8001 Baymeadows Way, Suite 1
Jacksonville, FL 32256
**P** (904) 900-6494
**F** (904) 268-5255
**Terracon.com**

September 14, 2023

Alachua County Growth Management Department
10 SW 2nd Avenue
Gainesville, Florida 32601

Attn: Mr. Mehdi Benkhatar, Planner
Email: mbenkhatar@alachuacounty.us

**Re: Environmental Resources Assessment Checklist**
**NexTower Development Group II, LLC**
**NXFL-358**
**Alachua County, Florida**

Dear Mr. Benkhatar:

On behalf of our client, NexTower Development Group II, LLC (NexTower), Terracon Consultants, Inc. (Terracon) herein submits a complete Environmental Resources Assessment Checklist in support of the zoning application for a proposed telecommunications tower (NexTower Project Name NXFL-358).

I trust that this information will be sufficient for you to complete your environmental review associated with this zoning submittal. Should you require any further information, please contact me at 904-900-6494 or Brett.Anderson@Terracon.com.

Sincerely,
**Terracon Consultants, Inc.**

Brett Anderson
Group Manager
(904) 470-2205
Brett.Anderson@Terracon.com

Gary K. Howalt, PWS
Senior Principal/Senior Scientific Consultant
(904) 470-2214
Gary.Howalt@Terracon.com

# 1.0 Introduction

NexTower is proposing the construction of a proposed telecommunications tower south of County Road 225 in Alachua, Alachua County, Florida. More specifically, the project is located within Section 2, Township 8 South, Range 20 East within a portion of Alachua County Parcel Number 07605-000-000. Specific project information is below.

| | |
|---|---|
| **Site Name:** | NXFL-358 |
| **Project Number:** | EQ237257 |
| **Address:** | County Road 225 |
| **City, County, State:** | Alachua, Alachua County, Florida 32609 |
| **Lat/Long:** | 29° 49’ 33.71” N / 82° 16’ 08.01” W |
| **Proposed Lease Area:** | 10,000 Sq. Ft. |
| **Project Description:** | Proposed Self-Support Telecommunications Tower with associated access easement and compound |
| **Proposed Tower Height:** | 265-feet |
| **Project Type:** | Self-Support Lattice Telecommunications Tower |
| **Description of the site:** | Planted Pine (Silviculture) |
| **Description of the surrounding properties:** | Silviculture & Rural Residential Properties |

# 2.0 Environmental Resources Assessment Checklist

NexTower seeks a Special Use Permit for a Personal Wireless Services Facility from Alachua County. To support this request, Alachua County requires the completion of an Environmental Resources Assessment Checklist consistent with the requirement of the Alachua County Comprehensive Plan – Conservation Open Space Element Policy 3.4.1. A copy of the Environmental Resources Assessment Checklist is included in Appendix A of this report. That checklist is signed by a Qualified Environmental Professional. Documentation supporting the findings is provided in Appendices B – L. Below is a brief narrative description of the findings associated with each item on the Alachua County checklist.

## 2.1 Surface Waters

Checklist Response: N/A
Qualified Terracon personnel performed a site review of the proposed tower lease parcel and associated access easement on July 17, 2023. At no point during the investigation were any surface waters noted within the boundaries of the lease parcel or access easement.

## 2.2 Wetlands

Checklist Response: N/A
Qualified Terracon personnel performed a site review of the proposed tower lease parcel and associated access easement on July 17, 2023. Terracon reviewed the site for hydrophytic vegetation, hydric soils, and hydrologic conditions. At no point were any state or federal wetlands identified on-site or immediately adjacent to the project area.

### 2.3 Surface Water or Wetland Buffers

Checklist Response: N/A
As indicated in Sections 2.1 & 2.2, wetlands or surface waters were not identified within or immediately adjacent to the lease parcel and associated access easement. Therefore, no buffers are proposed.

### 2.4 Floodplains (100-year)

Checklist Response: Yes
Based on a review of publicly available floodplain data, a portion of the access easement of the proposed project appears to lie in Flood Zone A on the Federal Emergency Management Act FIRM Community Panel Map Number 1203C0170D dated June 16, 2006. The remaining portion of the access easement and the entirety of the lease parcel fall outside of any designated flood zone (Zone X). A copy of the Flood Zone map is included in Appendix C for reference.

### 2.5 Special Area Study Resource Protection Areas

Checklist Response: N/A
Pursuant to Terracon's review, Terracon did not identify any data that indicates the project falls within a Special Area Study Resource Protection Area. The current area is altered via historic and current silvicultural practices and contains no unique environmental, historic, or cultural resources.

### 2.6 Strategic Ecosystems

Checklist Response: Yes
Pursuant to Terracon's review of Alachua County GIS data, the proposed project falls within the Strategic Ecosystem known as the Northeast Flatwoods. A map created from the Alachua County GIS webpage is included as Appendix D. Please note that this parcel is being actively utilized as a silvicultural operation, with timbering occurring as recent as 2021.

### 2.7 Significant Habitat

Checklist Response: N/A
Pursuant to Terracon's review, Terracon did not identify any significant habitat within or adjacent to the proposed lease parcel or access easement. The current area is altered via historic and current silvicultural practices and contains a monoculture of planted pine. Further, The U.S. Fish and Wildlife Service (FWS) Information for Planning and Consultation (IPaC) report does not identify any federally defined critical habitats within or adjacent to the proposed project area. A copy of the IPaC report is included in Appendix E.

### 2.8 Listed Species/Listed Species Habitats

Checklist Response: N/A
Terracon completed a protected species assessment on behalf of the applicant to ensure compliance with the National Environmental Policy Act (NEPA). This review was completed to comply with the Federal Communication Commission's (FCC) NEPA requirements. Based on Terracon's review, no protected species will be affected by the proposed project. A copy of Terracon's Protected Species documentation is included in Appendix F.

## 2.9 Recreation/Conservation/Preservation Lands

Checklist Response: N/A
Terracon completed a review of Alachua County GIS data and did not identify any lands classified as recreation, conservation, or preservation. The parent parcel is privately owned and active silvicultural lands.

## 2.10 Significant Geological Features

Checklist Response: N/A
Terracon did not identify any significant geological features such as caves, springs, or sinkholes within or directly adjacent to the project site. Further, a review of Alachua County GIS data indicated that the project area is not within sensitive karst areas.

## 2.11 High Aquifer Recharge Areas

Checklist Response: N/A
Based on a review of the Alachua County Floridan Aquifer High Recharge Area map, the site is located within an area of Low Vulnerability. A copy of the map is included as Appendix G.

## 2.12 Wellfield Protection Areas

Checklist Response: N/A
Based on Terracon's review, the proposed project does not abut any existing well fields. The closest wellfield appears to be the Murphree Well Field to the south. Based on a review of the Alachua County Murphree Well Field Management Zone Map (Appendix H), the project falls outside of the wellfield, the surrounding conservation easement, or the zones of influence.

## 2.13 Wells

Checklist Response: N/A
As indicated above in Section 2.12, the proposed project does not abut any existing well fields. Further, at no point during Terracon's review were any public or private wells were identified within or adjacent to the project lease parcel and access easement.

## 2.14 Soils

Checklist Response: Yes
Natural soil conditions are altered due to historic and current silvicultural practices in and surrounding the proposed lease parcel and access easement. A soils map is included as Appendix I of this report. The sole mapped soil type is Zolfo sand.

## 2.15 Mineral Resource Areas

Checklist Response: N/A
Terracon or the applicant are not aware of the project falling within any mineral resource areas. As previously indicated, the current property use is silvicultural, and no known active or historic sand mining activities have occurred on-site.

### 2.16 Topography/Steep Slopes

Checklist Response: N/A
Pursuant to Terracon's review of Alachua County GIS data, the proposed project area does not include any significant topography or steep slopes. GIS data indicate elevations around 150' above mean sea level. Terracon's site review on July 17, 2023 did not indicate any steep slopes or other significant topographical features. Alachua County topographical data for the project area is included in Appendix J.

### 2.17 Historical and Paleontological Resources

Checklist Response: N/A
Terracon performed a cultural resource assessment as part of the FCC NEPA process. No significant historical or paleontological resources were identified during the review, and no comments have been received from the State Historic Preservation Office (SHPO) since submittal on August 11, 2023. A copy of the cultural resource assessment is included in Appendix K.

### 2.18 Hazardous Materials Storage Facilities

Checklist Response: N/A
Terracon performed a Phase I Environmental Site Assessment (ESA) as part of the due diligence for the proposed project. No hazardous materials storage facilities were noted in or directly adjacent to the proposed project. A copy of the Phase I ESA is included in Appendix L.

### 2.19 Contamination

Terracon performed a Phase I ESA as part of the due diligence for the proposed project. No recognized environmental conditions were noted in or directly adjacent to the proposed project. A copy of the Phase I ESA is included in Appendix L.

## 3.0 Conclusion

Terracon has reviewed the proposed project against Alachua County's Environmental Resources Assessment Checklist. All documentation associated with this assessment is included in this report and associated appendices. It is not anticipated that the proposed project will have an adverse effect on natural or cultural resources.

# APPENDIX A

## Environmental Resource Assessment Checklist

Alachua County, Board of County Commissioners
Department of Growth Management
10 SW 2nd Ave., Gainesville, Fl 32601
Tel. 352.374.5249, Fax. 352.338.3224
http://growth-management.alachuacounty.us

Submit to:
Development Services Division

# ENVIRONMENTAL RESOURCES ASSESSMENT CHECKLIST

Pursuant to Alachua County Comprehensive Plan 2002, as amended, Conservation Open Space Element Policy 3.4.1, applications for land use change, zoning change, and development approval shall be required to submit an inventory of natural resource information. The inventory shall include site specific identification, analysis and mapping of each resource present on or adjacent to the site. The identification and analysis shall indicate information sources consulted.

## Natural Resources Checklist:

Check "Yes" for each resource or resource characteristic identified and discuss and provide supporting material.
Check "N/A" for each resource or resource characteristic not present or otherwise relevant to the application.

| | | | | |
|---|---|---|---|---|
| Yes | ☐ | N/A | ☑ | Surface Waters (ponds, lakes, streams, springs, etc.) |
| Yes | ☐ | N/A | ☑ | Wetlands |
| Yes | ☐ | N/A | ☑ | Surface Water or Wetland Buffers |
| Yes | ☑ | N/A | ☐ | Floodplains (100-year) |
| Yes | ☐ | N/A | ☑ | Special Area Study Resource Protection Areas (Cross Creek, Idylwild/Serenola, etc) |
| Yes | ☑ | N/A | ☐ | Strategic Ecosystems (within or adjacent to mapped areas) |
| Yes | ☐ | N/A | ☑ | Significant Habitat (biologically diverse natural areas) |
| Yes | ☐ | N/A | ☑ | Listed Species/Listed Species Habitats (FNAI S1, S2, & S3; State or Federally E, T, SSC) |
| Yes | ☐ | N/A | ☑ | Recreation/Conservation/Preservation Lands |
| Yes | ☐ | N/A | ☑ | Significant Geological Features (caves, springs, sinkholes, etc.) |
| Yes | ☐ | N/A | ☑ | High Aquifer Recharge Areas |
| Yes | ☐ | N/A | ☑ | Wellfield Protection Areas |
| Yes | ☐ | N/A | ☑ | Wells |
| Yes | ☑ | N/A | ☐ | Soils |
| Yes | ☐ | N/A | ☑ | Mineral Resource Areas |
| Yes | ☐ | N/A | ☑ | Topography/Steep Slopes |
| Yes | ☐ | N/A | ☑ | Historical and Paleontological Resources |
| Yes | ☐ | N/A | ☑ | Hazardous Materials Storage Facilities |
| Yes | ☐ | N/A | ☑ | Contamination (soil, surface water, ground water) |

SIGNED:_____ PROJECT #_____ DATE:_____

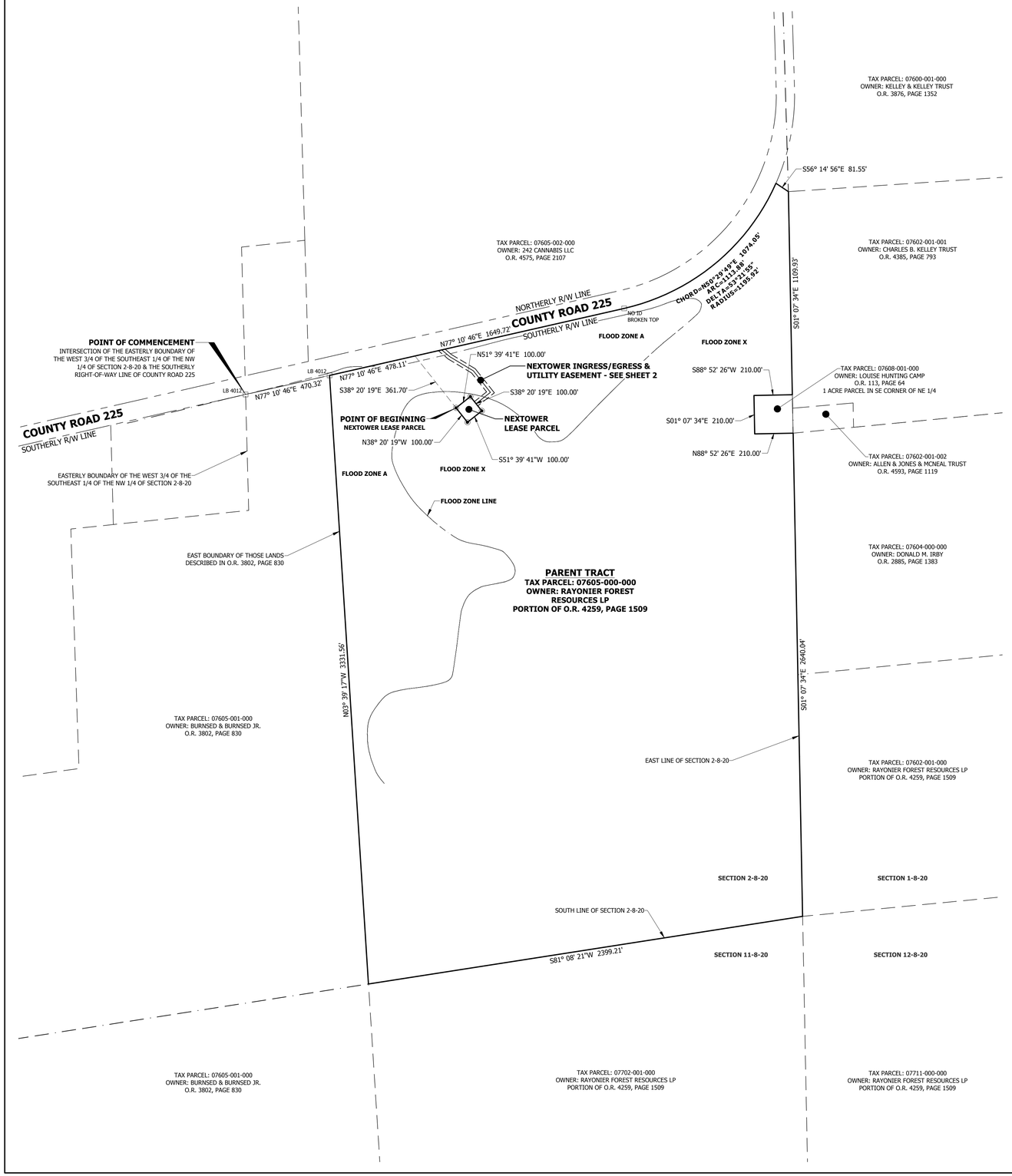
For assistance please visit the Alachua County Environmental Protection Department (ACEPD) website at http://www.alachuacounty.us/government/depts/epd/natural/devchecklist.aspx or contact ACEPD at (352) 264-6800. (version 5/20/05)

# APPENDIX B

## NexTower-Rayonier CR 225 Survey
## Sept. 2022

# BOUNDARY & TOPOGRAPHIC SURVEY OF NEXTOWER LEASE PARCEL

IN SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST
ALACHUA COUNTY, FLORIDA




## PARENT TRACT DESCRIPTION

(PREPARED BY SURVEYOR BEING A PORTION OF O.R. 4259, PAGE 1509)

THAT PART OF THE EAST HALF OF SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA LYING SOUTHERLY OF COUNTY ROAD 225 (FORMERLY STATE ROAD 225) AND EASTERLY OF THOSE CERTAIN LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 3802, PAGE 830 OF THE PUBLIC RECORDS OF SAID COUNTY. LESS 1 ACRE PARCEL IN SOUTHEAST CORNER OF NORTHEAST QUARTER.

## NEXTOWER LEASE PARCEL DESCRIPTION

**A PARCEL OF LAND LYING IN SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA; SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:**

**COMMENCE AT THE INTERSECTION OF THE EASTERLY LINE OF THE WEST THREE-QUARTERS OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA AND THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225 (A 100' RIGHT-OF-WAY); THENCE N77° 10' 46"E ALONG SAID RIGHT-OF-WAY LINE FOR 470.32 FEET; THENCE CONTINUE N77° 10' 46"E ALONG SAID RIGHT-OF-WAY LINE FOR 478.11 FEET; THENCE S38° 20' 19"E FOR 361.70 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL OF LAND; THENCE N51° 39' 41"E FOR 100.00 FEET; THENCE S38° 20' 19"E FOR 100.00 FEET; THENCE S51° 39' 41"W FOR 100.00 FEET; THENCE N38° 20' 19"W FOR 100.00 FEET TO THE POINT OF BEGINNING. SAID PARCEL OF LAND SITUATE, LYING AND BEING IN ALACHUA COUNTY, FLORIDA, CONTAINING 10,000 SQUARE FEET OF LAND MORE OR LESS.**

## NEXTOWER INGRESS/EGRESS & UTILITIES EASEMENT DESCRIPTION

**A 30-FEET WIDE EASEMENT STRIP OF LAND FOR THE PURPOSES OF INGRESS/EGRESS AND UTILITIES LYING IN SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA; SAID EASEMENT STRIP LYING 15.00 FEET ON BOTH SIDES OF THE FOLLOWING DESCRIBED EASEMENT CENTERLINE:**

**COMMENCE AT THE INTERSECTION OF THE EASTERLY LINE OF THE WEST THREE-QUARTERS OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA AND THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225 (A 100' RIGHT-OF-WAY); THENCE N77° 10' 46"E ALONG SAID RIGHT-OF-WAY LINE FOR 470.32 FEET; THENCE CONTINUE N77° 10' 46"E ALONG SAID RIGHT-OF-WAY LINE FOR 478.11 FEET; THENCE S38° 20' 19"E FOR 361.70 FEET ; THENCE N51° 39' 41"E FOR 100.00 FEET; THENCE S38° 20' 19"E FOR 50.00 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED EASEMENT CENTERLINE; THENCE N51° 39' 41"E FOR 100.00 FEET; THENCE N38° 20' 19"W FOR 150.00 FEET; THENCE N59° 10' 06"W FOR 150.00 FEET; THENCE N49° 41' 32"W FOR 58.09 FEET TO AN INTERSECTION WITH THE AFORESAID SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225 AND THE POINT OF TERMINUS. THE SIDELINES OF SAID EASEMENT TO BE SHORTENED AND PROLONGED TO MEET AT ANGLE POINTS, LEASE PARCEL LINES AND RIGHT-OF-WAY LINES.**

## SURVEYOR'S NOTES

1. BEARINGS SHOWN HEREON ARE ASSUMED AND REFERENCED TO THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225 AS BEARING N77° 10' 46"E.

2. THE BOUNDARY & TOPOGRAPHIC SURVEY SHOWN HEREON IS BASED ON ACTUAL FIELD MEASUREMENTS AND OBSERVATIONS DATED JUNE 6, 2023.

3. THIS SURVEY MAP OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

4. CENTER OF PROPOSED TOWER LATITUDE, LONGITUDE AND ELEVATIONS SHOWN HEREON WERE ESTABLISHED FROM RTK GPS OBSERVATIONS REFERENCED TO THE STATE OF FLORIDA PERMANENT REFERENCE NETWORK. THE VALUES FOR THE PROPOSED TOWER LATITUDE, LONGITUDE AND ELEVATION SHOWN HEREON EXCEED FAA "1-A" ACCURACY REQUIREMENTS. ELEVATIONS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE REFERENCED TO THE STATE OF FLORIDA PERMANENT REFERENCE NETWORK.

5. THE PURPOSE OF THIS SURVEY IS TO SHOW IMPROVEMENTS ASSOCIATED WITH A PROPOSED TELECOMMUNICATIONS FACILITY AND PROVIDE LEGAL DESCRIPTIONS FOR SAID FACILITY AND ASSOCIATED EASEMENTS. THIS IS NOT A BOUNDARY SURVEY OF THE PARENT TRACT.

6. MEASURED BEARINGS AND DISTANCES WERE IN SUBSTANTIAL AGREEMENT WITH RECORD DATA UNLESS OTHERWISE NOTED.

7. PROPERTY TIES ARE PERPENDICULAR MEASURE UNLESS OTHERWISE NOTED.

## FLOOD ZONE NOTE

THE HEREON DESCRIBED LEASE PARCEL APPEARS TO LIE IN FLOOD ZONE A & X BASED ON THE FEDERAL EMERGENCY MANAGEMENT ACT FIRM, COMMUNITY PANEL MAP NUMBER 12031C0160D DATED JUNE 16, 2006.

