PELICAN BAY PROJECT SITE

CULPEPPER & TERPENING, INC.

WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

PELICAN BAY PROJECT SITE
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1.00 INTRODUCTION

The following Wetland and Wildlife Assessment Report (WWA) of the Pelican Bay Project Site has been prepared by Hobe Sound Environmental Consultants, Inc. (HSE). The purpose of this report is to provide the methodologies and results of a scientific wetland and wildlife assessment for the Pelican Bay Project Site. This report addresses the following environmental issues: protected species, wildlife, vegetative communities, wetlands, soils and topography. The report is based on field data collected from 13 July to 29 July 2021. The entire property consists of ± 33.77 acres and the development site consists of ± 18.90 acres; the land westward of the tributary shall remain in its natural state and will not be disturbed. The project is located in Section 23; Township 34S; Range 40E in St. Lucie County, Florida. The center of the project site is located at coordinates Latitude: 27°30'43.811", Longitude: -80°18'45.09"(**Appendix A: Figures 1-3 of 16**).

2.00 METHODOLOGY

2.01 Protected Species/Wildlife Survey

2.01.1 Objective

Conduct a systematic survey for flora and fauna that may occur within the project site and note the presence of any protected species listed in *Florida's Official Endangered and Threatened Species List* Updated June, 2021, FFWCC.

The state lists of animals are maintained by the FFWCC and categorized as endangered, threatened, and species of special concern, in accordance with rules 68A-27.003, 68A-27.004, and 68A-27.005, respectively, Florida Administrative Code (F.A.C.). The state lists of plants are categorized into endangered, threatened, and commercially exploited, and are maintained by the Florida Department of

Agriculture and Consumer Services (DOACS) via Chapter 5B-40, F.A.C.

The federal agencies that share the authority to list species as Endangered and Threatened are the National Oceanic and Atmospheric Administration-National Marine Fisheries Service (NOAA-NMFS) and the U.S. Fish and Wildlife Service (USFWS). The NOAA-NMFS is responsible for listing most marine species. The federal list of animals and plants is administered by the USFWS, and is published in 50 CFR 17 (animals) and 50 CFR 23 (plants).

2.01.2 Methodology

Following are the methodologies biologists used to conduct the wildlife/protected species survey.

- Biologists conducted pedestrian transects throughout the project site.
- The transects meandered through areas of suitable habitat within the entire project area.
- Biologists recorded sightings, tracks, scat, tree markings, nests, cavities, and burrows.

2.02 Gopher Tortoise and Other Burrow Commensals

2.02.1 Objective

Conduct a 100% systematic survey within and around the boundaries of the project site to locate any gopher tortoise (*Gopherus polyphemus*) burrows and the eastern indigo snake (*Drymarchon corais couperi*).

2.02.2 Methodology

Biologists followed the survey protocol as recommended in *Ecology and Habitat Protection Needs of Gopher Tortoise (Gopherus polyphemus) Populations Found on Lands Slated for Large-scale Development in Florida*; Non-game Wildlife Program, Technical Report #4, Florida Game and Fresh Water Fish Commission

(FGFWFC), now known as FFWCC, Tallahassee, Florida, December 1987, and *Gopher Tortoise Permitting Guidelines*, FFWCC, Tallahassee, Florida April 2008 (Updated July 2020).

- Biologists conducted pedestrian transects from 13 July 2021 to 19 July 2021 **(Appendix A: Figure 4 of 16)**;
- All gopher tortoise burrows located were flagged as either abandoned or potentially occupied, if appropriate;
- All gopher tortoise burrows located were assigned an identification number and recorded, if appropriate;
- Biologists field located all gopher tortoise burrows on an aerial photograph, if appropriate (**Appendix A: Figure 5 of 16**);
- Additional data and notes were collected by biologists for the occurrence of the eastern indigo snake.

2.03 Vegetation Survey (FLUCFCS)

2.03.1 Objective

To map vegetation within the boundaries if the project site according to the *Florida Land Use, Cover and Forms Classification System* (FLUCFCS).

2.03.2 Methodology

Biologists used the following methodology to map vegetation found on the project site:

- Biologists used the *Florida Land Use, Cover and Forms Classification System* (FLUCFCS), January 1999, State of Florida Department of Transportation, Surveying & Mapping Office, Geographic Mapping Section.
- Biologists based vegetative community descriptions on field surveys, United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) soil maps, and aerial photograph interpretations.
- Numerical community designations were carried to Levels II or III, as determined to be appropriate, according to FLUCFCS.

2.04 Jurisdictional Wetlands

2.04.1 Objective

To identify and locate State of Florida (South Florida Water Management District; SFWMD) and Federal (FDEP State 404) jurisdictional wetlands that may occur within the boundaries of the project site.

2.04.2 Methodology

Biologists used the following methodologies to locate State of Florida and Federal jurisdictional wetlands on-site.

- Biologists delineated wetlands according to F.A.C. 62-340, as appropriate;
- Biologists flagged the wetlands with consecutively numbered flagging tape marked "Wetland Delineation", as appropriate;
- Biologists marked the approximate wetland locations on a St. Lucie County aerial photograph, if appropriate.

2.05 Soils

2.05.1 Objective

To identify project soil types according to the NRCS.

2.05.2 Methodology

Biologists used the following methodology to identify soil types found on the project sites.

- Project soils were mapped according to the *Soil Survey of St. Lucie County Area, Florida*, April 1981, USDA.

2.06 Topography

2.06.1 Objective

To identify the topography of the project sites.

2.06.2 Methodology

Biologists used the following methodologies to identify the topography of the project site.

- Biologists used the *U.S. Geological Survey* (USGS) *Topographic Map, USGS Fort Pierce, FLA. Quadrangle* to determine on-site topography.

3.00 RESULTS

3.01 Protected Species/Wildlife Survey

3.01.1 Gopher Tortoise and Other Burrow Commensals

The gopher tortoise is designated as threatened (T) by the State of Florida. The eastern indigo snake is designated as threatened (T) by the State of Florida and the USFWS. These species are protected under regulations set forth in the F.A.C. Chapter 68, Florida Fish and Wildlife Conservation Commission, Rule 68A-3.001 and 68A-25.002, as well as Chapter 68A-27. Six (6) potentially occupied burrows were located by biologists during the gopher tortoise and commensal species survey **(Appendix A: Figure 5 of 16).** The estimated gopher tortoise population is three (3). Commensal species such as the eastern indigo snake were not observed on-site, although suitable habitat does exist. HSE biologists applied an Eastern Indigo Snake Determination key as follows, as per USFWS memo dated 25 January 2010, updated 13 August 2013 and revised 01 August 2017.

Eastern Indigo Snake Determination Key

A. Project is not located in open water or salt marsh.....go to B

Project is located solely in open water or salt marsh....."no effect"

B. Permit will be conditioned for use of the Service's *Standard Protection Measures for the Eastern Indigo Snake* during site preparation and project

construction..... go to C

Permit will not be conditioned as above for the eastern indigo snake, or it is not known whether an applicant intends to use these measures and consultation with the Service is requested[2].....“may effect”

C. The project will impact less than 25 acres of eastern indigo snake habitat (eg., sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive or abandoned citrus groves], and coastal dunes).....go to D

The project will impact more than 25 acres of xeric habitat (eg., sandhill, scrub, pine flatwoods, pine rocklands, scrubby flatwoods, high pine, dry prairie, coastal prairie, mangrove swamps, tropical hardwood hammocks, hydric hammocks, edges of freshwater marshes, agricultural fields [including sugar cane fields and active, inactive or abandoned citrus groves], and coastal dunes).....“may affect”

D. The project has no known holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and/or injured..... “NLAA”

The project has holes, cavities, active or inactive gopher tortoise burrows, or other underground refugia where a snake could be buried, trapped and/or injured.....go to E

E. Any permit will be conditioned such that all gopher tortoise burrows, active and inactive, will be evacuated prior to site manipulation in the vicinity of the burrow[1]. If an eastern indigo snake is encountered, the snake must be allowed to vacate the area prior to additional site manipulation in the vicinity. Any permit will also be conditioned such that holes, cavities, and snake refugia other than gopher tortoise burrows will be inspected each morning before planned site manipulation of a particular area, and, if occupied by an eastern indigo snake, no work will commence until the snake has vacated the vicinity of proposed work..... **“NLAA[2]”**

Permit will not be conditioned as outlined above.....may affect

End Key

[1] If excavating potentially occupied burrows, active or inactive, individuals must first obtain state authorization via Florida Fish and Wildlife Conservation Commission Authorized Gopher Tortoise Agent permit. The excavation method selected should also minimize the potential for injury of an indigo snake. Applicants should follow the excavation guidance provided within the most current Gopher Tortoise Permitting Guidelines found at http://myfwc.com/gophertortoise

[2]Please note, if the proposed project will impact less than 25 acres of vegetated eastern indigo snake habitat (not urban/human-altered) completely surrounded by urban development, and an eastern indigo snake has been observed on site, NLAA is not the appropriate

conclusion. The Service recommends formal consultation for this situation because of the expected increased value of the vegetated habitat within the individual's home range.

No eastern indigo snakes were observed on-site by HSE biologists and the key has determined that the proposed project is "not likely to adversely affect" this species. As such, it has been determined by the key that full precautionary measures must be taken in order to avoid harming any indigo snakes during all on-site activities. If these precautionary measures are not utilized, the project may have a determination of "may affect". EIS educational posters will be installed at all entryways to the construction site and contractor sensitivity training will be required for all personnel prior to onset of construction activities.

3.01.2 Other Protected Fauna

Various species of fauna were observed on-site during the pedestrian transect survey and are listed in **Table 1**. Protected species that potentially occur in St. Lucie County are listed in **Table 2**. Likelihood of these species occurrence within the project site according to the Florida Natural Areas Inventory (FNAI) Biodiversity Matrix is also listed in **Table 2**.

The project site is within the consultation area of the state protected Florida pine snake (*Pituophis melanoleucus mugitus*) **(Appendix A: Figure 6 of 16).** These snakes occupy a variety of upland habitats around the state, but they prefer dry habitats with moderate to open canopy cover and sandy, well-drained soils, mostly pines and scrubby oaks. It is HSE's professional opinion that no suitable habitat exists on-site for the Florida pine snake.

The site is within the core foraging area of one (1) wood stork (*Mycteria americana*) colonies **(Appendix A: Figure 7 of 16)**. No wood storks have been observed on-site, and it is in HSE's professional opinion that no suitable foraging habitat exists on-site. The wood stork key was utilized below to determine if the project would affect the species.

Table 1: Wildlife Observed on the Pelican Bay Project Site

A. Fish & Aquatic Macro-invertebrates

Common Name	Scientific Name	Protected Species	
		State	Federal
Mayan cichlid	*Cichlasoma urophthalmus*	---	---
Eastern mosquito fish	*Gambusia holbrooki*	---	---

B. Reptiles & Amphibians

Common Name	Scientific Name	Protected Species	
		State	Federal
Brown anole	*Anolis sagrei*	---	---
Black racer	*Coluber constrictor*	---	---
Gopher tortoise	*Gopherus polyphemus*	T	---
Cuban tree frog	*Osteopilus septentrionalis*	---	---
Yellow ratsnake	*Pantherophis alleghaniensis*	---	---

C. Birds

Common Name	Scientific Name	Protected Species	
		State	Federal
Mottled duck	*Anas fulvigula*	---	---
Anhinga	*Anhinga anhinga*	---	---
Great blue heron	*Ardea herodias*	---	---
Northern cardinal	*Cardinalis cardinalis*	---	---
Turkey vulture	*Cathartes aura*	---	---
Black vulture	*Coragyps atratus*	---	---
American crow	*Corvus brachyrhynchos*	---	---
Fish crow	*Corvus ossifragus*	---	---
White ibis	*Eudocimus albus*	---	---
Northern mockingbird	*Mimus polyglottos*	---	---
Osprey	*Pandion haliaetus*	---	---
Double-crested cormorant	*Phalacrocorax auritus*	---	---
Common grackle	*Quiscalus quiscula*	---	---
Yellow warbler	*Setophaga petechia*	---	---

Table 1, continued.

D. Mammals

Common Name	Scientific Name	Protected Species	
		State	Federal
Raccoon	*Procyon lotor*	---	---
Gray squirrel	*Sciurus carolinensis*	---	---

*T = Threatened (State or Federal), C = Candidate for Endangered and/or Threatened, SAT = Threatened due to similarity of appearance

Table 2: Pelican Bay Project Site: 2019 Federal/State Listed Fauna and Flora Potentially Found in St. Lucie County, FL

A. Fish/ Aquatic Macroinvertebrates

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS+	STATE STATUS++ (FLORIDA)	EXISTING HABITAT ON-SITE	LIKELIHOOD OF OCCURRENCE	NOTES
Striped croaker	*Bairdiella sanctaeluciae*	SC	N	No	not likely	not observed during preliminary pedestrian transects
Opossum pipefish	*Oostethus brachyurus*	SC	N	No	not likely	not observed during preliminary pedestrian transects

B. Reptiles & Amphibians

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS+	STATE STATUS++ (FLORIDA)	EXISTING HABITAT ON-SITE	LIKELIHOOD OF OCCURRENCE	NOTES
American alligator	*Alligator mississipiensis*	SAT	FT(S/A)	Yes	likely	not observed during preliminary pedestrian transects
Loggerhead sea turtle	*Caretta caretta*	T	FT	Yes	not likely	not observed during preliminary pedestrian transects
Green sea turtle	*Chelonia mydas*	T	FT	Yes	not likely	not observed during preliminary pedestrian transects
Leatherback turtle	*Dermochelys coriacea*	E	FE	Yes	not likely	not observed during preliminary pedestrian transects
Eastern indigo snake	*Drymarchon corais couperi*	T	FT	Yes	likely	not observed during preliminary pedestrian transects
Hawksbill sea turtle	*Eretmochelys imbricata*	E	FE	Yes	not likely	not observed during preliminary pedestrian transects
Gopher tortoise	*Gopherus polyphemus*	C	ST	No	not likely	not observed during preliminary pedestrian transects
Kemp's Ridley Sea Turtle	*Lepidochelys kempii*	E	FE	No	not likely	not observed during preliminary pedestrian transects

Table 2, continued.

