

# **BALD EAGLE MANAGEMENT PLAN**

For

**Eagle Nest LE-081**

Project Located:

5081 Pine Island Road NW  
Bokeelia, Florida

July 2018

Prepared for:

***Edison Oil Company***  
*PO Box 982*  
*Fort Myers, FL 33902*

Prepared By:

***Landesco, PLLC***  
*18197 Sandy Pines Circle*  
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## **Introduction**

This bald eagle (*Haliaeetus leucocephalus*) management plan is being prepared for Edison Oil Company. The subject commercial property, known as Edison Oil, is approximately 2.4 acres in size and is located on the south side of Pine Island Road in Bokeelia within Section 28, Township 44, Range 22 East, Unincorporated Lee County, Florida.

Bald eagle nest LE-081 is an active nest located on the neighboring property 5041 Pine Island Road NW (26.61293,-82.11006). The nest was built in 2011, and has been active nearly every nesting season. The nest is located in the west-central area of the adjacent property. On the same property, there is a 3,694 square feet of medical office building and a 28,811 sq. ft. asphalt parking lot.

## **Bald Eagle Habitat and Reproduction**

The following information on the biology of the bald eagle is excerpted from the South Florida Multi-Species Recovery Plan (USFWS 1999).

Florida has one the densest concentrations of nesting bald eagles in the lower 48 states, with an estimated 1,500 nesting pairs (FWC). Bald eagles are considered a water-dependent species typically found near <sup>1</sup>estuaries, large lakes, reservoirs, major rivers, and some seacoast habitats (USFWS 1999). In Florida, nests are often in the <sup>2</sup>ecotone between forest and marsh or water, and are constructed in dominant or co-dominant living pines (*Pinus* spp.) or bald cypress (*Taxodium distichum*) (McEwan and Hirth 1979). About ten percent of eagle nests are located in dead pine trees, while two to three percent occur in other species such as Australian Pine (*Casuarina equisetifolia*) and Live Oak (*Quercus virginiana*). Nest trees in South Florida are smaller and shorter than reported elsewhere; however, comparatively they are the largest trees available (Wood et al. 1989, Hardesty 1991). The small size of the nest trees in South Florida relative to other nest sites throughout the eagle's range is due to the naturally smaller stature of *Pinus elliotti*, *Pinus taeda*, *Pinus palustris*, and *Pinus clausa* in South Florida, and lack of pines (*Pinus* spp.) in extreme Southern Florida.

Bald eagles are monogamous and annual courtship behavior reinforces pair bonds (Palmer 1988). Pair bond formation includes dramatic pursuit flights, high soaring, talon locking, and cartwheeling (Johnsgard 1990). In establishing territories, eagles may also fly around the perimeter of their nesting areas and visually communicating their presence. Pair bond behavior, as well as territory establishment and defense, probably occur concurrently throughout much of the eagle's range. Successful pair bond information ultimately leads to nest site selection and nest construction for newly formed pairs or established pairs without nests. For pairs that have previously nested, nest repair or construction of an alternate nest may occur concurrent with copulation.

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<sup>1</sup> **Estuaries** is defined as a water passage where the tide meets a river current; *especially*: an arm of the sea at the lower end of a river. *Merriam-Webster*, June 2018.

<sup>2</sup> **Ecotone** is defined as a transition area between two adjacent ecological communities. *Merriam-Webster*, June 2018.



In South Florida, nesting activities generally begin in early September, with egg laying occurring as early as late October and peaking in the latter part of December. Depending on latitude incubation may be initiated from as early as October to as late as March. Clutches usually consist of one or two eggs, but occasionally three or four are laid. Incubation takes approximately 35 days and <sup>3</sup>fledging occurs within 10 to 12 weeks of hatching. Parental care may extend four to six weeks after fledging even though young eagles are fully developed and may not remain at the nest after fledging (USFWS 1989).

### **Status of Species**

The bald eagle was added to the endangered species list on March 11<sup>th</sup>, 1967 due to substantial population declines. On July 12<sup>th</sup>, 1995, the bald eagle's status was reduced from endangered to threatened, due to significant population increases following conservation efforts (FWC). On August 9<sup>th</sup>, 2007, the bald eagle was removed from the federal list of threatened and endangered species. After nearly disappearing from most of the United States decades ago, the bald eagle is now flourishing across the nation and no longer needs the protection of the Endangered Species Act (USFWS).

The U.S. Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission no longer list the bald eagle as a threatened or endangered species. However, the bald eagle is still protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act (USFWS 1987).

### **Proposed Project**

Site improvements shall consist of basic infrastructure to allow future users to access convenience store, a small retail business known as Edison Oil. Improvements include, but are not limited to: roadway development, utilities installation, site preparations. Landscaping improvements will include buffering on north, south, east, and west sides of property, along with building perimeter planting. Additional buffering has been added along the south side of the new rear parking area.

### **Existing Site Conditions**

The property consists of 2.39 acres of undeveloped land with primarily exotic vegetation and remnants of natural vegetation. There is currently one abandoned building on the property, the one-story building is 1300 sq. ft. There is also a gravel/paved parking lot located in front of the current building.

### **Bald Eagle Nest Zone Habitat**

The following Florida Land Use, Cover and Forms Classification System (FLUCFCS)

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<sup>3</sup> **Fledging** is defined as an immature bird who has flown at least once but who remains under the care of adult birds. *National Bald Eagle Center*, June 2018.

#### 437 - Australian Pine (CLC 7100)

Australian pines border the property along the east, south, and west. Contrary to its name, this species is actually a hardwood. Its name is derived from its needle-like leaves and its characteristic cone shaped crown structure. It is common on disturbed sites, forming dense thickets, and is frequently planted as wind breaks and soil stabilizers and can be found in some wetland areas. Trees average at least 20 feet tall. This class grows in tall, dense monocultures that preclude other vegetation. (FDOT)

#### 740 - Disturbed Lands

The property is mainly cleared with Australian Pines along the perimeter. Disturbed Lands are those areas which have been changed due primarily to human activities other than mining. In Florida, these areas may be rather extensive and often appear outside of urban areas.

#### **Nest Observations and Territory**

Nest LE-081 is on the west-central portion of the neighboring 5-acre parcel (5041 Pine Island Road NW). The nest is situated approximately 75 feet off the ground, in an Australian Pine that is 90-100± foot tall. The nest is located approximately 175± feet East from the new proposed building on 5081 Pine Island Rd NW, future location of Edison Oil. There is an abundance of potential perch trees onsite and in the surrounding area. Perch trees primarily consist of 70± foot tall Australian Pines, similar to the nest tree.

During our observations, on May 10<sup>th</sup>, 2018 the nest was empty there were no chicks or parents present. Since observations were conducted at the beginning of May it is assumed the eagle(s) had already left for the season. Since the eagle(s) were not present during our visit we were not able to determine any of their habits or typical flight patterns. We provided the flight path map that was prepared by Kevin Erwin in 2016, since we did not witness the Eagles during our visits and observations (Exhibit 2).

To the north of the property is Pine Island Road, and across the street to the north is cleared land that is owned by Lake Jefferson, LLC. They own approximately 915 feet of road frontage along Pine Island Road, and approximately 81-acres of land north of Pine Island Road; these properties are zoned commercial, and but are currently vacant. Properties along northeast (across Pine Island Road), east, and southeast are owned by Lee County; these properties are zoned governmental and are all vacant. To the immediate east there is a property that is owned by Canzano Properties, LLC; the property is approximately two acres, zoned commercial and is currently vacant. Parcel directly south of nest is owned by Souto's; the property is 20-acres is zoned residential, and is currently vacant. There is an open boat storage facility located at 5149 Pine Island Road, just west of the Bald Eagle nest. Pine Island Elementary School and residential housing is located to the northwest across Pine Island Road.

This eagle pair has the opportunity of flying in numerous directions to reach the nearest suitable foraging area (ERWIN). These are to the northeast, east, and southeast to Matlacha Pass approximately two to three miles away; to the immediate southeast to Pine Island Creek approximately 1,600 feet away; and the west to Pine Island Sound approximately one mile away (ERWIN).

