



Environmental Impact Report

For:

Terwilliger Apartments



Prepared for:

Mr. Bruce K. Terwilliger
Terwilliger Brothers Residential
900 Pinellas Bayway, Unit 213
Tierra Verde, FL 33715



Timothy E. Maslin, C.E.S. / C.E.C.
Certification #77283

FEC Job #22-210

Table of Contents

1.0 Executive Summary

2.0 Environmental Impact Report

- 2.1 Objective**
- 2.2 Introduction**
- 2.3 Materials and Methods**
- 2.4 Soils**
- 2.5 Hydrology**
- 2.6 Flora**
- 2.7 Fauna**
- 2.8 Wetlands**
- 2.9 Summary and Discussion**
- 2.10 Conclusion and Recommendations**
- 2.11 Qualifications of Individual Preparing Report**

3.0 Appendix

- 3.1 Location Map**
- 3.2 Soils Map**
- 3.3 Topographic Map**
- 3.4 Flood Map**
- 3.5 Land Use Land Cover Map**
- 3.6 National Wetland Inventory Map**
- 3.7 Historic Aerials**
- 3.8 Site Photos**

1.0 Executive Summary

The proposed Terwilliger Apartments property:

- is approximately 12.59 acres in Brevard County, Florida.
- is two undeveloped parcels along W New Haven Ave, that is proposed for land development improvements.
- contains mostly poorly drained sandy soils.
- is at an elevation of approximately 25 ft.
- is in Flood Zone X.
- is mostly an Abandoned Citrus Grove that contains exotic vegetation
- is partially a Mixed Upland Hardwoods habitat supporting some palms, pines, and oaks.
- also contains an approximately 0.75-acre forested wetland habitat.
- does support the protected gopher tortoise.
- does contain jurisdictional wetlands.
- improvements to the parcel unless properly planned may cause adverse environmental impacts to trees, native habitats, wetlands, and protected species.
- may require additional environmental permitting and mitigation for wetlands and the gopher tortoise.

2.0 Environmental Impact Report

2.1 Objective

In August of 2022 Environmental Specialists from *Florida Environmental Consulting Inc.* performed an environmental impact study of the **Terwilliger Apartments** property. The objective of this study was to assess and report on the baseline environmental condition of the subject site as well as to discuss how developing this site may impact the environment.

2.2 Introduction

The subject property is parcel IDs 28-36-01-00-751 and 28-36-01-50-D in section 01 of township 28, range 36 of Brevard County, Florida. More specifically, on the south side of W New Haven Ave, directly east of Seminole Blvd. It is comprised of approximately 12.59 acres of vacant land, a portion of which was historically a citrus grove, at 28°04'35.0"N 80°40'43.3"W. The parcel is currently proposed for land development improvements. Please see the maps and other reference materials in the appendix of this report.

2.3 Materials and Methods

The site assessment included preliminary research of the site and surrounding area to determine what type of ecological community to expect as well as what types of individual flora and fauna may be found on site. This preliminary research included Geographic Information Systems (GIS) Mapping, aerial interpretation, Florida Department of Environmental Protection (FDEP) Environmental Resource Analysis and assessing the potential for species and habitats listed by the County, St. Johns Water Management District (SJWMD), Florida Natural Areas Inventory (FNAI), Florida Fish and Wildlife Conservation Commission (FWC), and the U.S. Fish and Wildlife Service (FWS).

The site assessment also included traversing and observing communities adjacent to and within the site. During the site assessment community types, vegetation, wildlife, and other pertinent observations were noted.

2.4 Soils

According to the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) the property contains 4 major soil types more specifically described as:

Soil 29, *Malabar sand, high* characterized as poorly drained sand with a water table typically 6-18 inches below the surface with no typical frequency of ponding or flooding.

Soil 31, *Malabar, Holopaw, and Pineda soils* characterized as poorly drained sand with a water table typically 0-12 inches below the surface with no typical frequency of ponding or flooding.

Soil 39, *Myakka-Urban land complex* characterized as poorly drained sand with a water table typically 6-18 inches below the surface with no typical frequency of ponding or flooding.

Soil 47, *Pineda sand, 0 to 2 percent slopes* characterized as poorly drained sand with a water table typically 3-18 inches below the surface with no typical frequency of ponding or flooding.

Soils with water tables within 6 inches of the surface are suspected to support wetlands. Please see the soils map in the appendix of this report for the general location of these soils.

2.5 Hydrology

This project is in hydrologic basin 20, the *Southern St. Johns River basin*, and the United States Geological Survey (USGS) Topographic Map in the Appendix shows the area as generally flat with Stormwater runoff accumulating in adjacent roadside swales as well as in onsite furrows and ditches. Using the North American Vertical Datum of 1983 (NAD83) the natural ground grade is at an elevation of approximately 25 ft and according to the Flood Hazard Map in the Appendix, this area is not in a flood plain and as such is considered Flood Zone X.

