Esplanade on Palmer Ranch (Parcel 9C)

Southwest Florida Water Management District

Environmental Narrative

Sarasota County, Florida

Cardno
Shaping the Future

Document Information

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1 Overview

Cardno provides this environmental narrative in support of permit applications to authorize construction on Esplanade on Palmer Ranch (Parcel 9C). The Palmer Ranch Development of Regional Impact (DRI) is currently being updated to include Parcel 9C at the southern extent of the development. Taylor Morrison of Florida, Inc. is a contract purchaser of Palmer Ranch Parcel 9C and has McCann Holdings, Ltd.'s authorization to apply for this permit application (See ERP Forms). Taylor Morrison proposes to construct approximately 500 single- and multi-family homes, supporting infrastructure, and community amenities

The Esplanade on Palmer Ranch project is a 229.3± acre project of residential proposed by Taylor Morrison along Honore Avenue, south of the pending Palmer Ranch Parcel 9A project and the Silver Oak subdivision. The project is located in the southern portion of the Palmer Ranch DRI within Section 1, Township 38 South, Range 18 East, Sarasota County, Florida (Figures 1 and 2). The center of the project is located at Latitude 27.2012°; Longitude -82.4597°. The site is bordered by Honore Avenue and undeveloped lands to the east, Legacy Trail to the west, Palmer Ranch Parcel 9A and Silver Oak subdivision to the north, and Oscar Scherer State Park to the south. A future extension of East Bay Street makes up the southern boundary of the project.

This environmental narrative is provided in support of an Environmental Resource Permit (ERP) application to obtain Southwest Florida Water Management District (SWFWMD) authorization for the proposed residential development, supporting infrastructure, and community amenities. The information provided in this narrative follows the format outlined in Section C of the SWERP Application (*Supplemental Information For Works or Other Activities In, On or Over Wetlands and/or Other Surface Waters*).

2 Environmental Analysis and Permitting History

The Palmer Ranch DRI is a multi-phased, mixed-use master-planned community that was approved by the Sarasota Board of County Commissioners in December 1984. The Master Development Order (MDO) for Palmer Ranch development is approved for 11,550 residential dwelling units; ±99 acres of internal commercial, plus additional square footage of commercial/office approved/planned in designated Activity Centers; and 1.75 million square feet of industrial development. Since the 1984 approval, there have been 23 Incremental Development Orders (IDO) approved within the Palmer Ranch DRI.

Applications for rezone and petition to add the subject parcel into the boundaries of the Palmer Ranch Development of Regional Impact (DRI) have been filed with Sarasota County in September 2015. SWFMWD has issued a Petition for Formal Determination of Wetlands and Other Surface Waters over an expanded 900-acre portion which includes the project area (Petition No. 698868/ ERP 42041916.000), issued on November 25, 2014. There are no other existing permits over the site.

3 Existing Site Conditions

Palmer Ranch Parcel 9C is characterized by improved pasture, with the eastern and southern portions as woodland pasture, and a section of the southern forested area classified as mesic hammock and live oak cover types. South Creek borders the eastern boundary of the site and then angles west through the southwest portion of the site. South Creek exits the site into Oscar Scherer State Park (OSSP) and ultimately discharges into Sarasota Bay approximately 4.5 miles southwest.

The site is interspersed with freshwater marshes that have been altered by past land-management activities. A total of eight (8) herbaceous wetlands occur on the site. Nearly all of the wetlands are connected by swales or ditches constructed to improve drainage of the property. These ditches total 1.5 acres and drain into the portion of South Creek that runs northeast to southwest through the project site. A single wetland located in the northwest corner of the site drains west into North Creek. Spoil piles occur in the northeast corner of the project site. Overall, the Project can be characterized as agricultural.

The Project has a few regionally important resources immediately adjacent to or within it. It is located generally west of the Interstate 75 and Honore Avenue. Residential development occurs to the north with undeveloped conservation lands to the south (Oscar Scherer State Park). The native upland habitat present has been impacted by the agricultural uses on the site.

The overall conveyance of the area, historically water flows from the north through a network of wetlands north and east of the project site and then continued through the onsite wetland system and historical South Creek, which exited the site to the southwest.

The existing conditions of upland and wetland plant communities were extensively studied and mapped using the Florida Land Use Cover Forms and Classification System (FLUCFCS, Florida Department of Transportation 1999) (Table 3-1). An aerial photograph and FLUCFCS land use map of the site is provided as Figure 3. Figure 4 is an NRCS Soils Map of the subject site.

Table 3-1. Land Use Classification Existing on Palmer Ranch Parcel 9C.

FLUCFCS Code	FLUCFCS Classification	Total Acres
Uplands		
211	Improved Pasture	181.7
213	Woodland Pasture	21.4
422	Brazilian Pepper	1.5
425	Mesic Hammock	1.3
427	Live Oak	3.2
740	Disturbed Lands	1.2
	Subtotal	**210.3**
Wetlands and Surface Waters of the US		
510	Stream and Waterway	3.7
534	Reservoirs Less Than 10 AC	1.4
641	Freshwater Marsh	13.9
	Subtotal	**19.0**
	TOTAL	**229.3**

3.1 Upland Communities

Approximately 210.3 acres of uplands occur within Parcel 9C. The majority (98%) of the uplands have previously been altered from their natural condition. Conversion for the historical and on-going use of the site for agriculture, primarily as pastures for beef cattle, has eliminated former native habitats. The remaining natural upland habitats are of moderate quality, with some areas significantly infested by nuisance and exotic species and altered hydrology. The following provides a summary of existing conditions of each upland habitat type.

Improved Pasture (FLUCFCS 211)

The pasture areas are dominated by bahia grass (*Paspalum notatum*). Other common species observed in the pasture include Bermuda grass (*Cynodon dactylon*), blackberry (*Rubus sp.*), wand blackroot (*Pterocaulon virgatum*), carpetgrass (*Axonopus sp.*), broomsedge (*Andropogon* sp.) and smutgrass (*Sporobolus indicus*). There are scattered cabbage palms (*Sabal palmetto*) and live oak (*Quercus virginiana*) located throughout the pasture.

Woodland Pasture (FLUCFCS 213)

The woodland pasture areas are similar to the improved pasture habitat in species composition, with the addition of a live oak, and cabbage palm overstory.

Brazilian Pepper (FLUCFCS 422)

Two small areas are dominated by Brazilian pepper (*Schinus terebinthifolius*), located in the northeast corner, and southern portion of the site adjacent to South Creek. Wax myrtle (*Myrica cerifera*), saw palmetto (*Serenoa repens*), and cabbage palm are scattered within this habitat.

Mesic Hammock (FLUCFCS 425)

The mesic hammock is located in the south central portion of the site and is considered wetland-fringing mesic hammock as defined by County regulations. This area supports a tree canopy dominated by live and laurel oak (*Quercus larifolia*), with cabbage palm occurring in some areas. The understory is dominated by American beautyberry (*Callicarpa americana*) and wild coffee (*Psychotria nervosa*) but also contain ruderal and weedy species from cattle disturbance.

Live Oak (FLUCFCS 427)

The live oak habitat occurs adjacent to the mesic hammock and the wetland located in the southwest corner of the property. The overstory is primarily live oak with a higher percentage of cabbage palm and some slash pine (*Pinus elliottii*). The understory begins to resemble the woodland pasture in this habitat, with pasture grasses and blackberry amidst cabbage palm and the herbaceous species found in the mesic hammock.

3.2 Wetland and Aquatic Communities

Parcel 9C contains eight (8) wetlands, seven of which are entirely on site and one extending offsite, agricultural ditches, and a portion of South Creek. In July 2014, Cardno delineated the jurisdictional extent of wetlands and surface waters in accordance with Chapter 62-340, F.A.C., Delineation of the Landward Extent of Wetlands and Surface Waters. The wetland and surface water (SW) features total 19.0 acres. The limits of onsite wetlands and surface waters were field verified by the Mr. Lee Hughes of SWFWMD on 21 and 29 July 2014 and approved by SWFWMD in a Petition for Formal Determination of Wetlands and Other Surface Waters (Petition No. 698868/ ERP 42041916.000), issued on November 25, 2014. The wetlands are reflected on the approved Specific Purpose Survey by Stantec and construction drawings prepared by Waldrop Engineering.

Cardno investigated the current conditions of these wetlands and provides these findings below. The quality of wetlands within Parcel 9C varies depending on location and hydrologic function. The overall quality of each wetland is also summarized below.

Freshwater Marsh (FLUCFCS 641)

Eight (8) freshwater marshes, totaling approximately 13.9 acres, occur on the subject property (one extends off the property to the east). These wetlands have similar species. However, the overall species distribution, size and level of disturbance vary.

All freshwater marshes are dominated by typical herbaceous species. Most common are pickerelweed (*Pontederia cordata*), maidencane (*Panicum hemitomon*), saw grass (*Cladium jamaicense*), bulrush (*Scirpus* spp.), smartweed (*Polygonum* spp.) and duck potato (*Sagittaria* spp.). Small patches of woody species also are present, especially willow (*Salix caroliniana*), buttonbush (*Cephalanthus occidentalis*), wax myrtle, and salt bush (*Baccharis halimifolia*). Strong zonation patterns generally are fairly representative and there is some evidence that hydrological patterns have been altered from historic conditions due to agricultural practices. In most of the marshes, zonation is typically impacted by the presence of invasive native and non-native species generally indicative of disturbance, such as cattle and ditching. Most commonly present are torpedo grass (*Panicum repens*), punk tree (*Melaleuca quinquenervia*), dog fennel (*Eupatorium capillifolium*), cattail (*Typha* spp.), Peruvian primrose willow (*Ludwigia peruviana*), Brazilian pepper, and West Indian marsh grass (*Hymenachne amplexicaulis*).

Stream & Waterway (FLUCFCS 510)

Agricultural ditching transverse through the site connecting the central four (4) wetlands. These ditches appear to facilitate surface water runoff from the agricultural areas. They typically contain pasture grasses and other ruderal vegetation. Generally, the ditches are several feet in width and no deeper than 2 feet. These ditches have been excavated from upland habitats, therefore are considered as Other Surface Waters (OSW) for this application.

In addition to the agricultural ditches, a portion of South Creek runs along the eastern boundary of the parcel and cuts southwest through the southern portion of the site. This portion of South Creek is steeply incised with several cattle crossings. Vegetation within the open water portion includes cattail, water-lettuce (*Pistia stratiotes*), water-hyacinth (*Eichornia crassipes*), and West Indian marsh grass. Along the banks of the Creek includes live and laurel oaks, wax myrtle (*Myrica cerifera*), cabbage palm, salt bush (*Baccharis halimifolia*), and Brazilian pepper. This portion of the Creek has been classified as a “Surface Water” for this application. The ditches drain into South Creek, as do the wetlands in the southwest corner of the parcel.