Pine Snake	*Pituophis melanoleucus*	---	ST	No	not likely	not observed during preliminary pedestrian transects

C. Birds

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS+	STATE STATUS++ (FLORIDA)	EXISTING HABITAT ON-SITE	LIKELIHOOD OF OCCURRENCE	NOTES
Florida Sandhill Crane	*Antigone canadensis pratensis*	---	ST	No	not likely	not observed during preliminary pedestrian transects
Florida Scrub-Jay	*Aphelocoma coerulescens*	T	FT	No	not likely	not observed during preliminary pedestrian transects
Florida Burrowing Owl	*Athene cunicularia floridana*	---	ST	No	not likely	not observed during preliminary pedestrian transects
Crested Caracara	*Caracara cheriway*	T	FT	No	not likely	not observed during preliminary pedestrian transects
Red-cockaded Woodpecker	*Dryobates borealis*	E	FE	No	not likely	not observed during preliminary pedestrian transects
Little Blue Heron	*Egretta caerulea*	---	ST	Yes	likely	not observed during preliminary pedestrian transects
Tri-colored Heron	*Egretta tricolor*	---	ST	Yes	likely	not observed during preliminary pedestrian transects
American Oystercatcher	*Haematopus palliatus*	---	ST	No	not likely	not observed during preliminary pedestrian transects
Wood Stork	*Mycteria americana*	T	FT	No	not likely	not observed during preliminary pedestrian transects
Roseate Spoonbill	*Platalea ajaja*	---	ST	Yes	likely	not observed during preliminary pedestrian transects
Snail Kite	*Rostrhamus sociabilis*	E	FE	No	not likely	not observed during preliminary pedestrian transects
Black Skimmer	*Rynchops niger*	---	ST	No	not likely	not observed during preliminary pedestrian transects

Table 2, continued.

Least Tern	*Sternula antillarum*	N	ST	Yes	likely	not observed during preliminary pedestrian transects

D. Mammals

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS+	STATE STATUS++ (FLORIDA)	EXISTING HABITAT ON-SITE	LIKELIHOOD OF OCCURRENCE	NOTES
Southeastern Beach Mouse	*Peromyscus polionotus niveiventris*	T	FT	No	not likely	not observed during preliminary pedestrian transects
West Indian manatee	*Trichechus manatus*	T	FT	Yes	likely	not observed during preliminary pedestrian transects

E. Vascular Plants

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS+	STATE STATUS++ (FLORIDA)	EXISTING HABITAT ON-SITE	LIKELIHOOD OF OCCURRENCE	NOTES
Sand-dune spurge	*Chamaesyce cumulicola*	N	E	No	not likely	not observed during preliminary pedestrian transects
Piedmont jointgrass	*Coelorachis tuberculosa*	N	T	No	not likely	not observed during preliminary pedestrian transects
Large-flowered rosemary	*Conradina grandiflora*	N	T	No	not likely	not observed during preliminary pedestrian transects
Lakela's balm	*Dicerandra immaculata var. immaculata*	E	E	No	not likely	not observed during preliminary pedestrian transects
Savanna balm	*Dicerandra immaculata var. savannarum*	E	E	No	not likely	not observed during preliminary pedestrian transects
Coastal vervain	*Glandularia maritima*	N	E	No	not likely	not observed during preliminary pedestrian transects
Johnson's seagrass	*Halophila johnsonii*	T	E	No	not likely	not observed during preliminary pedestrian transects
Fragrant prickly apple	*Harrisia fragrans*	E	E	No	not likely	not observed during preliminary pedestrian transects

Table 2, continued.

Sea rosemary	*Heliotropium gnaphalodes*	N	E	No	not likely	not observed during preliminary pedestrian transects
Nodding pinweed	*Lechea cernua*	N	T	No	not likely	not observed during preliminary pedestrian transects
Burrowing four-o'clock	*Okenia hypogaea*	N	E	No	not likely	not observed during preliminary pedestrian transects
Hand fern	*Ophioglossum palmatum*	N	E	No	not likely	not observed during preliminary pedestrian transects
Terrestrial peperomia	*Peperomia humilis*	N	E	No	not likely	not observed during preliminary pedestrian transects
Blunt-leaved peperomia	*Peperomia obtusifolia*	N	E	No	not likely	not observed during preliminary pedestrian transects
Tiny polygala	*Polygala smallii*	E	E	No	not likely	not observed during preliminary pedestrian transects
Giant orchid	*Pteroglossaspis ecristata*	N	T	No	not likely	not observed during preliminary pedestrian transects
Scrub bluestem	*Schizachyrium niveum*	N	E	No	not likely	not observed during preliminary pedestrian transects
Coastal hoary-pea	*Tephrosia angustissima var. curtissii*	N	E	No	not likely	not observed during preliminary pedestrian transects

+Federal Status: U.S. Fish and Wildlife Service (FWS)

E	- Endangered
PE	- Proposed for Endangered
T	- Threatened
PT	- Proposed for Threatened
C	- Candidate for Endangered and/or Threatened
E (S/A)	- Endangered due to similarity of appearance
T (S/A)	- Threatened due to similarity of appearance

++State of Florida Status: Florida Fish and Wildlife Conservation Commission (FFWCC)

Animals:

E	- Endangered
T	- Threatened
SSC	- Species of Special Concern
N	- Not currently listed
FT	- Federally threatened
ET	- Federally endangered

Plants:

E- Endangered

T- Threatened

N- Not currently listed

Wood Stork Key for South Florida

A. Project within 0.76 km (0.47 mile)[2] of an active colony site[3]..... may affect[4]

Project impacts Suitable Foraging Habitat (SFH) at a location greater than 0.76 km (0.47 mile) from a colony site.....“go to B”

Project does not affect SFH [5] ..... “no effect.[1]"

B. Project impact to SFH is less than 0.20 hectare (0.5 acre)[6] .....“NLAA[1]"

Project impact to SFH is greater in scope that 0.20 hectare (one-half acre).....“go to C”

C. Project impacts to SFH not within the CFA (29.9 km, 18.6 miles) of a colony site ..... “go to D”

Project impacts to SFH within the CFA of a colony site.....“go to E”

D. Project impacts to SFH have been avoided and minimized to the extent practicable, and compensation (Service approved mitigation bank or as provided in accordance with Mitigation Rule 33 CFR Part6 332) for unavoidable impacts is proposed in accordance with the CWA section 404(b)(1) guidelines and habitat compensation replaces the foraging value matching the hydroperiod[7] of the wetlands affected and provides foraging value similar to, or higher than, that of impacted wetlands. See Appendix 3 for a detailed discussion of the hydroperiod foraging values, an example, and further guidance[8].....“NLAA”

Project not as above..... “may affect[4]"

E. Project provides SFH compensation in accordance with the CWA section 404(b)(1) guidelines and is not contrary to the HMG; habitat compensation is within the appropriate CFA or within the service area of a Service-approved mitigation bank; and habitat compensation replaces foraging value, consisting of wetland enhancement or restoration matching the hydroperiod[6] of the wetlands affected, and provides foraging value similar to, or higher than, that of impacted wetlands. See Appendix 3 for a detailed discussion of the hydroperiod foraging values, as example, and further guidance[8]..... “NLAA”

Project does not satisfy these elements..... “may affect”

End Key

* This Wood Stork Key does not apply to Comprehensive Everglades Restoration Plan projects, as they will require project-specific consultations with the Service.

[1] With an outcome of "no effect" or "NLAA" as outlined in this key, and the project has less than 20.2 hectares (50 acres) of wetland impacts, the requirements of section 7 of the Act are fulfilled for the wood stork and no further action is required. For projects with greater than 20.2 hectares (50 acres) of wetland impacts, written concurrence of NLAA from the Service is necessary.

[2] Within the secondary zone (the average distance from the border of a colony to the limits of the secondary zone is 0.76 km (2,500 feet, or 0.47 mi).

[3] An active colony is defined as a colony that is currently being used for nesting by wood storks or has historically over the last 10 years been used for nesting by wood storks.

[4] Consultation may be concluded informally or formally depending on project impacts.

[5] Suitable foraging habitat (SFH) are wetland that typically have shallow-open water areas that are relatively calm and having a permanent or seasonal water depth between 5 to 38 cm (2 to 15 inches) deep. Other shallow non-wetland water bodies are also SFH. SFH supports and concentrates, or is capable of supporting and concentrating small fish, frogs, and other aquatic prey. Examples of SFH include, but are not limited to freshwater marshes, small ponds, shallow, seasonally flooded roadside or agricultural ditches, seasonally flooded pastures, narrow tidal creek or shallow tidal pools, managed impoundments, and depressions in cypress heads and swamp sloughs.

[6] On an individual basis, SFH impacts to wetlands less than 0.20 hectares (one-half acre) generally will not have a measurable effect on wood storks, although we request that the Corps require mitigation for these losses when appropriate. Weed storks are a wide ranging species, and individually, habitat change form impacts to SFH less than one-half acre are not likely to adversely affect wood storks. However, collectively they may have an effect and therefore regular monitoring and reporting of these effects are important.

[7] Several researchers (Fleming et al. 1994; Ceilley and Bortone 2000) believe that the short hydroperiod wetlands provide a more important pre-nesting foraging food source and a greater early nestling survivor value for wood storks than the foraging base (grams of fish per square meter) that short hydroperiod wetlands provide. Although the short hydroperiod wetlands may provide less fish, these prey bases historically were more extensive and met the foraging needs of the pre-nesting storks and the early-age nestlings. Nest productivity may suffer as a result of the loss of short hydroperiod wetlands. We believe that most wetland fill and excavation impacts permitted in south Florida are in short hydroperiod wetlands. Therefore, we believe that it is especially important that impacts to these shore hydroperiod wetlands within CFAs are avoided, minimized, and compensated fro by enhancement/restoration of short hydroperiod wetlands.

[8] For this Key, the Service requires an analysis of foraging prey base losses and enhancements from the proposed action as shown in the examples in Appendix 3 for projects with greater that 2.02 hectares (5 acres) of wetland impacts. For projects with less that 2.02 hectares (5 acres) of wetland impacts, an individual foraging prey base analysis is not necessary although type for type wetland compensation is still a requirement of the Key.

This key was completed with the professional opinion that Suitable Foraging Habitat (SFH) does not exist on-site for the wood stork, since the tributary is too deep for wood storks to forage. A determination of "no effect" is made concerning the wood stork for this project.

There are zero (0) known bald eagle (*Haliaeetus leucocephalus*) nests within one (1) mile of the project site and two (2) known bald eagle nest within five (5) miles of the project site (**Appendix A: Figure 8 of 16**). It is HSE's opinion that the proposed project will not adversely impact the nests, nor any suitable foraging habitat.

The site is outside the consultation area for the Everglades snail kite (*Rostrhamus sociabilis*). No snail kites were observed on-site, and there is no suitable habitat, therefore it is HSE's opinion that the proposed project is not likely to adversely affect the Everglades snail kite **(Appendix A: Figure 9 of 16)**. The project site is outside the consultation area of the red-cockaded woodpecker (*Dryobates*

borealis), and while the project site is within the consultation area of the Florida scrub-jay (*Aphelocoma coerulescens*); no suitable habitat exists on-site for either of these species (**Appendix A: Figures 10-11 of 16**).

The site is outside the consultation area of the crested caracara (*Caracara cheriway*), and the site does not contain any suitable nesting habitat or foraging habitat. It is HSE's opinion that the proposed project will not adversely impact the crested caracara (**Appendix A: Figure 12 of 16**).

3.02 Vegetation (FLUCFCS)

3.02.1 General

Vegetation associations present on-site were mapped using Level II, Level III, and Level IV of FLUCFCS. The classifications used represent the closest facsimile possible to the natural community present. The FLUCFCS map is depicted in **Appendix A: Figure 13 of 16**, and the site photos can be found in **Appendix B**.

3.02.2 Vegetation Designations

3.02.2.1 *422- Brazilian Pepper (±8.57 acres)*

This designation refers to the majority of the east portion of the site, the majority of the buildable section. These sections are dominated by exotic Brazilian pepper (*Schinus terebinthifolia*); however, occasional native species were observed, including but not limited to cabbage palm (*Sabal palmetto*), seagrape (*Coccoloba uvifera*), cocoplum (*Chrysobalanus icaco*), wild lime (*Zanthoxylum fagara*), Hercules-club (*Zanthoxylum clava-herculis*) and wild coffee (*Psychotria nervosa*) that were observed during the pedestrian transects.