2.6 Flora

As noted in the introduction the parcel is approximately 12.59 acres, most of which is historic grove that the Florida land classification system classified as 7.07 acres of LULC 4200: Upland Hardwoods; and 5.56 acres of LULC:4110: Pine Flatwoods. However, the current site conditions would be more accurately described as 6.83 acres of LULC 2240: Abandoned Grove, 5.46 acres of LULC 4200: Mixed Upland Hardwoods, and 0.75 acres of LULC 6300: Wetland Forested Mixed. Please see the Aerial LULC Map and Site Photos in the Appendix.

The flora of the Abandoned Grove habitat included a mixed canopy of live oaks (*Quercus virginiana*), laurel oak (*Quercus laurifolia*), and cabbage palm (*Sabal palmetto*), with some slash pines (*Pinus elliottii*). The understory was dominated by dense Brazilian pepper (*Schinus terebinthifolius*). The groundcover of the site consisted of Boston fern (*Nephrolepis exaltata*), Caesar weed (*Urena lobata*), muscadine grape (*Vitis rotundifolia*), as well as miscellaneous grasses and forbes.

The flora of the Mixed Upland Hardwoods habitat included a canopy of some slash pine, live oaks, laurel oaks and cabbage palms. The understory species included dome saw palmetto (*Serenoa repens*), and gallberry (*Ilex glabra*), with some Brazilian pepper. The groundcover included Boston fern, Caesar weed, muscadine grape, as well as miscellaneous grasses and forbes.

The flora of the onsite 0.75-acre Wetland Forested Mixed habitat included a canopy of laurel oaks, and cabbage palms and with a live oak, with some dwarf palms (*Sabal minor*), and swamp fern (*Blechnum serrulatum*), as well as some miscellaneous grasses and forbes.

No species of flora was observed on site listed by the County, Florida Natural Areas Inventory, Florida Fish and Wildlife Conservation Commission, or U.S. Fish and Wildlife Service, as Endangered, Threatened, or a Species of Special Concern.

2.7 Fauna

The species of fauna directly observed and evidenced on site were mourning doves (*Zenaida macroura*), brown anoles (*Anolis sagrei*), armadillos (*Dasypus novemcinctus*), ants (*Formicidae spp.*), spiders (*Arachnida spp.*), dragon flies (*Odonata spp.*), and bees (*Apidae spp.*).

Additionally, there was one potentially occupied but inactive gopher tortoise burrow found in the Mixed upland hardwoods habitat. The gopher tortoise is a species listed by the Florida Fish and Wildlife Conservation Commission and is protected along with their burrows.

Further, no additional evidence or suspicion of use was formulated of other listed species of fauna according to the county, Florida Natural Areas Inventory, Florida Fish and Wildlife Conservation Commission, and the U.S. Fish and Wildlife Service lists of Endangered, Threatened, and Species of Special Concern.

2.8 Wetlands

Based on aerial interpolation and in conjunction with the topo map and soils survey publication describing the site soils as potentially hydric, wetlands were suspected. As such, approximately 0.75-acre Freshwater Forested Wetland was found on site via the presence of wetland vegetation, and hydric soils. However, there are some man-made swales and furrows on the property that would be classified as an 'other surface water' but will not require additional permitting or mitigation. Please see the National Wetland Inventory Map in the Appendix of this report.

2.9 Summary and Discussion

In summary, the proposed **Terwilliger Apartments** is 12.59 acres proposed for land development improvements in Brevard County, Florida.

More specifically, the property contains poorly drained sandy soils, is at an elevation of approximately 25 ft and is in Flood Zone X. Also the parcel contains 6.83 acres of Abandoned Grove, 5.46 acres of Mixed Upland Hardwoods, and 0.75 acres of Wetland Forested Mixed habitat. These habitats support some native vegetation including oaks, pines, palms, as well as jurisdictional wetlands, and the protected gopher tortoise.

As stated above the property does contain some pines, oaks, and palms, and though these trees may be cleared with a permit, 10% of the native tree canopy may require preservation.

Also, this site does support the gopher tortoise. Any proposed site impacts within 25' of a gopher tortoise burrow will require special permitting from the FWC, as well as the relocation of any tortoise found along with associated mitigation fees. Based on the site plan, offsite relocation to a gopher tortoise mitigation recipient site will be required. A formal gopher tortoise survey and possible permitting, mitigation, and relocation should be initiated 90 days prior to any site work activity including bush-hogging and geotechnical work requiring clearing.

Finally, the site supports a Wetland Forested Mixed habitat which appears to be larger than 0.5 acres, and as such any impacts will require additional environmental permitting and mitigation. Based on the proposed site plan, offsite mitigation credits will be required from Mary A. Ranch Mitigation Bank. A formal wetland delineation and mitigation assessment will be required during the permitting process.

2.10 Conclusion and Recommendations

In conclusion, permitting and development or other improvements to the **Terwilliger Apartments** property may cause adverse environmental impacts to trees, native habitats, wetlands, and protected species. Additional environmental permitting and mitigation for wetlands and the gopher tortoise are recommended.

