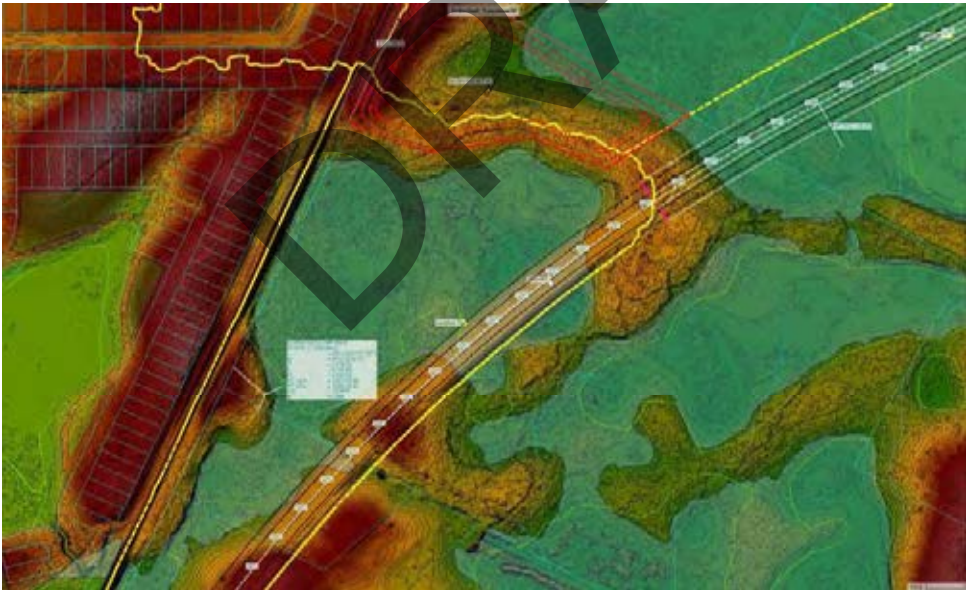
Floodplain Elevation 106.5 Based on floodplain delineation and LiDAR information

SHGWT Elevations - Calculations start at 101.5 ft based on existing ground due to lack of SHGWT elevations

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
101.50	0.00	0.00	0.00	1.08	1.16	8.14	7.00
102.50	0.88	0.44	0.44	1.24	1.32	6.98	5.84
103.50	0.90	0.89	1.33	1.39	1.47	5.67	4.53
104.50	1.00	0.95	2.28	1.55	1.63	4.20	3.06
105.50	1.10	1.05	3.33	1.71	1.43	2.57	1.43
106.50	1.20	1.15	4.48	1.14	0.86	1.14	
107.50				0.57	0.29	0.29	
108.50				0.00			
109.50							
Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.							
Total			4.48			7.00	2.52 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



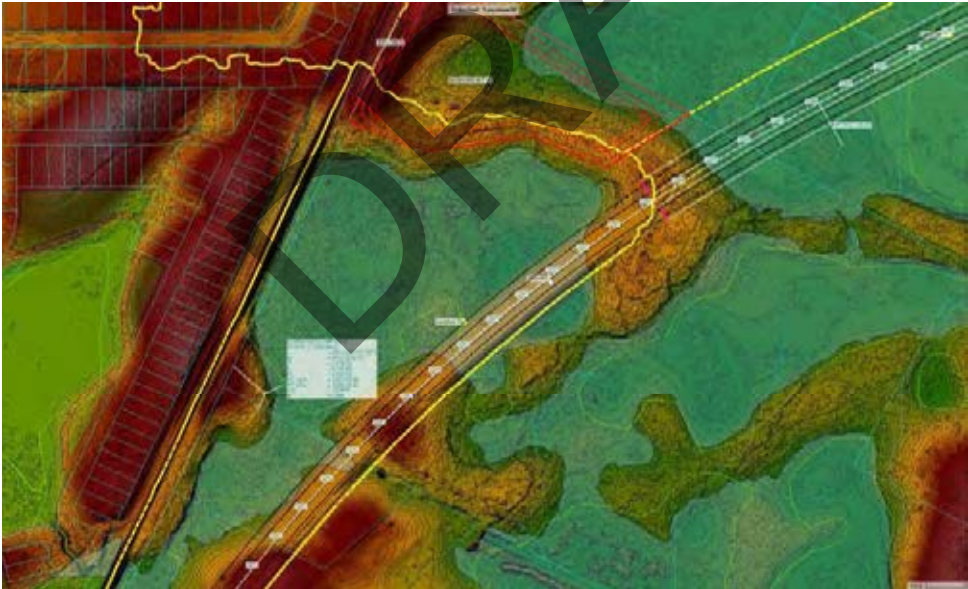
Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 13C

Floodplain Elevation	106.5	Based on floodplain delineation and LiDAR information
SHGWT Elevations	-	Calculations start at 101.5 ft based on existing ground due to lack of SHGWT elevations
Floodplain Zone	A	BFE Elevation -

				Cut			
Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Compensation Cummulative Volume (acre-ft)
101.50	0.00	0.00	0.00	1.09	1.15	5.90	5.66
102.50	0.88	0.44	0.44	1.20	1.26	4.75	4.52
103.50	0.90	0.89	1.33	1.31	1.37	3.50	3.26
104.50	1.00	0.95	2.28	1.42	1.19	2.13	1.90
105.50	1.10	1.05	3.33	0.95	0.71	0.95	0.71
106.50	1.20	1.15	4.48	0.47	0.24	0.24	
107.50				0.00			
108.50							
Total							Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.
				4.48		5.66	1.18 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 14A

Floodplain Elevation 104.5 Based on floodplain delineation and LiDAR information and crown elevation along US 17/92

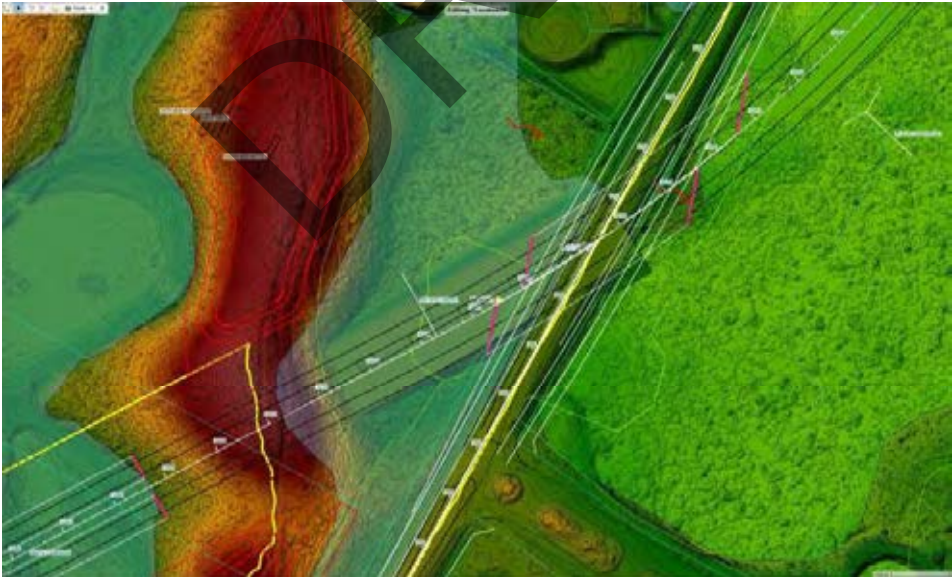
SHGWT Elevations - Calculations start at 98.5 ft based on existing ground due to lack of SHGWT elevations