Reservoir Less Than 10 Acres (FLUCFCS 534)

This existing stormwater pond is present and located adjacent to the spoil piles in the northeast corner of the project site appears to have been permitted and construction for the Honore Avenue extension.

4 Proposed Project Description

The Esplanade on Palmer Ranch project is proposed as a residential development consisting of approximately 500-unit single- and multi-family development with supporting infrastructure, and community amenities by Taylor Morrison on approximately 229 acres of the project. The project also includes associated roadways, surface water management facilities and recreational and other amenities.

It is anticipated that the project will be developed in phases based on market conditions. Taylor Morrison will construct the surface water management system and infrastructure in phases as well. The construction of the residential development will be focused in the northern portion of the property first with

focused along the spine road and continue south as additional phases are needed. It is desired that construction of wetland mitigation areas will occur in phases concurrent with the project impacts. The applicant will work with SWFWMD staff to provide an alternative to the phasing of the construction of the mitigation areas that is proportional to the wetland impacts. The current total plan of development of the project has been designed to provide for the infrastructure, i.e., transportation access, surface water management, and utility services that will be required by the development.

4.1 Wetland and Other Surface Water Impacts

The following section details alterations to wetland jurisdictional areas and OSW proposed for authorization and mitigated within the Parcel 9C (Figure 6). Plan views and cross sections for wetland and OSW impacts are depicted on the plans prepared by Waldrop Engineering within this Application. Table 1 is provided as Figure 5. The site plan has been designed to focus the impacts to the series of wetlands located in the interior portion of the site, including Wetlands I, J, L, M, W, and the agricultural ditches, and a small road crossing over South Creek to allow for access to the southeast portion of the uplands. These impacts total 6.35 acres and are summarized in Table 4-1.

4.1.1 Surface Waters

OSW 1, 2A, 2B, 3, and 4; 1.31 acres

The proposed impacts to OSWs 1, 2A, 2B, 3, and 4 are required for the construction of the residential lot and stormwater pond construction.

South Creek Impact; Permanent Impacts - 0.07 acres; Temporary Impacts – 0.10 acres

The proposed impact to South Creek to allow for access to the uplands located in the southeast corner of the property. A 42-inch pipe will be place on each side of the of box culvert to provide access for wildlife along South Creek. Best Management Plan is included with the full set of plans, which will include silt fencing below all fill areas and turbidity barriers installed in the water upstream and downstream of the crossing.

4.1.2 Wetlands

Wetland J; 0.31 acres

The project to the north (Palmer Ranch Parcel 9A) has proposed impacts to the small wetland (Wetland J) as a result of a forcemain and landscaped berm. The berm will be extended south on this property to separate the subdivisions. The remaining portion of the wetland will be impacts by the subdivision roadway.

Wetland I; 1.14 acres

Proposed impacts to Wetland I are the result of the geometry site design constraints of the site for the construction of road and lot filling and dredging for stormwater pond construction.

Wetland L; 1.22 acres

Proposed impacts to Wetland L are required for road and lot construction.

Wetland M; 2.06 acres

Proposed impacts to Wetland M are the result of the geometry site design constraints of the site for the construction of road and lot filling and dredging for stormwater pond construction.

Wetland W; 0.22 acres

Proposed impacts to Wetland W are required for stormwater pond construction.

Wetland U; 0.04 acres

Proposed impacts to Wetland U are required to re-establishing the berm / weir system along South Creek for hydrologic restoration of the wetland.

Wetland U2; 0.01 acres

Proposed impacts to Wetland U2 are required to re-establishing the berm / weir system along South Creek for hydrologic restoration of the wetland.

Table 4-1. Wetland Impact and Preservation Summary, Palmer Ranch 9C Project

Wetland/OWUS Id.	Habitat Type	Total Area (acres)	Preserved Area (acres)	Impacted Area (acres)	Notes
Impacts					
Wetland J	Freshwater Marsh	0.31	0.00	0.31	Impact due to filling for residential lot.
Wetland I	Freshwater Marsh	1.14	0.00	1.14	Impact due to filling for road and lot and dredging portions of the lake.
Wetland L	Freshwater Marsh	1.22	0.00	1.22	Impact due to filling for road and residential lot and dredging for portions of the lake.
Wetland M	Freshwater Marsh	2.06	0.00	2.06	Impact due to filling for residential lot and dredging for portions of the lake.
Wetland W	Freshwater Marsh	0.22	0.00	0.22	Impact due to dredging for portions of the lake.
OSW 1, 2A, 2B, 3, 4	Agricultural Ditches	1.54	0.26	1.28	Impact due to filling for residential lot and dredging for portions of the lake.
SW Impact - South Creek	Surface Water/ Creek	2.15	2.05	0.07	Permanent Impacts of 0.07 ac and Temporary Impacts of 0.10 ac for construction of the road crossing.
Wetland U	Freshwater Marsh	3.69	3.65	0.04	Impact due to re-establishing the berm along South Creek for restoration purposes
Wetland U2	Freshwater Marsh	0.48	0.47	0.01	Impact due to re-establishing the berm along South Creek for restoration purposes
	Subtotal	**12.55 ac**	**6.20 ac**	**6.35 ac**	

Wetland/OWUS Id.	Habitat Type	Total Area (acres)	Preserved Area (acres)	Impacted Area (acres)	Notes
Preservation / Restoration / Creation					
Wetland D2	Freshwater Marsh/ Enhancement Area	4.74	4.74	0.00	Mitigation Area #1
Wetland Creation D2	Freshwater Marsh / Creation Area	1.60	1.60	0.00	Mitigation Area #2
Wetland U	Freshwater Marsh/ Enhancement Area	3.69[1]	3.65[1]	0.04[1]	Mitigation Area #3
Wetland Creation U	Freshwater Marsh Enhancement/ Creation Area	2.96	2.96	0.00	Mitigation Area #4
Wetland U2	Freshwater Marsh/ Enhancement Area	0.48[1]	0.47[1]	0.01[1]	Mitigation Area #5
Wetland Creation U2	Freshwater Marsh Enhancement/ Creation Area	1.59	1.59	0.00	Mitigation Area #6
	Subtotal	**10.89 ac**	**10.89 ac**	**0.05 ac**[1]	
	TOTAL	**23.44 ac**	**17.09 ac**	**6.35 ac**	

[1] Previously Calculated.

5 Environmental Considerations

5.1 Elimination or Reduction of Impacts

The project has been designed to be consistent with and expand the watershed preservation and restoration program implemented throughout the development of the Palmer Ranch DRI. The challenges of enhancing or restoring wetland ecological function in an urban setting makes is highly likely that preservation of the wetlands would fail to maintain the ecological functions the systems now provides. A primary principle of the environmental design and permitting of the Palmer Ranch DRI has been the creation of environmental/habitat corridors throughout the project to aggregate and maximize ecological functions and habitat values of preserved natural systems. On Parcel 9C, the South Creek corridor and areas adjacent to the wildlife corridor along the western side of the project provide locations where habitat functions lost by the filling of wetlands could be mitigated in a landscape position that would have the greatest long-term ecological value.

This successful program is based on two primary principles: (1) preservation and restoration of a mosaic of high-quality and altered wetland and upland habitats along the historic creeks through the Palmer Ranch DRI; and (2) restricting impacts those wetlands with a lowered likelihood of environmental function if preserved in a developed landscape. The project implemented the following measures consistent with these principles:

1. Directing proposed impacts to previously fragmented, dewatered systems; anthropogenic features; and systems unlikely to continue to viable function ecologically, even if preserved in a developed landscape.
2. The site has been designed to avoid impacts to wetlands that can be integrated into the habitat corridors through and around the project. This will provide for preservation of the larger, higher quality wetland systems further away from development which will provide more ecological function to the wildlife that may use the site.
3. Protect a combination of high quality upland and wetland preserve area, including high quality mesic hammock and Grand Trees. A total of 41.1± acres will remain in wetland and upland preservation, conservation, and open-space areas following development and allow for a wildlife corridor connection to habitats along both South Creek and the Legacy Trail.

5.2 Fish, Wildlife, Listed Species and their Habitats

Cardno conducted surveys to evaluate for the presence and relative abundance of wildlife species considered Endangered, Threatened, or of Special Concern by the Florida Fish and Wildlife Conservation Commission (FFWCC) under Rule 68A-27 of the Florida Administrative Code (F.A.C.) and by the U.S. Fish and Wildlife Service (USFWS) under 50 CFR 17. Various sources reviewed included the on-line databases of listed species maintained by the Florida Natural Areas Inventory (FNAI), FFWCC, and the USFWS. The professional knowledge and experience of ecologists from Cardno, also contributed to the target species list.

The Project includes several freshwater marshes and a historical ditch which transverses the site. In addition, an upland-excavated surface water pond is located in the interior of the project. In accordance with the *Wildlife Methodology Guidelines*, all wetlands were surveyed daily by visually scanning them with the use of binoculars during the five-day pedestrian transect survey period, 18, 20, and 26-29 May 2015. Each wetland was visited during the morning survey period, and all wildlife were recorded and mapped. During the survey, all suitable habitats within the project area were investigated for listed species including any evidence to suggest utilization by listed species (i.e., tracks, scat, nests, burrows and cavity trees). Each wetland was visited during the morning survey period, and all wildlife were recorded and mapped. The following Table 5-1 summarizes the aquatic or wetland-dependent state listed species with geographic distributions that include Sarasota County and for which potentially suitable habitat may exist within the project area.

Table 5-1. Listed Aquatic or Wetland Dependent Species Potentially Occurring on the Palmer Ranch 9C Project, Sarasota County, Florida.