3.02.2.2 ***422/437- Mixed Brazilian Pepper/Australian Pine (±8.46 acres)***

This designation refers to the eastern central portion of the site. This section is dominated by both exotic species Brazilian pepper and Australian pine (*Casuarina equisetifolia*) at approximately 50% each.

3.02.2.3 ***437 - Australian Pine (±4.67 acres)***

This designation is dominated by the invasive species Australian Pine. This exotic species is typically found along the coastal areas of Florida, as they were initially introduced in order to provide shade and a windbreak along the coast. This designation is located along the eastern edge of the tributary.

3.02.2.4 ***510 - Streams and Waterways (±3.19 acres)***

There is one tributary (OSW) that runs throughout the site and splits the development portion from the western portion that will be left undisturbed. Observed vegetation includes red mangrove (*Rhizophora mangle*), black mangrove (*Avicennia germinans*), white mangrove (*Laguncularia racemosa*) and Brazilian pepper, which were found within the edges of the tributary, adjacent to the mangrove swamp.

3.02.2.6 ***612 - Mangrove Swamp (±17.34 acres)***

This area includes the mangrove swamp that will not be disturbed (**Appendix A: Figure 14 of 16**) and the wetland located on the east side of the tributary. HSE biologists flagged the east wetland, but did not flag the western wetland, as it was not proposed for any disturbance. Species observed in the eastern wetland include red mangrove, black mangrove, white mangrove and Brazilian pepper.

3.02.3 Tree Protection

The St. Lucie County Land Development Code (SLCLDC), Chapter VI, Section 6.00.03, states that "*no person shall remove or alter protected vegetation from or on any lot or parcel of land in the unincorporated area of St. Lucie County without first obtaining a Vegetation Removal Permit. Protected vegetation includes all native vegetation. Section 6.00.05(D) requires mitigation for native trees meeting the minimum threshold outlined in Table 1 in Section 6.00.05(D) of the Code. This minimum threshold is based on the diameter of the tree at breast height (DBH) and varies according to the species of tree.*".

It is recommended by HSE to have a tree survey completed by a licensed professional, in order to ensure that no protected trees will be harmed through the implementation of this project. There are some protected tree species located on the project site, but measurements were not taken during this survey to ensure they will not require mitigation in the future. The SLCLDC, Chapter XI, Section 11.05.06 (B)(3) states that all trees that meet the above requirements and are located within all areas of proposed improvement and within twenty (20) feet of all proposed improvement areas shall be shown on an illustrative plan. This plan shall show the existing vegetation superimposed onto a plan identifying what areas will be impacted by the proposed development activity and what areas are proposed for protection, relocation or preservation. Mitigation will be required for impacts to protected trees.

3.03 Jurisdictional Wetlands

It is HSE's professional opinion that there is one (1) jurisdictional wetland and one (1) other surface water (OSW) on the project site **(Appendix A: Figure 14 of 16)**. Permits are required if this wetland is to be impacted. All construction should be conducted using Best Management Practices (BMP). The jurisdictional wetland will require a 25' buffer, according to state regulations to prevent any and all potential impacts and eliminate the

necessity of mitigation. St. Lucie County's regulations contain the following for wetland buffers:

> *"A buffer zone of native upland edge (i.e., transitional) vegetation shall be provided and maintained around isolated wetlands covered by this Section which are constructed or preserved on new development sites. The buffer zone may consist of preserved or planted vegetation but shall include canopy, understory, and ground cover of native species only. The edge habitat shall begin at the upland limit of any wetland or deepwater habitat. As a minimum, ten (10) square feet of such buffer shall be provided for each linear foot of wetland or deepwater habitat perimeter that lies adjacent to uplands.".*

There is also an OSW connecting to a navigable water on the project site. The wetland and OSW have not yet been verified by State or Federal agencies. They will both require verification and permits before any clearing or construction activities commence.

3.04 Soils

NRCS soil types are mapped in **Appendix A: Figure 15 of 16** and **Table 3** below. The USDA, NRCS, has mapped the surficial soil types within the project site. The resulting soil delineations were published in the *Soil Survey of St. Lucie Area, Florida*, April 1981. Detailed and complete descriptions of each of these soil communities are presented in the St. Lucie County Soil Survey, and therefore are not included herein. However, a general description of the soils is included in **Table 3**. This table also lists associated plants as excerpted from the NRCS published data. Soil types mapped by the NRCS are generally limited to the upper 60 to 72 inches of the soil profile and are distinguished by several factors. These factors include soil drainage, topography, presence or absence of restrictive or clayey hardpan type soils, and the depth and range in fluctuation of the groundwater table associated with each soil type.

Table 3: Soil Descriptions*

Map Unit #	Map Unit Name	Order	Suborder	Drainage	Hydric Rating	Hydric Group	Associated Plants	
							Scientific Name	**Common Name**
10	**Canaveral fine sand, 0 to 5 percent slopes**	*Entisols*	*Psamments*	Somewhat poorly drained	No	A	*Uniola paniculata*	seaoats
							Spartina patens	saltmeadow cordgrass
							Cenchrus	sandbur
							Panicum amarum	bitter panicgrass
							Paspalum vaginatum	seashore paspalum
							Sesuvium portulacastrum	shoreline seapurslane
27	**Palm Beach fine sand, 0 to 5 percent slopes**	*Entisols*	*Psamments*	Excessively drained	No	A	**NO PLANTS MENTIONED VIA NRCS**	
35	**Kesson-Terra Ceia complex, tidal**	*Entisols*	*Aquents*	Very poorly drained	Yes	A/D	**NO PLANTS MENTIONED VIA NRCS**	
99	**Water**	N/A	N/A	N/A	0	N/A	**NO PLANTS MENTIONED VIA NRCS**	

*Source: U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Martin County Area, Florida; April 1981.

3.05 Topography

According to the *USGS Topographic Map, Indrio, FLA Quadrangle*, the site elevation is approximately 5' NGVD. **Appendix A: Figure 16 of 16** depicts the USGS Topographic Map for the project site.

4.00 CONCLUSIONS

- Six (6) potentially occupied gopher tortoise burrows located during the pedestrian transects. The estimated gopher tortoise population is three (3).
- No eastern indigo snakes were observed on-site by HSE biologists and the EIS key has determined that the proposed project is "not likely to adversely affect" this species. EIS educational posters will be installed at all entryways to the construction site and contractor sensitivity training will be required for all personnel prior to onset of construction activities.
- The project site is within the core foraging area of one (1) wood stork colony, however no (0) wood storks have been observed on-site. The wood stork key was utilized and a determination of "no effect" was made concerning the wood stork for this project.
- There are zero (0) known bald eagle nests within one (1) mile of the project site, and two (2) known bald eagle nest within five (5) miles of the project site. It is HSE's opinion that the proposed project will not adversely affect any eagle nests, nor any suitable foraging habitat.
- It is HSE's opinion that the proposed project is not likely to adversely affect the Florida pine snake, Everglades snail kite, red-cockaded woodpecker, nor the Florida scrub-jay. None of these species were observed on-site and there is no suitable habitat on-site for these any of these species.
- The site does not contain any suitable nesting habitat, or foraging habitat, therefore it is HSE's opinion that the proposed project will not adversely impact the crested caracara.
- Vegetation associations present on-site were mapped using Level II, Level III and Level IV of FLUCFCS.
- One (1) jurisdictional wetland occur within the project site and one (1) OSW divides the project site into eastern and western portions. Permits are required before this wetland can be impacted. This site has not yet been verified by State or Federal agencies.
- The surficial soils within the project site were mapped according to the NRCS.

- The site elevation range is approximately 5' NGVD according to the USGS.

APPENDIX A

PROJECT FIGURES

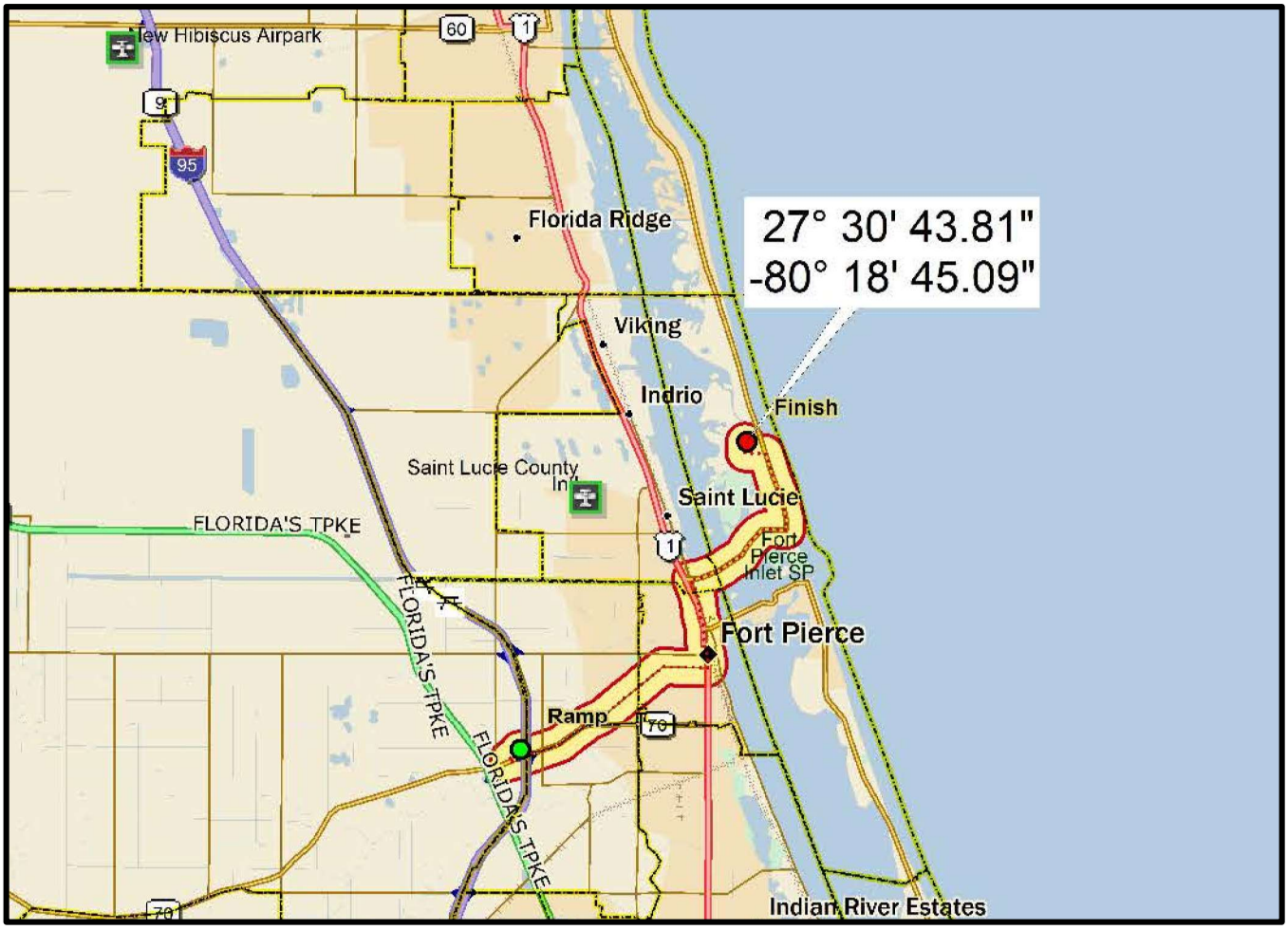
NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4386

NORTH

0' 10,000' 20,000' 40,000' 80,000'

SCALE: 1" = 20,000'



DIRECTIONS:

		Dist	Turn		Road	Exit	Total Time	Total Dist
			Start	at	Ramp		00:00:00	0.00 mi
			Go straight (SW)	on	Peters Rd		00:00:00	0.00 mi
	in	0.34 mi	Turn left (SSE)	on to	Crossroads Pkwy		00:00:48	0.34 mi
	in	0.07 mi	Turn left (ENE)	on to	SR 70 (Okeechobee Rd)		00:00:57	0.41 mi
	in	1.73 mi	Keep left (NE)	on to	CR 770 (Okeechobee Rd)		00:03:24	2.14 mi
	in	2.12 mi	Go straight (E)	on to	CR 770 (Delaware Ave)		00:09:02	4.26 mi
	in	0.94 mi	Turn left (N)	on to	US 1 (S 4th St)		00:11:36	5.20 mi
	in	0.34 mi	Go straight (NNW)	on to	N US 1 (N 4th St)		00:12:23	5.54 mi
	in	0.17 mi	Go straight (N)	on to	US 1 (N 4th St)		00:12:47	5.72 mi
	in	0.65 mi	Keep right (NNW)	on to	CR 605 (Old Dixie Hwy)		00:14:19	6.36 mi
	in	0.75 mi	Turn right (ENE)	on to	N SR A1A		00:16:20	7.11 mi
	in	2.39 mi	Turn left (NNW)	on	N SR A1A		00:20:52	9.50 mi
	in	1.68 mi	Turn left (W)	on to	Regal Rd		00:23:15	11.19 mi
	in	0.45 mi	Go straight (N)	on to	Queens Rd		00:24:18	11.63 mi
	in	0.23 mi	Finish	at	Finish		00:24:51	11.86 mi