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
98.50	0.30	0.00	0.00	0.98	1.03	12.70	7.62
99.50	0.93	0.62	0.62	1.08	1.13	11.67	6.59
100.50	1.21	1.07	1.69	1.17	1.22	10.55	5.47
101.50	1.21	1.21	2.90	1.27	1.32	9.33	4.25
102.50	1.21	1.21	4.11	1.37	1.42	8.01	2.93
103.50	1.21	1.21	5.32	1.46	1.51	6.59	1.51
104.50	1.21	1.21	6.53	1.56	1.61	5.08	
105.50				1.66	1.71	3.47	
106.50				1.76	1.32	1.76	
107.50				0.88	0.44	0.44	
108.50				0.00	0.00	0.00	
Total						7.62	1.10 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 14B

Floodplain Elevation 104.5 Based on floodplain delineation and LiDAR information and crown elevation along US 17/92

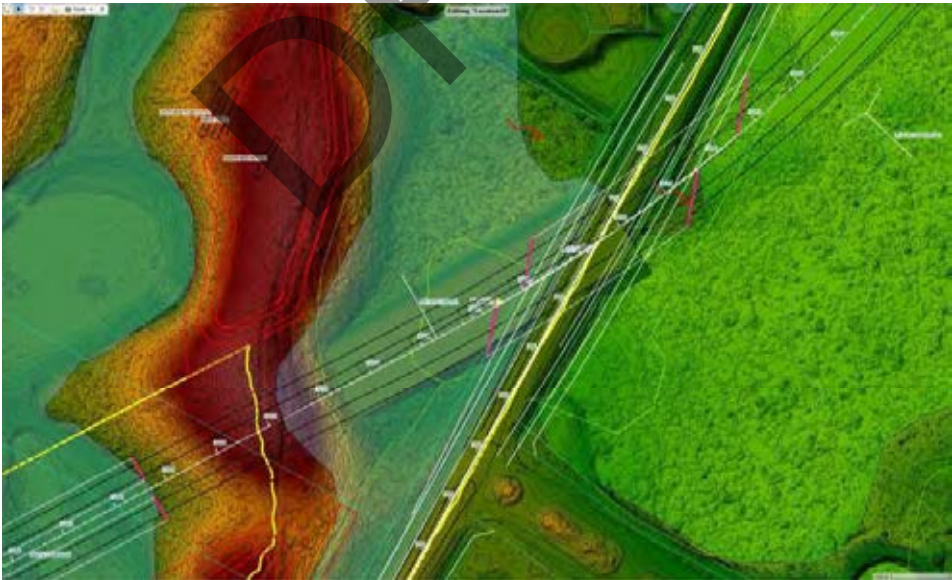
SHGWT Elevations - Calculations start at 98.5 ft based on existing ground due to lack of SHGWT elevations

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
98.50	0.30	0.00	0.00	1.70	1.76	22.44	12.24
99.50	0.93	0.62	0.62	1.81	1.87	20.69	10.49
100.50	1.21	1.07	1.69	1.93	1.99	18.82	8.62
101.50	1.21	1.21	2.90	2.04	2.10	16.83	6.63
102.50	1.21	1.21	4.11	2.15	2.21	14.74	4.54
103.50	1.21	1.21	5.32	2.27	2.33	12.53	2.33
104.50	1.21	1.21	6.53	2.38	2.44	10.20	
105.50				2.49	2.55	7.77	
106.50				2.61	2.29	5.22	
107.50				1.96	1.63	2.93	
108.50				1.30	0.98	1.30	
109.50				0.65	0.33	0.33	
110.50				0.00	0.00	0.00	
Total							5.72 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 14C

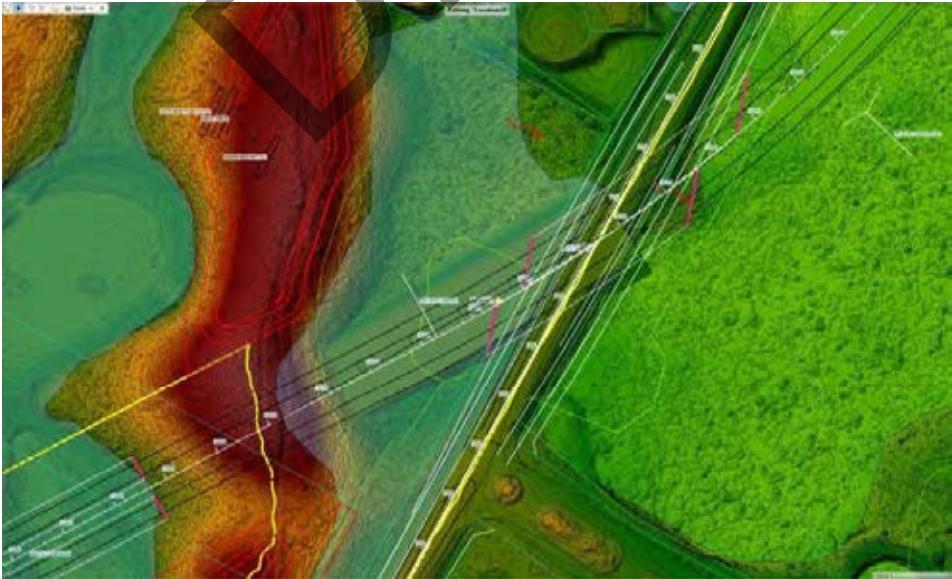
Floodplain Elevation 104.5 Based on floodplain delineation and LiDAR information and crown elevation along US 17/92

SHGWT Elevations - Calculations start at 98.5 ft based on existing ground due to lack of SHGWT elevations

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
98.50	0.30	0.00	0.00	0.91	0.95	12.24	6.86
99.50	0.93	0.62	0.62	0.99	1.04	11.29	5.91
100.50	1.21	1.07	1.69	1.08	1.12	10.25	4.87
101.50	1.21	1.21	2.90	1.16	1.20	9.13	3.75
102.50	1.21	1.21	4.11	1.24	1.29	7.93	2.55
103.50	1.21	1.21	5.32	1.33	1.27	6.65	1.27
104.50	1.21	1.21	6.53	1.20	1.13	5.38	
105.50				1.06	1.00	4.25	
106.50				0.93	0.87	3.26	
107.50				0.80	0.73	2.39	
108.50				0.66	0.60	1.66	
109.50				0.53	0.47	1.07	
110.50				0.40	0.34	0.60	
111.50				0.27	0.20	0.27	
112.50				0.13	0.07	0.07	
113.50				0.00		0.00	
					Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.		
Total			6.53		6.86	0.33 ac-ft	