Common Name	Scientific Name	Legal Status	Probability of Occurrence	Preferred Habitat	Potential FLUCFCS Codes
			Amphibians		
Gopher Frog	*Lithobates capito*	SSC	Very Low	Xeric habitats where gopher tortoise and suitable breeding exist	211, 213, 425, 427, 510, 641, 740
			Reptiles		
American Alligator	*Alligator mississippiensis*	FT (SA)	Moderate	Freshwater wetlands, lakes, ponds and rivers	510, 641
			Birds		
Little Blue Heron	*Egretta caerulea*	SSC	High/Observed	Breeding; marshes, swamps, ponds, estuaries, rivers; nests in shrubs and small trees	510, 641
Roseate Spoonbill	*Ajaia ajaja*	SSC	Moderate/ Presumed Present	Shallow marine, brackish, or freshwater sites, including tidal pools, sloughs, and marshes	510, 641
Sandhill Crane[1]	*Grus canadensis pratensis*	T	High/ Observed	Breeds in emergent palustrine wetlands; forages in pastures	211, 213, 425, 427, 510, 641, 740
Snowy Egret	*Egretta thula*	SSC	Moderate/ Presumed Present	Breeding: marshes, swamps, ponds, estuaries, rivers; nests in shrubs and small trees	510, 641
Limpkin	*Aramus guarauna*	SSC	Low / Presumed Present	Mostly Permanent, Some Females Seasonal	510, 641

Common Name	Scientific Name	Legal Status	Probability of Occurrence	Preferred Habitat	Potential FLUCFCS Codes
Tricolored Heron	*Egretta tricolor*	SSC	High/ Observed	Breeding; marshes, swamps, ponds, estuaries, rivers; nests in shrubs and small trees	510, 641
White Ibis	*Eudocimus albus*	SSC	High/ Observed	Breeding; marshes, swamps, ponds, estuaries, rivers; nests in shrubs and small trees	510, 641
Bald Eagle	*Haliaeetus leucocephalus*	Management Plan	Moderate	Nests in tall trees along coasts; rivers and lakes	211, 213, 425, 427, 740
Wood Stork	*Mycteria americana*	FT	High/ Observed	Estuaries or freshwater wetlands; nests in tops of trees in cypress or mangrove swamps	510, 641

[1]State listing applies only to resident *Grus canadensis pratensis*

FT=Federally Threatened, T=Threatened, FT (SA) =Federally Threatened due to similarity of appearance, SSC=Species of Special Concern, Management Plan = FFWCC Bald Eagle Management Plan

A specific discussion of each aquatic or wetland dependent listed species documented or presumed to occur on the Project, but not documented, is provided below.

American Alligator

No American alligators were observed within the Project during the survey period. They can be expected to seasonally occur in open-water portions of the Project site. The proposed development preserves the most significant wetland and open water habitats within the Project area, stabilizes hydrology, and removes several connecting ditches that currently serve to speed drainage off-site. Interior isolated wetlands proposed to be impacted currently do not provide significant habitat for this species as they small and shallow, and typically are dry for several months annually during dry periods.

Gopher Frog

While gopher frogs have not been observed within the Project site during the survey, there is a very low probability this commensal species could utilize portions of the project area. If present, gopher frogs occupy gopher tortoise burrows and breed in freshwater marshes.

It is anticipated that a gopher tortoise relocation permit will be issued by the FFWCC to address gopher tortoise burrows located within the project footprint. The gopher tortoise relocation permit will require that any commensal species, including gopher frogs, discovered during excavation activities will also be relocated during these efforts.

Wading Birds – Roseate Spoonbill, Limpkin, Little Blue Heron, Tricolored Heron, Snowy Egret, White Ibis, Woodstork

A number of listed wading birds (i.e., little blue heron, tricolored heron, white ibis, and wood stork) were observed in the marshes and streams on the site. It is anticipated that frequency of use of the site by listed wading birds is typical for the region and dependent on site conditions affecting foraging opportunities.

No evidence of apple snails was observed in any of the Project site's freshwater marshes or South Creek. Therefore, we do not believe that limpkins are present. It is anticipated that frequency of use of the site by listed wading birds is typical for the region and dependent on site conditions as they may affect foraging opportunities.

Wetlands within the Project provide foraging and loafing opportunities for listed wading birds. No evidence of nesting of listed water birds was observed on the Project area. Review of the FFWCC wading bird rookery database indicates that a rookery was previously documented east of the project area in the 1970s and 1980s (FFWCC 1999). There is no evidence to suggest that colony still exists. No active wood stork colonies are known to exist within 850 meters of the Project boundary however, the Core Foraging Area (18.5 miles) of multiple wood stork colonies includes the project area.

Any loss in wading bird habitat that results for approved impacts to wetlands or other surface waters will be offset by wetland mitigation completed for the project. As discussed above, the goal of any mitigation will be to recreate the shallow marsh habitats favored by wading birds.

Sandhill Crane

Multiple observations of sandhill cranes were recorded during the survey period. This species was seen loafing and feeding in a variety of habitats but primarily in improved pasture and freshwater marsh habitats. No evidence of nesting was observed in any of the wetlands on site. The species is known to be in surrounding properties and can be expected to use portions of the site as adult cranes are known to forage in dry freshwater marshes and pasture habitats. It is anticipated that frequency of use of the site by this species is typical for the region and dependent on site conditions as they may affect foraging opportunities.

Florida sandhill cranes nest in the herbaceous vegetation of freshwater wetlands when sufficient hydrology exists to retain standing water during the late winter and spring months. These larger wetland systems within the Project will be preserved. The smaller wetlands within the interior of the Project,

proposed to be impacted, provide minimal suitable nesting habitat for Florida sandhill cranes. Sandhill cranes forage in a wide variety of open upland habitats adjacent to their nesting sites. Such habitat will be preserved in the upland buffers surrounding the larger wetlands, within the wildlife corridor, along South Creek, and by open space outside of the Project area. The project will also follow the recommendations included in the FFWCC Draft Species Conservation Measures and Permitting Guidelines during construction activities to minimize potential impacts to sandhill cranes. Because of this, we do not anticipate that this project should have a significant impact on regional sandhill crane populations.

Bald Eagle

Review of the FFWCC bald eagle nest locator indicates that two nests occur within one mile of the project area. The nearest nest (SA-011) is located on public conservation lands approximately 2,400 feet to the south. The project area is outside of any state and federal protection zones for this nest. No bald eagles were observed during the field surveys nor observed any evidence of eagle nesting activity on or immediately adjacent to the subject site. Therefore, we believe the development will have minimal to no impact to this species.

5.3 Water Quantity Impacts to Wetlands and Other Surface Waters

As currently proposed, stormwater associated with the project will be pretreated prior to discharge offsite. The stormwater ponds will discharge into the preserve wetlands and into a ditch that connects to North Creek post-treatment. Please refer to the stormwater design and calculations provided by Waldrop Engineering under separate cover. The project has been designed to comply with the water quantity criteria contained in the Environmental Resource Permit Applicant's Handbook Volume II Part IV.

5.4 Public Interest Test

5.4.1 Public Health, Safety and Welfare

The property is currently used for agricultural land. With the proposed changes, the project proposes moderate-density residential. This change to the land use will have a positive benefit to the surrounding properties. In addition, the proposed residential development will be a gated community, thereby protecting the safety and welfare for those who utilize the area. In the short-term, the construction of the community will provide job opportunities to the region and more long-term have a positive effect on the community's tax base.

5.4.2 Conservation of Fish and Wildlife

Wildlife surveys have been conducted on site. As discussed elsewhere in this application, the subject site supports few listed wildlife species. The subject site was originally altered as improved pasture in the early 1990's. This activity had the effect of altering and fragmenting existing upland and wetland wildlife habitats in the area. While common species remain and may be affected by site development, development of a previously altered site is expected to have less of an overall impact to fish and wildlife than development of a similarly sized parcel of undisturbed native upland and wetland habitats. Prior to any construction on the site, state listed species will be addressed through permitting with the FFWCC as required.

5.4.3 Navigation, Flow of Water, Erosion or Shoaling

The project has been conceptually designed in accordance with the criteria of the ERP Applicant's Handbook Volume II. As navigational access is not available on any of the waterways within or adjacent to the project, impacts to navigation from the project or resulting from project-related changes in the flow of water, erosion or shoaling are not anticipated.

5.4.4 Fishing and Recreation

The subject site is in private ownership and currently posted and barricaded to prevent trespass. It is not open to Sarasota County residents for fishing or other recreational uses. Relative to the existing land use

as improved pasture, the proposed development of the project including implementation of surface water management system designed to current ERP Applicant's Handbook criteria will have a beneficial effect on downstream water quality and fishing and recreational uses to Little Sarasota Bay.

5.4.5 Nature of Project

The proposed project will be of a permanent nature.

5.4.6 Historical and Archeological Resources

Historical and archeological resources were evaluated and addressed on the subject site in February 2015 as part of the review for the Palmer Ranch Parcel 9C project. An archeological survey was performed by Archaeological Consultants, Inc. (ACI). ACI conducted archaeological background research and a review of the Florida Master Site File (FMSF), the National Register of Historic Places (NRHP), and the Sarasota County Registry of Historic Places (SCRHP) data. All indicated that no archaeological sites were recorded in the project area. A review of relevant site locational information for environmentally similar areas within Sarasota County and the surrounding region indicated a moderate to low probability for the occurrence of prehistoric sites within portions of the project area.

Historical background research, including a review of the FMSF and the NRHP, indicated that no historic structures (50 years of age or older) were previously recorded within the project area. However, one resource, the abandoned Seaboard Air Line Railway (8SO2622), was previously recorded along the western side of the survey area. The tracks have been removed, and the corridor has been converted into the Legacy Trail. As a result of the field survey, no historic resources were identified or recorded. Therefore, the development of the project area will have no impact on any significant cultural resources, including those properties listed, determined eligible, or considered potentially eligible for listing in the NRHP or the SCRHP. Appendix A provides a copy of the Cultural Resources Assessment Survey (CRAS).

5.4.7 Avoidance of Adverse Effects to Current Conditions and Functional Values

The existing land use is improved pasture which has impacts to native vegetation and increased pollutants which degrade water quality off the site. Overall, the development of the project can be expected to have a positive effect on public interest review criteria. Potential negative effects are minimized or precluded by the fact this this project will occur in a previously impacted area. Significant benefits to water quality will result from the implementation of a surface water management system designed to current regulatory criteria and the installation of central water and sewer.

The project proposes to improve the condition of the wetlands which will remain on site. Mitigation of wetland impacts will occur in the larger wetlands systems within the project and provides a connection to the Palmer Ranch DRI environmental corridor. Historic channelization of wetlands has resulted in a dramatic reduction in the extent and quality of wetlands that remain. The mitigation plan for the Project has been designed to target previously impacted areas for restoration or enhancement. This will improve the overall condition and potential function of these wetland systems.

5.5 Class II Waters

Not Applicable

5.6 Vertical Seawalls

Not Applicable

5.7 Secondary Impacts

5.7.1 Upland Buffers

A minimum 30-ft upland buffer will be preserved surrounding the remaining wetlands and a minimum 50-ft watercourse buffer will protect the South Creek. Slight impacts to the upland buffer surrounding Wetland

D-2 are required for sloping of the grades of the adjacent lots. These impacts are considered temporary (315 SF (0.007 acres)) and will be replanted once the grading of the lots are completed.

Table 5-2. Buffer Enhancement Planting Plan.