Please contact Florida Environmental Consulting, Inc. with any questions or comments regarding this report or for any additional specific consulting.

2.11 Qualifications of Individual Preparing Report

Florida Environmental Consulting is a Florida registered environmental consulting firm, the person who prepared this report is the president of the company, and his signature and seal on the cover of this document demonstrate that he is in responsible charge of the information provided. He is a Certified Environmental Consultant and Environmental Specialist. Additionally, he has a Bachelor of Science in Environmental Science from the University of Florida with a minor in Natural Resource Management, along with 21 years of experience. Finally, he is a member of the National Association of Environmental Professionals, and the Environmental Assessment Association where a code of ethics and personal commitment to quality work is upheld.

3.0 Appendix

- 3.1 Location Map**
- 3.2 Soils Map**
- 3.3 Topographic Map**
- 3.4 Flood Map**
- 3.5 Land Use Land Cover Map**
- 3.6 National Wetland Inventory Map**
- 3.7 Historic Aerials**
- 3.8 Site Photos**



LOCATION

TERWILLIGER APTS EIR

Florida Environmental Consulting Inc.
 1825 70th Street, Vero Beach, Florida 32909
 Phone: 772-366-4701 • Email: terwilliger@feci.com

JOB NO. FEC-22-210
 DESIGNED _____
 DRAWN _____
 CHECKED _____
 DATE _____
 SCALE _____

Revisions	Date





Legend

Subject Parcels

Florida Soils

- Basinger sand
- EauGallie sand
- Malabar sand, high
- Malabar, Holopaw, and Pineda soils
- Myakka-Urban land complex
- Pineda sand

SOILS

TERWILLIGER APTS EIR

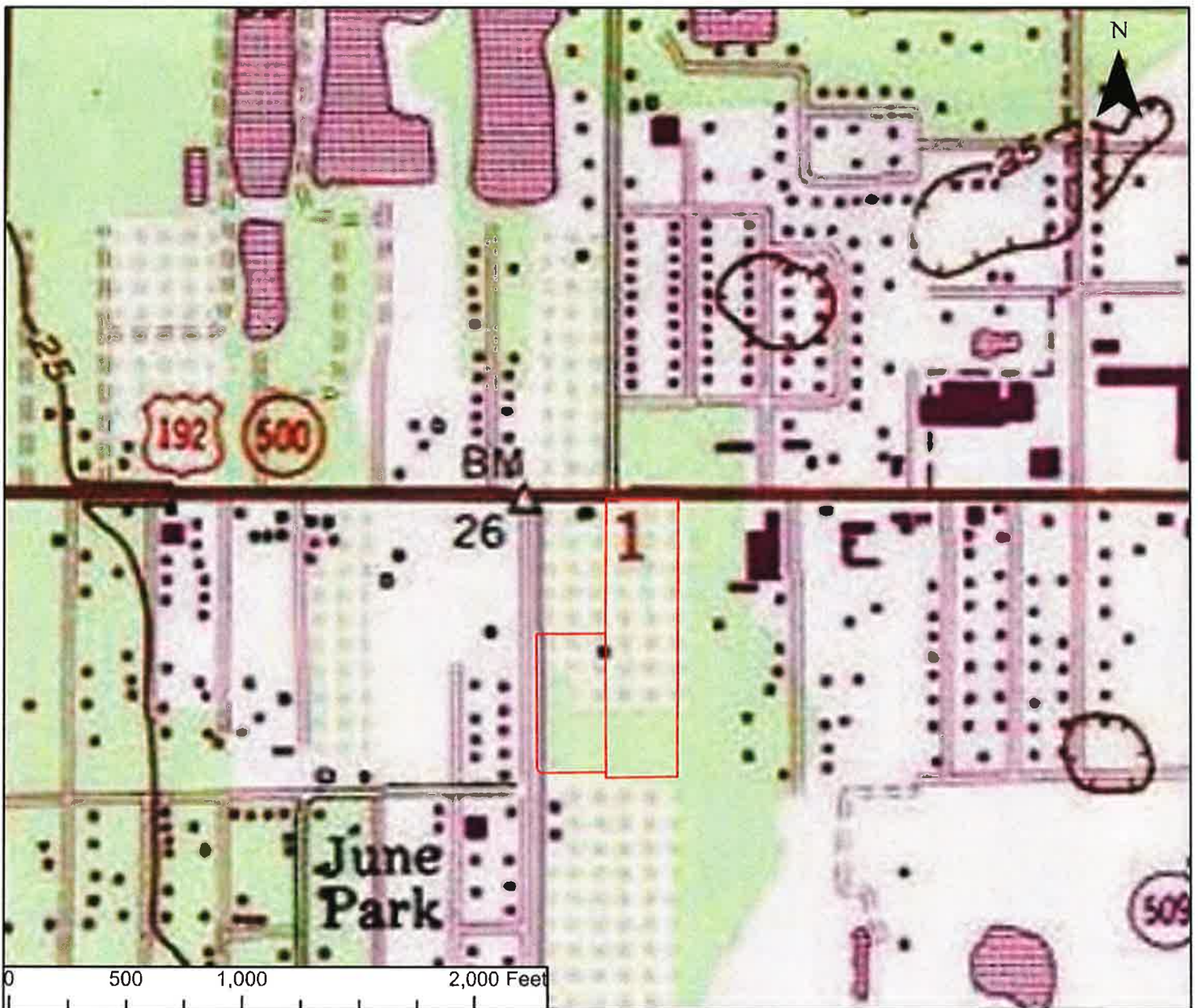
**Florida
Environmental
Consulting Inc.**