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 15A

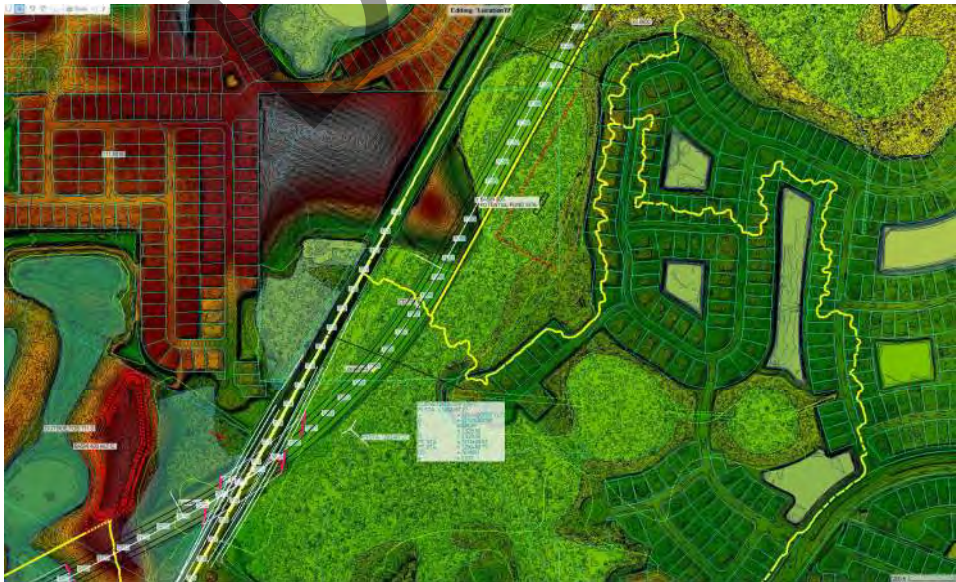
Floodplain Elevation 96.9 Based on BFE

SHGWT Elevations 94.0 ft from Basin 700 ALT B

Floodplain Zone AE BFE Elevation 96.9

				Cut			
Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
94.00	0.00	0.00	0.00	3.83	4.13	6.35	6.35
95.00	1.00	0.50	0.50	4.43	2.22	2.22	2.22
96.00	2.50	1.75	2.25	0.00	0.00	0.00	0.00
97.00	5.02	3.76	6.01				
98.00							

Notes: Cut condition assumes a 1:2 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 16A

Floodplain Elevation 90.4 Based on BFE
 SHGWT Elevations - Calculations start at 88.4 ft based on existing ground due to lack of SHGWT elevations
 Floodplain Zone AE BFE Elevation 90.4

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cumulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cumulative Volume (acre-ft)	Compensation Cumulative
88.40	1.09	0.00	0.00	1.75	1.86	5.01	3.92
89.40	1.30	1.20	1.20	1.96	2.07	3.15	2.07
90.40	2.65	1.98	3.17	2.17	1.09	1.09	
91.40				0.00	0.00	0.00	
				Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.			
Total			3.17				3.92
							0.75 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 18A

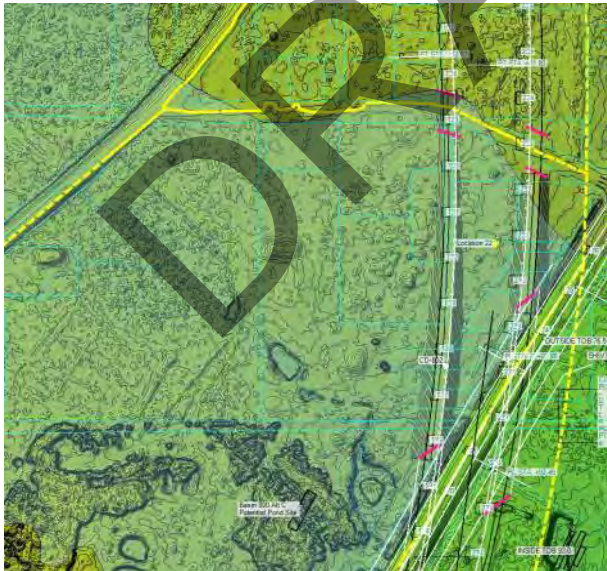
Floodplain Elevation 82.5 Based on floodplain delineation and LiDAR information

SHGWT Elevations - Calculations start at 77.5 ft based on existing ground due to lack of SHGWT elevations

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
77.50	0.00	0.00	0.00	1.60	1.67	11.95	9.68
78.50	0.71	0.36	0.36	1.73	1.80	10.29	8.01
79.50	0.85	0.78	1.14	1.87	1.94	8.49	6.21
80.50	1.00	0.93	2.06	2.00	2.07	6.55	4.28
81.50	1.10	1.05	3.11	2.14	2.21	4.48	2.21
82.50	0.85	0.98	4.09	2.27	1.71	2.28	
83.50				1.14	0.57	0.57	
84.50				0.00	0.00	0.00	
Total							Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.
							5.59 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Location 18B

Floodplain Elevation	<u>82.5</u>	Based on floodplain delineation and LiDAR information
SHGWT Elevations	<u>-</u>	Calculations start at 77.5 ft based on existing ground due to lack of SHGWT elevations
Floodplain Zone	A	BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Compensation			
				Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cummulative Volume (acre-ft)
77.50	0.00	0.00	0.00	1.05	1.08	4.49	4.34
78.50	0.71	0.36	0.36	1.10	1.12	3.41	3.27
79.50	0.85	0.78	1.14	1.14	1.00	2.29	2.15
80.50	1.00	0.93	2.06	0.85	0.72	1.30	1.15
81.50	1.10	1.05	3.11	0.58	0.44	0.58	0.44
82.50	0.85	0.98	4.09	0.29	0.15	0.15	
83.50				0.00			
				Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.			
Total			4.09	4.34			0.26 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 19A

Floodplain Elevation 84.5 Based on floodplain delineation and LiDAR information

SHGWT Elevations 82.5 ft from Basin 900 ALT A

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
81.50							
82.50	0.20	0.10	0.10	1.17	1.22	3.19	2.52
83.50	0.40	0.30	0.40	1.26	1.30	1.97	1.30
84.50	0.50	0.45	0.85	1.34	0.67	0.67	0.00
85.50				0.00			
Total							Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.
				0.85		2.52	1.67 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 19B

Floodplain Elevation 84.5 Based on floodplain delineation and LiDAR information

SHGWT Elevations 82.5 ft from Basin 900 ALT A

Floodplain Zone A BFE Elevation -

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
81.50	0.00			0.99	1.06	2.74	1.99
82.50	0.20	0.10	0.10	1.12	0.94	1.68	0.94
83.50	0.40	0.30	0.40	0.75	0.56	0.75	
84.50	0.50	0.45	0.85	0.37	0.19	0.19	
85.50				0.00	0.00	0.00	
86.50							
Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.							
Total			0.85			1.99	1.14 ac-ft

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 20A

Floodplain Elevation 83.0 Based on floodplain delineation and LiDAR information

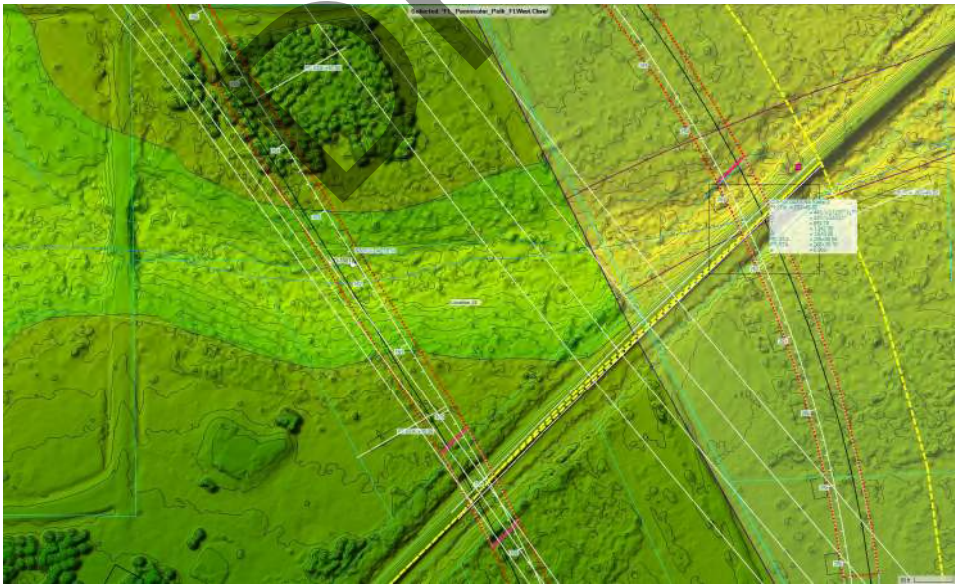
SHGWT Elevations - Calculations start at 78 ft based on existing ground due to lack of SHGWT elevations