Area	Strata	Plant Species		Size	Spacing	Percentage	Quantities
		Common Name	Scientific Name				
0.007 (315 ft²)	Trees	Slash Pine	*Pinus elliottii*	3 gallon	10' o/c	100%	4
	Shrubs	Wax Myrtle	*Myrica cerifera*	3 gallon	5' o/c	100%	12
	Herbaceous[1]	Fakahatchee Grass	*Tripsacum dactyloides*	1 qt. or bare root	3' o/c	50%	20
		Sand cordgrass	*Spartina bakeri*	1 qt. or bare root	3' o/c	50%	20

[1] Herbaceous groundcover may be used to delineate the edge of the buffer in which case plants will be installed in rows on 3 foot centers along the outer edge of the buffer. The quantities may be reduced relative to those shown in the table which is based on the industry's standard spacing requirements.

The remaining preserved wetlands are proposed for as mitigation therefore no secondary impacts will occur to these wetland due to the proposed improvement. Additional buffers and expansion of the wetland enhancement area focused around the preserved wetlands will be maintained to avoid potential concerns for secondary wetland impacts.

5.7.2 Wildlife Agency Coordination

Prior to any future construction on the project, coordination will occur with representatives of the FFWCC and USFWS, as appropriate. As warranted, species-specific surveys will be completed and permitting completed to address the presence of any state or federally listed species.

5.7.3 Upland Nesting or Denning Wetland-Dependent Wildlife

Development of this site is not likely to impact upland nesting or denning wetland-dependent wildlife.

5.7.4 Future Phases or Extensions

All lands owned by or under contract for purchase by the Applicant are included in this ERP Application. Therefore, no future phases of development will occur with this project.

5.8 Cumulative Impacts

Not applicable. All wetland mitigation is proposed within the development. Therefore no cumulative impacts are associated with this ERP application.

5.9 Mitigation Plan

5.9.1 Preliminary UMAM Analysis

The Uniform Mitigation Assessment Methodology (UMAM) pursuant to 62-345, *FAC,* incorporates the wetland impact acreages and the quality of the wetland pre- and post-development to compute quantitative compensation acreage, if any (Appendix B). The necessary lift units needed to offset the loss units associated with unavoidable wetland impacts to Wetlands I, J, L, M, and W will occur through the creation and expansion of onsite freshwater marshes adjacent to Wetlands D, U, and U2. No mitigation is proposed for the impacts to agricultural ditches located throughout the project area because of the man-made feature and lack of habitat value. Table 5-3 provides a summary of the UMAM analysis, which resulted in -2.79 units of loss and +3.14 units of lift. There is preservation of the higher-quality upland habitat adjacent to the mitigation areas, totaling approximately 41.1 acres, including addition to the surrounding uplands buffers which will be enhanced/ restored to further minimize potential impacts to the mitigation wetlands in the future.

Table 5-3. UMAM Analysis Summary for Palmer Ranch 9C.

Wetland	Pre-Construction UMAM Scores	Post-Construction UMAM Scores	Area (Acres)	Functional Gain or Loss (-)
Impact Areas				
Wetland I	0.57	0.00	1.14	-0.646
Wetland J	0.43	0.00	0.31	-0.134
Wetland L	0.57	0.00	1.22	-0.691
Wetland M	0.57	0.00	2.06	-1.167
Wetland W	0.47	0.00	0.22	-0.103
Wetland U	0.40	0.00	0.04	-0.016
Wetland U2	0.37	0.00	0.01	-0.004
SW Impact - South Creek	0.40	0.00	0.07	-0.028
Functional Loss Subtotal				**-2.79**
Mitigation Areas				
Mitigation Area 1 – Wetland Enhancement D2	0.60	0.63	4.74	0.118
Mitigation Area 2 – Wetland Creation D2	0.00	0.67	1.60	0.624
Mitigation Area 3 – Wetland Enhancement U	0.47	0.67	3.65	0.546
Mitigation Area 4 – Wetland Creation U	0.00	0.67	2.96	1.154
Mitigation Area 5 – Wetland Enhancement U2	0.43	0.67	0.47	0.082
Mitigation Area 6 – Wetland Creation U2	0.00	0.67	1.59	0.620
Functional Lift Subtotal				**+3.14**
Net Functional Gain				**+0.35**

5.9.2 Mitigation Discussion

Six (6) mitigation areas at three (3) locations are proposed as compensation for wetland impacts regulated by local, state and federal wetland agencies. The mitigation for the project will occur along the

northwest corner and southern portion of the property strategically connecting to and expanding the existing wildlife corridor along Legacy Trail and South Creek into Oscar Scherer State Park (Appendix C). Agricultural ditching and the channelization of South Creek has resulted in a dramatic reduction in the extent and quality of wetlands that remain. The mitigation plan for the Project has been designed to target previously impacted areas for restoration or enhancement.

Mitigation Area 1 (Wetland Enhancement D2); 4.74 acres

Mitigation Area 1 is a shrub wetland located in the northwest corner of the property adjacent to the wildlife corridor along Legacy Trail. Slight dewatering by the adjacent ditch has resulted in altered hydrology in Wetland D2. Nuisance and exotic vegetation has infested portion of the wetland and include Brazilian pepper, punk tree, torpedo grass, cattail, Peruvian primrose willow, and dog fennel totaling 50% cover throughout the wetland. The proposed mitigation will include the enhancement of the Wetland D2 through the removal of nuisance and exotic vegetation to improve the quality of vegetation and allow native vegetation to recruit. In addition, cattle will be removed from the site; therefore will decrease impacts to native vegetation and nutrient loading inputs to the wetland. On-going maintenance activities will ensure nuisance and exotic vegetation is within compliance.

Mitigation Area 2 (Wetland Creation D2); 1.60 acres

Located adjacent to Wetland D2 is Wetland Creation D2. This creation area is located in the northeast corner of the project connecting to the wildlife corridor along Legacy Trail and Wetland D2. Existing vegetation along the wildlife corridor and along the east side of Wetland D2 will be preserved. The site of the mitigation area currently supports bahia grass and other grasses as improved pasture with scattered oaks and cabbage palms. Multiple swales connections along the creation area and Wetland D2 will be created to allow water to flow into and hydrate the creation area.

During excavation of the mitigation area, soil strata will be segregated to salvage organic soils for use as the substrate of the finished mitigation area. In addition, during the clearing and grading of wetlands proposed for impact, the organic soils and plant material will be salvaged and utilized in the Wetland Creation D2 to maximize natural recruitment of native vegetation. Grading will include the over-excavation of the area by a depth of 6 inches and backfilling to proposed grade using wetland mulch, i.e., organic soils and plant material, salvaged from impacted wetland. Following mulch application, the mitigation area will be supplementally planted with native species.

Deeper zones will be created within areas of the wetland to provide topography for wading birds, fish and other wetland-dependent wildlife species. These newly created zones will be planted with native vegetation 3-foot on center. The wetland plantings includes sand cordgrass (*Spartina bakeri*), golden canna (*Canna flaccida*), maidencane, and saw grass within Zone 1. The remaining zones will be appropriately planted with knotted spikerush (*Eleocharis interstincta*), denseflower knotweed (*Polygonum glabrum*), pickerelweed (*Pontedaria cordata*), and lance-leaf arrowhead (*Sagittaria lancifolia*).

The upland buffer vegetation along the west side of the mitigation area and vegetation between Wetland D2 and the creation area will be preserved. The upland buffer along the south and north side of the mitigation areas will be planted with native tree and shrub species. These include slash pine, red maple (*Acer rubrum*), gallberry (*Ilex glabra*), wax myrtle, and sand cordgrass to provide additional screening of the mitigation area. The buffer along the north boundary will be an extension of areas preserved on this parcel (Parcel 9A), also under control by Taylor Morrison.

Mitigation Area 3 (Wetland Enhancement U); 3.65 acres

The areal extent of Wetland U has been significantly reduced by the dewatering effects of the adjacent channelized South Creek. Low water crossing in the Creek berm has significantly altered the hydrology in Wetland U. During flood events, South Creek overflows and hydrates Wetland U. As the water recedes in the Creek, much of the water in the wetland flows out through the wash outs in the berm. The mitigation proposed for this wetland will stabilize the hydrology to enhance the dewatered wetland and to restore ephemeral fresh water marsh to the system.

To restore natural seasonal fluctuations in the hydrology of Wetland U, the existing berm along the Creek will be re-established where the wash outs occur and a weir will be constructed along the south side of the wetland to control the water level in the wetland. The berm and weir system will block the current dewatering effects of several washouts that drain the wetland into the Creek. Slight impacts to the wetland will occur during the construction of the weir system (0.04 acres). The top elevation of the berm will be placed at 11.5' and the top elevation of the weir will be placed at 11.0' to allow summer high water levels to overtop the weir and provide for the colonization of the wetland by fish. The existing wetland's seasonal high water elevation (SHWE) is established at 10.57'; however since the wetland is significantly dewatered, we propose to raise the SHWE to 11.5'. This will allow the water within the wetland to be held at a higher stage for longer periods of time. As water levels recede, the weir and berm system will isolate the wetland from the Creek, concentrating fish and other potential aquatic prey of wading birds.

Excavation will occur within the wetland to create topography of varying depths to add diversity to the wetland and to provide for sequential drying and concentration of aquatic prey. The need for a deep water refuge will also be implemented in the mitigation area. Existing deeper zones will be preserved along the eastern portion of the wetland. Within this area, following initial eradiation of the nuisance and exotic vegetation, the wetland will be supplementally planted widely-spaced (10-ft on center) with native species. Plantings in the deeper zone will be planted with water lily (*Nymphaea odorata*) and arrowhead with the shallow zone planted with knotted spikerush, maidencane, lance-leaf arrowhead, pickerelweed, and denseflower knotweed. Zonation will be created in the western portion of the wetland enhancement area and will be continuous with the newly created area, Creation Area U. These newly created zones will be planted with native vegetation 3-foot on center within similar native vegetation.

The mesic hammock along the east side of the wetland will be preserved and protected from any construction access.

Mitigation Area 4 (Wetland Creation U); 2.96 acres

This Wetland Creation Area will be extended to the north and east of Wetland U, re-hydrating the historic extents of Wetland U. The mitigation area has been sited in areas that currently supports bahia grass, with stands of larger oaks and cabbage palms being avoided, where possible. The wetland zones for the Creation Area will be incorporated into Wetland U and will be graded similarly as Wetland U.

During excavation of the mitigation area soil strata will be segregated to salvage organic soils for use as the substrate of the finished mitigation area. In addition, during the clearing and grading of wetlands proposed for impact, the organic soils and plant material will be salvaged and utilized in the Wetland Creation U. Grading will include the over-excavation of the area by a depth of 6 inches and backfilling to proposed grade using wetland mulch salvaged from impacted wetland. Following mulch application, the mitigation area will be planted with native species.

The created wetland area will be planted with native wetland species 3-foot on centers, typical of fresh water marshes. Species have been selected and will be installed to maximize survival and establishment based on anticipated water levels. Plantings will include knotted spikerush, maidencane, lance-leaf arrowhead, pickerelweed, and denseflower knotweed.