## **Management Plan**

This management plan is only applicable to this 2.4 ± acre subject property located at 5081 Pine Island Rd. NW, Bokeelia, FL. It is the responsibility of the property owner(s) to retain and implement this plan, including educating others (i.e., contractors, future owners, etc.) about the specific requirements of this Bald Eagle Management Plan (BEMP) and the local, state and federal eagle protection laws. Any modification to this BEMP will require review and approval by the Eagle Technical Advisory Committee (ETAC), Lee County, or any other succeeding body.

The details of this BEMP are prepared to provide conservation measures designed to reduce potential adverse impacts to the eagle nest while allowing the project to move forward. The following conservation measures will limit activities on the property.

1. ALL exterior construction activities (including clearing and exotic vegetation removal/maintenance) within 660 feet of the nest will ONLY be carried out during the non-nesting season (May 16th - September 30th), or after nestling eagles have <sup>4</sup>fledged, and obtained confirmation by ETAC, or Lee County Staff. In the event that the eagles have not initiated nesting activity by February 15th, construction and exotic removal/maintenance activities may occur, upon confirmation by ETAC, and approval of Lee County Staff.
2. All new construction activity within 660 feet of nest shall include planted landscape buffers to screen the new activity from the nest.
3. All new exterior lighting shall be positioned/shielded in such a way that little to no light illuminates the bald eagle nest tree or its surrounding area (i.e., the cone of light shall fall substantially within the perimeter of the development, excluding a 100-foot radial buffer surrounding eagle nest).
4. Interior finish (i.e., dry wall, flooring, electrical, painting, plumbing) work may be conducted on the subject property throughout the year. If work is being finished during nesting season and nest is active, no car radios or any radios can be played outside of building. All vehicles must be parked close to building, or out of view of nest. However, vehicles can be parked under gas pump canopy if construction of canopy is complete.
5. Typical day-to-day commercial operations shall be allowed throughout the year beyond 100-feet of the nest on the subject property (i.e. lawn and property maintenance).
6. No native tree cutting, clearing, removal, or use of chemicals toxic to wildlife shall be permitted without municipal government approval.

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<sup>4</sup> **Fledged** is defined as the act of a young bird taking its first flight from the nest. *National Eagle Center*, June 2018.

7. In the event that bald eagle nest LE-081 has been lost for three consecutive nesting seasons or abandoned for five consecutive nesting seasons, this nest shall be de-listed (as “loss of nest” or “abandoned nest”) and the requirements of this management plan shall be terminated.

8. Infrastructure work (i.e., grading clearing, filling, paving, laying foundation, guttering, installation of underground utilities, street lighting, excavation, and installation of storm water management facilities) within 330-feet of nest LE-081 shall be initiated subsequent to <sup>5</sup>fledging if nest LE-081 is active in the prior nesting season, or after February 15th, if there is no evidence of breeding activity at nest LE-081 (non-nesting season). Planning (i.e. surveying or staking property) for future infrastructure and site improvements may occur throughout the year as long as this management plan is followed.

9. If exterior construction has not been completed by OCTOBER 1st, then ALL exterior construction will cease until nesting season is completed.

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<sup>5</sup> **Fledging** is defined as an immature bird who has flown at least once but who remains under the care of adult birds. *National Bald Eagle Center*, June 2018.

## **REFERENCES**

- Erwin, K. (2016, May). *Bald Eagle Management Plan LE-081*[Pdf]. Fort Myers: Kevin Erwin Consulting Ecologist, Inc.
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- FNAI. (2010). Natural Communities. Retrieved June, 2018, <http://fnai.org/naturalcommguide.cfm>
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- Johnsgard, P.A. 1990. Hawks, Eagles, and Falcons of North America. Smithsonian Institution Press; Washington, D.C.
- Lee County Land Development Code, Chapter 14, Article II, Division 3, Section 14-119(c).
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- United States Fish and Wildlife Service. 1999. South Florida Multi-Species Recovery Plan.
- U.S. Fish and Wildlife Service. 1999. Multi-species recovery plan for South Florida. U.S. Fish and Wildlife Service, Vero Beach, Florida.
- United States Fish and Wildlife Service. 2007. Bald Eagle Monitoring Guidelines. 20 pp.
- United States Fish and Wildlife Service. 2007. National Bald Eagle Management Guidelines. 25 pp.

**Exhibit 1**

**Project Boundary with Aerial Map**



## Exhibit 1: Project Boundary with Aerial Map



### Notes:

1. Property boundary is approximate and was obtained from the Lee County Property Appraiser's Website.
2. Mapping based on photointerpretation of 2018 aerial photography and ground truthing in May 2018.

**PERMIT USE ONLY, NOT FOR CONSTRUCTION**

**Exhibit 2**

**Bald Eagle Flight Pattern Map**



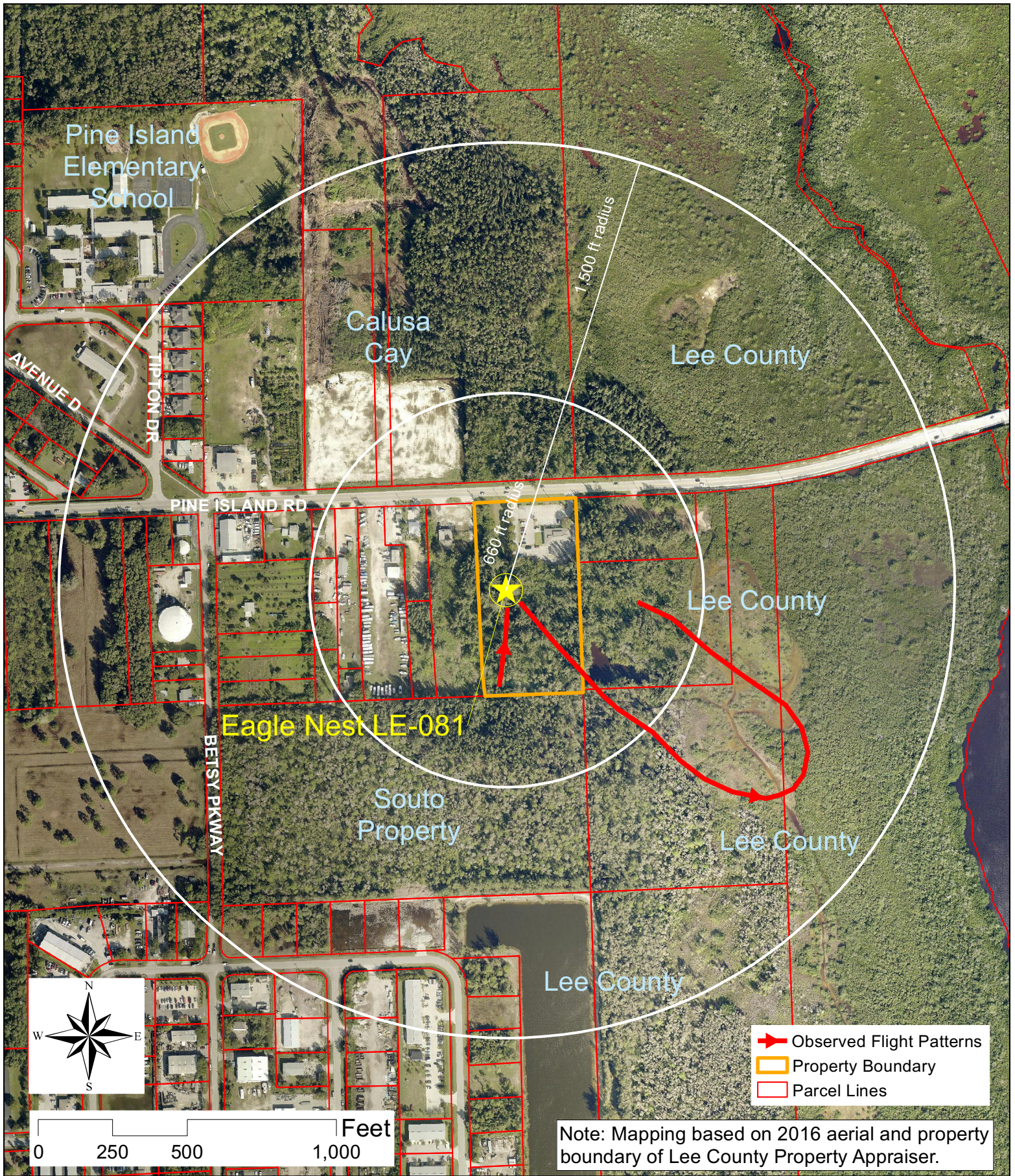


Figure 2. Bald Eagle Nest LE-081 and Surrounding Area

FILE NAME	Pine Island Road
LOCATION	JAPEL101, #2
DWG DATE	04-26-2016
BY	Kris Bowman
TECH	Vince Wang