Floodplain Zone AE BFE Elevation 79.0

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
78.00	0.09	0.00	0.00	0.49	0.52	3.61	3.61
79.00	0.14	0.12	0.12	0.55	0.58	3.09	3.09
80.00	0.19	0.17	0.28	0.61	0.64	2.51	2.51
81.00	0.20	0.20	0.48	0.67	0.70	1.87	1.87
82.00	0.21	0.21	0.68	0.73	0.77	1.17	1.17
83.00	0.22	0.22	0.90	0.80	0.40	0.40	0.40
84.00				0.00	0.00	0.00	
85.00							
Total							2.71 ac-ft

Net Floodplain Impact (-)/Creation (+) within Station Range indicated due to proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



Subject: FPID 451419-1-22-01, Central Polk Parkway East PD&E, South of US 17/92 to SR 538
Floodplain Impact Analysis Worksheet

Location 20B

Floodplain Elevation 83.0 Based on floodplain delineation and LiDAR information

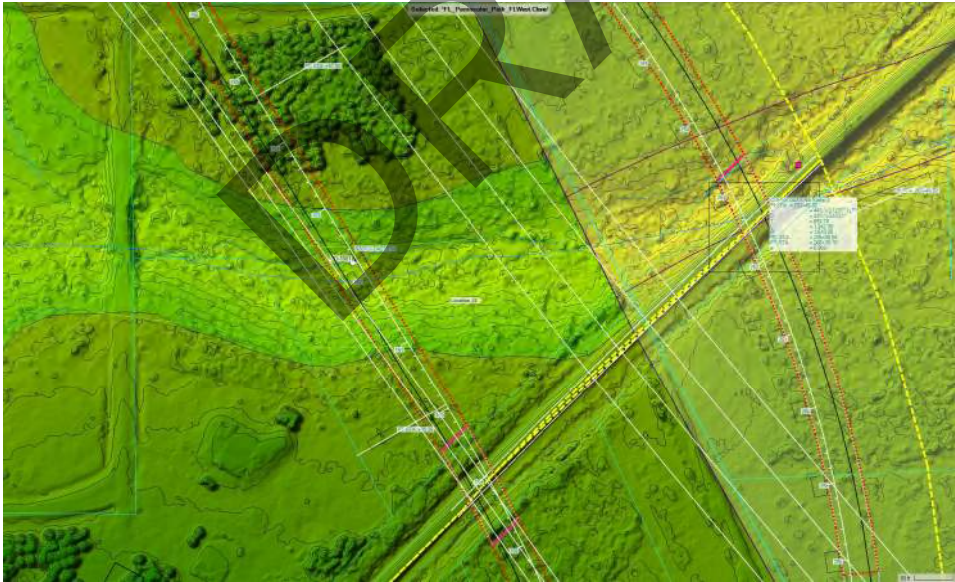
SHGWT Elevations - Calculations start at 78 ft based on existing ground due to lack of SHGWT elevations

Floodplain Zone AE BFE Elevation 79.0

Elevation (ft)	Fill Area (acre)	Fill Incremental Volume (acre-ft)	Fill Cummulative Volume (acre-ft)	Cut Area (acre)	Cut Incremental Volume (acre-ft)	Cut Cummulative Volume (acre-ft)	Cut Compensation Cummulative Volume (acre-ft)
78.00	0.09	0.00	0.00	0.43	0.46	4.06	2.90
79.00	0.14	0.12	0.12	0.49	0.52	3.60	2.44
80.00	0.19	0.17	0.28	0.55	0.58	3.08	1.92
81.00	0.20	0.20	0.48	0.61	0.64	2.50	1.34
82.00	0.21	0.21	0.68	0.67	0.70	1.86	0.70
83.00	0.22	0.22	0.90	0.73	0.76	1.16	0.00
84.00				0.79	0.40	0.40	
85.00				0.00	0.00	0.00	
Total						2.90	2.01 ac-ft

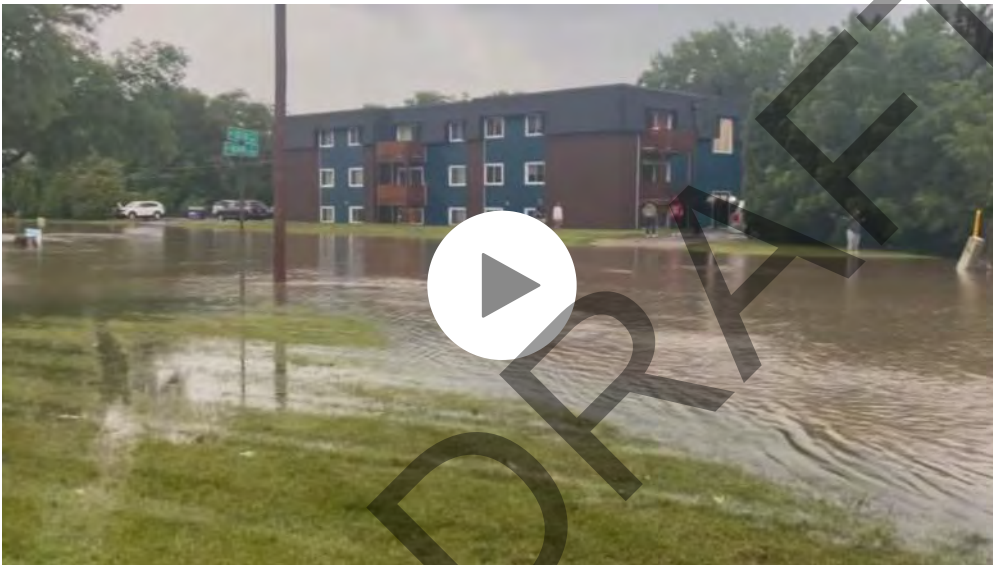
Net Floodplain Impact (-)/Creation (+)
within Station Range indicated due to
proposed improvements.

Notes: Cut condition assumes a 1:4 side slope.



APPENDIX I – CORRESPONDENCE, MEETING MINUTES, AND EXCERPTS

Flooding reported throughout Davenport on Friday



Severe storms dumped heavy rain Thursday evening, flooding roads, waterways and the lower levels of many buildings.

Author: wqad.com

Published: 7:57 PM CDT July 11, 2025

Updated: 7:57 PM CDT July 11, 2025

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Davenport neighborhood still underwater three months after Hurricane Ian



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It's been several months since Hurricane Ian made landfall, but one Davenport community is still underwater. Hurricane season has come and gone, but about three feet of water from Hurricane Ian remains in this Davenport community. "What you're seeing has never occurred here before," said Fred Daniell.



By: Rebecca Petit

Posted 6:44 PM, Jan 02, 2023 and last updated 10:30 AM, Jan 03, 2023

DAVENPORT, Fla. — It's been several months since Hurricane Ian made landfall, but one Davenport community is still underwater.

Hurricane season has come and gone, but about three feet of water from Hurricane Ian remains in this Davenport community.

"What you're seeing has never occurred here before," said Fred Daniell.

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Fred Daniell has lived in his home for 22 years and said he never experienced flooding like this. Daniell lives next to a lake. He said a seawall that was built for a new subdivision nearby changed the water flow, which he believes is causing his neighborhood to flood.

“As these subdivisions are being built and the water flows into the lake, there’s nowhere for that water to go. Recently if you look over here to my left, this is the last new subdivision that went in,” said Daniell.

