

ENVIRONMENTAL SUPPLEMENT

RUSSELL SQUARE

AMENDED
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1.0 INTRODUCTION

The Russell Square project site is approximately 32.89 acres located in eastern Collier County, east of Santa Barbara Blvd and south of Davis Blvd. The property is located within Sections 9, Township 50 South, Range 26 East, Collier County, Florida. The project site is made up of seven smaller parcels individually identified as folio numbers 00407520002, 00407960002, 00407840009, 00408360009, 00408120003, 00407720006, and 00408200004 by the Collier County property appraiser's office. Access to the project is via Santa Barbara Blvd on the west boundary and from Sunset Blvd into the south boundary. A general location map is provided in the included exhibits.

The 4 westernmost parcels have been used in the past as pasture lands and also had a single-family residence until it was removed in 2003. Two of the eastern parcels contain existing single-family residences and have had horses in the past. The final parcel in the south east is undeveloped and forested. There is a mix of developed and undeveloped residential parcels to the east and south of the project site. Santa Barbara Blvd lies immediately to the west with higher density residential development to the northwest and southwest.

A majority of the site has been cleared and maintained clear for the agricultural and single family uses. The remaining undeveloped areas are infested to varying degrees by exotic vegetation including melaleuca and Brazilian pepper. The project site contains about 27.03 acres of upland habitats (82% of the project area) and 5.50 acres of wetland habitats (17% of the project area) as well as 0.36 acre of other surface waters (OSW) (1% of the project area).

The proposed project is occurring on a site which has been impacted by agricultural and construction activities. The proposed development does impact jurisdictional wetlands, though these impacts have been minimized to isolated wetlands that are not jurisdictional to the US Army Corps of Engineers (USACE). The wetlands proposed to be impacted are isolated, relatively low functioning wetlands due to surrounding development and exotic vegetation infestation. A wetland enhancement program is proposed which will improve the long-term viability prospect of the remaining on-site wetlands as well as provide increased functional value and wading bird foraging values to the local watershed while meeting the County's native vegetation retention requirements. The preserved wetlands meet the County hierarchy with respect to native vegetation preservation requirements for the project, though they are not interconnected with each other or to off-site preserve lands.

This document provides information concerning the proposed Russell Square project site as it relates to natural resources and environmental issues. It is submitted to Collier County in support of a Planned Unit Development zoning request.

2.0 WETLAND JURISDICTION AND PERMITTING HISTORY OVERVIEW

There have been three residences constructed on three of the parcels making up the project site. One of these was removed in 2003 while the other two are still remaining on parcels 00407720006 and 00408120003. There are also three distinct wetland areas on the project site. One is located immediately adjacent to Santa Barbara Blvd, one is in the northeast portion of the project site and the third in in the southeast portion of the project site. The southeast wetland area is jurisdictional to the State of Florida but is not jurisdictional to the USACE due to its isolation. A jurisdictional determination was made by the USACE on January 25, 2018, verifying that parcel 00408200004 did not fall under their jurisdiction.

The remaining two wetlands are jurisdictional to both the state of Florida and the USACE. Impacts proposed to the southeast wetland will require mitigation for the State. No impacts are proposed to the remaining two wetlands.

3.0 EXISTING CONDITIONS (PRE-DEVELOPMENT)

3.1 VEGETATION ASSOCIATIONS

3.1.1 Project Site

The existing habitat types (based on FLUCFCS codes) are shown in Table 1 below and Exhibit 2 (FLUCFCS Map).

Of the total 32.89 acres contained within the combined Russell Square property boundary, approximately 82% are considered uplands (27.03 ac.) and 18% are considered wetlands (5.50 ac. of wetlands and 0.36 ac. of OSW). Several portions of the property have been infested to some degree by noxious exotic vegetation; including melaleuca and Brazilian pepper.

Table 1- EXISTING HABITAT TYPES - FLUCFCS Codes & Acreages

Wetland Habitat	FLUCCS Code	Project Acreage
Cypress-Pine-Cabbage Palm	624 (E2)	2.44
Mixed Wetland Forest	630 (E1-2)	3.06
Total Wetland Habitat		5.50
OSW Habitat (Ponds)**	520	0.36
Total OSW Habitat		0.36
Upland Habitat		
Residential Low Density**	111	5.40
Unimproved Pasture**	212	16.31
Disturbed Cypress	621E4D	0.19
Pine Flatwoods	411 (E2)	4.78
Brazilian Pepper	422	0.18
Live Oak	427	0.17
Total Upland Habitat		27.03

** Habitats do not qualify as native habitat under Collier County guidelines as long as it can be demonstrated that they were legally cleared.

There are no rare or exceptional vegetation associations present on the project lands.

A list of plant species observed within each habitat type is found below.

C = Canopy M = Midstory G = Groundcover V = Vine E = Epiphyte * - Protected species

411(E2) – Pine Flatwoods, 4.78 acres

Slash pine	<i>Pinus elliottii</i>	C & M	Dominant
Cabbage palm	<i>Sabal palmetto</i>	C, M & G	Dominant
Brazilian pepper	<i>Schinus terebinthifolia</i>	C, M & G	Common
Melaleuca	<i>Melaleuca quinquinervia</i>	C, M & G	Common
Laurel oak	<i>Quercus laurifolia</i>	C	Occasional
Earleaf acacia	<i>Acacia auriculiformis</i>	C	Occasional
Myrsine	<i>Myrsine guianensis</i>	M & G	Common
Wax myrtle	<i>Myrica cerifera</i>	M & G	Occasional
Caesar weed	<i>Urena lobate</i>	G	Occasional
Wire grass	<i>Aristida stricta</i>	G	Common
Broom grass	<i>Andropogon virginicus</i>	G	Common
Saw palmetto	<i>Serenoa repens</i>	G	Occasional
Greenbriar	<i>Smilax spp.</i>	V	Occasional
Grapevine	<i>Vitis rotundifolia</i>	V	Occasional

422(E2) – Brazilian Pepper, 0.18 acres

Brazilian pepper	<i>Schinus terebinthifolia</i>	M & G	Dominant
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427 – Live Oak, 0.17 acres

Live Oak	<i>Quercus virginiana</i>	C, M & G	Dominant
Slash pine	<i>Pinus elliottii</i>	C & M	Occasional
Cabbage palm	<i>Sabal palmetto</i>	C, M & G	Occasional
Brazilian pepper	<i>Schinus terebinthifolia</i>	C, M & G	Common
Laurel oak	<i>Quercus laurifolia</i>	C	Occasional

621(E4)(D) – Cypress, disturbed, 0.19 acres

Cypress	<i>Taxodium distichum</i>	C & M	Common
Brazilian pepper	<i>Schinus terebinthifolia</i>	C, M & G	Dominant

624 – Cypress-Pine-Cabbage Palm – 2.44 acres

Cypress	<i>Taxodium distichum</i>	C, M, & G	Dominant
Slash Pine	<i>Pinus elliottii</i>	C & M	Occasional
Melaleuca	<i>Melaleuca quinquenervia</i>	C, M & G	Common
Cabbage palm	<i>Sabal palmetto</i>	C & M	Common
Swamp fern	<i>Blechnum serrulatum</i>	G	Dominant
Sawgrass	<i>Cladium jamaicense</i>	G	Occasional

Brazilian pepper	<i>Schinus terebinthifolia</i>	M & G	Common
Myrsine	<i>Myrsine guianensis</i>	M & G	Common
Wax myrtle	<i>Myrica cerifera</i>	M & G	Occasional
Laurel oak	<i>Quercus laurifolia</i>	C	Occasional
Coco plum	<i>Chrysobalanus icaco</i>	M	Rare

630 – Mixed Wetland Forest – 3.06 acres

Cypress	<i>Taxodium distichum</i>	C & M	Common
Melaleuca	<i>Melaleuca quiquinervia</i>	C, M & G	Common
Carolina Willow	<i>Salix caroliniana</i>	M & G	Common
Pond apple	<i>Annona glabra</i>	M & G	Occasional
Brazilian Pepper	<i>Schinus terebinthifolia</i>	M	Common
Swamp fern	<i>Blechnum serrulatum</i>	G	Common
Alligator flag	<i>Thalia geniculata</i>	G	Occasional

3.2 TOPOGRAPHY AND DRAINAGE PATTERNS

According to the SFWMD, the project lands as well as surrounding off-site lands are located within the West Collier drainage basin. The basin boundary (divide) to the north generally follows Immokalee Road (SR 846) east and west. The basin divide to the south generally follows the tidal boundary with Rookery Bay.

Historically, prior to extensive human development of the area, water generally flowed from northeast to southwest driven by the land elevations dropping toward the Gulf of Mexico. Water generally flows in this same direction but largely via the existing stormwater swales and ponds associated with the Lely Area Stormwater Improvement Plan (LASIP). Surface water within the project boundary is not tidally connected and will move towards the Gulf slowly via the overland flow through the stormwater management lakes, pipes, and swales south and west of the project site.

3.3 WETLANDS & OTHER SURFACE WATERS

Qualified Turrell, Hall & Associates, Inc. (THA) environmental staff inspected the project site for the purpose of delineating wetlands and other surface waters. The wetland delineation methodologies and criteria set forth by the state (in Chapter 62-340, FAC, Delineation of the Landward Extent of Wetlands and Surface Waters) and the Corps (in the 1987 Corps of Engineers Wetlands Delineation Manual) were followed in determining whether an area was considered as a wetland or other surface water and in delineating the limits (boundaries) of potential jurisdictional wetlands and other surface waters.

THA biologists flagged the boundaries of those areas which are considered wetlands according to the state and federal guidelines. There were very few cases where it appeared wetland lines established based on the state methodology would differ from those established based on the

federal (Corps) methodology. Where this did occur, the feature boundary was flagged based on the landward-most extent of the two methods – in other words, the methodology that produced the greatest extent of wetlands was used to flag the wetland line.

Sheet 02 of the enclosed exhibits depicts wetlands present on the project lands. Within the Russell Square property there are 3 distinct wetland areas that are not connected to each other either through drainage swales or via off-site wetlands. These "on-site" wetlands are individually identified and are treated as separate wetland systems. Additionally, there is a small remnant cypress area that no longer exhibits wetland characteristics and has been taken over by Brazilian pepper so was not included as a wetland area. All of the on-site wetlands are SFWMD jurisdictional while only two of them are jurisdictional to the USACE.

3.3.1 Wetland Seasonal High Water Table & Hydroperiod

The hydrologic regime on this property is extremely altered from historical levels and patterns by surrounding development and the LASIP stormwater system that has been put in place in the region. Seasonal high-water elevations were determined using water lines, lichen lines, adventitious rooting, and other hydrologic indicators. Nails were placed in several trees at the seasonal high-water level indicators and will be later surveyed to determine elevations and help establish final control elevations for the development. Water from adjacent properties is now mostly cut off as a result of construction (residences and roads) around the site. There is standing water in the ponds year-round, however the remainder of the site dries out seasonally before being inundated again during rainy season.

3.3.2 Jurisdictional Status of Wetlands

All of the on-site wetlands are SFWMD jurisdictional while only two of them are jurisdictional to the USACE.