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**Exhibit 3**  
**FLUCFCS Map**

### Exhibit 3: FLUCFCS Map



#### Legend

-  Subject Property
-  Eagle Nest LE-081
-  Parcel Lines

#### Florida Land Use, Cover & Forms Classifications System, 1999

FLUCFCS Code	Description	Acreage
740	Disturbed Land	1.06
437	Australian Pine	.64
147	Mixed Commercial and Services	.71

#### Notes:

1. Property boundary is approximate and was obtained from the Lee County Property Appraiser's Website.
2. Mapping based on photointerpretation of 2018 aerial photography and ground truthing in May 2018.



**Exhibit 4**

**Boundary/Buffer Map**





- Legend
- 100 FT Buffer Ring
  - 330 FT Buffer Ring
  - 660 FT Buffer Ring
  - 1500 FT Buffer Ring

- Property Boundaries
- Buildings
  - Parcels

- ★ Bald Eagle Nest
- Project Site



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BOUNDARY / BUFFER MAP

EDISON OIL  
5081 PINE ISLAND ROAD NW, BOKEELIA, FL 33922  
STRAP #: 28-44-22-00-00015.0000

In Conjunction with:

Drawing Information

Drawn by: CEK

Checked by: DKK

Revision(s):

Date: 08-21-2019

Sheet: ( 1 of 1 )

EXHIBIT

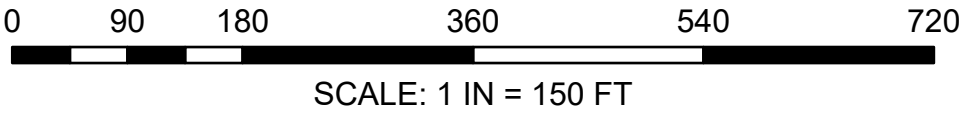
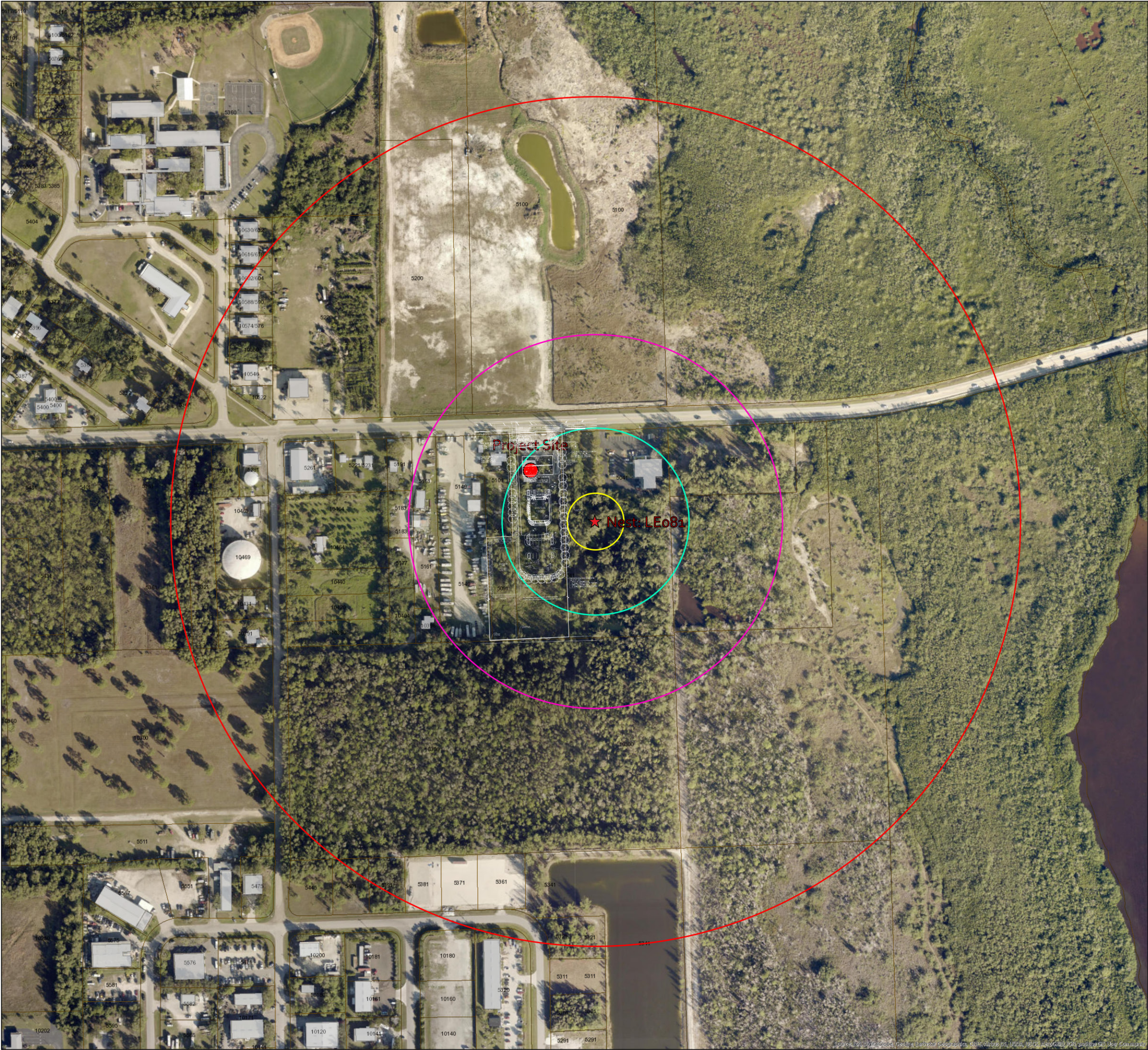




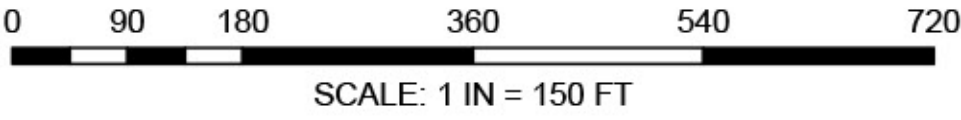
Exhibit 5

Aerial with Landscape  
Plan & Buffers





- Legend
- 100 FT Buffer Ring
  - 330 FT Buffer Ring
  - 660 FT Buffer Ring
  - 1500 FT Buffer Ring
- Property Boundaries
- Buildings
  - Parcels
- ★ Bald Eagle Nest
- Project Site



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2612 Edison Avenue  
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AERIAL WITH LANDSCAPE PLAN & BUFFERS

**EDISON OIL**  
5081 PINE ISLAND ROAD NW, BOKEELIA, FL 33922  
STRAP #: 28-44-22-00-00015.0000

In Conjunction with:

Drawing Information

Drawn by: CEK

Checked by: DKK

Revision(s):

Date: 08-21-2019

Sheet: ( 1 of 1 )