Total Time: 00:24:51 Total Distance: 11.86 mi

SOURCE: DELORME STREET ATLAS USA, 2014 PLUS

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 01 - VIC MAP.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 1 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"	LONGITUDE: -80° 18'45.09"				DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
PROJECT VICINITY MAP

HSE
Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 500' 1,000 2,000' 4,000'

SCALE: 1" = 1,000'

SOURCE: DELORME STREET ATLAS USA, 2014 PLUS

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 02 - LOC MAP.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 2 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"	LONGITUDE: -80° 18'45.09"				DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
PROJECT LOCATION MAP

HSE
Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

NOT A SURVEY

CULPEPPER & TERPENING, INC.
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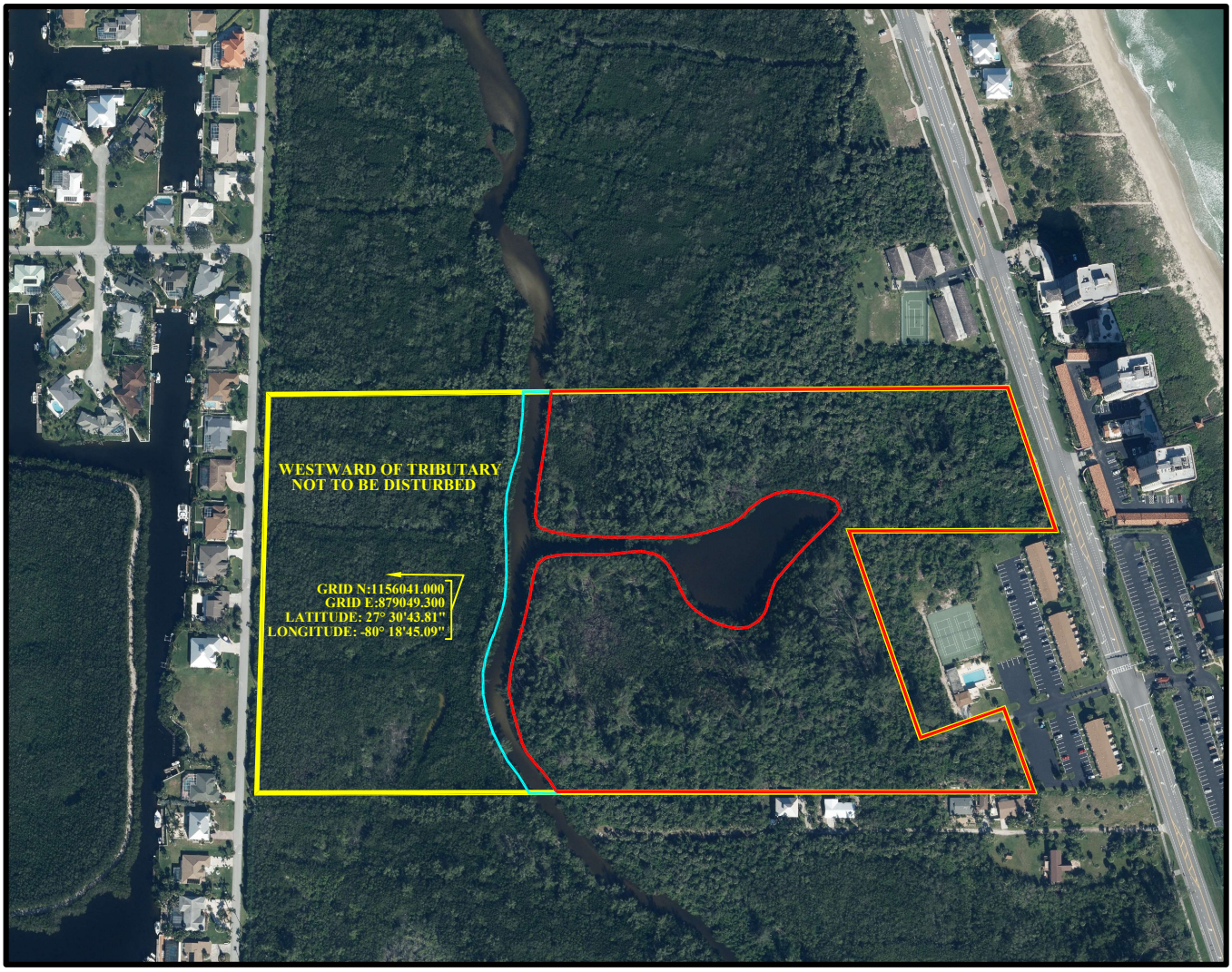
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 200' 400' 800' 1,600'

SCALE: 1" = 400'



LEGEND:

PROPERTY LINE: ±33.77 ACRES

DEVELOPMENT SITE: ±18.90 ACRES

OSW

SOURCE: 2018 AERIAL PHOTOGRAPH, FDOT.

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 03 - 2018 AERIAL.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 3 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"	LONGITUDE: -80° 18'45.09"				DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
2018 AERIAL PHOTOGRAPH

HSE
Hobe Sound Environmental Consultants Inc.
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Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

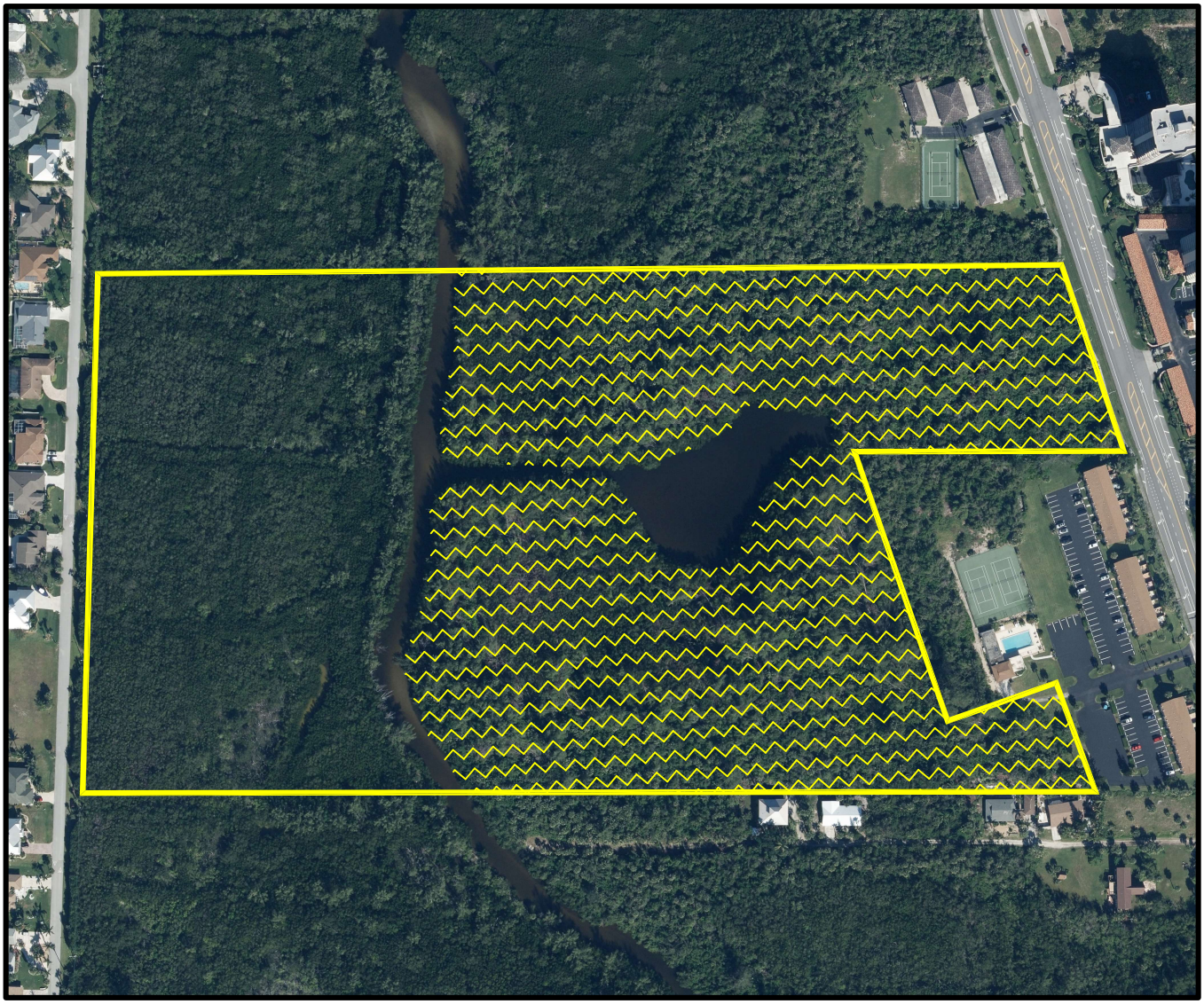
NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 150' 300' 600' 1,200'

SCALE: 1" = 300'



LEGEND

- HSE PEDESTRIAN TRANSECTS

SOURCE: 2018 AERIAL PHOTOGRAPH, FDOT.

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 04 - PED TRANS.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 4 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"	LONGITUDE: -80° 18'45.09"				DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
HSE PEDESTRIAN TRANSECTS

H S E
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9512 SE Duncan Street
Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

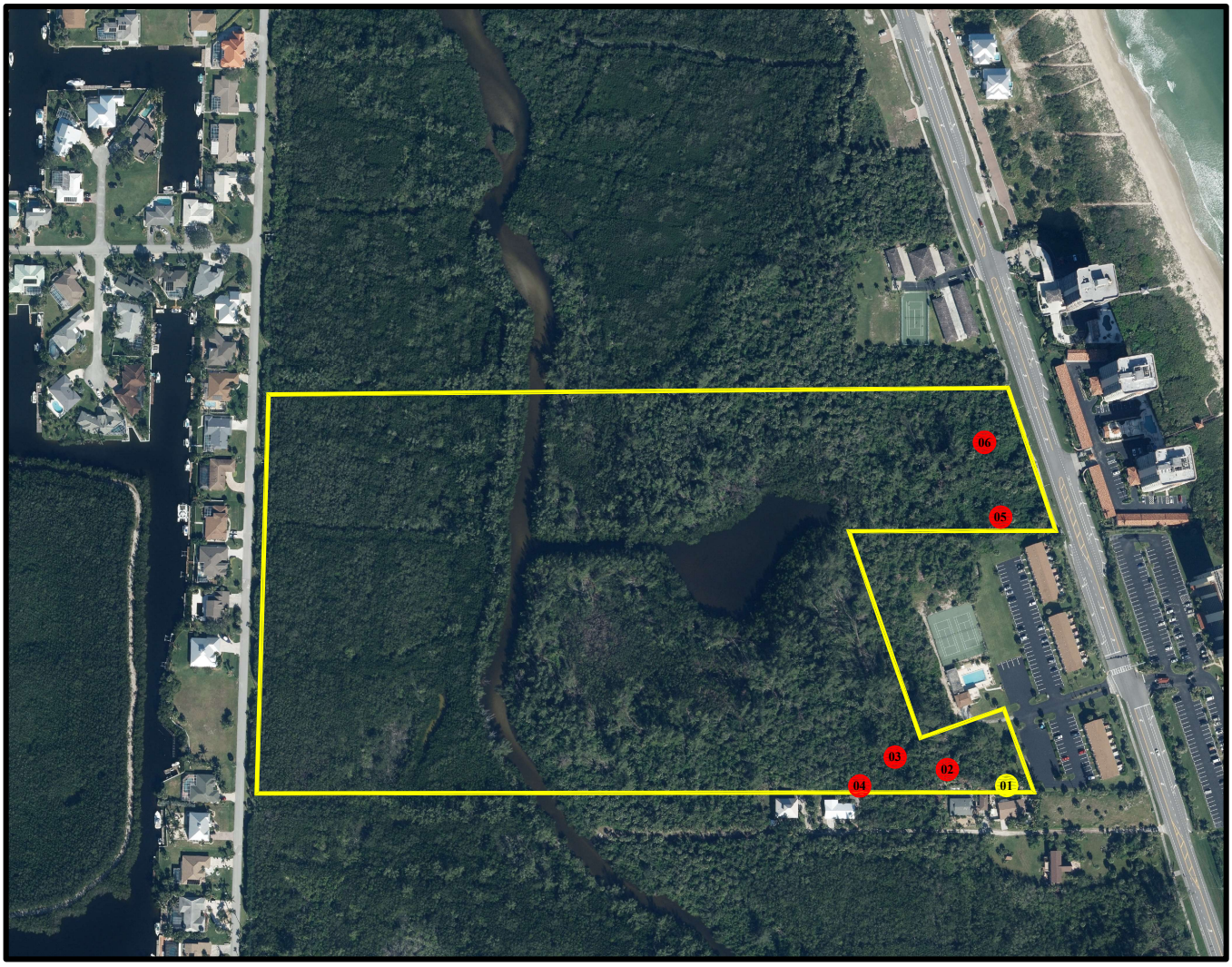
NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 140' 280' 560' 1,120'

SCALE: 1" = 280'



LEGEND:

- ACTIVE (5) POTENTIALLY OCCUPIED
- INACTIVE (1) POTENTIALLY OCCUPIED
- ABANDONED (0)

I HERE BY CERTIFY THAT:

A 100% SURVEY FOR GOPHER TORTOISES WAS COMPLETED ON 16 JULY 2021, ACCORDING TO FWC GUIDELINES. SIX (6) POTENTIALLY OCCUPIED GOPHER TORTOISE BURROWS WERE LOCATED DURING THE SURVEY. THE ESTIMATED GOPHER TORTOISE POPULATION IS THREE (3).
MARVIN BROWN, GTA-21-00014A

SOURCE: HSE
SOURCE: 2018 AERIAL PHOTOGRAPH, FDOT.

