Natural Resources Evaluation Report Addendum

Florida Department of Transportation

District One

State Road (SR) 70 PD&E Study

Limits of Project: County Road (CR) 29 to Lonesome Island Road

Highlands County, Florida

Financial Management Number: 414506-5-22-01

ETDM Number: 14364

Date: July 2021

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

Natural Resources Evaluation Addendum

SR 70 from CR 29 to Lonesome Island Road
Project Development and Environment Study

Highlands County, Florida

Financial Project ID: 414506-5-22-01
ETDM No.: 14364

Florida Department of Transportation
District One

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July 2021

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1.0 Introduction

The Florida Department of Transportation (FDOT), District One, is conducting a Project Development and Environment (PD&E) Study for State Road 70 (SR 70) from County Road 29 (CR 29) to Lonesome Island Road in Lake Placid, Highlands County, Florida (**Figure 1-1**). The purpose of the PD&E study is to evaluate engineering and environmental data, and document information that will aid FDOT District One, and the FDOT's Office of Environmental Management (OEM), in selecting the project's preferred alternative. The study is being conducted in order to meet the requirements of the National Environmental Policy Act (NEPA) and other related federal and state laws, rules, and regulations.

As part of the PD&E Study, a *Natural Resources Evaluation* (NRE) was prepared in October 2020 (herein referred to as the October 2020 NRE) for the proposed project. This report represents an addendum to the October 2020 NRE for the PD&E Study, documents changes, and provides updated information regarding the project's engineering design since the completion of the October 2020 NRE.

1.1 Agency Coordination

In accordance with Section 7 of the Endangered Species Act of 1973, as amended (ESA), the FDOT requested to initiate formal consultation on October 22, 2020 during the PD&E study due to the project's effect determination of "May affect, and is likely to adversely affect" for the Eastern indigo snake (*Drymarchon couperi*) and Florida bonneted bat (*Eumops floridanus*) (**Appendix A**). The USFWS requested additional information to adequately determine the proposed project's effect on the eastern indigo snake and Florida bonneted bat and FDOT provided responses on April 8, 2021 (**Appendix A**).

Based on this coordination, several changes to species effect determinations were made and commitments were added to minimize and reduce potential adverse impacts to the eastern indigo snake and Florida bonneted bat (**Appendix A**). The USFWS officially initiated formal consultation on April 20, 2021 and a Biological Opinion for the eastern indigo snake and concurrence for species effect determinations was signed on June 1, 2021 (**Appendix A**). **Section 2.2** below discusses these changes in detail. **Appendix A** provides the USFWS coordination and consultation documents, including the final Biological Opinion.

1.2 Engineering Changes

The October 2020 NRE included the footprint for all proposed pond alternatives (see Section 1.4 on page 1-5 of the October 2020 NRE) because drainage analyses were ongoing and preferred pond sites had yet to be selected. Since the completion of the October 2020 NRE, the Floodplain Model Report and Pond Siting Report have been completed, and selection of the preferred pond sites has been made. Additionally, based on more detailed analysis, the size of the preferred pond sites were reduced to meet the project's stormwater management and floodplain compensation requirements for the ultimate condition. The preferred ponds selected include linear stormwater management facilities (SMFs) within the proposed mainline corridor right-of-way (ROW) and two (2) adjacent floodplain compensation (FPC) sites, FPC 1A and FPC 2A. FPC1A is located at the

western end of the project limits and FPC 2A is located at the eastern end of the project limits. Both FPC 1A and FPC 2A are located outside of existing FDOT right-of-way. The proposed typical section was also updated to meet the 2021 FDOT Design Manual. **Figures 1-2** and **1-3** provide the updated interim and ultimate typical sections, respectively (see Figures 1-3 and 1-4 on pages 1-6 and 1-7, respectively, of the October 2020 NRE).

Based on these engineering changes, the project study area of the Preferred Build Alternative was reduced from 491.85 acres to 199.80 acres. The project study area is defined as the existing SR 70 ROW with a 300-foot buffer to the south and the preferred ponds. **Figure 1-1** provides a project location map with the updated project study area, including the preferred ponds (see Figure 1-1 on page 1-2 of the October 2020 NRE).

Figure 1-1 Updated Project Location Map

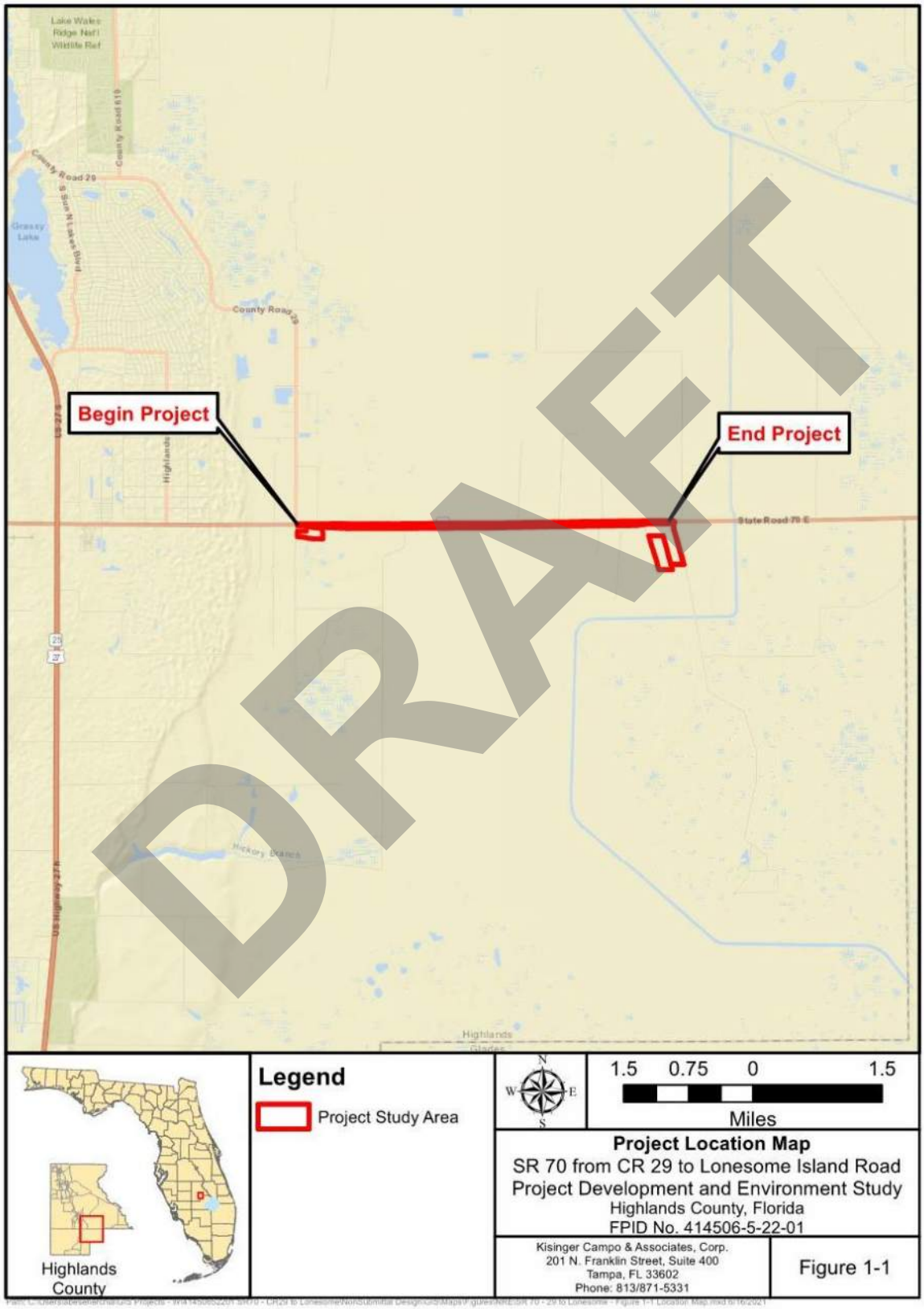


Figure 1-2 Updated Interim Condition Typical Section

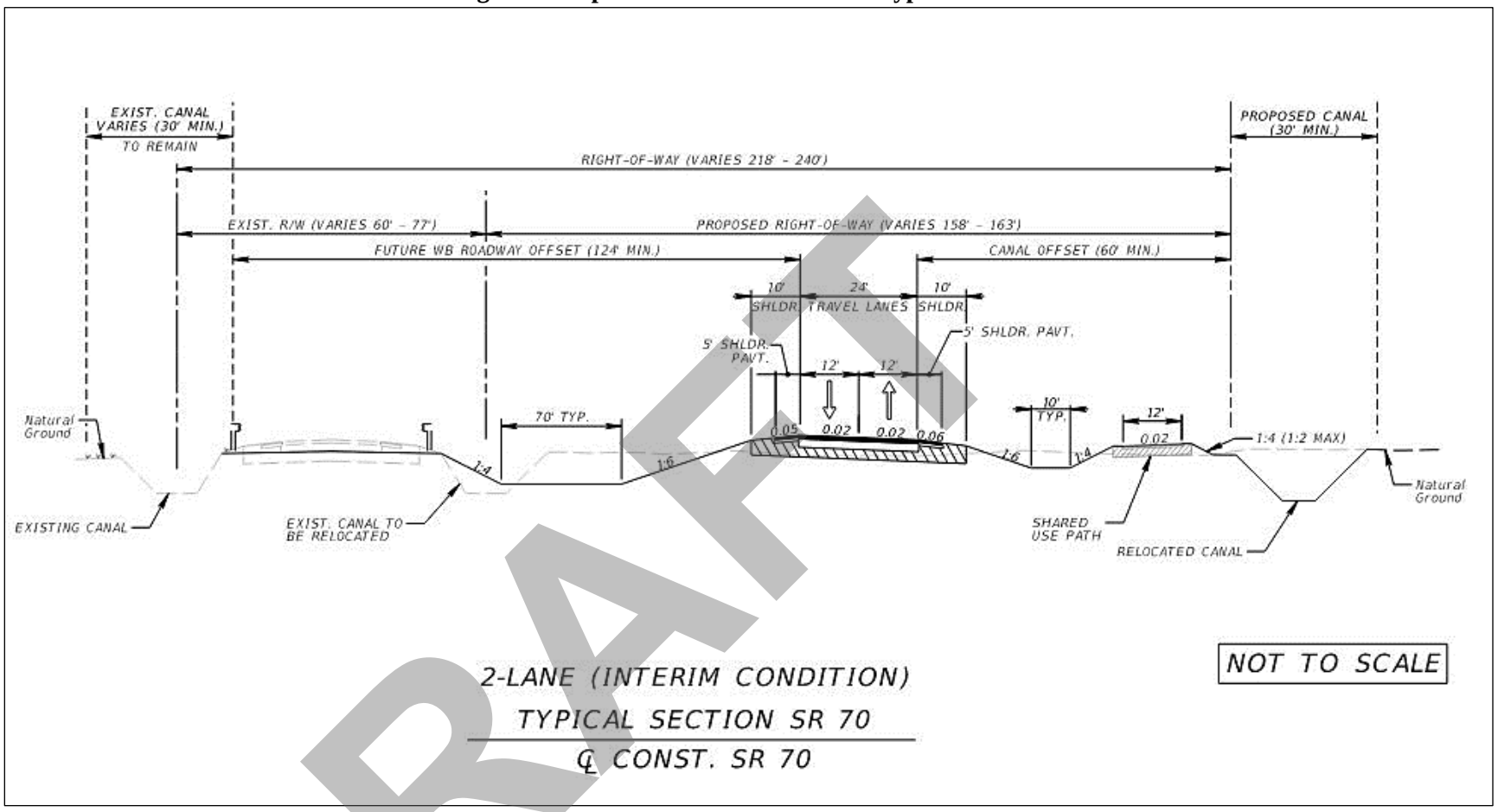
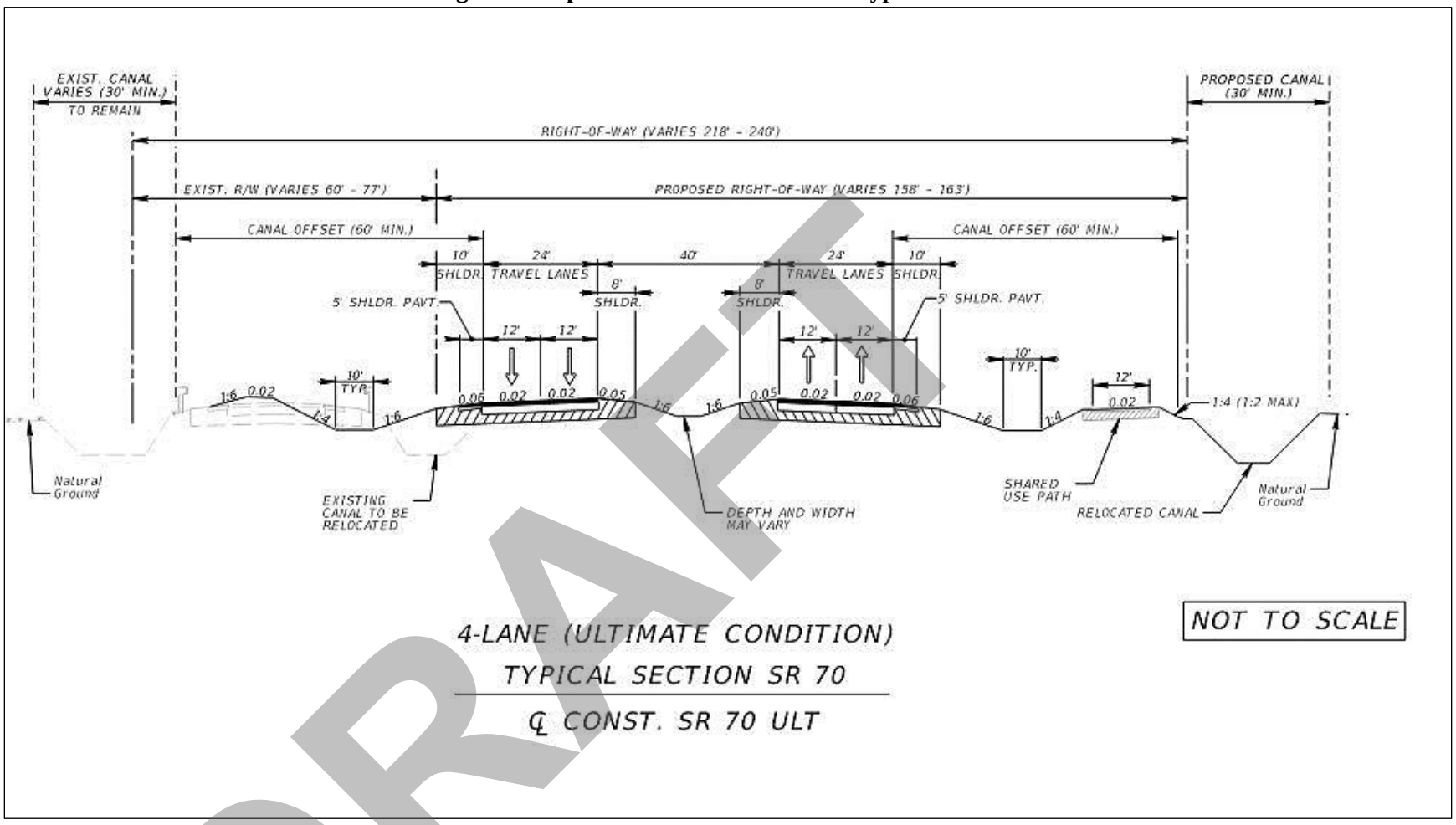


Figure 1-3 Updated Ultimate Condition Typical Section



2.0 Updates

2.1 Existing Conditions

2.1.1 Soils

The number of soil types found within the project study area was reduced from seven (7) to five (5). Additionally, their total acreages have been reduced due to the reduction in size of the project study area. Hydric soils now comprise 138.28 acres (69.21%) of the project study area and non-hydric soils comprise 61.52 acres (30.79%) of the project study area. **Table 2-1** provides updated soil acreages to those previously presented (see Table 1-1 on page 1-9 of the October 2020 NRE).