EXHIBIT

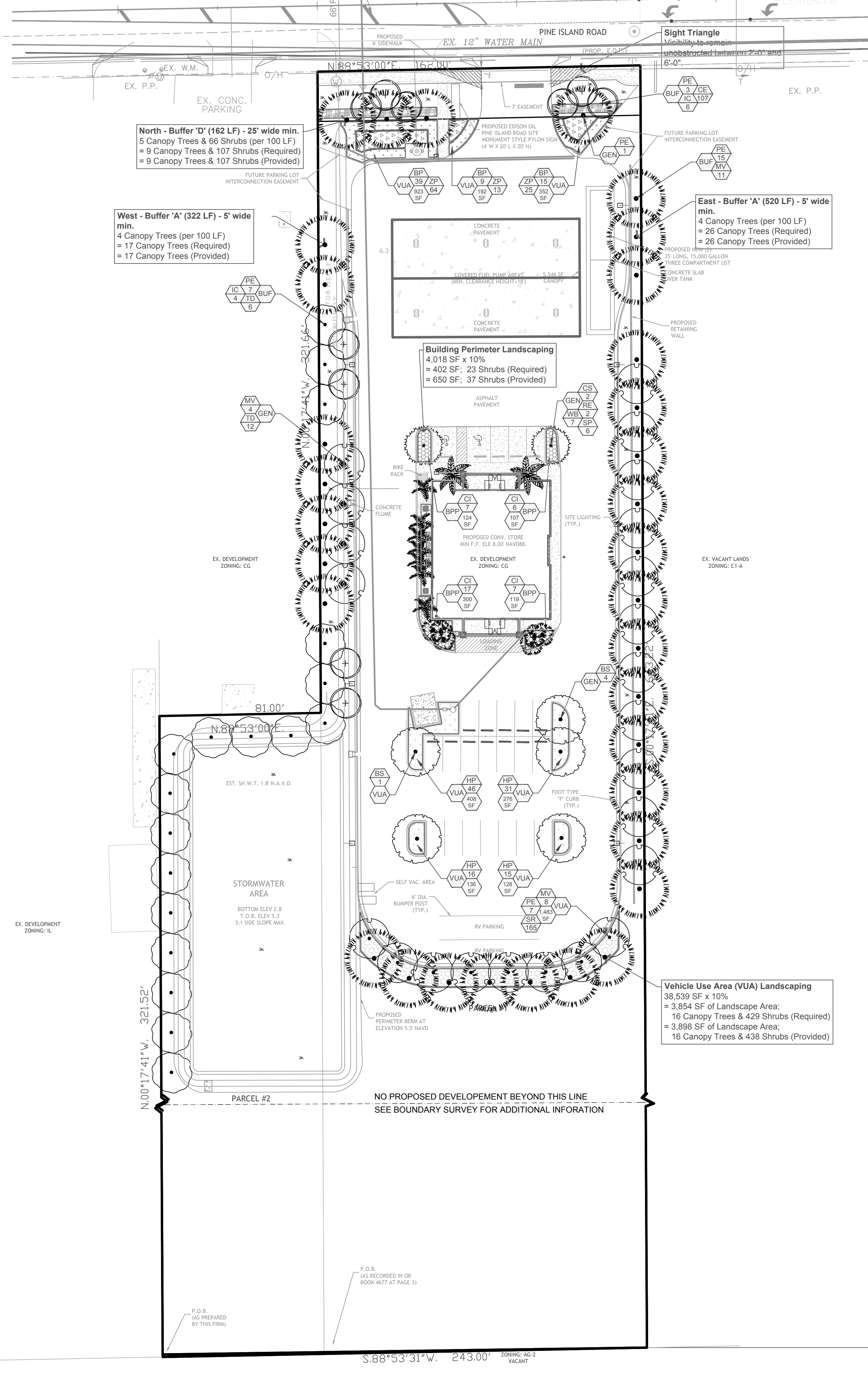


Exhibit 6

Proposed Landscape Plan



SITE INFORMATION			
SITE ADDRESS:		5081 Pine Island Road W Boketelia, FL 33922	
SITE AREA:		130,680 SF	
CURRENT ZONING:		CG	
FUTURE LAND USE:		URBAN COMMUNITY	
SITE DEVELOPMENT AREA			
TOTAL PARCEL AREA:	130,680 SF	100.00%	
PROPOSED BUILDING AREA:	4,018 SF	3.10%	
PROPOSED PAVEMENT AREA:	38,539 SF	29.50%	
WALKS & CANOPY CONCRETE:	7,474 SF	5.70%	
PROPOSED TOTAL IMPERVIOUS AREA:	50,031 SF	38.30%	
PROPOSED TOTAL PERVIOUS AREA:	80,649 SF	61.70%	
LEE COUNTY LANDSCAPE REQUIREMENTS			
(Per Lee County, FL - Land Development Code / Chapter 10 - DEVELOPMENT STANDARDS / ARTICLE III. - DESIGN STANDARDS AND REQUIREMENTS / DIVISION 6. - OPEN SPACE, BUFFERING AND LANDSCAPING)			
		Required:	Provided:
Sec. 10-415. - Open Space.			
(a) Open Space Calculations: Commercial			
20% of development area must be provided as open space			
► Open Space:	130,680 SF x 0.20 = 26,136.00 SF	26,136 SF	76,151 SF
Sec. 10-416. - Landscape standards.			
(a) General Trees. (GEN)			
(3) All other developments. One tree must be provided per each 3,500 square feet of development area.			
► GEN:	130,680 SF / 3,500 = 37.34 SF	38	38
(b) Building perimeter plantings. (BPP)			
Building Perimeter Plantings equal to ten percent of the proposed building gross ground level floor area must be provided.			
► BPP:	4,018 SF x 0.10 = 401.80 SF	402 SF	650 SF
► BPP:	(402 SF / 2 ) / 9 ) = 22.33 Shrubs	23	37
(c) Landscaping of parking and vehicle use areas. (VUA)			
(2) Internal landscaping:			
a. At least one canopy tree or a cluster of three sabal palms must be planted or retained for every 250 square feet of required internal planting area, and no parking space may be more than 200 feet from a tree planted in a permeable island, peninsula or median.			
► VUA Canopy Trees:	3,854 SF / 250 = 15.42 Trees	16	16
b. Landscaped areas on the parking area perimeter or internal islands must equal or exceed a minimum of ten percent of the total paved surface area.			
► VUA Area:	38,539 SF x 0.10 = 3,853.90 SF	3,854 SF	3,898 SF
► VUA Shrubs:	3,854 SF / 9 = 428.22 SF	429	438
(d) Buffering adjacent property. (BUF)			
Commercial Development abutting the following uses:			
North Property Boundary: Commercial <---> ROW (Pine Island "Buffer per LDC 34-1353(e)"			Rd)
(25' min. width; 5 Trees + 66 Shrubs / 100 LF)			
► 162.00 LF = 9 Trees + 107 Shrubs		9	9
162 / 100 = 1.62 x 5 = 8.10 Trees		107	107
162 / 100 = 1.62 x 66 = 106.92 Shrubs			
East Property Boundary: Commercial <---> Commercial Type 'A' Buffer (5' min. width; 4 Trees / 100 LF)			
► 520.03 LF = 26 Trees		26	26
520 / 100 = 5.20 x 5 = 26.00 Trees			
West Property Boundary: Commercial <---> Commercial Type 'A' Buffer (5' min. width; 4 Trees / 100 LF)			
► 321.66 LF = 17 Trees		17	17
322 / 100 = 3.22 x 5 = 16.10 Trees			
South Property Boundary: Commercial <---> Agriculture No Buffer Required			
TOTALS	TREES SHRUBS LANDSCAPE AREA	106 559 4,256 SF	106 582 4,548 SF