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 05 - GT BURROW.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 5 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"	LONGITUDE: -80° 18'45.09"				DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
100% GOPHER TORTOISE (Gopherus polyphemus) BURROW SURVEY
BURROW LOCATION MAP

HSE
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9512 SE Duncan Street
Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

NOT A SURVEY

CULPEPPER & TERPENING, INC.
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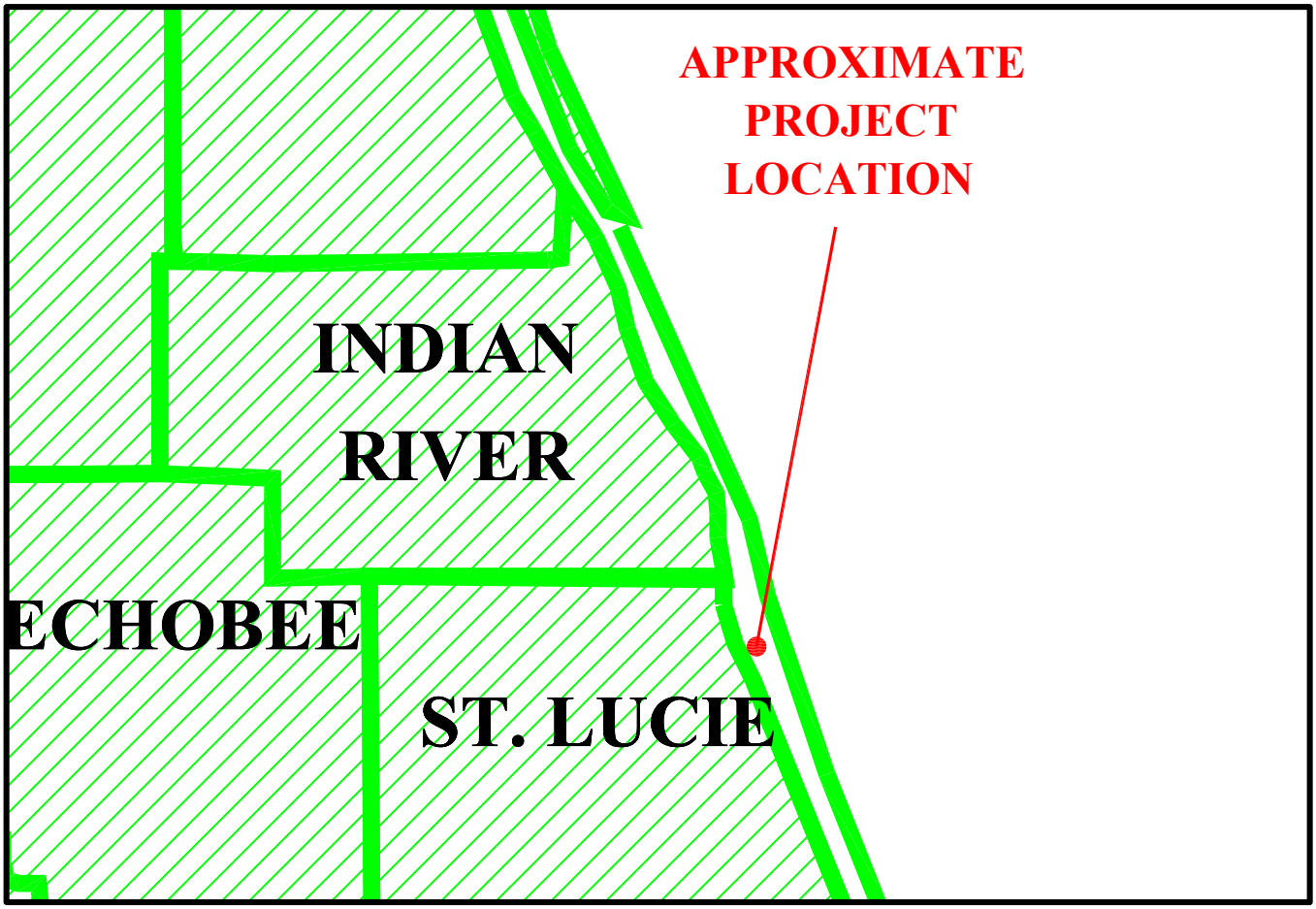
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 30,000' 60,000' 120,000' 240,000'

SCALE: 1" = 60,000'



FLORIDA PINE SNAKE

Pituophis melanoleucus mugitus

- DISTRIBUTION

PRINCIPLE GEOGRAPHIC RANGE OF THE FLORIDA PINE SNAKE, INCLUDING INTERVENING AREAS OF UNOCCUPIED HABITAT. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY AND NOT FOR REGULATORY USE.
COUNTIES: ALL EXCEPT FOR MONROE, COLLIER AND HENDRY.

FLORIDA FISH AND WILDLIFE CONSERVATION SERVICE
DATE: 28 JUNE 2014
SOURCE: FWC

SOURCE: FWC

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 06 - FL PINE SNAKE.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 6 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"		LONGITUDE: -80° 18'45.09"			DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
FLORIDA PINE SNAKE (Pituophis melanoleucus mugitus)
DISTRIBUTION MAP

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NOT A SURVEY

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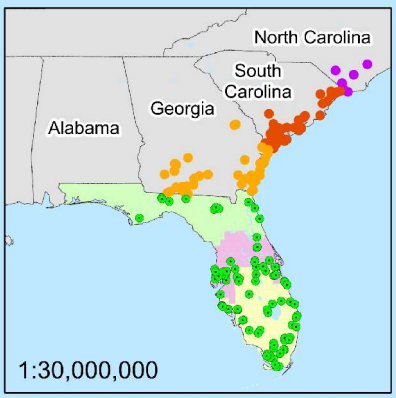
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4386

NORTH

0' 30,000' 60,000' 120,000' 240,000'

SCALE: 1" = 60,000'



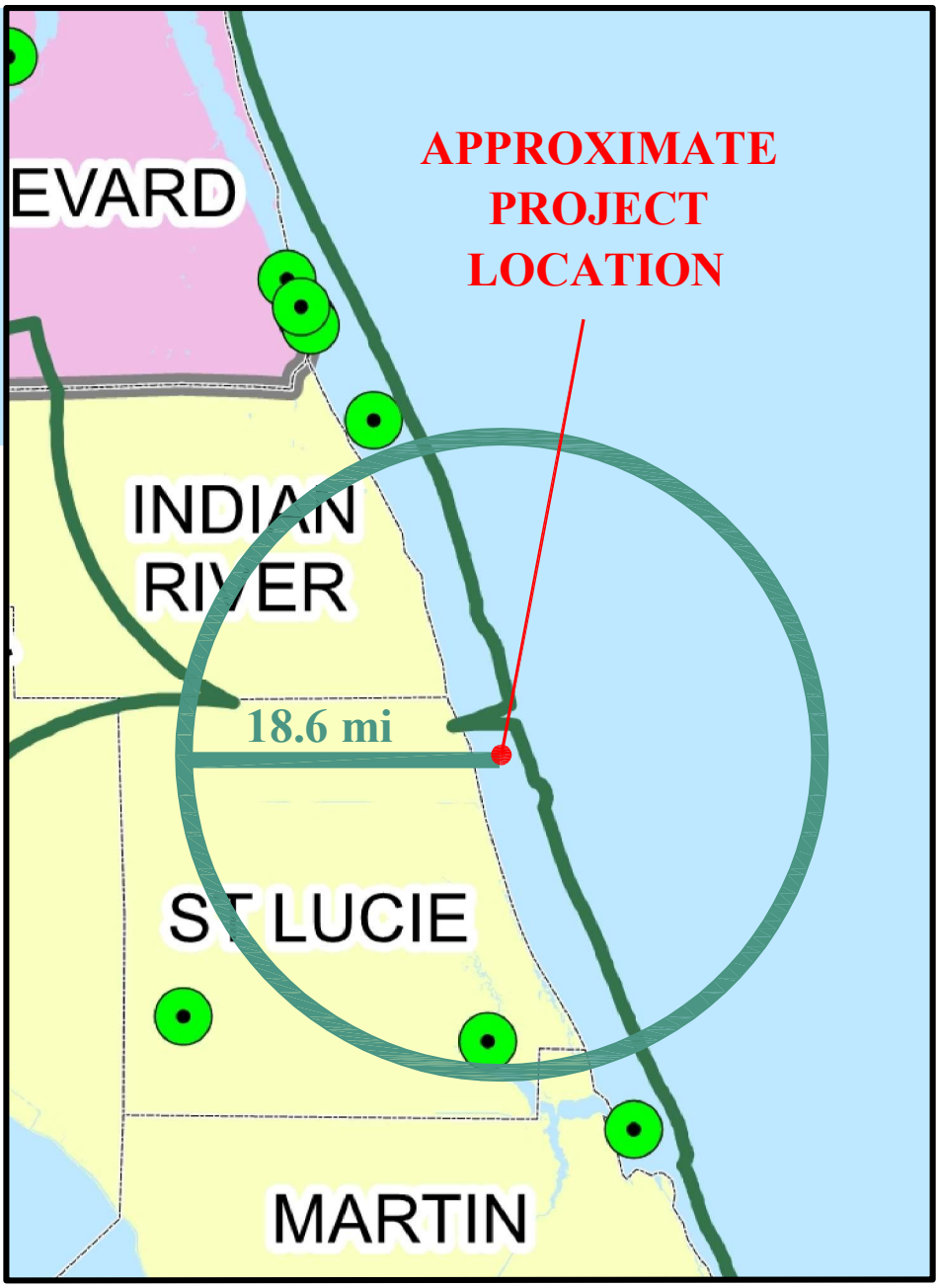
Wood Stork Nesting Colonies and Core Foraging Areas Active Within 2010-2019 in Florida

- Colonies Active In FL 2010-2019
- Colonies Active In GA 2010-2019
- Colonies Active In SC 2010-2019
- Colonies Active In NC 2010-2019

Foraging Area Active 2010-2019

Foraging Buffer Radias:
- South Florida Counties: 18.6 miles
- Central Florida Counties: 15 miles
- North Florida Counties: 13 miles
- Neighboring States: 13 miles

Florida Counties
Water
USFWS Ecological Services Office Boundary



SOURCE: U.S. FISH & WILDLIFE SERVICE HTTP://VEROBEACH.FWS.GOV

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 07 - WOOD STORK.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 7 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"		LONGITUDE: -80° 18'45.09"		DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP	

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
WOOD STORK (Mycteria americana)
NESTING COLONIES & CORE FORAGING AREAS

HSE Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

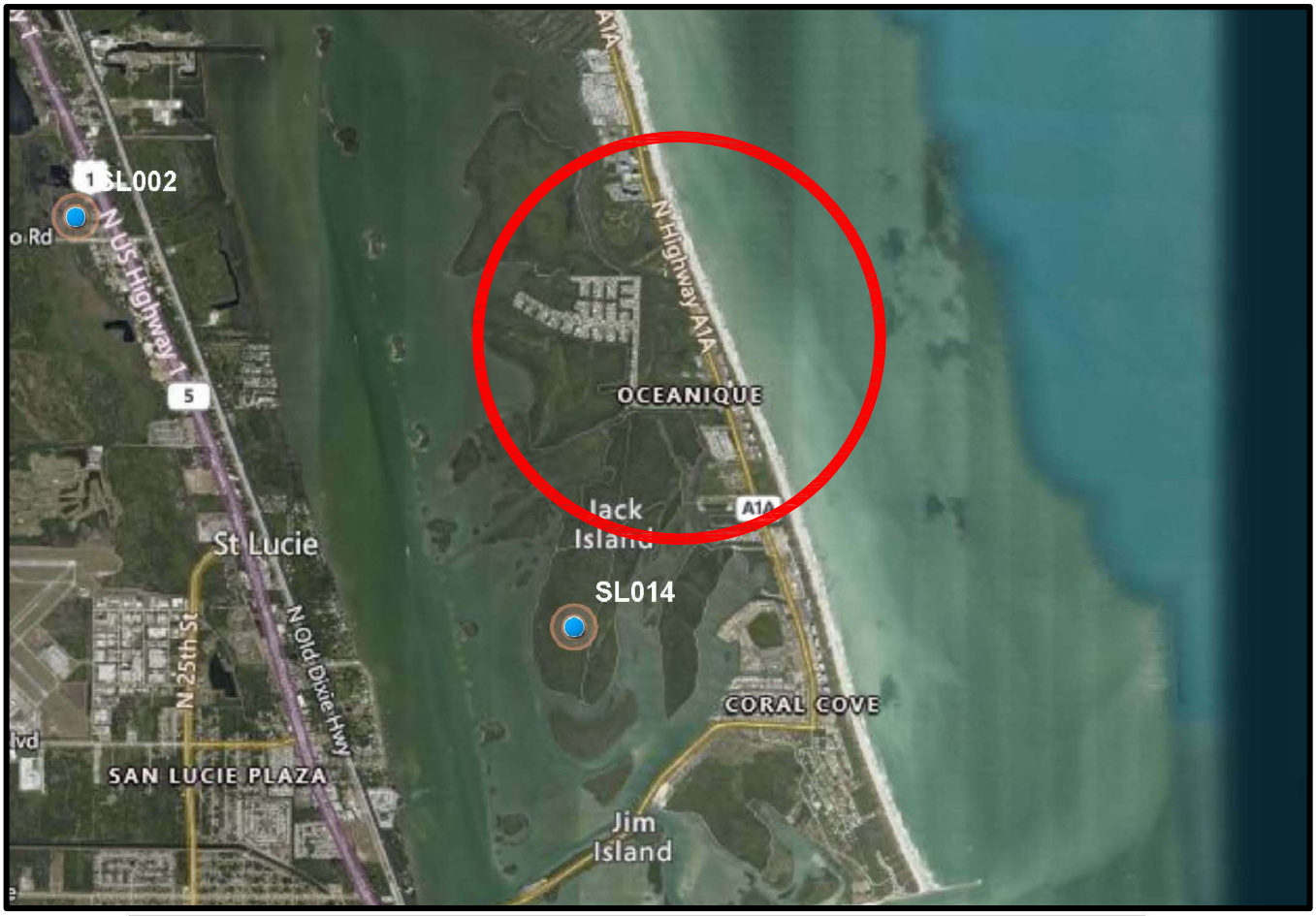
NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 2,500' 5,000' 10,000' 20,000'