Table 2-1 Updated Soils within the Project Study Area

Soils Type	Hydric Y/N	Area within the Project Study Area (acres)	Percent of Project Study Area
8: Immokalee sand, 0-2% slopes*	N**	61.52	30.79%
13: Felda fine sand, 0-2% slopes*	Y	45.06	22.55%
18: Kaliga muck, frequently ponded, 0-1% slopes*	Y	72.88	36.48%
26: Tequesta muck, frequently ponded, 0-1% slopes*	Y	19.00	9.51%
35: Sanibel Muck	Y	1.34	0.67%
Total Hydric Soils		**138.28**	**69.21%**
Total Non-Hydric Soils		**61.52**	**30.79%**
Total		**199.80**	**100.00%**

* Classified as farmland of unique importance
** May have hydric soil inclusions

2.1.2 Land Use

The number of upland and surface water land uses within the project study area remain the same, with eight (8) upland land cover types and two (2) surface water habitats, respectively. However, the number of wetland habitat types found within the project study area was reduced from three (3) to two (2) (see Section 1.6.2 on page 1-10 of the October 2020 NRE). Additionally, the total acreage of upland, wetland, and surface water habitats has been reduced due to the reduction in size of the project study area. **Table 2-2** provides updated land use acreages to those previously presented (see Table 1-2 on page 1-11 of the October 2020 NRE). **Appendix B** provides an updated land use map of the project study area.

Table 2-2 Updated Land Use within the Project Study Area

Habitat Type	FLUCFCS[1] Code and Description	USFWS Classification[2]	Total in Mainline Corridor (acres)	Total in Preferred Ponds (acres)	Total in Project Study Area[3] (acres)
Upland	110: Residential, Low Density	N/A	1.62		1.62
	211: Improved Pastures	N/A	19.75	19.15	38.90
	212: Unimproved Pastures	N/A	13.71		13.71
	221: Citrus Groves	N/A	5.01	41.94	46.95
	242: Sod Farms	N/A	29.15		29.15
	425: Temperate Hardwood	N/A	1.83		1.83
	427: Live Oak	N/A	4.23		4.23
	814: Roads and Highways	N/A	27.68		27.68
Total Uplands			**102.98**	**61.09**	**164.07**
Surface Waters	510: Streams and Waterways	R2UBHx, R2AB4Hx, R2AB3Fx, PEM1Cx	32.23	0.47	32.70
	530: Reservoirs	PUBHx	0.17		0.17
Wetlands	617: Mixed Wetland Hardwoods	PFO1Cd	1.96	0.26	2.22
	641: Freshwater Marshes	PEM1Ad	0.23	0.41	0.64
Total Surface Waters/Wetlands			**34.59**	**1.14**	**35.73**
Total			**137.57**	**62.23**	**199.80**

[1] FDOT 1999

[2] Cowardin *et al*. 1979

[3] Includes the mainline corridor and preferred pond sites

PEM1Ad: Palustrine, Emergent, Persistent, Temporarily Flooded, Partially Drained/Ditched
PEM1Cx: Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated
PFO1Cd: Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched
PUBHx: Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated
R2UBHx: Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated
R2AB3Fx: Riverine, Lower Perennial, Aquatic Bed, Rooted Vascular, Semipermanently Flooded, Excavated
R2AB4Hx: Riverine, Lower Perennial, Aquatic Bed, Floating Vascular, Permanently Flooded, Excavated

2.2 Protected Species

The project's effect determination on protected species was made in the October 2020 NRE and submitted to the USFWS for concurrence and to request formal consultation on October 22, 2020 for the Florida bonneted bat and eastern indigo snake. During coordination with USFWS, it was determined that the preferred FPC sites would still offer suitable foraging habitat for the Florida bonneted bat and suitable habitat for the eastern indigo snake, and conversion of these areas from agriculture to FPC sites should not be considered permanent habitat impacts. Additionally, the FDOT proposed to add four (4) best management practices (BMPs) for the Florida bonneted bat as PD&E commitments. With the addition of these BMPs, the reduction in proposed impacts, and the results of the Florida bonneted bat roost and acoustic surveys documenting no evidence of roosting, the FDOT changed the effect determination from "may affect, likely to adversely affect" to "may affect, not likely to adversely affect" and the USFWS concurred with this finding (**Appendix A**).

Based on the USFWS' current records and known distributions of federally listed species it was determined that the proposed project is unlikely to affect the Florida scrub-jay (*Aphelocoma coerulescens*) and Florida panther (*Puma concolor coryi*). The USFWS recommended, and the FDOT agreed, the effect determinations for these species be changed from "may affect, not likely to adversely affect" to "no effect" (**Appendix A**).

Table 2-3 provides a summary of all effect determination changes between the October 2020 NRE and this addendum (see Table 5-1 on page 5-2 of the October 2020 NRE).

Table 2-3 Summary of Federal Listed Species Effect Determination Changes

Federal Listed Species	Original Effect Determination	New Effect Determination
Florida Scrub-jay	May Affect, Not Likely to Adversely Affect	No effect
Florida Panther	May Affect, Not Likely to Adversely Affect	No effect
Florida Bonneted Bat	May Affect, Likely to Adversely Affect	May Affect, Not Likely to Adversely Affect

Regarding coordination with the USFWS on the eastern indigo snake, due to the reduction in size of the project study area and removal of FPC sites from the impact area, the anticipated eastern indigo snake habitat impacts have been reduced. **Table 2-4** provides updated eastern indigo snake habitat acreages within the project study area to correct those previously presented (see Table 2-2 on page 2-11 of the October 2020 NRE). Suitable eastern indigo snake habitat within the project study area was reduced from 337.16 acres to 75.87 acres. The final eastern indigo snake mitigation credit requirements for the Platt Branch Mitigation Bank (PBMB) were determined in consultation with the USFWS. The FDOT will provide sufficient credits at the PBMB to provide at least 75.87 acres of land cover types that provide habitat for the eastern indigo snake. The FDOT will provide the USFWS with a letter or email from the PBMB stating that the credit ledger from the bank has been revised to reflect the deduction of credits. The FDOT will not commence construction of the proposed project until a response email or letter from the USFWS has been received stating that they have received the document. The effect determination for the eastern indigo snake remained "may affect, likely to adversely affect." Formal consultation with USFWS was completed for the eastern indigo snake, resulting in a Biological Opinion and a non-jeopardy determination for eastern indigo snake signed on June 1, 2021 (**Appendix A**).

Table 2-4 Eastern Indigo Snake Habitat within the Project Study Area

Project Component	FLUCFCS Classification	FLUCFCS Description	Acreage of Eastern Indigo Snake Habitat
Mainline Corridor	211	Improved pastures	19.75
	212	Unimproved pastures	13.71
	221	Citrus groves	5.01
	242	Sod farms	29.15
	425	Temperate hardwood	1.83
	427	Live oak	4.23
	617	Mixed wetland hardwoods	1.96
	641	Freshwater marshes	0.23
Eastern Indigo Snake Habitat Subtotal Mainline			**75.87**

2.3 Wetland and Surface Water Impacts

As a result of the design changes, total wetland and surface water impacts, and anticipated functional loss from project construction, have been reduced. Permanent wetland and surface water impacts resulting from the updated Preferred Build Alternative total 35.73 acres (2.86 acres wetlands and 32.87 acres surface waters). Additionally, the updated Preferred Build Alternative will result in 0.81 acres of secondary impacts to wetlands. **Appendix C** provides an updated wetland and surface water impact map. To determine the Preferred Build Alternative's impact on wetland functions, wetland impacts were assessed using the Uniform Mitigation Assessment Method (UMAM). UMAM scores remained the same as those presented in the October 2020 NRE. The estimated functional loss has been updated based on the new impact acreages. **Table 2-5** provides the updated permanent impacts, secondary impacts, and functional loss to those previously presented (see Table 3-3 on page 3-6 of the October 2020 NRE).

Table 2-5 Updated Wetland and Surface Water Impacts and UMAM Functional Loss

FLUCFCS Code[1]	Description	USFWS Classification[2]	Impact Type	UMAM Delta	Acres of Impact	Functional Loss
Wetlands						
617	Mixed wetland hardwoods	PFO1Cd	Permanent	-0.63	2.22	1.40
617	Mixed wetland hardwoods	PFO1Cd	Secondary	-0.06	0.57	0.03
641	Freshwater marshes	PEM1Ad	Permanent	-0.63	0.64	0.40
641	Freshwater marshes	PEM1Ad	Secondary	-0.06	0.24	0.01
				Total Wetland	**3.67**	**1.84**
Surface Waters						
510	Streams and waterways	R2UBHx, R2AB4Hx, R2AB3Fx, PEM1Cx	Permanent	-0.47	32.70	N/A
530	Reservoirs	PUBHx	Permanent	-0.37	0.17	N/A
				Total Surface Water	**32.87**	**N/A**
				Total	**36.54**	**1.84**

[1] FDOT 1999

[2] Cowardin *et al.* 1979

PEM1Ad: Palustrine, Emergent, Persistent, Temporarily Flooded, Partially Drained/Ditched
PEM1Cx: Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated
PFO1Cd: Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched
PUBHx: Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated
R2AB3Fx: Riverine, Lower Perennial, Aquatic Bed, Rooted Vascular, Semipermanently Flooded, Excavated
R2AB4Hx: Riverine, Lower Perennial, Aquatic Bed, Floating Vascular, Permanently Flooded, Excavated
R2UBHx: Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated

2.4 Commitments

Based on consultation with the USFWS, five (5) commitments were added and one (1) commitment was updated (see Section 5.4 on page 5-4 of the October 2020 NRE). These new and updated commitments are presented in **bold font** below, along with the one (1) original commitments from the October 2020 NRE. To minimize project impacts on protected species to the greatest extent practicable, the following project commitments will be adhered to:

- **To reduce the likelihood that construction of the Project will result in injuries or mortalities of eastern indigo snakes, the FDOT has agreed to have its contractor follow the Service's *Standard Protection Measures for the Eastern Indigo Snake* (SPM; Service 2013) during construction.**

- **To support the survival and recovery of the eastern indigo snake, the FDOT has agreed to provide sufficient credits at the Platt Branch Mitigation Bank (PBMB) in Highlands County, Florida to provide at least 75.87 ac of land cover type that provide habitat for the species. The FDOT has agreed not to commence construction of the Project until they provide the Service with a letter or email from the PBMB stating the credit ledger from the bank has been revised to reflect the deduction of the credits and the FDOT and their consultant receives and email or letter from the Service indicating that we have received this document.**

- The FDOT will perform Audubon's crested caracara surveys of the project area during design and permitting phase of the project.

- **If potential Florida bonneted bat roost trees or structures need to be removed, check cavities for bats within 30 days prior to removal of trees, snags, or structures. When possible, remove structure outside of breeding season (e.g., January 1 – April 15). If evidence of use by any bat species is observed, discontinue removal efforts in that area and coordinate with the Service on how to proceed.**

- **Avoid or limit widespread application of insecticides (e.g., mosquito control, agricultural pest control) in areas where Florida bonneted bats are known or expected to forage or roost.**

- **Avoid and minimize the use of artificial lighting, retain natural light conditions, and install wildlife friendly lighting (i.e., downward facing and lowest lumens possible). Avoid permanent night-time lighting to the greatest extent practicable.**

- **Incorporate engineering designs that discourage bats from using buildings or structures. If Florida bonneted bats take residence within a structure, contact the Service and Florida Fish and Wildlife Conservation Commission prior to attempting removal or when conducting maintenance activities on the structure.**

3.0 Summary

The selection of the preferred SMF and FPC sites significantly reduced the size of the project study area. As a result, land use impacts, wetland and surface water impacts, and protected species impacts have been reduced due to this reduction in size of the project footprint. Additionally, during coordination with the USFWS, it was agreed that the FPC sites would not permanently alter suitable Florida bonneted bat or eastern indigo snake habitat. Based on this information, the FPC site footprints were removed from the Florida bonneted bat and eastern indigo snake impact assessments, further reducing anticipated protected species impacts. As a result of this coordination, the effect determinations for the Florida panther, Florida scrub-jay, and Florida bonneted bat were reduced, and four (4) protected species commitments were added. The USFWS provided concurrence on all effect determinations and issued a Biological Opinion for the eastern indigo snake, signed on June 1, 2021.

This report represents an addendum to the October 2020 NRE for the PD&E Study, documents changes, and provides updated information regarding the project engineering since the completion of the October 2020 NRE.

APPENDIX A

U.S. Fish and Wildlife Service Coordination and Biological Opinion

USFWS Coordination

From: harrison.garrett@dot.state.fl.us <Harrison.Garrett@dot.state.fl.us>
Sent: Thursday, October 22, 2020 11:03 AM
To: john_wrublik@fws.gov
Cc: Pipkin, Gwen G <Gwen.Pipkin@dot.state.fl.us>; Turley, David <David.Turley@dot.state.fl.us>; Peters, Lauren <Lauren.Peters@dot.state.fl.us>; Cornwell, Katasha <Katasha.Cornwell@dot.state.fl.us>; Turner, Jonathan <Jonathan.Turner@dot.state.fl.us>
Subject: Formal Consultation Request for SR 70 from CR 29 to Lonesome Island Rd.

Dear Mr. Wrublik,

Please find enclosed the Natural Resources Evaluation (NRE) prepared for the project. The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) study to evaluate the proposed widening of SR 70 from County Road (CR) 29 to Lonesome Island Road in Highlands County, Florida, a distance of 4.3 miles. The purpose of the PD&E Study is to provide documented information necessary for FDOT to reach a decision on the type, design, and location of improvements; as well as to assess the project's potential impacts to natural resources within the project study area. The proposed improvements are needed due to existing roadway deficiencies, operational conditions, vehicle safety conditions, and to support economic development associated with projected population and economic growth in Highlands County.

The environmental review, consultation, and other actions required by applicable federal environmental laws for this project are being, or have been, carried out by the FDOT pursuant to 23 U.S.C. §327 and a Memorandum of Understanding (MOU) dated December 14, 2016 and executed by the Federal Highway Administration and FDOT.

As part of the PD&E Study, the NRE was prepared to document potential impacts to protected species, habitat, and wetlands associated with this project. The NRE provides documentation and rationale to support effect determination for protected resources within the project limits. The evaluation includes field inspections and species-specific surveys by qualified biologists, literature and database reviews, and coordination with natural resource agencies. Details on the methodologies and results are provided in the NRE.

As a result of the evaluation, the FDOT has concluded that implementation of the preferred ultimate build alternative will result in a total of 70.37 acres of unavoidable impacts to wetlands and surface waters. The permanent wetland impacts total 21.42 acres and the secondary wetland impacts total 1.02 acres. The total surface waters impacts are 47.93 acres. In accordance with federal and state requirements, the full range of mitigation options were considered in developing this project, including impact avoidance, minimization, restoration, enhancement, and creation. This NRE presents conceptual mitigation alternatives, as appropriate, for unavoidable wetland impacts.