PLANT SCHEDULE						
KEY	SYMBOL	QTY	SPECIES	PLANT TYPE	CATEGORY	NATIVE STATUS
PROPOSED TREES						
BS		4	Gumbo Limbo, <i>Bursera simaruba</i>	CANOPY	GEN	YES
CS		2	Orange Geiger Tree, <i>Cordia sebestena</i>	CANOPY	GEN	YES
IC		10	Dahoon Holly, <i>Ilex cassine</i>	CANOPY	BUF	YES
MV		11	Sweetbay Magnolia, <i>Magnolia virginiana</i>	CANOPY	BUF	YES
PE		25	South Florida Slash Pine, <i>Pinus elliotii</i> var. <i>densa</i>	CANOPY	BUF	YES
RE		2	Florida Royal Palm, <i>Roystonea elata</i>	PALM	GEN	YES
SP		6	Cabbage Palm, <i>Sabal palmetto</i>	PALM	GEN	YES
TD		6	Bald Cypress, <i>Taxodium distichum</i>	CANOPY	BUF	YES
WB		12	Foxtail Palm, <i>Wodyetia bifurcata</i>	PALM	GEN	NO
TOTAL TREES		106				
PROPOSED SHRUBS						
BP		63	Orange Bird of Paradise, <i>Breutelia reginae</i>	HEDGE/ SHRUB	VUA	NO
CE		107	Button Buttonwood, <i>Canacarpus erectus</i> var. <i>sericeus</i>	HEDGE	BUF	YES
CI		37	Red Tip Coccoloba, <i>Chrysobalanus icaco</i> 'Red Tip'	HEDGE	BPP	YES
HP		108	Firebush, <i>Hamelia patens</i>	HEDGE	VUA	YES
SR		165	Silver Saw Palmetto, <i>Serenoa repens</i>	HEDGE/ SHRUB	VUA	YES
ZP		102	Coontie, <i>Zamia pumila</i>	SHRUB	VUA	YES
TOTAL SHRUBS		582				
---		---	Bahiagrass (Sod), <i>Paspalum notatum</i> 'Fluorger'	LAWN	THROUGHOUT	YES
Size & Specification Notes						
TREES: 10'-0" HT. min., 2" Caliper @ 6' above grade min., 4'-0" Spread min.						
ROW BUFFER TREES (per LDC 34-1353(e)): 14'-0" HT. min., 3.5" Caliper @ 12' above grade min., 6'-0" Spread min.						
*ROW Buffer Trees located along Pine Island Road*						
PALMS: 10'-0" min. of clear trunk after planting, Staggered heights (min. 4' ht. difference) when grouped.						
SHRUBS: 24" HT., 3-Gal. Cont., Spaced 36" O.C.						
SOD: All sod to be solid, free of weeds and pests, sand-grown, sand-leveled, and hand-laid.						
MULCH: A minimum three-inch thick layer of mulch, measured after watering-in, shall be placed around all newly installed trees, shrubs, and groundcover plantings. All landscape areas not receiving a vegetative cover must be mulched. Each tree must have a ring of mulch no less than 24 inches beyond its trunk. The use of cypress mulch is discouraged.						
QUALITY: Plant materials used to meet the requirements of this division must meet the standards for Florida No. 1 or better, as provided in Grades and Standards for Nursery Plants, Parts I and II, Department of Agriculture, State of Florida (as amended). Root ball sizes on all transplanted plant materials must also meet state standards.						
NATIVE VARIETIES: At least 75 percent of the trees and 50 percent of the shrubs used to fulfill requirements of this chapter must be Florida native species. Required: 75% / 50% Provided: 93% / 89%						
ROOT BARRIERS: A root barrier shall be required for all canopy trees planted within 7'-0" of any roadway, sidewalk, or easement.						

PREPARED BY:

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NORTH FORT MYERS, FL 33917  
Tel: 239.691.7790  
EMAIL: info@landesco.com

E SEAL: 01-07-2020

PREPARED FOR:

EDISON OIL  
5081 PINE ISLAND ROAD NW  
BOKEELIA, FL 33922

IN CONJUNCTION WITH:

DARBY ENGINEERING, INC.  
2638 STONYHILL COURT  
CAPE CORAL, FL 33991

LANDSCAPE PLAN

DATE IN: 06-08-2018

DRAWN BY: JOK

CHECKED BY: DKK

02-07-19	REVISED PER SITE PLAN & COMMENTS
08-15-19	REVISED PER SITE PLAN & COMMENTS
01-07-20	REVISED PER SITE PLAN & COMMENTS
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REVISION DATE:	
REVISION DATE:	
REVISION DATE:	
REVISION DATE:	

SHEET: 1 OF 2

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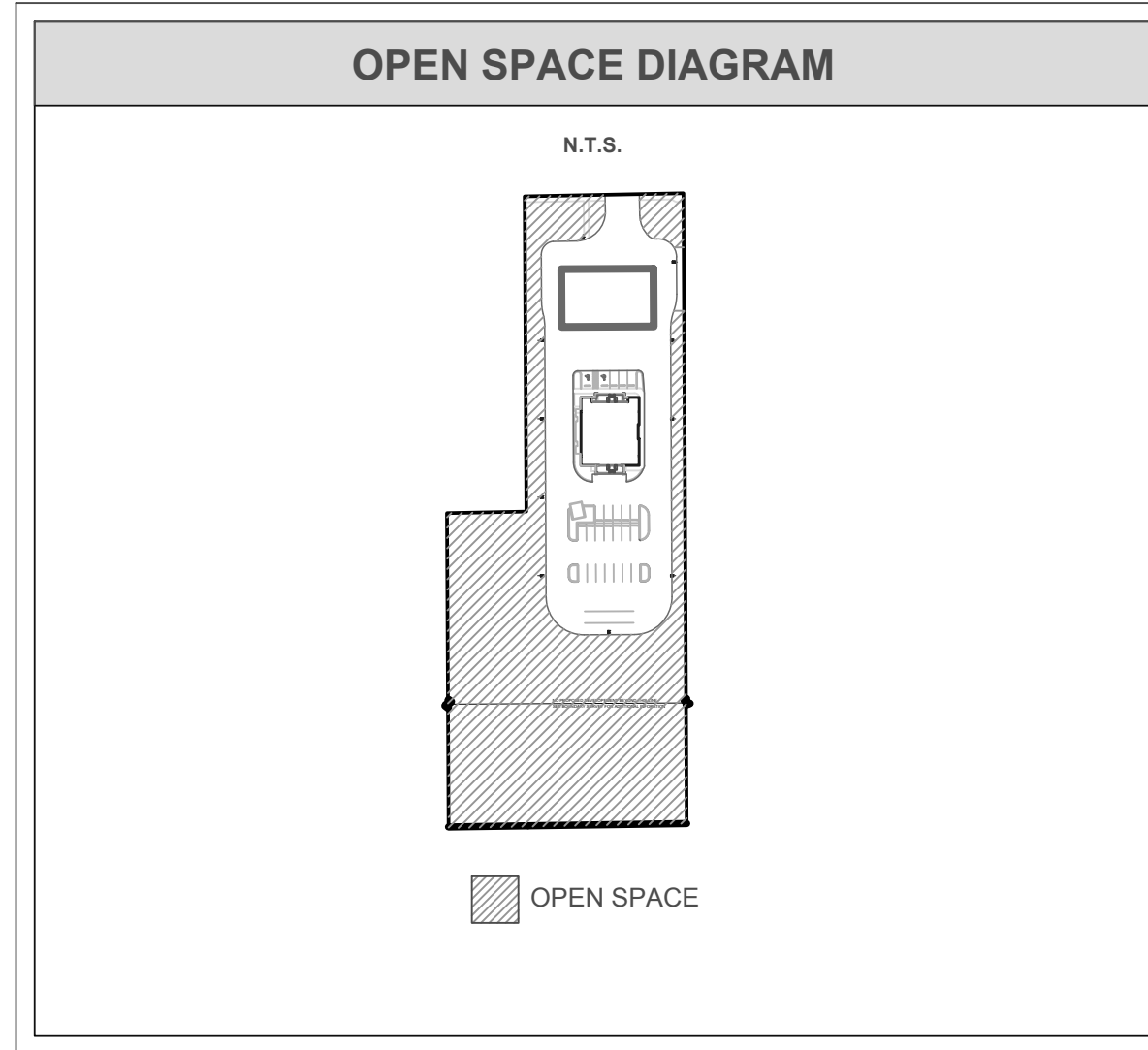
1. REPAIR EXISTING TURF AREAS DISTURBED BY/DURING CONSTRUCTION (SOD).
2. CONTRACTOR SHALL LOCATE THE EXISTENCE OF ALL UTILITIES PRIOR TO STARTING WORK.
3. THE CONTRACTOR SHALL SUPPLY ALL PLANT MATERIALS IN QUANTITIES SUFFICIENT TO COMPLETE THE PROPOSED PLANTINGS AS SHOWN ON DRAWING. PLANTING MATERIALS SHOWN ON PLAN TAKE PRECEDENCE TO THOSE OF THE PLANT LIST/SCHEDULE.
4. ALL PLANT MATERIALS SHALL CONFORM TO THE STANDARDS FOR FLORIDA NO. 1 OR BETTER AS GIVEN IN 'GRADES AND STANDARDS FOR NURSERY PLANTS' PART I AND 'GRADES AND STANDARDS FOR NURSERY PLANTS' PART II, FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES TALLAHASSEE.
5. ALL PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO FINISHED GRADE AS THE PLANTS ORIGINAL GRADE PRIOR TO DIGGING.
6. ALL PLANTS SHALL BE BALLED AND WRAPPED AS SPECIFIED.
7. CONTAINER GROWN STOCK SHALL NOT BE USED/ACCEPTED IF IT IS ROOT BOUND. ALL WRAPPING MATERIAL MADE OF PLASTICS, OR SYNTHETICS, SHALL BE REMOVED AT TIME OF PLANTING.
8. ALL PLANTS SHALL BE WATERED WITHIN FIRST 24 HOURS OF PLANTING. WATERING SHALL BE THOROUGH IN ORDER TO ENSURE THAT ALL AIR POCKETS ARE REMOVED FROM ROOT BALL AREA.
9. CONTRACTOR IS RESPONSIBLE FOR WATERING ALL NEW PLANTINGS, INCLUDING SOD. SOD SHALL BE WATERED UNTIL TIME OF KNITTING.
10. TREES OUTSIDE OF PLANTING BED AREAS SHALL RECEIVE 5' DIAMETER MULCH RING.
11. ALL PLANTS AND STAKES SHALL BE SET PLUMB AT TIME OF PLANTING, UNLESS OTHERWISE NOTED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE PLANTS REMAIN PLUMB UNTIL END OF GUARANTEE PERIOD.
12. INFORMATION IN "NOTES" TAKES PRECEDENCE OVER INFORMATION IN "DETAILS".
13. CONTRACTOR SHALL VERIFY SITE CONDITIONS AND INFORMATION ON DRAWINGS AND PROMPTLY REPORT ANY DISCREPANCIES AND/OR DEVIATIONS FROM INFORMATION SHOWN/WRITTEN ON THE PLAN.
14. THE OWNER IS NOT RESPONSIBLE FOR UNAUTHORIZED CHANGES OR EXTRA WORK REQUIRED TO CORRECT UNREPORTED DISCREPANCIES.

