

**NC SQUARE
COLLIER COUNTY
ENVIRONMENTAL DATA REPORT**

January 2024

Prepared For:

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1.0 INTRODUCTION

The following environmental data report is provided in support of the Planned Unit Development Amendment (PUDA) application for NC Square (Project). The application includes an amendment to Ordinance 2021-18, which was issued for the Project in May 2021. The following information is being provided in accordance with the Collier County Environmental Data Submittal Requirements outlined in Section 3.08.00(A) of the Collier County Land Development Code (LDC).

The Project totals 24.40± acres and is located in Section 29, Township 48 South, Range 27 East, Collier County (Exhibit 1). More specifically, it is located at the southwest corner of the intersection of Immokalee Road and Catawba Street. The Project is bordered by Immokalee Road and the residential and golf course community of Twin Eagles to the north; Catawba Street and Crawford Landscape Nursery to the east and southeast; and the Valencia Trails residential development to the south and west (Exhibit 2).

The Project site is comprised of undeveloped, forested uplands that have been invaded to various degrees by exotic vegetation, including Brazilian pepper (*Schinus terebinthifolia*) and strawberry guava (*Psidium cattleianum*).

The following environmental data report includes details regarding the author of this report, vegetation descriptions for the various habitats on-site, results of the listed species survey conducted by Passarella & Associates, Inc. (PAI) in November 2023, and the native vegetation preservation information.

2.0 ENVIRONMENTAL DATA AUTHOR

This environmental data report was prepared by Bethany Brosious. She satisfies the environmental credential and experience requirements for preparing the report, per Section 3.08.00(A)2 of the Collier County LDC.

Mrs. Brosious is a Senior Ecologist with PAI and has over 17 years of experience in the environmental consulting industry. She holds a Bachelor of Science degree from the University of Florida in animal science, and a Master of Science degree from Florida Gulf Coast University in environmental science.

3.0 VEGETATION DESCRIPTIONS

The vegetation mapping of the subject property was conducted using Collier County December 2017 rectified color aerials (Scale: 1" = 100'). Groundtruthing to map the vegetative communities was updated in July 2018 utilizing the Florida Land Use, Cover and Forms Classification System (FLUCFCS) Levels III and IV. Level IV FLUCFCS was utilized to denote hydrological conditions and disturbance. Exotic, or "E," codes were used to show levels of exotic species invasion (e.g., Brazilian pepper). AutoCAD Map 3D 2021 software was used to

determine the acreage of each mapped polygon, produce summaries, and generate the final FLUCFCS map (Exhibit 3).

Five vegetative associations (i.e., FLUCFCS codes) were identified on the property. The dominant habitat types on the site are Cypress, Disturbed and Drained (25-49% Exotics) (FLUCFCS Code 6215 E2) (63.8 percent of the site) and Pine, Disturbed (25-49% Exotics) (FLUCFCS Code 4159 E2) (17.8 percent of the site). Exotic vegetation documented on-site includes, but is not limited to, Brazilian pepper and strawberry guava. The degree of exotic infestation ranges from zero to 75 percent cover.

Surrounding land use practices, such as the construction of the Cocohatchee Canal, have significantly altered the hydrologic regime of the area, with draining effects resulting in a relic wetland system within the Project site. The Project site was confirmed to be comprised of upland habitat by the South Florida Water Management District (SFWMD) per Formal Wetland Determination (Permit No. 11-100754-P) issued November 29, 2018, and by the U.S. Army Corps of Engineers (COE) per Approved Wetland Determination (Project No. SAJ-2018-02547 (NPR-RMG)), by letter dated October 26, 2018.

The resulting acreage and a description for each FLUCFCS classification is provided in Table 1, and the vegetation composition for each community type follows.

Table 1. Existing Land Use and Cover Summary

FLUCFCS Code	Description	Acreage	Percent of Total
4159 E2	Pine, Disturbed (25-49% Exotics)	4.34	17.8
4279 E2	Live Oak, Disturbed (25-49% Exotics)	1.28	5.2
4289 E3	Cabbage Palm, Disturbed (50-75% Exotics)	2.58	10.6
6215 E2	Cypress, Disturbed and Drained (25-49% Exotics)	15.56	63.8
6215 E3	Cypress, Disturbed and Drained (50-75% Exotics)	0.64	2.6
Total		24.40	100.0

Pine, Disturbed (25-49% Exotics) (FLUCFCS Code 4159 E2)

This upland habitat is situated along the northeast boundary and occupies 4.34± acres or 17.8 percent of the property. The canopy is dominated by slash pine (*Pinus elliottii*) with scattered cabbage palm (*Sabal palmetto*). The sub-canopy is dominated by cabbage palm with slash pine, Brazilian pepper, and scattered dahoon holly (*Ilex cassine*). Ground cover included saw palmetto (*Serenoa repens*), muscadine grape (*Vitis rotundifolia*), poison ivy (*Toxicodendron radicans*), greenbrier (*Smilax* sp.), Virginia creeper (*Parthenocissus quinquefolia*), American beautyberry (*Callicarpa americana*), and scattered ground orchid (*Habenaria* sp.).