As a result of the data collection effort, field reviews, species-specific surveys, and agency coordination, the FDOT has determined that the project will have the following effects determinations for federal listed species:

"No effect":
Florida bonamia (Bonamia grandiflora) - T
Pygmy fringe tree (Chionanthus pygmaeus) - E
Perforate reindeer lichen (Cladonia perforata) - E
Scrub pigeon wings (Clitoria fragrans) - T
Short-leaved rosemary (Conradina brevifolia) - E

Avon park harebells (Crotalaria avonensis) - E
Garrett's scrub balm (Dicerandra christmanii) - E
Scrub mint (Dicerandra frutescens) - E
Scrub buckwheat (Eriogonum longifolium var. gnaphalifolium) - T
Snakeroot (Eryngium cuneifolium) - E
Highlands scrub hypericum (Hypericum cumulicola) - E
Scrub blazingstar (Liatris ohlingerae) - E
Britton's beargrass (Nolina brittoniana) - E
Paper nailwort (Paronychia chartacea) - T
Lewton's polygala (Polygala lewtonii) - E
Sandlace (Polygonella myriophylla) - E
Florida jointweed (Polygonum basiramia) - E
Scrub plum (Prunus geniculata) - E
Scrub ziziphus (Pseudoziziphus celata) - E
Carter's mustard (Warea carteri) - E
Florida grasshopper sparrow (Ammodramus savannarum floridanus) - E
Blue-tailed mole skink (Plestiodon egregius lividus) - T
Sand skink (Plestiodon reynoldsi) - T

"May affect, but is not likely to adversely affect":

American alligator (Alligator mississippiensis) - SAT
Florida scrub-jay (Aphelocoma coerulescens) - T
Audubon’s crested caracara (Caracara cheriway) - T
Wood stork (Mycteria americana) - T
Florida panther (Puma concolor couguar) - E
Everglade snail kite (Rostrhamus sociabilis) - E

"May affect, and is likely to adversely affect"

Eastern indigo snake (Drymarchon couperi) - T
Florida bonneted bat (Eumops floridanus) - E

The FDOT appreciates the FWS’ involvement with this project. In accordance with the MOU previously discussed and due to the project’s effect determination of “May affect, and is likely to adversely affect” for the Eastern indigo snake and Florida bonneted bat, the FDOT requests to initiate formal consultation pursuant to Section 7 of the Endangered Species Act, as amended. The FDOT respectfully requests your review comments or agreement with the findings and effect determinations within 30 days. Additionally, please confirm acknowledgement of the formal consultation request. If you have any questions or require additional information, please contact me at 850-414-4943 or Harrison.Garrett@dot.state.fl.us.

Sincerely,

Harrison Garrett
Project Delivery Coordinator
Florida Department of Transportation
Office of Environmental Management

cc. David C. Turley, P.E, FDOT
Gwen Pipkin, FDOT
Lauren Peters, FDOT
Mike Campo, P.E., KCA

Enclosure: Electronic copy of NRE (October 2020)

Secure File Downloads:

Available until: **05 November 2020**

Click link to download:

20-10-15_SR 70_CR29 to Lonesome_NRE.pdf

455.85 MB

Thank you for sharing files securely.

Florida Department of Transportation

RON DESANTIS
GOVERNOR

801 N Broadway
Bartow, FL 33830

KEVIN J. THIBAULT, P.E.
SECRETARY

April 8, 2021

Mr. John Wrublik
United States Fish and Wildlife Service
South Florida Ecological Services Office
1339 20th Street
Vero Beach, FL 32960
john_wrublik@fws.gov

RE: Comments on Natural Resources Evaluation
SR 70 from CR 29 to Lonesome Island Rd.
Project Development & Environment Study
Financial Project ID No. 414506-5-22-01
ETDM No. 14364
Highlands County, Florida

Dear Mr. Wrublik,

We appreciate USFWS's review of Natural Resources Evaluation (NRE) Report for the SR 70 from CR 29 to Lonesome Island Rd. PD&E Study. In response to your comments on the NRE received in December 2020, we have prepared the responses in bold text below for each comment received.

USFWS Comments on NRE and FDOT Responses:

1) Please verify if the information in Tables 1-2 and 1-3 of the Natural Resource Evaluation for the project represents the acreage(s) of land cover types that occur in the project footprint (i.e., all lands to be impacted by the project including the new widened roadway and all stormwater ponds and floodplain compensation areas proposed within the preferred alternative). The acreages in these tables are currently designated for the Project study area and I am not sure if that is the same as the Project footprint. I need this information to determine the amount of habitat for the Eastern indigo snake and the Florida bonneted bat will be permanently lost due to the project. If the acreages provided in these tables are not from the project footprint, please provide me the total acreage for the project footprint and the acreage of each of the land cover/habitat types in the project footprint.

Response: Table 1-2 of the submitted NRE included the total project area containing a total acreage of 491.85 acres. This total acreage included the potential pond sites listed on Table 1-3. Therefore, the detailed potential pond sites with land uses and acreages provided in NRE Table 1-3 were not additional acreage within the project area. The pond sites

included multiple preliminary pond site options that were being evaluated. As a result of completing the project's Floodplain Model Report and Pond Siting Report, selection of preferred pond sites have been made. We have also updated the typical section to meet the 2021 FDOT Design Manual which resulted in a more accurate alignment typical section to calculate the mainline corridor acreage. Therefore, the total project area has been reduced to 199.80 acres. This acreage is now the proposed project footprint. Please see below, the Revised Table 1-2 which includes the total proposed ROW and Attachment 1 has been provided with revised land use maps. The preferred ponds selected include linear stormwater management facilities within the proposed mainline right-of-way and two adjacent Floodplain Compensation (FPC) areas to accommodate the proposed 4-lane roadway.

Revised Table 1-2 Existing Land Uses within the Project Footprint

Habitat Type	FLUCFCS[1] Code and Description	USFWS Classification[2]	Total Acreage in Mainline Corridor	Total Acreage in Preferred Ponds (only FPC areas)	Total Project Footprint[3] (acres)
Upland	110: Residential, Low Density	N/A	1.62		1.62
	211: Improved Pastures	N/A	19.75	19.15	38.90
	212: Unimproved Pastures	N/A	13.71		13.71
	221: Citrus Groves	N/A	5.01	41.94	46.95
	242: Sod Farms	N/A	29.15		29.15
	425: Temperate Hardwood	N/A	1.83		1.83
	427: Live Oak	N/A	4.23		4.23
	814: Roads and Highways	N/A	27.68		27.68
Total Uplands			**102.98**	**61.09**	**164.07**
Surface Waters	510: Streams and Waterways	R2UBHx, R2AB4Hx, R2AB3Fx, PEM1Cx	32.23	0.47	32.70
	530: Reservoirs	PUBHx	0.17		0.17
Wetlands	617: Mixed Wetland Hardwoods	PFO1Cd	1.96	0.26	2.22
	641: Freshwater Marshes	PEM1Ad	0.23	0.41	0.64
Total Surface Waters/Wetlands			**34.59**	**1.14**	**35.73**
Total			**137.57**	**62.23**	**199.80**

1 FDOT 1999

2 Cowardin et al 1979

3 Total project footprint includes the mainline corridor and preferred pond sites

PEM1Ad: Palustrine, Emergent, Persistent, Temporarily Flooded, Partially Drained/Ditched

PEM1Cx: Palustrine, Emergent, Persistent, Seasonally Flooded, Excavated

PFO1Cd: Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched

PSS1Cd: Palustrine, Scrub-Shrub, Broad-Leaved Deciduous, Seasonally Flooded, Partially Drained/Ditched

PUBHx: Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated

R2UBHx: Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded, Excavated

R2AB3Fx: Riverine, Lower Perennial, Aquatic Bed, Rooted Vascular, Semipermanently Flooded, Excavated

R2AB4Hx: Riverine, Lower Perennial, Aquatic Bed, Floating Vascular, Permanently Flooded, Excavated

FDOT believes the conversion of agricultural land to FPC areas should not be considered an impacted land use when assessing habitat impacts to Eastern Indigo Snake and Florida Bonneted Bat (FBB). This is based on the 2019 FBB Consultation Key and the 2017 (revised) Eastern Indigo Snake Programmatic Effect Determination Key, including permanent or seasonal wetlands as suitable habitat for both species. The proposed FPC areas will be equivalent to permanent and seasonal wetlands since they will contain shallow levels of water at least seasonally. Therefore, these FPC areas will remain foraging habitat for the Eastern Indigo Snake and FBB. Additionally, these areas will no longer be treated with high levels of pesticides and herbicides associated with current agricultural uses.

Additionally, agriculture and urban development have not been shown to strongly impact occurrence of Florida's bat species, including the FBB (Bailey et al. 2019). Specifically, Bailey et al. (2019) found that the presence of FBB's was not significantly correlated with canopy cover. The 2020 roost survey found zero bats roosting in the project area and the 2020 FBB acoustic survey resulted in 20 FBB calls (0.09%) with the remaining 22,221 calls from seven (7) different bat species found in Florida. Of these 20 FBB calls, none were recorded within 90 minutes of sunset or sunrise which provides evidence of no FBBs roosting to ensure that no roosts are present in the project area. The FDOT commits to conducting a preconstruction FBB roost survey to ensure that no roosts are present in the project area.

Furthermore, FDOT proposes to adhere to the following USFWS approved best management practices (BMP) used with the FBB consultation key effect determination of MANLAA-P and Couplet 12b.

- **BMP #1: If potential roost trees or structures need to be removed, check cavities for bats within 30 days prior to removal of trees, snags, or structures. When possible, remove structure outside of breeding season (e.g., January 1 – April 15). If evidence of use by any bat species is observed, discontinue removal efforts in that area and coordinate with the Service on how to proceed.**
- **BMP #7: Avoid or limit widespread application of insecticides (e.g., mosquito control, agricultural pest control) in areas where Florida bonneted bats are known or expected to forage or roost.**
- **BMP #11: Avoid and minimize the use of artificial lighting, retain natural light conditions, and install wildlife friendly lighting (i.e., downward facing and lowest lumens possible). Avoid permanent night-time lighting to the greatest extent practicable.**
- **BMP #12: Incorporate engineering designs that discourage bats from using buildings or structures. If Florida bonneted bats take residence within a structure, contact the Service and Florida Fish and Wildlife Conservation Commission prior to attempting removal or when conducting maintenance activities on the structure.**

Lastly, the proposed linear mainline corridor will have canals on both sides along with linear stormwater treatment, so these areas will continue to provide foraging habitat.

Based on no evidence of FBB roosting in the project area and 62.23 acres of FPC areas remaining suitable foraging habitat along with part of the mainline corridor, use of the

proposed FBB BMPs (#'s 1, 7, 11, and 12), and Bailey et al 2019 study, FDOT believes the effect determination should be revised to May Affect, Not Likely to Adversely Affect for the FBB.

If USFWS disagrees with this determination for FBB, FDOT requests that due to the amount of time between the PD&E study and future Design and Construction phases, that the potential impacts to FBB be revisited during the design and permitting phase to determine conservation measures at that time. FDOT would add a commitment to state: ESA Section 7 Consultation will be initiated with the USFWS during the Design phase of the project.

2) I understand that the FDOT proposes to provide credits at the FDOT's Platt Branch Mitigation Bank as a conservation measure to benefit the Eastern indigo snake. The total acreage of land provided in the bank has not yet been proposed. According to the Natural Resource Evaluation provided for the project a total of 337.16 acres of land types that provide suitable habitat for the Eastern indigo snake (EIS) will be lost in the study area due to the project. Once I get the response to item 1 above, I will be able to determine if this is correct acreage of suitable indigo snake habitat lost in the project footprint or what the amount of suitable Eastern indigo snake habitat lost is. To compensate the loss of EIS habitat due to the project, I recommend that the FDOT provide sufficient credits at the Platt Branch Bank to provide the acreage of Eastern indigo snake habitat lost in the project footprint due to the project. As, I indicated, I'll be able to determine that number once you respond to this email. Please indicate if this approach is acceptable to the FDOT.

Response: The project footprint has been reduced to a total area of 199.80 acres. In regards to the conversion of agricultural land uses for two (2) FPC areas, FDOT believes these land uses will remain suitable habitat for Eastern Indigo Snakes. NRE Table 2-2 Estimated Suitable Habitat for the Eastern Indigo Snake within the Project Study Area. This table has been revised to remove the FPC 1A and FPC 2A areas and remove unsuitable developed land uses (FLUCFCS Codes 110 and 814) from the list of habitat impacts for Eastern indigo snake due to the proposed improvements. This results in a revised total impact area of 75.87 acres of Eastern indigo snake habitat.

Revised Table 2-2 Estimated Eastern Indigo Snake Habitat within the Project Study Area

Project Component	FLUCFCS Classification	FLUCFCS Description	Acreage of Eastern Indigo Snake Habitat
Mainline Corridor	211	Improved pastures	19.75
	212	Unimproved pastures	13.71
	221	Citrus groves	5.01
	242	Sod farms	29.15
	425	Temperate hardwood	1.83
	427	Live oak	4.23
	617	Mixed wetland hardwoods	1.96
	641	Freshwater marshes	0.23
Eastern Indigo Snake Habitat Subtotal Mainline			**75.87**

Layne and Steiner (1996) estimated Eastern indigo snake mean home ranges sizes of 46 acres (females) and 184 acres (males). The formula below was used to calculate required Eastern indigo snake mitigation credits from Platt Branch Mitigation Bank which is consistent with Biological Opinion for Polk Pkwy at Braddock Road (Service Consultation Code: 04EF2000-2017-F-0305).

Eastern Indigo Snake Credits:
1 female (__acres of impact / 46 acres = xx) + 1 male (__acres of impact / 184 acres = xx)

75.87 acres / 46 acres = 1.65 females and 75.87 acres / 184 acres = 0.41 males = 2.06 credits from Platt Branch Mitigation Bank

2) Acoustic surveys for the Florida bonneted bat (FBB) conducted on the project site indicate that the FBB uses the project site. As such, the project will result in adverse effects to the FBB. To benefit the survival and recovery of the FBB, the Service requests that the FDOT provide $25,000.00 to the Fish and Wildlife Foundation of Florida's Florida bonneted bat fund. The purpose of the fund is to support activities that promote the survival and recovery of the Florida bonneted bat (e.g., research, habitat conservation etc.) and is similar to requests we have made to support listed species funds in association with other FDOT projects that have resulted in adverse effects to Federally listed species (e.g. Audubon's crested caracara). As you are probably aware, the Platt Branch Mitigation Bank has not been approved to provide habitat compensation for FDOT projects that impact the Florida bonneted bat. Please indicate if the FDOT is agreeable to this conservation measure.

Response: Please see response to number 1 above requesting a revised FBB effect determination of May Affect, Not Likely to Adversely Affect. If USFWS concurs with this FBB effect determination, the FBB contribution measure in not required.

3) Please indicate if the FDOT agrees to not commence construction activities for the project until a) an email or letter from the FDOT is provided to the Service indicating that the credits from the Platt Branch Mitigation Bank have been withdrawn from the bank's credit ledger, b) a letter or email from the Fish and Wildlife Foundation of Florida is provided indicating that the FDOT has provided $25,000.00 to the Florida bonneted bat fund, and c) the Service provides an email to the FDOT indicating that we have received verification from the FDOT and Fish and Wildlife Foundation regarding these actions. This is something that the Service normally asks for in association with out biological opinions for development projects to assure that the agreed upon compensation is provided.

Response: FDOT agrees to not commence construction activities for the project until:
a) an email or letter from the FDOT is provided to the Service indicating that the credits from Platt Branch Mitigation Bank have been withdrawn from the bank's credit ledger,

b) Based on responses to questions above, FDOT requests the USFWS' concurrence with a MANLAA effect determination for the FBB, therefore no payment would be required to the FBB fund.

c) FDOT agrees to not commence construction activities for the project until the Service provides an email to the FDOT indicating that USFWS has received verification from the FDOT and FWC regarding receipt of ledger deduction for Eastern indigo snake Credits from Platt Branch Mitigation Bank.

3) The FDOT has determined that the project may affect, but is not likely to adversely affect the Florida scrub-jay, and the Florida panther. The project is not located in the Service's consultation area or Focus area for the Florida panther. Moreover, scrub-jays were not observed within or near the project footprint and the project will not affect suitable scrub-jay habitat. As such, I find that these species are not reasonably certain to occur on the project site and will not be affected by the project. I recommend that you change your determination for these species from may affect, not likely to adversely affect to no effect. If this is agreeable to the FDOT you can let me know by return email.