The upland buffer is already well established on the north, east and west sides of the mitigation area. Therefore, no plantings are proposed except areas devoid of vegetation during construction activities for the mitigation areas. Various tree and shrub species, including slash pine and wax myrtle will be planted as needed to provide additional screening of the mitigation area.

Mitigation Areas 5 and 6 (Wetland Enhancement U2 and Wetland Creation U2); 0.48 acres and 1.59 acres, respectively

Similar to Wetland U, described above, the existing Wetland U2, located on the south side of South Creek, has been significantly reduced by the dewatering effects from South Creek. The hydrology of the Wetland Enhancement Area and the Creation Area will be stabilized by re-establishing the berm along the Creek. A weir will be construction with the top elevation of the weir placed at 11.0' to allow summer high water levels to overtop the weir and provide for the colonization of the wetland by fish. The existing

wetland seasonal high water elevation (SHWE) is established at 10.8'; however since the wetland is significantly dewatered, we propose to raise the SHWE to 11.5'. The water within the wetland will allowed to stage higher and held for longer periods of time. As water levels recede in the Creek, the weir will isolate the wetland areas from the Creek, concentrating fish and other potential aquatic prey of wading birds, allowing the wetland system to naturally dry out during the winter months.

The Wetland Enhancement Area (Wetland U2) and the Wetland Creation Area will incorporated into one system, thereby re-hydrating the historic extents of Wetland U2. The site of the mitigation area currently supports bahia grass, with stands of larger oaks and cabbage palms being avoided along the east side of the mitigation area. Zonation will be created to allow for diversity of native vegetation and foraging opportunities. The wetland zones for the Creation Area will be incorporated into Wetland U and will be hydrated similarly as Wetland U. The bottom topography of the created marsh will be sloped to create zonation at differing depths to add diversity to the wetland and to provide for sequential drying and concentration of aquatic prey.

Wetland U2 will be temporarily impacted by grading activities. Soils will be segregated to salvage organic soils for use as the substrate of the finished mitigation area. In addition, during the clearing and grading of the impacted wetlands, the organic soils and plant material will be salvaged and utilized in the mitigation areas. Following mulch application, the mitigation area will be supplementally planted with native species.

Species have been selected and will be installed to maximize survival and establishment based on anticipated water levels. Wetland plantings in the shallow zone will include sand cordgrass, golden canna, iris, maidencane, and saw grass. Within the deeper zone, plantings will include knotted spikerush, maidencane, pickerelweed, and denseflower knotweed.

The upland buffer is well established on the east side of the mitigation area. The upland buffer along the remainder of the mitigation areas will be planted with native tree and shrub species. These include slash pine, red maple, gallberry, wax myrtle, and sand cordgrass to provide additional screening of the mitigation area.

5.9.3 Wetland Mitigation Success Criteria, Monitoring and Maintenance

Mitigation Success Criteria

Mitigation is expected to offset adverse impacts to wetlands caused by regulated activities and to achieve viable, sustainable ecological and hydrological wetland functions. Wetlands enhancement for mitigation purposes will be considered successful and will be released from monitoring and reporting requirements when the following criteria are met continuously for a period of at least one year without intervention in the form of irrigation or the addition or removal of vegetation.

Mitigation areas may be deemed successful and released from monitoring and reporting requirements at any time during the monitoring period if the Permittee demonstrates that the conditions in the area have adequately replaced the wetland and other surface water functions affected by the regulated activity and that the site conditions are sustainable.

Table 5-4. Expected Mitigation Success Criteria for the Esplanade on Palmer Ranch Project.

Mitigation Criteria	Mitigation Area 1 4.74 acres	Mitigation Area 2 1.60 acres	Mitigation Area 3 3.65 acres	Mitigation Area 4 2.96 acres	Mitigation Area 5 0.48 acres	Mitigation Area 6 1.59 acres
A.	Mitigation Areas can reasonably be expected to develop into a Freshwater Marsh (FLUCFCS 641) as determined by the Florida Land Use Cover and Forms Classification System (third edition; January 1999).					
B.	Topography, water depth and water level fluctuation in Mitigation Areas are characteristic of the wetlands/surface water type specified in criterion "a".					
C.	Planted or recruited herbaceous or shrub species (or plant species providing the same function) shall meet the criteria specified:					
	Zone: 1 (4.74 acres) **Percent Cover:** 85% **Species**: *Salix caroliniana, Cladium jamaicense, Panicum hemitomon, Spartina bakeri*	**Zone:** 1 (0.70 acres) **Percent Cover:** 85% **Species**: *Canna flaccida, Cladium jamaicense, Iris* sp., *Panicum hemitomon, Spartina bakeri* **Zone:** 2 (0.64 acres) **Percent Cover:** 85% **Species:** *Eleocharis interstincta, Polygonum glabrum, Pontederia cordata* **Zone: 3** (0.26 acres) **Percent Cover:** 50% **Species**: *Pontederia cordata, Sagittaria lancifolia*	**Zone:** 1 (1.04 acres) **Percent Cover:** 85% **Species:** *Canna flaccida, Cladium jamaicense,Iris* sp., *Panicum hemitomon, Spartina bakeri* **Zone:** 2 (2.48 acres) **Percent Cover:** 85% **Species:** *Eleocharis interstincta, Panicum hemitomon, Polygonum glabrum, Pontederia cordata* **Zone:** 3 (0.13 acres) **Percent Cover:** 50% **Species:** *Nymphaea odorata, Sagittaria lancifolia*	**Zone:** 1 (2.48 acres) **Percent Cover**: 85% **Species**: *Canna flaccida, Cladium jamaicense, Iris* sp., *Panicum hemitomon, Spartina bakeri* **Zone:** 2 (0.47 acres) **Percent Cover**: 85% **Species:** *Eleocharis interstincta, Panicum hemitomon, Polygonum glabrum, Pontederia cordata*	**Zone:** 1 (0.12 acres) **Percent Cover**: 85% **Species**: *Canna flaccida, Cladium jamaicense, Iris* sp., *Panicum hemitomon, Spartina bakeri* **Zone:** 2 (0.43 acres) **Percent Cover**: 85% **Species:** *Eleocharis interstincta, Panicum hemitomon, Polygonum glabrum, Pontederia cordata*	**Zone:** 1 (1.26 acres) **Percent Cover**: 85% **Species**: *Canna flaccida, Cladium jamaicense, Iris* sp., *Panicum hemitomon, Spartina bakeri* **Zone:** 2 (0.25 acres) **Percent Cover**: 85% **Species:** *Eleocharis interstincta, Panicum hemitomon, Polygonum glabrum, Pontederia cordata*
D.	Species composition of recruiting wetland vegetation is indicative of the wetland type specified in criterion "a".					
E.	Coverage by nuisance or exotic species does not exceed 10 percent at any are within the mitigation site and 10 percent for the entire mitigation site.					
F.	The wetland mitigation area can be determined to be a wetland or other surface water according to Chapter 62-340, F.A.C.					

Maintenance, Management and Reporting

The Applicant shall monitor and maintain Mitigation Areas until the criteria described in Table 5-4 are met. The Applicant shall perform corrective action identified by SWFWMD if a wetland mitigation deficiency is noted by staff. Maintenance activities within Mitigation Areas shall be undertaken as needed at any time between mitigation area construction and termination of monitoring with the exception of the final year. Maintenance shall include the removal of all nuisance and exotic species, with sufficient frequency that their combined coverage at no time exceeds the criteria described below.

A Wetland Mitigation Completion Report shall be submitted to the District within 30 days of completing construction and planting of the Mitigation Areas. Upon SWFWMD inspection and approval of these mitigation areas, the monitoring program shall be initiated with the date of the SWFWMD field inspection being the construction completion date of the mitigation areas. Monitoring events shall occur between March 1 and November 30 of each year.

An Annual Wetland Monitoring Report shall be submitted upon the anniversary date of the SWFWMD approval initiating monitoring. Annual reports shall provide documentation that a sufficient number of maintenance inspection/activities were conducted to maintain Mitigation Areas in compliance with the criteria described above. Performance of maintenance inspections and maintenance activities will normally be conducted more frequently than the collection of other monitoring data to maintain the Mitigation Areas in compliance with the criteria described below. Monitoring data shall be collected semi-annually.

Termination of monitoring for Mitigation Areas shall be coordinated with SWFWMD staff by: a) notifying SFWMWD in writing when the criteria described above has been achieved; b) submitting documentation that all maintenance activities in Mitigation Areas have been suspended; and c) submitting a monitoring report to SWFWMD one year following the written notification and suspension of the maintenance activities.

The SWFWMD will then evaluate Mitigation Areas to determine if the above criteria are met and maintained. The SWFWMD will notify the Applicant in writing of the evaluation results. The Applicant shall perform corrective actions for any portion of Mitigation Areas that fail to maintain the below criteria.