## PROPOSED TOWER DISTANCE FROM PARENT TRACT LINES

(AS MEASURED PERPENDICULAR FROM CENTER OF TOWER)

| | |
|---|---|
| NORTH LINE: | 350.0' |
| EAST LINE: | 1760' |
| SOUTH LINE: | 3010' |
| WEST LINE: | 747' |

## TOWER DATA

PROPOSED 255' SELF-SUPPORT TOWER WITH 10' APPURTENANCES
(TOTAL HEIGHT=265')

**NAD 83/2011**
LATITUDE: **29° 49' 33.71" NORTH**
LONGITUDE: **82° 16' 08.01" WEST**
GROUND ELEVATION: **149.7' NAVD 1988**

## LEGEND

| | |
|---|---|
| ◉ | INDICATES 5/8" REBAR & CAP SET STAMPED LB 7810 |
| ⊡ | INDICATES 4"x4" CONCRETE MONUMENT FOUND ID AS NOTED |
| R/W | INDICATES RIGHT-OF-WAY |
| O.R. | INDICATES OFFICIAL RECORDS BOOK |
| ID | INDICATES IDENTIFICATION |

300 0 300 600
**SCALE: 1"=300'**

ASSUMED NORTH

## CERTIFIED TO:

1. RAYONIER FOREST RESOURCES, L.P.
2. NEXTOWER DEVELOPMENT GROUP II, LLC

DAVID WILLIAM STONECYPHER LICENSE No. LS6391 STATE OF FLORIDA

REVISION: 6-21-23 REVISED TYPOS IN LEGAL DESCRIPTIONS


**STONECYPHER SURVEYING INC.**
1225 NW 16TH AVENUE GAINESVILLE, FLORIDA 32601
Tel.: (352) 379-0948
Email: dws@stone-survey.com
Professional Surveying & Mapping Certificate of Authorization No.: LB 7810


| | | | |
|---|---|---|---|
| BOOK/PAGE | 41/58 | SCALE | AS SHOWN |
| DRAWN | DWS | DATE | JUNE 6, 2023 |
| CHECKED | DWS | PROJECT # | 22-0056 |

This map prepared by:
6-21-2023
**DAVID W. STONECYPHER**
PROFESSIONAL SURVEYOR & MAPPER FLA. LICENSE NO. 6391

**COMMUNICATION TOWER SITE**
**RAYONIER NORTH ALACHUA NXFL-358**

DRAWING # nextower-n alachua survey.dwg
**NEXTOWER DEVELOPMENT GROUP II, LLC**
SHEET # 1 OF 2

# BOUNDARY & TOPOGRAPHIC SURVEY OF NEXTOWER LEASE PARCEL

IN SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST
ALACHUA COUNTY, FLORIDA

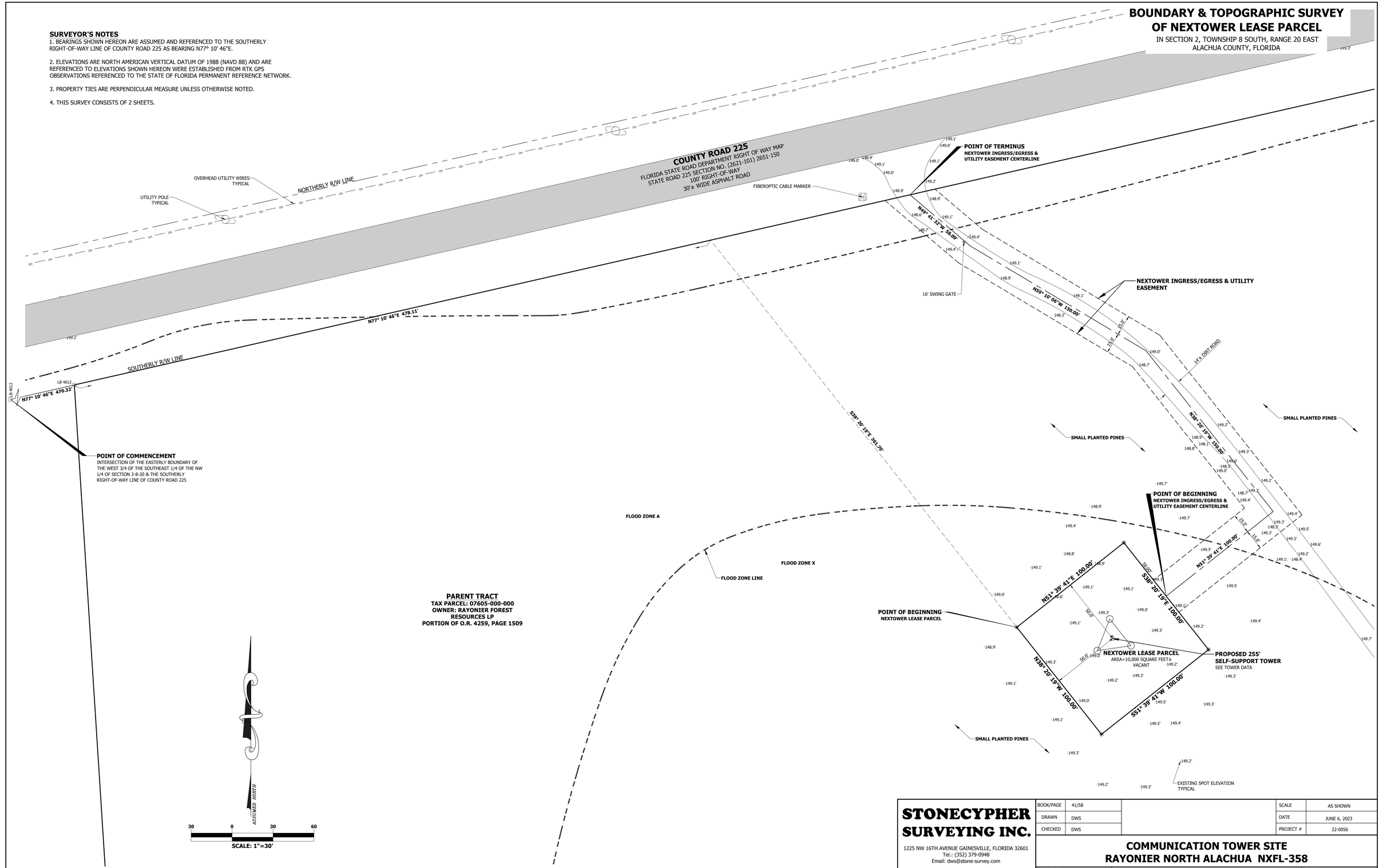
**SURVEYOR'S NOTES**

1. BEARINGS SHOWN HEREON ARE ASSUMED AND REFERENCED TO THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225 AS BEARING N77° 10' 46"E.

2. ELEVATIONS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE REFERENCED TO ELEVATIONS SHOWN HEREON WERE ESTABLISHED FROM RTK GPS OBSERVATIONS REFERENCED TO THE STATE OF FLORIDA PERMANENT REFERENCE NETWORK.

3. PROPERTY TIES ARE PERPENDICULAR MEASURE UNLESS OTHERWISE NOTED.

4. THIS SURVEY CONSISTS OF 2 SHEETS.




**POINT OF COMMENCEMENT**
INTERSECTION OF THE EASTERLY BOUNDARY OF THE WEST 3/4 OF THE SOUTHEAST 1/4 OF THE NW 1/4 OF SECTION 2-8-20 & THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225

**PARENT TRACT**
**TAX PARCEL: 07605-000-000**
**OWNER: RAYONIER FOREST RESOURCES LP**
**PORTION OF O.R. 4259, PAGE 1509**

ASSUMED NORTH

30 0 30 60

**SCALE: 1"=30'**

**STONECYPHER SURVEYING INC.**

1225 NW 16TH AVENUE GAINESVILLE, FLORIDA 32601
Tel.: (352) 379-0948
Email: dws@stone-survey.com

Professional Surveying & Mapping Certificate of Authorization No.: LB 7810

| | | | |
|---|---|---|---|
| BOOK/PAGE | 41/58 | SCALE | AS SHOWN |
| DRAWN | DWS | DATE | JUNE 6, 2023 |
| CHECKED | DWS | PROJECT # | 22-0056 |

**COMMUNICATION TOWER SITE**
**RAYONIER NORTH ALACHUA NXFL-358**

DRAWING # nextower-n alachua survey.dwg

**NEXTOWER DEVELOPMENT GROUP II, LLC**

SHEET # 2 OF 2

# APPENDIX C

## FEMA Map

# National Flood Hazard Layer FIRMette

FEMA

82°16'27"W 29°49'49"N


0 250 500 1,000 1,500 2,000 Feet

1:6,000

82°15'49"W 29°49'18"N

*Basemap Imagery Source: USGS National Map 2023*

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

**SPECIAL FLOOD HAZARD AREAS**
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

**OTHER AREAS OF FLOOD HAZARD**
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

**OTHER AREAS**
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

**GENERAL STRUCTURES**
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

**OTHER FEATURES**
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

**MAP PANELS**
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

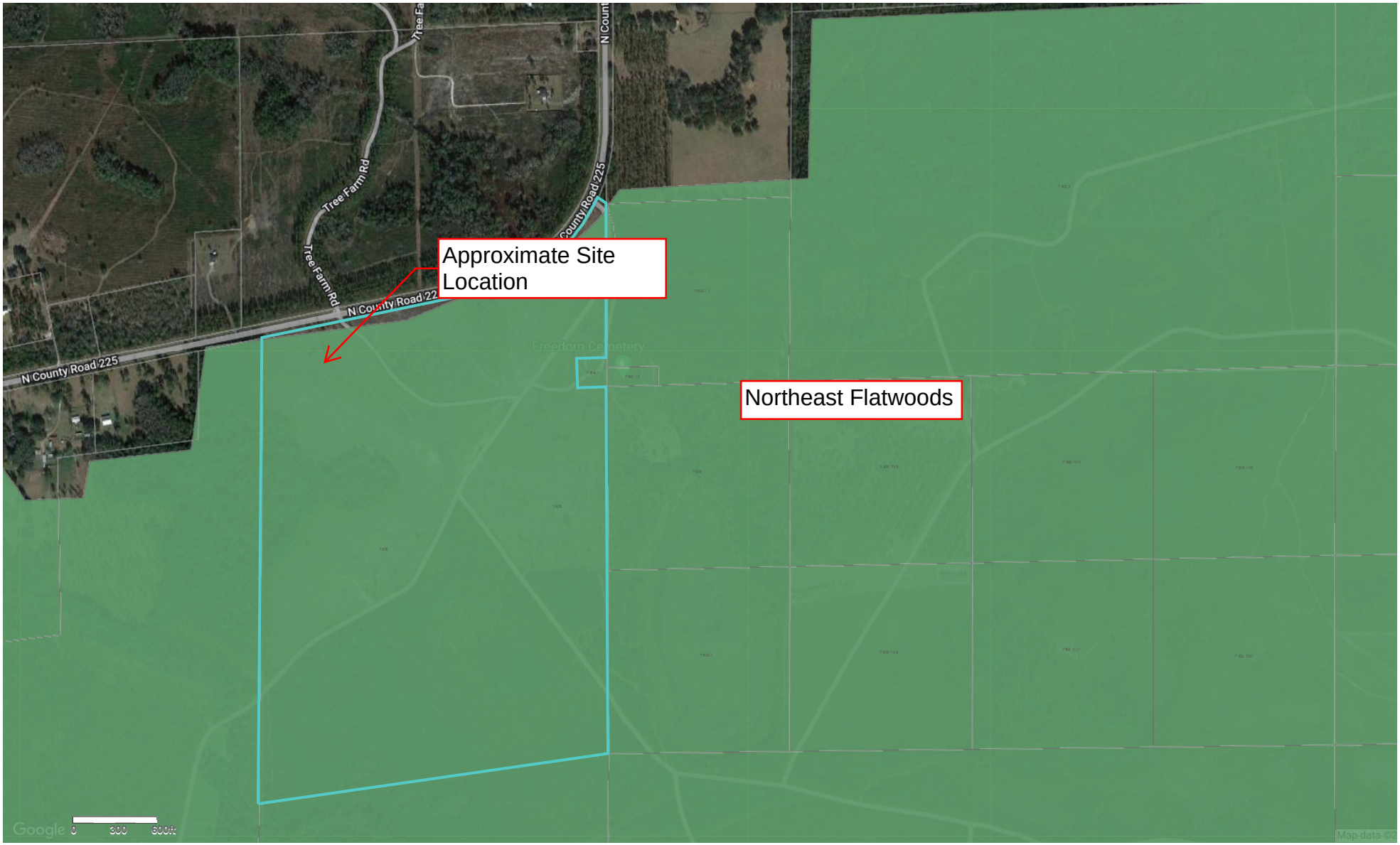
This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/16/2023 at 8:41 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

# APPENDIX D

## Strategic Ecosystems


Approximate Site Location
Northeast Flatwoods
Tree Farm Rd
Tree Farm Rd
N County Road 225
N County Road 225
N County Road 22
Freedom Cemetery
Google
0
300
600ft

# APPENDIX E

## iPac Species List

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960-3559
Phone: (772) 562-3909 Fax: (772) 562-4288
Email Address: fw4flesregs@fws.gov
https://www.fws.gov/office/florida-ecological-services

In Reply Refer To:
Project Code: 2023-0114533
Project Name: NXFL-356_North Alachua

August 09, 2023

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. **Please include your Project Code, listed at the top of this letter, in all subsequent correspondence regarding this project.** Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

**Migratory Birds**: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of

this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

# OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Florida Ecological Services Field Office**
1339 20th Street
Vero Beach, FL 32960-3559
(772) 562-3909

# PROJECT SUMMARY

Project Code: 2023-0114533
Project Name: NXFL-356_North Alachua
Project Type: Communication Tower New Construction
Project Description: Telecommunications tower- self support
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@29.826048200000002,-82.26901321022339,14z


Counties: Alachua County, Florida

# ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## BIRDS

| NAME | STATUS |
|---|---|
| Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/10477 | Threatened |
| Whooping Crane *Grus americana*<br>Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY)<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/758 | Experimental Population, Non-Essential |

## REPTILES

| NAME | STATUS |
|---|---|
| Eastern Indigo Snake *Drymarchon couperi*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/646 | Threatened |
| Suwannee Alligator Snapping Turtle *Macrochelys suwanniensis*<br>Population:<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/10891 | Proposed Threatened |

### CLAMS

| NAME | STATUS |
|---|---|
| Oval Pigtoe *Pleurobema pyriforme* | Endangered |

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/4132

### INSECTS

| NAME | STATUS |
|---|---|
| Monarch Butterfly *Danaus plexippus* | Candidate |

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

### CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

## MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

**The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location.** To learn more about the levels of concern for birds on your list and how this

list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|---|
| American Kestrel *Falco sparverius paulus*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/9587 | Breeds Apr 1 to Aug 31 |
| Bachman's Sparrow *Aimophila aestivalis*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/6177 | Breeds May 1 to Sep 30 |
| Chimney Swift *Chaetura pelagica*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Mar 15 to Aug 25 |
| Great Blue Heron *Ardea herodias occidentalis*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds Jan 1 to Dec 31 |
| Swallow-tailed Kite *Elanoides forficatus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/8938 | Breeds Mar 10 to Jun 30 |

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence (■)**

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

**Breeding Season** (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort** (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

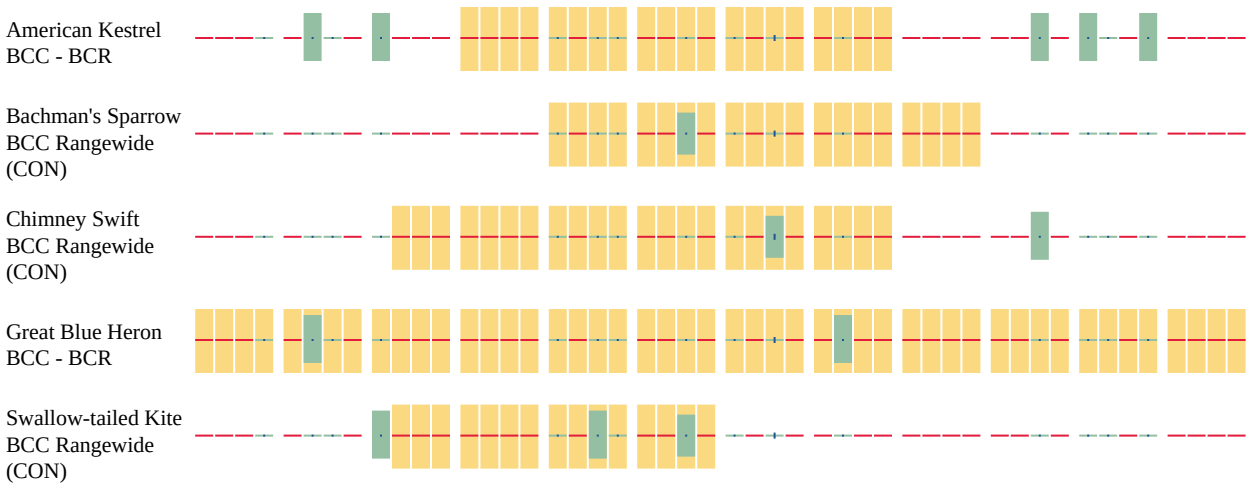
**No Data** (–)
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

---

▪ probability of presence ▪ breeding season | survey effort – no data

| SPECIES | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|




Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

## MIGRATORY BIRDS FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act

requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering or migrating in my area?**
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

**Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

**What if I have eagles on my list?**
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

**Proper Interpretation and Use of Your Migratory Bird Report**
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

# WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

# IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Malyssa Peabody
Address: 8001 Baymeadows Way
City: Jacksonville
State: FL
Zip: 32256
Email malyssa.peabody@terracon.com
Phone: 9045497377

# APPENDIX F

# IBA Stating No Effect

April 18, 2023

**Informal Biological Assessment Memo**

Federal Communication Commission (FCC) regulations, as identified in 47CFR § 1.1307 (a) 3, require that NexTower Development Group II, LLC consider the effects of the proposed tower construction to protected species and critical habitats. Findings in this memo are based upon the site's current utilization applicant provided information, and from other activities described herein; such information is subject to change. Basic site information is presented in the table below.

| | |
|---|---|
| **Site Name:** | NXFL-356 North Alachua |
| **Terracon Project Number:** | EQ237257 |
| **Address:** | N. County Road 225 |
| **City, County, State:** | Gainesville, Alachua County, Florida 32609 |
| **Lat/Long:** | 29° 49' 33.71" N, 82° 16' 08.01" W |
| **Proposed Lease Area:** | ±10,000 Sq. Ft. |
| **Proposed Ingress/Egress Easement:** | ±35 Ft. Wide |
| **Proposed Tower Height:** | 235 feet |
| **Tower Type:** | Self- Support |

**Species Review**

The site was preliminarily investigated for the presence of state and federally protected animal and plant species and their habitat. Literature and agency file searches were conducted to identify the potential occurrence of state and federally protected animal species on the site. The U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Conservation (IPaC) and Florida Natural Areas Inventory (FNAI) search engines were utilized to determine potential occurrences.

FWS-IPaC identifies potential occurrences and habitat for federally listed threatened and endangered species, proposed listed and candidate species, and designated critical habitat. The FNAI search engine identifies potential occurrences of both federally and state listed species. The search results were supplemented by data from the Florida Fish and Wildlife Conservation Commission (FWC). Absence of documented sightings on-site or in the immediate vicinity does not ensure that protected species are not present. The lack of documented sightings in the databases may indicate that the area has not been surveyed or did not previously contain habitat. Additional FWC databases researched for this assessment include Map Direct, wading bird colonies, the eagle nest locator, and GIS data layers of species occurrences.

The proposed project would involve the construction of a self-support lattice communications tower including a tower compound and access/utility easement. See the table below with detailed site information.

| Individual Pole Name | Lat/Long | Tower Height | Ground Elevation | Distance to Nearest Surface Water | Site Description |
|---|---|---|---|---|---|
| NXFL-356 North Alachua | 29° 49' 33.71" N / 82° 16' 08.01" W | 235' | 149.7' | >500' | Cleared timberland |

Listed species with the potential to be located within the vicinity of the site are included in the attached IPaC and FNAI database reports. Based on our review of the site, the project area for the tower consisted of cleared timberland. There are no critical habitats, wildlife refuges, or fish hatcheries documented at the site.

**Migratory Birds**

USFWS recommendations published in Revised Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning (2018) state the preferred tower height to decrease potential effects on migratory birds is less than 200 feet tall. Siting and design process for this project could not conform to all the USFWS recommendations; however, mitigating factors proposed for implementation at the site include the following:

- Limiting the tower height
- eliminating the need for guy wires
- utilizing a lighting style that eliminates the need for red steady-burning lighting

**Federal Consultation – USFWS**

USFWS provides a concurrence key through their IPaC system which revises and replaces all prior versions of communication tower clearance letters within the state of Florida. The key is intended to streamline consultation with the USFWS when the proposed action can be walked through the Key and the appropriate conclusion is the proposed action will have no effect on listed species.

For towers where USFWS believes further evaluation of the proposed action is necessary, the Key recommends contacting the local field office and requesting consultation. However, based on June 2022 correspondence with Mr. Robert Carey, USFWS Division Manager of the USFWS Florida Ecological Services Field Office, if the applicant makes a "No Effect" determination for the proposed action, USFWS does not require direct consultation.

The consultation key was completed for this project and the key determined that the project should result in further consultation with USFWS. However, based on the correspondence with Mr. Robert Carey, Terracon has made a "No Effect" determination for this project and therefore no direct consultation is required. Documentation supporting the "No Effect" determination can be found below and attached to this Informal Biological Assessment.

To support the "No Effect" determination, Terracon conducted a preliminary review using the USFWS IPaC system to identify listed and proposed threatened and endangered species, as well as critical habitats that may be located on or near the proposed tower site. According to the IPaC report, the following species are listed to have the potential to be present in the vicinity of the project area:

| Taxon | Name | Species Habitat | Status | Habitat On-Site? |
|---|---|---|---|---|
| Birds | Eastern Black Rail *(Laterallus jamaicensis)* | In coastal marsh, upper limits of highest tides; inland, mostly wet meadows | Threatened (Federal)<br><br>Threatened (State) | No |
| | Whooping Crane *(Grus americana)* | Marshes, ponds, lagoons. Forages mainly in fresh water, including shallow marshes, flooded farm fields, ponds, ditches | Experimental Population<br><br>Non- Essential | No |
| Reptiles | Eastern Indigo Snake (*Drymarchon corais couperi)* | Broad range including scrub, sandhill, wet prairies, and mangrove swamps | Threatened (Federal)<br><br>Threatened (State) | No |
| | Suwannee Alligator Snapping Turtle *(Macrochelys suwanniensis)* | Rivers, lakes, backwater swamps, and periodically in brackish water systems | Proposed Threatened | No |
| Clams | Oval Pigtoe *(Pleurobema pyriforme* | Small to medium-sized creeks to small rivers where it inhabits silty sand to sand and gravel substrates, usually in slow to moderate current | Endangered (State)<br><br>Endangered (Federal) | No |
| Insects | Monarch Butterfly *(Danaus plexippus)* | Disturbed habitats such as agricultural landscapes and along roadsides | Candidate (Federal)<br><br>Candidate (State) | Marginal |

Based on a review of the habitat for the above-listed species, compared to an analysis of the habitat present on the site, it is not anticipated that the construction of the proposed telecommunications tower site will affect listed or proposed protected species or critical habitats. Marginal habitat for monarch butterflies (*Danaus plexippus*) can be found on-site due to the disturbed nature of the area after timbering. However, as the species is listed as a "candidate" species, no additional correspondence with regulatory agencies is necessary.