He is having to pump water out of his shed, and his house is now collapsing at one end.

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“I’ve built a dyke around the home in order to protect the home. There are pumps running to keep the water out from under it,” Daniell said. “The sad part is FEMA denied my claim because I have flood insurance. Flood insurance in order to save the home tells me they’ll pay back \$1,000, and I’ve spent \$7,000.”

His neighbor has water up to the back wall of her house. “It’s very frustrating. Our septic is kind of iffy. You have to really watch what you put down the drains,” Beverly Brewer said.



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TAMPA (CHANGE) > | AUGUST 15, 2025



DAVENPORT FLOODING

Davenport residents say big development is causing flooding in their neighborhood

BY ASHONTI FORD | TAMPA

UPDATED 9:02 PM ET JAN. 02, 2023

DAVENPORT, Fla. — A small Polk County community says new development is causing flooding in their neighborhood.

What You Need To Know

- Residents in a community in Polk County are still dealing with flooding
- They assert the flooding happened because of a new development in the area
- Local officials dispute that claim, stating that they did not feel the flooding was because of new subdivisions

TAMPA (CHANGE) > | AUGUST 15, 2025

Daniell walked us around his property to show us how the water that's surrounding his home is loosening its foundation.

"I've been here for 22 years and Mrs. Brewer, who you're gonna be speaking to shortly, has been here since early 1975. If you look over here to our North, you see the new subdivision that was just finished," said Daniell.

"You can see the seawall when they came in here. First it was denied because of the flood plain, then somehow it got it approved and now has 4-foot build up for this entire subdivision."

County commissioners report they are looking for a long-term solution to this problem but believe there are already drains in place.

"There should be drains in place already," said County Commissioner Bill Braswell. "We believe those drains are most likely clogged with decades of build-up."

TAMPA (CHANGE) > | AUGUST 15, 2025

Davenport resident says new development is causing flooding in his neighborhood.

@BN9 @MyNews13

Watch on X

1:54 PM · Jan 2, 2023



3



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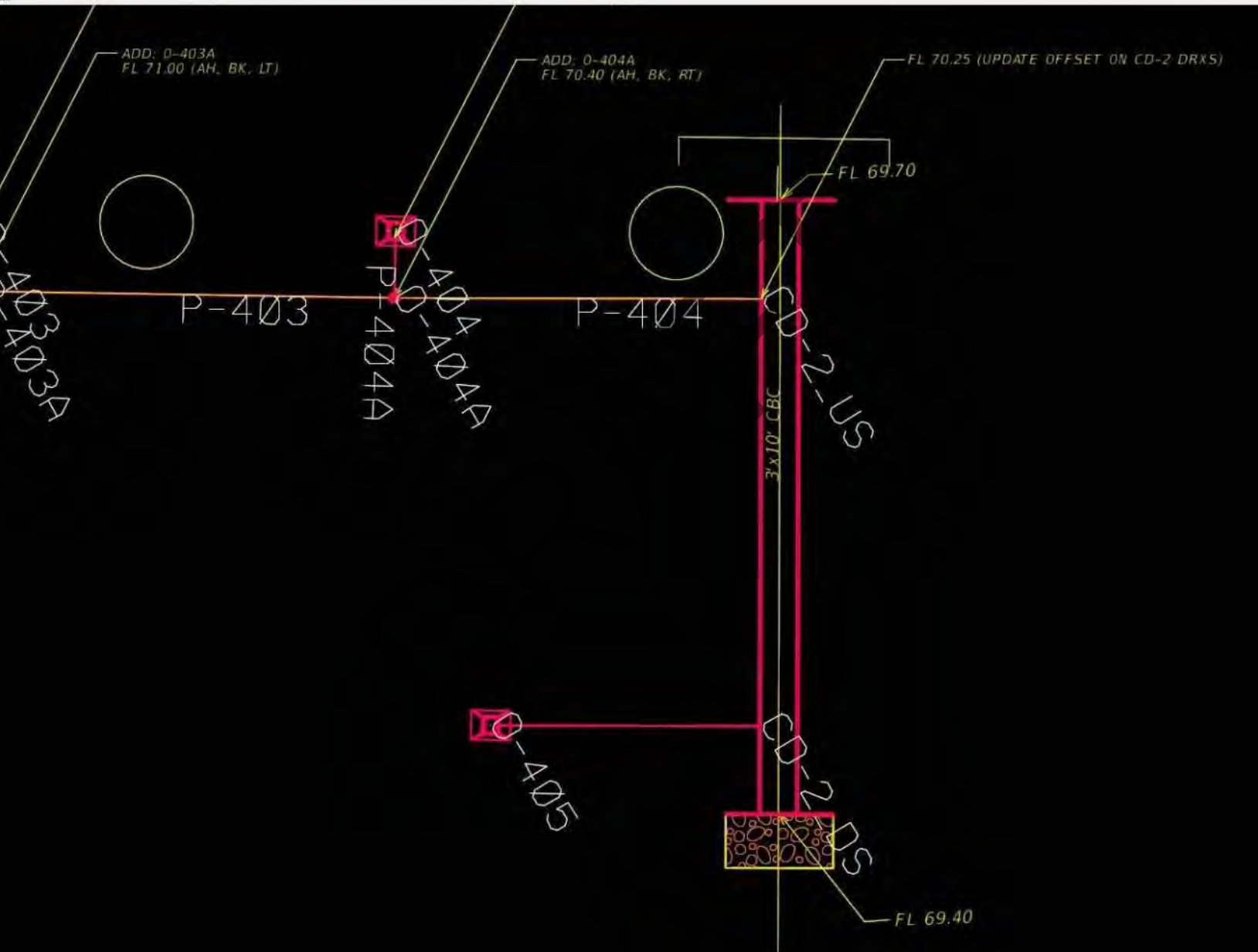
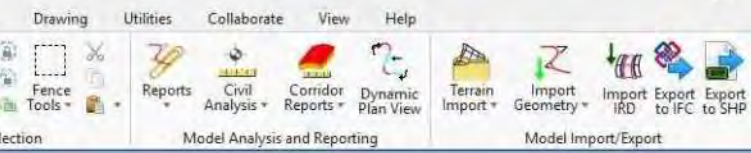
Daniell and his neighbors handed Spectrum Bay News 9 a flash drive full of documents showing the condition of the home, before and after the storms started rolling in - besides building structure details for the new development in the area.

"We've lived here for 42 years," said Beverly Brewer, a Davenport resident. "The pasture that's around us is underwater and it used to be cow pasture and Orange grove. We used to be Lakeview and now we're in the lake."

County commissioners said they did not feel the flooding was because of new subdivisions, adding that they are working to find a solution.

YOU MAY ALSO BE INTERESTED IN





COMPONENTS OF CONTRACT PLANS SET

ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS

A DETAILED INDEX APPEARS ON THE
KEY SHEET OF EACH COMPONENT

INDEX OF ROADWAY PLANS

SHEET NO.	SHEET DESCRIPTION
1	KEY SHEET
2	SUMMARY OF PAY ITEMS
3 - 4A	TYPICAL SECTION, ROADWAY AS-BUILT PAVEMENT DATA
5 - 7	SUMMARY OF QUANTITIES
8	SUMMARY OF DRAINAGE STRUCTURES
9	OPTIONAL MATERIAL TABULATION
10 - 15	PROJECT LAYOUT
16 - 22	VERTICAL CONTROL DATA
23 - 28	REFERENCE POINTS
29	GENERAL NOTES
30 - 36	ROADWAY PLAN SHEETS
37	DRAINAGE STRUCTURE
38	CULVERT DATA TABLE
39 - 42	REINFORCING BAR LIST
43	CONCRETE CULVERT DETAIL SHEET
44	CULVERT EXTENSION TRANSITION AND DOWELING DETAILS
45	REPORT OF CORE BORINGS
46 - 58	CROSS SECTIONS
59 - 61	STORM WATER POLLUTION PREVENTION PLAN
62	TRAFFIC CONTROL PLAN

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED 2008,
AND STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2007,
AS AMENDED BY CONTRACT DOCUMENTS.