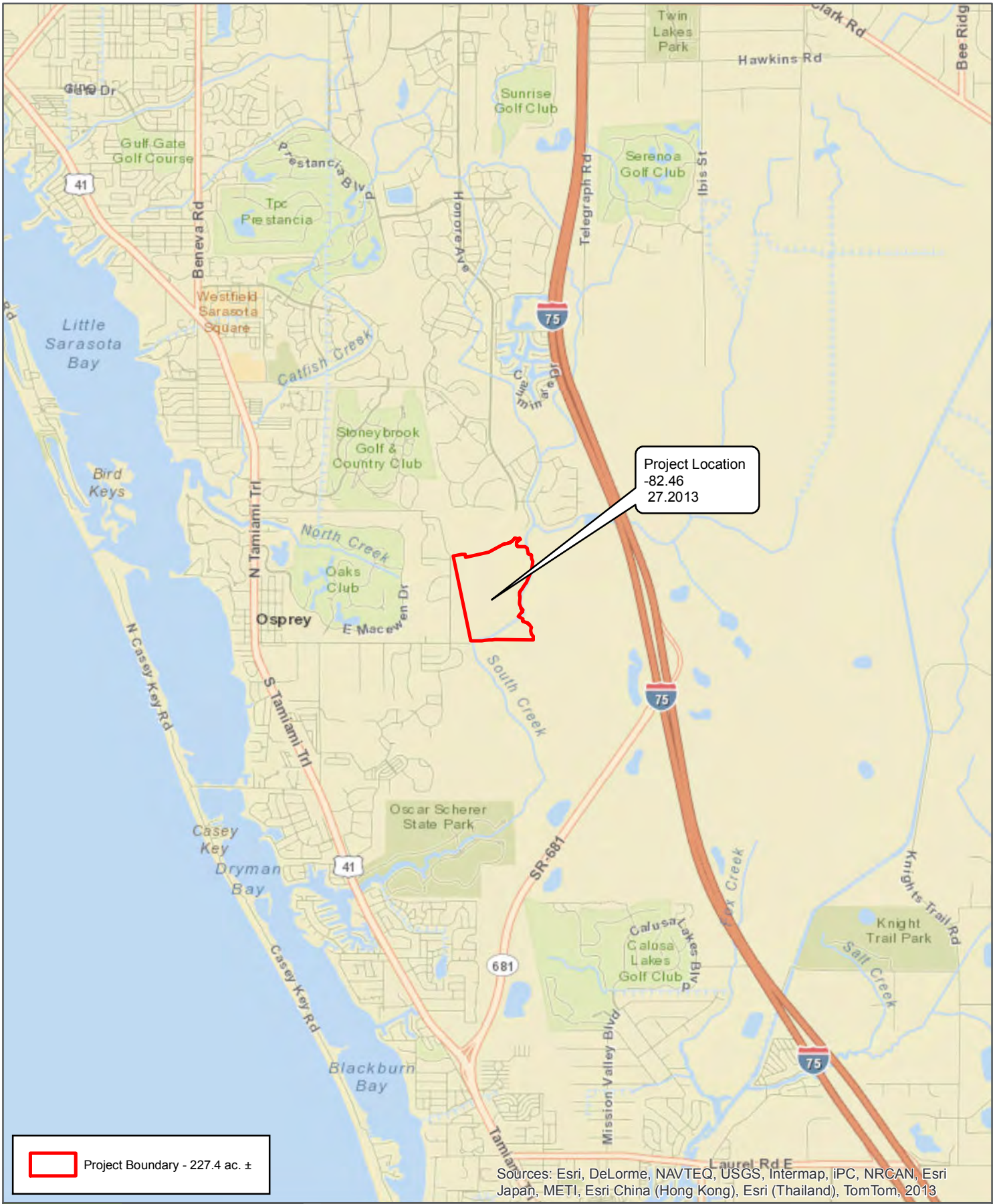
The Applicant shall commence construction of Mitigation Areas within 30 days of wetland impact, if the wetland impact occurs between February 1 and August 31. If wetland impacts occur between September 1 and January 31, construction of Mitigation Areas shall commence by March 1. In either case, construction of Mitigation Areas shall be completed within 120 days of the commencement date unless a time extension if approved in writing by SWFWMD.

5.10 Sovereign Submerged Lands

Not applicable. A determination letter dated September 10, 2015 from FDEP Title and Land Records Section was issued for Bay Street Extension (Application No. 717286) that there was insufficient information that this portion of South Creek located in Section 1, Township 38S, Range 18E is State Owned. This subject project is located upstream of the location of the Bay Street Extension determination.

Esplanade on Palmer Ranch

FIGURES



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Data Source:

Sec 01
Twp 38 S
Rng 18 E

Location Map

Esplanade on Palmer Ranch
Sarasota County, Florida

0 4,000 8,000 Feet

0 1,000 2,000 Meters

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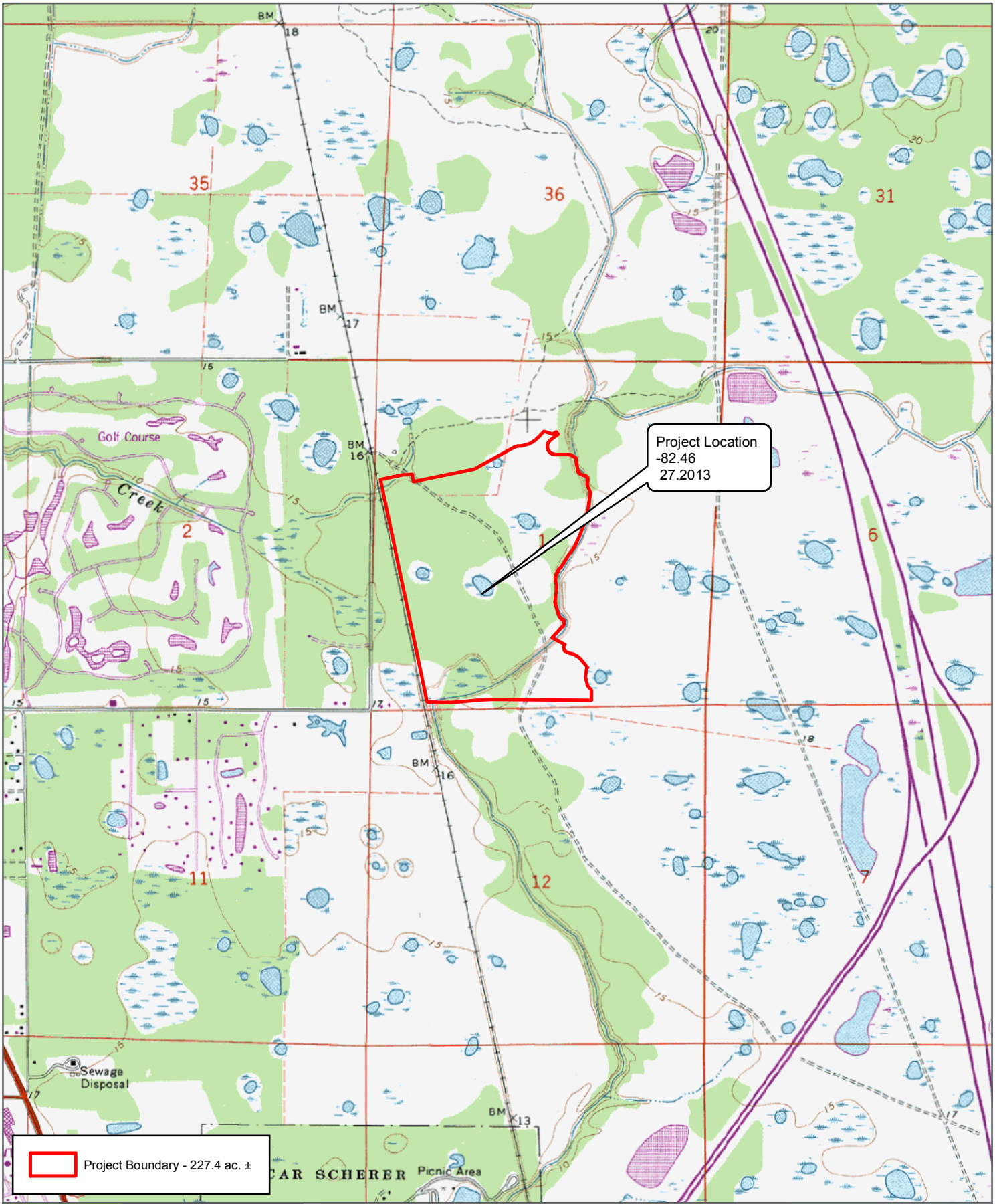
Date Created: 10/5/2015 Date Revised: 10/5/2015 File Path: Q:\UnitedStates\Florida\Sarasota\Taylor_Morrison_Florida\Palmer_Ranch\Parcel_9C\working\arcmap\Palmer_Ranch_Parcel _9C_Location_Map_A_1_20150928.mxd
GIS Analyst: wes.henriquez



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Data Source:

Sec 01
Twp 38 S
Rng 18 E

Quad Map

Esplanade on Palmer Ranch
Sarasota County, Florida

0 1,000 2,000 Feet

0 500 1,000 Meters

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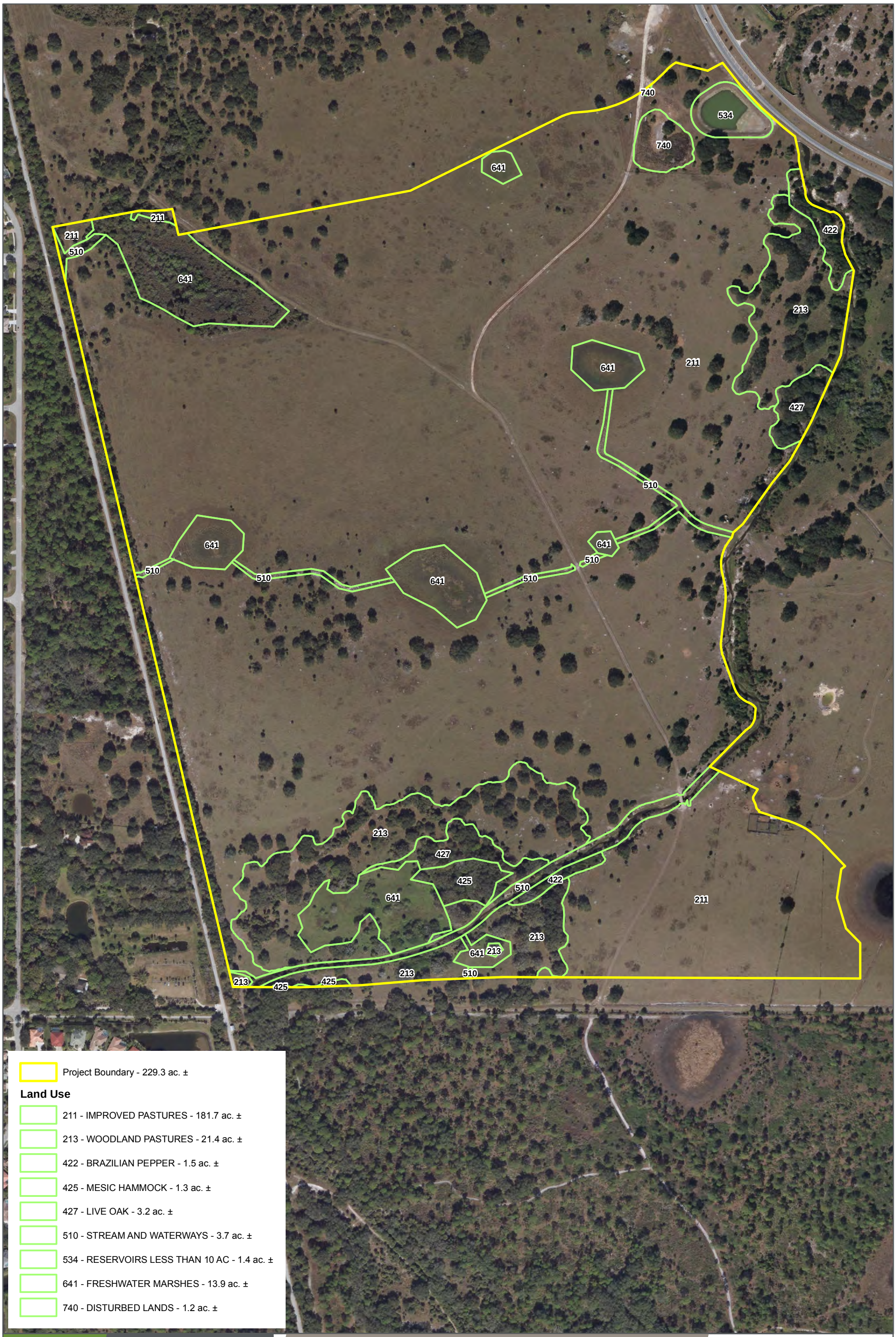
GIS Analyst: wes.henriquez