3.3.3 Jurisdictional Status of Other Surface Waters

The other surface waters present on the property are man-made fill pit ponds excavated in the late -1980's and early 1990's for fill that was used on the residential construction. Due to the lack of connectivity with the wetlands and no surficial hydrologic connections to downstream navigable waters of the U.S. (tidal waters), these OSWs were assumed to not be jurisdictional with either the SFWMD or the Corps.

3.4 NATIVE HABITAT

Collier County Land Development Code regulations require that project preserve a portion of their on-site native habitat as part of their development proposal. Calculations are based on a percentage of the acreage of native habitat existing on the site. Lands within the County ROW are not included in this calculation. Since the Russell Square property is greater than 20 acres in size, it will be required to preserve 25% of the native vegetation on the site. The property is

32.89 acres in size and based on the FLUCFCS mapping pasture, residences, and other legally cleared lands do not count towards native vegetation totals. The sections below break out the overall property into the individual components to try and better explain the native vegetation calculations.

3.4.1 Pasture Parcel

Clearing of approximately $\frac{3}{4}$ of this parcel occurred in the early 1970's. The 1973 aerial shows the clearing for pasture use as well as a residence and a couple of small ponds. The wetland area along the west side of the property was not cleared and was contiguous with a larger wetland system to the west. Since the clearing was for pasture use and was done before the County Ordinance 76-42 it is exempt from the need for an ag clearing permit (LDC 10.02.06.C.1.d). By 2003 exotic vegetation had taken over large portions of the site and the grazing value of the site was much reduced. Extensive exotic removal was undertaken in 2004 and 2005. A bark beetle infestation also hit the property in 2005 which killed a good number of the pines which had been left as shade for the livestock. In 2009 and 2010, Santa Barbara Blvd was extended down past this property and the northern portion of the site was used as a storage and staging area for the road construction. Additional clearing on the site was done as part of that construction. The portions of the site cleared for this staging are also exempt from the native vegetation calculations per LDC 3.05.07.B.2. This information was provided to the County in 2014 as part of a due diligence investigation to build a small farm stand operation on this site. This 2014 coordination determined that all the pasture area except for 1.79 acres had been cleared legally and would not be subject to native vegetation preservation requirements. The 1.79 acres would need to be included in any native vegetation retention requirements for future development or agricultural use. An after the fact agricultural clearing permit (ACP-PL20140000566) was obtained to account for the mid-story and groundcover clearing that had occurred within that 1.79 acres.

3.4.2 North Single-Family Parcel

It could not be determined definitively that all of the clearing associated with the northernmost single-family parcel was actually permitted. It is obvious from aerial photograph investigations that the clearing and construction was all done at the same time in 1993 and 1995. A residence, barn, pond, and riding ring were all part of the original construction. The plans and drawings associated with the construction permits issued only show the house footprint though, not the entire property or accessory components (riding ring and pond) so it could not be determined if clearing done for those accessory uses was permitted. Both permits issued for this property in 1993 and 1995 were CO'ed and no violation noted. An additional structure was built in 2012 that encompassed 0.25 acre of the already previously cleared area. Collier Code (3.05.02.F.1) allows for up to 1 acre of clearing associated with single family residences without additional clearing authorizations needed. The County Code has an exemption from this provision for properties that were cleared prior to January 1989 but that didn't apply to this property since the permits were issued in 1993 and 1995. Since no additional authorizations were found, the clearing of the

property over the 1.25 acres permitted was counted as native habitat for the preserve requirement calculations.

3.4.3 Central Single-Family Parcel

The center single family parcel was permitted and cleared in 1983 so is prior to the January 1989 exception date in the County LDC (3.05.07.B.2.a) and therefore not subject to the native vegetation calculations. More of the site was originally cleared than is depicted on the exhibits due to the regeneration of some trees that have been left to grow. Mowing of the understory is still done regularly. The majority of the trees on this single family parcel also fall below the 8" dbh requirement to be counted as native on maintained properties (LDC 3.05.07.A.2).

3.4.4 South Undeveloped Parcel

This parcel contains a mix of upland and isolated wetland communities almost all of which qualify as native habitat. A small area of Brazilian pepper has no canopy overstory and therefore does not qualify as native habitat per the County Code.

Taking all of the above into account, the native preservation calculation is based on the remaining acreage of 13.88 acres (see Native Vegetation Table Below). The project will be required to preserve 25% of this acreage or a minimum of 3.47 acres. The project is currently proposing to preserve 3.61 acres of native habitat onsite; therefore it is compliant with the County LDC preservation requirements of section 3.05.07. The proposed preserve lands will be in two different locations in order to preserve the higher quality wetland areas and so will need a deviation from LDC 3.05.07.A.5 to account for all of the preserve lands not being interconnected or contiguous.

Table 2- NATIVE VEGETATION ACREAGES

Habitat	FLUCCS Code	Total Acreage	Native Vegetation Acreage
Residential	111	5.40	1.10
Pasture	212	16.31	1.85
Pine Flatwoods	411	4.78	4.78
Brazilian Pepper	422	0.18	0.00
Oak	427	0.17	0.17
Disturbed Cypress	621	0.19	0.19
Cypress-Pine-Cabbage Palm	624	2.44	2.44
Mixed Wetland Forest	630	3.06	3.06
Ponds (OSW)	520	0.36	0.29
		32.89	13.88
25% Native Vegetation Retention			3.47
Proposed Onsite Preservation			3.61

3.5 LISTED PLANT & ANIMAL SPECIES

A survey for listed animal and plant species has been conducted within the project area by THA biologists. This threatened and endangered species survey and its results are discussed in the attached Appendix B. The Threatened & Endangered Species report describes the approximate locations where listed animal species were observed on and near the project area during the course of the referenced survey. During the survey events white ibis (*Eudocimus albus*), snowy egret (*Egretta thula*), and little blue heron (*Egretta caerulea*) were observed. No other listed species were observed within the project area.

A few listed animal species in addition to those documented on the project lands by THA have some potential for occurring in certain habitats present on project lands. These species are discussed in Appendix B and include; indigo snake, roseate spoonbill, limpkin, southeastern American kestrel, Big Cypress fox squirrel, Florida bonneted bat, and Florida black bear. The probability of these animals utilizing suitable habitats in project lands ranges from very low to moderate depending upon the particular species (see discussion in Appendix B). It is improbable that any of these species currently reside or nest on the project lands. These listed species records and the source of these records are also discussed in Appendix B.

It is highly unlikely that any federally listed plant species could be present on the project lands. Several butterfly orchids (*Encyclia tampensis*) were observed growing on cypress trees on the project site. These orchids are listed as "less rare" in the Collier County Land Development Code (LDC). The orchids were located within areas proposed to be preserves so no relocation will be required.

Due to isolation, exotic species encroachment, proximity to major roadways, and degradation of foraging habitat, it is apparent that this site offers only minimal value to local wildlife. The surrounding developments, and roads have partially isolated this property and made travel to it by larger terrestrial wildlife difficult.

3.6 HISTORICAL/ARCHAEOLOGICAL RESOURCES

The Florida Master Site File (MSF) is a database of the known historic and archaeological sites in the state of Florida. The MSF office was contacted and the response back indicated that there were no recorded archaeological sites in close proximity to the subject property. If a suspected archaeological or historical artifact is discovered during the course of site development activities (construction, clearing, etc.), the development activities at the specific site will be immediately halted and the appropriate agency notified. Development will be suspended for a sufficient length of time to enable the County or a designated consultant to assess the find and determine the proper course of action.

3.7 SOILS

Based on the National Resource Conservation Service (NRCS) "Soil Survey of Collier County Area, Florida" (NRCS, 1998) there are two (2) different soil types (soil map units) present on the

project lands. Exhibit 05 provides a soils map for the project area as derived from the NRCS mapping. The following sub-sections provide a brief description of each soil map unit identified on the project lands. Information is provided about the soil's landscape position (i.e. it's typical location in the landscape on a county-wide basis), the soil's profile (i.e. textural composition and thickness or depth range of the layers or horizons commonly present in the soil), and the soil's drainage and hydrologic characteristics. The soils occurring on project lands are as follows:

(14) Pineda Fine Sand, Limestone Substratum

This nearly level poorly drained soil is in sloughs and poorly defined drainageways. Individual areas are elongated and irregular in shape and range from 20 to 300 acres. The slope is 0 to 2 percent.

Typically, the surface layer is dark grayish brown fine sand about 4 inches thick. The subsurface layer is light brownish gray fine sand to a depth of about 12 inches. The subsoil is to a depth of about 55 inches; the upper part is brownish yellow and very pale brown fine sand, the middle part is grayish brown sandy clay loam, and the lower part is light brownish gray and dark grayish brown fine sandy loam. Limestone bedrock is at a depth of about 55 inches.

In 95 percent of areas mapped as this soil, Pineda and similar soil make up 79 to 100 percent of the map unit. The characteristics of Holopaw and Riviera, limestone substratum soils are similar.

Soils of dissimilar characteristics included in this unit are small areas of Boca, Hallandale and Malabar soils on similar landscape positions. These soils make up about 11 percent or less of the unit.

The permeability of this soil is slow. The available water capacity is low. In most years, under natural conditions, the seasonal high water table is within 12 inches of the surface for 3 to 6 months. In other months, the water table is below 12 inches and recedes to a depth of more than 40 inches during extended dry periods. During periods of high rainfall, the soil is covered by shallow slowly moving water for periods of about 7 to 30 days.

Natural vegetation consists of South Florida slash pine, wax myrtle, chalky bluestem, blue maidencane and gulf muhly.

This soil is poorly suited to cultivated crops because of wetness and droughtiness. With good water-control measures and soil-improving measures, the soil can be made suitable for many fruit and vegetable crops. A water control system is needed to remove excess water in wet seasons and provide water through subsurface irrigation in dry season. Row crops should be rotated with cover crops. Seedbed preparations should include bedding of the rows. Fertilizer and lime should be added according to the need of the crops.

With proper water control, the soil is moderately suited to citrus. Water control systems that maintain good drainage to an effective depth are needed. Bedding the soil prior to planting provides good surface and internal drainage and elevates the trees above the seasonal high water

table. A good grass cover crop between the trees helps to protect the soil from blowing when the trees are younger.

With good water control management, this soil is well suited to pasture. A water control system is needed to remove excess water during the wet season. It is well suited to pangolagrass, bahiagrass and clover. Excellent pastures of grass or grass-clover mixtures can be grown with good management. Regular applications of fertilizers and controlled grazing are needed for highest yields.

This soil is well suited for desirable range plant production. The dominant forage consists of blue maidencane, chalky bluestem and bluejoint panicum. Management practices should include deferred grazing. This Pineda soil is in the slough range site.

This soil has severe limitations for most urban uses because of the high water table. To overcome this limitation, building sites and septic tank absorption fields should be mounded. This soil also has severe limitations for recreational development because of wetness and sandy textures. Problems associated with wetness can be corrected by providing adequate drainage and drainage outlets to control the high water table. The sandy texture limitation can be overcome by adding suitable topsoil or by resurfacing the area.

This Pineda soil is in capability subclass IIIw.