1815 10th Street, Suite 200, Tampa, FL 33602
Phone: 727-204-2233 Email: info@fec-inc.com

JOE NO. **FEC-22-210**
DESIGNED
DRAWN
CHECKED
DATE
SCALE

Revisions	Date



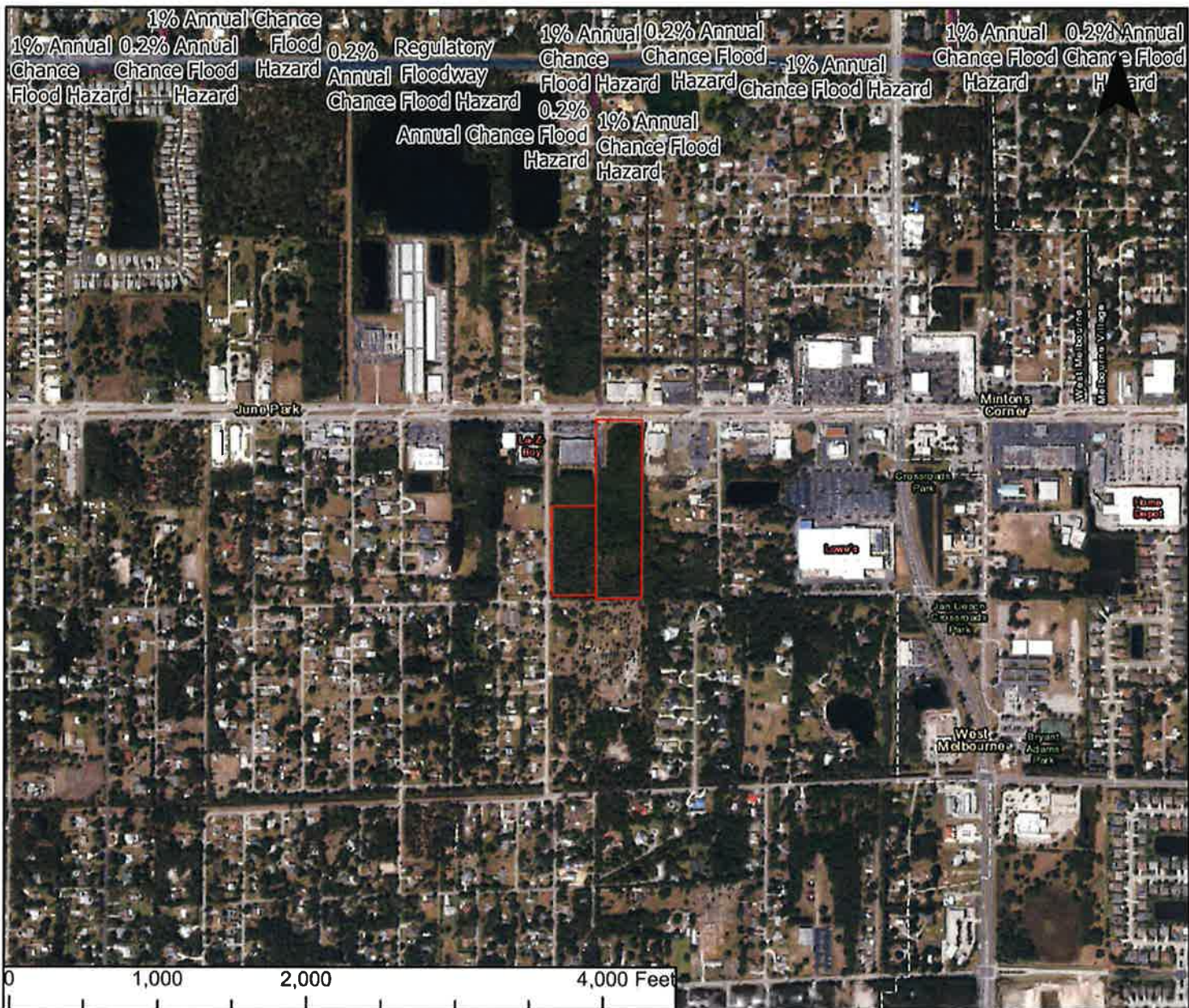


Legend

Subject Parcels

TOPO	TERWILLIGER APTS EIR	<div>Florida Environmental Consulting Inc.</div> <div>1835 20th Street, Suite 100, San Diego, CA 92103 Phone: 772-200-1414 & 772-200-1415</div>	<div>JOB NO. FEC-22-210</div> <div>DESIGNED: _____</div> <div>DRAWN: _____</div> <div>CHECKED: _____</div> <div>DATE: _____</div> <div>SCALE: _____</div>	<div>Revisions</div> <table><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table>							<div>Date</div> <table><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>			