SCALE: 1" = 5,000'



Nesting Area ID	Observation Date Range	Vicinity to Project
SL 014	2012-2021	1.43 mi
SL 02	2020-2021	3.12 mi

LEGEND:

- EAGLE NEST LOCATION

- ONE MILE RADIUS

SOURCE: https://myfwc.maps.arcgis.com/apps/webappviewer/index.html?id=fca6f17a0ef64b7b8bdcb51c9de43fb4

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 08 - EAGLE NEST.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 8 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"	LONGITUDE: -80° 18'45.09"				DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
AMERICAN BALD EAGLE (Haliaeetus leucocephalus)
HISTORICAL AND CURRENT NEST LOCATIONS

HSE
Hobe Sound Environmental Consultants Inc.
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Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

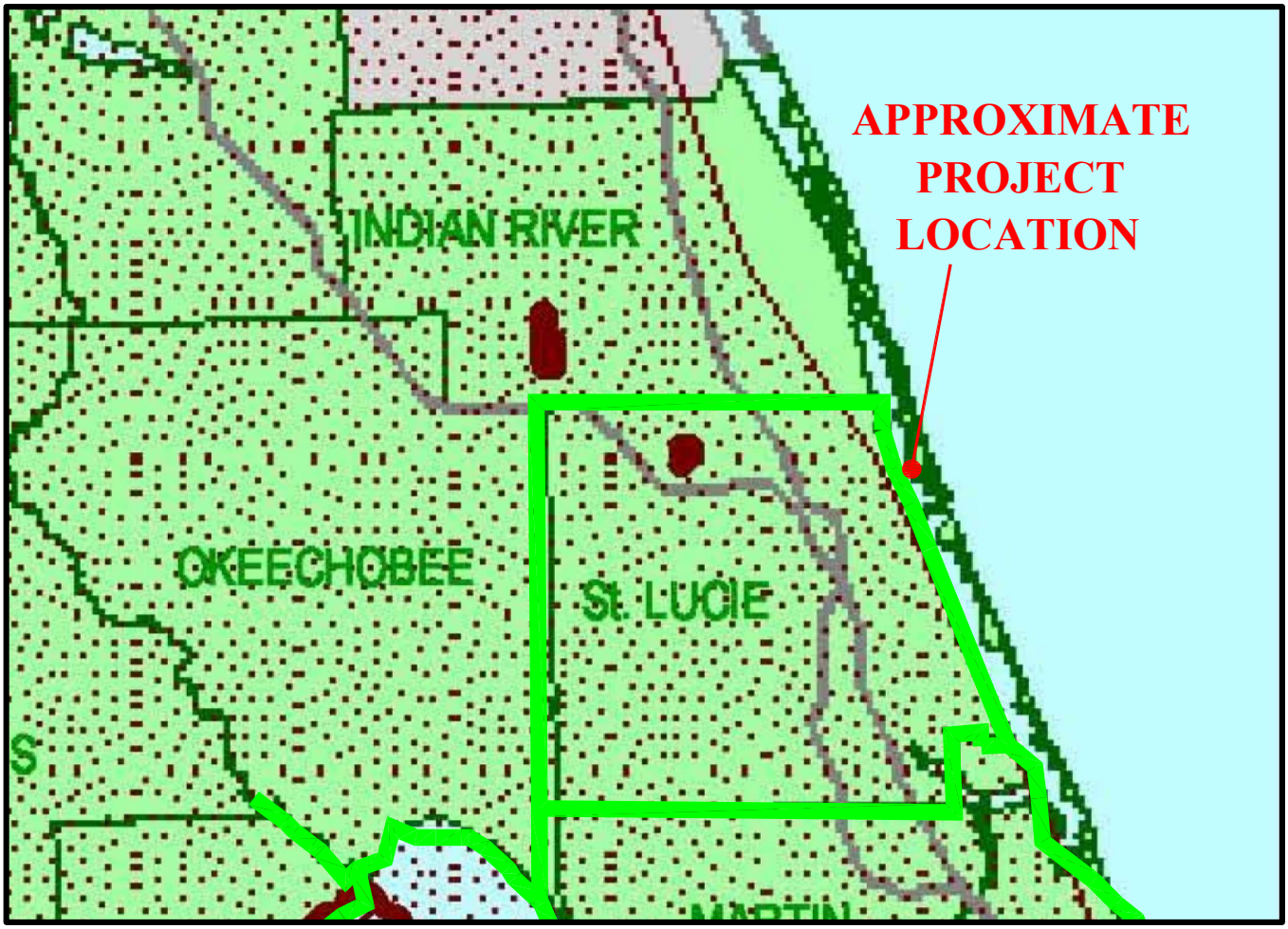
NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 30,000' 60,000' 120,000' 240,000'

SCALE: 1" = 60,000'



LEGEND

- Snail Kite Critical Habitat
- Snail Kite Consultation Area
- South Florida Service Area

SOURCE: U.S. FISH & WILDLIFE SERVICE HTTP://VEROBEACH.FWS.GOV

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 09 - SNAIL KITE.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 9 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"		LONGITUDE: -80° 18'45.09"			DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
EVERGLADE SNAIL KITE (Rostrhamus sociabilis plumbeus)
USFWS CONSULTATION AREA

HSE
Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

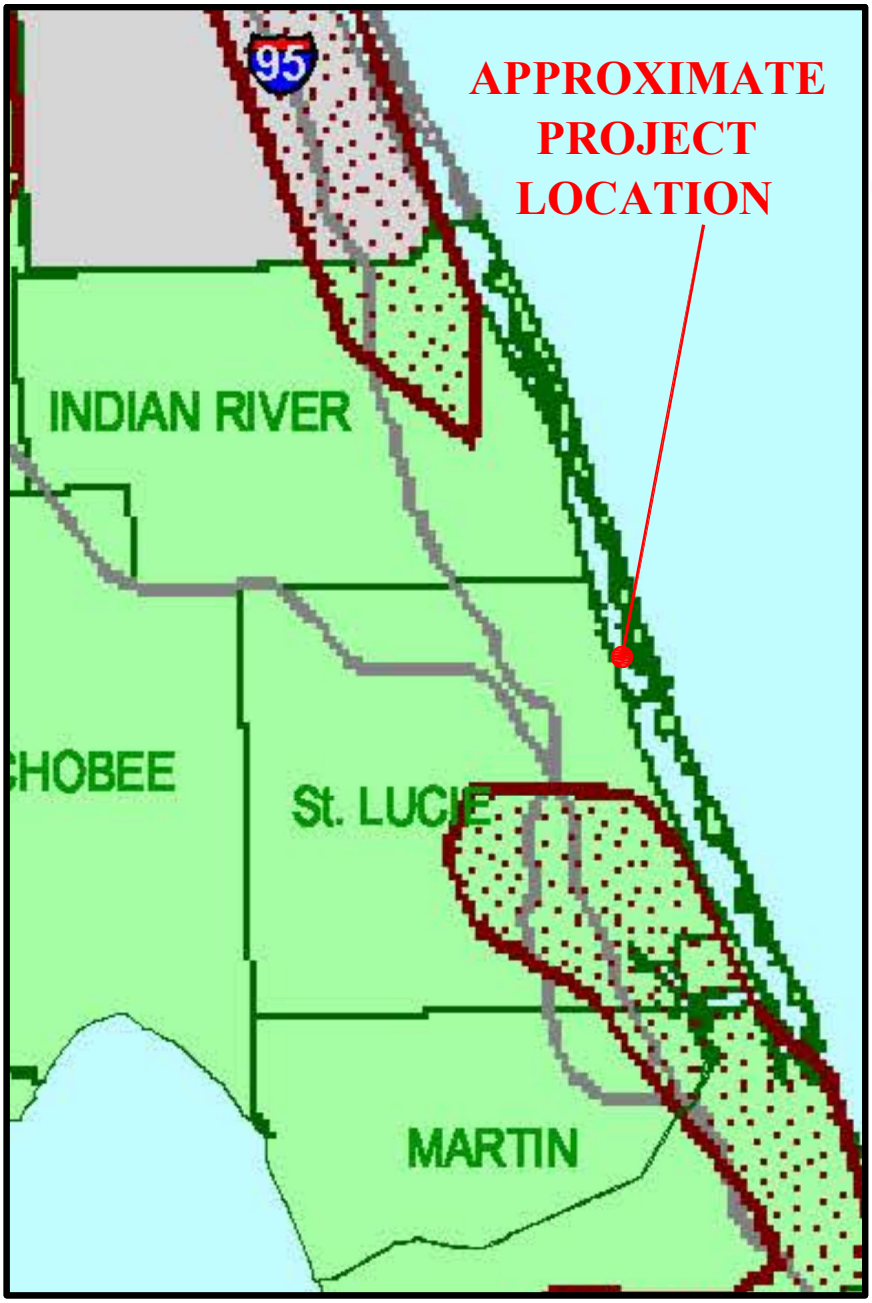
NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 30,000' 60,000' 120,000' 240,000'

SCALE: 1" = 60,000'



LEGEND

- Red-cockaded Woodpecker Consultation Area
- South Florida Service Area

U.S. FISH & WILDLIFE SERVICE

SOURCE: U.S. FISH & WILDLIFE SERVICE HTTP://VEROBEACH.FWS.GOV

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 10 - RED COCK WP.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 10 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"		LONGITUDE: -80° 18'45.09"			DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
RED-COCKADED WOODPECKER (Dryobates borealis)
USFWS CONSULTATION AREA

HSE
Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

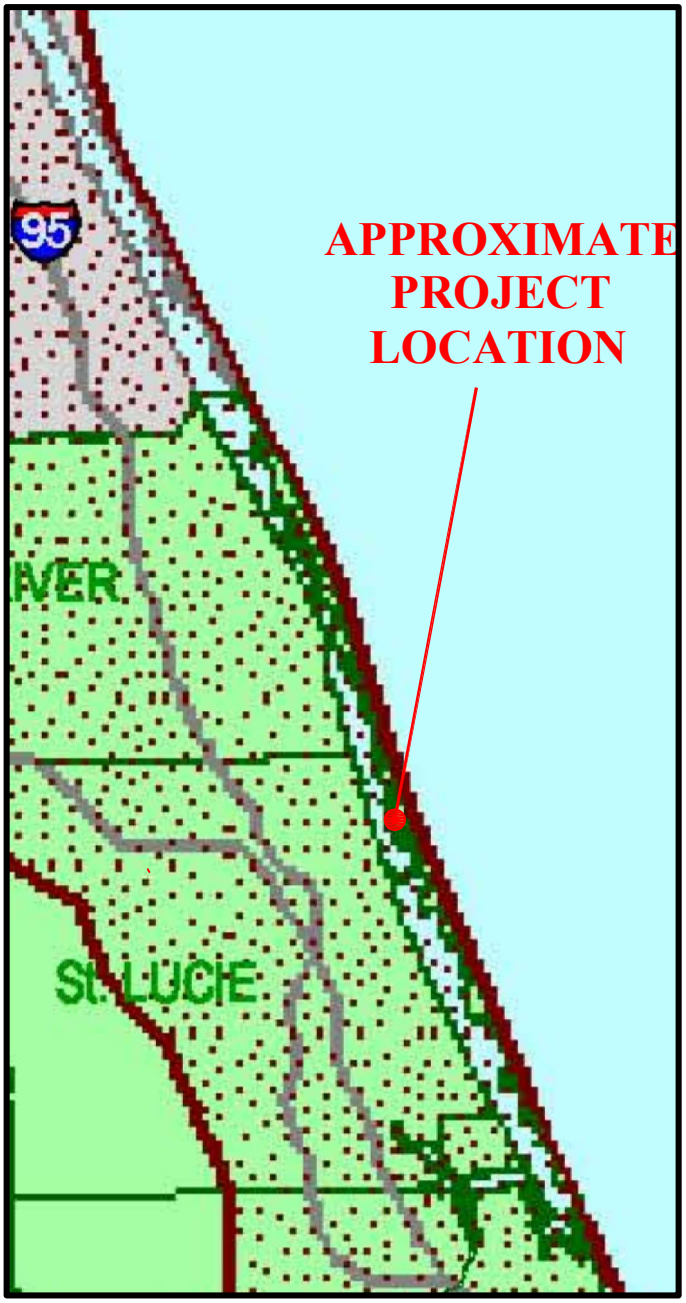
NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 30,000' 60,000' 120,000' 240,000'