Further, Terracon has reviewed Florida databases for both eagle nests and wood stork rookeries and determined the proposed activities are more than 660 feet from any documented bald eagle nest and 2500 feet from any documented wood stork rookery.

**State Consultation – FWC**

In a letter dated July 19, 2022, the FWC stated that they have no comments, recommendations, or objections related to state-listed species and their habitat or other fish and wildlife resources in regard to FCC licensed telecommunications tower installations provided no listed species or their habitat is detected on site.

Because no listed species or critical habitat for listed species was detected on site, no further coordination with FWC is required.

**Conclusions**

Based on Terracon's analysis, the proposed project activities should have no effect on state or federally listed species or their habitat, and no additional coordination with USFWS or FWC is required.

Sincerely,

Terracon

Malyssa Peabody
Field Scientist

Brett Anderson
Group Manager

*Attachments:*
*IPaC Report*
*IPac Determination Key Report*
*FNAI Report*
*FDEP MapDirect Documentation*
*NWI Map*
*FWC Correspondence*
*June 2022 FWS Correspondence*
*Site Plan Diagrams*

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Florida Ecological Services Field Office
1339 20th Street
Vero Beach, FL 32960-3559
Phone: (772) 562-3909 Fax: (772) 562-4288
Email Address: fw4flesregs@fws.gov
https://www.fws.gov/office/florida-ecological-services

In Reply Refer To: August 09, 2023
Project Code: 2023-0114533
Project Name: NXFL-356_North Alachua

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. **Please include your Project Code, listed at the top of this letter, in all subsequent correspondence regarding this project.** Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

**Migratory Birds**: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of

this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

# OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Florida Ecological Services Field Office**
1339 20th Street
Vero Beach, FL 32960-3559
(772) 562-3909

# PROJECT SUMMARY

Project Code: 2023-0114533
Project Name: NXFL-356_North Alachua
Project Type: Communication Tower New Construction
Project Description: Telecommunications tower- self support
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@29.826048200000002,-82.26901321022339,14z


Counties: Alachua County, Florida

# ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## BIRDS

| NAME | STATUS |
|---|---|
| Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/10477 | Threatened |
| Whooping Crane *Grus americana*<br>Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY)<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/758 | Experimental Population, Non-Essential |

## REPTILES

| NAME | STATUS |
|---|---|
| Eastern Indigo Snake *Drymarchon couperi*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/646 | Threatened |
| Suwannee Alligator Snapping Turtle *Macrochelys suwanniensis*<br>Population:<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/10891 | Proposed Threatened |

### CLAMS

| NAME | STATUS |
|---|---|
| Oval Pigtoe *Pleurobema pyriforme* | Endangered |

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/4132

### INSECTS

| NAME | STATUS |
|---|---|
| Monarch Butterfly *Danaus plexippus* | Candidate |

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

### CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

## USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

## MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

**The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location.** To learn more about the levels of concern for birds on your list and how this

list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

| NAME | BREEDING SEASON |
|---|---|
| American Kestrel *Falco sparverius paulus*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA<br>https://ecos.fws.gov/ecp/species/9587 | Breeds Apr 1 to Aug 31 |
| Bachman's Sparrow *Aimophila aestivalis*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/6177 | Breeds May 1 to Sep 30 |
| Chimney Swift *Chaetura pelagica*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. | Breeds Mar 15 to Aug 25 |
| Great Blue Heron *Ardea herodias occidentalis*<br>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA | Breeds Jan 1 to Dec 31 |
| Swallow-tailed Kite *Elanoides forficatus*<br>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.<br>https://ecos.fws.gov/ecp/species/8938 | Breeds Mar 10 to Jun 30 |

## PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

**Probability of Presence (■)**

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

**Breeding Season** (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort** (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

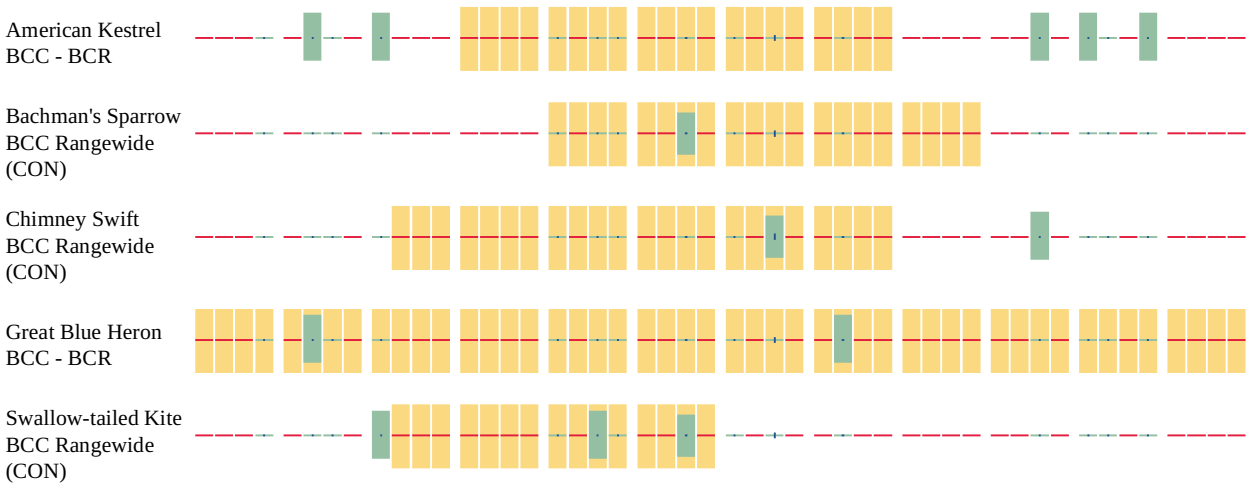
**No Data** (–)
A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

---

▪ probability of presence ▪ breeding season | survey effort – no data

| SPECIES | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|




Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

## MIGRATORY BIRDS FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?**

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act

requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering or migrating in my area?**
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

**Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

**What if I have eagles on my list?**
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

**Proper Interpretation and Use of Your Migratory Bird Report**
The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

# WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

# IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Malyssa Peabody
Address: 8001 Baymeadows Way
City: Jacksonville
State: FL
Zip: 32256
Email malyssa.peabody@terracon.com
Phone: 9045497377

1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
850-681-9364 fax
www.fnai.org

# Florida Natural Areas Inventory

## Biodiversity Matrix Query Results

**UNOFFICIAL REPORT**

Created 8/9/2023

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

**Report for 1 Matrix Unit: 28402**


**Descriptions**

**DOCUMENTED** - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

**DOCUMENTED-HISTORIC** - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

**LIKELY** - The species or community is *known* to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; *or*
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

**POTENTIAL** - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

**Matrix Unit ID: 28402**

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

3 **Likely** Elements Found

| Scientific and Common Names | Global Rank | State Rank | Federal Status | State Listing |
|---|---|---|---|---|
| *Drymarchon couperi*<br>Eastern Indigo Snake | G3 | S2? | T | FT |
| *Mesic flatwoods* | G4 | S4 | N | N |
| *Ursus americanus floridanus*<br>Florida Black Bear | G5T4 | S4 | N | N |

**Matrix Unit ID: 28402**

30 **Potential** Elements for Matrix Unit 28402

| Scientific and Common Names | Global Rank | State Rank | Federal Status | State Listing |
|---|---|---|---|---|
| *Agrimonia incisa*<br>incised groove-bur | G3 | S2 | N | T |
| *Ambystoma cingulatum*<br>Frosted Flatwoods Salamander | G2 | S1 | T | FT |
| *Antigone canadensis pratensis*<br>Florida Sandhill Crane | G5T2 | S2 | N | ST |
| *Asplenium x curtissii*<br>Curtiss' spleenwort | GNA | S1 | N | N |
| *Asplenium x heteroresiliens*<br>Morzenti's spleenwort | G2 | S1 | N | N |
| *Asplenium x plenum*<br>ruffled spleenwort | G1Q | S1 | N | N |
| *Athene cunicularia floridana*<br>Florida Burrowing Owl | G4T3 | S3 | N | ST |
| *Brickellia cordifolia*<br>Flyr's brickell-bush | G3 | S2 | N | E |
| *Calydorea coelestina*<br>Bartram's ixia | G2G3 | S2S3 | N | E |
| *Crotalus adamanteus*<br>Eastern Diamondback Rattlesnake | G3 | S3 | N | N |
| *Ctenium floridanum*<br>Florida toothache grass | G2 | S2 | N | E |
| *Dryobates borealis*<br>Red-cockaded Woodpecker | G3 | S2 | E, PT | FE |
| *Gopherus polyphemus*<br>Gopher Tortoise | G3 | S3 | C | ST |
| *Hartwrightia floridana*<br>hartwrightia | G2 | S2 | N | T |
| *Heterodon simus*<br>Southern Hognose Snake | G2 | S2S3 | N | N |
| *Lampropeltis extenuata*<br>Short-tailed Snake | G3 | S3 | N | ST |
| *Lithobates capito*<br>Gopher Frog | G2G3 | S3 | N | N |
| *Litsea aestivalis*<br>pondspice | G3? | S2 | N | E |
| *Macrochelys suwanniensis*<br>Suwannee Alligator Snapping Turtle | G2 | S2 | PT | ST |
| *Matelea floridana*<br>Florida spiny-pod | G2 | S2 | N | E |
| *Myotis austroriparius*<br>Southeastern Myotis | G4 | S3 | N | N |
| *Neofiber alleni*<br>Round-tailed Muskrat | G2 | S2 | N | N |
| *Notophthalmus perstriatus*<br>Striped Newt | G2G3 | S2 | N | C |
| *Peucaea aestivalis*<br>Bachman's Sparrow | G3 | S3 | N | N |
| *Podomys floridanus*<br>Florida Mouse | G3 | S3 | N | N |
| *Pycnanthemum floridanum*<br>Florida mountain-mint | G3 | S3 | N | T |
| *Rhododendron chapmanii*<br>Chapman's rhododendron | G1 | S1 | E | E |
| *Sciurus niger niger*<br>Southeastern Fox Squirrel | G5T5 | S3 | N | N |
| *Sideroxylon alachuense*<br>silver buckthorn | G1 | S1 | N | E |
| *Verbesina heterophylla*<br>variable-leaf crownbeard | G2 | S2 | N | E |

**Disclaimer**

The data maintained by the Florida Natural Areas Inventory represent the single most comprehensive source of information available on the locations of rare species and other significant ecological resources statewide. However, the data are not always based on comprehensive or site-specific field surveys. Therefore, this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. FNAI shall not be held liable for the accuracy and completeness of these data, or opinions or conclusions drawn from these data. FNAI is not inviting reliance on these data. Inventory data are designed for the purposes of conservation planning and scientific research and are not intended for use as the primary criteria for regulatory decisions.

**Unofficial Report**

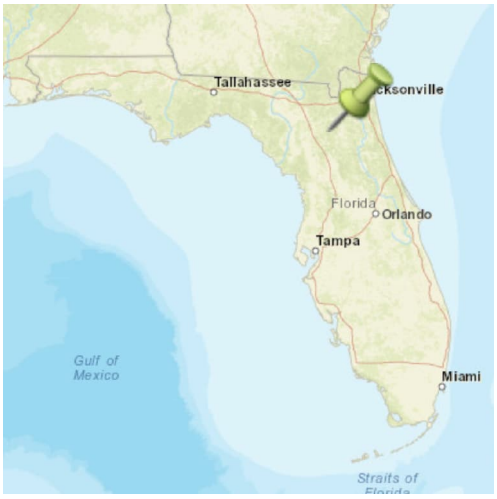
These results are considered unofficial. FNAI offers a Standard Data Request option for those needing certifiable data.

Printer Friendly View | Download as PDF

Florida Department of Environmental Protection

Map Direct AIR (Area of Interest Report)
Standard Map

| | |
|---|---|
| Point of Interest:<br>29°49'33.4638" x -82°16'7.4497"<br>29.82596218033188 x -82.26873603750431<br>Search Radius: 1 mile<br>Report Created on Wed Aug 09 2023 at 12:23:51<br>*Map Direct v7.230713* | Township/Range/Section: 8S20E2<br>, Alachua County 32609<br>FDEP Regulatory District: NORTHEAST DISTRICT<br>Water Management District: SRWMD<br>FL House District 10 :: FL Senate District 6<br>US Congressional District 3<br>HUC Basin Area: Santa Fe<br>Waterbody ID: 3605<br>State Land DM ID: |




## Search Result Summary

| *Features Found* | *Data Layer* | *Metadata* | *Spreadsheet* |
|---|---|---|---|
| 0 | Florida Wood Stork Foraging Areas | Layer Information | -- |
| 0 | Wood Stork Active Nesting Colonies - 2500 Foot Buffer | Layer Information | -- |
| 0 | Fish and Wildlife Conservation Commission (FWC) Eagle Nests - 660 Foot Buffer | Layer Information | -- |

## Search Result Details

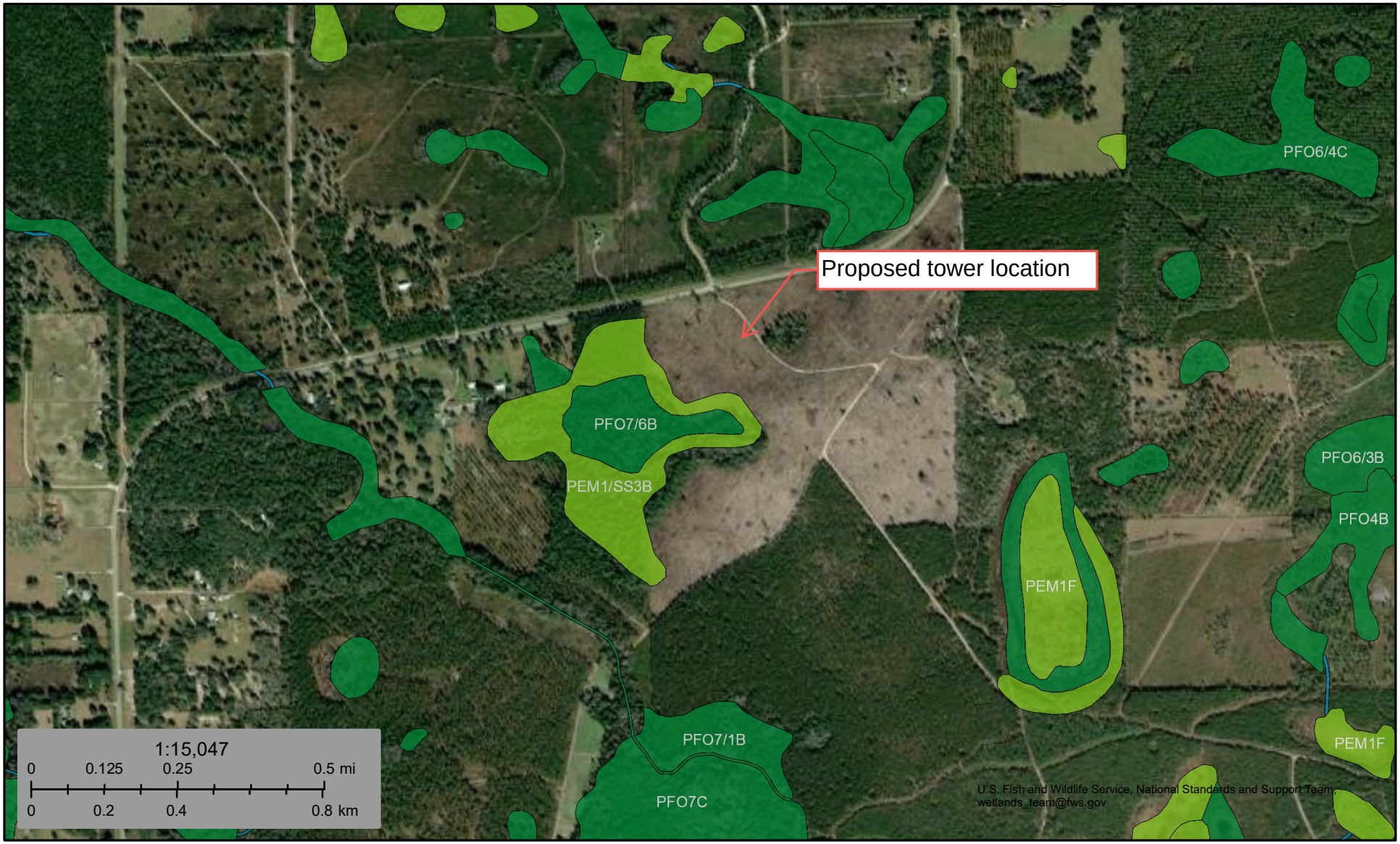
***No Results Found***:
Fish and Wildlife Conservation Commission (FWC) Eagle Nests - 660 Foot Buffer
Florida Wood Stork Foraging Areas
Wood Stork Active Nesting Colonies - 2500 Foot Buffer

*** END OF REPORT ***

U.S. Fish and Wildlife Service

# National Wetlands Inventory

NWI




August 9, 2023

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

Florida Fish and Wildlife Conservation Commission

Commissioners
**Rodney Barreto**
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**Steven Hudson**
*Fort Lauderdale*

**Gary Lester**
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Office of the
Executive Director
**Eric Sutton**
Executive Director

**Thomas H. Eason, Ph.D.**
Assistant Executive Director

**Jennifer Fitzwater**
Chief of Staff

850-487-3796
850-921-5786 FAX

*Managing fish and wildlife resources for their long-term well-being and the benefit of people.*

620 South Meridian Street
Tallahassee, Florida
32399-1600
Voice: 850-488-4676

Hearing/speech-impaired:
800-955-8771 (T)
800 955-8770 (V)

MyFWC.com

July 19, 2022

Brett Anderson
Terracon
8001 Baymeadows Way, Suite 1
Jacksonville, FL 32256
Brett.Anderson@terracon.com

Dear Mr. Anderson:

Florida Fish and Wildlife Conservation Commission (FWC) staff received your firm's request for review regarding standard, macro telecommunication tower project sites. The combined height of the monopoles or self-support lattice structures plus telecommunications equipment for these sites is normally between 100 and 300 feet. Installation may also include clearing for 100-foot by 100-foot compounds and access easements adjacent to the towers. Each site will be reviewed for the following prior to construction activities: the presence of federal or state-listed species; the presence of suitable habitat for federal or state-listed species; presence of critical habitat for federal species either onsite or nearby (within 1 mile), wildlife refuges (within 5 miles), or fish hatcheries; and each site will be surveyed as appropriate prior to development.

For the purpose of the required Federal Communications Commission National Environmental Policy Act screenings for these installations, FWC staff have no comments, recommendations, or objections related to state-listed species and their habitat or other state fish and wildlife resources to offer for the time period of two years from the date of this letter. The liability to not impact or cause "take" of listed species, migratory wildlife, and other regulated species of wildlife is the responsibility of the applicant or developer associated with each site. Please refer to the Florida Administrative Code, 68A-27, for definitions of "take" and a list of species. If listed species are observed onsite in the future or if project design details change, FWC staff are available to provide decision support information or other technical assistance.

Resources provided by federal agencies regarding potential requirements for these types of projects can be found here: https://www.fws.gov/story/incidental-take-beneficial-practices-communication-towers.

Requests for further information or review can be sent to ConservationPlanningServices@MyFWC.com. Thank you for contacting the FWC.

Sincerely,

Jason Hight, Director
Office of Conservation Planning Services

jh/cc

CC: Janie Valade, Terracon, Janie.Valade@terracon.com
Malyssa Peabody, Terracon, Malyssa.Peabody@terracon.com

## Valade, Janie D

**From:** Carey, Robert L <robert_carey@fws.gov>
**Sent:** Tuesday, June 14, 2022 3:38 PM
**To:** Valade, Janie D
**Cc:** Anderson, Brett A
**Subject:** Re: [EXTERNAL] Request for ESA Section 7 Consultation; iPac Project Code: 2022-0042015
**Attachments:** 20201106_Florida_Clearance_to_Proceed_Communication_Towers.pdf; IpaC Key.pdf; iPac Clearance Key_Bostwick Tower.pdf; 20220609 _FLES_Guidance_for_Completing_Project_Reviews.docx

Hi Janie,
I 'm glad you reached out and it seems like you have a good grasp of the current procedures. I understand there is some conflicting information and issues with the various previous documents. We are working to revise these.

Basically, if a project fails to key out, it may well be a May Affect, Not Likely to Adversely Affect (MANLAA) rather than No Effect situation. That said, you have the option of applying best professional judgement and maintaining your no effect determination. In this case we advise you maintain a clear rationale for your decision in your records.

If you get to MANLAA, we would consult. If you maintain your No Effect determination, we **do not need to see the project**.

If you decide to consult, please know we will need a very clear description of the proposed action and how you determined the effects of the action will not result in incidental take. Surveys may be appropriate for some species. Think here of "connecting the dots" between what is being proposed and how impacts to listed species may occur. Basically, what would be included in a Biological Assessment for a Section 7 consultation.

I attached a draft document that contains more specific guidance. We hope to get this posted to our website in the near future but websites within all of the FWS were recently revised under a national effort.