THE FOLLOWING HIGHLY INVASIVE PLANTS MUST BE REMOVED FROM THE DEVELOPMENT AREA, IF IT EXISTS, AND THE PROPERTY MUST BE MAINTAINED FREE OF INVASIVE EXOTICS IN PERPETUITY. TO DATE A LIST OF SPECIES CONSIDERED INVASIVE AND EXOTIC CAN BE FOUND AT [HTTP://WWW.FLEPPC.ORG](http://www.fleppc.org). ALSO SEE FLORIDA EXOTIC PEST PLANT COUNCIL'S INVASIVE PLANT LIST. PLANTS LISTED AS CATEGORY I INVASIVE SPECIES ARE STRICTLY PROHIBITED.

THE EXTENT OF DEVELOPMENT SHOWN ON THIS PLAN MAY BE EFFECTED BY ANALYSES OF THE PRESENCE OF WETLAND AREAS AND PROTECTED WILDLIFE HABITAT. THIS LEVEL OF ANALYSIS IS REQUIRED BY FEDERAL, STATE AND/OR LOCAL DEVELOPMENT REGULATIONS, AND HAS NOT BEEN PERFORMED BY LANDESCO, PLLC. WE THEREFORE TAKE NO RESPONSIBILITY FOR THE DEPICTION OF THIS LEVEL OF INFORMATION.

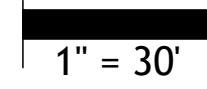
1. PLANT MATERIAL USED SHALL MEET THE STANDARDS OF FLORIDA #1 OR BETTER AS SET OUT IN THE GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I AND II, DEPARTMENT OF AGRICULTURE, STATE OF FLORIDA (AS AMENDED).
2. ROOT BALL SIZES ON ALL TRANSPLANTED MATERIALS MUST MEET STATE STANDARDS.
3. 75% OF THE REQUIRED TREES AND 50% OF THE SHRUBS SHALL BE NATIVE VARIETIES. 100% OF THE REQUIRED TREE AND SHRUB SPECIES DEPENDING ARE CONSIDERED NATIVE FLORIDA SPECIES.
4. TREES ADJACENT TO WALKWAYS, BIKE PATHS AND RIGHT-OF-WAYS MUST BE MAINTAINED WITH EIGHT FEET (8') OF CLEARANCE AND BE CLEAR OF VEHICULAR SIGHT TRIANGLES. REQUIRED HEDGES MUST BE PLANTED IN UNINTERRUPTED ROWS SO AS TO FORM CONTINUOUS UNBROKEN SCREEN WITHIN A MINIMUM OF ONE YEAR AFTER TIME OF PLANTING.
5. A MINIMUM THREE-INCH THICK LAYER OF MULCH, MEASURED AFTER WATERING-IN, SHALL BE PLACED AROUND ALL NEWLY INSTALLED TREES, SHRUBS, AND GROUNDCOVER PLANTINGS. ALL LANDSCAPE AREAS NOT RECEIVING A VEGETATIVE COVER MUST BE MULCHED. EACH TREE MUST HAVE A RING OF MULCH NO LESS THAN 24 INCHES BEYOND ITS TRUNK. THE USE OF CYPRESS MULCH IS DISCOURAGED.
6. ALL REQUIRED LANDSCAPING SHALL BE MAINTAINED IN PERPETUITY IN A HEALTHY AND VIGOROUS CONDITION. TREE AND PALM STAKING AND TEMPORARY BARRICADES SHALL BE REMOVED WITHIN 12 MONTHS AFTER INSTALLATION.
7. ALL CODE REQUIRED TREES SHALL BE A MINIMUM OF 10 FEET IN HEIGHT AT PESTIGATION; CANOPY SHALL BE 36 INCHES ABOVE THE GROUND) AND FOUR-FOOT WEDE CANOPYS. PALMS MUST HAVE A MINIMUM OF 10 FEET OF CLEAR TRUNK/WOOD AT TIME OF PLANTING. TREES LOCATED ALONG ARTERIAL ROADS MUST HAVE A MINIMUM 3-INCH CALIPER (AT 12 INCHES ABOVE GROUND) AT THE TIME OF INSTALLATION.
8. SHRUBS SHALL BE A MINIMUM OF 24 INCHES IN HEIGHT ABOVE THE ON-SITE ADJACENT PAVEMENT SURFACE TO BE BUFFERED AND/OR SCREENED, WHEN MEASURED AT THE TIME OF PLANTING. ALL SHRUBS INTENDED FOR SCREENING MUST BE A MINIMUM OF 3-GALLON CONTAINER SIZE AT TIME OF PLANTING AND 36 INCHES IN HEIGHT WITHIN 12 MONTHS OF PLANTING. SHALL BE MAINTAINED AT A HEIGHT NO LESS THAN 36 INCHES ABOVE DRIVEWAY/SIDEWALK AND INTERSECTIONS THAT ARE BUFFERED AND/OR SCREENED, EXCEPT FOR VISIBILITY AT INTERSECTIONS AND WHERE PEDESTRIAN ACCESS IS PROVIDED, WHICH SHALL BE MAINTAINED AT 24 INCHES ABOVE NEAREST ROADWAY, MAXIMUM.
9. CANOPY TREES SHALL NOT BE PLANTED WITHIN SEVEN FEET OF ANY ROADWAY, SIDEWALK, OR PUBLIC UTILITY UNLESS AN ACCEPTABLE ROOT BARRIER MATERIAL IS INSTALLED BETWEEN THE TREE AND THE ROADWAY, SIDEWALK, OR PUBLIC UTILITY.
10. IRRIGATION REQUIRED. THE IRRIGATION SYSTEM SHALL BE OPERATED BY AN AUTOMATIC IRRIGATION CONTROLLER. ALL LANDSCAPE AREAS, INCLUDING PARKING LOT ISLANDS, SHOULD REGULARLY GLEVEED FOR IRIGATION. A MOISTURE (RAIN) SENSOR SHALL BE INCLUDED IN THE IRRIGATION SYSTEM AND LOCATED ON THE SITE SO THAT IT WILL RECEIVE DIRECT RAINFALL, NOT IMPDED BY OTHER OBJECTS. THE IRRIGATION SYSTEM SHALL BE DESIGNED IN A WAY THAT ELUVATES THE APPLICATION OF WATER TO DRYER PORTIONS OF AREAS SUBJECT TO DROWNING AND OVERHEAD IRRIGATION. THE IRRIGATION SYSTEM SHALL BE DESIGNED TO AVIOD IMPLICATIONS ON EXISTING NATIVE VEGETATION THAT WILL BE RETAINED ON THE DEVELOPMENT SITE. IRRIGATION COVERS SHALL INCLUDE BOTH SPRAY HEADS AND DRIPPERS AND TO HEAD OR 100% COVERAGE WITH SPRAY HEADS OR OTHER APPROVED DEVICE