Live Oak, Disturbed (25-49% Exotics) (FLUCFCS Code 4279 E2)

This upland habitat is found along the northern boundary and occupies 1.28± acres or 5.2 percent of the property. The canopy is dominated by live oak (*Quercus virginiana*) with cabbage palm. The sub-canopy includes wax myrtle (*Morella cerifera*), Simpson’s stopper (*Myrcianthes fragrans*), and Brazilian pepper. The ground cover is comprised of wild coffee (*Psychotria*

nervosa), swamp fern (*Telmatoblechnum serrulatum*), strap fern (*Campyloneurum phyllitidis*), sword fern (*Nephrolepis cordifolia*), caesarweed (*Urena lobata*), and American beautyberry.

Cabbage Palm, Disturbed (50-75% Exotics) (FLUCFCS Code 4289 E3)

This upland habitat is located on the northwest portion of the Project and occupies 2.58± acres or 10.6 percent of the property. The canopy and sub-canopy strata are dominated by cabbage palm. The sub-canopy also includes Brazilian pepper, with scattered live oak and bald cypress (*Taxodium distichum*). The ground cover is dominated by sword fern with wild coffee, caesarweed, muscadine grape, and lantana (*Lantana camera*).

Cypress, Disturbed and Drained (25-49% Exotics) (FLUCFCS Code 6215 E2)

This upland habitat is located on the southern and central portions of the property and occupies 15.56± acres or 63.8 percent of the site. The canopy of this habitat is dominated by bald cypress and cabbage palm. The sub-canopy is dominated by cabbage palm, along with scattered strangler fig (*Ficus aurea*), strawberry guava, hog plum (*Ximenia americana*), citrus (*Citrus* spp.), and Brazilian pepper. The ground cover includes wild coffee, caesarweed, American beautyberry, swamp fern, and scattered Boston fern (*Nephrolepis exaltata*).

Cypress, Disturbed and Drained (50-75% Exotics) (FLUCFCS Code 6215 E3)

This upland habitat is located on the northwest corner of the property and occupies 0.64± acre or 2.6 percent of the site. The vegetative composition is similar to that of FLUCFCS Code 6215 E2; however, this community contains 50 to 75 percent cover of exotic species.

4.0 LISTED SPECIES SURVEY

An updated listed plant and wildlife species survey was conducted for the Project site on November 1, 2023. No state- or federally-listed plant or wildlife species, or plant species protected by Collier County, were documented during the survey.

The listed species survey methodology and results are provided as Exhibit 4.

5.0 NATIVE VEGETATION PRESERVATION

As required by Ordinance 2021-18, the Project will retain 6.20± acres of native vegetation preservation areas in the northwestern and southern portions of the Project site. Please see the Master Concept Plan for additional details on the preserve. Please note that the preserve locations identified as part of this PUDA application are consistent with those approved in Ordinance 2021-18.

The two preserve areas satisfy the Preservation Standards as outlined in Sections 3.05.07.4 & 5 of the Collier County LDC.

The northwest preserve area will protect a small live oak or hardwood hammock, which contains a documented archaeological site (8CR1502). The southern preserve area will connect to the off-site conservation area, located east of the Project, on Crawford Landscape Nursery.