(21) Boca Fine Sand

This nearly level, poorly drained soil is on the flatwoods. Individual areas are elongated and irregular in shape and range from 20 to 350 acres. The slope is 0 to 2 percent.

Typically, the surface layer is very dark gray fine sand about 4 inches thick. The subsurface layer is fine sand to a depth of about 26 inches; the upper part is light gray and the lower part is brown. The subsoil is dark grayish brown fine sandy loam to a depth of about 30 inches. Limestone bedrock is at a depth of about 30 inches.

In 95 percent of areas mapped as this soil, Boca and similar soils make up 79 to 93 percent of the map unit. The characteristics of Hallandale soils are similar.

Soils of dissimilar characteristics included in this map unit are small areas of Pineda and Riviera, limestone substratum soils in slough landscape positions. These soils make up about 7 to 21 percent of the unit.

The permeability of this soil is moderate. The available water capacity is very low. In most years, under natural conditions, the seasonal high water table is between 6 to 18 inches of the surface of 1 to 6 months. In other months, the water table is below 18 inches and recedes to a depth of more than 40 inches during extended dry periods. Rarely is it above the surface.

Natural vegetation consists mostly of South Florida slash pine, cabbage palm, sawpalmetto, wax myrtle, chalky bluestem and pineland threeawn.

This soil is poorly suited to cultivated crops because of wetness and droughtiness. The number of adapted crops is limited unless very intensive management practices are followed. With good water control and soil improving measures, the soil can be made suitable for many fruit and vegetable crops. A water control system is needed to remove excess water in wet season and provide water through subsurface irrigation in dry seasons. Row crops should be rotated with cover crops. Seedbed preparation should include bedding of the rows. Fertilizer and lime should be added according to the need of the crops.

With proper water control, the soil is well suited to citrus. Water control systems that maintain good drainage to an effective depth are needed. Bedding the soil prior to planting provides good surface and internal drainage and elevates the trees above the seasonal high water table. A good grass cover crop between the trees helps to protect the soil from blowing when the trees are young.

With good water control management, this soil is well suited to pasture. A water control system is needed to remove excess water during the wet season. It is well suited to pangolagrass, bahiagrass and clover. Excellent pastures of grass or grass-clover mixtures can be grown with good management. Regular applications of fertilizers and controlled grazing are needed for highest yields.

This soil is moderately suited for desirable range plant production. The dominant forage is creeping bluestem, lopsided indiagrass, pineland threeawn and chalky bluestem. Management practices should include deferred grazing and brush control. This Boca soil is in the South Florida Flatwood range site.

This soil has severe limitations for most urban uses because of wetness. If this soil is used as septic tank absorption fields, it should be mounded to maintain the system well above the seasonal high water table. For recreational uses, this soil also has severe limitations because of wetness, but with proper drainage to remove excess surface water during wet periods, many of these limitations can be overcome.

This Boca soil is in capability subclass IIIw.

4.0 PROPOSED CONDITIONS (POST-DEVELOPMENT)

4.1 PROPOSED PROJECT

The purpose of the proposed Russell Square project is to develop a new residential community within the eastern Collier County area. The location of the project is in a region where there is currently a demand for home sites with access to community amenities such as found in the Collier County area (access to beaches, golf courses, shopping, etc.). Various acreage estimates for the proposed project are provided in Table 3 below.

TABLE 4. RUSSELL SQUARE PROJECT CUMULATIVE ACREAGE SUMMARY			
LAND TYPES			TOTAL
<u>PROPERTY ACREAGE EXISTING CONDITIONS</u>			
Total Area			32.89 Acres
Existing Wetlands & Waters			
Wetlands			5.50 Acres
OSW			0.36 Acres
TOTAL Wetlands & Waters			5.86 Acres
Uplands			27.03 Acres
<u>PROPOSED PROJECT ACREAGE</u>			
Wetlands & Waters to be Impacted			
Wetland Impacts Direct			2.44 Acres
Wetland Impacts Secondary			0.00 Acres
TOTAL Wetlands & Waters to be Impacted			2.44 Acres
Wetlands & Waters to be Enhanced and Preserved			
Wetlands			3.06 Acres
Uplands to be Enhanced and Preserved			
Uplands			0.55 Acres
TOTAL Lands Preserved			3.61 Acres

4.2 PROJECT IMPACTS TO WETLANDS

4.2.1 Direct, Permanent Impacts

Development of the proposed project will impact some wetlands though the wetlands to be impacted are isolated and are not jurisdictional to the USACE. The proposed development will result in direct, permanent impacts on the project site to a total of 2.44 acres of State jurisdictional wetlands. Please see attached Exhibit (Sheet 04) for more detail. As used herein, the term "direct impacts" refers to actions that will result in the complete elimination of jurisdictional areas (i.e. dredging and filling). The remainder of the existing wetlands on-site will be preserved (3.06 acres). The wetlands proposed to be impacted are relatively low functioning wetlands due to past impacts and exotic vegetation infestation.

UMAM score for the existing functional values of the wetland to be impacted is 0.43. The wetlands to be preserved on the northern side of the property are contiguous to off-site systems and are the least likely to be cut off by future surrounding development and development proposed on-site. The wetland to be preserved on the west side of the development is adjacent to the existing man-made swale along Santa Barbara Blvd. Transient use of these wetlands by wading birds will continue to be available within the preserves proposed.

4.2.2 Temporary Impacts

Minimal temporary impacts are expected with this development. Prior to construction commencement all preserved areas will be enclosed with siltation-prevention devices, which will remain in place until the adjacent construction is completed.

4.2.3 Secondary Impacts to Wetlands & Water Resources

The proposed layout of the project's development features will not result in any secondary impacts to adjacent wetlands. Secondary impacts are not assessed when there is a minimum 25 foot naturally vegetated upland buffer between the development and the wetland. This is consistent with the State's Environmental Resource Permitting guidelines. The proposed wetland and upland preserves will prevent additional secondary impacts to any off-site wetland areas.

4.2.4 Cumulative Impacts to Wetlands

No cumulative impacts are expected as a result of this project. The development of this property will not increase the development likelihood of adjacent parcels and any wetland impacts associated with those parcels will have to be mitigated through the proper permitting channels.

4.3 PRESERVATION OF WETLANDS, OTHER SURFACE WATERS, AND UPLANDS

Development of the proposed Russell Square project will impact 2.44 acres of the State of Florida Jurisdictional wetlands. The proposed project will impact predominately disturbed, exotic infested habitat areas on the property. Higher quality native wetland areas will be preserved. All of the preserved areas will be enhanced through the removal of exotic vegetation and improvements to hydrology.

The proposed Russell Square project will include 2 preserve areas within the project boundaries which will contain preserved and enhanced wetlands and uplands. The attached Exhibits (Sheet 05) illustrate the location of the proposed conservation areas.

The preserve wetlands will maintain the hydrological connectivity that currently exists. No project stormwater will be routed through these wetlands.

All of the preserved areas will be placed under appropriate conservation easements as required, which will protect the future integrity of the wetland and upland habitats contained in these areas. Appropriate access easements will also be provided to insure future maintenance of the preserve areas can be undertaken.

All Preserve areas will be delineated and marked with appropriate signage identifying the preserve boundary and restrictions associated with the preserve. Signage will be placed at least 150 feet apart and no more than 300 feet apart along all interfaces with the development. Signage will not be placed along the shared borders with existing Conservation lands.

4.4 PROJECT IMPACTS TO LISTED SPECIES

A survey for listed animal and plant species was conducted on the project site by THA biologists in 2014 and updated in late 2017. The listed animals associated with this project site as observed directly or indirectly by THA included the white ibis, snowy egret, and little blue heron.

A few listed animal species, in addition to those documented, have the potential to occur in certain habitats present on-site. These species include but are not limited to the indigo snake (*Drymarchon couperi*), tricolor heron (*Egretta tricolor*), roseate spoonbill (*Platalea ajaja*), Big Cypress fox squirrel (*Sciurus niger*), and Florida bonneted bat (*Eumops floridanus*). The probability of these animals utilizing suitable on-site habitats ranges from high to low depending on the particular species. None of these species currently reside or nest on-site.

The following subsections provide an assessment of the proposed project's potential impacts to various listed animal species. The species addressed include those observed on or in close proximity to the subject property as well as certain species that could potentially occur on the Russell Square site or on nearby off-site parcels.

Wood Storks (*Mycteria americana*)

No wood stork nests, rookeries, or roosting sites have been found on the subject property though foraging in the freshwater marsh area along Santa Barbara Blvd is possible. The closest documented wood stork colony is located approximately 18 miles to the northeast at Corkscrew Swamp Sanctuary. The site is appropriate for foraging within the existing man-made fill pit ponds, and open wetland forest habitats. The open forest habitat adjacent to Santa Barbara Blvd will be preserved under the current project proposal.

The proposed project will impact 2.44 acres of wetlands on-site, however these areas are of lower value foraging habitat for the wood stork. The foraging opportunities provided can vary significantly during a given year due to a wide array of factors that include, but are not limited to: water levels present; variable abundance of prey species; and available access of prey species to wetland areas. The proposed wetland preserve area will result in the preservation and enhancement of suitable wood stork foraging habitats.

Proposed Determination of Effect: Given these considerations, use of the USFWS Wood Stork Key, outlined in the USFWS South Florida Programmatic Concurrence Letter dated January 25, 2010 and the May 18, 2010 addendum, to conduct a sequential effect determination for the species resulted in the following key sequential determination: A-B-C-E-NLAA and it is concluded that the proposed project “may affect, but is not likely to adversely affect” wood storks (MANLAA).

Various Listed Wading Birds

Snowy egrets (*Egretta thula*), little blue herons (*Egretta caerulea*), and white ibis (*Eudocimus alba*) have been documented in the wetlands on-site and within the vicinity of the site. No nests of these species have been observed within the project area. In addition to the observed species, other listed wading birds that could frequent appropriate habitats within the project area include roseate spoonbills (*Platalea ajaja*), tricolor herons (*Egretta tricolor*), and limpkins (*Aramus guarauna*).

Development of the project area will result in the loss of 2.44 acres of on-site wetlands that could be utilized by the wading birds mentioned, though it is important to note that this wetland is infested by exotic vegetation and does not have a sufficient hydrologic regime to provide high quality foraging opportunities. The on-site preserve will enhance and protect 3.06 acres of appropriate on-site habitats that could be utilized by foraging wading birds in addition to adding lake shoreline where foraging activities can be observed.

Eastern Indigo Snake (*Drymarchon corais couperi*)

No indigo snakes have been observed on-site, however the majority of the project area could provide some habitat for indigo snakes. Considering their elusive nature, their large home range, and the wide array of habitats they may utilize, there is potential that indigo snakes could occasionally frequent portions of the project area.

Proposed Determination of Effect: In consideration of these points and given the potential probability of any indigo snakes occurring on the project lands, use of the USFWS Eastern Indigo Snake Key outlined in the USFWS' North and South Florida Programmatic Concurrence Letter, dated January 25, 2010 and the August 13, 2013 Addendum, to conduct a sequential effect determination for the species resulted in the following key sequential determination: A-B-C-D-E-NLAA and results in a "May affect, not likely to adversely affect" determination for this species.