SCALE: 1" = 60,000'



LEGEND

Florida Scrub-jay Consultation Area

South Florida Service Area

SOURCE: U.S. FISH & WILDLIFE SERVICE HTTP://VEROBEACH.FWS.GOV

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC. 23	TWP. 34S	R. 40E	HSE JOB NO.: 21-042.01	DRAWING NAME: 11 - SCRUB JAY.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 11 OF 16
LATITUDE: 27° 30'43.81"		LONGITUDE: -80° 18'45.09"			DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
FLORIDA SCRUB-JAY (Aphelocoma coerulescens)
USFWS CONSULTATION AREA

HSE
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Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

NOT A SURVEY

CULPEPPER & TERPENING, INC.
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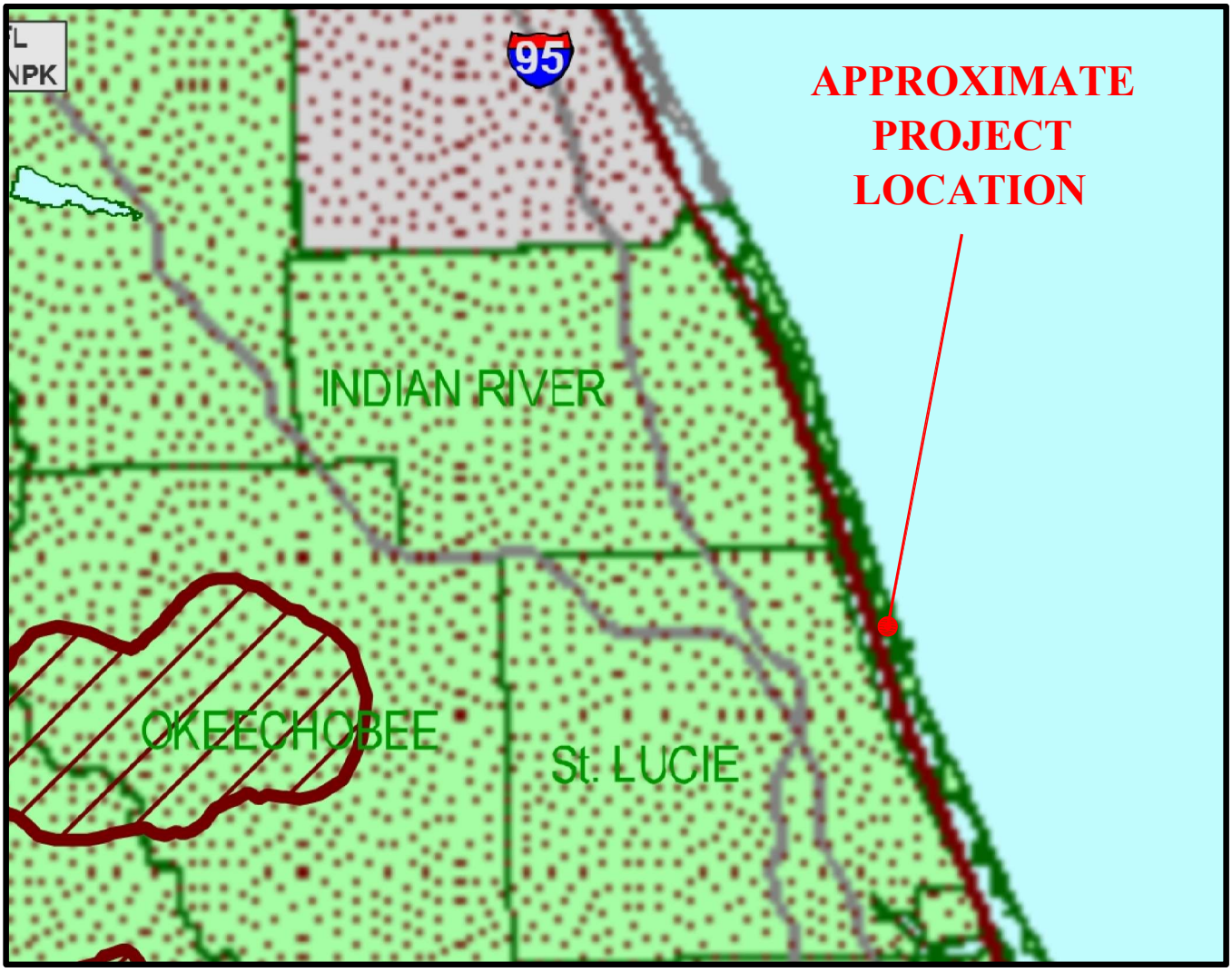
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 30,000' 60,000' 120,000' 240,000'

SCALE: 1" = 60,000'



LEGEND

- USFWS CONSULTATION AREA FOR CRESTED CARACARA

SOURCE: U.S. FISH & WILDLIFE SERVICE HTTP://VEROBEACH.FWS.GOV

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 12 - CARACARA.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 12 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"	LONGITUDE: -80° 18'45.09"				DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
CRESTED CARACARA (Caracara cheriway)
USFWS CONSULTATION AREA

HSE
Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

NOT A SURVEY

CULPEPPER & TERPENING, INC.
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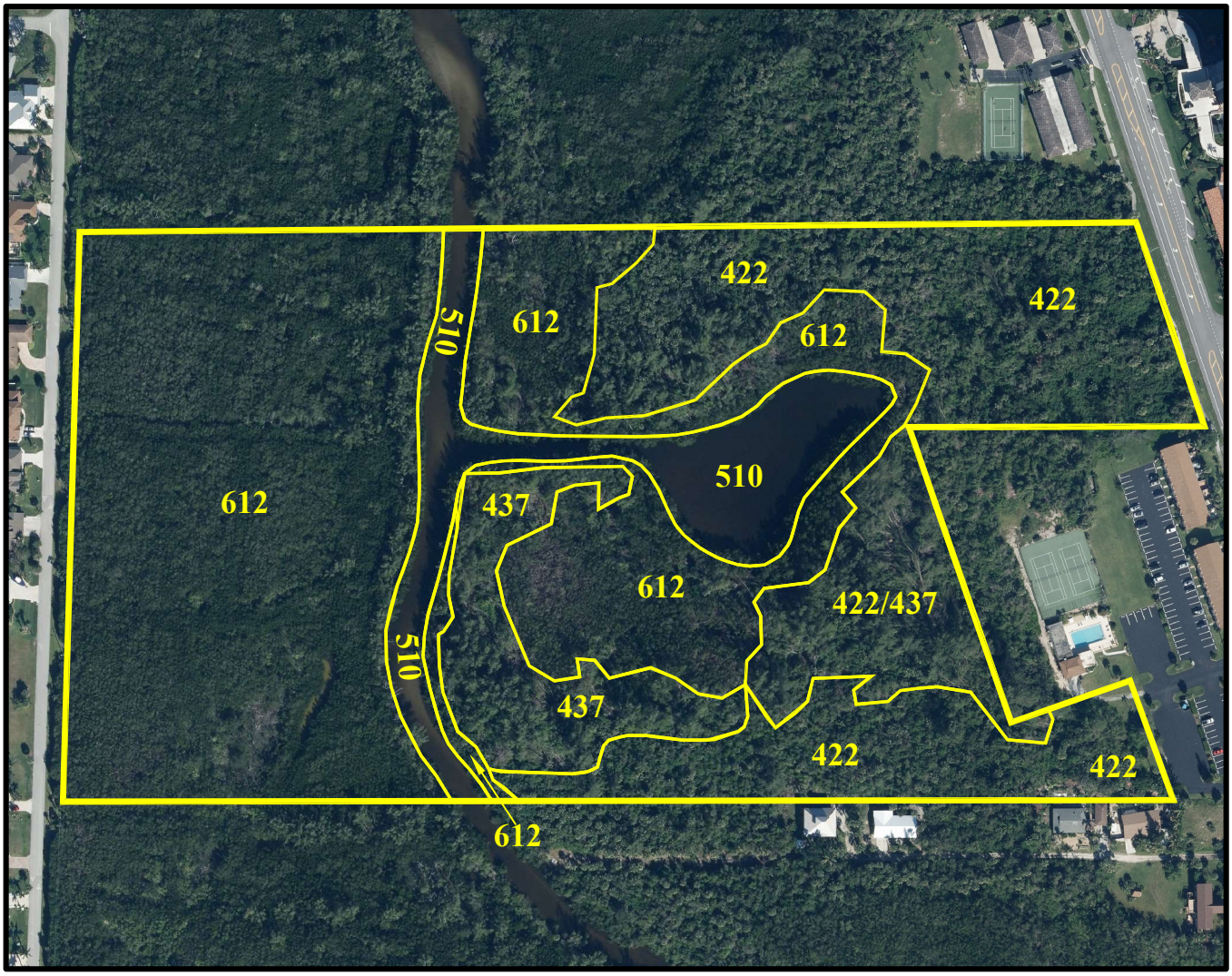
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 140' 280' 560' 1,120'

SCALE: 1" = 280'



LEGEND

422 - BRAZILIAN PEPPER: ±8.57 ACRES
422/437 - MIXED BRAZILIAN PEPPER/AUSTRALIAN PINE: ±2.37 ACRES
437 - AUSTRALIAN PINE: ±2.30 ACRES
510 - STREAMS AND WATERWAYS: ±3.19 ACRES
612 - MANGROVE SWAMP: ±17.34 ACRES
TOTAL: ±33.77 ACRES

SOURCE: FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM, HANDBOOK 1999 DEPARTMENT OF TRANSPORATION.

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 13 - FLUCFCS.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 13 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"	LONGITUDE: -80° 18'45.09"			DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP	

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
FLUCFCS (VEGETATION) MAP

HSE
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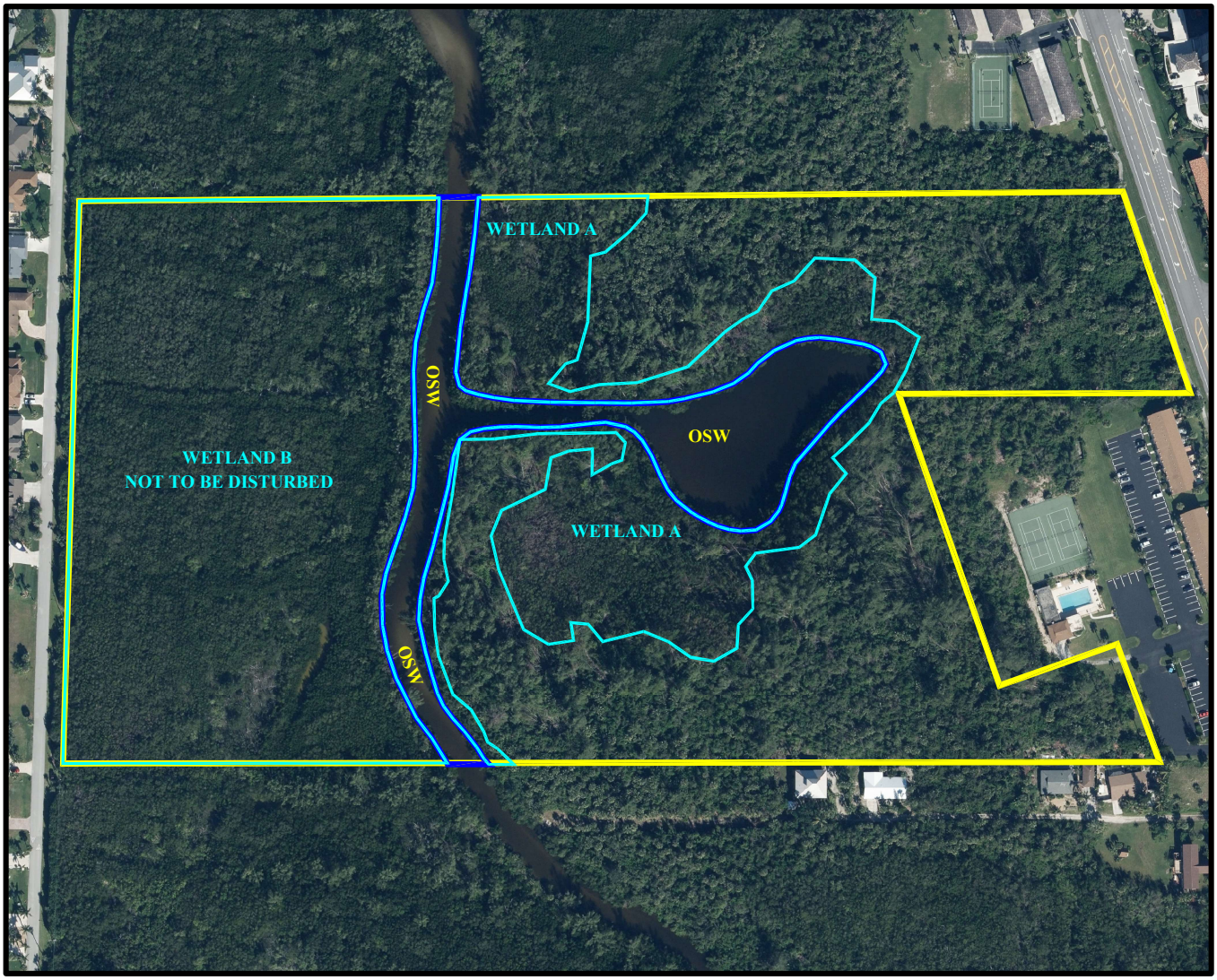
NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 140' 280' 560' 1,120'

SCALE: 1" = 280'



LEGEND:

- WETLAND A: 5.68 ACRES
- WETLAND B: 11.66 ACRES
- OSW LOCATED ON-SITE: 3.19 ACRES

SOURCE: HSE.
SOURCE: 2018 AERIAL PHOTOGRAPH, FDOT.