I hope this helps and we could certainly arrange a call or conversation.

Thank you very much.

Robert L. Carey
Division Manager, Environmental Review
Florida Ecological Services Field Office
U.S. Fish and Wildlife Service
Gainesville, Florida

(530) 340-2496 Cell (Currently teleworking due to Covid 19 pandemic - please use this number)

# STONECYPHER SURVEYING INC.

1225 NW 16TH AVENUE, GAINESVILLE, FLORIDA 32601 PHONE: 352-379-0948

## FAA "1-A CERTIFICATION

**June 14, 2023**

**NexTower Development Group II, LLC**
**13577 NW 2nd Lane, Suite 20**
**Newberry, FL 32669**

**Site Name:** ***NORTH ALACHUA***
**Site Number:** ***NXFL-356***

**Site Data:** **Proposed 225' Self-Support Tower with 10' Appurtenance**
**Total Height = 235' Above Ground Level**

**Tower Information**

**Geographic Coordinates:** Latitude – **29° 49' 33.71" North**
Longitude – **82° 16' 08.01" West**

**Ground Elevation:** Base of Proposed Tower – **149.7'**

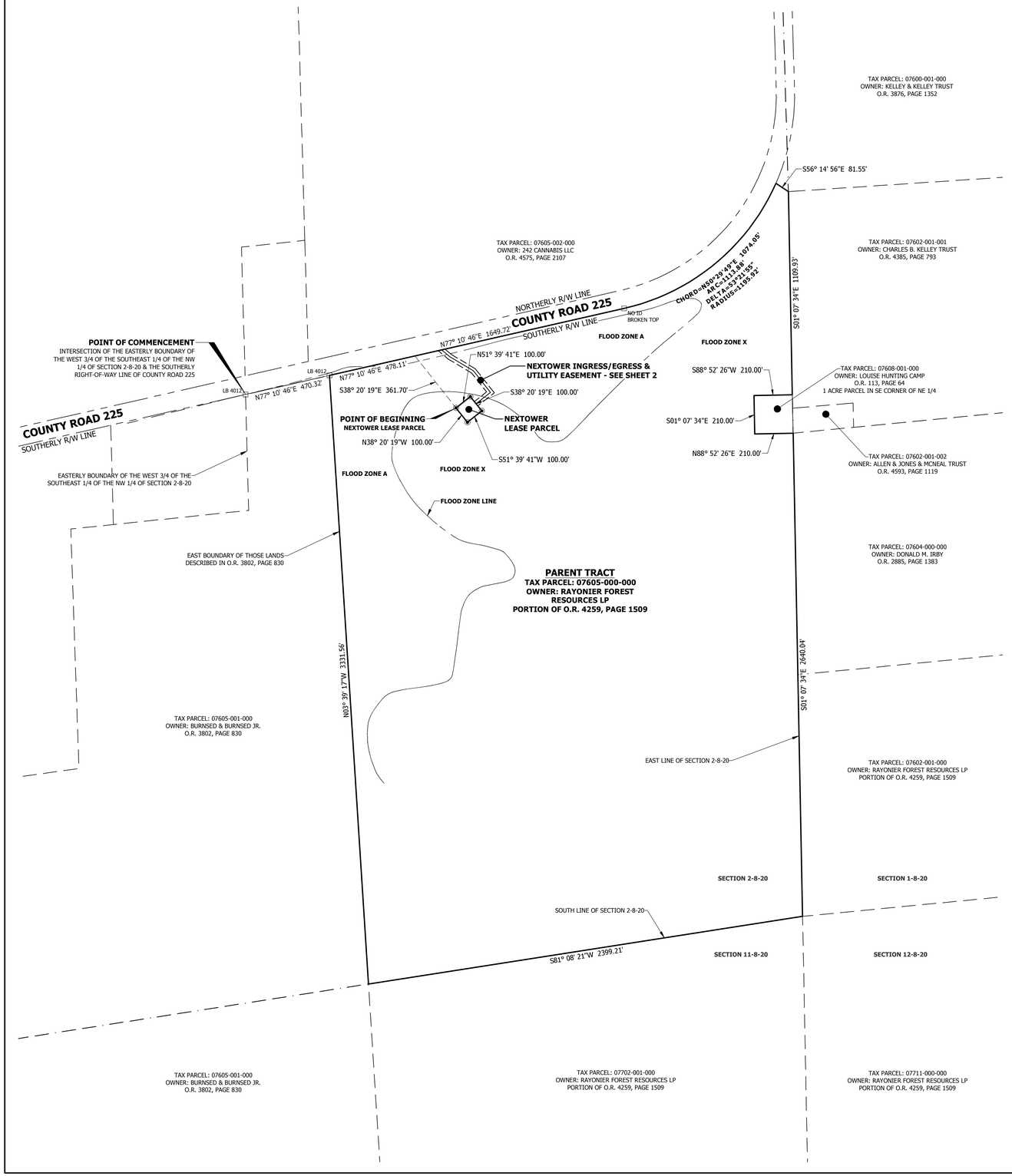
**Certification**

I hereby certify that the latitude of **29° 49' 33.71" North** and the longitude of **82° 16' 08.01" West** are within 20-feet horizontally, and that the ground elevation at the base of the tower of **149.7** feet is accurate to within 3-feet vertically. The horizontal datum (coordinates) are in terms of North American Datum of 1983/2011 (NAD 83/2011) and is expressed as degrees, minutes, and seconds, to the nearest hundredth of a second. The vertical datum (elevation) is in terms of the North American Vertical Datum of 1988 (NAVD 88) and is determined to the nearest foot.

**David W. Stonecypher**
**Professional Surveyor and Mapper No. LS 6391**
**Stonecypher Surveying Inc. – Business No. LB 7810**
**State of Florida**

# BOUNDARY & TOPOGRAPHIC SURVEY OF NEXTOWER LEASE PARCEL

IN SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST
ALACHUA COUNTY, FLORIDA




## PARENT TRACT DESCRIPTION

(PREPARED BY SURVEYOR BEING A PORTION OF O.R. 4259, PAGE 1509)

THAT PART OF THE EAST HALF OF SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA LYING SOUTHERLY OF COUNTY ROAD 225 (FORMERLY STATE ROAD 225) AND EASTERLY OF THOSE CERTAIN LANDS DESCRIBED IN OFFICIAL RECORDS BOOK 3802, PAGE 830 OF THE PUBLIC RECORDS OF SAID COUNTY. LESS 1 ACRE PARCEL IN SOUTHEAST CORNER OF NORTHEAST QUARTER.

## NEXTOWER LEASE PARCEL DESCRIPTION

**A PARCEL OF LAND LYING IN SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA; SAID PARCEL OF LAND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:**

**COMMENCE AT THE INTERSECTION OF THE EASTERLY LINE OF THE WEST THREE-QUARTERS OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA AND THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225 (A 100' RIGHT-OF-WAY); THENCE N77° 10' 46"E ALONG SAID RIGHT-OF-WAY LINE FOR 470.32 FEET; THENCE CONTINUE N77° 10' 46"E ALONG SAID RIGHT-OF-WAY LINE FOR 478.11 FEET; THENCE S38° 20' 19"E FOR 361.70 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL OF LAND; THENCE N51° 39' 41"E FOR 100.00 FEET; THENCE S38° 20' 19"E FOR 100.00 FEET; THENCE S51° 39' 41"E FOR 100.00 FEET; THENCE N38° 20' 19"W FOR 100.00 FEET TO THE POINT OF BEGINNING. SAID PARCEL OF LAND SITUATE, LYING AND BEING IN ALACHUA COUNTY, FLORIDA, CONTAINING 10,000 SQUARE FEET OF LAND MORE OR LESS.**

## NEXTOWER INGRESS/EGRESS & UTILITIES EASEMENT DESCRIPTION

**A 30-FEET WIDE EASEMENT STRIP OF LAND FOR THE PURPOSES OF INGRESS/EGRESS AND UTILITIES LYING IN SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA; SAID EASEMENT STRIP LYING 15.00 FEET ON BOTH SIDES OF THE FOLLOWING DESCRIBED EASEMENT CENTERLINE:**

**COMMENCE AT THE INTERSECTION OF THE EASTERLY LINE OF THE WEST THREE-QUARTERS OF THE SOUTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST, ALACHUA COUNTY, FLORIDA AND THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225 (A 100' RIGHT-OF-WAY); THENCE N77° 10' 46"E ALONG SAID RIGHT-OF-WAY LINE FOR 470.32 FEET; THENCE CONTINUE N77° 10' 46"E ALONG SAID RIGHT-OF-WAY LINE FOR 478.11 FEET; THENCE S38° 20' 19"E FOR 361.70 FEET ; THENCE N51° 39' 41"E FOR 100.00 FEET; THENCE S38° 20' 19"E FOR 50.00 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED EASEMENT CENTERLINE; THENCE N51° 39' 41"W FOR 100.00 FEET; THENCE N38° 20' 19"W FOR 150.00 FEET; THENCE N59° 10' 06"W FOR 150.00 FEET; THENCE N49° 41' 32"W FOR 58.09 FEET TO AN INTERSECTION WITH THE AFORESAID SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225 AND THE POINT OF TERMINUS. THE SIDELINES OF SAID EASEMENT TO BE SHORTENED AND PROLONGED TO MEET AT ANGLE POINTS, LEASE PARCEL LINES AND RIGHT-OF-WAY LINES.**

## SURVEYOR'S NOTES

1. BEARINGS SHOWN HEREON ARE ASSUMED AND REFERENCED TO THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225 AS BEARING N77° 10' 46"E.

2. THE BOUNDARY & TOPOGRAPHIC SURVEY SHOWN HEREON IS BASED ON ACTUAL FIELD MEASUREMENTS AND OBSERVATIONS DATED JUNE 6, 2023.

3. THIS SURVEY MAP OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.

4. CENTER OF PROPOSED TOWER LATITUDE, LONGITUDE AND ELEVATIONS SHOWN HEREON WERE ESTABLISHED FROM RTK GPS OBSERVATIONS REFERENCED TO THE STATE OF FLORIDA PERMANENT REFERENCE NETWORK. THE VALUES FOR THE PROPOSED TOWER LATITUDE, LONGITUDE AND ELEVATION SHOWN HEREON EXCEED FAA "1-A" ACCURACY REQUIREMENTS. ELEVATIONS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE REFERENCED TO THE STATE OF FLORIDA PERMANENT REFERENCE NETWORK.

5. THE PURPOSE OF THIS SURVEY IS TO SHOW IMPROVEMENTS ASSOCIATED WITH A PROPOSED TELECOMMUNICATIONS FACILITY AND PROVIDE LEGAL DESCRIPTIONS FOR SAID FACILITY AND ASSOCIATED EASEMENTS. THIS IS NOT A BOUNDARY SURVEY OF THE PARENT TRACT.

6. MEASURED BEARINGS AND DISTANCES WERE IN SUBSTANTIAL AGREEMENT WITH RECORD DATA UNLESS OTHERWISE NOTED.

7. PROPERTY TIES ARE PERPENDICULAR MEASURE UNLESS OTHERWISE NOTED.

## FLOOD ZONE NOTE

THE HEREON DESCRIBED LEASE PARCEL APPEARS TO LIE IN FLOOD ZONE A & X BASED ON THE FEDERAL EMERGENCY MANAGEMENT ACT FIRM, COMMUNITY PANEL MAP NUMBER 12031C0160D DATED JUNE 16, 2006.

## PROPOSED TOWER DISTANCE FROM PARENT TRACT LINES

(AS MEASURED PERPENDICULAR FROM CENTER OF TOWER)

| | |
|---|---|
| NORTH LINE: | 350.0' |
| EAST LINE: | 1760' |
| SOUTH LINE: | 3010' |
| WEST LINE: | 747' |

## TOWER DATA

PROPOSED 225' SELF-SUPPORT TOWER WITH 10' APPURTENANCES (TOTAL HEIGHT=235')

**NAD 83/2011**
LATITUDE: **29° 49' 33.71" NORTH**
LONGITUDE: **82° 16' 08.01" WEST**
GROUND ELEVATION: **149.7' NAVD 1988**

## LEGEND

| | |
|---|---|
| ◉ | INDICATES 5/8" REBAR & CAP SET STAMPED LB 7810 |
| ⊡ | INDICATES 4"x4" CONCRETE MONUMENT FOUND ID AS NOTED |
| R/W | INDICATES RIGHT-OF-WAY |
| O.R. | INDICATES OFFICIAL RECORDS BOOK |
| ID | INDICATES IDENTIFICATION |

300 0 300 600
**SCALE: 1"=300'**

ASSUMED NORTH

## CERTIFIED TO:

1. RAYONIER FOREST RESOURCES, L.P.
2. NEXTOWER DEVELOPMENT GROUP II, LLC

DAVID WILLIAM STONECYPHER LICENSE No. LS6391 STATE OF Florida


**STONECYPHER SURVEYING INC.**
1225 NW 16TH AVENUE GAINESVILLE, FLORIDA 32601
Tel.: (352) 379-0948
Email: dws@stone-survey.com
Professional Surveying & Mapping Certificate of Authorization No.: LB 7810


| | | | |
|---|---|---|---|
| BOOK/PAGE | 41/58 | SCALE | AS SHOWN |
| DRAWN | DWS | DATE | JUNE 6, 2023 |
| CHECKED | DWS | PROJECT # | 22-0056 |

This map prepared by: 6-14-2023
**DAVID W. STONECYPHER**
PROFESSIONAL SURVEYOR & MAPPER FLA. LICENSE NO. 6391

**COMMUNICATION TOWER SITE**
**RAYONIER NORTH ALACHUA NXFL-356**

DRAWING # nextower-n alachua.survey.dwg
**NEXTOWER DEVELOPMENT GROUP II, LLC**
SHEET # 1 OF 2

# BOUNDARY & TOPOGRAPHIC SURVEY OF NEXTOWER LEASE PARCEL

IN SECTION 2, TOWNSHIP 8 SOUTH, RANGE 20 EAST
ALACHUA COUNTY, FLORIDA

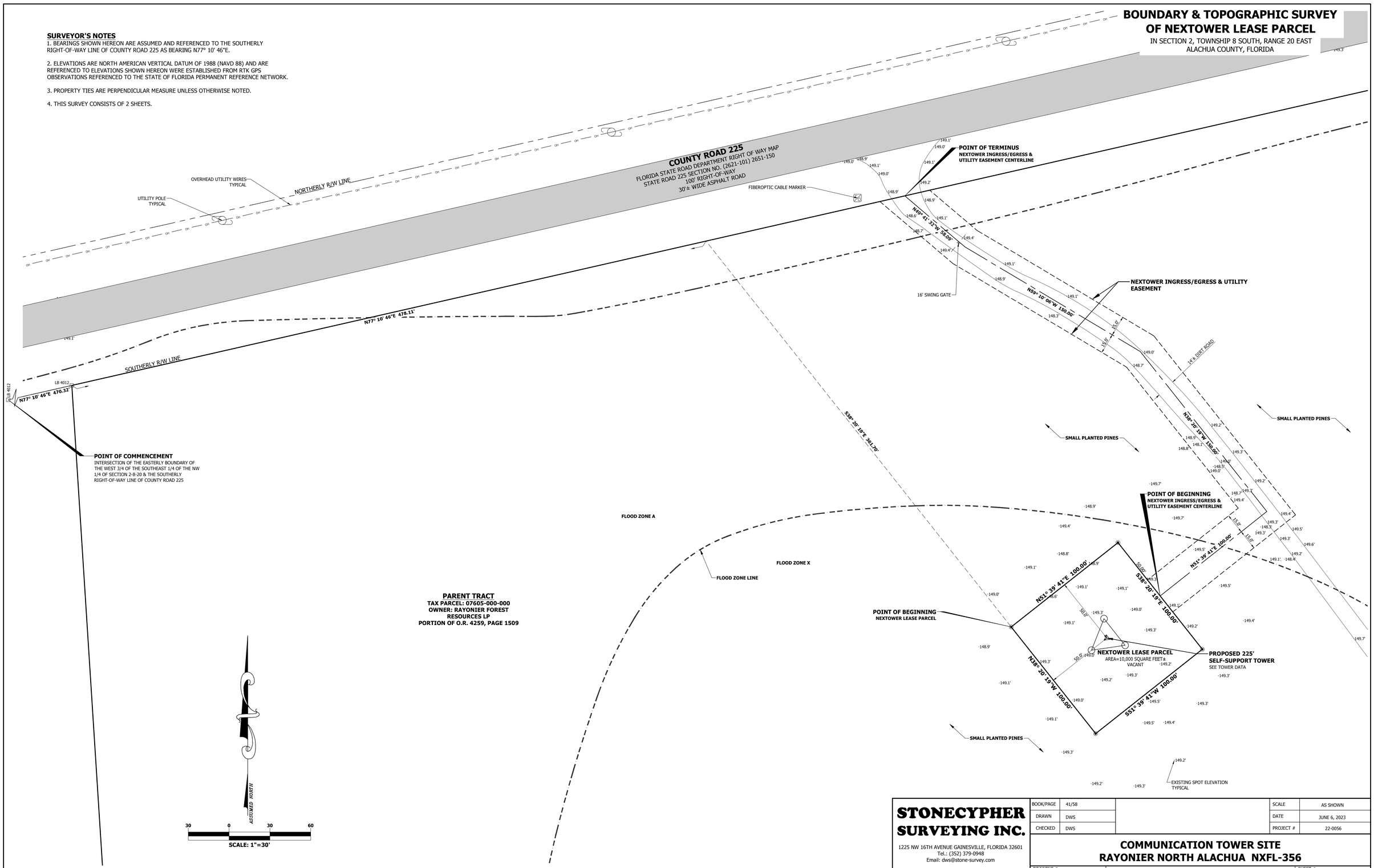
**SURVEYOR'S NOTES**

1. BEARINGS SHOWN HEREON ARE ASSUMED AND REFERENCED TO THE SOUTHERLY RIGHT-OF-WAY LINE OF COUNTY ROAD 225 AS BEARING N77° 10' 46"E.

2. ELEVATIONS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND ARE REFERENCED TO ELEVATIONS SHOWN HEREON WERE ESTABLISHED FROM RTK GPS OBSERVATIONS REFERENCED TO THE STATE OF FLORIDA PERMANENT REFERENCE NETWORK.

3. PROPERTY TIES ARE PERPENDICULAR MEASURE UNLESS OTHERWISE NOTED.

4. THIS SURVEY CONSISTS OF 2 SHEETS.




| | | | | | |
|---|---|---|---|---|---|
| BOOK/PAGE | 41/58 | | | SCALE | AS SHOWN |
| DRAWN | DWS | | | DATE | JUNE 6, 2023 |
| CHECKED | DWS | | | PROJECT # | 22-0056 |


**STONECYPHER SURVEYING INC.**

1225 NW 16TH AVENUE GAINESVILLE, FLORIDA 32601
Tel.: (352) 379-0948
Email: dws@stone-survey.com

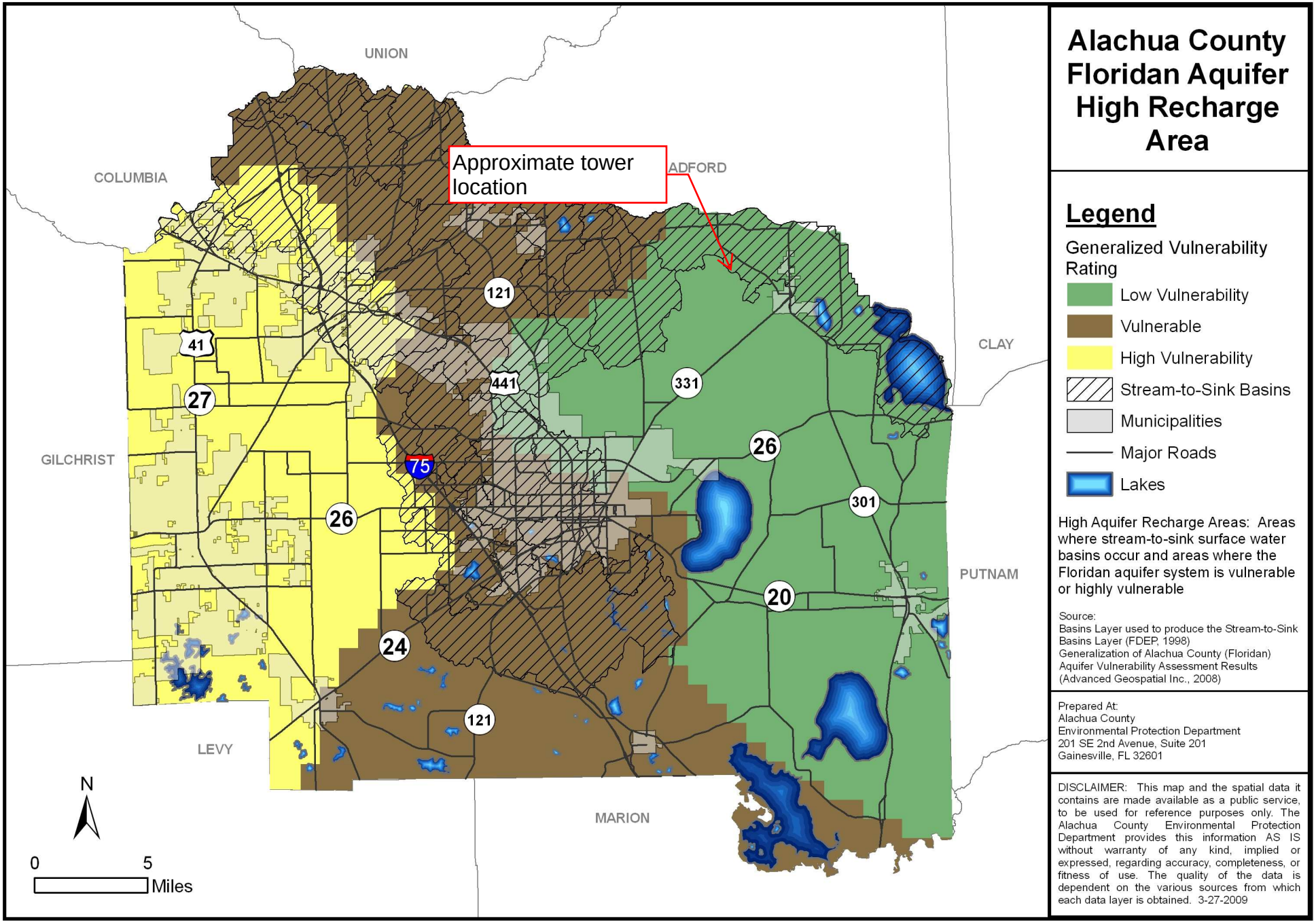
Professional Surveying & Mapping Certificate of Authorization No.: LB 7810