Florida Bonneted Bat (*Eumops floridanus*)

The Florida bonneted bat (FBB) utilizes habitats such as hardwoods and pinelands for foraging. The project area does contain some pine flatwoods and cypress-pine-palm habitats suitable for Florida bonneted bat foraging though it is important to note that much of this habitat is densely forested which would preclude bat flight through the forested areas. Much of this habitat will be impacted with the development of the proposed project, however, following the enhancement activities, the entire preserve area will consist of open forested habitat suitable for Florida bonneted bat foraging. The project site is located within the FBB consultation area but is not located within any of the Focal Areas that have been designated by FWS.

Surveys of the site have been conducted to search for potential roosts. Cavity trees observed were peeped to determine if any roosting was present. To date no evidence of any bat presence on the site has been observed.

Proposed Determination of Effect: Based on our analysis of the existing conditions of the site, the proposed, enhanced, open forested preserve areas, and the lack of any documented FBB presence, our proposed determination is that the proposed project "may affect, but is not likely to adversely affect" MANLAA the FBB.

Big Cypress Fox Squirrel (*Sciurus niger*)

The Big Cypress Fox Squirrel has not been observed on-site however they have been known to utilize habitats such as cypress, cypress-pine-cabbage palm, and pine flatwoods that do exist on the project site. Much of the habitat has been infested with exotic vegetation which limits fox squirrel use and foraging. The proposed project would result in impacts to 2.44 acres of cypress-pine-cabbage palm, and 2.54 acres of pine flatwoods. Fox squirrels have been shown in many locations to prefer suburban habitats including golf courses and low-density residential areas.

The preserve habitats will be enhanced for fox squirrel utilization through the elimination of exotic vegetation and the opening up of the site through said removal. However, the isolation of the site amidst other development and roadways makes the use of the site by fox squirrels unlikely. Little affect to the Big Cypress fox squirrel is expected.

4.5 PROJECT IMPACTS TO ARCHAEOLOGICAL/HISTORICAL RESOURCES

The Florida Master Site File (MSF) is a database of the known historic and archaeological sites in the state of Florida. The MSF office was contacted and the response back indicated that there were no recorded sites in close proximity to the proposed project.

Should any archaeological evidence be discovered during construction, the development activities at the specific site will be immediately halted and the appropriate agency notified. Development will be suspended for a sufficient length of time to enable the County or a designated consultant to assess the find and determine the proper course of action.

5.0 AVOIDANCE & MINIMIZATION OF WETLAND IMPACTS

Alternative Site Plans

The applicant has made all appropriate and practicable steps to minimize impacts to existing jurisdictional wetlands. The final site plan as presented in this document shows that all of the higher quality natural wetlands within the project boundary have been avoided. The wetland preserves will be avoided and remain connected to off-site flows as exists in the current conditions. The preservation of upland and wetland areas along the northeast boundary will provide a buffer between the development and the off-site adjacent wetlands to the north and east.

Avoidance During Construction

During construction, appropriate best management practices will be employed to help protect water quality and avoid the discharge of sediments and/or turbid water from the project site into both the on-site and off-site wetlands. The specific erosion/sediment/turbidity control methods and devices used will conform to applicable standards and criteria set forth in the "FDER Florida Development Manual," Sections 6-301 through 6-500 (FDER, 1988. "The Florida Development Manual: A Guide to Sound Land and Water Management," Chapter 6: "Storm Water and Erosion Control Best Management Practices for Developing Areas; Guidelines for Using Erosion and Sediment Control Practices," ES BMP 1.01-1.67. FDER, Tallahassee, FL.). These methods will also conform to applicable standards and guidelines set forth in the "Florida Stormwater, Erosion, and Sedimentation Control Inspector's Manual" (FDEP, 2002).

The boundaries of all the wetland areas adjacent to the construction activities will be delineated with silt fencing in order to clearly identify the wetland areas and to protect them from inadvertent impacts or encroachment by the machinery during project construction.

Preserve Management Plan

The Russell Square project has proposed to establish on-site preserve areas to minimize wetland impacts associated with the residential development. The project will also undertake enhancement activities within the preserve areas which will improve the functional value of the wetlands and insure that no long term impacts will occur as a result of the propose development activities. A Management Plan for the short and long-term enhancement and maintenance activities will be created and submitted for review at the time of site development plan approval.

6.0 PROJECT CONSISTENCY WITH CCME

The following Section outlines how the project is consistent with the Goals and Objectives of the Collier County Conservation and Coastal Management Element (CCME) of the Growth Management Plan (GMP). Each of the 13 Goals of the CCME is listed along with how that Goal is applicable to the proposed project. For those Goals that are not applicable, no further description is included.

GOAL 1: TO PLAN FOR THE PROTECTION, CONSERVATION, MANAGEMENT AND APPROPRIATE USE OF THE COUNTY'S NATURAL RESOURCES.

This Goal is more applicable to the County process in general than to any single project. The project has used data available from the County resources to plan the project and protect species, habitats, and resources to the greatest extent practicable.

GOAL 2: TO PROTECT THE COUNTY'S SURFACE AND ESTUARINE WATER RESOURCES.

The Project will undergo review by the South Florida Water Management District as part of the ERP process. The project will also be reviewed by County reviewers during the PUD and SDP applications. Surface water management, water quality concerns, and outfall quantities and locations will all undergo review and will be consistent with any regional or local Watershed Management Plans. The Project stormwater will meet all applicable State and Local water quality criteria.

GOAL 3: TO PROTECT THE COUNTY'S GROUND WATER RESOURCES TO ENSURE THE HIGHEST WATER QUALITY PRACTICAL.

The Project will undergo review by the South Florida Water Management District as part of the ERP process. Groundwater extractions for the purposes of irrigation may be permitted upon SFWMD review. Any irrigation use will be monitored to insure that adverse impacts to groundwater resources are not adversely impacted.

GOAL 4: TO CONSERVE, PROTECT AND APPROPRIATELY MANAGE THE COUNTY'S FRESH WATER RESOURCES.

The Project will undergo review by the South Florida Water Management District as part of the ERP process. Groundwater extractions for the purposes of irrigation may be permitted upon SFWMD review. If applicable and available, the Project will utilize treated effluent (re-use) water for irrigation.

GOAL 5: TO PROTECT, CONSERVE AND APPROPRIATELY USE THE COUNTY'S MINERAL AND SOIL RESOURCES.

No mineral extraction is contemplated on the Project property.

The Project will utilize appropriate BMPs to protect soils on the project site from erosion or disturbance during construction activities. Silt fencing, protective barriers, berms, and swales could all be used during construction activities on the site.

GOAL 6: TO IDENTIFY, PROTECT, CONSERVE AND APPROPRIATELY USE NATIVE VEGETATIVE COMMUNITIES AND WILDLIFE HABITAT.

The Project as proposed is consistent with Goal 6 and its objectives specifically;

Objective 6.1 – The Project will preserve a minimum of 25% of the existing native habitat on the project site. The property contains 12.58 acres of native vegetation and cannot account for an additional 1.88 acres of historic clearing that has been done. The project is therefore required to preserve a minimum of 3.61 acres. As proposed, the project will preserve 3.61 acres of native habitats. In addition, the areas proposed for preservation meet the hierarchy standards of this Objective in that the areas are utilized by listed species and do include the higher functional wetlands. Because of the separation of the high quality areas by a roadway and pasture lands the preserves are not interconnected within the site. One of the preserve areas is contiguous with offsite lands to the north and east while the remaining preserve area is sandwiched between the development area and Santa Barbara Blvd.

Objective 6.2 – The Project will preserve higher quality functional wetlands within the project boundary and will appropriately mitigate for lost functions through purchase of mitigation credits from an approved wetland mitigation bank. Valuation of the functionality of the wetlands to be impacted and the mitigation requirements will be reviewed by both the SFWMD and the USACE as part of the ERP review process. Preservation of the higher quality wetland habitats will be a priority for the state and federal permitting agencies. Both proposed wetland areas are also located within Special Treatment overlays which the County had used to identify higher quality wetland areas.

Objective 6.5 – Appropriate buffers and setbacks from construction activities on the project site will be maintained from the existing adjacent wetlands to the north and east.

GOAL 7: TO PROTECT AND CONSERVE THE COUNTY'S FISHERIES AND WILDLIFE.

The Project as proposed is consistent with Goal 7 and its objectives specifically;

Objective 7.1 – The Project has conducted a Protected Species Survey over the Project lands. This survey will be updated periodically during the permitting process to insure that new species do not take up residence on the Project lands without knowledge. Lands known to be utilized by listed species, such as the wetland along Santa Barbara Blvd. have been proposed for preservation. Species Management Plans will be completed for the Project which will outline how the proposed project can move forward while minimizing the risk of adversely impacting any protected species. Coordination and review with the Florida Fish and Wildlife Conservation Commission (FFWCC) will be undertaken to insure that potential impacts to state and federally protected species are minimized.

GOAL 8: TO MAINTAIN COLLIER COUNTY'S EXISTING AIR QUALITY.

The Project will comply with all applicable State and Federal air quality standards. All site construction equipment will be maintained appropriately in terms of emissions standards and potential air pollution.

GOAL 9: TO APPROPRIATELY MANAGE HAZARDOUS MATERIALS AND WASTE TO PROTECT THE COUNTY'S POPULOUS AND NATURAL RESOURCES AND TO ENSURE THE HIGHEST ENVIRONMENTAL QUALITY.

This Goal is more applicable to County efforts than to individual projects. Consistent with Objective 9.3, the project will encourage resident participation in hazardous waste collection days to try and help insure that household hazardous wastes are disposed of properly in coordination with the County's efforts.

GOAL 10: TO PROTECT, CONSERVE, MANAGE, AND APPROPRIATELY USE THE COUNTY'S COASTAL BARRIERS INCLUDING SHORELINES, BEACHES AND DUNES AND PLAN FOR, AND WHERE APPROPRIATE, RESTRICT ACTIVITIES WHERE SUCH ACTIVITIES WILL DAMAGE OR DESTROY COASTAL RESOURCES.

This Project will not affect any coastal barriers, dunes, beaches, shorelines, or any other coastal resources.

GOAL 11: TO PROVIDE FOR THE PROTECTION, RESERVATION, AND SENSITIVE RE-USE OF HISTORIC RESOURCES.

This Project will not affect any historical or archaeological properties or resources.

GOAL 12: TO MAKE EVERY REASONABLE EFFORT TO ENSURE THE PUBLIC SAFETY, HEALTH AND WELFARE OF PEOPLE AND PROPERTY FROM THE EFFECTS OF HURRICANE STORM DAMAGE.

The Project is not located within the County's Coastal High Hazard Area. All building construction on the Project will be subject to building code regulation and will adhere to construction standards with respect to wind loadings and hurricane protection. On-site construction will have a hurricane preparedness plan outlining steps to follow should a hurricane approach while site construction is under way.

GOAL 13: TO AVOID UNNECESSARY DUPLICATION OF EXISTING REGULATORY PROGRAMS.