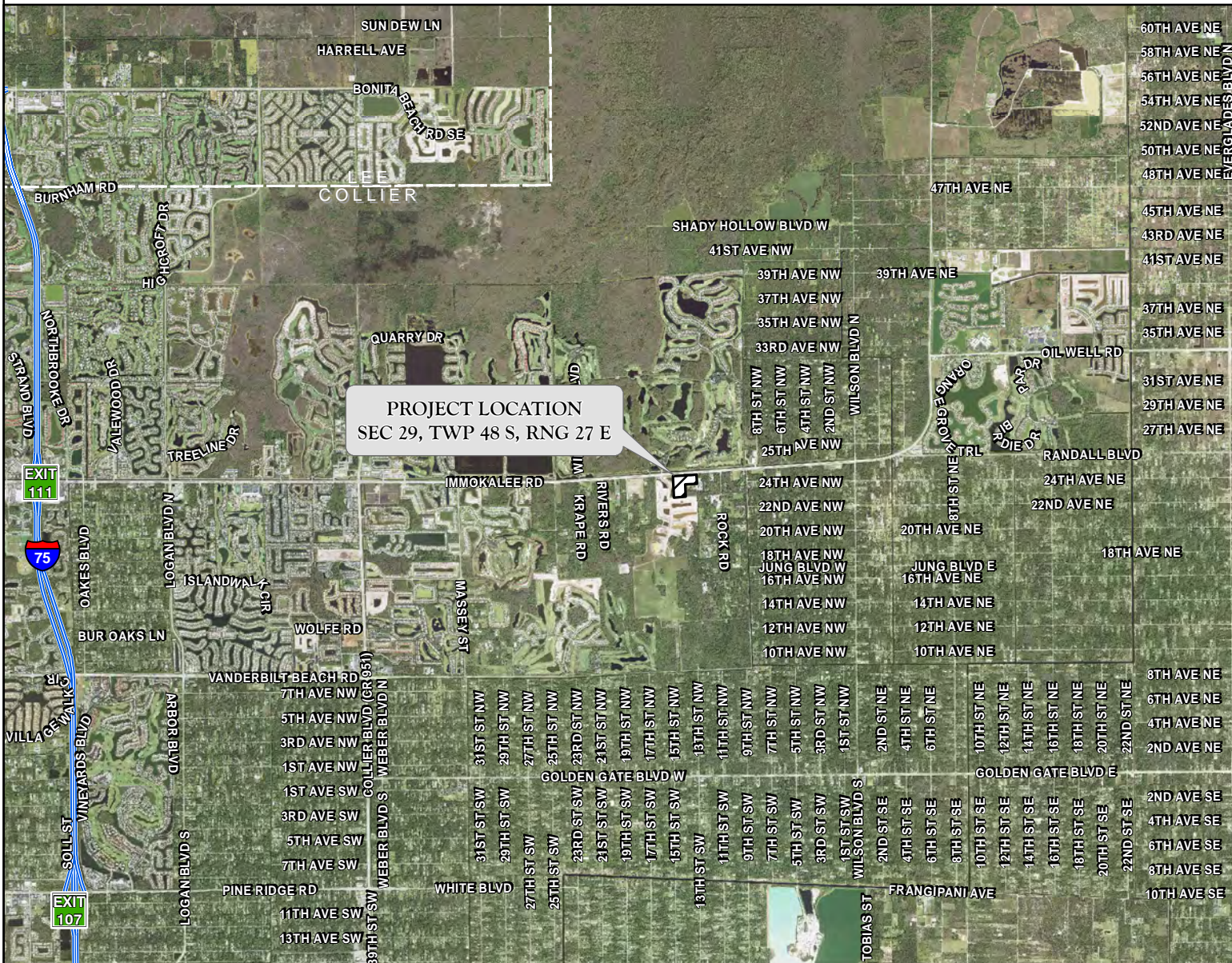
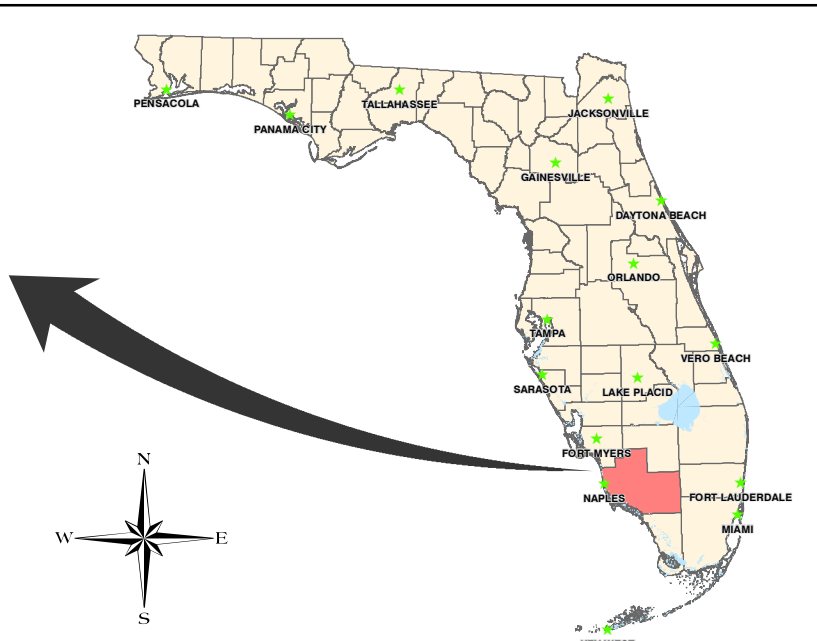
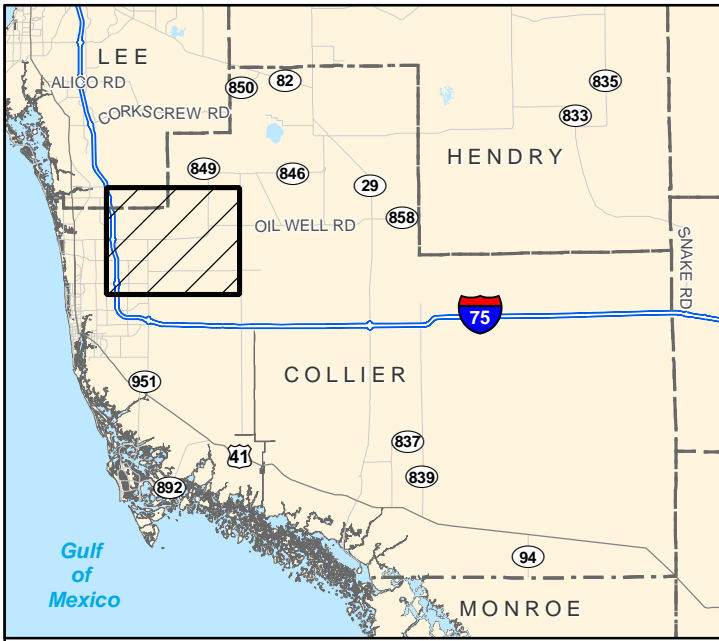
Prohibited exotics will be removed from the preserve areas and the on-site preserves will be protected via a conservation easement dedicated to Collier County, per the requirements of the Collier County LDC.