40



Legend

Subject Parcels

USA Flood Hazard

0.2% Annual Chance Flood Hazard

1% Annual Chance Flood Hazard

Regulatory Floodway

FLOOD HAZARD

TERWILLIGER APTS EIR

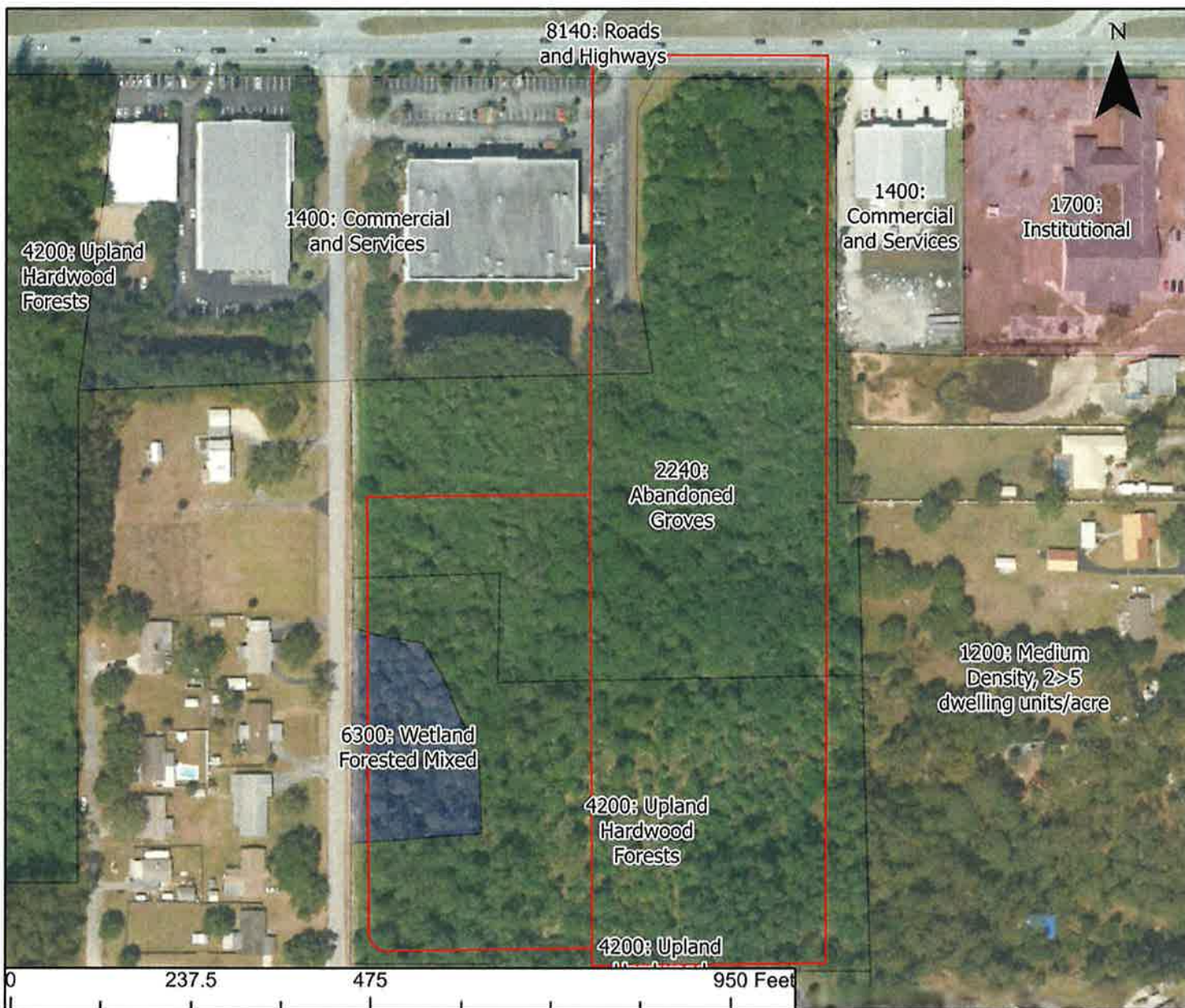
**Florida
Environmental
Consulting Inc.**

1430 20th St. Suite 200, West Palm Beach, Florida 33411
Phone: 781-200-4700 • Email: fecs@floridacsi.com

JOB NO. **FEC-22-210**
DESIGNED _____
DRAWN _____
CHECKED _____
DATE _____
SCALE _____

Revisions	Date

41



Legend

Subject Parcels

LANDUSE Field verified and adjusted August 2022

1200: Medium Density, 2>5 dwelling units/acre, 1200: Medium Density, 2>5 dwelling units/acre