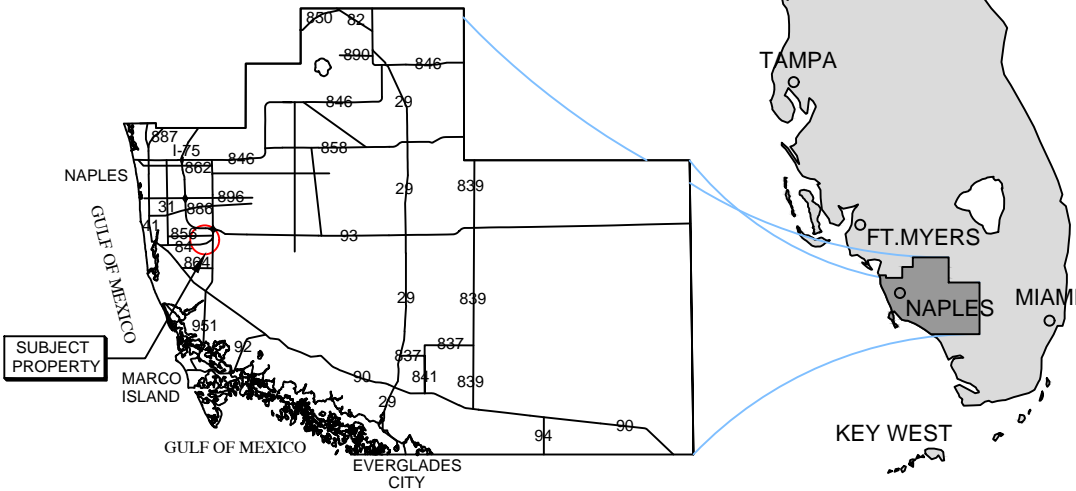
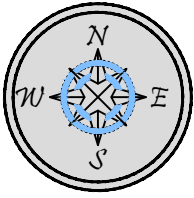
The Project will undergo review by the SFWMD, and FWC. Review by USACE and FWS is not expected due to the fact that no federal jurisdictional areas will be impacted by the development. All correspondence and permitting undertaken with these agencies will be provided to the County upon request to assist with County review and minimize duplication of permitting efforts.

ENVIRONMENTAL SUPPLEMENT

EXHIBITS

MAY 2018

STATE OF FLORIDA



COLLIER COUNTY

SITE ADDRESS:

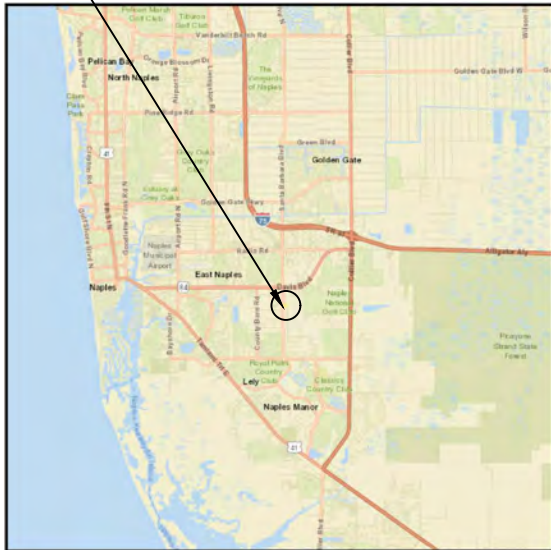
<> NAPLES
2505 SUNSET BLVD, FL 34112

NOTES:

<> THESE DRAWINGS ARE FOR PERMITTING PURPOSES ONLY
AND ARE NOT INTENDED FOR CONSTRUCTION USE.

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<> LONGITUDE: W -81.716983

SUBJECT
PROPERTY



VICINITY MAP

SUBJECT
PROPERTY



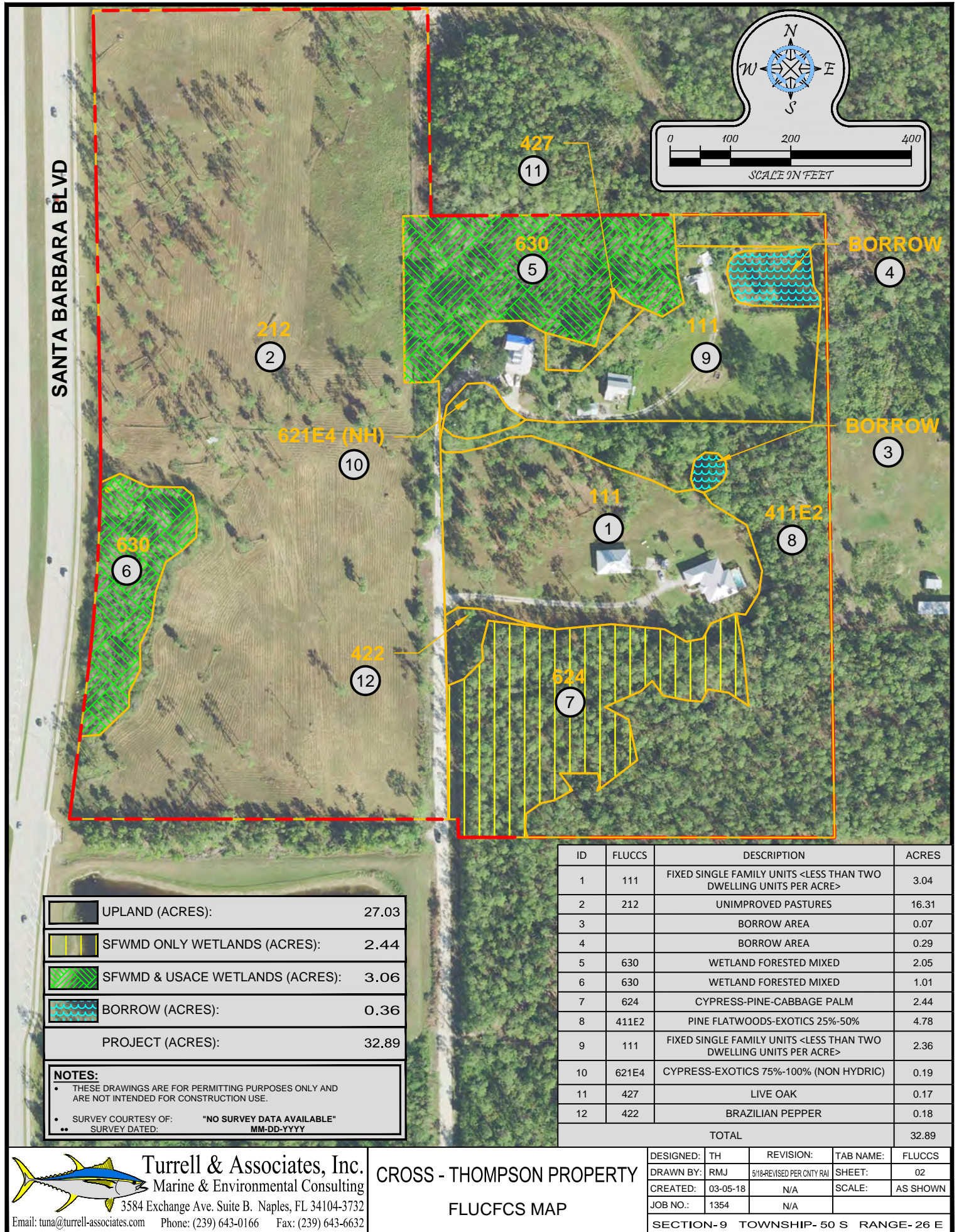
COUNTY AERIAL

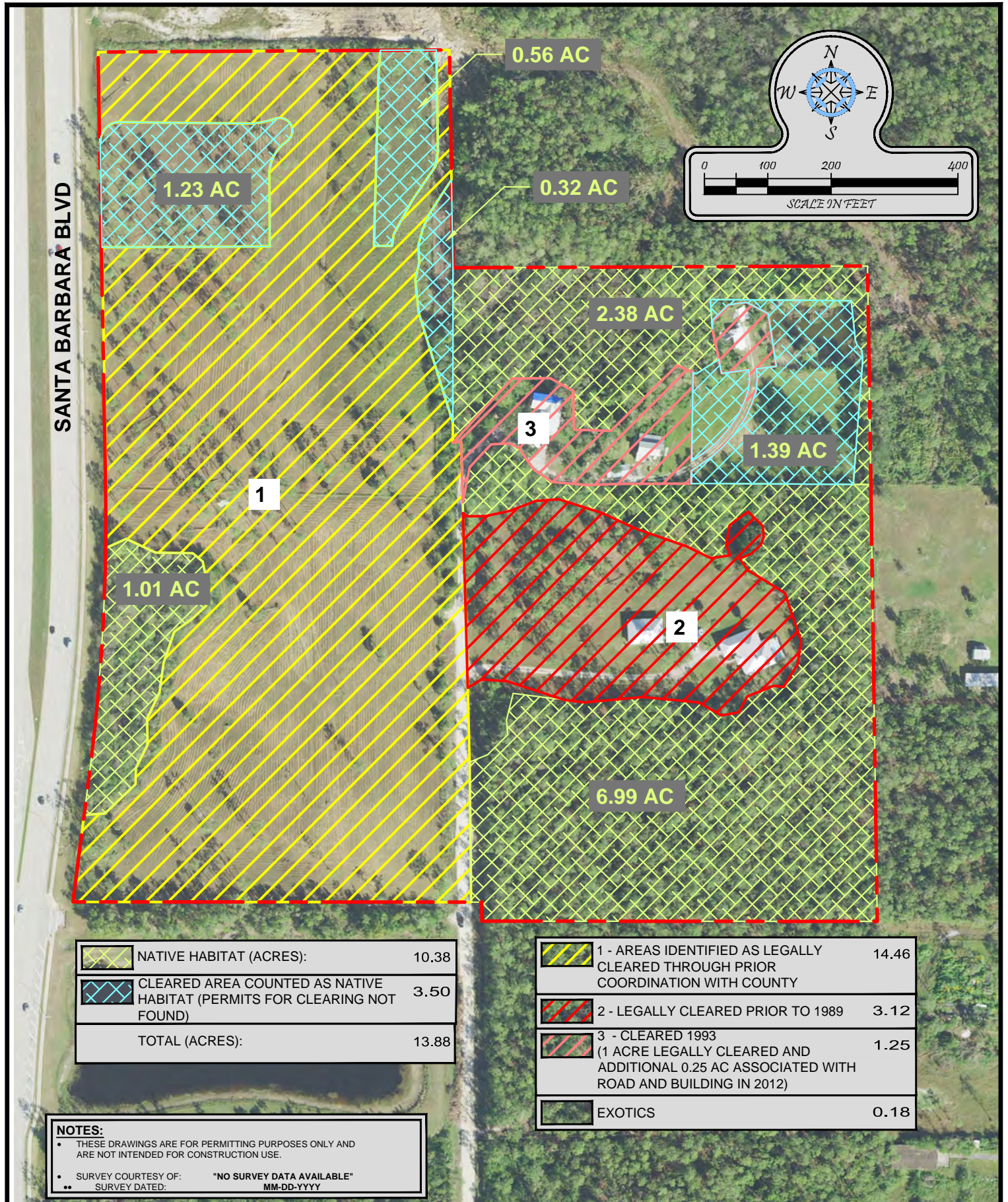


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Marine & Environmental Consulting
3584 Exchange Ave. Suite B. Naples, FL 34104-3732
Email: tuna@turrell-associates.com Phone: (239) 643-0166 Fax: (239) 643-6632