6.0 REFERENCES

Florida Department of Transportation. 1999. Florida Land Use, Cover and Forms Classification System. Procedure No. 550-010-001-a. Second Edition.

EXHIBIT 1

PROJECT LOCATION MAP



PROJECT LOCATION
SEC 29, TWP 48 S, RNG 27 E

EXHIBIT 1. PROJECT LOCATION MAP
NC SQUARE

DRAWN BY	DATE
P.F.	10/31/23
REVIEWED BY	DATE
M.K.	10/31/23
REVISED	DATE



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EXHIBIT 2

AERIAL WITH BOUNDARY



TWIN EAGLES

SCALE: 1" = 200'

-IMMOKALEE ROAD-

-CATAMBA STREET-

CRAWFORD
LANDSCAPING

P/L

VALENCIA
TRAILS

VALENCIA TRAILS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF DECEMBER 2022.

PROPERTY BOUNDARY PER PENINSULA ENGINEERING DRAWING No. ACAD-P-NCSQ-002-001-DB01- MODEL.DWG DATED APRIL 10, 2023.

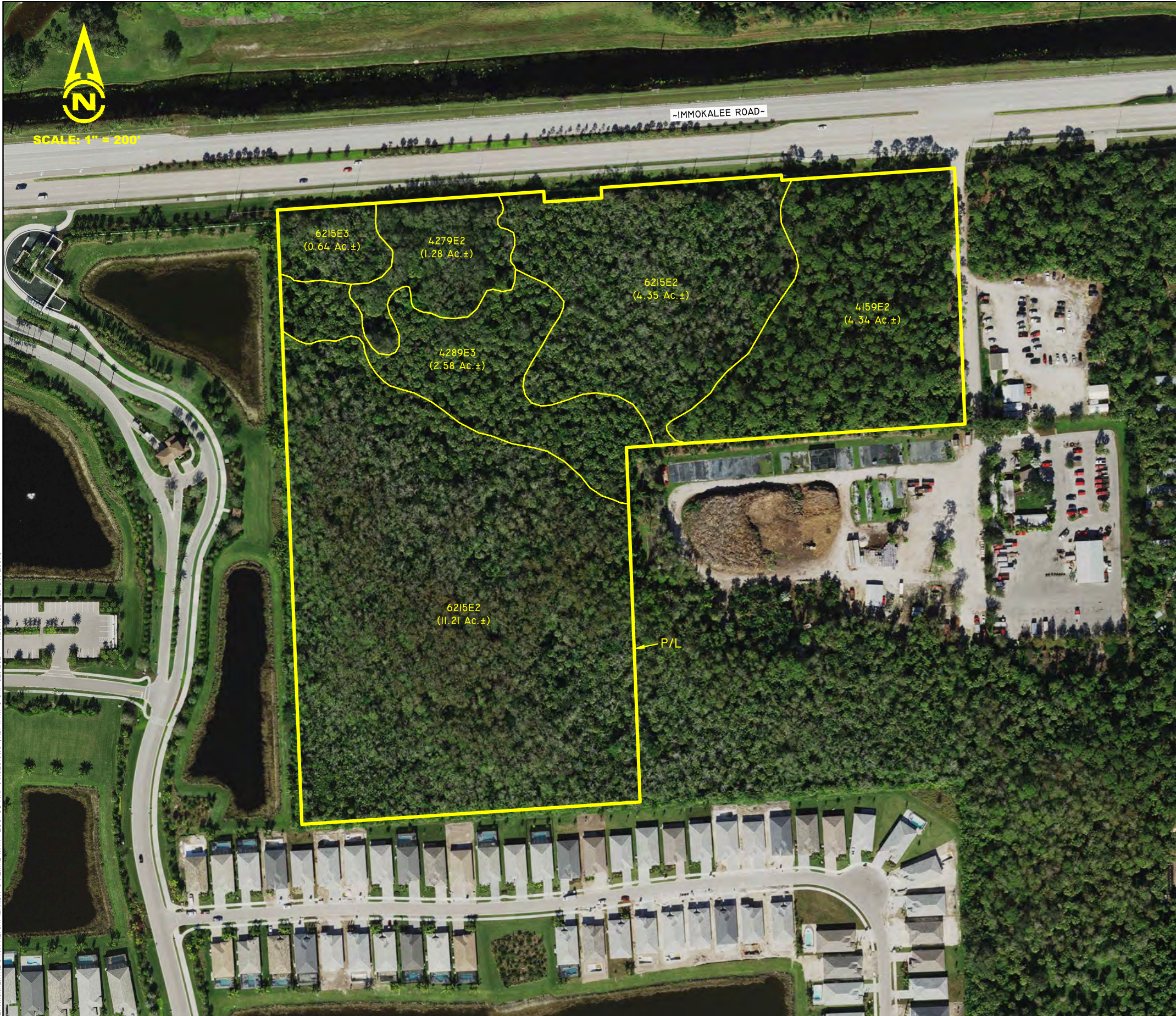
EXHIBIT 2. AERIAL WITH BOUNDARY
NC SQUARE

DRAWN BY	DATE
H.H.	7/17/18
REVIEWED BY	DATE
M.M.	7/17/18
REVISED	DATE
R.F.	1/21/20



EXHIBIT 3

AERIAL WITH FLUCFCS MAP



SCALE: 1" = 200'

FLUCFCS CODES	DESCRIPTIONS	ACREAGE	% OF TOTAL
4159 E2	PINE, DISTURBED (25-49% EXOTICS)	4.34 Ac. ±	17.8%
4279 E2	LIVE OAK, DISTURBED (25-49% EXOTICS)	1.28 Ac. ±	5.2%
4289 E3	CABBAGE PALM, DISTURBED (50-75% EXOTICS)	2.58 Ac. ±	10.6%
6215 E2	CYPRESS, DISTURBED AND DRAINED (25-49% EXOTICS)	15.56 Ac. ±	63.8%
6215 E3	CYPRESS, DISTURBED AND DRAINED (50-75% EXOTICS)	0.64 Ac. ±	2.6%
TOTAL		24.40 Ac. ±	100.0%

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF DECEMBER 2022.

PROPERTY BOUNDARY PER PENINSULA ENGINEERING DRAWING No. ACAD-P-NCSQ-002-001-DB01- MODEL.DWG DATED APRIL 10, 2023.

FLUCFCS LINES ESTIMATED FROM 1"=200' AERIAL PHOTOGRAPHS AND LOCATIONS APPROXIMATED.

FLUCFCS PER FLORIDA LAND USE, COVER AND FORMS CLASSIFICATION SYSTEM (FLUCFCS) (FDOT 1999).