Response: FDOT agrees to change the project's effect determination for Florida scrub-jay and Florida panther to No Effect.

From USFWS: Please indicate if the Florida Department of Transportation (FDOT) would agree to the following minimization measure for the Florida bonneted bat (FBB):

If land clearing is scheduled during the FBB breeding season from January through April, the Applicant's consultant will inspect all suitable roosting sites within the project footprint to determine the status of female bats with young. If female FBBs with young are observed roosting on the project site, the Applicant will conduct land clearing outside of the FBB breeding season from May through December.

This is a minimization measure that I have requested for previous FDOT projects.

Response: FDOT agrees to this minimization measure and will add the FBB BMP #1 listed in response number 1 above as a project commitment.

I have a question about nest surveys for the Audubon's crested caracara that were conducted for the SR 70 Project. The following is stated on page 8 of Appendix H (Audubon's crested caracara technical memorandum) in the Natural Resource Assessment provided for the Project:

Selected pond sites included on exhibits in this memorandum were not identified prior to the 2019 nesting season surveys. These areas will be surveyed for Audubon's crested caracara during the project's design and permitting phase and it is not anticipated that the selected pond sites will elevate the effect determination and involvement with this species.

It sounds like caracara nest surveys have not yet been conducted in these selected pond sites. Can you please tell me if these pond sites will be included in the preferred alternative for the project, and if suitable nesting sites/ habitat for the caracara occur within the footprint of the pond sites or within 985 feet of these sites? If these pond sites are included in the preferred alternative for the project and suitable nesting habitat is located in these sites, then the FDOT

will need to conduct nest surveys (based on the Service's guidance) to determine the status of active caracara nesting in or within 985 feet of these sites. I will not be able to determine if I can provide concurrence for the FDOT's determination that the project may affect, and is not likely to adversely affect the caracara or determine if further nest surveys are needed for these pond sites until I receive your response to this question. In addition, I won't be able to complete the biological opinion for the project. If you have any questions, please let me know.

Response: The pond sites included in the NRE had not been identified during the 2019 nesting season survey. However, based on the selection of the preferred pond sites, the proposed offsite pond sites (FPC areas) are located within the 2019 nesting survey boundary. Since the timing of the potential design and construction phases have not been determined, the NRE included a commitment to resurvey the project area, including preferred pond sites, for caracara during the design and permitting phase.

The FDOT appreciates the USFWS' involvement with this project. The FDOT respectfully requests your review comments or agreement with the findings and effect determinations within 30 days. If you have any questions or require additional information, please contact me 850-414-4943 or Harrison.Garrett@dot.state.fl.us.

Sincerely,

Harrison Garrett
Project Delivery Coordinator
Florida Department of Transportation
Office of Environmental Management

References:

Bailey, A.M., H.K. Ober, B.E. Reichert, and R.A. McCleery. 2019. Canopy Cover Shapes Bat Diversity across an Urban and Agricultural Landscape Mosaic. *Environmental Conservation* 46: 193-200.
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Layne, J.N., and T.M. Steiner. 1996. Eastern Indigo Snake (*Drymarchon corais couperi*): Summary of Research Conducted on Archbold Biological Station. Report to U.S. Fish and Wildlife Service, Order No. 43910-6-0134, Jackson, Mississippi. 33 pp.

U.S. Fish and Wildlife Service. 2017. Eastern Indigo Snake Programmatic Effect Determination Key. South Florida Ecological Services Office. Vero beach, Florida.

U.S. Fish and Wildlife Service. 2019. Florida Bonneted Bat Consultation Guidelines Key. South Florida Ecological Services Office. Vero Beach, Florida.

USFWS Biological Opinion

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Florida Ecological Services Field Office

May 28, 2020

Harrison Garrett
Florida Department of Transportation
605 Suwanee Street, MS-37
Tallahassee, Florida 32399-0450

Service Consultation Code: 04EF2000-2019-F-0187
Date Received: October 22, 2020
Consultation Initiation Date: April 20, 2021
Project: State Road 70 from County Road 29 to Lonesome Island Road
County: Highlands

Dear Mr. Garrett:

The U.S. Fish and Wildlife Service (Service) has received a request for formal consultation from the Florida Department of Transportation (FDOT), dated October 22, 2020, for the widening of State Road (SR) 70 from County Road (CR) 29 to Lonesome Island Road (Project). This request was made on behalf of the Federal Highway Administration (FHWA). The FDOT has assumed FHWA's consultation responsibilities with the Service per agreement with the FHWA dated December 14, 2016. This document transmits the Service's Biological Opinion (BO) based on our review of the proposed Project located in Highlands County, Florida, and its effects on the threatened eastern indigo snake (*Drymarchon corais couperi = Drymarchon couperi*). It also includes and summarizes our concurrences for the FDOT's determinations for the Audubon's crested caracara (*Polyborus plancus = Caracara cheriway*; ACC), Everglade Snail Kite (*Rostrhamus sociabilis*; ESK), Florida bonneted bat (*Eumops floridanus*; FBB) and wood stork (*Mycteria americana*). This document is submitted in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884; 16 U.S.C. 1531 *et seq*.).

This biological opinion is based on information provided in the FDOT's Natural Resource Evaluation for the Project dated October 1, 2020, correspondence, telephone conversations, emails, and other sources of information. A complete record of this consultation is on file at the South Florida Ecological Services Office in Vero Beach, Florida

Consultation History

In an email to the Service dated October 22, 2020, the FDOT determined that the Project may affect, and is likely to adversely affect the eastern indigo snake and the FBB, and requested that

the Service initiate formal consultation on the Project. The FDOT also determined that the Project may affect, but is not likely to adversely affect the ACC, ESK, Florida panther (*Puma concolor coryi*), Florida scrub-jay (*Aphelocoma coerulescens*), and wood stork, and requested the Service's concurrence for these determinations.

In an email to the FDOT dated December 3, 2020, the Service noted that the Project site did not contain suitable habitat for the Florida scrub-jay, and the Project was not located in the Service's focus area for the Florida panther. Consequently, these species were not reasonably certain to occur on or near the Project site. The Service recommended that the FDOT change its determination for these species from may affect, but is not likely to adversely affect to no effect. The Service also requested additional information on the Project design and conservation measures proposed to benefit the eastern indigo snake.

In an email to the Service dated April 20, 2021, the FDOT noted that the during the acoustic survey conducted at the Project site by their consultant in May 2020, a total of 20 bat calls were identified as those of the FBB. However, none of those calls were recorded within 90 minutes of sunset or sunrise and based on the timing of these calls it is not likely that FBBs roost on the Project site. In addition, no FBB roosts were documented on the Project site during roosting survey conducted by FDOT's consultant in August 2020. Based on this information, the FDOT changed its determination for the FBB from may affect, and is likely to adversely affect to may affect, but is not likely to adversely affect, and requested concurrence for this determination. The FDOT also changed its determinations for the Florida panther and the Florida scrub-jay from may affect, but is not likely to adversely affect to no effect. Finally, the FDOT provided additional information regarding the Project design and conservation measures associated with the Project as discussed above.

BIOLOGICAL OPINION

This BO provides the Service's opinion as to whether the proposed Project is likely to jeopardize the continued existence of the eastern indigo snake. Critical habitat has not been designated for the eastern indigo snake. Therefore, this BO will not address destruction or adverse modification of critical habitat.

Jeopardy Determination

Section 7(a)(2) of the Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 Code of Federal Regulations 402.02).

The jeopardy analysis in this biological opinion relies on four components: (1) the Status of the Species a description of the range-wide condition of the species, the factors responsible for that condition, and the species survival and recovery needs; (2) the Environmental Baseline an analysis of the condition of the species in the action area, the factors responsible for that

condition, and the relationship of the action area to the survival and recovery of the species; (3) the Effects of the Action on the species, including the direct and indirect effects of the proposed Federal action and the effects of any interrelated or interdependent activities; and (4) the Cumulative Effects an evaluation of the effects of future, non-federal activities in the action area on the species.

In accordance with policy and regulation, the jeopardy determination is made by evaluating the effects of the proposed federal action in the context of the current status of the species, taking into account any cumulative effects, to determine if implementation of the proposed action is likely to cause an appreciable reduction in the likelihood of both the survival and recovery of the species in the wild.

DESCRIPTION OF THE PROPOSED ACTION

The FDOT proposes to widen a 4.3-mile (mi) segment of the SR 70 from CR 29 to Lonesome Island Road. The existing 2 lane paved roadway will be enlarged to 4, 12-foot wide paved lanes (2 eastbound and 2 westbound) with 5-foot wide paved shoulders, and a 40-foot wide grassed center median. The Project will also include a 12-foot wide paved shared use path, three stormwater treatment ponds and two floodplain compensation ponds. The need for the Project is based on addressing structural deficiencies of the existing roadway (*e.g.,* pavement cracking, potholes, rutting, failing roadway slopes), improving motor vehicle operational efficiency and hurricane evacuation capability, improving safety for motorists, and enhancing economic development in the region. The Project is located at latitude 27.29410, longitude 81.24591, in Section 36, Township 37 South, Range 30 East, Sections 31-34, Township 37 South, Range 31 East; Section 1, Township 38 South, Range 30 East; and Sections 3-6, Township 38 South, Range 31 East in Highlands County, Florida (Figure 1).

The 199.80-acre (ac) Project site contains 75.87 ac of land cover types that provide habitat for the eastern indigo snake including 33.46 ac of improved and unimproved pasture, 5.01 ac of citrus groves, 29.15 ac of sod farms, 1.83 ac of temperate hardwood, 4.23 ac of live oak, 1.96 ac of mixed-wetland hardwoods, and 0.23 ac of freshwater marsh. Lands within the two proposed Floodplain Compensation areas will not be converted into paved roadway and are expected to maintain vegetation that provides suitable habitat for the eastern indigo snake following completion of the Project.

The Project will impact 32.87 ac of surface waters and 2.86 ac of wetlands. To compensate for impacts to wetlands, the FDOT has proposed to develop a conceptual wetland mitigation plan at the time of permitting.

Minimization and conservation measures

To benefit the survival and recovery of the eastern indigo snake, the FDOT has agreed to implement the following minimization and conservation measures in association with the Project:

1) To reduce the likelihood that construction of the Project will result in injuries or mortalities of eastern indigo snakes, the FDOT has agreed to have its contractor follow the Service's *Standard Protection Measures for the Eastern Indigo Snake* (SPM; Service 2013) during construction.

2) To support the survival and recovery of the eastern indigo snake, the FDOT has agreed to provide sufficient credits at the Platt Branch Mitigation Bank (PBMB) in Highlands County, Florida to provide at least 75.87 ac of land cover types that provide habitat for the species. The FDOT has agreed not to commence construction of the Project until they provide the Service with a letter or email from the PBMB stating the credit ledger from the bank has been revised to reflect the deduction of the credits and the FDOT and their consultant receives an email or letter from the Service indicating that we have received this document.

Action area

The action area is defined as all areas to be directly or indirectly affected by the Federal action and not merely the immediate area involved in the action. For this Project the Service defines the action area as the Project footprint and all lands within 1,000 feet of the Project footprint. Construction activities and subsequent use of the new widened roadway by motor vehicles will produce noise, vibrations and light that will extend outward from the Project footprint. The distance that disturbance from these sources will extend from the Project footprint is not exactly known. However, based on our knowledge of noise and light that occur at other paved roadways in Florida, and in lieu of any other available information to the contrary, we estimate that noise will extend up to 1,000 feet from the Project footprint.

SPECIES NOT LIKELY TO BE ADVERSELY AFFECTED BY THE PROPOSED ACTION

Audubon's crested caracara

The Project occurs within the geographic range of the ACC. The ACC was observed in the Project area during field inspections conducted by the FDOT's consultant. Surveys for active nests of the ACC, following the Service's survey guidance, were conducted by the FDOT's consultant from January through April 2019. Active nests were not observed on the Project footprint or within 1,000 feet of the Project footprint. Therefore, the Project is not expected to affect nesting of the ACC. The Project will result in the minor loss of potential foraging habitat for the ACC (75.87 ac). However, thousands of acres of potential foraging habitat remain in the Project area and this loss is not expected to affect foraging of the ACC. The Service acknowledges that the collective loss of foraging habitat range wide has the potential to adversely affect the ACC. As such, we continue to monitor the loss of ACC foraging habitat throughout the species range. The Service finds that this Project is not expected to result in adverse impacts to the ACC. The FDOT has determined that the Project may affect, but is not likely to adversely affect the ACC. Based on the information provided, the Service concurs with this determination.

Everglade Snail Kite

The Project is in the geographic range of the ESK. The ESK was observed in the Project area during field inspections conducted by the FDOT's consultant. Surveys for active nests of the ESK, following the Service's survey guidance, were conducted by the FDOT's consultant during six separate events from December 2018 through May 2019. Active nests of the ESK were not observed on or near the Project footprint. Therefore, the Project is not expected to affect nesting of the ESK. The Project will result in the loss in the small amount of potential foraging habitat for the ESK (32.87 ac of surface waters and 2.86 ac of wetlands). However, thousands of ac of potential foraging habitat remain in the Project area and this loss is not expected to affect foraging of the ESK. The Service acknowledges that the collective loss of foraging habitat range wide has the potential to adversely affect the ESK. As such, we continue to monitor the loss of ESK foraging habitat throughout the species range. The Service finds that this Project is not expected to result in adverse impacts to the ESK. The FDOT has determined that the Project may affect, but is not likely to adversely affect the ESK. Based on the information provided, the Service concurs with this determination.

Florida bonneted bat

The Project occurs within the Service's consultation area for the FBB. The FDOT's consultant conducted roosting and acoustic surveys for the FBB based on the Service's guidance at the Project site in 2020. Roosting FBBs were not observed on the Project site. A total of 20 bat calls identified as the FBB were recorded during the acoustic survey. However, none of these calls were recorded within 90 minutes of sunset or sunrise. Therefore, these calls likely represent transient individuals travelling or foraging over the Project footprint and not FBBs that roost on the Project site. The FDOT has determined that the Project may affect, but is not likely to adversely affect the FBB. Based on the information provided, the Service concurs with this determination.

Wood stork

The Project is in the geographic range of the wood stork and within the Core Foraging Area (CFA) (*i.e.,* all lands within 18.6 mi) of an active nesting colony. The Project will result in the minor loss of potential foraging habitat for the wood stork associated with the loss of 2.86 ac of wetlands. However, thousands of acres of suitable potential foraging habitat remain in the CFA, including emergent wetlands in or adjacent to Lake Okeechobee, and this minor loss is not expected to affect foraging wood stork foraging in the CFA. The Service acknowledges that the collective loss of foraging habitat range wide has the potential to adversely affect the wood stork. As such, we continue to monitor the loss of wood stork foraging habitat throughout the species range. The Service finds that the Project is not expected to result in adverse impacts to the wood stork. The FDOT has determined that the Project may affect, but is not likely to adversely affect the wood stork. Based on the information provided, the Service concurs with this determination.

STATUS OF THE SPECIES RANGEWIDE

The status of the species range wide for the eastern indigo snake can be found at: https://ecos.fws.gov/ServCat/DownloadFile/165512 (Service 2019).

Summary of threats to the species

The principal threat to the eastern indigo snake is the loss of habitat due commercial and residential development. Fire suppression and the lack of habitat management (*i.e.,* prescribed fire) in some areas has also resulted in the overgrowth of vegetation and the degradation and loss of habitat. Additional potential threats to the eastern indigo snake include: injuries and mortalities due to collisions with motor vehicles when attempting to cross roadways, malicious killing, occasional illegal collection of snakes for pets or the pet trade, and the reduction of gopher tortoise (*Gopherus polyphemus*) burrows available to eastern indigo snakes as shelters due to the decline of the gopher tortoise throughout its range.