CROSS - THOMPSON PROPERTY
LOCATION MAP

DESIGNED:	TH	REVISION:	TAB NAME:	LOCATION
DRAWN BY:	RMJ	N/A	SHEET:	01
CREATED:	03-05-18	N/A	SCALE:	AS SHOWN
JOB NO.:	1354	N/A		
SECTION-9 TOWNSHIP- 50 S RANGE- 26 E				





	NATIVE HABITAT (ACRES):	10.38
	CLEARED AREA COUNTED AS NATIVE HABITAT (PERMITS FOR CLEARING NOT FOUND)	3.50
	TOTAL (ACRES):	13.88

	1 - AREAS IDENTIFIED AS LEGALLY CLEARED THROUGH PRIOR COORDINATION WITH COUNTY	14.46
	2 - LEGALLY CLEARED PRIOR TO 1989	3.12
	3 - CLEARED 1993 (1 ACRE LEGALLY CLEARED AND ADDITIONAL 0.25 AC ASSOCIATED WITH ROAD AND BUILDING IN 2012)	1.25
	EXOTICS	0.18

NOTES:

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- SURVEY COURTESY OF: "NO SURVEY DATA AVAILABLE"
- SURVEY DATED: MM-DD-YYYY



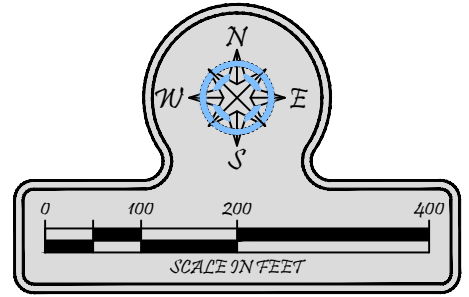
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CROSS - THOMPSON PROPERTY
NATIVE HABITAT

DESIGNED:	TH	REVISION:	TAB NAME:	NATIVE
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CREATED:	03-05-18	N/A	SCALE:	AS SHOWN
JOB NO.:	1354	N/A		
SECTION-9 TOWNSHIP- 50 S RANGE- 26 E				

SANTA BARBARA BLVD



WATER
MANAGEMENT

R

R

PRESERVE

WATER
MANAGEMENT

R

PRESERVE


R

WATER
MANAGEMENT

R

A

PROJECT
BOUNDARY

	WETLAND IMPACT (AC.) 2.44
NOTES:	
• THESE DRAWINGS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT INTENDED FOR CONSTRUCTION USE.	
• SURVEY COURTESY OF:	"NO SURVEY DATA AVAILABLE"
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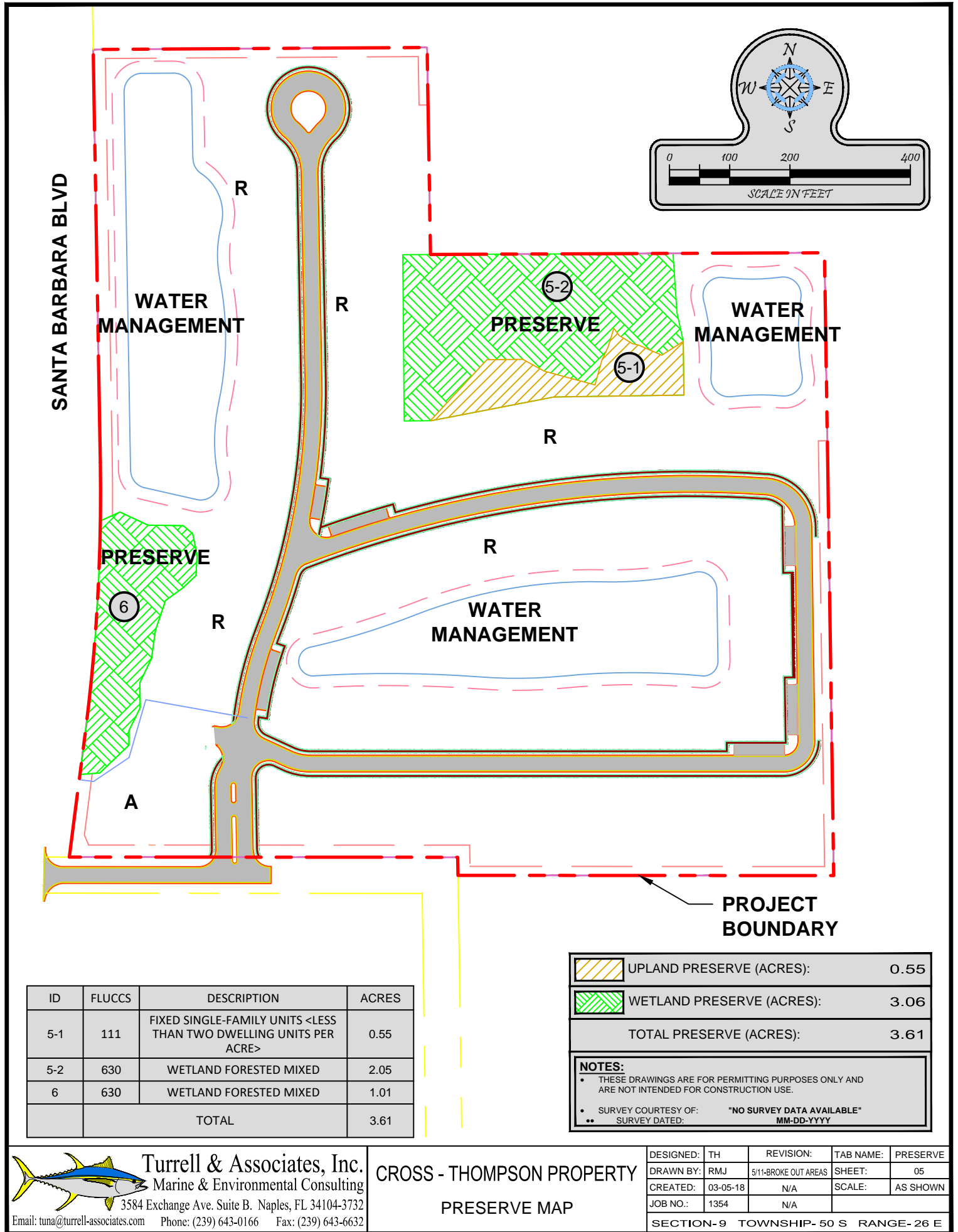


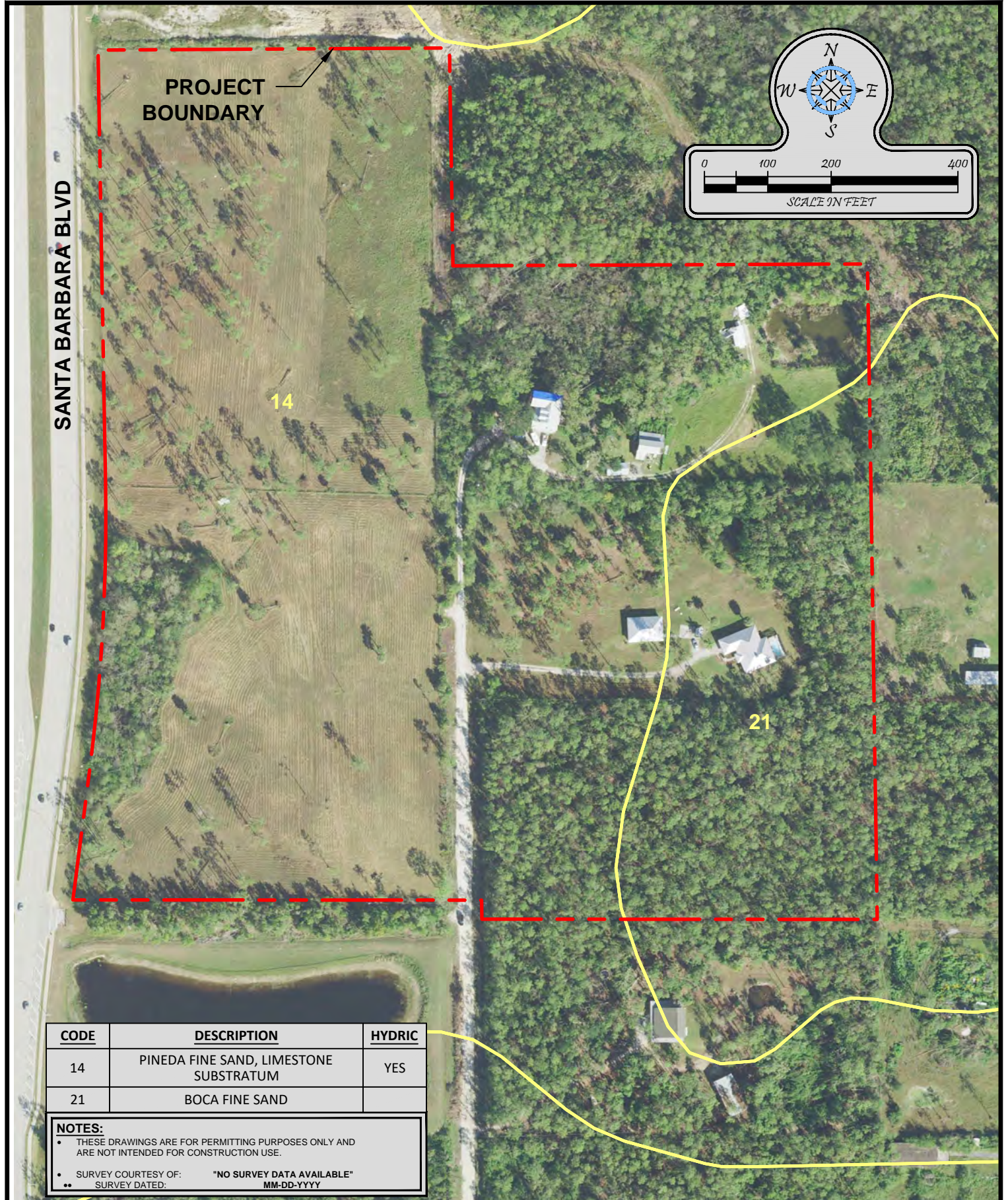
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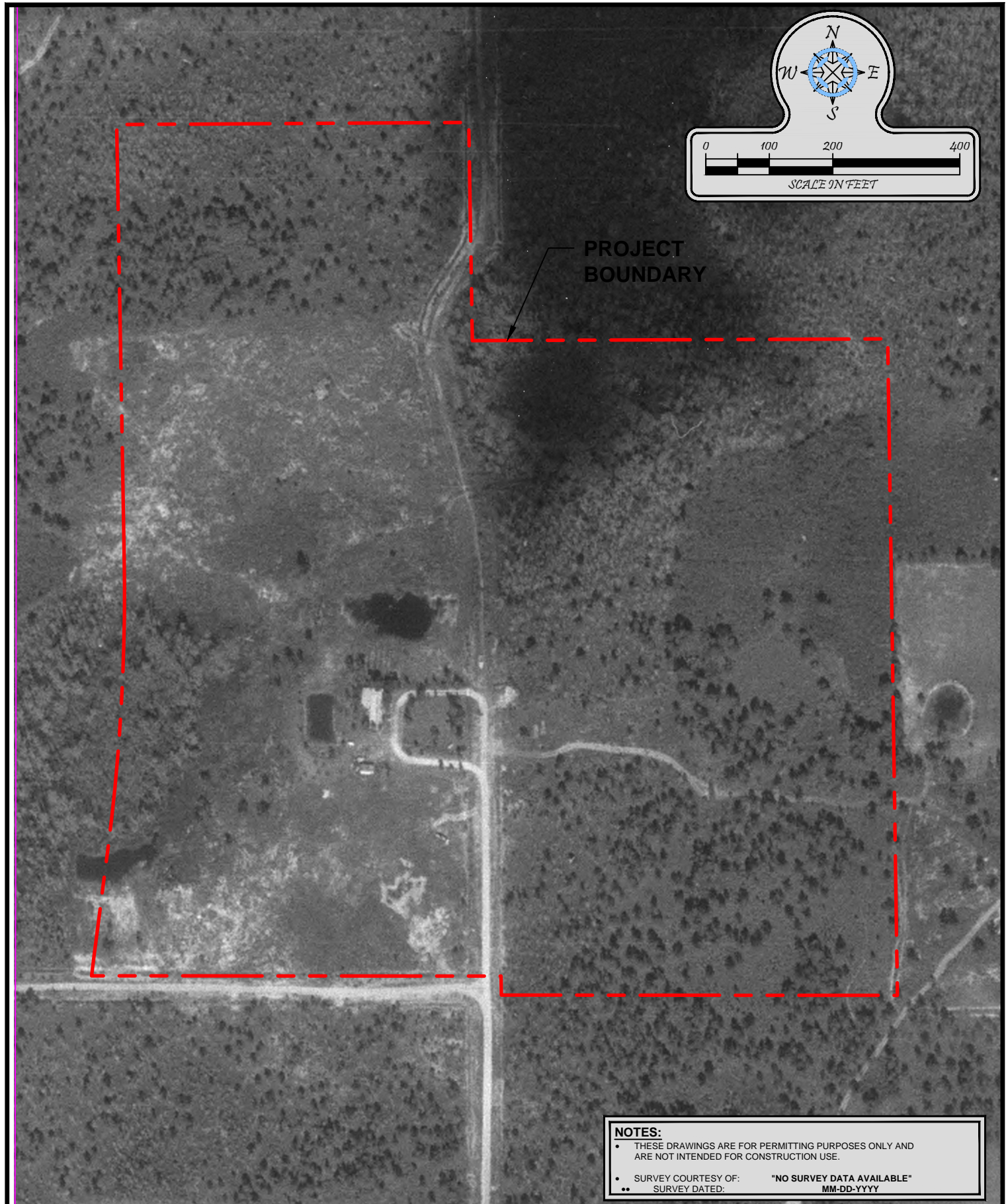
Email: tuna@turrell-associates.com Phone: (239) 643-0166 Fax: (239) 643-6632