## COMMUNICATION TOWER SITE
## RAYONIER NORTH ALACHUA NXFL-356

| DRAWING # | | SHEET # |
|---|---|---|
| nextower-n alachua survey.dwg | **NEXTOWER DEVELOPMENT GROUP II, LLC** | 2 OF 2 |

# APPENDIX G

## Aquifer Recharge Areas




# Alachua County Floridan Aquifer High Recharge Area

## Legend

Generalized Vulnerability Rating

- Low Vulnerability
- Vulnerable
- High Vulnerability
- Stream-to-Sink Basins
- Municipalities
- Major Roads
- Lakes

High Aquifer Recharge Areas: Areas where stream-to-sink surface water basins occur and areas where the Floridan aquifer system is vulnerable or highly vulnerable

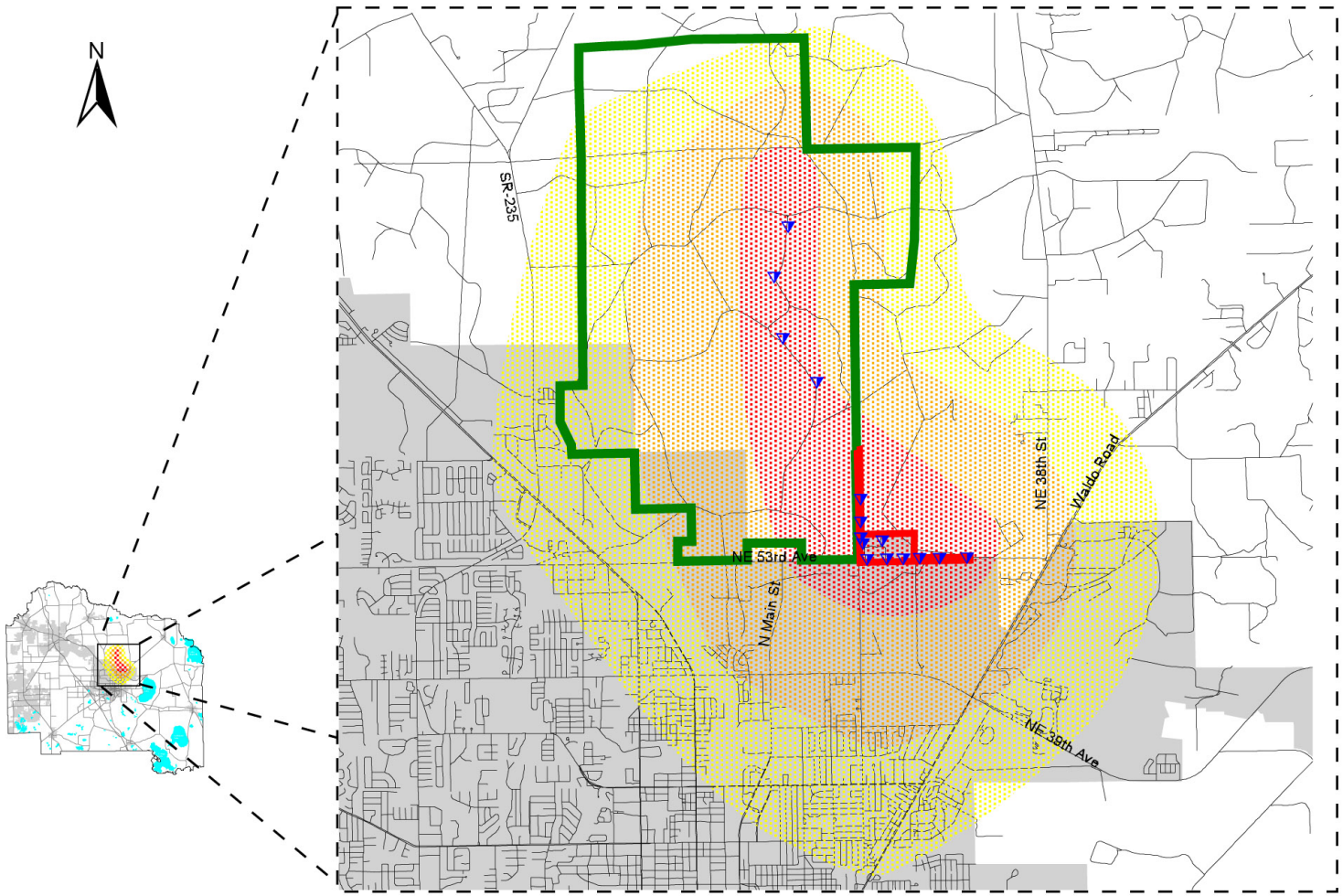
Source:
Basins Layer used to produce the Stream-to-Sink Basins Layer (FDEP, 1998)
Generalization of Alachua County (Floridan) Aquifer Vulnerability Assessment Results (Advanced Geospatial Inc., 2008)

Prepared At:
Alachua County
Environmental Protection Department
201 SE 2nd Avenue, Suite 201
Gainesville, FL 32601

# APPENDIX H

## Well Field Management Zones

Approximate TOwer Location




# ALACHUA COUNTY MURPHREE WELL FIELD MANAGEMENT ZONES

## Legend

- Existing and Future Wells
- Murphree Well Field Management Zones Travel Times
  - 2 Years
  - 10 Years
  - 25 Years
- Existing Well Field
- Conservation Easement
- Roads
- City of Gainesville

**SOURCE:**
Murphree Wellfield digital files were obtained from Gainesville Regional Utilities, Dept. of Strategic Planning. The originals were CAD files, received at various times, and subsequently converted to shapefiles at Alachua County Environmental Protection Department

**CONTENT:**
Murphree Well Field Management Zones

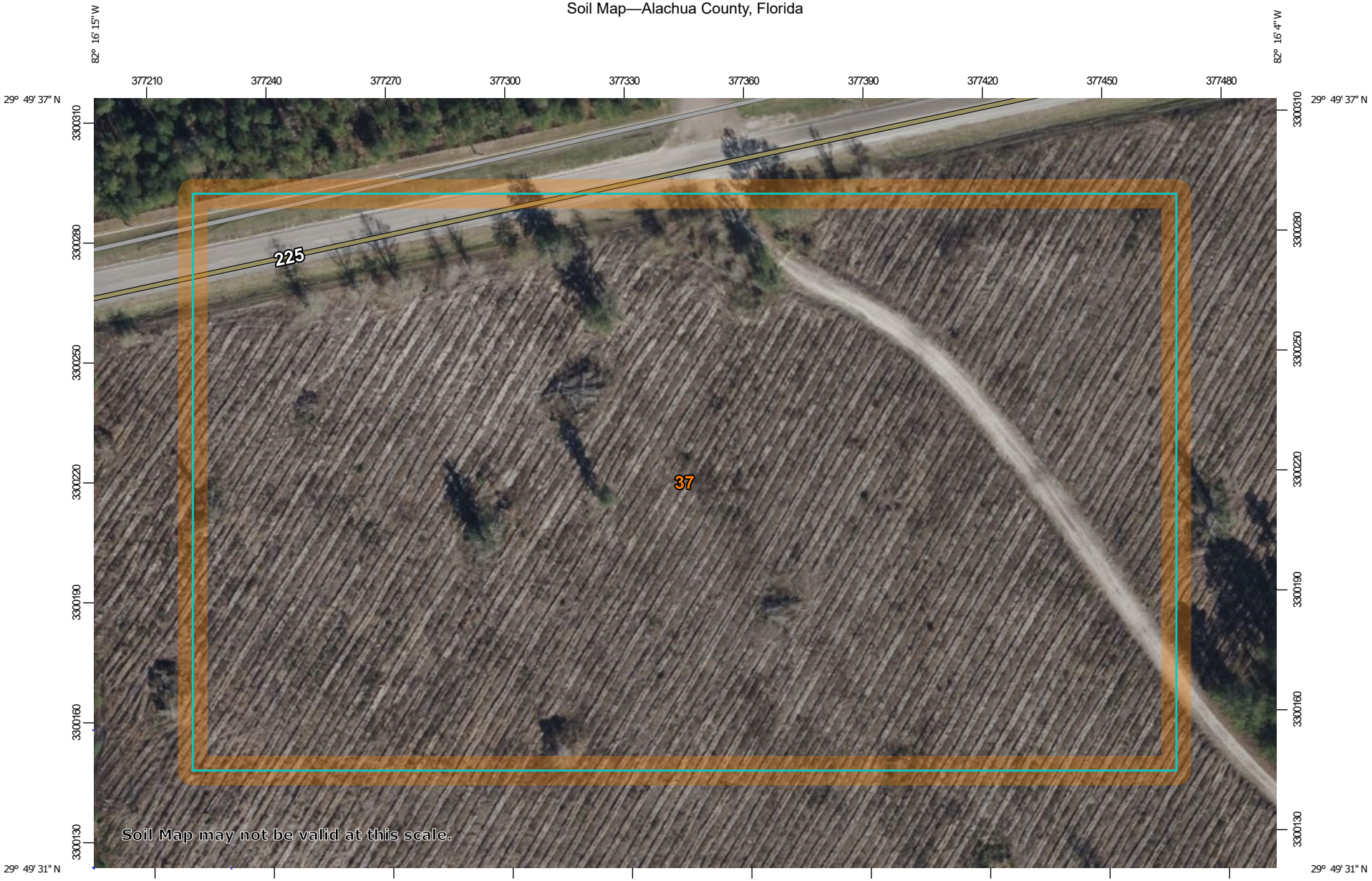
**NOTES:**
This map is part of the Future Land Use Map (FLUM) Series. The FLUM Series includes maps such as the County Wide Map, the Urban Cluster and Surrounding Area Map, the Wetlands and Floodplains Map, the Murphree Well Field Management Zones Map, the USDA Soil Map (incorporated by reference), activity center maps, and special study area maps.
Date of Production: 2-20-2002

**PREPARED AT:**
Alachua County
Department of Growth Management
10 SW 2nd Avenue
Gainesville, Fl 32601
(352) 374-5249
http://growth-management.alachua.fl.us/index.php

# APPENDIX I

## Web Soil Survey

# Soil Map—Alachua County, Florida




Map Scale: 1:1,360 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Alachua County, Florida
Survey Area Data: Version 23, Sep 1, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jan 9, 2022—Feb 10, 2022

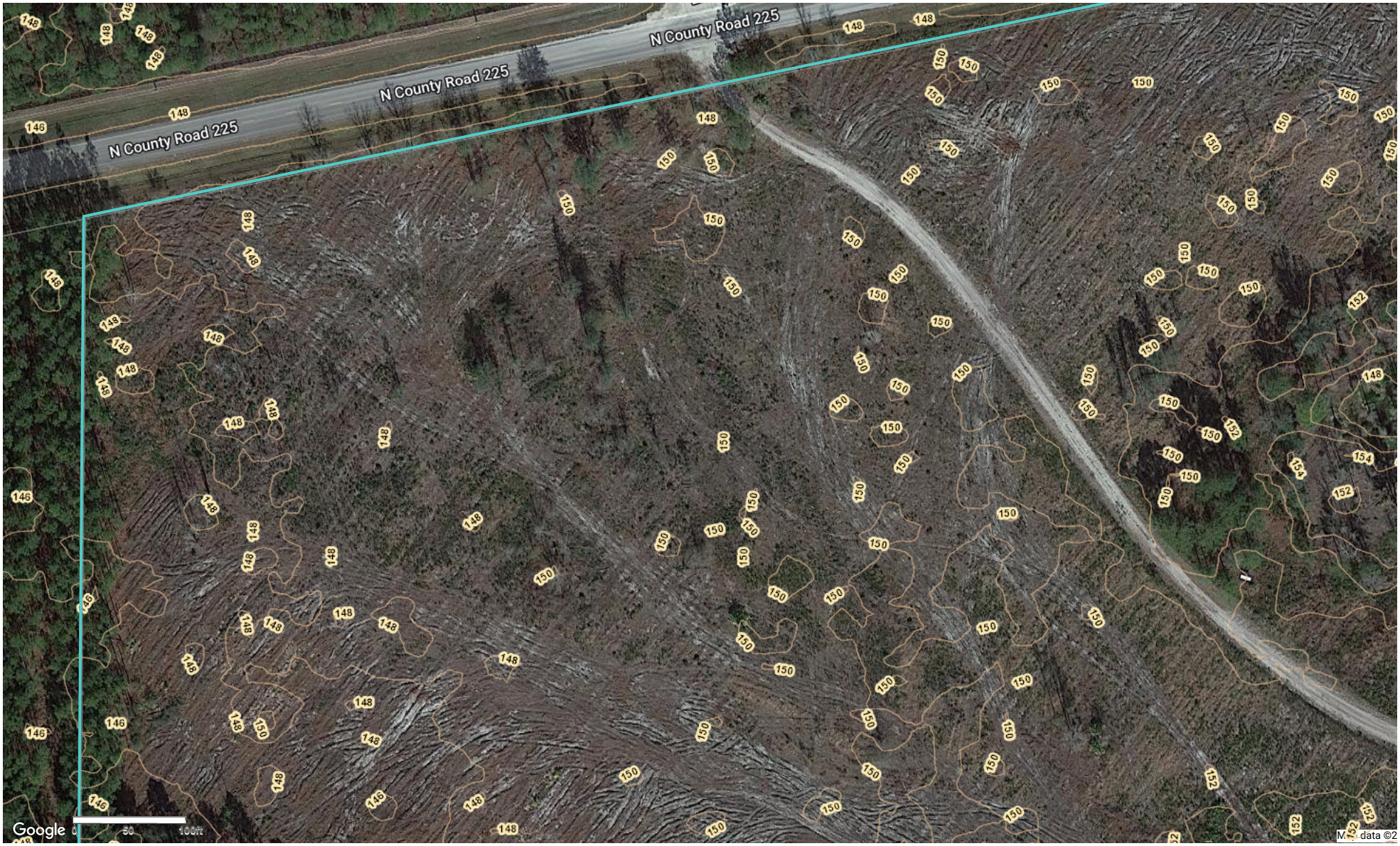
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|---|---|---|---|
| 37 | Zolfo sand | 8.8 | 100.0% |
| **Totals for Area of Interest** | | **8.8** | **100.0%** |

# APPENDIX J

## Alachua County Topography


N County Road 225
N County Road 225
N County Road 225
Google
100ft
data ©2

# APPENDIX K

## Cultural Resource Assessment Survey and SHPO Response

# PHASE I ARCHAEOLOGICAL SURVEY FOR THE NXFL-356 NORTH ALACHUA TELECOMMUNICATIONS PROJECT

**Alachua County, Florida**

Terracon Project No. EQ237257

August 2023

**Prepared by:**
Terracon Consultants, Inc.
8001 Baymeadows Way
Jacksonville, Florida 32256

# ABSTRACT

**Report Title:** Phase I Archaeological Survey for the NXFL-356 North Alachua Telecommunications Project

| | |
|---|---|
| **Site Name:** | NXFL-356 North Alachua |
| **Terracon Project No.** | EQ227256 |
| **Address:** | North County Road 225 |
| **City, County, State:** | Gainesville, Alachua County, Florida 32609 |
| **Lat/Long:** | N 29° 49' 33.71" / W 82° 16'08.01" |
| **Proposed Lease Area:** | Approximately 10,000 square feet (100 ft. x 100 ft.) |
| **Access Road/Utility Easement:** | 450 feet x 30 feet |
| **Proposed Tower Height:** | 235 feet |
| **Tower Type:** | Self-Support |
| **Topo Quad Name/Date:** | Monteocha, FL (2021) USGS 7.5-Minute Quadrangle |
| **Direct Effects APE** | Lease Area and Utility Easement |

On behalf of our client, Terracon Consultants, Inc. (Terracon) conducted a Phase I archaeological survey for the proposed NXFL-356 North Alachua Telecommunications Project located in Alachua County, Florida. The fieldwork was performed on August 4, 2023. Prior to fieldwork, a review of the Florida Master Site File (FMSF) was conducted to identify previously recorded cultural resource surveys and cultural resources within or immediately adjacent to the area of potential effects (APE). As a result, no previously recorded surveys or archaeological sites were identified within the APE for direct effects. No archaeological or aboveground historic resources were encountered within the project area. No further archaeological work is recommended at this time.

Dave Boschi

Dave Boschi, M.A., R.P.A.
Principal Investigator and Author

Blue Nelson, M.A., R.P.A.
Principal Investigator

# TABLE OF CONTENTS

# FIGURES



# TABLES

# 1. PROJECT INFORMATION

Terracon Consultants, Inc. (Terracon) understands that the client is proposing to develop a telecommunication site with associated equipment enclosures under the following specifications:

| | |
|---|---|
| **Site Name:** | NXFL-356 North Alachua |
| **Terracon Project Number:** | EQ227256 |
| **Address:** | North County Road 225 |
| **City, County, State:** | Gainesville, Alachua County, Florida 32609 |
| **Lat/Long:** | N 29° 49' 33.71" / W 82° 16'08.01" |
| **Proposed Lease Area:** | Approximately 10,000 square feet (100 ft. x 100 ft.) |
| **Proposed Tower Height:** | 235 feet |
| **Tower Type:** | Self-Support |
| **Access Road/Utility Easement:** | 450 feet x 30 feet |
| **Topo Quad Name/Date:** | Monteocha, FL (2021) USGS 7.5-Minute Quadrangle |
| **Direct Effects APE:** | Lease Area and Utility Easement |

Federal Communications Commission (FCC) regulations require that the client consider the effects of the proposed undertaking on historic properties in compliance with the *National Programmatic Agreement (NPA) for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission* (Nationwide PA [FCC 04-222]) and Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. A historic property as defined by the FCC as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register maintained by the Secretary of the Interior" (FCC 2004).

In partial fulfillment of these requirements, Terracon conducted a Phase I archaeological survey for the proposed NXFL-356 North Alachua Telecommunications project. The goal of the survey was to determine if National Register of Historic Places (NRHP)-eligible or NRHP-listed historic properties were located within the area of potential effects (APE). The APEs for direct effects for this project are summarized in the above table. All work complied with the cultural resources provisions of Chapter 267, Florida Statutes, as well as the Florida Division of Historical Resources (DHR) recommendations for such projects as stipulated in the Division's Historic Preservation Compliance Review Program manual and Rule Chapter 1A-46, Florida Administrative Code.

# 2. PROJECT DESCRIPTION

The client is proposing to construct a telecommunications tower south of North County Road 225 in the City of Gainesville, Alachua County, Florida (**Figure 2-1**). The site is located south of North County Road 225 at geographic coordinates: Latitude 29.826031, Longitude -82.268892 (UTM Zone 17R E377400, N3300184). The proposed tower consists of a 235-foot self-support monopole tower situated within a 10,000-square foot lease area. An approximate 450-foot by 30-foot access road and utility easement will also be constructed utilizing an existing crushed rock/dirt road.

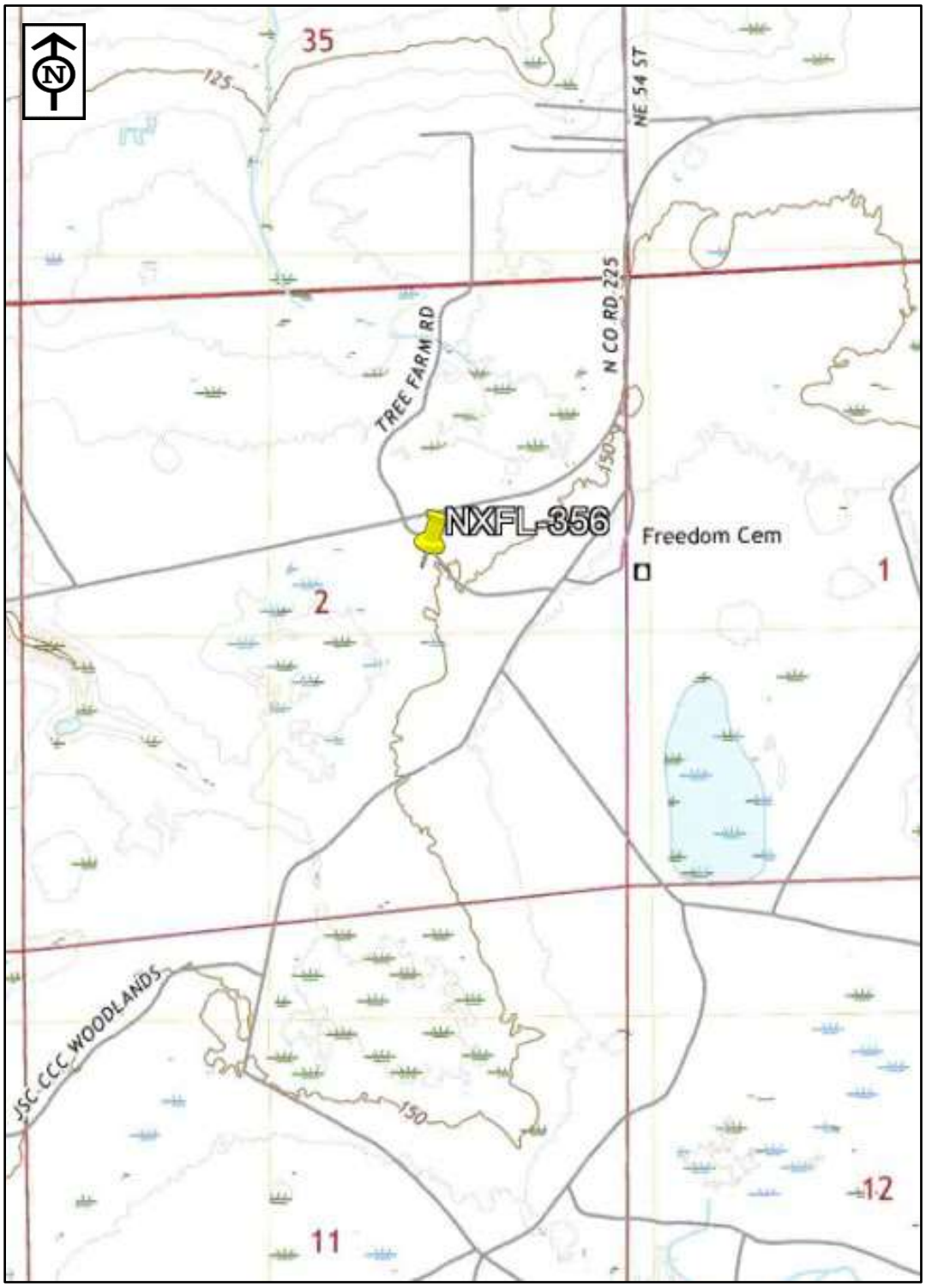



**Figure 2-1. NXFL-356 North Alachua Telecommunications Project location, Alachua County Florida (USGS *Monteocha, Florida* [2021] topographic map, scale 1:24,000).**

# 3. ENVIRONMENTAL CONTEXT

The project area is located within the High Flatwoods subdistrict, within the larger Sea Island District of the Atlantic Coastal Plain Section (Brooks 1981). The High Flatwoods are described as a poorly dissected upland plain with sluggish surficial drainages, with flatwoods and river swamps (Brooks 1981). Monteocha Creek flows just over a mile to the west of the APE; in addition, there are no less than five wetlands within one mile of the APE, with small, unnamed streams. The immediate vicinity of the project area is occupied by young planted pine with no standing water. At the time of the archaeological survey, surface visibility was low due to the pine leaf litter (**Figure 3-1**). The area has defined rows and furrows; silvicultural activities have disturbed the soil to a minor degree. The entire project area is comprised of somewhat poorly drained Zolfo sand, as mapped by the United States Department of Agriculture (USDA 1985).