APPLICABLE DESIGN STANDARDS MODIFICATIONS: 07/01/09

For Design Standards Modifications click on "Design Standards"
at the following web site: <http://www.dot.state.fl.us/rddesign>

REVISION

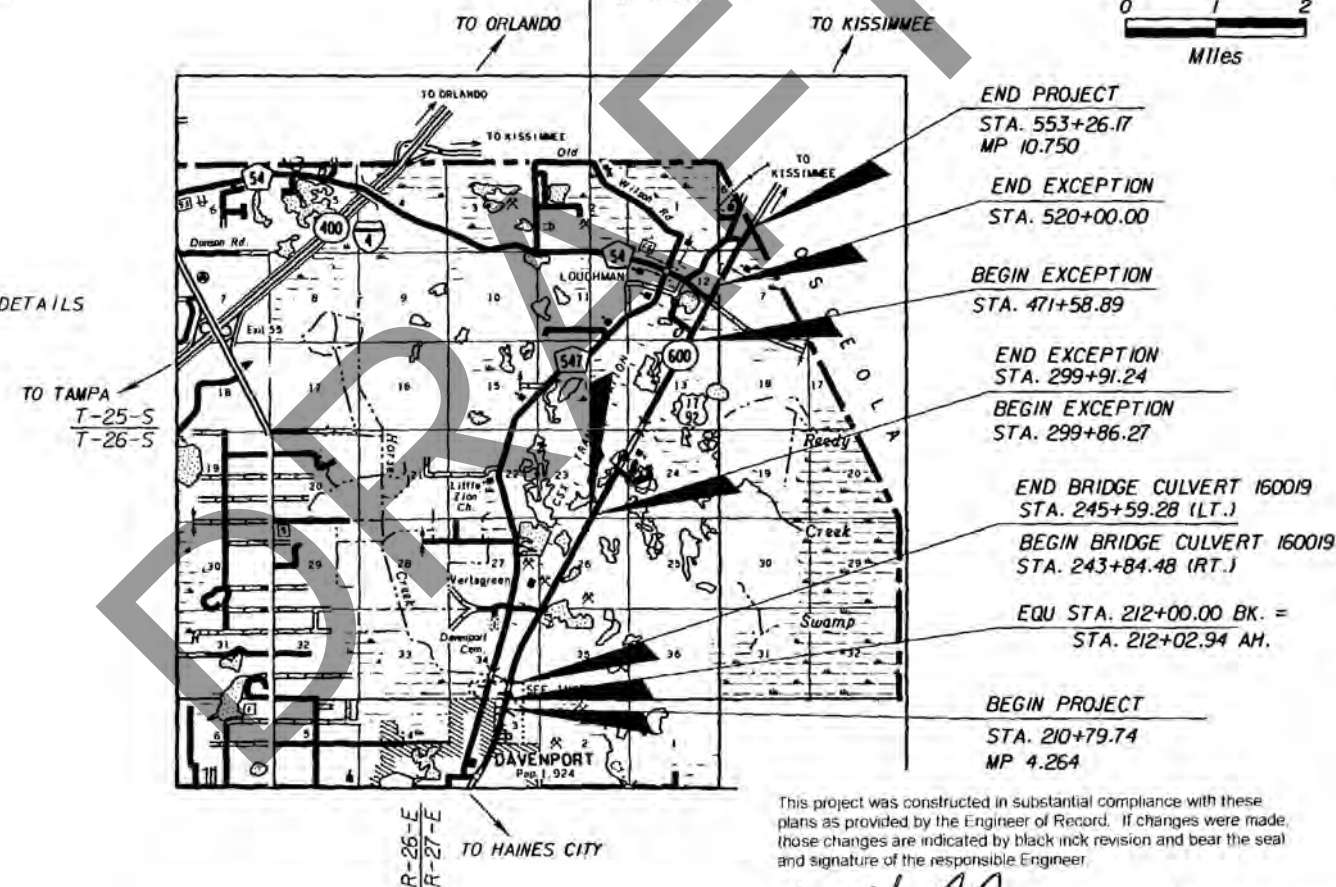
- 1 ROADWAY GENERAL NOTE SHEET 29 (REVISED 9/14/2009)
- 2 ROADWAY PLAN SHEET 33 AND TRAFFIC CONTROL PLAN SHEET 62 (REVISED 1-7-2010)
- 3 SIGNING AND PAVEMENT MARKING PLAN SHEETS S-32 AND S-36 (REVISED 3-4-2010)
- 4 ROADWAY PLAN SHEETS 8, 32, 48-51, AND STRUCTURE PLANS SHEETS 38, 41 AND 42 (REVISED 6-7-2010)
- 5 ROADWAY PLAN SHEETS 8 AND 32 AND STRUCTURE PLANS SHEETS 38, 39, 40 AND 41 (REVISED 6-29-2010)

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

FINAL "AS-BUILT" PLANS

FINANCIAL PROJECT ID 422391-I-52-01
(FEDERAL FUNDS)
POLK COUNTY (16050)
STATE ROAD NO. 600

DOT/AAR CROSSING NO. 622959Y
RR MP A 823.52, CSXT, INC.
STA. 299+88.99 =
MP 5.949



END PROJECT
STA. 553+26.17
MP 10.750

END EXCEPTION
STA. 520+00.00

BEGIN EXCEPTION
STA. 471+58.89

END EXCEPTION
STA. 299+91.24
BEGIN EXCEPTION
STA. 299+86.27

END BRIDGE CULVERT 160019
STA. 245+59.28 (LT.)
BEGIN BRIDGE CULVERT 160019
STA. 243+84.48 (RT.)

EQU STA. 212+00.00 BK. =
STA. 212+02.94 AH.

BEGIN PROJECT
STA. 210+79.74
MP 4.264

This project was constructed in substantial compliance with these
plans as provided by the Engineer of Record. If changes were made,
those changes are indicated by black ink revision and bear the seal
and signature of the responsible Engineer.

Will R. Jones 9/27/2010
Operation Center Engineer Date

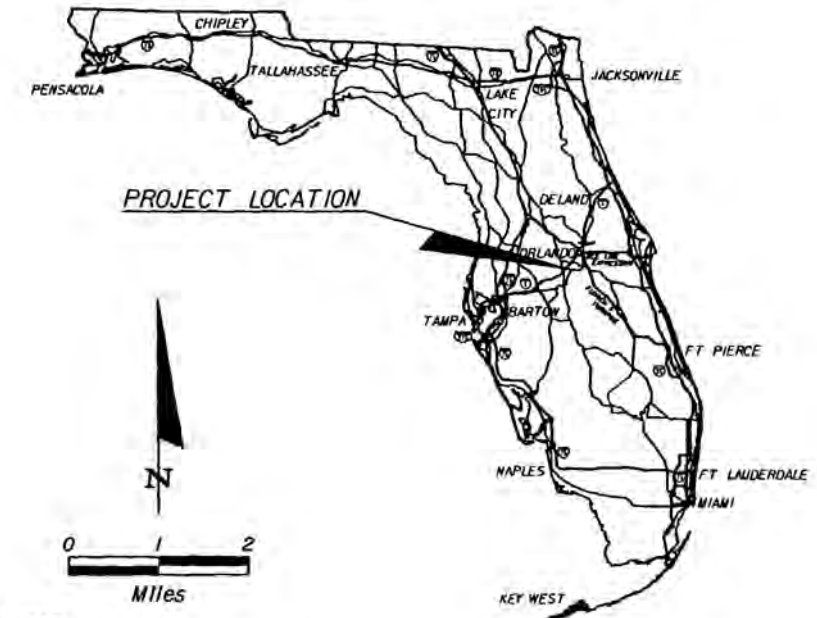
LENGTH OF PROJECT

	LINEAR FEET	MILES
ROADWAY	29,397.41	5.568
BRIDGES	0.00	0.000
NET LENGTH OF PROJECT	29,397.41	5.568
EXCEPTIONS	4846.08	0.918
GROSS LENGTH OF PROJECT	34,243.49	6.486