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 14 - WETLAND MAP.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 14 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"	LONGITUDE: -80° 18'45.09"				DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
WETLAND & OSW MAP

H S E
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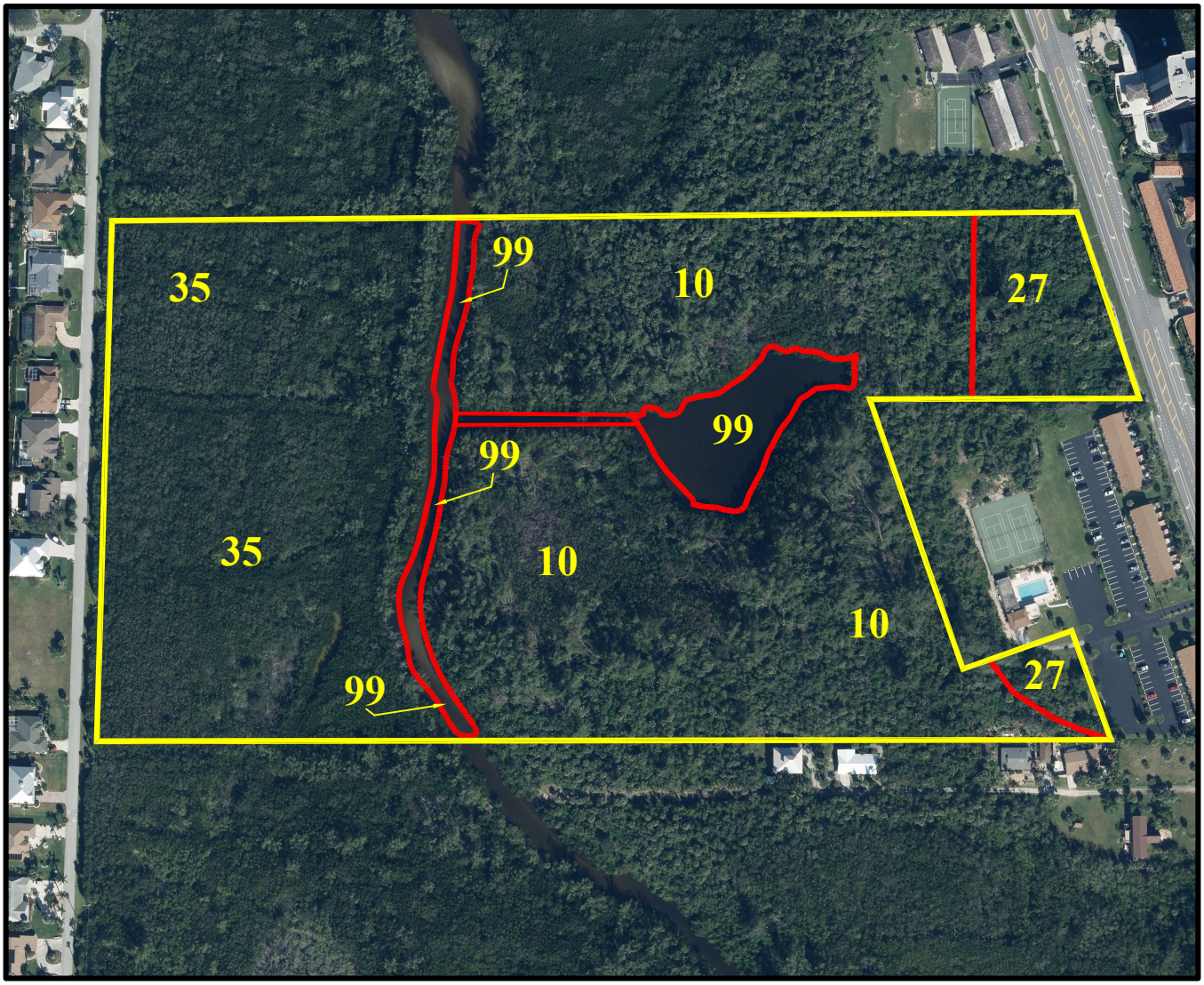
NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 200' 400' 800' 1,600'

SCALE: 1" = 400'



LEGEND

10 - Canaveral fine sand, 0 to 5 percent slopes
27 - Palm Bach fine sand, 0 to 5 percent slopes
35 - Kesson-Terra Ceia complex, tidal
99 - Water

SOURCE: http://websoilsurvey.sc.egov.usda/App/WebSoilSurvey.aspx

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 15 - SOIL MAP.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 15 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"		LONGITUDE: -80° 18'45.09"			DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
NRCS SOIL MAP

HSE
Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL. 33455
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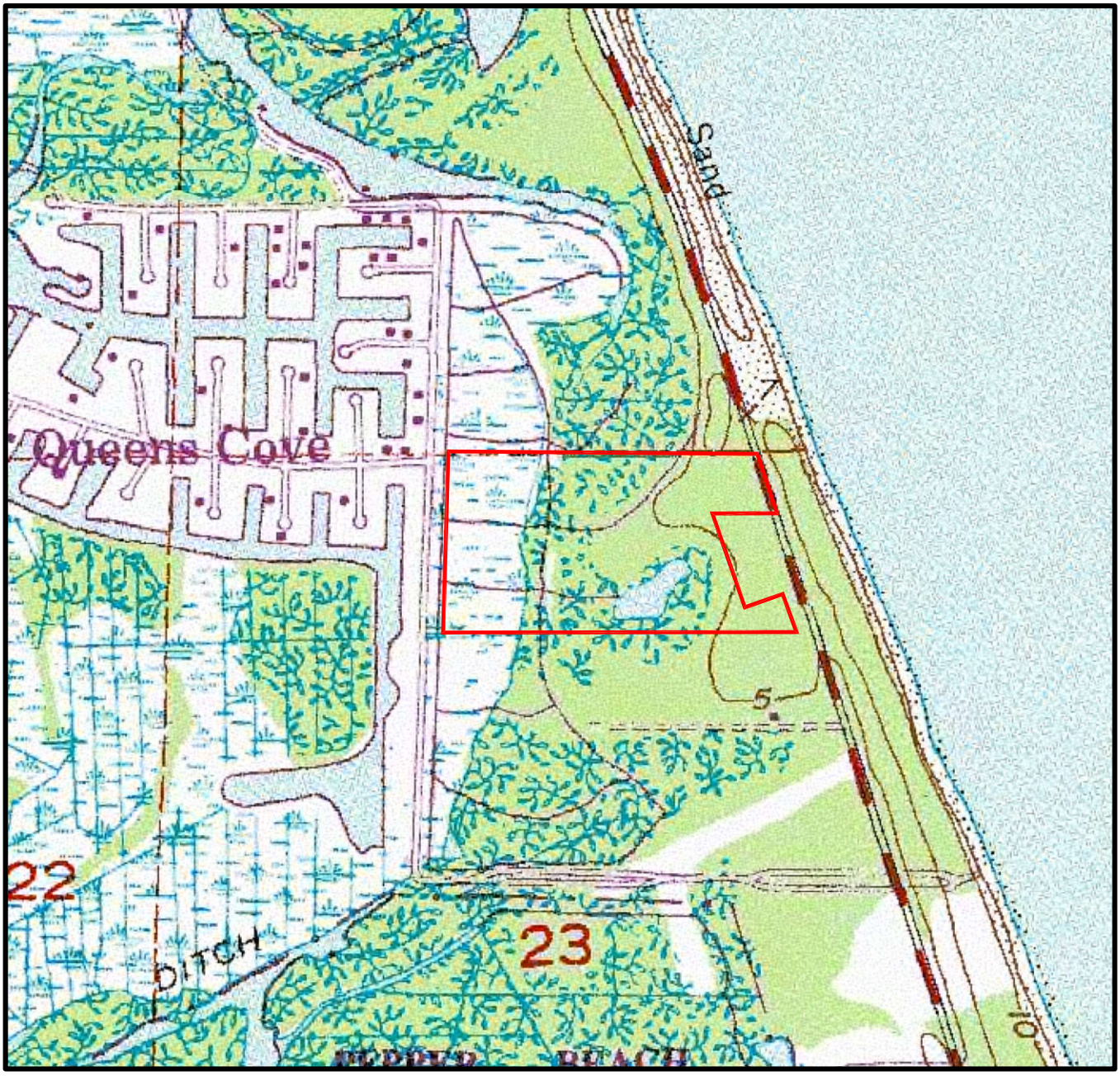
NOT A SURVEY

CULPEPPER & TERPENING, INC.
CONSULTING ENGINEERS | LAND SURVEYORS
2980 SOUTH 25th STREET
FORT PIERCE, FLORIDA 34981
(772) 464-3537
STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4288

NORTH

0' 250' 500' 1,000' 2,000'

SCALE: 1" = 500'



SOURCE: USGS INDRIO, FLA. QUADRANGLE. 27080-D3-TF-024 REV 1983 7.5 MINUTE SERIES

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: 16 - TOPO.DWG	DATE: 06 AUGUST 2021	APPENDIX A FIGURE: 16 OF 16
	23	34S	40E				
LATITUDE: 27° 30'43.81"		LONGITUDE: -80° 18'45.09"		DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP	

PELICAN BAY PROJECT SITE
CULPEPPER & TERPENING, INC.
WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT
USGS TOPOGRAPHIC MAP

HSE
Hobe Sound Environmental Consultants Inc.
9512 SE Duncan Street
Hobe Sound, FL. 33455
(772) 545-3676, E-mail: bobhsenv@gmail.com

APPENDIX B

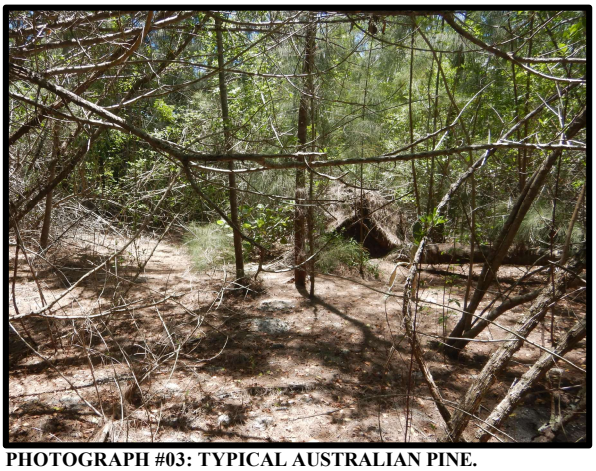
SITE PHOTOGRAPHS

SOURCE: PHOTOGRAPHS BY HSE

NOT A SURVEY

PHOTOGRAPH #01: TYPICAL BRAZILIAN PEPPER VEGETATION.

PHOTOGRAPH #02: TYPICAL BRAZILIAN PEPPER VEGETATION.



PHOTOGRAPH #03: TYPICAL AUSTRALIAN PINE.

PHOTOGRAPH #04: TYPICAL MANGROVE SWAMP OVERLOOKING THE OSW.

PHOTOGRAPH #05: TYPICAL MANGROVE SWAMP OVERLOOKING THE OSW.

PHOTOGRAPH #06: GOPHER TORTOISE SEEN NEAR THE EDGE OF THE PROJECT SITE.

PARCEL ID #'S: 1423-120-0006-000-3 & 1423-120-0010-000-4

ST. LUCIE COUNTY FLORIDA	SEC.	TWP.	R.	HSE JOB NO.: 21-042.01	DRAWING NAME: APP B - PHOTOS.DWG	DATE: 06 AUGUST 2021	APPENDIX B FIGURE: 1 OF 1
	23	34S	40E				
LATITUDE: 27° 30'43.81"	LONGITUDE: -80° 18'45.09"				DESIGNED BY: RLW	DRAWN BY: MRS	CHECKED BY: FRP

PELICAN BAY PROJECT SITE

CULPEPPER & TERPENING, INC.

WETLAND AND WILDLIFE ASSESSMENT (WWA) REPORT

SITE PHOTOGRAPHS #1-6

H S E

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Hobe Sound, FL. 33455

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