**Figure 3-1. Typical environment within the APE, view west.**

**Paleoenvironment**

By the end of the Pleistocene epoch (ca. 18,000-12,000 before present [BP]), Florida was considerably cooler and arid relative to present conditions. Around 20,000 BP a gradual warming trend began as glaciers began to recede across the North American continent. During this period, the southeast was primarily comprised of coniferous forests, and large mammal species known as megafauna, such as, mammoth, mastodon, giant ground sloth, and bison, roamed across the landscape. Sea levels rose rapidly across the globe, resulting in the creation of peninsular Florida's freshwater table.

The earth experienced a brief reversal of the warmer trending temperatures between 12,900 to 11,700 years BP. This period is known as the Younger Dryas, which resulted in a temporary return to glacial conditions. During this period, the shoreline was likely 40 meters (m) lower than present-day, indicating the shoreline could have been as many as 47 nautical miles (140 kilometers [km]) from current coastline (Faught 2004). During this time landscape of The Florida landscape was nearly twice the current size during this period.

Between 10,000 to 8,000 BP, glacial melt resulted in rapid horizontal transgression along the low-sloping continental shelf of the Gulf of Mexico, which quickly inundating the landscape as sea levels increased (Faught 2004). Also, during this time 33 genera of large mammals died off, resulting in the mass extinction of North American megafauna (Anderson 1990). By 9,000 BP, Florida experienced warmer more arid conditions and by 8,000 BP (Middle Holocene) sea levels had risen, altering the state's hydrology, and forming Florida's salt marshes and many of the lakes in the central portion of the state (Miller, 1998; Thulman, 2009; Faught, 2004; Watts & Hansen, 1988). Although sea levels continue to fluctuate, environmental and climatic conditions stabilized sometime between 4000 BP and 5000 BP, (Watts, 1971).

# 4. CULTURAL HISTORY

The following Pre-Columbian cultural context utilizes the date notation BP or Before Present, to better help understand the passage of time. Before Present dates assumes the scientifically accepted arbitrary date of 1950 as the baseline date to establish the age of Pre-Columbian sites. Common Era dates correspond to dates established on the standard Gregorian Calendar.

## Pre-Columbian Context

### Paleoindian Period (15,000 – 10,000 BP)

The Paleoindian Period is the earliest occupation for which there is archaeological evidence of in the Western Hemisphere. It began during the late Pleistocene epoch and ended around 10,000 BP. The earliest evidence for human occupation in the southeastern United States (US) dates to approximately 15,000 years ago. Early peoples likely migrated from Northeastern Asia towards the end stages of the last glacial period, which was marked by drier climates, cooler annual temperatures, and significantly lower sea levels. Alternative theories suggest migratory routes may have voyaged along the Pacific and Atlantic coasts by boats or utilizing exposed coastlines (Anderson and Gillam 2000; Bradley and Stanford 2004; Faught 2008). Because sea levels were significantly lower during this period, many early Paleoindian sites have since been submerged along the continental shelf in the Gulf of Mexico (Faught 2004; Faught and Gusick 2011). Most known terrestrial sites dating to this period are found around karstic regions in the center of the state. Permanent freshwater sources such as sinkholes and springs in proximity to exposed Tertiary-age limestone attracted these nomadic groups. The Clovis culture has long been the earliest widely acknowledged culture in North America; however, some submerged archaeological investigations are generating compelling new evidence, suggesting a human presence

that predates the Clovis culture, which is identified by the presence of a distinct lanceolate-shaped projectile point/knife (PP/K) tool type. Investigations at the Page-Ladson site in the Aucilla River has yielded stone tools in association with butchered megafaunal remains dating to around 15,000 BP. This evidence has pushed back the previously established timeline for human presence in Florida and the Southeast (Halligan et al. 2016). Conventional archaeology divides the Paleoindian Period into three stages. The Early Paleoindian Period (ca. 15,000 – 12,500 BP) is associated with the exploration and colonization of the Southeast; the Middle Paleoindian Period (ca. 12,500 – 10,500 BP) is associated with the establishment of cultural variations and the settling of areas; and the Late Paleoindian Period (ca. 10,500 – 10,000 BP) is marked by wetter climates, rising sea levels, and the transition to Holocene conditions (Anderson 1990; Bense 1994; Milanich 1994). Evidence suggests Paleoindian settlement patterns focused on specific river drainage basins and maintained interactive networks with other groups (Thulman 2006).

Subsistence studies indicate that Paleoindians likely hunted and gathered a variety of animal and plant species. Paleoindians hunted fauna and megafauna. Studies have indicated that mammoth seasonally migrated north - south, suggesting Paleoindians may have migrated along these routes in conjunction with the migratory herds (Milanich 1998). The Florida Paleoindian diet also included, various turtle, gopher tortoise, freshwater shellfish, fish, deer, diamondback rattlesnake, racoon, opossum, rabbit, muskrat, wood ibis, panther, and frogs (Milanich 1998).

Due to the great age of these sites, lithic material is often the only cultural material recovered at Paleoindian sites. Early and Middle Paleoindian periods are characterized by the presence of lanceolate-shaped, chipped stone projectile points exhibiting convex or straight bases (Bense 1994:41-42). These artifacts are often made of fine-grained chert worked to long, thin, bifacially-worked blades, often exhibiting a flute, or long shallow flake scar, on each face. The most prevalent Early and Middle Paleoindian projectile points found in Florida include the Clovis, Suwannee, and Simpson types, with the Suwannee and Simpson. Late Paleoindian lithic tool types include smaller, serrated, and basally thinned projectile points (Anderson 1990; Bense 1994; Faught 2004; Faught and Gusick 2011; Milanich 1994). Additionally, microliths, or small lithic flakes or flake fragments, which were utilized as small lithic tools may have been used during the Late Paleoindian Period.

## Archaic Period (10,000 – 2,000 BP)

The Archaic Period (10,000 – 2,000 BP) marks the longest stage of cultural development in the Southeastern US. Beginning around 10,000 BP Florida experienced a gradual warming trend, leading to rising sea levels, which reduced the width of Florida considerably, and the proliferation of oak dominated hammocks across the state (Milanich 1994; Allison et al. 2009; Anderson et al. 2017). The climate remained relatively stable between the end of the Archaic Period until the late twentieth century (Allison et al. 2009; Anderson et al. 2017). Gradual climatic and environmental changes led to the emergence of new plant and animal communities, resulting in shifts in human subsistence strategies. As human populations increased in size and number, settlements with regionally specific adaptations and material cultures developed into diversified small-scale economies (Bense 1994; Milanich 1994). The Archaic Period is divided into three subperiods: Early (10,000 – 8,500 BP), Middle (8,500 – 6,000 BP), and Late (6,000 – 2,500 BP).

The climate during the Early Archaic Early Period was warmer in summer and colder during winter than present day. Evidence indicates that Florida experienced drought-like conditions for about three centuries at the beginning of the Holcene. Archaic groups exhibited similar settlement patterns and subsistence methods to their Paleoindian ancestors. Early Archaic site types are generally characterized

as base camps, which are usually larger, or extractive stations, which tend to be smaller. These groups established seasonal specialized camps close to available resources, taking advantage of local food sources by natural resources (Milanich 1994). In the fall when food was more bountiful, it is likely that smaller groups gathered together at larger basecamps (Bense 1994). Cultural material associated with Early Archaic occupations is generally comprised of lithic scatters consisting of lithic debitage fragments and an occasional PP/K. Archaic PP/Ks are smaller, and exhibit side- and corner-notched variants. Early Archaic PP/K types found in Florida include Kirk, Bolen, Santa Fe, and Tallahassee types. The reduction of PP/K size during the Archaic Period suggests a shift to hunting smaller game.

The Windover Pond site, discovered in 1982, is one of the most important Early Archaic sites in Florida. During road construction activities across a small pond in Brevard County, human remains were discovered protruding from the peat that was being removed from the pond. Subsequent archaeological excavations at the Windover Pond site utilized coffer dams and well points to facilitate the excavation of half of the pond, which resulted in the excavation and identification of 168 human interments (Milanich 1998). The burials were wrapped in cloth and staked to the base of the shallow pond with sticks. Due to the wet anaerobic conditions of the burials, 91 specimens yielded well-preserved human brain matter. Several even exhibited preserved stomach contents, which allowed for an unprecedented analysis of the Early Archaic diet. Radiocarbon dates indicate the site was utilized for over a millennium, yielding dates ranging from 8,200 to 7,000 BP (Doran 2002).

Middle Archaic Period sites are relatively rare in northwest Florida. This may be a result of the Middle Archaic Period coinciding with the Hypsithermal Period, a climatic episode where temperatures peaked, and precipitation declined. While still utilizing smaller seasonal camps, Middle Archaic groups shifted settlement practices, establishing basecamps on floodplains to take advantage of natural resources (Milanich 1994). Middle Archaic subsistence practices also shifted slightly. Although mammals, such as deer and rabbit, remained important sources of protein, Middle Archaic groups relied more on a diverse riverine diet that included oysters, snails, mussels, water birds, water snakes, alligators, and other prominent wetland species (Milanich 1998). Human populations continued to increase during this period. Although seasonal migrations persisted, larger, longer-term settlements were established, evidence includes a greater number of shell middens during the Middle Archaic, introduction of charnel houses, and secondary burial practices in the region (Milanich 1994). While some Middle Archaic populations resided on floodplains and within the Florida river valleys, they also made seasonal trips to the coast during resource procurement; however, based on analysis at some coastal shell middens, some of these coastal sites were occupied throughout the year (Bond 1992; Piatek 1994; Russo and Ste. Claire 1992; Ste Claire 1990).

Middle Archaic PP/Ks are more prevalent in the archaeological record than earlier PP/K types in Florida, and include broad blade, stemmed types including Hardee, Sumter, Alachua, Putnam, and Newnan (Smith and Bond 1984). Other lithic tools that appear during this period include specialized tools such as microliths, large lithic choppers, and burins (Bense 1994). Tool types became larger and more diverse, suggesting people were occupying settlements longer, which resulted in the accumulation of more possessions, subsequently leaving behind larger archaeological signatures. The presence of large choppers indicates that larger construction projects were undertaken (Milanich 1998). Although Middle Archaic populations continued to exploit the same food sources as Early Archaic populations, regional adaptions and patterns began to emerge. Sites from this period exhibit characteristics that can be categorized into specific site types, including small seasonal camps, larger central-base settlements, quarries, and cemeteries (Milanich 1994).

Shifts in Middle Archaic subsistence patterns are directly related to an increased dependency on riverine resources, demonstrated by an increase in the number of shell middens on the banks of the St. Johns River. While seasonal migrations continued, a shift towards more permanent residencies is indicated by greater number of Middle Archaic shell middens, charnel houses, and secondary burial practices in the region (Milanich 1994). These changes are associated with the development of the Mount Taylor culture that spread throughout east Florida during the Middle Archaic period (7350 – 4950 BP). These groups had not yet adopted early forms of pottery and are largely characterized by their chipped stone tool and microlithic assemblages, along with worked bone and shell implements (Bullen 1975; Randall 2013).

As populations continued to increase, a trend towards sedentism continued. The Late Archaic is characterized by the presence and introduction of ceramic technology around 4,100 BP. The earliest pottery tradition in North America, introduced by populations in Coastal Georgia and the Carolina Piedmont, was tempered with vegetal fibers such as Spanish Moss or Palmetto fibers (Milanich 1994; Sassaman 2003). Early fiber-tempered ceramic vessels were generally undecorated, hand-molded, and exhibit thicker vessel walls, whereas later fiber-tempered ceramic vessels exhibit thinner vessel walls, which were formed by coiling the pottery during production. After 3,600 BP, geometric designs and punctations appear, allowing to differentiate between earlier and later Late Archaic sites (Milanich 1994).

## Woodland Period (2,500 BP – 100 AD)

Following the Archaic period, population levels in east Florida continued to rise. Increased contact between Florida Indians and other indigenous groups to the north and west is evidenced by the presence of exotic materials such as non-local stone and copper artifacts. Settlement and subsistence strategies remained consistent from that of the previous periods. Hunting, fishing, and collecting wild plant resources remained as staple subsistence practices of Woodland groups; however, the collection and use of nuts became more widespread. Storage pits, presumably for storing nuts and seeds, become extensively used during this period (Hudson 1989). Innovations, such as, storage, the increased use of pottery, and rudimentary agriculture, allowed for a certain level of sedentism. It is during this time that we have the first evidence for permanent housing (Hudson 1989). It is also during this time that elaborate mortuary customs are adopted, and monumental earthworks and burial mounds begin to appear. Sites associated with this period show a predilection for living near the floodplains of rivers to exploit native seed-bearing plants that thrived here (Hudson 1989). With nutrient rich soils replenished by occasional floods, floodplains became fertile occupational zones that would help lead to the expansion of agriculture.

Around 1150 BP., corn was acquired by the Woodland people of the east (Hudson 1989). This type of corn, commonly called "tropical flint", was a small ear that exhibited 10-16 rows of kernels (Hudson 1989). Much smaller than what we identify as an ear of corn today, "tropical flint" was likely not a staple food item, as it disappears from the archaeological record from around AD 400 and does not return until the beginning of the Mississippian Period, around AD 900 (Hudson 1989).

In Northeast Florida, the beginning of the Woodland Period is marked by the presence of Deptford Period pottery. Deptford pottery is identified by coarse sand or grit-tempered wares consisting primarily of plain, check-stamped, and simple-stamped surface treatments (Ashley 2008). Although the Deptford Period dates to between 2550 BP to AD 400 along the Georgia and South Carolina Coasts, evidence suggests a tighter temporal occupation in Northeast Florida (2450 BP to AD 200) (Ashley 2008).

Following the Deptford Period in Northeast Florida, and beginning around AD 100, a nondescript, sand-tempered plain pottery type dominates the area for the few centuries (Ashley 2008). This nondescript pottery type represents a local pottery tradition continuum that fits between Deptford series pottery and early Swift Creek series pottery of the Middle Woodland Period (Ashley 2008).

Swift Creek pottery is a distinct pottery tradition that exhibits intricate curvilinear and rectilinear designs that area applied with a wooden paddle with raised designs. Although this pottery was widely used in Northeast Florida and Southeast Georgia, specific designs appear to vary by region (Williams and Elliot 1998). The earliest locally made Swift Creek pottery type includes charcoal tempering and exhibit complicated stamping with notched, scalloped, and folded rim types (Ashley and Wallis 2006). This ceramic type was used in domestic and mortuary contexts. The "charcoal tempered complex" (AD 300-500) was confined to sites along the St. Johns River and are rarely associated with Weeden Island pottery (Ashley 2008). From AD 500-850 Swift Creek pottery from sites on the south side of the St. Johns River exhibit sand-tempering, while sites found on the north side of the river tend to exhibit grit-tempering similar to that found in Southeast Georgia (Ashley and Wallis 2006). It is during this period that Weeden Island pottery is found in small numbers in mounds and middens (Ashley 2008).

The terminal Woodland Period is marked in Northeast Florida by the appearance of Colorinda phase pottery (AD 850-900) (Ashley 2008). During this period, the elaborate designs on the Swift Creek pottery are replaced by mundane wares as participation in long distance trade networks subsided. Colorinda is distinguished by the inclusion of crushed St. Johns (spicule-tempered) pottery sherds and can include crushed sand-tempered sherd as well (Sears 1957). Colorinda is regionally specific to Northeast Florida, occurring from Amelia Island in the north to Jacksonville University in the south (Ashley 2008).

### Mississippian Period (1,000 – 500 BP)

Following the Woodland period, cultural developments in the interior of North America continued to shape the socioeconomic landscape of the Southeast into an ever more complex network of dynamic territories and cultures. The Mississippian Period in Northeast Florida is subdivided into three sub-groups including the St. Johns II (AD 900-1250/1300), St. Marys II (AD 1250/1300-1450/1500, and the San Pedro (AD 1450/1500-1625/1650) (Ashley 2008). The Mississippian period is typically marked by heightened sociopolitical and religious complexities, a widespread and intense reliance on maize agriculture, and ranked and hierarchically organized societies that fluctuated throughout the Southeast from about AD 900 to 1550. Many Southeastern cultures developed into chiefdom-level societies linked together by shared traditions such as the production of shell-tempered pottery, a maize-based agricultural economy, the construction of flat-topped mounds, the use of wall-trenches to build domestic structures, increasing social stratification and specialization, and participation in a central belief system that supported wide-ranging spheres of interaction across the Southeast (Anderson and Sassaman 2012:165-173; Ashley and White 2012; Bense 1994; Blitz 2010; Steponaitis 1986).

Although many indigenous societies shared general cultural features, the Mississippian period was an ever-changing and diverse region. Chiefdoms rose and fell, rarely lasting for more than a century, and the movement and displacement of populations affected social and political landscapes across the Mississippian world. From the Atlantic coast of Georgia and South Carolina to eastern Oklahoma, and from the Gulf of Mexico northward to Wisconsin, Mississippian societies developed along unique cultural trajectories, all impacted by internal and external dynamics and influenced by diverse local histories, environments, and traditions (Anderson and Sassaman 2012; Ashley and White 2012; Cobb 2003; Cobb and Garrow 1996).

Of course, not all indigenous societies took part in a Mississippian way of life. Here, the term "Mississippian" is used to describe a cultural manifestation and display of commonalities and traits. The "Mississippian Period" refers to the specific temporal period in which these characteristics proliferated (Ashley and White 2012:8, 10; Cobb and Garrow 1996:21-22; Adelsberger and Kidder 2007). During this time, many areas in the lower Southeast lay at the edge of the Mississippian world and many groups developed into societies that participated in a lifestyle enveloped in Mississippian cultural patterns. However, some groups apart from the interior Southeast, such as those in peninsular Florida and coastal Georgia, never fully adopted agriculture-based economies or hierarchically organized systems, though many still communicated and interacted with the Mississippian world (Anderson and Sassaman 2012:159; Ashley and White 2012:11).

In Northeast Florida, the Mississippian period (AD 750-1565) is signaled by the appearance of check stamped pottery into the St. Johns region and is also known as the St. Johns II period. Settlement and subsistence strategies changed little from the preceding St. Johns I period, though there was an increase in non-riverine and interior sites as populations continued to increase in size and number. Village sites are often found in hammocks along the St. Johns River and around coastal lagoons, and related burial sites sometimes occur nearby. Although intense maize-based agriculture was never adopted in Florida, cultigens such as squash and gourds continued to play an important role in the lives of Northeast Florida Indians. Some areas in Northeast Florida display a connection with the larger Mississippian world, such as at the Mill Cove Complex near the mouth of the St. Johns River where evidence of the construction of platform mounds is present (Ashley and White 2012; Milanich 1994; Miller 1998; Rouse 1951).

The middle Mississippian Period in Northeast Florida is marked by the presence of a thin-walled, sand-tempered fine cord-marked pottery type referred to as St. Marys II. Originally believed to be associated with the Savannah cord-mark traditions; however, the Florida cord-marked wares differ in type and assemblage sizes and exhibit folded rims more similar in morphology to the Ocmulgee Cord-marked III types (Ashley and Rolland 2002). The production of this pottery type is believed to be locally made by Ocmulgee immigrants who moved into the area sometime around 1250 (Ashley and Rolland 2002).

Around the fifteenth century, Mississippian/Protohistoric period ceramics in Florida become thicker walled vessels and the cordage used for making the cord-marks became thicker. Known as San Pedro pottery, this ceramic type was tempered with sand and grog (pulverized pottery fragments) early, but grog tempering with cob marking surface treatments become the dominant type (Ashley 2008). The emergence of San Pedro pottery coincides with the first appearance of preserved maize in Northeast Florida (Ashley 2008).