FDOT PROJECT MANAGER: ROBIN EWING

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

CONSTRUCTION CONTRACT NO. T1353



ROADWAY PLANS
ENGINEER OF RECORD:

EDUARDO A. PONCE
FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT ONE OFFICE
801 NORTH BROADWAY AVE.
BARTOW, FLORIDA 33830-3809
(863) 519-2300

Contractor: The Middlesex Corporation
Consultant: None
District Secretary: Stanley M. Cann, P.E.
Operations Center Engineer: Bill Jones, P.E.
Project Manager: Robin Ewing
Project Administrator: Lee H. Jones
Date Work Started: January 19, 2010
Date Final Acceptance: September 3, 2010

NOTE: THIS IS A FDOT R-R-R PROJECT.

NOTE: THE SCALE OF THESE PLANS MAY
HAVE CHANGED DUE TO REDUCTION

ROADWAY PLANS
ENGINEER OF RECORD: EDUARDO A. PONCE, P.E.

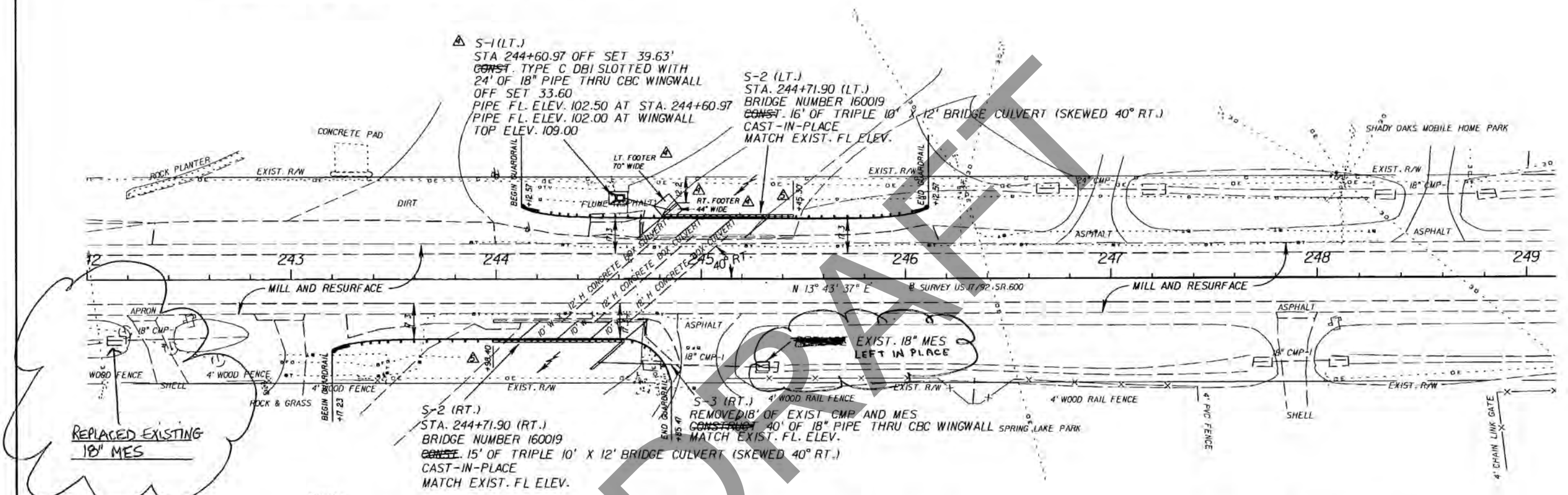
P.E. NO. 56818

FISCAL YEAR	SHEET NO.
10	1

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 6105-23.003, F.A.C.

1" = 50'

CONTRACTORS ATTENTION IS DIRECTED TO THE EXISTENCE OF OVERHEAD ELECTRIC, UNDERGROUND GAS AND FIBER OPTIC UTILITIES WHICH MAY INTERFERE WITH THE NORMAL CONSTRUCTION PRACTICES AT THIS LOCATION.



NOTES:

1. THE CONTRACTOR IS TO ASSURE ONE CLEAN BARREL IS KEPT OPEN FOR FLOW DURING CONSTRUCTION.
 2. DURING PHASE CONSTRUCTION OPERATION WORK AREAS WILL BE ENCLOSED WITH SHEET PILING. NO EARTHEN BERMS WILL BE ALLOWED IN HORSE CREEK.
 3. THE SHEET PILING ON THE EAST SIDE OF THE CANAL SHOULD BE REMOVED PRIOR TO THE REMOVAL OF PILING ON THE WEST SIDE OF THE CANAL TO AVOID ANY POSSIBLE EROSION.
- ALLOW WATER TO FILL BOX CULVERT BEFORE REMOVING PILING ON THE WEST SIDE.