PROHIBITED INVASIVE EXOTICS	
Common Name	Scientific Name
Earleaf acacia	Acacia auriculiformis
Woman's tongue	Albizia lebeck
Bishopwood	Bischofia javanica
Australian Pines	All Casuarina species
Carrotwood	Cupaniopsis anacardioides
Rosewood	Dalbergia sissoo
Air potato	Dioscorea alata
Murray red gum	Eucalyptus camaldulensis
Weeping fig	Ficus benjamina
Cuban laurel fig	Ficus microcarpa
Japanese Climbing fern	Lygodium japonicum
Old World climbing fern	Lygodium microphyllum
Melaleuca, paper tree	Melaleuca quinquevneria
Downy rose myrtle	Rhodomyrtus tomentosus
Chinese tallow	Sapium sebiferum
Brazilian pepper, Florida holly	Schinus terebinthifolius
Tropical soda apple	Solanum vianum
Java plum	Syzygium cumini
Rose apple	Syzygium jambos
Cork tree	Thespesia populnea
Wedelia	Wedelia trilobata



E SEAL: 01-07-2020

DARBY ENGINEERING, INC.  
2638 STONYHILL COURT  
CAPE CORAL, FL 33991



## LANDSCAPE DETAILS

CHECKED BY: DKK

REVISION DATE:	02-07-19 REVISED PER SITE PLAN & COMMENTS
REVISION DATE:	08-15-19 REVISED PER SITE PLAN & COMMENTS
REVISION DATE:	01-07-20 REVISED PER SITE PLAN & COMMENTS
REVISION DATE:	-----

SHEET: 2 OF 2

# L 2.0

**Exhibit 7**

**LE-081 Nest History**

Nest History for LE-081

Strap Number: 28-44-22-00-00014.0000

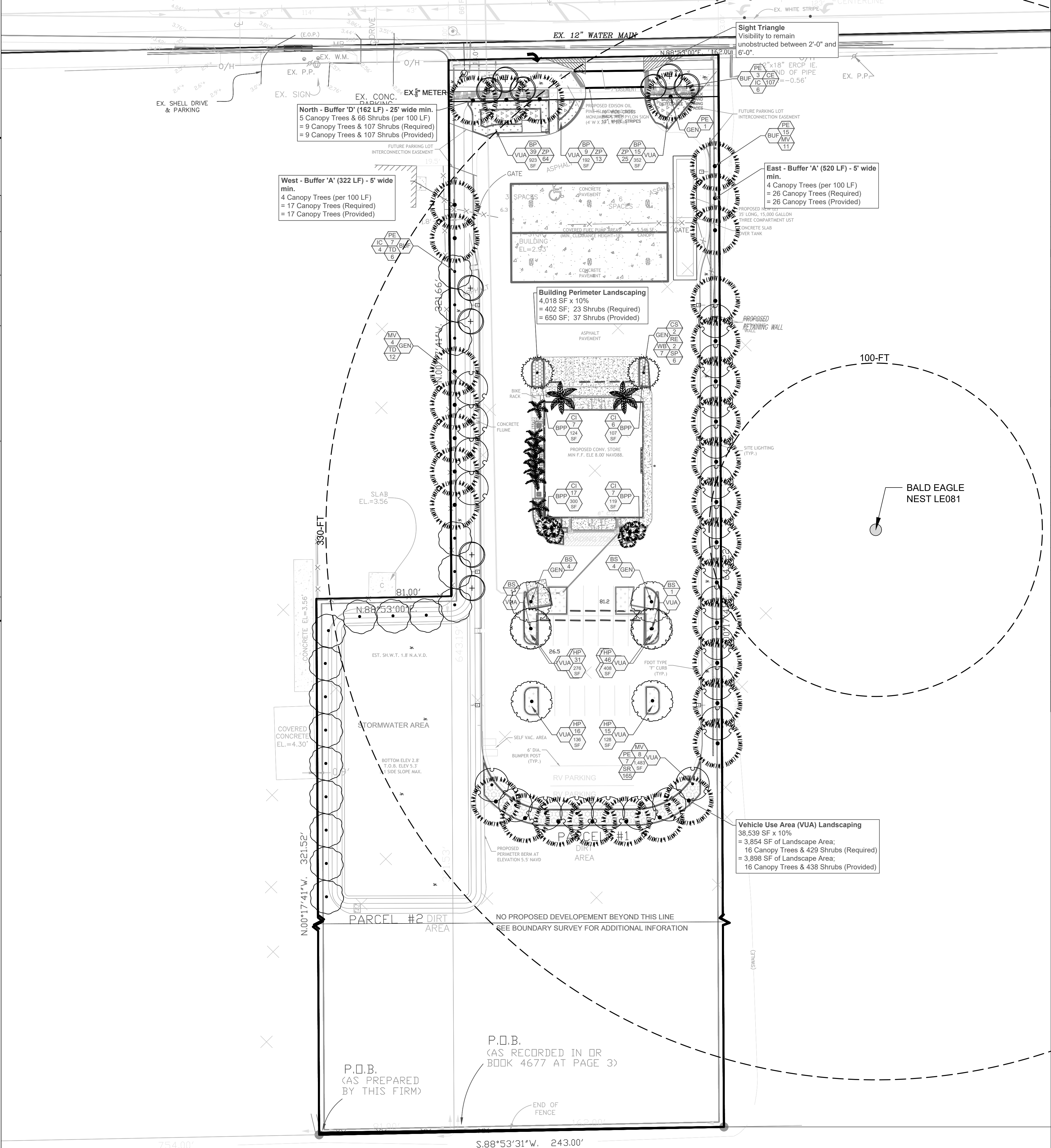
<b>Year</b>	<b>Activity</b>	<b>Productivity of Nest</b>
2011-2012	Active	2 Fledglings
2012-2013	Inactive	Zero
2013-2014	Active	2 Fledglings
2014-2015	Active	2 Fledglings
2015-2016	Active	2 Fledglings
2016-2017	Active	2 Fledglings
2017-2018	Active	1 Fledgling
2018-2019	Active	1 Fledgling