1400: Commercial and Services, 1400: Commercial and Services

1700: Institutional, 1700: Institutional

2240: Abandoned Groves

4200: Upland Hardwood Forests, 4200: Upland Hardwood Forests

6300: Wetland Forested Mixed, 6300: Wetland Forested Mixed

8140: Roads and Highways, 8140: Roads and Highways

FIELD ADJUSTED LULC

TERWILLIGER APTS EIR

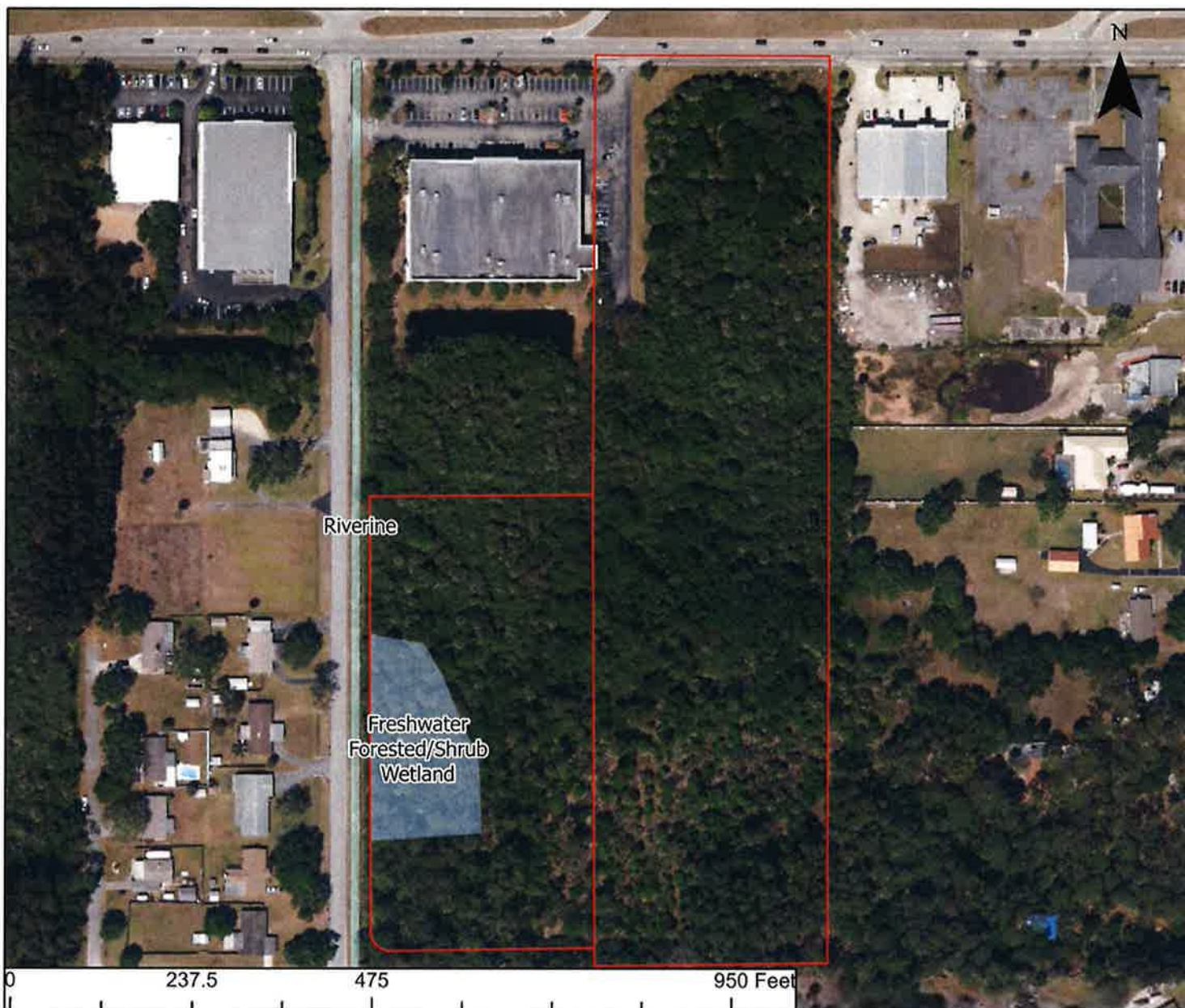
**Florida
Environmental
Consulting Inc.**

1400 20th Street, Suite 200, Fort Myers, Florida 33901
Phone: 941-355-4775 x. 2000 Fax: 941-355-4776