6/29/2010

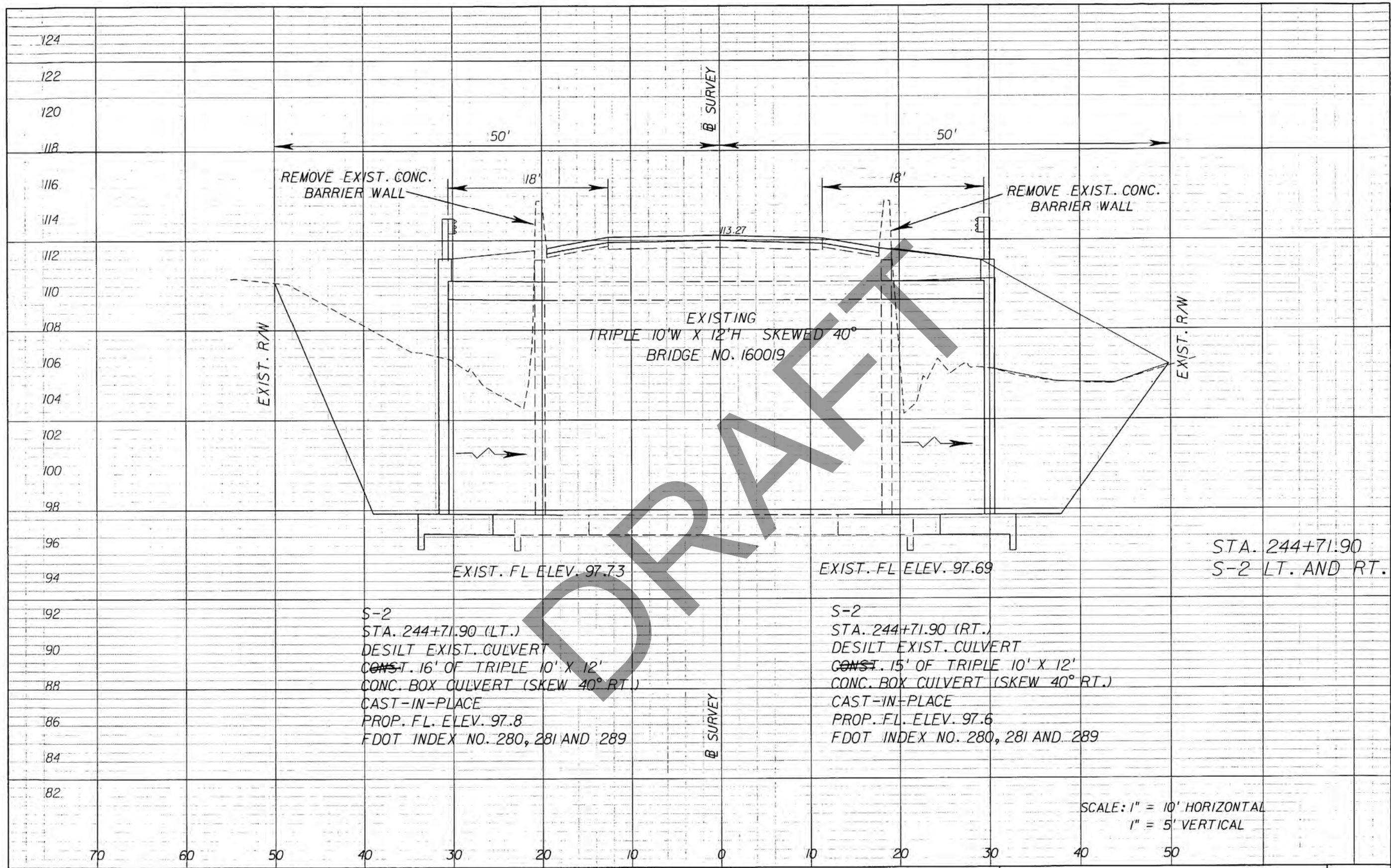
9/27/2010

REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			ROADWAY PLAN SHEET	SHEET NO. 32
DATE	DESCRIPTION	DATE	DESCRIPTION	ROAD NO.	COUNTY	FINANCIAL PROJECT ID		
6/7/10	CHANGED SOUTHWEST WINGWALL LENGTH, ADDED LT. AND RT. FOOTER AND DIMENSIONS, CHANGED S-1 STA., ADDED PIPE ELEV., ADDED SOUTHWEST WINGWALL DETAIL AND NOTE 3 REGARDING SHEET PILING	6/29/10	CHANGED NORTHWEST WINGWALL LENGTH, FROM 26' TO 12', CHANGED SOUTHEAST WINGWALL LENGTH FROM 26' TO 12'	600	POLK	422391-1-52-01		

ENGINEER OF RECORD:
EDUARDO A. PONCE, P.E.
P.E. LICENSE NUMBER 56818
FLORIDA DEPARTMENT OF TRANSPORTATION
801 N. BROADWAY AVENUE
BARTON, FL 33830-3809

#USER# #DATER# #TIMES# #FILE#

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.



NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 6G15-23.003, F.A.C.

REVISIONS				ENGINEER OF RECORD: EDUARDO A. PONCE, P.E. P.E. LICENSE NUMBER 56818 FLORIDA DEPARTMENT OF TRANSPORTATION 801 N. BROADWAY AVENUE BARTON, FL 33830-3809	STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SHEET NO. 37
DATE	DESCRIPTION	DATE	DESCRIPTION		ROAD NO.	COUNTY	FINANCIAL PROJECT ID	
					600	POLK	422391-1-52-01	

DRAINAGE STRUCTURE



BRIDGE INSPECTION REPORT

FERROVIAL

PREPARED FOR: FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE OWNER: FLORIDA DEPARTMENT OF TRANSPORTATION

INSPECTED BY:
TRANSYSTEMS

BRIDGE NO. 160019 CONTENTS OF REPORT INSPECTION DATE: 09/06/2024

BrM Report

U/W Inspection Report

CIDR

* Fracture Critical Data

Scour Elevation (Profile)

* Load Rating Analysis Summary

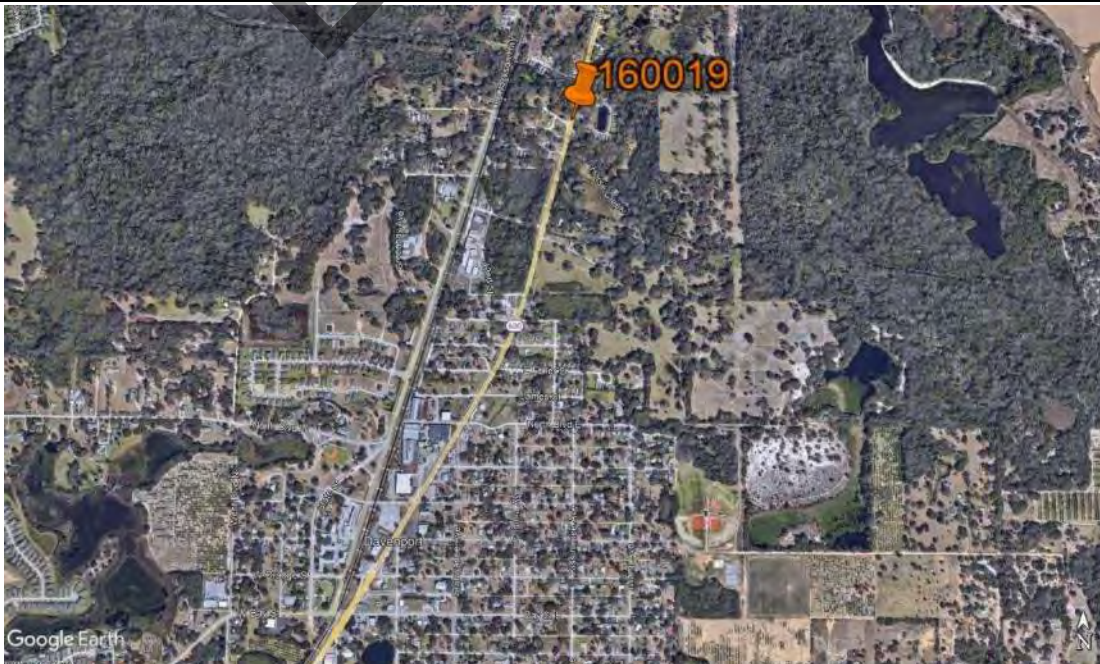
* Addendum (Element Notes & Photos/Sketches)

*This section is not included in this report.



US-17 & US-92 OVER HORSE CREEK

1.1 MILES NORTH OF CR-547



FLORIDA DEPARTMENT OF TRANSPORTATION
BRIDGE MANAGEMENT SYSTEM
Inspection/CIDR/Bridge Profile Report
Inspection

Structure ID: 160019

DISTRICT: D1 - Bartow

INSPECTION DATE: 9/6/2024 MBVV

BY:	Transystems	STRUCTURE NAME:	US-17 & US-92 OVER HORSE CREEK
OWNER:	1 State Highway Agency	YEAR BUILT:	1934
MAINTAINED BY:	1 State Highway Agency	SECTION NO.:	16 050 000
STRUCTURE TYPE:	1 Reinforced Concrete - 19 Culvert	MP:	4.900
LOCATION:	1.1 MI NORTH OF CR-547	ROUTE:	00017
SERV. TYPE ON:	1 Highway	FACILITY CARRIED:	US17 & US92(SR600)
SERV. TYPE UNDER:	5 Waterway	FEATURE INTERSECTED:	HORSE CREEK

DRAFT