ENVIRONMENTAL BASELINE

Status of the species within the action area

The action area (*i.e,* the Project site and all lands within 1,000 feet) contains habitat suitable for the eastern indigo snake, and the majority of this habitat is unfragmented. A total of 75.87 ac of land cover types that provide suitable habitat for the eastern indigo snake occur in the Project footprint and will be lost due to the Project. Suitable habitat (roughly 850 ac) consisting of pasture, other agricultural lands, and forested lands also occurs within the remainder of the action area.

The Project site occurs within the known geographic range of the eastern indigo snake. This species was not observed by the FDOT's consultant during recent pedestrian surveys of the Project site. However, the Service has three records of the eastern indigo snake in our database occurring on the Project site. One individual was observed near the intersection of SR 70 and Lonesome Island Road in 2007 and two individuals were observed immediately adjacent to the intersection of SR 70 at its current intersection with CR 29 in 1974 (Figure 2). The Service also has two records of eastern indigo snakes (documented in 1982 and 1944, respectively) occurring approximately 0.25 mi west of the Project footprint (Figure 2). These records are located within 0.62 mi and 0.30 mi of the Project footprint. This distance corresponds to diameter of the home range of male and female indigo snake in South Florida based on estimated mean home range sizes of 184 ac and 46 ac respectively (as described in Layne and Steiner 1996). The habitat in the action area remains largely in a natural or agricultural state which would allow this species to persist in the action area after the observations were made. Based on this evidence, the Service concludes that the eastern indigo snake is reasonably certain to occur on the Project site.

It is difficult to determine the number of eastern indigo snakes that occur in the action area and within the Project footprint due to lack of existing data on the species abundance and an easily applied and reliable survey method. Therefore, we used the records in our database described above to estimate these metrics assuming each record represents a single male and a single

female eastern indigo snake. We further assumed that eastern indigo snakes identified by our database records would represent individuals likely to occur within the Project footprint or the action area if the records were located in these areas or within either 0.62 mi of these areas for male eastern indigo snakes or 0.30 mi for female eastern indigo snakes (as discussed above these distances represent the mean diameter of the home range for male and female snakes, respectively). Based on the number and location of the eastern indigo snake records described above and denoted in Figure 2, the Services estimates that up to ten eastern indigo snakes (five males and five females) could occur in the action area and that up to ten eastern indigo snakes (five males and five females) could occur in the Project footprint. In association with the five female eastern indigo snakes, the Service also estimates that up to five clutches of eggs could be present either in the action area or Project footprint during a breeding season.

Factors affecting the species environment within the action area

Currently, the greatest factor affecting the eastern indigo snake's environment within the action area is the presence of existing roadways (*i.e.,* SR 70, CR 29, and Lonesome Island Road). Motor vehicle traffic using these roadways increases the likelihood that eastern indigo snakes will be struck by these vehicles and injured or killed. The Service does not have any records of eastern indigo snakes being killed on these sections of roads. However, we do not have a reliable method of monitoring road-killed animals on public roadways. Moreover, scavengers quickly remove road-killed animals from roadways reducing the likelihood of detection.

Climate change

Our analyses under the Act include consideration of observed or likely environmental effects related to ongoing and projected changes in climate. As defined by the Intergovernmental Panel on Climate Change (IPCC), "climate" refers to average weather, typically measured in terms of the mean and variability of temperature, precipitation, or other relevant properties over time; thus, "climate change" refers to a change in such a measure which persists for an extended period, typically decades or longer, due to natural conditions (*e.g.,* solar cycles) or human-caused changes in the composition of the atmosphere or in land use (IPCC 2013, p. 1450). Because observed and projected changes in climate at regional and local levels vary from global average conditions, rather than using global scale projections, we use "downscaled" projections when they are available. In our analysis, we use our expert judgment to weigh the best scientific and commercial data available in our consideration of relevant aspects of climate change and related effects. Based on the observed trends in the climate record gathered from thousands of temperature and precipitation recording stations around the world and changes observed in physical and biological systems, the scientific community is certain that the earth's climate is changing and a warming trend in the climate is occurring (USGS 2019).

Florida is vulnerable to pulse events and sea level rise as well as to changes in rainfall and temperatures expected due to changes in environmental trends. Recent model simulations conducted by the National Oceanic and Atmospheric Administration (NOAA) during its Coupled Model Intercomparison Phase 5 Project (NOAA 2017) predict seasonal changes in precipitation for South Florida with increases in dry season rainfall up to 20 percent and decreases in wet season rainfall up to 30 percent. The change in timing of rainfall will likely stress ecosystems

and cause changes in vegetation types. A potential outcome of the change in vegetation could be a reduction in the prey productivity and the availability of prey to the eastern indigo snake.

EFFECTS OF THE ACTION

Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR 402.02).

Construction activities

The construction activities associated with the widening of SR 70 in the Project footprint have the potential to adversely affect eastern indigo snakes. For example, the use of heavy equipment in the Project footprint during land clearing and grading could incidentally injure or kill this species. The Service notes that the contractor for FDOT will be required to follow the SPM (Service 2013) during land clearing and construction activities. The SPM require that all construction workers be informed about eastern indigo snakes, their protected status, and potential occurrence on the Project site. The SPM further require the posting of speed limit signs on all roadways during Project construction and onsite signs explaining the penalties of intentionally running over snakes. Finally, the SPM require that construction cease if eastern indigo snakes are observed on the Project site during construction. Through the implementation of the SPM, the Service finds it unlikely that eastern indigo snakes will be injured or killed the part during construction activities.

As indicated above, the Service expects that up to five clutches of eastern indigo snakes could occur in the Project footprint during the breeding season. Unfortunately, egg clutches are located underground and difficult to detect. Consequently, if construction activities occur during the breeding season, they are likely to crush eastern indigo snake eggs and result in the loss of any egg clutch deposited in the Project footprint prior to the commencement of construction activities.

The construction of the new roadway lanes and associated infrastructure will directly result in the permanent loss of at least 75.87 ac of lands that provide habitat for the eastern indigo snakes. This acreage will be permanently lost to the species and will result in a minor reduction in the geographic range of the species and additional fragmentation of the species habitat in the region. The installation of the Project will also reduce the size of each existing home range of the eastern indigo snakes located in the Project footprint. Consequently, this loss of habitat could cause any eastern indigo snakes present to readjust its home range and potentially result in intraspecific competition for a territory, or in the worst case scenario reduce the size of the home range whereby it is no longer suitable for the species and result in the loss of the home range. The habitat lost due to the Project will adversely affect the eastern indigo snake by reducing the amount of habitat available for breeding, feeding, and sheltering of the species. As a conservation measure to benefit the survival and recovery of the eastern indigo snake and

compensate for the loss of eastern indigo snake habitat, the FDOT will provide sufficient credits from the PBMB in Highlands County, Florida to provide at least 75.87 ac of eastern indigo snake habitat. Lands within the PBMB are protected and managed in perpetuity to provide habitat for eastern indigo snake and other federally listed species.

Roadway operation following project completion

Motor vehicles present a threat to Eastern indigo snakes attempting to cross roadways. Injuries and mortalities of eastern indigo snakes resulting from motor vehicle strikes have been documented in other portions of the species range (Service 2019). The Service does not have any reports of injuries or mortalities of eastern indigo snakes resulting from collisions from motor vehicles in the action area. However, as discussed above, we acknowledge that little information about the frequency of road-related injuries and mortalities exists.

The Service finds it logical to expect that the widening of the SR 70 roadway will increase the risk that eastern indigo snakes will be struck by motor vehicles when attempting to cross the roadway. This will result from the increased width of paved roadway, containing cars and trucks moving at high speeds, that eastern indigo snakes must traverse when crossing the roadway, and the increase in the number of motor vehicles that the widened roadway can accommodate. The number of motor vehicles using the SR 70 roadway following widening is anticipated to increase, but not because of the widening itself. Rather, the number of motor vehicles using this section of roadway is expected to increase due to the projected future increase in human population growth and development in the region and the associated increase in motor vehicle use. Because the frequency of road crossings made by eastern indigo snakes in the action area is unknown and a reliable method to monitor road-related injuries and mortalities of eastern indigo snakes is not available, the Service finds it is not practicable to quantify the increased risk of road-related injuries and mortalities of eastern indigo snakes that may occur due the widening of the SR 70 roadway as the number of individuals injured or killed. Although the Project is likely to increase the potential for take associated with vehicular strikes, we find that the increased risk to eastern indigo snakes from vehicle strikes is likely to be small because the additional width of paved lanes containing motor vehicle traffic resulting from the Project is relatively small (ca. 24 feet of paved travel lanes within the 4.3-mi roadway segment).

Operation of the widened roadway (*i.e.,* motor vehicle use) is expected to increase disturbance to eastern indigo snakes in the Project area. Eastern indigo snakes are already exposed to significant disturbance in the Project corridor from motor vehicles using the existing SR 70 two-laned roadway (*i.e.,* the visual presence of motor vehicles and human activity on the roadway and vibrations due to motor vehicle operation). However, the addition of two new paved lanes will expand the extent of disturbance from motor vehicle use. The expected increase in the number of vehicles using the roadway resulting from future development in the region will also increase the magnitude of the disturbance. Disturbance resulting from motor vehicle use of the Project corridor could affect the movements of eastern indigo snakes. Consequently, eastern indigo snakes may be more likely to avoid the SR 70 roadway and alter or reduce the size of their home range. Based on our knowledge of the eastern indigo snake's behavior, we believe that they will adjust their home range to account for the increased level of disturbance resulting from the Project. Consequently, the increase in disturbance resulting from roadway operation

may result in minor changes in eastern indigo snake use patterns in the Project area. However, we don't expect these minor changes to result in the loss of an eastern indigo snake home range in the action area.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, Tribal, local or private actions that are reasonably certain to occur in the action area considered in this Biological Opinion. Future Federal actions unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. The Service notes that future development in the action area will likely require a permit to fill wetlands either from the U.S. Army Corps of Engineers (Corps) or the Florida Department of Environmental Protection (FDEP) through their recent assumption of the Corps wetlands permitting process pursuant to Section 404 of the Clean Water Act. Therefore, a Federal nexus will exist and the Service will be able to consult on these actions, or the Service will be able to provide comments to the FDEP on these actions as a result of the Service's programmatic consultation with the Environmental Protection Agency on FDEP's assumption of the permitting process that has already occurred. Consequently, cumulative effects are not expected to occur in the action area.

CONCLUSION

After reviewing the current status of the eastern indigo snake, the environmental baseline for the action area, the effects of the proposed action, and the cumulative effects, it is the Service's biological opinion that the Project, as proposed, is not likely to jeopardize the continued existence of the eastern indigo snake. We have reached this conclusion because:

1. The FDOT will follow the Service's SPM for the eastern indigo snake during construction of the Project and it is unlikely that eastern indigo snakes will be injured or killed during construction activities. Egg clutches could be crushed and destroyed during construction activities, although the number of clutches that could be lost is expected to be small and not exceed five clutches during one breeding season.

2. The Project will result in the loss of a small amount of lands (75.87 ac) that currently provide habitat for eastern indigo snake, and result in a minor decrease in the spatial extent of this habitat and the geographic range of the species. The Service notes that thousands of acres of eastern indigo snake habitat remain throughout the range of the eastern indigo snake and we don't expect this minor loss of habitat resulting from the Project to significantly reduce the range-wide population of the species. We acknowledge that collectively habitat loss from development projects could ultimately result in jeopardy to the species. Therefore, we continue to monitor the adverse effects of habitat loss of development projects to the eastern indigo snake throughout its range.

3. The number of eastern indigo snakes taken due to the Project will be small. Based on records of eastern indigo snakes in the Service's database and the home range size estimates provided by Layne and Steiner (1996; 46 ac and 184 ac respectively, for female and male eastern indigo snakes), the incidental take of up to five female and five male eastern indigo snakes and five

clutches of eastern indigo snake eggs within the Project footprint could occur. We don't expect this minor loss of individuals and reproductive effort to significantly reduce the range wide population of the species. We acknowledge that collectively the incidental take of eastern indigo snakes resulting from development projects could ultimately result in jeopardy to the species. Therefore, we continue to monitor the adverse effects of incidental take to the eastern indigo snake due to development projects throughout its range.

4. The potential for eastern indigo snake mortality and injury due to collisions with motor vehicles is expected to increase within the section of SR 70 associated with the Project due to the increase in paved roadway containing motor vehicle traffic, and the expected increase in motor vehicle traffic from future population growth and development in the action area. However, this increase is expected to be small.

5. The widening of SR 70 will increase disturbance to eastern indigo snakes resulting from roadway operation. The increase in disturbance may result in minor changes in eastern indigo snake use patterns in the Project area, but the Service does not expect these minor changes to result in the loss of an eastern indigo snake home range in the action area.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. "Take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct." "Harm" is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking, that is incidental to and not intended as part of the agency action, is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The terms and conditions described below are nondiscretionary and must be undertaken by the FDOT for the exemption in section 7(o)(2) to apply. The FDOT has a continuing duty to regulate the activity covered by this incidental take statement. If the FDOT fails to assume and implement the terms and conditions, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the FDOT must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement [50 CFR § 402.14(i)(3)].

AMOUNT OR EXTENT OF TAKE

The Service has reviewed the biological information for the eastern indigo snake, information presented by the FDOT and their consultant, and other available information relevant to this action. The Project is expected to incidentally result in take of the eastern indigo snake in the form of harm from the direct loss of habitat in the Project footprint (75.87 ac) and construction activities (with respect to the loss of egg clutches of eastern indigo snakes). The Service expects that habitat loss due to the Project will result in the incidental take of no more than five female and five male eastern indigo snake and that construction activities will result in the incidental take of no more than five clutches of eastern indigo snake eggs.

As indicated above, the Service finds it not practicable to quantify the number of injuries or mortalities of eastern indigo snakes resulting from the increased risk in motor vehicle strikes expected to result from operation of the widened roadway. However, we find that our estimate of incidental take related to habitat loss (up to five female and five male eastern indigo snakes) sufficiently encompasses the increased risk of take from vehicles strikes because the likelihood of these events is small.

The Service has chosen to use habitat loss as a surrogate for monitoring the number of eastern indigo snakes expected to be taken incidentally from the Project. We note that it is not practicable to monitor take of eastern indigo snakes directly for the following reasons: (1) the eastern indigo snake is secretive species that spends much of its time in underground refugia making it difficult to detect; 2) egg clutches of eastern indigo snakes are laid underground and difficult to detect; and (3) it is difficult to document the adverse effects of habitat loss from the Project on survival and reproduction of an individual eastern indigo snake. The Service notes that habitat loss is easily measured and monitored. Therefore, we will monitor the amount of incidental take from the Project by monitoring the loss of 75.87 ac of eastern indigo snake habitat.

If more than 75.87 ac of eastern indigo snake habitat is lost, immediate reinitiation of consultation is required, to the extent discretionary Federal agency involvement or control over the action has been retained or is authorized by law. While we do not expect to observe harm or death of eastern indigo snakes, if more five male eastern indigo snakes or five female eastern indigo snakes or five clutches of eastern indigo snake eggs are harmed or killed, then take is exceeded and immediate reinitiation of consultation is required, to the extent discretionary Federal agency involvement or control over the action has been retained or is authorized by law.

EFFECT OF TAKE

In the accompanying BO, the Service determined this level of anticipated take is not likely to result in jeopardy to the eastern indigo snake. Critical habitat has not been designated for the eastern indigo snake and will not be affected.