UPLAND SITE CONDITIONS VERIFIED BY SFWMD FORMAL JURISDICTIONAL DETERMINATION NO.11-100754-P AND COE APPROVED JURISDICTIONAL DETERMINATION NO. SAJ-2018-02547

J:\2015\15TFL2408\2015 ENVIRONMENTAL DATA REPORT\EXHIBIT 3 AERIAL WITH FLUCFCS MAP 041323.DWG TAB: 17XII-C JAN 02, 2024 - 4:29PM PLOTTED BY: LUCYC

<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>REVISIONS</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS	DATE			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">DRAWN BY R.F.</td> <td style="width: 50%;">DATE 04/13/23</td> </tr> <tr> <td>DESIGNED BY B.B.</td> <td>DATE 04/13/23</td> </tr> <tr> <td>REVIEWED BY B.B.</td> <td>DATE 04/13/23</td> </tr> </table>	DRAWN BY R.F.	DATE 04/13/23	DESIGNED BY B.B.	DATE 04/13/23	REVIEWED BY B.B.	DATE 04/13/23	<p>13620 Metropolis Avenue Suite 200 Ft. Myers, FL 33912 Phone (239) 274-0067 Fax (239) 274-0069</p>	 <p>PASSARELLA & ASSOCIATES CONSULTING ECOLOGISTS</p>	<p>NC SQUARE AERIAL WITH FLUCFCS MAP</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="font-size: small;">DRAWING No.</td> <td style="text-align: center;">15TFL2408</td> </tr> <tr> <td style="font-size: small;">SHEET No.</td> <td style="text-align: center;">EXHIBIT 3</td> </tr> </table>	DRAWING No.	15TFL2408	SHEET No.	EXHIBIT 3
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REVIEWED BY B.B.	DATE 04/13/23																		
DRAWING No.	15TFL2408																		
SHEET No.	EXHIBIT 3																		

EXHIBIT 4

LISTED SPECIES SURVEY REPORT

NC SQUARE UPDATED LISTED SPECIES SURVEY REPORT

November 2023

1.0 INTRODUCTION

This report documents the results of the updated listed species survey conducted by Passarella & Associates, Inc. on November 1, 2023 for NC Square (Project). The Project includes a proposed mixed-use development with associated infrastructure and stormwater management system.

The Project totals 24.40± acres and is located in Section 29, Township 48 South, Range 27 East, Collier County (Appendix A). More specifically, the Project is located southwest of the intersection of Immokalee Road and Catawba Street, approximately 6.6 miles east of Interstate 75. The Project is bordered by Immokalee Road (State Road 846) to the north, Crawford Landscape Nursery to the east and southeast, and the Valencia Trails residential development to the south and west.

The Project site is comprised of undeveloped, disturbed forested upland habitat. A previous listed species survey was conducted on the Project site in July 2018. During that survey, no listed species were documented on-site.

2.0 FIELD SURVEY METHODOLOGY

An updated listed species survey was conducted on November 1, 2023 to determine whether the Project was being utilized by state and/or federally listed species. The property was surveyed for wildlife species listed by the Florida Fish and Wildlife Conservation Commission (FWCC) and the U.S. Fish and Wildlife Service (USFWS) as endangered or threatened; for plant species listed by the Florida Department of Agriculture and Consumer Services (FDACS) and the USFWS as endangered, threatened, or commercially exploited; and for those species that are included on the Collier County Rare and Less Rare Plants lists (Land Development Code Section 3.04.03).

The survey was conducted during daylight hours and habitats were inspected for listed plant and wildlife species. At regular intervals, the ecologists stopped, remained quiet, and listened for wildlife vocalizations. The survey was conducted with the aid of 8x or 10x power binoculars.

The survey was conducted by qualified ecologists walking meandering transects throughout the Project site. Transects were spaced to ensure that sufficient visual coverage of ground and flora was obtained. Transect locations and spacing are shown on Appendix B.

The listed wildlife species surveyed for included, but were not limited to, gopher tortoise (*Gopherus polyphemus*), Eastern indigo snake (*Drymarchon corais couperi*), red-cockaded woodpecker (*Picoides borealis*), wood stork (*Mycteria americana*), Big Cypress fox squirrel (*Sciurus niger avicennia*), and Florida panther (*Puma concolor coryi*). The listed plant species

surveyed for included species typical to forested upland habitats in this geographical region, as well as listed epiphytes and terrestrial orchids common in Southwest Florida.

3.0 FIELD SURVEY RESULTS

Weather conditions during the survey included clear to partly cloudy skies, with calm to light wind, and temperatures ranging from the mid-70s to mid-80s.

No listed species or their sign were documented during the updated listed species survey conducted on November 1, 2023.