# Historical Review

## European Contact & the First Spanish Period (1513-1763 CE)

Florida's first authorized European exploration was in 1513 by Juan Ponce de León of Spain who was in search of gold and slaves (Griffin 1983:18). In 1519, Alonso Alvarez de Pineda led an expedition into the Gulf of Mexico. Sailing from the Florida Keys to Veracruz, Mexico, the expedition mapped the coastline from Florida to Texas creating the first map of the region Pineda named *Amichel* (Tebeau 1980). The first Europeans to document their travels in the region of northwest Florida were surviving

crew members of the ill-fated Pánfilo de Narváez expedition in 1528. Of the 600 crew and passengers who set sail from Santo Domingo, Hispaniola (modern Dominican Republic) only four survived. Of the four surviving castaways, three were Spanish, Álvar Núñez Cabeza de Vaca, Alonso del Castillo Maldonado, Andrés Dorantes de Carranza, and one was an enslaved African, Estevanico. During the expedition's march across Florida, Cabeza de Vaca documented their experiences which included illness, death, and frequent attacks by Native Americans. Plagued by sickness, starvation, attacks by Native Americans, and desertion, The Spanish decided to leave Florida, heading west along the Gulf to Texas, the nearest Spanish settlement. The Spanish constructed large rafts using palmetto husks and fibers, juniper for oars, clothing was stitched together to make sails, iron tools were melted down to make nails, horsehair was used for ropes and tanned horse skin to carry water. Five rafts or barges carrying nearly 50 people each passed Panama City en route to the Gulf of Mexico where a westerly course was plotted. During this trip, tragedy struck when a storm hit the sailors killing many and stranding survivors onto an island off the coast of Texas where they were enslaved by local Native Americans (Cabeza De Vaca 1542 [1904]). The four previously mentioned survivors continued on and wandered around the American southwest and northern Mexico for years.

In May 1539, Spanish conquistador Hernando de Soto landed south of Tampa Bay in search of gold. The de Soto expedition, which included nine ships, over 600 men, and 220 horses traveled inland to the Timucuan village of Ocale, (approximately 25 miles southwest of present-day Ocala), and then north and west into the eastern panhandle (Hann and McEwan 1998). Rather than engage in peaceful negotiations, De Soto, like previous conquistadors, dealt with Native Americans with brutality. After encountering stiff resistance by the Apalachee near present-day Tallahassee, the Spanish finally gained control of the large principal village of Anhaica Apalache. Due to the ample supplies controlled by the village De Soto decided to camp there prior to departing northeast into Georgia. This five-month bivouac was characterized by almost constant attacks by angry natives, that on two occasions burned the settlement during the De Soto occupation (Ewen and Hann 1998: 8). Once the Spanish left Florida, they continued into Georgia, South Carolina, and North Carolina before traversing west across much of the southeastern US. De Soto died of an illness at the native village of Guachoya on the western banks of the Mississippi River in the area of Arkansas, Mississippi, or Louisiana (Ewen and Hann 1998: 8). During the de Soto trek across the Southeast, Diego Maldando, de Soto's pilot, entered Pensacola Bay, approximately 90 miles to the west of NSA Panama City (Hudson 1989).

The First Spanish Period, settlement was primarily focused along the coasts, particularly in Pensacola and St. Augustine. In 1559, Spanish conquistador Tristán de Luna y Arellano established the first European settlement in Florida. The Luna Colony consisted of 11 ships and more than 1500 settlers and soldiers, including Africans, Mexican Indians, Dominican missionaries, and about 100 Aztec warriors (Worth 2008). The Luna expedition, which landed in modern Pensacola Bay-the Bay of Auchuse, faced multiple setbacks including hurricanes and disease, and Luna himself was viewed as an ineffective leader, being replaced in 1561 when the colony abandoned the settlement and went to Cuba and Mexico (Worth 2008). Following the disastrous results of the Luna colony, it would be almost a century and a half before Europeans tried to settle northwest Florida again.

In 1565, Pedro Menedez de Aviles established a garrison near St. Augustine to expel French explorers and settlers in the region. By order of the Spanish King, Menedez was tasked with consolidating Spain's power within Florida by Christianizing Native Americans and making them subjects of the royal crown (Tebeau 1980). Following a petition from Menendez, the Jesuit Order provided missionaries to St. Augustine in 1566 to attempt to convert and christianize the natives (Thomas 1990). The Jesuits focused their attention on villages within proximity to St. Augustine but were unable to convert many people. Deterred, the Jesuits abandoned Florida by 1572 (Thomas 1990; Milanich 1995). Subsequently,

Menedez petitioned the Franciscan Order for missionaries to continue attempts to convert the natives of La Florida. The Jesuits complied, assigning friars to Santa Elena (South Carolina) in 1573 and St. Augustine in 1578 (Milanich 1995).

The Franciscans sought to establish missions within larger pre-existing native settlements. These missions would operate as bases for the missionaries who would travel among small neighboring communities to convert the indigenous population. Spanish missions eventually established a link between St. Augustine in the east with Mission San Luis in the Apalachee region, near present-day Tallahassee. During the sixteenth century, the Apalachee province prospered. By the time the Spanish missions arrived the Apalachee region stretched from the Gulf of Mexico to the border of present-day Georgia and from the Aucilla River west to the Ochlockonee and was populated by approximately 50,000 (Hann and McEwan 1998). Initially the Apalachee fiercely resisted the Spanish but by 1612, some Apalachee chiefs requested missionaries; however, despite this, missionaries did not arrive until 1633, quickly establishing nine missions in the region (Jones et al. 1991; Hann and McEwan 1998). Resistance to the Spanish continued throughout the Mission Period, even among other Apalachee who burned seven missions in 1647 (Hann 1990; Jones et al. 1991).

In 1656, twelve Timucuan and Apalachee chiefs revolted against the Spanish pressure by killing three Franciscan friars, soldiers, and people in charge of Spanish cattle ranches (Tebeau 1980: 49). As a result, Governor Diego de Rebolledo punished the rebels by strangling eleven men with garrotes and forcing 26 into hard manual labor constructing fortifications in St. Augustine (Tebeau 1980 49). Apalachee with little or no involvement in the revolt were spared punishment, but to ensure their continued cooperation 13 soldiers were garrisoned at San Luis (Tebeau 1980 49). Due to proximity to the missions in the west, the juncture of the Wakulla and St. Marks Rivers at present-day St. Marks became an important strategic shipping port for the Spanish. The construction of fortifications was directed by order of the Spanish crown around 1660; however, it would be a decade before a wooden fort was constructed (NPS 1972). In 1682, the fort was easily captured by a raiding party of French, British, and Native Americans, the results of which scattered the 45 person Spanish garrison and 400 Spanish-aligned Native Americans (NPS 1972). Once the Spanish regained control of the fort, a second wooden fort with better fortifications was constructed and a sizeable settlement developed around the fort (NPS 1972).

By the end of the seventeenth century, much of the eastern U.S. was being claimed by various European kingdoms, challenging Spain for La Florida. While the Spanish were reinforcing the Atlantic Coast to prevent the British from pushing south, the French were navigating the Mississippi south from Canada via the Great Lakes. By 1682, Robert Cavelier Sieur de la Salle reached the Gulf of Mexico claiming the Mississippi River Valley in the name of France (Tebeau 1980: 60). In response, the Spanish launched a series of expeditions to locate the French, who had overshot the Mississippi River and ended up in Texas. Between 1685-1690, the Spanish attempted to locate the French along the Gulf of Mexico during which time they rediscovered Pensacola Bay (Tebeau 1980: 60). Although the La Salle colony was decimated by local natives in 1687, the Spanish decided to reestablish a settlement at Pensacola to maintain a presence in the region and to neutralize threats to Spanish land claims (Tebeau 1980: 60).

It was not until the end of 1698 that the Spanish arrived to settle Pensacola and construct Fort San Carlos de Austria and the Presido Maria de Galve (Tebeau 1980: 61; Worth 2008). By the turn of the century, the sixteenth century native population that the Luna Colony encountered had left a century earlier and the immigrant population of the seventeenth century, the Pensacola Indians, was in rapid decline (Worth 2008). Between 1659-1680 and 1685-1715, Native American groups armed by the British were engaged in Indian slave raids across the margins of Spanish Florida (Worth 2008). These

raids had devastating effects on the indigenous population in proximity to Pensacola Bay prior to the return of the Spanish; however, they were also responsible for the settlement of Apalachee in western Florida (Worth 2008).

In 1704, the British and their allies the Creek Indians led a devastating raid on the Apalache mission province, which was partly responsible for the supply of Presidio Maria de Galve, annihilating the Apalachee (Worth 2008). Fort San Marcos and other settlements in the region were abandoned with some evacuating to Pensacola Bay to remain under the protection of the Spanish. Subsequent slaving raids on Timucuan missions resulted the withdrawal of all Florida missions to St. Augustine by 1706 (Worth 2008). In 1718, a detachment of Spanish troops under the command Captain Joseph Primo de Rivera returned to Fort San Carlos de Austria and constructed a third stone fort (NRHP 1972). This fort was held by the Spanish until 1763 when it was acquired by the British under a settlement of the Treaty of Paris (NRHP 1972).

## British Period (AD 1763 – 1783)

At the end of the Seven-Year's War in 1763, the Treaty of Paris surrendered Florida to England in exchange for Cuba. In England, the British passed settlement and development policies which awarded large tracts of land to the social elite in exchange for bankrolling commercial and agricultural enterprises (Schafer 2001). Maritime trade which had been illegal under Spanish rule became legitimate under English rule, and Florida underwent an economic revival, especially in agriculture and naval stores.

Following the British acquisition of Florida, England began mapping the Gulf Coast. In 1766, the coastline was mapped between Pensacola and Cape San Blas, which included St. Andrews Bay (Ware 1982: 14). Due to its narrow channels and sandbars, St. Andrew's Bay was determined to have limited military importance to the British Navy (Ware 1982: 64).

As a replacement for the Spanish Mission system in Florida, the British established trading posts across state. Florida's native population had decreased significantly due to war and disease, and around this time Creek Indians from Georgia and the Carolinas began to migrate into the state. The Spanish referred to these people as "cimarrone" meaning runaway or wild. It is thought that the term Seminole is derived from this expression. The Seminoles traded furs, cattle, and wild game for guns, iron tools, and fabric. Enslaved people from the Carolinas and Georgia fled bondage and established new lives in Florida. In some cases, they were able to establish isolated communities known as "maroons". Some maroon communities in Florida likely managed to evade notice for generations, as insular self-sufficient communities. Some that fled bondage sought refuge with the Seminoles. Generally, the Seminoles helped these refugees establish black settlements on the periphery of Seminole villages. Conversely, some became important figures within the Seminole community as translators and warriors.

## The Second Spanish Period (AD 1784 – 1821)

With the transfer of ownership, residents of Florida experienced a series of changes. British loyalists, many of whom recently moved to Florida to escape revolution fervor in other British colonies, now had to leave again. British loyalists who refused to swear loyalty to Spain forfeited their wealth and left Florida over an 18-month period. Back in control of its original colony, Spain worked to make Florida a secure, stable, and prosperous settlement (Cusick 2000). The Spanish government attempted to populate their recovered territory the same way the English had, through land grants, but they could not keep up with the influx of American settlers moving south. During this period, Spanish leadership had some difficulty unifying and exercising control over the diverse groups then living in Florida: Spanish

moving back in from other parts of the empire, Americans, Minorcans remaining from the British period, free blacks, and Seminole and Creek Indians, many of whom preferred the trading relationships they had developed with the British (Tebeau 1980). Tax exemptions, land grants, and subsidiaries were used to persuade Catholic immigrants and locally born Floridanos (those who had escaped to Cuba when the English arrived) to establish new plantations or to acquire the ones left behind by the British (Landers 2000b: 122).

The new Spanish governor in St. Augustine, Vicente Manuel de Zéspedes y Velasco, wrote that in 1785 Florida "was a province that has just died for England and is in the process of being reborn for Spain" (Lockey and Caughey 1949:728). After overseeing the evacuation of British subjects, Zéspedes' priority was to make Florida a stable and prosperous settlement. Florida was once again under Spanish control; however, Spain chose to keep the English divisions of the territory in place, leaving the state split into East and West provinces (Tanner 1989; Cusick 2000:173).

In many ways, the Florida colonies were once again a series of military outposts on the fringe of Spain's New World Empire. East Florida's population fell to under 2,000 whites and a slightly larger number of enslaved African Americans, while the non-Native population of West Florida was 3,660 (Tebeau 1980). Many British plantations lay abandoned.

As American settlers moved into West Florida, Spanish rule in the northern portions of the state began to weaken. In 1810, these American settlers declared independence from Spain and were supported by Presidential and Congressional claims that the region fell under the Louisiana purchase of 1803. After negotiations between Don Luis de Onís and the U.S. Government began in 1815 and in 1821, the U.S. finally acquired the territory. Predictably, clashes between European American settlers and the Seminoles characterized the early decades of the nineteenth century. American loss of life prompted the appointment of General Jackson to establish stability in Florida by the removal of the Native Americans. In 1818, Andrew Jackson led a large well-armed force, predominantly comprised of Creek warriors, against the Seminoles in Florida. Out gunned, the Seminoles were routed as Jackson's army marched across north Florida capturing the territory between St. Marks, south of Tallahassee, to Pensacola. Jackson executed British citizens accused of inciting non-whites and runaways, who were viewed as a threat to the state of Georgia. These American hostilities initiated the First Seminole War.

## American Territorial/Early Statehood Periods (AD 1821 – 1861)

The Onís-Adams Treaty (also called the Transcontinental Treaty), made in 1819 between the US and Spain, was ratified in 1821, and defined the western limits of the Louisiana Purchase without requiring additional compensation to Spain (Office of the Historian, U.S. State Department 2016). Responsibility for establishing Florida's new government was given to the newly appointed Commissioner Andrew Jackson, who was granted full provisional powers of Governor for the duration of reorganization. Within weeks, he had divided Florida into two counties. The area previously called West Florida became Escambia County, and the former East Florida became St. Johns County (Gannon 2003). Jackson established county courts and mayors in the former colonial capitals of St. Augustine and Pensacola and were joined with a new capital established at Tallahassee, a location halfway between St. Augustine and Pensacola (Gannon 2003). New county divisions were created across the territory, and in coming decades claims to land were contested through years of lawsuits as settlers from Spanish, English, and American periods, as well as Native Americans, competed over the same areas (Gannon 2003).

Around 5,000 Seminoles were living in Florida when it became a U.S. territory in 1821. The explicit position of the government was that these Indians should be removed to make way for anticipated

waves of white settlers into the new territory. Sharing this motivation were politically powerful slave owners who wanted to eliminate the refuge for runaway slaves that the Seminoles provided. Since North Florida was the primary location of European settlement, the first step was to confine the Seminoles to a 4,000,000-acre reservation taking up much of the central portion of Florida, south of present-day Ocala. This was accomplished through the Treaty of Moultrie Creek in 1823, which officially ended the First Seminole War. Not all Seminoles complied, as the reservation did not suit the tribes' needs or their accustomed means of subsistence by the sea. Once vacated by the Seminoles, Tallahassee became the new territorial capital (Gannon 2003). Pressing the bounds of the reservation, many Seminoles preferred to live in the coastal areas where they had traditionally hunted, farmed, fished, and raised cattle and pigs.

## The Civil War, Reconstruction, and the Late Nineteenth Century (AD 1865 – 1899)

Following the election of President Lincoln in 1860, emergency meetings were held across the state to discuss fears that the Republicans would dismantle slavery. Session commissioners were dispatched across the state to elicit support for withdrawing from the Union (Dew 2002). In 1861, both houses of the Florida General Assembly unanimously passed a bill calling for a constitutional convention (Gannon 2003: 41). On January 10, 1861, the convention adopted an Ordinance of Secession, becoming the third southern state to withdraw from the Union (Dew 2002).

Union forces in Florida quickly focused on controlling the coast, taking many of the port towns, such as Pensacola and Jacksonville, while Confederate forces sought to maintain control of the agricultural and cattle-producing interior of the state to supply food to its troops. In addition, cattle, salt, and citrus (for medical treatment) produced in towns along the east coast of Florida were important to the war effort (Gannon 2003). The Union took Fernandina and St. Augustine on the east coast, Tampa, Charlotte Harbor, Cedar Key and Pensacola on the west coast, Ft. Myers on the southwest coast, and held Key West for the duration of the war (Gannon 2003).

Tallahassee was the only Confederate city east of the Mississippi to not be taken by Union forces during the war. Additionally, although skirmishes between the Confederates and Union soldiers happened across the state, only two major battles were fought in the state, the Battle of Olustee in Baker County and the Battle of Natural Bridge in Leon County. The Battle of Natural Bridge occurred in March 1865 at a natural geological phenomenon, southeast of Tallahassee, where the St. Marks River goes underground. Union troops landed in St. Marks by boat hoping to march north and west in an attempt to take the Florida state capitol. This battle was notable because many of the Confederate home-guard soldiers that fought in this battle were old men or children. The battle lasted only a day but was a decided Confederate victory. The battle resulted in the death of 21 Union and three Confederate soldiers, while another 89 Union troops were wounded and another 38 were missing compared to 23 wounded Confederates. The following month, Confederate General Robert E. Lee surrendered his forces to General Ulysses S. Grant, of the Union, at Appomattox Courthouse in Virginia, ending the major hostilities of the Civil War. One month later Union forces occupied Tallahassee.

At the end of the war, the southern economy and infrastructure was in ruins. Following the assassination of Lincoln, Andrew Johnson, himself a Democrat from the south, favored a quick restoration of the Union, offering simple conditions for the restoration of Confederate States back into the Union. Accept the 13$^{th}$ Amendment, banning slavery, and swear an oath of loyalty to the US. Because this failed to account for provisions for the large, newly emancipated enslaved population, the Republican dominated Congress impeached Johnson, for which he was narrowly acquitted by a single vote.

By December 1865, all former Confederate states, except Texas, quickly implemented provisional governments while the U.S. Congress was in recess. These governments were largely comprised of former slave owners anxious to protect their interests. These provisional governments quickly moved to establish legislation restricting the rights of freedmen. These discriminatory laws, known as "Black Codes", were intended to largely reestablish white supremacy over the newly freed slaves. Florida implemented some of the strictest laws in the south against its freedmen population, and although these laws were quickly repealed once Congress was back in session, they foreshadowed codified segregation, implemented in 1877, once the Democrats regained political power of the state.

Although the Florida infrastructure was largely untouched by the war, many families were financially ruined and with Confederate money worthless, debt proliferated plunging the state into an economic depression. Some freedmen left for towns and federal camps in hope of securing new lives; however, many died as a result of malnutrition, exposure, or lack of medical attention (Gannon 2003; 46). In March 1865, the Freedmen's Bureau was created to establish an infrastructure to aid newly freed slaves. The Bureau was created to supply rations, organize schools and orphanages, regularize marriage among former slaves, register them to vote, and advise them on their rights. By January 1866, most freedmen returned to plantations and farms to begin the process of establishing new lives (Gannon 2003: 47).

Many southerners viewed martial law and the selection of northern Republicans and African Americans to fill political positions as retribution for the war. Furthermore, armed black military units in Florida towns seemed to validate, for some, unsubstantiated widespread fears of an armed black rebellion. Rather than to live under these impositions, many southerners, already broke from the war, chose to relocate. Those that stayed were immersed in a stagnant economy and with the realization that whites would now have to compete with African Americans for jobs, anti-black violence proliferated.

A major catalyst for growth in Florida came in early 1880s as railroads expanded west and south allowing for quicker travel to places along the coast and interior of the peninsula. The state had 550 miles of railroad in 1881, and within two decades that number increased to 3,500 miles (Gannon 2003). William D. Chipley constructed a rail line that connected the Florida Panhandle with the East Coast, Henry B. Plant linked the Atlantic and Gulf Coasts with a line between Jacksonville and Tampa, and Henry Flagler created the Florida East Coast Railroad, which ran the full length of Florida to Key West (Gannon 2003). Railroads allowed for the transport of building materials, development in previously impenetrable parts of the state, and scores of people seeking land, employment, and recreation.

### Twentieth Century (AD 1900 – 1920s)

Around the turn of the century, the naval stores industry spread into Florida as turpentine camps with expansive "cat-faced" pine plantations sprang up across the state. Convict labor was utilized extensively by the turpentine industry, using convicts like slave labor to extract pine sap and render turpentine for no pay. Convicts were overwhelmingly African Americans convicted of such banal "offenses" as loitering, vagrancy, perceived insults to whites, or failing to step aside for whites to pass (Ortiz 2005). In addition to the inherent dangers of rendering turpentine, convict workers were abused and murdered at such an alarming rate that once it was nationally reported, laws were enacted largely prohibiting the use of convict labor in turpentine camps.

### World War I (AD 1917 – 1920)

On April 6, 1917, the U.S. entered World War I. Although U.S. involvement in the war only lasted about 19 months, the war had profound effects on the state. State forests were utilized to provide lumber and

naval stores for the war effort, while shipyards in Tampa and Jacksonville increased the size of the nation's naval fleet (Gannon 2003: 74). At home food and other commodities were scare and had to be rationed. During the war, 42,030 Floridians served overseas in the armed forces, of which, over a thousand were killed and 18 received the nation's second highest award, the Distinguished Service Cross (Gannon 2003:74). Although African Americans accounted for only 30 percent of Florida's population, they provided over half of Florida's soldiers during the war (Ortiz 2005; 145). In fact, African American enlistments were significantly higher than those of white men in many Florida counties (Ortiz 2005; 144). For their patriotism, black soldiers were issued substandard uniforms and given inadequate training and facilities and continued to be mistreated wherever they went.

Following the war, political movements across the country threatened the status quo. As women and black military veterans demanded equality, white conservatives felt their grip on absolute power slipping away, fueling panic and widespread violence against the black community. By early 1919, tensions resulting from multiple underlying factors boiled over, resulting in violent race riots across the U.S. The Red Summer of 1919 was characterized by unbridled violence against African American families with no hope of federal or municipal intervention. Further aggravating the situation, the women's suffrage movement was gaining momentum. For white southern males, this not only meant sharing political power with women, but black women would also get the right to vote, threating to increase black political power two-fold.