CROSS - THOMPSON PROPERTY IMPACTS MAP

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JOB NO.:	1354	N/A		
SECTION-9 TOWNSHIP- 50 S RANGE- 26 E				







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- SURVEY COURTESY OF: "NO SURVEY DATA AVAILABLE"
- SURVEY DATED: MM-DD-YYYY



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CROSS - THOMPSON PROPERTY
1973 AERIAL

DESIGNED:	TH	REVISION:	TAB NAME:	FLUCCS
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CREATED:	05-22-18	N/A	SCALE:	AS SHOWN
JOB NO.:	1354	N/A		
SECTION-9 TOWNSHIP- 50 S RANGE- 26 E				



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- SURVEY COURTESY OF: "NO SURVEY DATA AVAILABLE"
- SURVEY DATED: MM-DD-YYYY

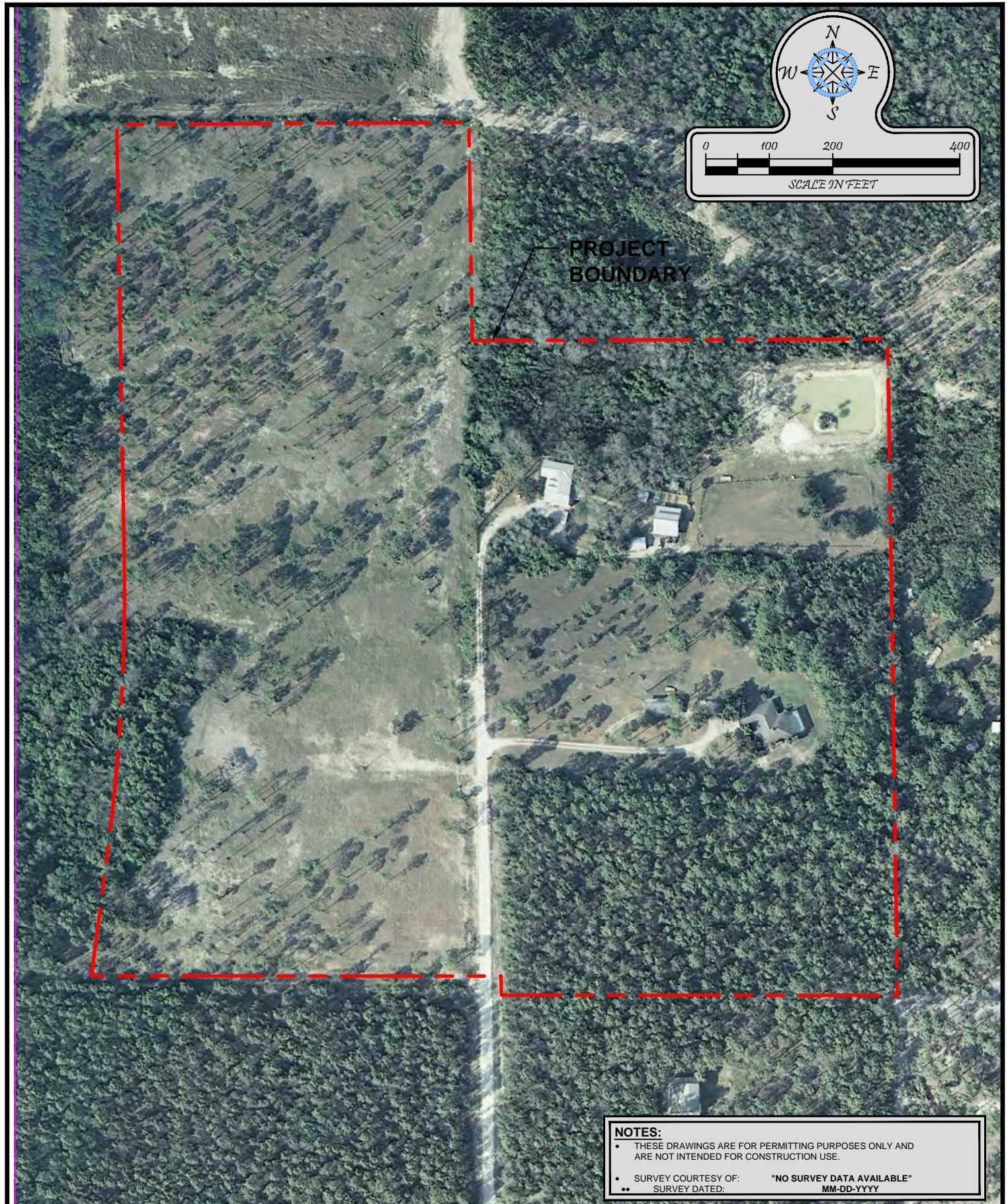


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CROSS - THOMPSON PROPERTY
1985 AERIAL

DESIGNED:	TH	REVISION:	TAB NAME:	FLUCCS
DRAWN BY:	RMJ	NA	SHEET:	08
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JOB NO.:	1354	N/A		
SECTION-9 TOWNSHIP- 50 S RANGE- 26 E				



NOTES:

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- SURVEY COURTESY OF: "NO SURVEY DATA AVAILABLE"
- SURVEY DATED: MM-DD-YYYY



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CROSS - THOMPSON PROPERTY
2005 AERIAL

DESIGNED:	TH	REVISION:	TAB NAME:	FLUCCS
DRAWN BY:	RMJ	NA	SHEET:	09
CREATED:	05-22-18	N/A	SCALE:	AS SHOWN
JOB NO.:	1354	N/A		
SECTION-9 TOWNSHIP- 50 S RANGE- 26 E				



SANTA BARBARA BLVD

PROJECT
BOUNDARY

NOTES:

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- SURVEY COURTESY OF: "NO SURVEY DATA AVAILABLE"
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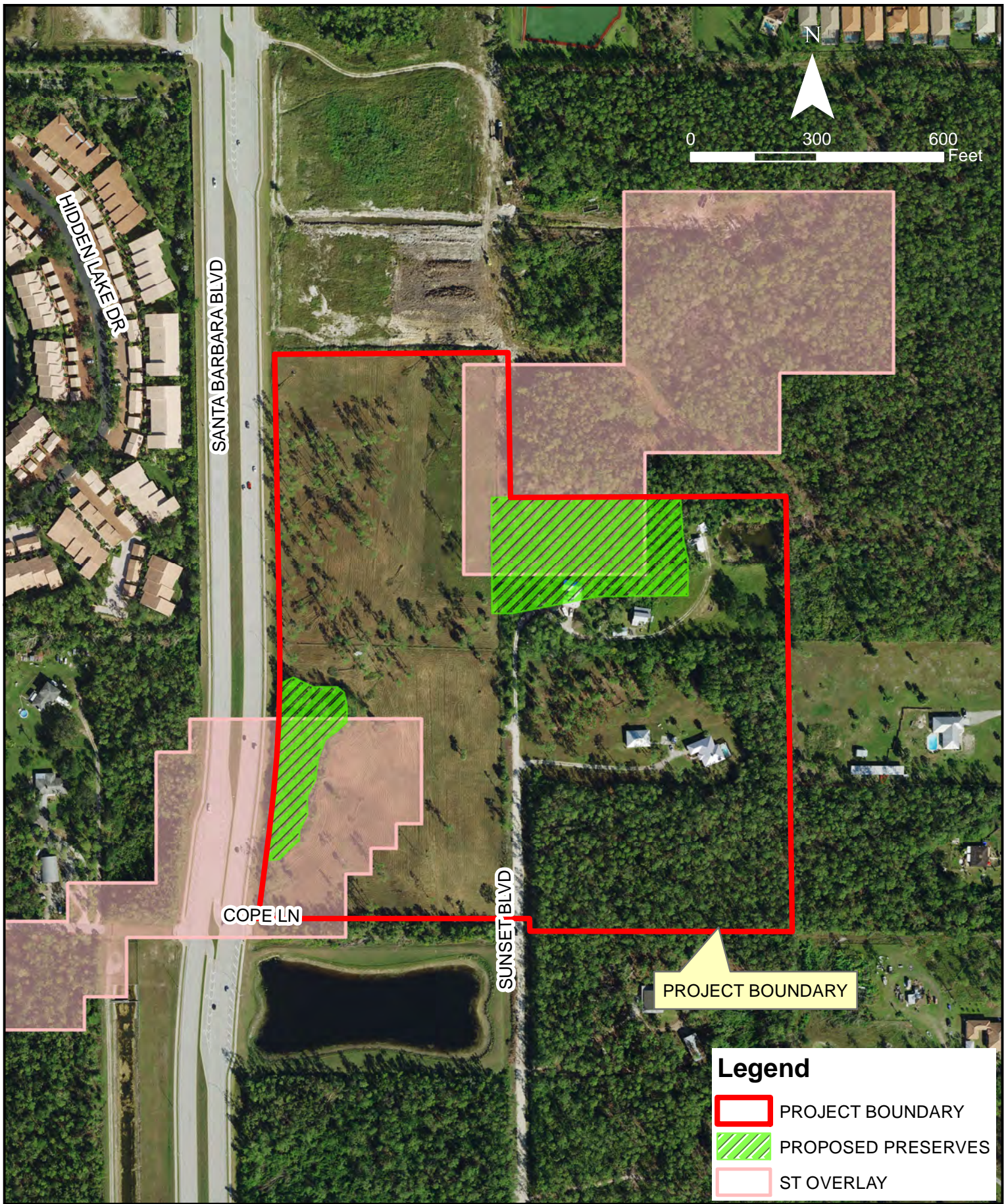