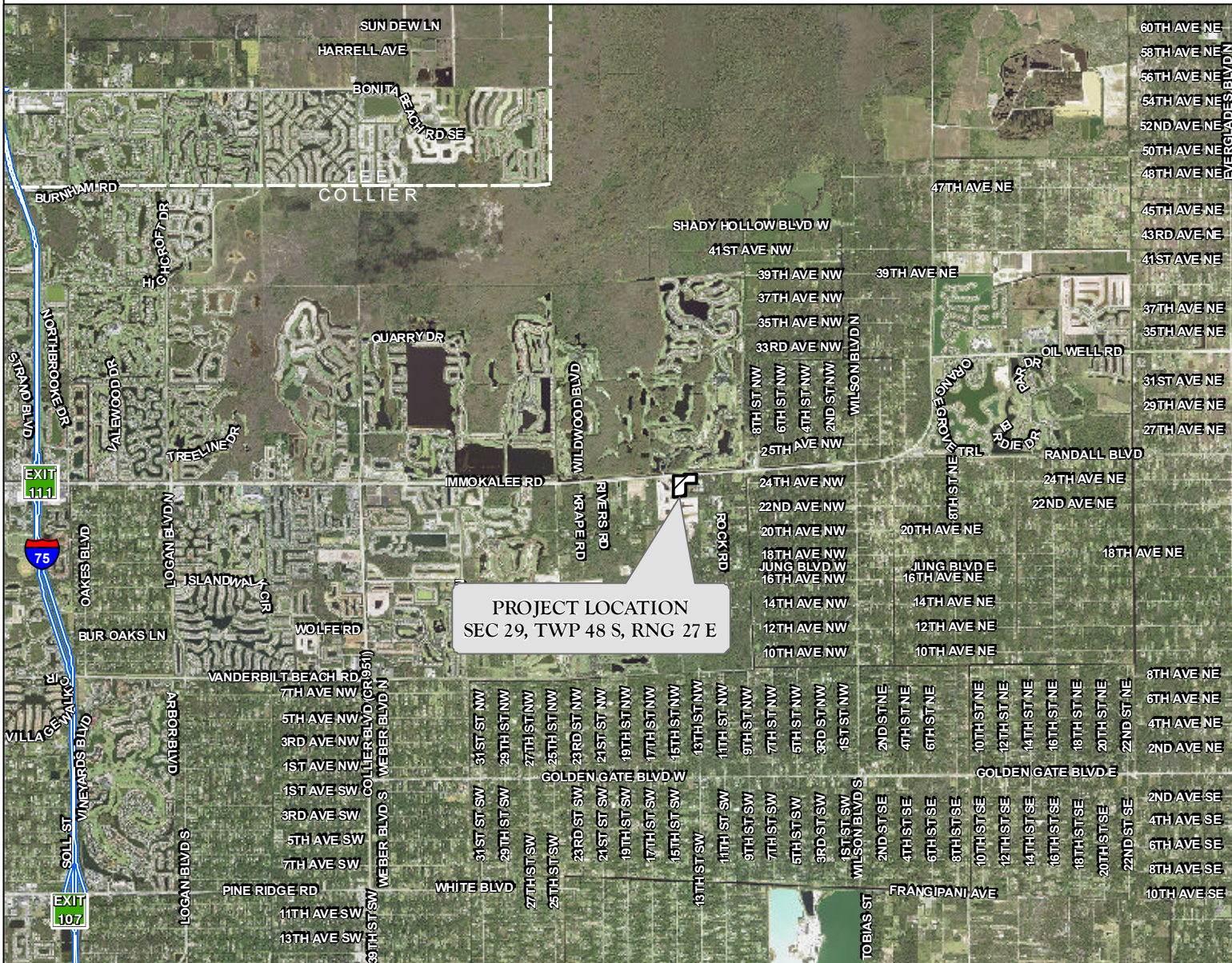
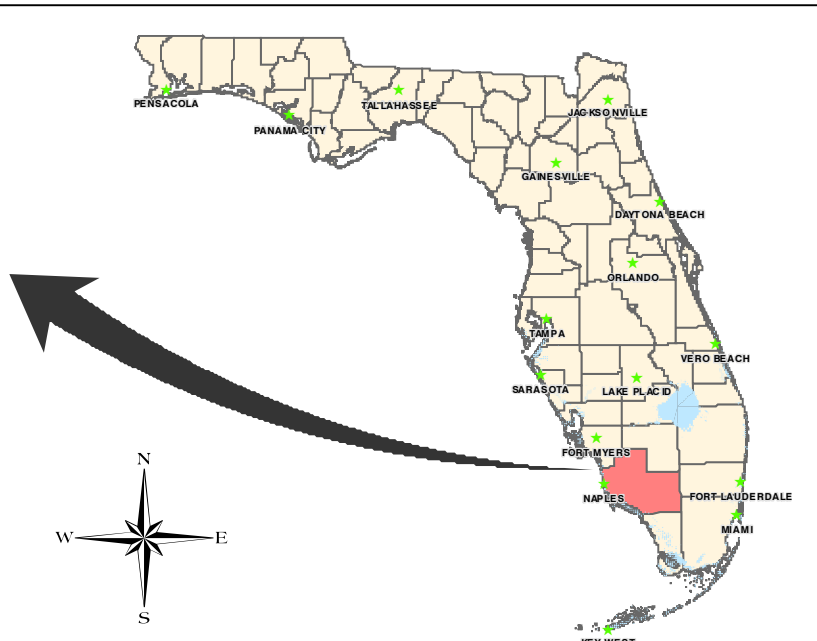
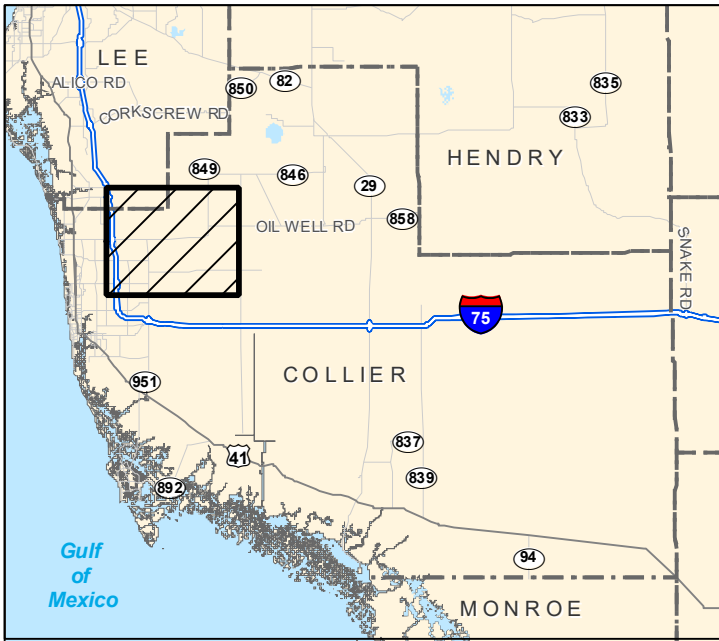
4.0 SUMMARY