REASONABLE AND PRUDENT MEASURES

When providing an incidental take statement, the Service is required to provide: 1) reasonable and prudent measures it considers necessary or appropriate to minimize the take; 2) terms and conditions that must be complied with to implement the reasonable and prudent measures; and 3) procedures to be followed if any federally listed species are injured or killed. The Service finds the FDOT has already designed the Project to minimize take resulting from the action as described in the "Description of the Proposed Action" section of this BO. Therefore, additional reasonable and prudent measures and their implementing terms and conditions are not necessary to reduce take of the eastern indigo snake resulting from the action and will not be provided.

MONITORING AND REPORTING REQUIREMENTS

Pursuant to 50 Code of Federal Regulations 402.14(i)(3), the FDOT must provide adequate monitoring and reporting to determine if the amount or extent of take is approached or exceeded. Following land clearing associated with the Project, the FDOT must provide a report notifying the Service as to the acreage of each habitat type cleared by the Project within the Project footprint.

DISPOSITION OF DEAD OR INJURED SPECIMENS

Upon locating a dead, injured, or sick threatened or endangered species, initial notification must be made to the nearest Service Law Enforcement Office, 20501 Independence Blvd., Groveland, Florida, 34736, (352)429-1037, as well as the Florida Fish and Wildlife Conservation Commission's Wildlife Alert number, (888)404-3922. Secondary notification should be made to the biologist identified below at the South Florida Ecological Service Office, (772)562-3909. Care should be taken in handling sick or injured specimens to ensure effective treatment and in the handling of dead specimens to preserve biological material in the best possible state for later analysis as to the cause of death. In conjunction with the care of sick or injured specimens, or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by Law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service is not proposing any conservation recommendations at this time.

REINITIATION NOTICE

This concludes formal consultation on the Project. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control

over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded (see below); (2) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (3) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. The amount of incidental take authorized by this consultation may be exceeded should impacts from the proposed Project increase beyond the loss of 75.87 ac of eastern indigo snake habitat and would be exceeded if more than five male eastern indigo snakes or five female eastern indigo snakes or five clutches of eggs are harmed or destroyed, as reported in this BO. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

Thank you for your cooperation in the effort to protect fish and wildlife resources. If you have any questions regarding this project, please contact John Wrublik at (772)469-4282.

Sincerely yours,

ROXANNA HINZMAN

Digitally signed by ROXANNA HINZMAN
Date: 2021.06.01 08:48:10 -04'00'

Roxanna Hinzman
Field Supervisor
Florida Ecological Services Office

cc: electronic only

FDOT, Bartow, Florida (Jonathon Bennett, Gwen Pipkin)
FWC, Tallahassee, Florida (FWC-CPS)
NOAA Fisheries, St. Petersburg, Florida (David Rydene)

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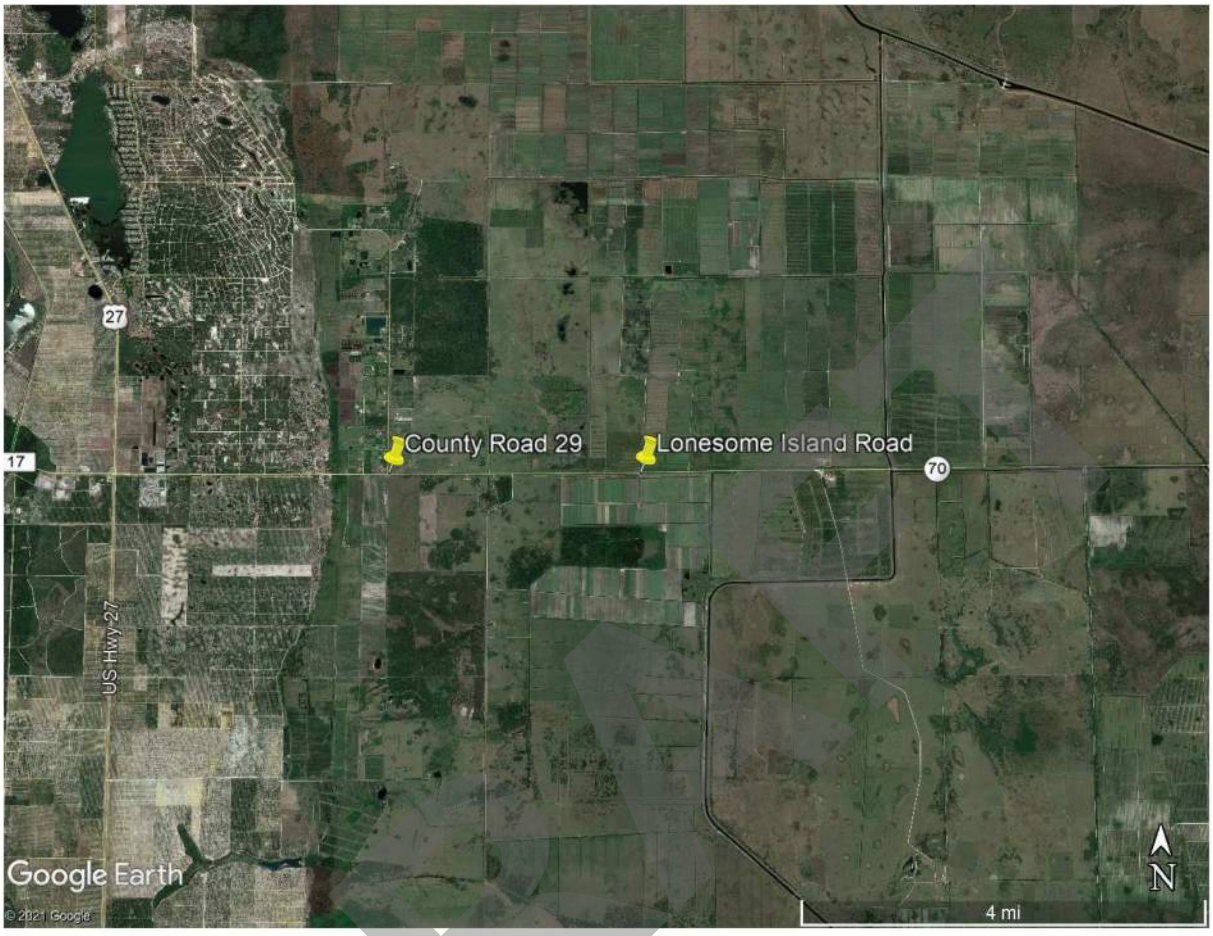


Figure 1. Location map for SR 70 from CR 29 to Lonesome Island Road widening project in Highlands County, Florida.

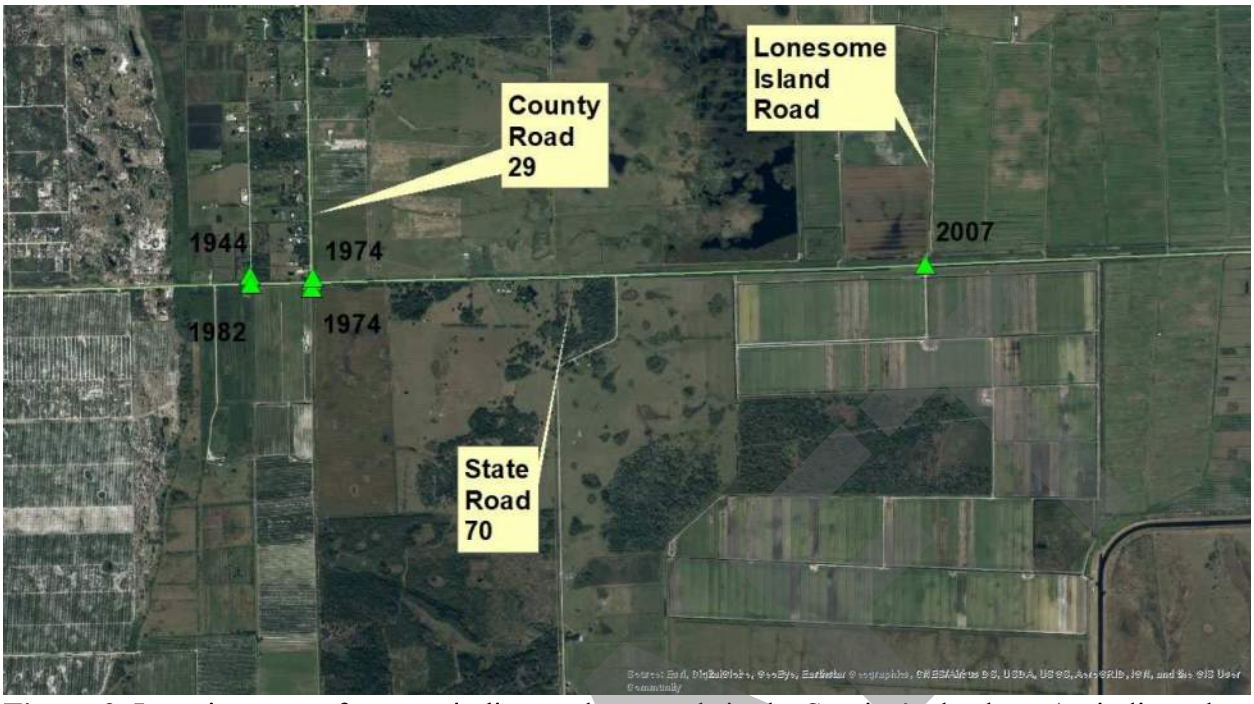
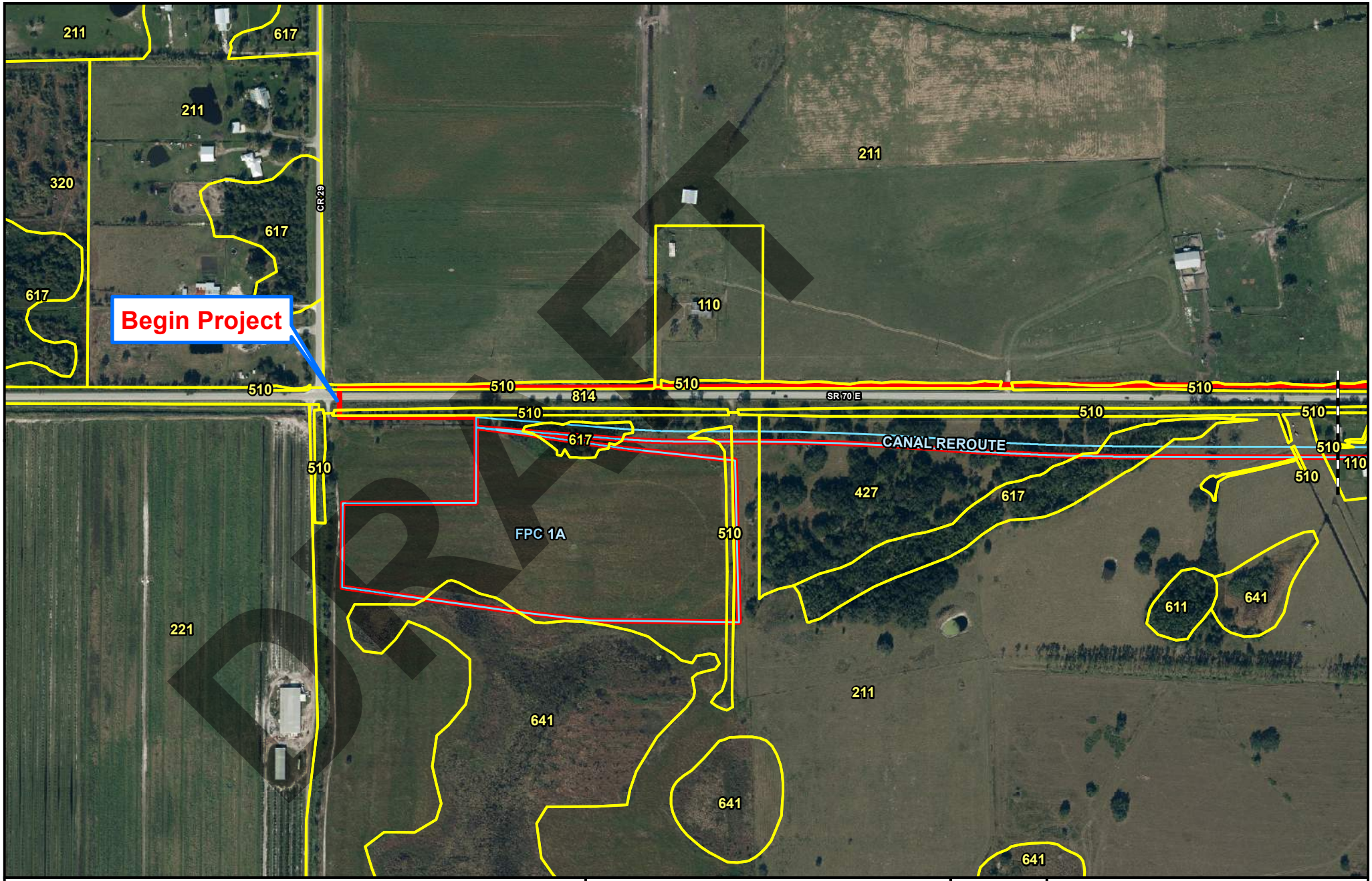


Figure 2. Location map of eastern indigo snake records in the Service's database (as indicated by green triangles) for SR 70 from CR 29 to Lonesome Island Road widening project in Highlands County, Florida

APPENDIX B

Updated Land Use Map



Project Study Area

Proposed Pond

110: Residential, Low Density

211: Improved Pastures

221: Citrus Groves

320: Upland Shrub and Brushland

427: Live Oak

510: Streams and Waterways

611: Bay Swamps

617: Mixed Wetland Hardwoods

641: Freshwater Marshes / Graminoid Prairie - Marsh

814: Roads and Highways

Land Use Map

SR 70 from CR 29 to Lonesome Island Road
Project Development & Environment Study
FPID No. 414506-5-22-01
Highlands County, FL

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Appendix B Page 1 of 6

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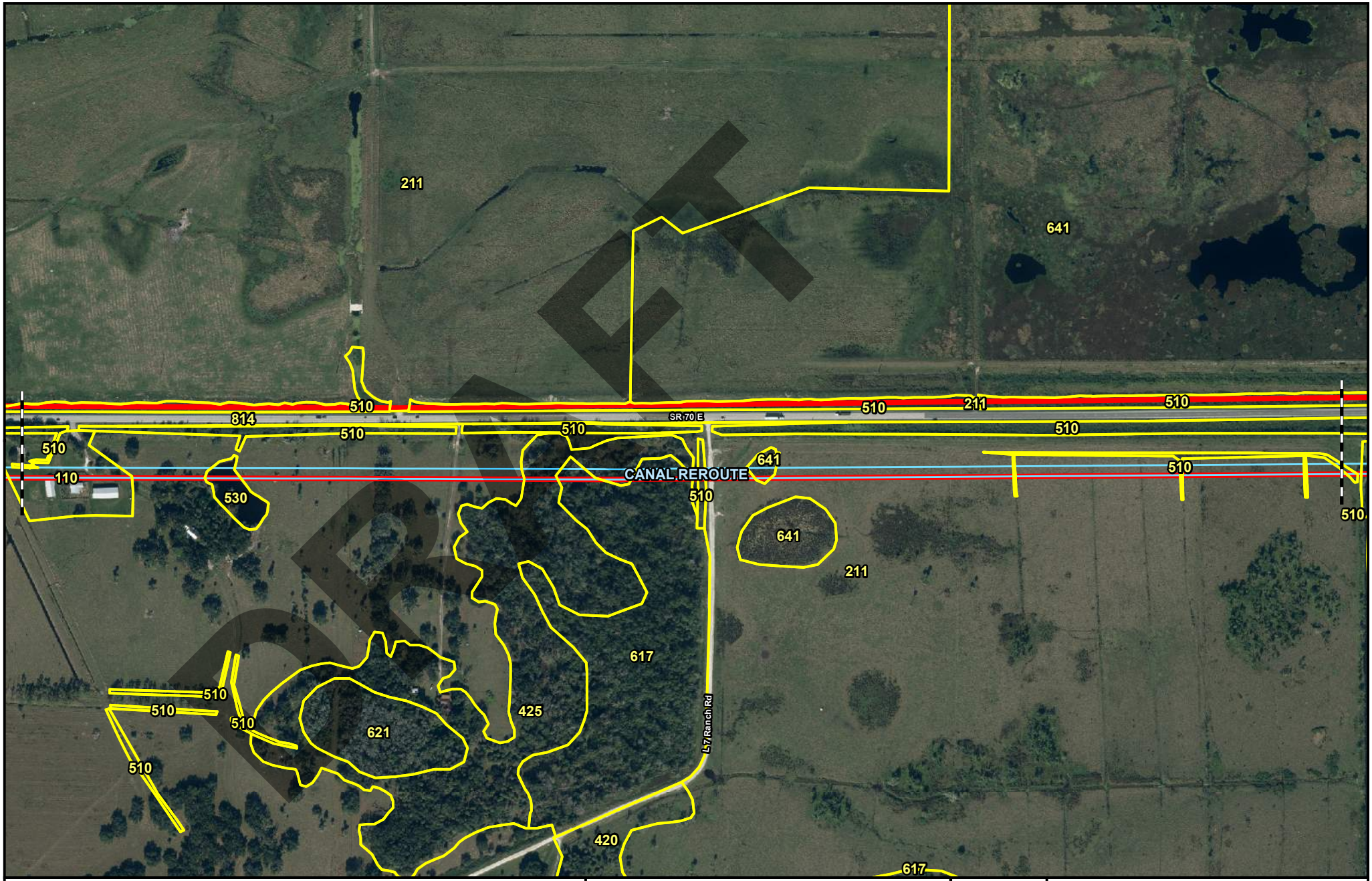