Expecting a wave of black female voters and fears agitated by salacious newspaper reports, the election of 1920 was predictably violent. In Florida, as a result of two African American men attempting to vote, the entire black community of Ocoee, just outside of Orlando, was destroyed. Whites, with numbers bolstered from reinforcements from Orlando, surrounded African American owned structures and burned them to the ground, often murdering black families as they ran (Ortiz 2005). In the end, all black-owned structures were burned, and the entire black community left. It would be several decades before African Americans would return to the area.

The violence and resurging anti-black sentiment experienced across the US paved the way for the rebirth of the Ku Klux Klan. Rather than attempting to affect the outcome of elections simply through intimidation, the Klan also sought to enter politics. By the mid-1920s, the KKK had infiltrated every sector of the local and state government, becoming active participants in shaping state legislation and reinforcing the racial caste system in Florida. In the 1930s, even though overall Klan membership across the U.S. was shrinking, Florida maintained strong numbers and consisted of one third of the organization's total membership (Chalmers 1981; 311).

Florida continued to change in the 1920s. Although most counties in Florida were dry by choice, following the Volstead Act of 1919 and the passage of the 18th Amendment, the state entered the Prohibition period. Despite the state's status as "dry" prior to the passage of the 18th Amendment, due to its proximity to distilleries in Cuba and the Bahamas, Florida became a major importer and distributor of illicit liquor. Large cities tended to have a problem, or no desire, to enforce the prohibition of alcohol, and the counties with the greatest reputation for enforcement problems were Duval, Dade, Hillsborough, Palm Beach, and Nassau (Gannon 2003). The "noble experiment" was repealed in 1933 and the Volstead Act was modified.

## Florida Real Estate Boom (AD 1920 – 1929)

The 1920s also ushered in Florida's largest growth expansion due to "runaway" land sales that fueled a speculative real estate market (Gannon 2003: 76). In fact, Miami was overwhelmed when it received

an influx of 2.5 million people (Gannon 2003:76). During the 1920s, housing subdivisions were planned and built, stores were opened, hotels proliferated, and wealth poured into the state. It is during this time that the "Mediterranean" style of architecture, inspired by the architecture of Rome and Spain, was introduced to the state. The extravagance would soon end as the real estate market lost control. Property was being turned over so fast that in some cases a single parcel of property could change hands for a profit up to a dozen times a day (Gannon 2003: 82). This speculative market peaked in October 1925, and within nine months it collapsed. People left the state in large numbers, leaving behind unfinished buildings, miles of sidewalks leading to nowhere, and financial ruin (Gannon 2003).

Following the burst of the real estate market in Florida, the state was dealt a series of disasters that forced Florida into a depression ahead of the rest of the country. In September 1926, a powerful hurricane hit south Florida in the middle of the night on September 18. Catching the population by surprise and unprepared to deal with such a disaster, 392 people were killed and 18,000 were left homeless. Two years later, in 1928, another hurricane hit Palm Beach killing an estimated 1,800-2,000 people, three-quarters of which were African American veterans, many of whom were never found (Gannon 2003: 82). A year later, the Florida citrus industry was decimated again when a Mediterranean fruit fly infestation destroyed 80% of the state's orange groves (Gannon 2003: 82).

Despite these setbacks, between 1920 and 1930, the state's population increased from 968,470 to 1,468,211 (Gannon 2003). Due to the growth experienced in the state 13 new counties were created. In south Florida, Charlotte, Hendry, Indian River, Glades, Hardee, Highlands, Collier, Sarasota, and Martin, and in the north part of the state, Dixie, Union, Gilchrist, and Gulf counties were formed (Gannon 2003).

## World War II (AD 1941 – 1945)

Following the Japanese attack on Pearl Harbor in December 1941, the US entered World War II. The war would have a profound effect on the state, developing from a sparsely populated small rural agricultural state to a large industrial state in just four years. Florida's weather, flat land, and hundreds of miles of coastline made the state an ideal place for military training. By the end of 1942, over 172 military installations ranging from training camps to large bases, dotted the Florida landscape. The military presence in Florida stimulated the economy helping to bring the state out of the Great Depression; however, property owners within the determined boundaries of these installations were given little time and no choice but to vacate their properties. In some cases, entire communities were uprooted. African Americans were disproportionately affected as land was purchased cheaper from black landowners.

Contrary to popular belief, the war was not only fought in Europe and the Pacific, but also along the busy shipping lanes of the U.S. east coast as merchant cargo ships were sunk by German U-boats during Operation Drumbeat. In fact, 10 weeks following the attack on Pearl Harbor, German U-boats were patrolling Florida's coastlines. On the night of February 19, 1942, U-128 torpedoed the U.S. tanker Pan Massachusetts off the coast of Cape Canaveral and the Gulf America off Jacksonville Beach (Gannon 2003). Floridians witnessed the attacks and the aftermath of the U-boat ambushes, fueling fear that the war could come to the U.S. During German U-boat operations along the U.S. coast, nearly 400 ships were sunk, including 24 off the coast of Florida (Gannon 1990).

During the war, federal contracts spurred the economy and provided industry and jobs across the state. With the men off fighting, women filled roles at shipyards, welding shops, military installations, firehouses, and police stations, in addition to agricultural jobs. Civilians volunteered as air raid wardens,

dim out monitors, auxiliary firemen, and nurses' aides. Even children contributed to the war effort by collecting scrap metal, paper, and grease for the war effort (Gannon 2003: 106). Gas was rationed at 3 gallons per week, per driver, provided the driver had an "A" sticker (Gannon 2003).

## Cold War/Space Race (AD 1945 – 1969)

Post war advances in mosquito control, air conditioning, and electric refrigeration, continued to help Florida grow. Between 1940-1950, the Florida population grew by 46 percent, relative to a 15 percent national growth rate (Gannon 2003: 106). By 1950, the Florida population was 2,771,305, 65 percent of which lived in the five major cities, Miami, Jacksonville, Tampa, St. Petersburg, and Orlando (Gannon 2003: 106). By 1950, Miami replaced Jacksonville as the largest populated city in the state. Additionally, tourism dollars began to edge out agriculture as the state's primary revenue stream (Gannon 2003: 118).

Between 1950-1960, Florida experienced its largest population growth, increasing 78.7 percent over the decade (Gannon 2003: 119). This increase was spurred by the introduction of affordable air conditioning window units. Due to the increase in population and the surge in tourism, and required to improve the flow of traffic, Florida made dramatic improvements to the road system. Between 1949-1953, the state invested $500 million to rehabilitate 3,000 miles of aging roads and bridges (Gannon 2003: 130).

In 1959, Fidel Castro overthrew dictator Fulgencio Batista assuming control over the Soviet Union supported Cuban government. This allowed Communism a foothold in the Western Hemisphere, just a little over 100 miles off the coast of Florida. In 1961, the U.S. Central Intelligence Agency (CIA) backed an invasion to overthrow Castro. Cuban exiles trained in south Florida, particularly on Useppa Island, to prepare for the invasion. A series of miscues and a half-hearted U.S. effort led to the failed invasion at the Bay of Pigs in Cuba.

In 1962, U.S. spy planes discovered Soviet nuclear missiles, within close striking distance to the US. Measures were taken to prepare for a possible invasion of Cuba. Within a short time, HAWK and Nike-Hercules missile batteries were quickly mobilized to south Florida to defend against a possible attack (Hasty 2010). In response to the brutal regime of Castro, over a half million Cuban refugees would leave Cuba and settle in Florida, predominantly in Dade County, over the next two decades, reshaping the social and political structure of south Florida (Gannon 2003: 130).

### *Alachua County*

Alachua County's name derives from the native Timucuan word "chua" for "sinkhole", which became a map moniker for the general area (Talbot 2020). Following the Spanish entrada, Catholic missionaries pushed from St. Augustine into the interior of Florida; one mission was established along the north edge of Paynes Prairie by 1655. Following being under the control of the Spanish, French and English, Florida comes into American hands in 1821, and Alachua County is created in 1824 (Matheson Museum 2020). In 1853, the Florida Railway proposed to connect Fernandina with Cedar Key and Tampa, bypassing the Alachua County seat at the time, Newnansville; this prompted changing the county seat to Gainesville (Talbot 2020). Alachua County is one of the most agriculturally diverse counties in Florida (USDA 1985). Prior to the Civil War, local plantations used large populations of enslaved people to create a significant agricultural endeavor, with crops including corn, beans, tobacco, cotton, sugar, indigo and citrus.

Post-Civil War, the newly-freed population nearly tripled and outnumbered the white population; Gainesville included thriving African-American businesses and communities (Talbot 2020). Florida's first

African-American congressman, Josiah Wells, lived in Alachua County. Following the Great Freezes at the end of the nineteenth century, the citrus industry was replaced by phosphate mining in 1883 (FDEP ND), producing approximately half of Florida's phosphate in the 1890s (Talbot 2020). Beef cattle and silviculture are major enterprises. Modern-day agricultural activities included corn, tobacco, soybeans, peanuts, hay, small grains and a wide variety of vegetables (USDA 1985).

# 5. BACKGROUND RESEARCH

Background research was conducted on August 1, 2023, by Dave Boschi, MA, RPA. Background research consisted of reviewing historic maps, aerial imagery, and data compiled on the Florida Master Site File (FMSF). The review of the FMSF archaeological site file records maintained indicated that there are no previously conducted cultural resource assessment surveys or previously documented cultural resources overlapping the direct effects APE.

The earliest map depicting the project area is the General Land Office (GLO) map from 1834; this map does not depict any development within the project area. The next available map is the USGS Gainesville, Fl (1954) topographic map (scale 1:250,000); this map includes a road which is overlain by the current North (N) County Road (CR) 225, but no other developments in the vicinity of the project area. The USGS Monteocha, Florida (1966, 1967 edition) topographic map (scale 1:24,000) includes the previously mapped road corresponding to N CR 225 and a series of Jeep trails to the south and east of the project area. The map does show Freedom Church 0.6 miles to the northeast, and Freedom Cemetery 0.35 miles to the east of the project area (**Figure 5-1**). Neither Freedom Church nor Cemetery were noted on the FMSF as being either eligible or potentially eligible for the NRHP. The USGS 1993 edition of the 1966 Monteocha, FL topographic map does not show any further developments; Freedom Church and Cemetery remain visible.

Aerial imagery consulted confirmed that little structural development has occurred within the project area. Imagery from 1999 shows the area as being planted pine, with the addition of a northwest to southeast trending dirt road visible (**Figure 5-2**); this road corresponds to the current crushed rock/compacted dirt road used to access the parcel and is south of Tree Farm Road. Aerial imagery from 2000 through present indicates that the parcel has been consistently used for pine tree farming to present day.

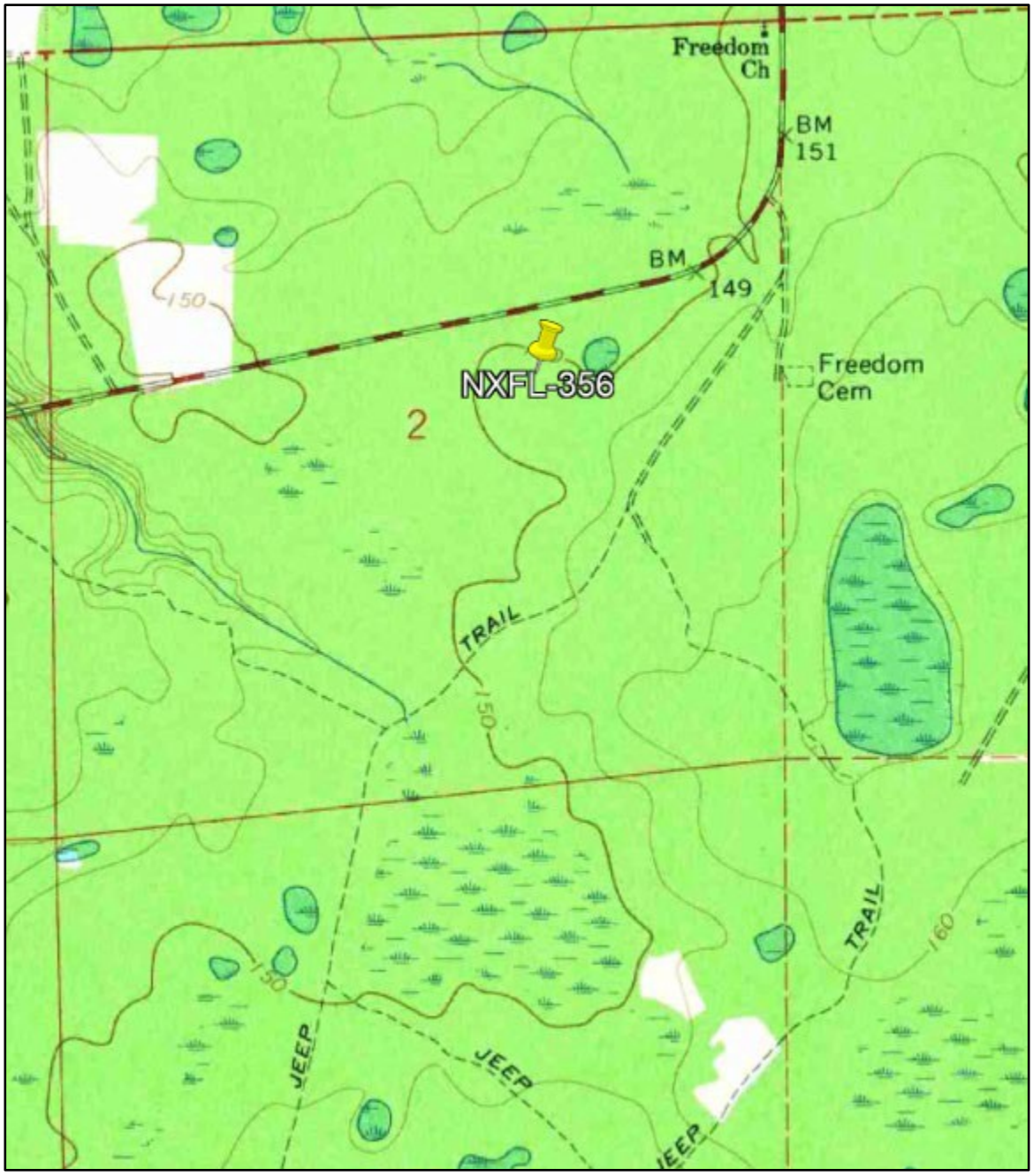



**Figure 5-1. Project Area on USGS Monteocha, Fl (1966, 1967 ed.) topographic map, scale 1:24,000.**


**Figure 5-2. Aerial Imagery of the Project Area, 1999 (Google Earth Timeslider).**

# 6.SURVEY METHODS AND RESULTS

An archaeological survey of the direct APE was performed on August 4, 2023, by Dave Boschi, MA, RPA. Testing consisted of subsurface testing (shovel tests) and pedestrian survey. A total of five shovel tests were excavated within the proposed lease area (**Figure 6-1**). The proposed access easement overlaps the existing crushed rock/compacted dirt road and was not able to be shovel tested but was subjected to pedestrian survey. At the time of the survey, surface was less than 10 percent due to pine straw litter.

The pedestrian survey consisted of surface inspection within the direct effects APE to locate artifacts which had been brought to the surface during ground disturbance activities. Shovel tests measured 50 cm in diameter minimum and were excavated to a meter in depth or until hydric soils were encountered. Soil from the shovel tests was screened through 1/4-inch wire mesh for the standardized collection of artifacts. Information for each shovel test regarding artifact content, shovel test depth, soil texture and color (using the Munsell soil color chart), and other relevant environmental factors were kept in a field journal. Representative soil profiles and environments were digitally photographed. Locations of each shovel test were recorded using handheld GPS systems and marked on paper field maps.

A total of five shovel tests were excavated within the APE: one in the center of the lease area, and four at the staked corners. All shovel tests were negative for cultural material (**Figure 6-1**). Shovel test profiles exhibited two strata and were excavated to 100 cm below surface (cmbs) (**Figure 6-2**). All tests displayed a dark gray (10YR 4/1) sandy loam, often mottled, between 30 to 40 cm thick (Stratum I) over a light gray (10YR 7/1) sand which extended to one meter in depth (Stratum II); this stratum contained mineral concretions and mineral staining with depth.

As a result of this survey, no archaeological sites, subsurface cultural features, or archaeological occurrences were identified within the APE.

**Table 6-1. Shovel Test Data**

| Shovel Test | Total Depth | Soil Profile |
|---|---|---|
| STP 1 (east corner) | 100 cmbs | 0 to 40 cmbs: 10YR 4/1 dark gray sandy loam<br>40 to 100 cmbs: 10YR 7/1 light sand, concretions and staining increasing with depth |
| STP 2 (center) | 100 cmbs | 0 to 40 cmbs: 10YR 4/1 dark gray sandy loam<br>40 to 100 cmbs: 10YR 7/1 light sand, concretions and staining 80-100 cmbs |
| STP 3 (south corner) | 100 cmbs | 0 to 40 cmbs: 10YR 4/1 dark gray sandy loam<br>40 to 100 cmbs: 10YR 7/1 light sand, concretions and staining 80-100 cmbs |
| STP 4 (west corner) | 100 cmbs | 0 to 30 cmbs: 10YR 4/1 dark gray sandy loam<br>30 to 100 cmbs: 10YR 7/1 light sand, concretions and staining 95-100 cmbs |
| STP 5 (north corner) | 100 cmbs | 0 to 30 cmbs: 10YR 4/1 dark gray sandy loam<br>30 to 100 cmbs: 10YR 7/1 light sand, concretions and staining with depth |


**Figure 6-1. Survey Results.**

**Figure 6-2. Soil profile, STP 1, view west.**

# 7. SUMMARY AND RECOMMENDATIONS

The client is proposing to construct a telecommunications tower near North County Road 225 in the City of Gainesville, Florida. The proposed tower consists of a 235-foot self-support monopole tower situated within a 10,000-square foot (100-foot x 100-foot) lease area. An approximate 450-foot by 30-foot access road and utility easement will utilize an existing dirt/crushed rock road. Background research indicates that there are no previously recorded cultural resource surveys or archaeological sites within the project area. Field survey included pedestrian survey and the excavation of five shovel test pits. As a result of fieldwork, no archaeological or aboveground historic resources were identified within the project area. The proposed project will have no adverse effect on historic properties listed on or eligible for the NRHP. Therefore, Terracon recommends a finding of no historic properties affected within the APE for direct and visual effects.

In the event archaeological material is encountered prior to or during construction, coordination should occur with a professional archaeologist to ensure that proper documentation and updates can be submitted to DHR. Archaeological materials consist of any items 50 years or older which were produced or used by humans. These items include stone tools (e.g., arrowheads, spearpoints, scrapers, etc.), ceramic fragments, worked wood or faunal remains, shell, brick fragments, metal and glass objects. These materials may be present on the ground surface and/or beneath the ground surface.

If human skeletal remains are encountered, **stop work immediately!** Chapter 872.05 of the Florida Statutes (Offenses Concerning Dead Bodies and Graves) states if skeletal human remains are discovered during any project, all work must stop immediately in the immediate area and all reasonable efforts must be made to minimize or avoid impacts to the remains. A 25-meter buffer should be established around the remains, and the medical examiner must be notified to determine if the age of the remains. If the remains are less than 75 years old, the medical examiner and local law enforcement will assume jurisdiction. If the remains are older than 75 years, the State Archaeologist assumes jurisdiction. Willfully and knowingly disturbing, removing, damaging, vandalizing, or destroying an unmarked human burial is guilty of a felony of the third degree (s. 775.082, s. 775.083, or s. 775.084).

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# APPENDIX A – FMSF SURVEY LOG

Ent D (FMSF only) _____

# Survey Log Sheet

**Florida Master Site File**
**Version 5.0 3/19**

Survey # (FMSF only) _____

**Consult *Guide to the Survey Log Sheet* for detailed instructions.**

## Manuscript Information

**Survey Project** (name and project phase)
NXFL-356 North Alachua Telecommunications project

**Report Title** (exactly as on title page)
PHASE I ARCHAEOLOGICAL SURVEY FOR THE NXFL-356 NORTH ALACHUA TELECOMMUNICATIONS PROJECT
Alachua County, Florida

**Report Authors** (as on title page) 1. Dave Boschi 3. _____
2. Blue Nelson 4. _____

**Publication Year** 2023 **Number of Pages in Report** (do not include site forms) 37

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Terracon No. EQ237257

**Supervisors of Fieldwork** (even if same as author) Names Dave Boschi

**Affiliation of Fieldworkers:** Organization Terracon City Jacksonville, FL

**Key Words/Phrases** (Don't use county name, or common words like *archaeology*, *structure*, *survey, architecture, etc.*)
1. Gainesville 3. Cell Tower 5. _____ 7. _____
2. North Alachua 4. Telecommunications 6. _____ 8. _____

**Survey Sponsors** (corporation, government unit, organization, or person funding fieldwork)
Name _____ Organization NexTower, LLC.
Address/Phone/E-mail _____

**Recorder of Log Sheet** Dave Boschi **Date Log Sheet Completed** 8-8-2023

**Is this survey or project a continuation of a previous project?** ☒No ☐Yes: **Previous survey #s (FMSF only)** _____

## Project Area Mapping

**Counties** (select every county in which field survey was done; attach additional sheet if necessary)
1. Alachua 3. _____ 5. _____
2. _____ 4. _____ 6. _____

**USGS 1:24,000 Map Names/Year of Latest Revision** (attach additional sheet if necessary)
1. Name MONTEOCHA Year 2021 4. Name _____ Year _____
2. Name _____ Year _____ 5. Name _____ Year _____
3. Name _____ Year _____ 6. Name _____ Year _____

## Field Dates and Project Area Description

**Fieldwork Dates:** Start 8-4-2023 End 8-4-2023 **Total Area Surveyed** (fill in one) _____ hectares 0.50 acres
**Number of Distinct Tracts or Areas Surveyed** 1
**If Corridor** (fill in one for each) **Width:** _____ meters _____ feet **Length:** _____ kilometers _____ miles


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