The November 2023 updated listed species survey was conducted to determine if the Project site was being utilized by species listed by the FWCC and USFWS as threatened or endangered; species listed by the FDACS or the USFWS as endangered, threatened, or commercially exploited; and for those species that are included on the Collier County Rare and Less Rare Plants lists.

No listed species were documented on-site during the updated survey.

APPENDIX A

PROJECT LOCATION MAP



PROJECT LOCATION
 SEC 29, TWP 48 S, RNG 27 E

APPENDIX A. PROJECT LOCATION MAP
 NC SQUARE

DRAWN BY	DATE
P.F.	10/31/23
REVIEWED BY	DATE
M.K.	10/31/23
REVISED	DATE



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APPENDIX B

AERIAL WITH SURVEY TRANSECTS



SCALE: 1" = 200'

TWIN EAGLES

~IMMOKALEE ROAD~

VALENCIA TRAILS

CRAWFORD LANDSCAPING

P/L

TWIN EAGLES SOUTH

LEGEND:

— — — — — APPROXIMATE LOCATION OF SURVEY TRANSECTS

NOTES:

AERIAL PHOTOGRAPHS WERE ACQUIRED THROUGH THE COLLIER COUNTY PROPERTY APPRAISER'S OFFICE WITH A FLIGHT DATE OF DECEMBER 2022.

PROPERTY BOUNDARY PER DAVIDSON ENGINEERING DRAWING NO. E-256-P571-18-434 IMMOKALEE SQUARE.DWG DATED JANUARY 2, 2019.

APPENDIX B. AERIAL WITH SURVEY TRANSECTS NC SQUARE

DRAWN BY	DATE
E.K.	11/06/23
REVIEWED BY	DATE
B.B.	11/06/23
REVISED	DATE



J:\2015\1512\018\2023\1\SS\APPENDIX B. AERIAL WITH SURVEY TRANSECTS.DWG TAB: 8X11-C, TB: NOV 13, 2023 - 10:35AM PLOTTED BY: ELLIANK