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CROSS - THOMPSON PROPERTY
2010 AERIAL

DESIGNED:	TH	REVISION:	TAB NAME:	FLUCCS
DRAWN BY:	RMJ	NA	SHEET:	10
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SECTION-9 TOWNSHIP- 50 S RANGE- 26 E				

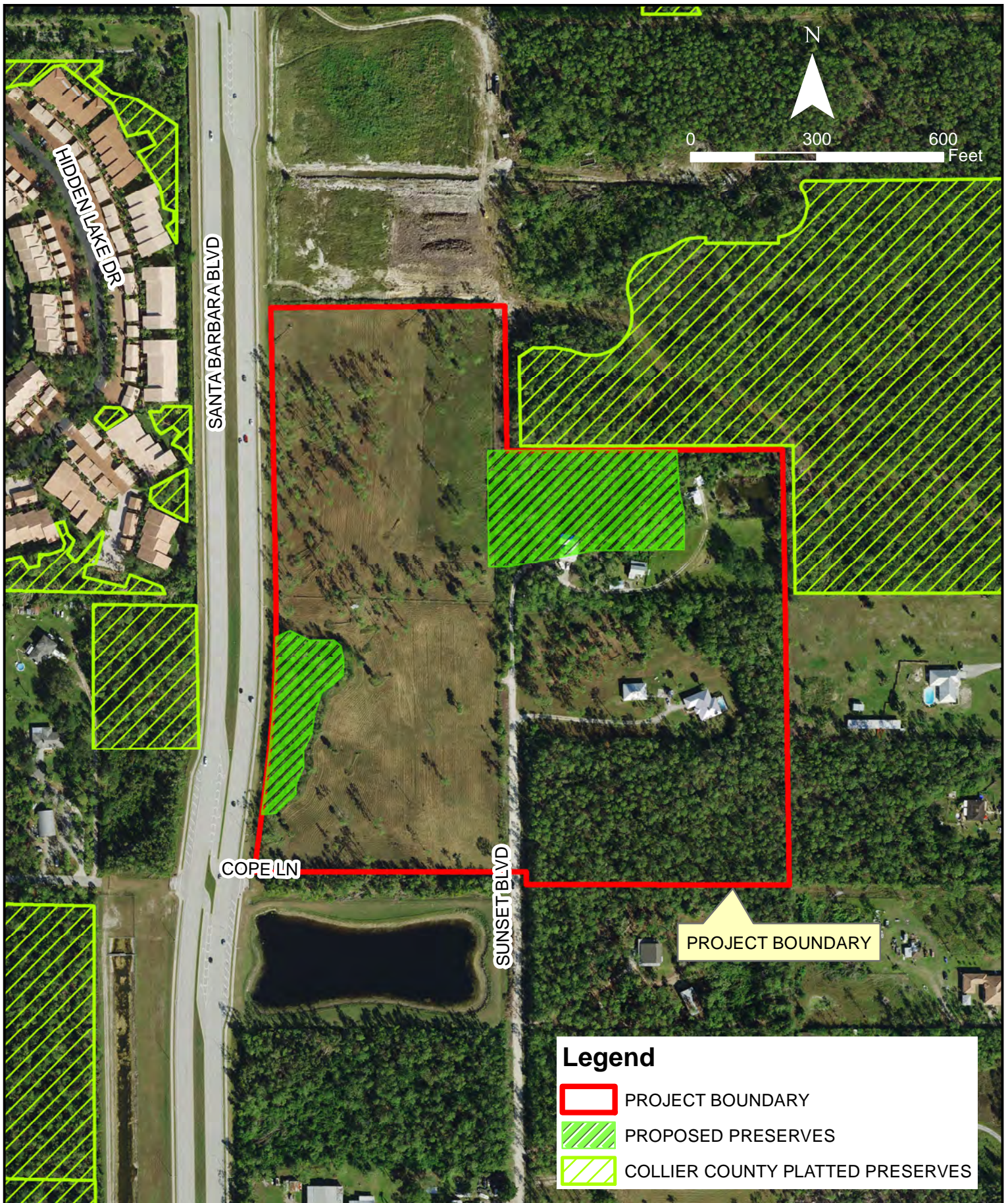


Legend

-  PROJECT BOUNDARY
-  PROPOSED PRESERVES
-  ST OVERLAY

CROSS-THOMPSON PROPERTY ST OVERLAY

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JOB NO.:	1354	N/A		
SHEET:	11	N/A		
SECTION-9 TOWNSHIP-50S RANGE- 26E				



ENVIRONMENTAL SUPPLEMENT

PREPARER

TIMOTHY HALL

RESUME



TIMOTHY C. HALL, VICE PRESIDENT

TURRELL, HALL & ASSOCIATES, INC.

3584 Exchange Avenue, Naples, Florida, 34104 • Office: (239) 643-0166 • Email: tim@thanaples.com

Tim Hall is a Principal at Turrell, Hall & Associates, Inc., and is also the Senior Ecologist for the firm. Tim works closely with federal, state, and local agencies to obtain approvals for a number of marina and residential development projects. His skills include wetland and marine permitting, plant and animal species identification, listed species analyses and surveying, habitat assessments, wetland delineations, wetland restoration, listed species permitting and relocation, construction-related bird monitoring, mitigation design and implantation, in-water construction manatee observation, and submerged resource surveying.

EDUCATION

Baccalaureate Studies: Wildlife Ecology
University of Florida, 1986-1989

Masters Studies: Wildlife Ecology & Wetland Ecosystems
University of Florida, 1990-1991

Continuing Education

- 2008 University of Florida- FDEP SOP Sampling Training for Groundwater, Surface Water and Wastewater
- 2006 Florida Green Industries Best Management Practices Course
- 2005 Florida Chamber's- Florida Uniform Mitigation Assessment Method Class
- 2005 The Florida Chamber's- Growth Management and Environmental Permitting Short Course
- 2003 Completed the Department of Environmental Protection Wetland Delineation Training Program. Fort Myers, Florida.
- 2002 Completed the FAEP Plant Identification Class with Dr. David Hall

PAPERS & PRESENTATIONS

- 2016 Wildlife Society Workshop Panel Member- Better Coordination Between Government Agencies For Public Projects
- 2016 Presentation at the Florida Association of Environmental Professionals (SW Florida Chapter) Seminar on Mangrove Restoration.
- 2014 Presented Paper at National Conference on Beach Preservation to Florida Shore & Beach Preservation Association (FSBPA), "Clam Bay; A Mangrove Restoration Success Story."

CERTIFICATIONS

- Certified Rescue Diver
- Authorized Gopher Tortoise Agent

REPRESENTATIVE PROJECTS

- (Currently) Managing the environmental and marine permitting and design for the City of Naples Baker Park on the Gordon River.
- (2010- Present) Overseeing environmental monitoring aspects for the Picayune Strand Restoration Project (Merritt, Faka Union, and Miller Pump Stations), part of the Everglades Restoration (CERP) Project, for project contractor. Services have included wildlife education presentations for all new onsite employees; construction oversight; coordination of new nests and any wildlife sightings that are within construction limits or buffer zones; and environmental reporting requirements.

- (1998- 2016) Managed the Clam Bay Natural Resource Protection Area (NRPA) for Pelican Bay Services Division, which includes a newly created 10-Year Clam Bay Management Plan as the key document in obtaining a 10-year permit to maintain the system. He also conducted annual mangrove and submerged resource monitoring within the system and periodically the hard bottom offshore, analyzed water quality data, and provided recommendations for nutrient load reductions to Pelican Bay.
- (2015-2016) Prepared an Environmental Protection Plan (EPP) for repairs the U.S. Army Corps of Engineers was performing at the Ortona Lock on the Caloosahatchee River.
- (2011- 2013) Managed a project (Bonita Trail) in the City of Bonita Springs along the Imperial River, where parking, boardwalk access, and a kayak ramp were planned, designed, permitted, construction plans were prepared and bid out, and construction was overseen.
- (2011 & 2013) Provided lighting and signage coordination and design during activities by the Corps of Engineers in the Caloosahatchee Waterway for repairs and improvements to the Hoover Dike.

PREVIOUS EXPERIENCE

- 1987-1988: University of Florida, IFAS Program – Key Deer research: collected and analyzed forage samples and used capture and release techniques to assess deer health.
- 1988-1989: Florida Cooperative Fish and Wildlife Research Unit – Alligator population research: collected, incubated, and hatched alligator eggs to assist in determination of potential repopulation rates.
- 1989: Alaska Department of Natural Resources – Marmot Population Study: conducted visual field survey counts of marmot burrows in remote field locations.
- 1990-1991: PMW Consulting – Wetland design and construction: Implemented studies for wetland creation/enhancement and monitoring projects in the south-eastern U.S.
- 1991-1993: Peace Corps, Guatemala - Defensores del la Naturaleza: Delineated boundaries for the Sierras de las Minas Biosphere Reserve, implemented floral and faunal surveys, taught classes on soil conservation techniques and environmental management to local villagers.
- 1992-1997: Power Corp: China, Central America, Canada, and Southern African Projects – Geologic and environmental survey: Conducted sample collection, mineral surveys, and feasibility studies in very remote locations. Produced habitat management plans and recovery / restoration plans for mining operations in Angola and Zaire.

ORGANIZATIONS

- Naples Botanical Garden (former Director 1998-2000)
- The Wildlife Society (Florida Chapter Board Member 2017)
- Florida Association of Environmental Professionals
- Society of Wetland Scientists
- Florida Native Plant Society