Project Study Area

Proposed Pond

110: Residential, Low Density

211: Improved Pastures

242: Sod Farms

420: Upland Hardwood Forests

425: Temperate Hardwood

510: Streams and Waterways

530: Reservoirs

617: Mixed Wetland Hardwoods

621: Cypress - Mixed Hardwoods

641: Freshwater Marshes / Graminoid Prairie - Marsh

814: Roads and Highways

Land Use Map

SR 70 from CR 29 to Lonesome Island Road
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Appendix B Page 2 of 6

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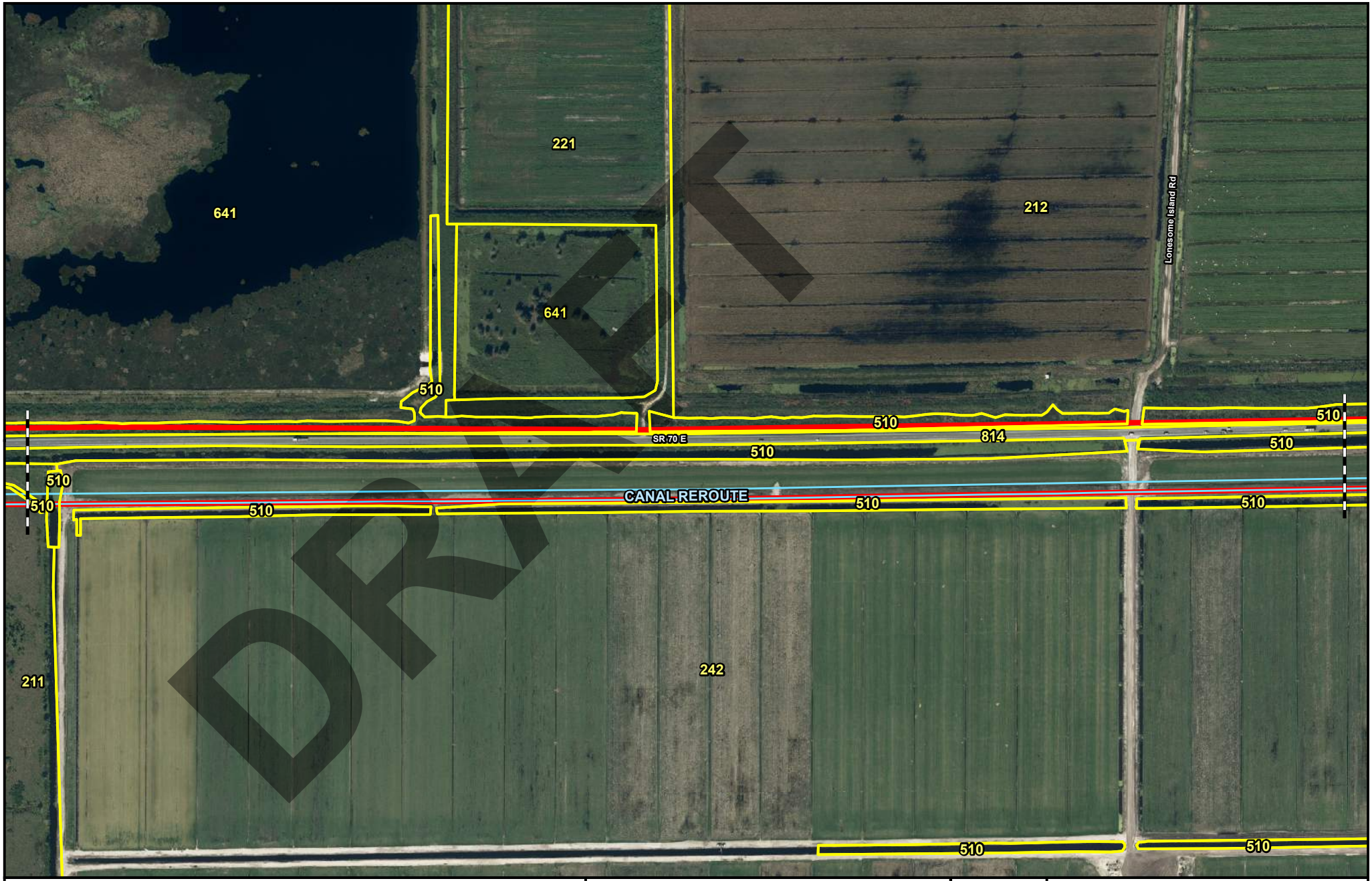

Project Study Area

Proposed Pond

211: Improved Pastures

212: Unimproved Pastures

221: Citrus Groves

242: Sod Farms

510: Streams and Waterways

641: Freshwater Marshes / Graminoid Prairie - Marsh

814: Roads and Highways

Land Use Map

SR 70 from CR 29 to Lonesome Island Road
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Appendix B Page 3 of 6

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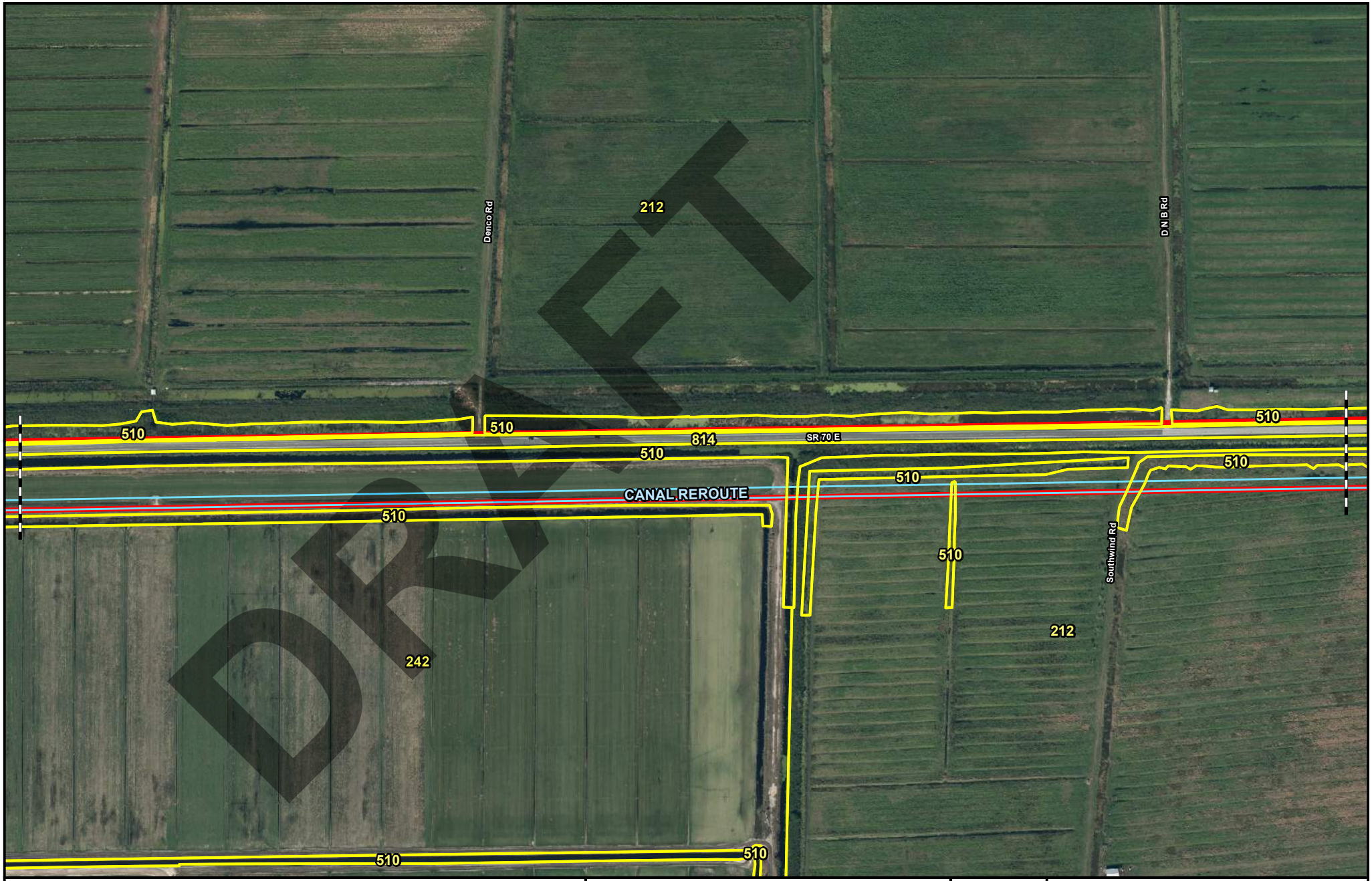

Project Study Area

Proposed Pond

212: Unimproved Pastures

242: Sod Farms

510: Streams and Waterways

814: Roads and Highways

Land Use Map

SR 70 from CR 29 to Lonesome Island Road
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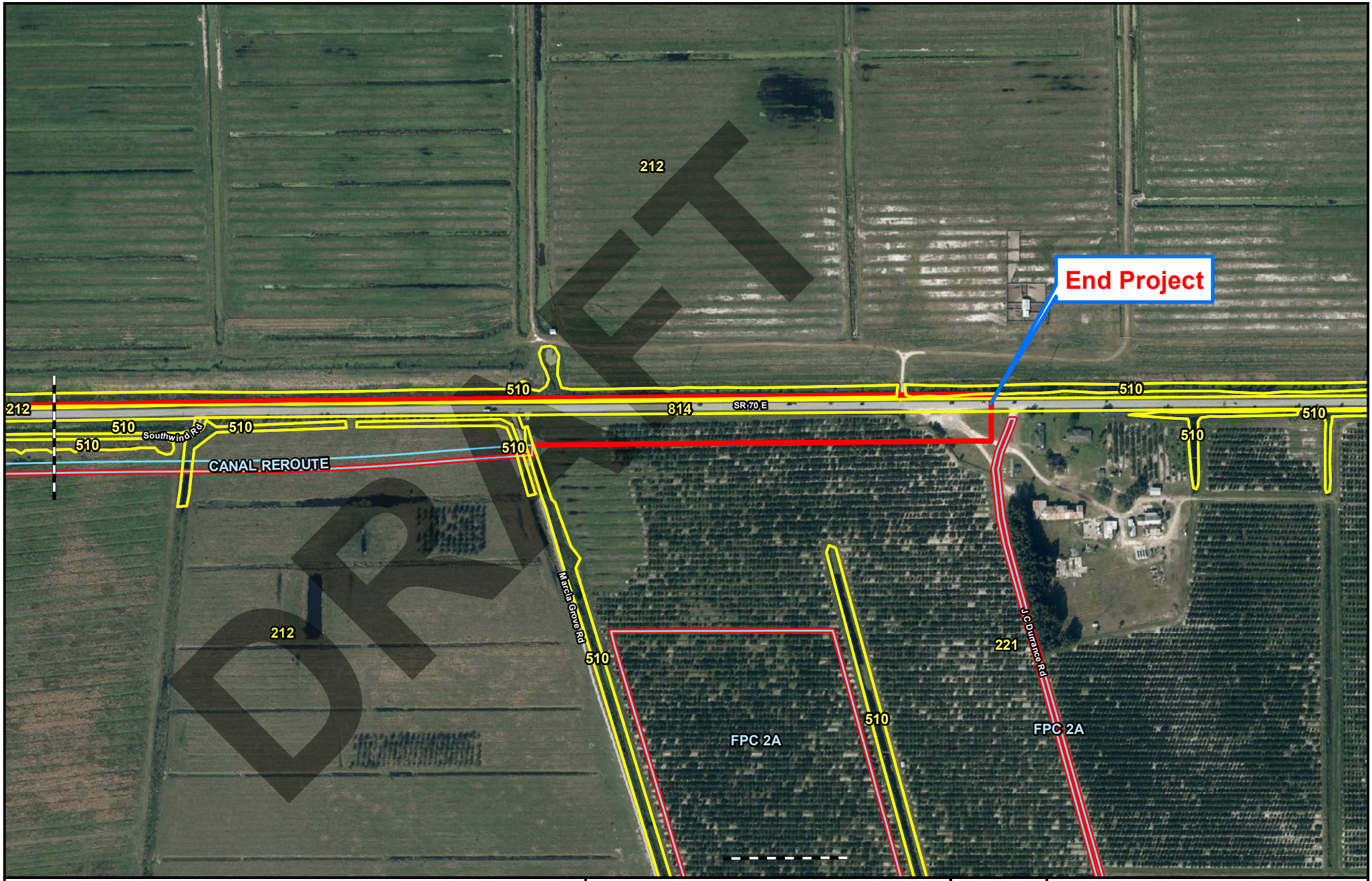

Project Study Area

Proposed Pond

212: Unimproved Pastures

221: Citrus Groves

510: Streams and Waterways

814: Roads and Highways

Land Use Map

SR 70 from CR 29 to Lonesome Island Road
Project Development & Environment Study
FPID No. 414506-5-22-01
Highlands County, FL