JOB NO. **FEC-22-210**
DESIGNED
DRAWN
CHECKED
DATE
SCALE

Revisions	Date

42



Legend

Subject Parcels

FL Wetlands Field verified and adjusted August 2022

Freshwater Forested/Shrub Wetland

Riverine

FIELD ADJUSTED NWI

TERWILLIGER APTS EIR

**Florida
Environmental
Consulting Inc.**

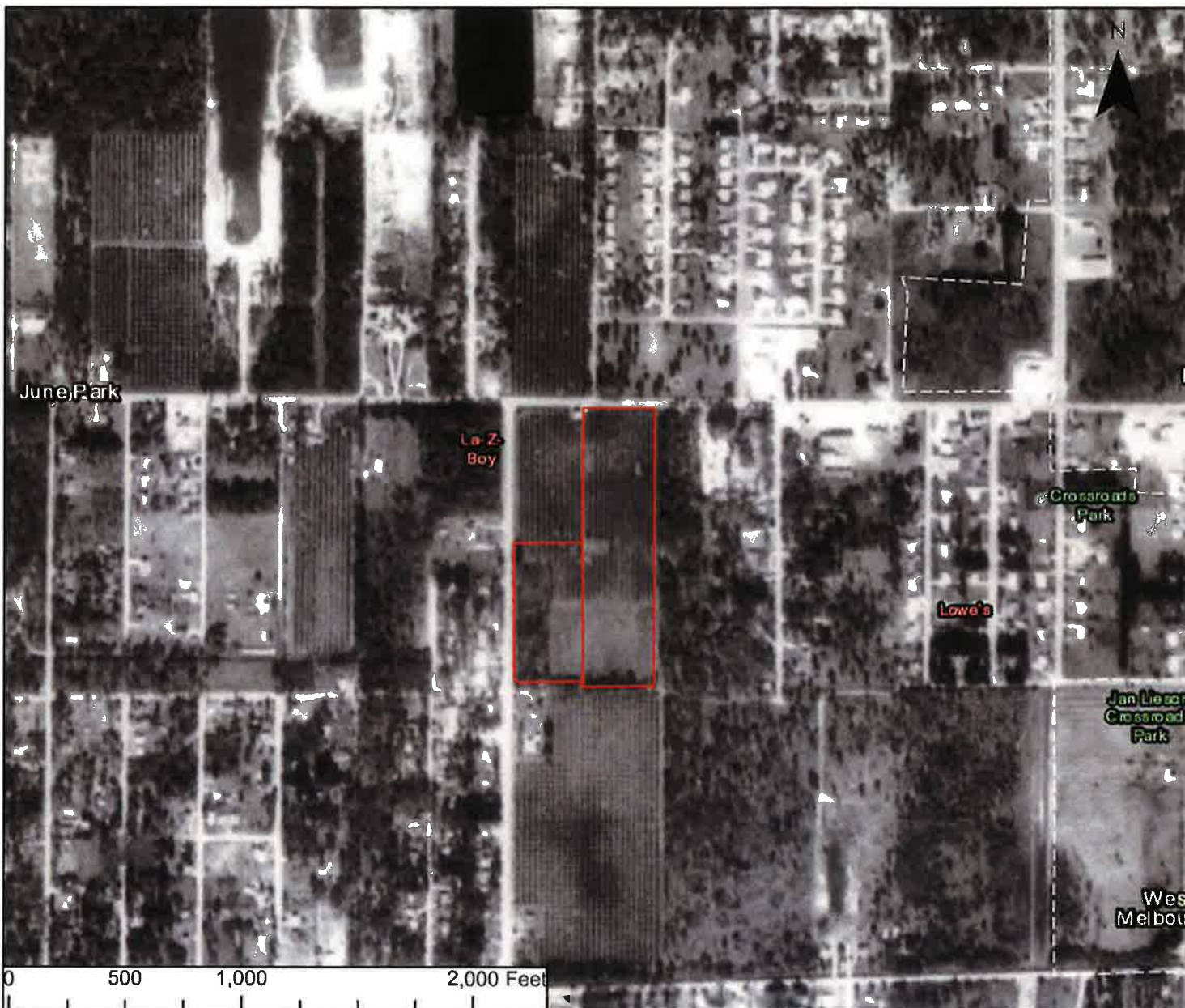
1330 21st Street, Suite 200, Boca Raton, Florida 33431
Phone: 774-3864-9911 Email: info@fec.com

JOB NO. **FEC-22-210**
DESIGNED _____
DRAWN _____
CHECKED _____
DATE _____
SCALE _____

Revisions

Date

(Handwritten signature)



Legend

Subject Parcels

1969 AERIAL

TERWILLIGER APTS EIR

**Florida
Environmental
Consulting Inc.**

1405 20th Street, Suite 200, Boca Raton, Florida 33432
Phone: 772-266-2751 • E-mail: fect@earthlink.net

JOB NO. FEC-22-210
DRAWN
CHECKED
DATE
SCALE

Revisions	Date

44



Legend

Subject Parcels

1972 AERIAL

TERWILLIGER APTS EIR

**Florida
Environmental
Consulting Inc.**

1810 2100 Street West, Suite 200, Fort Myers, Florida 33902
Phone: 772-286-4791 • Email: info@floridacenter.com