**Exhibit 8**

**Proposed Landscape Plan  
with Buffers**



SITE INFORMATION			
SITE ADDRESS:		5081 Pine Island Road W Bokereilla, FL 33922	
SITE AREA:		130,680 SF	
CURRENT ZONING:		CG	
FUTURE LAND USE:		URBAN COMMUNITY	
SITE DEVELOPMENT AREA			
TOTAL PARCEL AREA:		130,680 SF	100.00%
PROPOSED BUILDING AREA:		4,018 SF	3.10%
PROPOSED PAVEMENT AREA:		38,539 SF	29.50%
WALKS & CANOPY CONCRETE:		7,474 SF	5.70%
PROPOSED TOTAL IMPERVIOUS AREA:		50,031 SF	38.30%
PROPOSED TOTAL PERVIOUS AREA:		80,649 SF	61.70%
LEE COUNTY LANDSCAPE REQUIREMENTS			
(Per Lee County, FL - Land Development Code / Chapter 10 - DEVELOPMENT STANDARDS / ARTICLE III. - DESIGN STANDARDS AND REQUIREMENTS / DIVISION 6. - OPEN SPACE, BUFFERING AND LANDSCAPING)			
		Required:	Provided:
Sec. 10-415. - Open Space.			
(a) Open Space Calculations: Commercial			
20% of development area must be provided as open space			
➤ Open Space: 130,680 SF x 0.20 = 26,136.00 SF		26,136 SF	76,151 SF
Sec. 10-416. - Landscape standards.			
(a) General Trees. (GEN)			
(3) All other developments. One tree must be provided per each 3,500 square feet of development area.			
➤ GEN: 130,680 SF / 3,500 = 37.34 SF		38	38
(b) Building perimeter plantings. (BPP)			
Building Perimeter Plantings equal to ten percent of the proposed building gross ground level floor area must be provided.			
➤ BPP: 4,018 SF x 0.10 = 401.80 SF		402 SF	650 SF
➤ BPP: (402 SF / 2 ) / 9 = 22.33 Shrubs		23	37
(c) Landscaping of parking and vehicle use areas. (VUA)			
(2) Internal landscaping.			
a. At least one canopy tree or a cluster of three sabal palms must be planted or retained for every 250 square feet of required internal planting area, and no parking space may be more than 200 feet from a tree planted in a permeable island, peninsula or median.			
➤ VUA Canopy Trees: 3,854 SF / 250 = 15.42 Trees		16	16
b. Landscaped areas on the parking area perimeter or internal islands must equal or exceed a minimum of ten percent of the total paved surface area.			
➤ VUA Area: 38,539 SF x 0.10 = 3,853.90 SF		3,854 SF	3,898 SF
➤ VUA Shrubs: 3,854 SF / 9 = 428.22 SF		429	438
(d) Buffering adjacent property. (BUF)			
Commercial Development abutting the following uses:			
North Property Boundary: Commercial <--> ROW (Pine Island "Buffer per LDC 34-1353(e)")			Rd
(25 min. width; 5 Trees + 66 Shrubs / 100 LF)			
➤ 162.00 LF = 9 Trees + 107 Shrubs		9	9
162 / 100 = 1.62 x 5 = 8.10 Trees		107	107
162 / 100 = 1.62 x 66 = 106.92 Shrubs			
East Property Boundary: Commercial <--> Commercial			
Type A Buffer (5 min. width; 4 Trees / 100 LF)			
➤ 520.03 LF = 26 Trees		26	26
520 / 100 = 5.20 x 5 = 26.00 Trees			
West Property Boundary: Commercial <--> Commercial			
Type A Buffer (5 min. width; 4 Trees / 100 LF)			
➤ 321.66 LF = 17 Trees		17	17
322 / 100 = 3.22 x 5 = 16.10 Trees			
South Property Boundary: Commercial <--> Agriculture			
No Buffer Required			
TOTALS		TREES SHRUBS LANDSCAPE AREA	106 559 4,256 SF 106 582 4,548 SF



PLANT SCHEDULE					
KEY	SYMBOL	QTY	SPECIES	PLANT TYPE	CATEGORY
PROPOSED TREES					
BS		4	Gumbo Limbo, <i>Bursera simaruba</i>	CANOPY	GEN
CS		2	Orange Geiger Tree, <i>Cordia sebestena</i>	CANOPY	GEN
IC		10	Dahoon Holly, <i>Ilex cassine</i>	CANOPY	BUF
MV		11	Sweetbay Magnolia, <i>Magnolia virginiana</i>	CANOPY	BUF
PE		25	South Florida Slash Pine, <i>Pinus elliotii</i> var. <i>densa</i>	CANOPY	GEN
RE		2	Florida Royal Palm, <i>Roystonea elata</i>	PALM	GEN
SP		6	Cabbage Palm, <i>Sabal palmetto</i>	PALM	GEN
TD		6	Bald Cypress, <i>Taxodium distichum</i>	CANOPY	BUF
WB		7	Foxtail Palm, <i>Wodyetia bifurcata</i>	PALM	GEN
TOTAL TREES		106			
PROPOSED SHRUBS					
BP		63	Orange Bird of Paradise, <i>Streptocarpus reginae</i>	HEDGE/SHRUB	VUA
CE		107	Silver Buttonwood, <i>Conocarpus erectus</i> var. <i>sericeus</i>	HEDGE	BUF
CI		37	Red Tip Coccolup, <i>Chrysobalanus icaco</i> 'Red Tip'	HEDGE	BPP
HP		108	Firebush, <i>Hamelia patens</i>	HEDGE	VUA
SR		165	Silver Saw Palmetto, <i>Serenoa repens</i>	HEDGE/SHRUB	VUA
ZP		102	Coontie, <i>Zamia pumila</i>	SHRUB	VUA
TOTAL SHRUBS		582			
---		---	Bahia grass (Sod), <i>Paspalum notatum</i> 'Fluorger'	LAWN	THROUGHOUT
Size & Specification Notes					
TREES: 10'-0" HT. min., 2" Caliper @ 6' above grade min., 4'-0" Spread min.					
ROW BUFFER TREES (per LDC 34-1353(e)): 14'-0" HT. min., 3.5" Caliper @ 12' above grade min., 6'-0" Spread min.					
*ROW Buffer Trees located along Pine Island Road*					
PALMS: 10'-0" min. of clear trunk after planting, Staggered heights (min. 4' ht. difference) when grouped.					
SHRUBS: 24" HT., 3-Gal. Cont., Spaced 36" O.C.					
SOD: All sod to be solid, free of weeds and pests, sand-grown, sand-leveled, and hand-laid.					
MULCH: A minimum three-inch thick layer of mulch, measured after watering-in, shall be placed around all newly installed trees, shrubs, and groundcover plantings. All landscape areas not receiving a vegetative cover must be mulched. Each tree must have a ring of mulch no less than 24 inches beyond its trunk. The use of cypress mulch is discouraged.					
QUALITY: Plant materials used to meet the requirements of this division must meet the standards for Florida No. 1 or better, as provided in Grades and Standards for Nursery Plants, Parts I and II, Department of Agriculture, State of Florida (as amended). Root ball sizes on all transplanted plant materials must also meet state standards.					
NATIVE VARIETIES: At least 75 percent of the trees and 50 percent of the shrubs used to fulfill requirements of this chapter must be Florida native species. Required: 75% / 50% Provided: 93% / 89%					
ROOT BARRIERS: A root barrier shall be required for all canopy trees planted within 7'-0" of any roadway, sidewalk, or easement.					

PREPARED BY:

18197 SANDY PINES CIRCLE  
NORTH FORT MYERS, FL 33917  
Tel: 239.691.7790  
EMAIL: info@landesco.com

E SEAL: 08-15-2019

PREPARED FOR:

EDISON OIL  
5081 PINE ISLAND ROAD NW  
BOKEELIA, FL 33922

IN CONJUNCTION WITH:

DARBY ENGINEERING, INC.  
2638 STONYHILL COURT  
CAPE CORAL, FL 33991

LANDSCAPE PLAN  
WITH BALD EAGLE NEST  
BUFFER RINGS

DATE IN: 06-08-2018

DRAWN BY: JOK

CHECKED BY: DKK

02-07-19 REVISED PER SITE PLAN & COMMENTS

08-15-19 REVISED PER SITE PLAN & COMMENTS

01-07-20 REVISED PER SITE PLAN & COMMENTS

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REVISION DATE:

REVISION DATE:

REVISION DATE:

REVISION DATE:

SHEET: 1 OF 1

EXHIBIT