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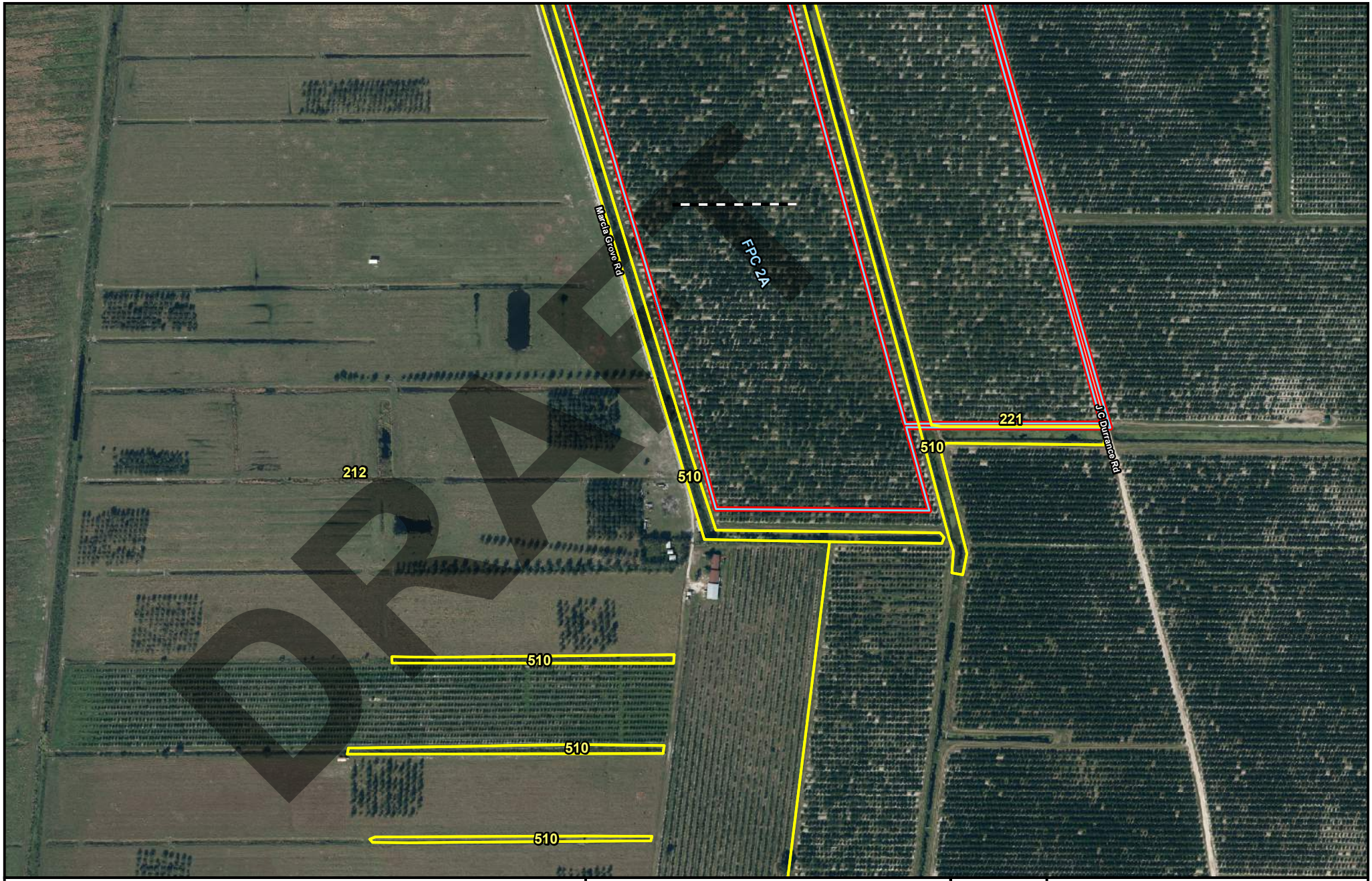

Project Study Area

Proposed Pond

212: Unimproved Pastures

221: Citrus Groves

510: Streams and Waterways

Land Use Map

SR 70 from CR 29 to Lonesome Island Road
Project Development & Environment Study
FPID No. 414506-5-22-01
Highlands County, FL

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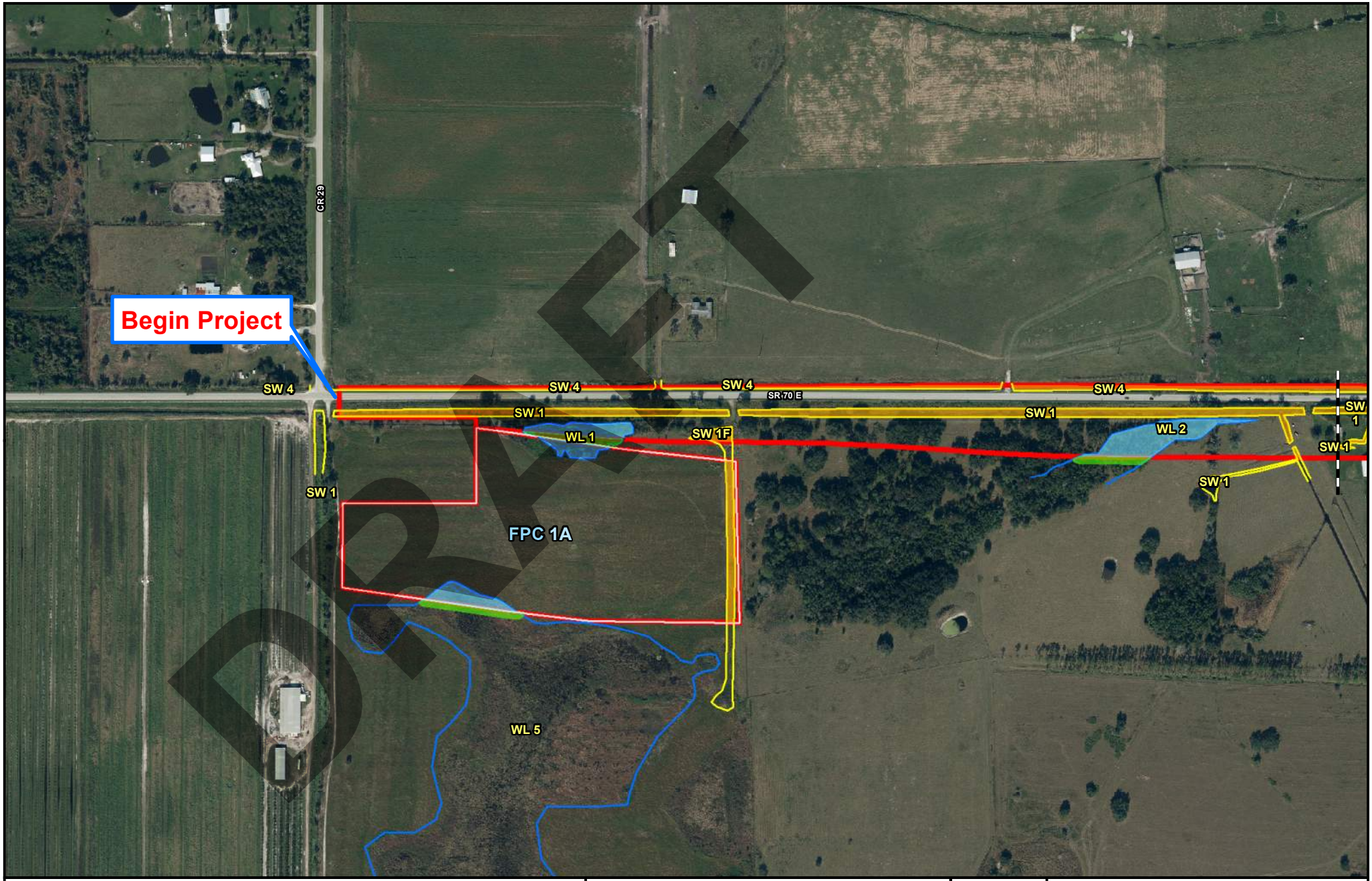
APPENDIX C

Updated Wetland and Surface Water Impact Location Map



Legend

- Project Study Area
- Proposed Pond
- Surface Water
- Wetland
- Surface Water Impact
- Wetland Impact
- Secondary Impact

Wetland and Surface Water Impact Location Map

SR 70 from CR 29 to Lonesome Island Road
Project Development & Environment Study
FPID No. 414506-5-22-01
Highlands County, FL

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Appendix C Page 1 of 6

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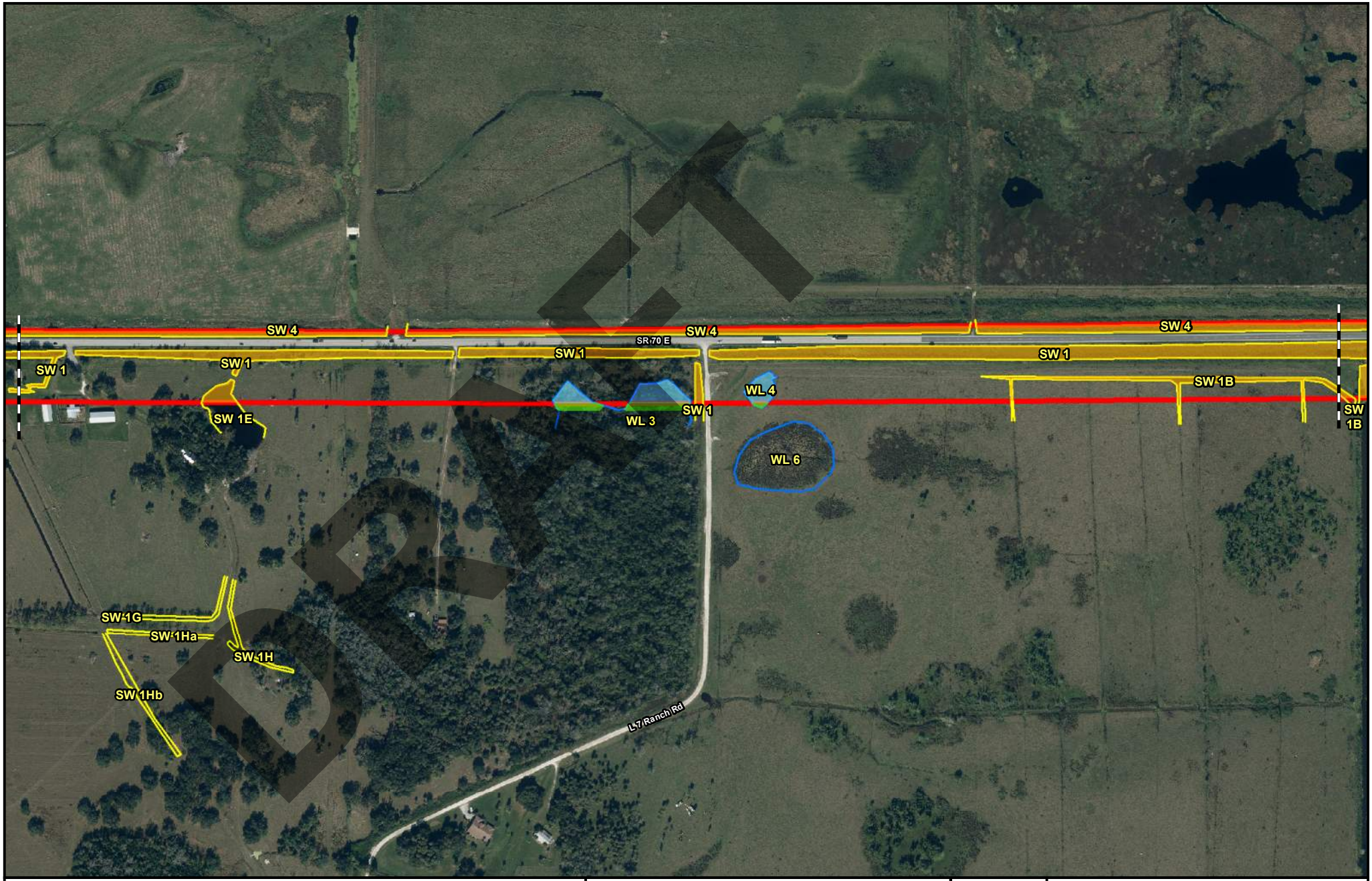

Legend

- Project Study Area
- Proposed Pond
- Surface Water
- Wetland
- Surface Water Impact
- Wetland Impact
- Secondary Impact

Wetland and Surface Water Impact Location Map

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Legend

- Project Study Area
- Proposed Pond
- Surface Water
- Wetland
- Surface Water Impact
- Wetland Impact
- Secondary Impact

Wetland and Surface Water Impact Location Map

SR 70 from CR 29 to Lonesome Island Road
Project Development & Environment Study
FPID No. 414506-5-22-01
Highlands County, FL

N W E S

500 250 0 500

Feet

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Kisinger Campo & Associates, Corp.
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Tampa, FL 33602
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Legend

- Project Study Area
- Proposed Pond
- Surface Water
- Wetland
- Surface Water Impact
- Wetland Impact
- Secondary Impact

Wetland and Surface Water Impact Location Map

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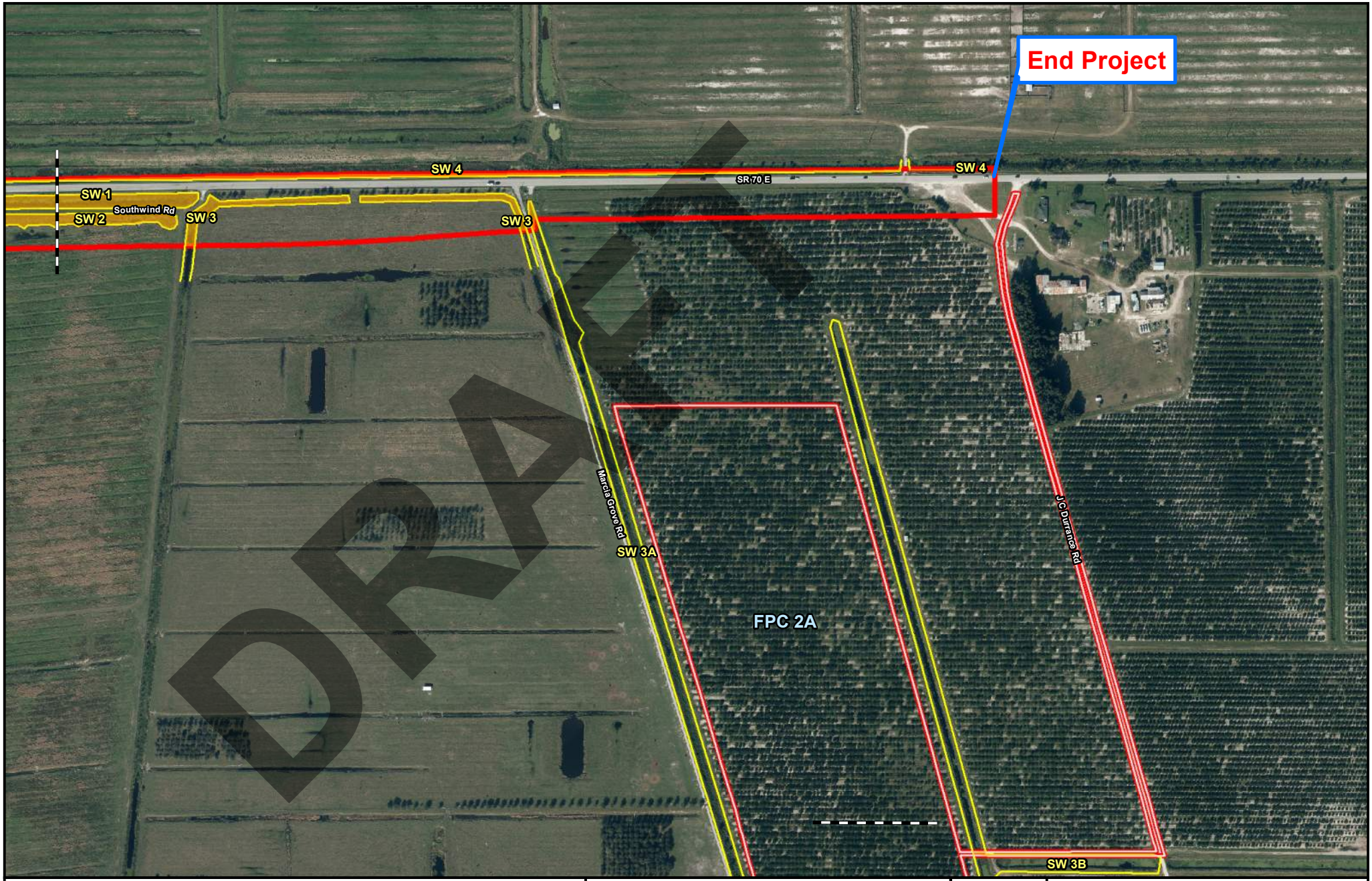

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