100 PRO. FEC-22-210
DESIGNED _____
DRAWN _____
CHECKED _____
DATE _____
SCALE _____

Revisions	Date

416



Legend

Subject Parcels

1980 AERIAL

TERWILLIGER APTS EIR

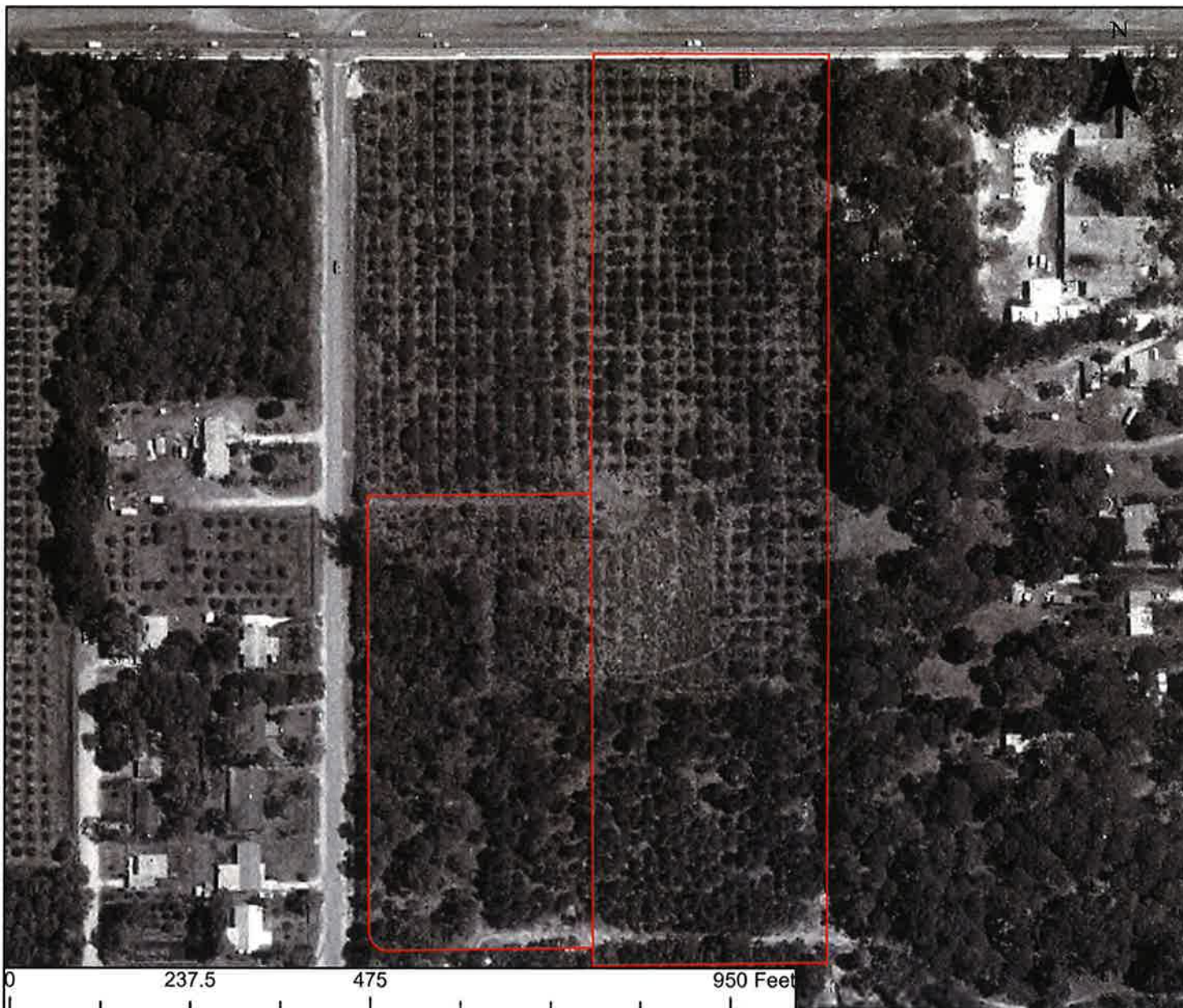
**Florida
Environmental
Consulting Inc.**

1835 12th Street, Suite 200, Fort Lauderdale, Florida 33304
Phone: 772-286-4711 Email: fecs@fecs-inc.com

JOB NO. FEC-22-210
DESIGNED _____
DRAWN _____
CHECKED _____
DATE _____
SCALE _____

Revisions	Date

467



Legend

Subject Parcels

1983 AERIAL

TERWILLIGER APTS EIR

**Florida
Environmental
Consulting Inc.**

1431 20th Street, Suite 200, Fort Lauderdale, FL 33304
Phone: 772.200.2911 • Email: FloridaEnviro@aol.com

JOB NO. FEC-22-210

DESIGNED

DRAWN

CHECKED

DATE

SCALE

Revisions

Date

47



Legend

Subject Parcels

1999 AERIAL

TERWILLIGER APTS EIR

**Florida
Environmental
Consulting Inc.**

1835 10th Street, Suite 200, Fort Lauderdale, FL 33304
Phone: 772-266-0151 • Email: fecs@fecs.com

FOR NO. FEC-22-210
DESIGNED
DRAWN
CHECKED
DATE
SCALE

Revisions	Date

(Handwritten signature/initials)

5