Project Boundary - 229.3 ac. ±

Land Use

- 211 - IMPROVED PASTURES - 181.7 ac. ±
- 213 - WOODLAND PASTURES - 21.4 ac. ±
- 422 - BRAZILIAN PEPPER - 1.5 ac. ±
- 425 - MESIC HAMMOCK - 1.3 ac. ±
- 427 - LIVE OAK - 3.2 ac. ±
- 510 - STREAM AND WATERWAYS - 3.7 ac. ±
- 534 - RESERVOIRS LESS THAN 10 AC - 1.4 ac. ±
- 641 - FRESHWATER MARSHES - 13.9 ac. ±
- 740 - DISTURBED LANDS - 1.2 ac. ±

Image:2014

Data Source: FDOT, Cardno

Sec 01
Twp 38 S
Rng 18 E

Land Use

Esplanade on Palmer Ranch
Sarasota County, Florida

0 400 800 Feet
0 122 244 Meters

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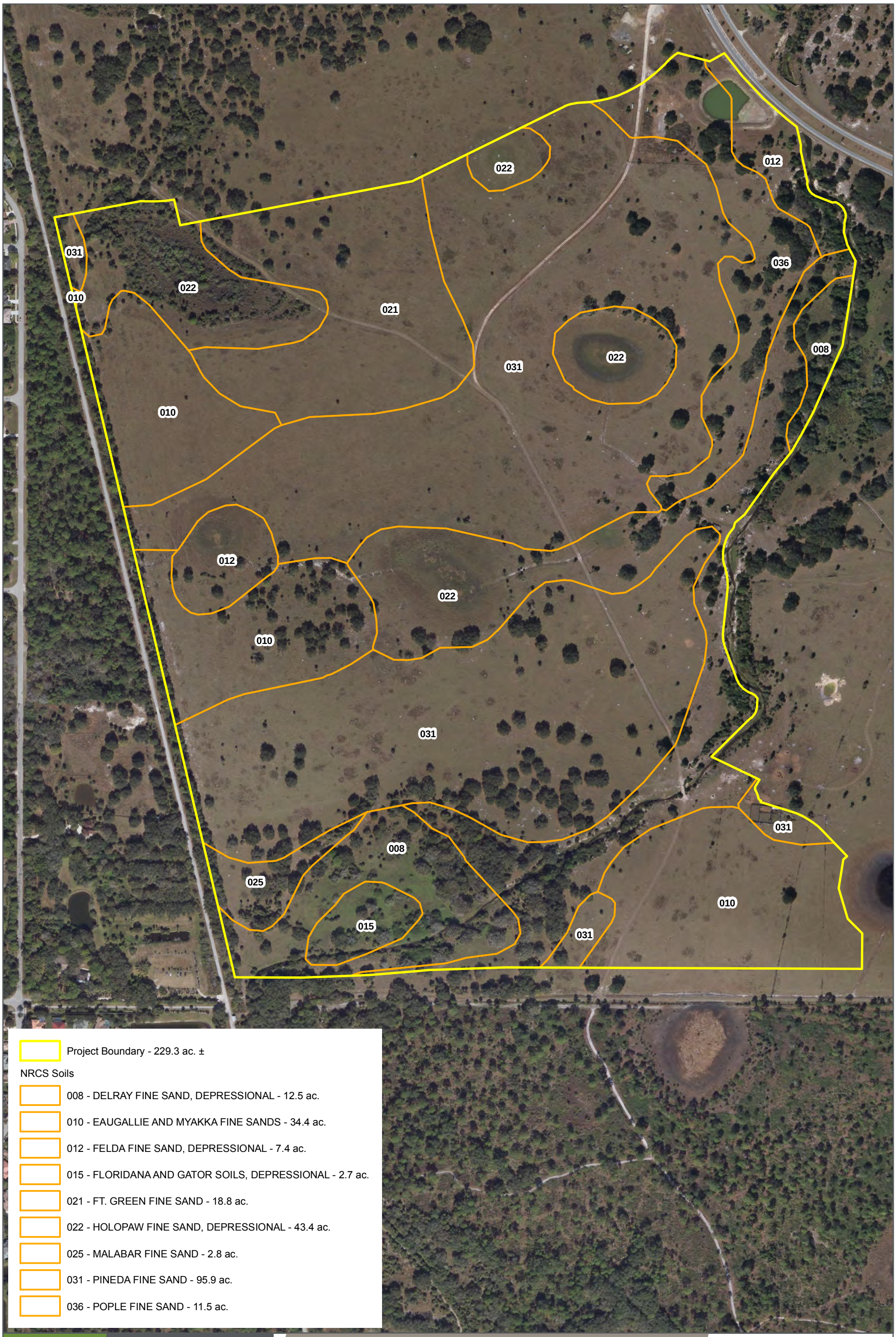
Date Created: 11/13/2015 Date Revised: 11/13/2015 File Path: Q:\UnitedStates\Florida\Sarasota\Taylor_Morrison_Florida\Palmer_Ranch\Parcel_9C\working\arcmap\Palmer_Ranch_Parcel _9C_LU_20151112.mxd
GIS Analyst: wes.henriquez



Project Boundary - 229.3 ac. ±

NRCS Soils

- 008 - DELRAY FINE SAND, DEPRESSIONAL - 12.5 ac.
- 010 - EAUGALLIE AND MYAKKA FINE SANDS - 34.4 ac.
- 012 - FELDA FINE SAND, DEPRESSIONAL - 7.4 ac.
- 015 - FLORIDANA AND GATOR SOILS, DEPRESSIONAL - 2.7 ac.
- 021 - FT. GREEN FINE SAND - 18.8 ac.
- 022 - HOLOPAW FINE SAND, DEPRESSIONAL - 43.4 ac.
- 025 - MALABAR FINE SAND - 2.8 ac.
- 031 - PINEDA FINE SAND - 95.9 ac.
- 036 - POPLE FINE SAND - 11.5 ac.

Image:2014

Data Source: FDOT, NRCS

Sec 01
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NRCS Soils

Esplanade on Palmer Ranch
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0 400 800 Feet
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GIS Analyst: wes.henriquez

TABLE 1 - PROJECT WETLAND (WL) AND OTHER SURFACE WATER (OSW) AND IMPACT SUMMARY

WL & SW ID	UMAM ASSESSMENT AREA NAME(S)	WL & SW TYPE	WL & SW SIZE (acres)	WL & SW NOT IMPACTED (acres)	TEMPORARY WL & SW IMPACTS		PERMANENT WL & SW IMPACTS		MITIGATION ID
					IMPACT SIZE (acres)	IMPACT TYPE	IMPACT SIZE (acres)	IMPACT TYPE	
Wetland D2	W-D2	641	4.74	4.74	0.00	N/A	0.00	N/A	N/A
Wetland I	W-I	641	1.14	0.00	0.00	N/A	1.14	D, F	Mitigation Area 1 & 2
Wetland J	W-J	641	0.31	0.00	0.00	N/A	0.31	F	Mitigation Area 3
Wetland L	W-L	641	1.22	0.00	0.00	N/A	1.22	D, F	Mitigation Area 3 & 6
Wetland M	W-M	641	2.06	0.00	0.00	N/A	2.06	D, F	Mitigation Area 1 & 4
Wetland U	W-U	641	3.69	3.65	0.00	N/A	0.04	N/A	N/A
Wetland U2	W-U2	641	0.48	0.47	0.00	N/A	0.01	N/A	N/A
South Creek	South Creek	510	2.15	2.05	0.10	N/A	0.07	F	Mitigation Area 5
OSW 1	N/A	510	0.67	0.00	0.00	N/A	0.67	D, F	N/A
OSW 2A	N/A	510	0.05	0.00	0.00	N/A	0.05	F	N/A
OSW 2B	N/A	510	0.18	0.00	0.00	N/A	0.18	D, F	N/A
OSW 3	N/A	510	0.34	0.00	0.00	N/A	0.34	D, F	N/A
OSW 4	N/A	510	0.04	0.00	0.00	N/A	0.04	F	N/A
OSW 4B	N/A	510	0.24	0.24	0.00	N/A	0.00	N/A	N/A
OSW 10B	N/A	510	0.02	0.02	0.00	N/A	0.00	N/A	N/A

WL & SW ID	UMAM ASSESSMENT AREA NAME(S)	WL & SW TYPE	WL & SW SIZE (acres)	WL & SW NOT IMPACTED (acres)	TEMPORARY WL & SW IMPACTS		PERMANENT WL & SW IMPACTS		MITIGATION ID
					IMPACT SIZE (acres)	IMPACT TYPE	IMPACT SIZE (acres)	IMPACT TYPE	
Pond “A”	N/A	534	1.4	1.4	0.00	N/A	0.00	N/A	N/A
PROJECT TOTALS:			**18.95**	**18.75**	**0.10**		**6.35**		

Comments:

Codes (multiple entries per cell not allowed):

- Wetland & Surface Water ID: Include ID on submitted wetland and surface water impact maps
- Wetland Type: from an established wetland classification system
- Impact Type: D=dredge; F=fill; H=change hydrology; S=shading; C=clearing; O=other; P=Pilings

TABLE 2 - PROJECT ON-SITE MITIGATION SUMMARY

MITIGATION ID	UMAM ASSESSMENT AREA NAME(S)	TARGET TYPE	CREATION	RESTORATION	ENHANCEMENT	WETLAND PRESERVE	UPLAND PRESERVE	OTHER
			AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)	AREA (acres)
Mitigation Area 1	Wetland Enhancement D	641	0.00	0.00	4.74	0.00	0.00	0.00
Mitigation Area 2	Wetland Creation D2	641	1.60	0.00	0.00	0.00	0.00	0.00
Mitigation Area 3	Wetland Enhancement U	641	0.00	0.00	3.65	0.00	0.00	0.00
Mitigation Area 4	Wetland Creation U	641	2.96	0.00	0.00	0.00	0.00	0.00
Mitigation Area 5	Wetland Enhancement U2	641	0.00	0.00	0.47	0.00	0.00	0.00
Mitigation Area 5	Wetland Creation U2	641	1.59	0.00	0.00	0.00	0.00	0.00
PROJECT TOTALS			**6.15**	**0.00**	**8.86**		**0.00**	**0.00**

COMMENTS:

Codes (multiple entries per cell not allowed):

- Target Type or Type=target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

Image:2014

Data Source:

Sec 01
Twp 38 S
Rng 18 E

Wetlands Map

Esplanade on Palmer Ranch
Sarasota County, Florida

0 400 800 Feet

0 100 200 Meters

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Date Created: 11/13/2015 Date Revised: 11/13/2015 File Path: Q:\UnitedStates\Florida\Sarasota\Taylor_Morrison_Florida\Palmer_Ranch\Parcel_9C\working\arcmap\Palmer_Ranch_Parcel _9C_Wetlands_Map_nopts_A_1_20151113.mxd
GIS Analyst: wes.henriquez

Esplanade on Palmer Ranch

APPENDIX A

CULTURAL RESOURCES ASSESSMENT SURVEY

CULTURAL RESOURCE ASSESSMENT SURVEY
PALMER RANCH SOUTH 900
SARASOTA COUNTY, FLORIDA

Performed for:

Taylor Morrison
501 North Cattlemen Road, Suite 100
Sarasota, Florida 34232

Prepared by:

Florida's First Choice in Cultural Resource Management

Archaeological Consultants, Inc.
8110 Blaikie Court, Suite A
Sarasota, Florida 34240
(941) 379-6206
Toll Free: 1-800-735-9906

February 2015

CULTURAL RESOURCE ASSESSMENT SURVEY
PALMER RANCH SOUTH 900
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8110 Blaikie Court, Suite A
Sarasota, Florida 34240

Marion Almy - Project Manager
Lee Hutchinson - Project Archaeologist
Katherine Baar - Archaeologist

February 2015

EXECUTIVE SUMMARY

A cultural resource assessment survey (CRAS) of the ±224-acre Palmer Ranch South 900 project in Sarasota County, Florida was performed by Archaeological Consultants, Inc. (ACI). The purpose of this survey was to locate and identify any cultural resources within the project area and to assess their significance in terms of eligibility for listing in the National Register of Historic Places (NRHP), and the Sarasota County Registry of Historic Places (SCRHP). The survey and report were conducted as due diligence and comply with Chapters 267 and 373, *Florida Statutes* (*FS*), as well as with the Historic Preservation Chapter of Apoxsee and with Article III, Chapter 66 of the Sarasota County Code. The archaeological and historical surveys were conducted in February 2015.

ACI conducted archaeological background research and a review of the Florida Master Site File (FMSF), the NRHP and the SCRHP data. All indicated that no archaeological sites were recorded in the project area or within one mile of the project area, although, one site was recorded just beyond one mile of the project area. A review of relevant site locational information for environmentally similar areas within Sarasota County and the surrounding region indicated a moderate to low probability for the occurrence of prehistoric sites within portions of the project area. In addition, based on the review of the project area with Ryan Murphy, Sarasota County Archaeologist, areas of archaeological potential were identified. As a result of field survey, no prehistoric sites were found.

Historical background research, including a review of the FMSF and the NRHP, indicated that no historic structures (50 years of age or older) were previously recorded within the project area. However, the no longer extant Seaboard Air Line Railway (8SO02622), along with two associated bridges (8SO5312 and 8SO05315), were previously recorded along the western extent of the survey area. The tracks have been removed and the corridor has been converted into the paved Legacy Trail. The bridges were not observed during the current survey. Vegetation generally obscures the view of the corridor from within the project area. As a result of field survey, no historic resources were identified or recorded.

Therefore, based on background research and field survey, development of the Palmer Ranch South 900 Property will have no impact on any significant cultural resources, including those properties listed, determined eligible, or considered potentially eligible for listing in the NRHP or the SCRHP. No further research is recommended.

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LIST OF FIGURES, TABLES, AND PHOTOGRAPHS

1.0 INTRODUCTION

1.1 Project Description

This project involved an archaeological and historical survey of the ±224-acre Palmer Ranch South 900 project area (**Figure 1.1**). The project was conducted as due diligence, but the survey and report comply with the Historic Preservation Chapter of Apoxsee and with Article III, Chapter 66 of the Sarasota County Code, as well as Chapters 267 and 373 *Florida Statutes* (*FS*).

1.2 Purpose

The purpose of the cultural resource assessment survey (CRAS) was to locate, identify, and delimit any prehistoric and historic period archaeological sites and historic resources located within the project area and to assess, to the extent possible, their significance as per the criteria of eligibility for listing in the NRHP or the SCRHP. The archaeological and historical field surveys were conducted in February 2015. Background research preceded field survey. Such research served to provide an informed set of expectations concerning the kinds of cultural resources that might be anticipated to occur within the project area, as well as a basis for evaluating any new sites discovered.

The project was conducted in compliance with the standards contained in the Florida Division of Historical Resources' (FDHR) *Cultural Resource Management Standards and Operational Manual* (FDHR 2003) and the report meets the specifications set forth in Chapter 1A-46, *Florida Administrative Code* (*FAC*).

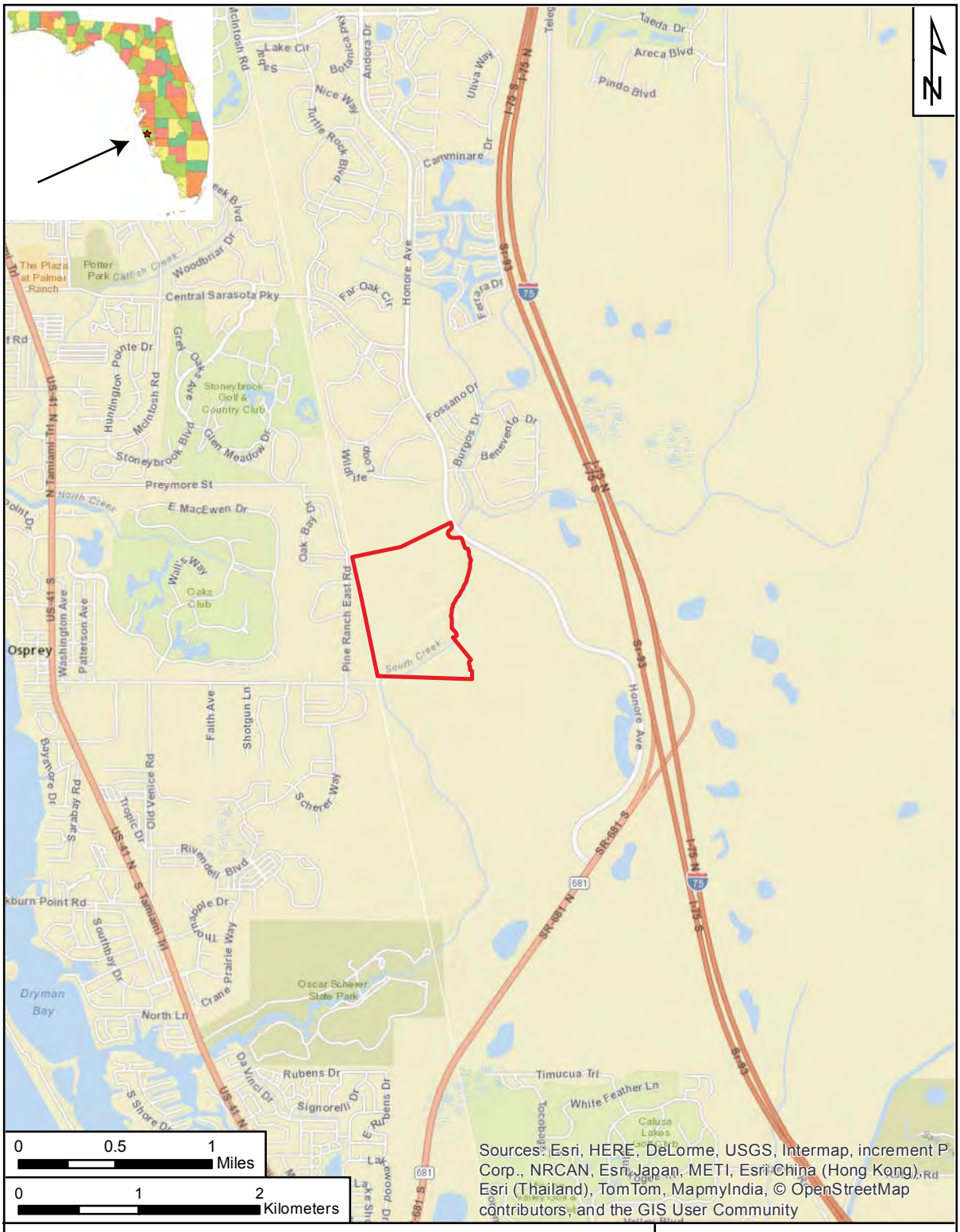


Figure 1.1. Location of the Palmer Ranch South 900 project area, Sarasota County.

2.0 ENVIRONMENTAL SETTING

2.1 Location and Setting

The ±224-acre project area is located west of Honore Avenue, south of the Isles on Palmer Ranch, and east of the Legacy Trail in Section 1 of Township 38 South, Range 18 East in Sarasota County, Florida (United States Geological Survey [USGS] 1993) (**Figure 2.1**).

2.2 Physiography and Geology

The project area lies within the Gulf Coastal Lowlands, the physiographic zone that typifies the entire coastline of Florida. The Gulf Coastal Lowlands are flat, and are characterized by surficial streams with little to no down cutting. Coastwise parallel, low sand ridges form slight, rolling hills within the zone. Ocean waters constructed these ridges during the Pleistocene Epoch. The lack of elevation in the Gulf Coastal Lowlands creates the near-surficial to exposed water table throughout the region. This high water table results in the poor natural drainage in the project area (Davis 1943; United States Department of Agriculture [USDA] 1959, 1991; McNab and Avers 1996). The project area is about 15 feet (ft) (5 meters [m]) above mean sea level (amsl).

2.3 Soils and Vegetation

Soils in the project area are nearly level and poorly to very poorly drained. Specific types are listed in **Table 2.1**.

Table 2.1. Soils in the project area (USDA 1991, 2013).

Soil Type	Drainage	Environment
Delray fine sand, depressional	Very poorly drained	Depressions
EauGallie and Myakka fine sands	Poorly drained	Flatwoods
Felda fine sand, depressional	Very poorly drained	Depressions
Floridana and Gator soils, depressional	Very poorly drained	Depressions
Ft. Green fine sand	Poorly drained	Flatwoods
Holopaw fine sand, depressional	Very poorly drained	Depressions
Malabar fine sand, 0-2% slopes	Poorly drained	Low sloughs and poorly defined drainageways, and on flats
Pineda fine sand, 0-2% slopes	Poorly drained	On broad, low hammocks
Pople fine sand	Poorly drained	Drainageways

2.4 Paleoenvironmental Considerations

The prehistoric environment of Sarasota County and the surrounding area was different from that which is seen today. Sea levels were much lower, the climate was drier, and potable water was scarce. Given the changes in water resource availability, botanical communities, and faunal resources, an understanding of human ecology during the earliest periods of human

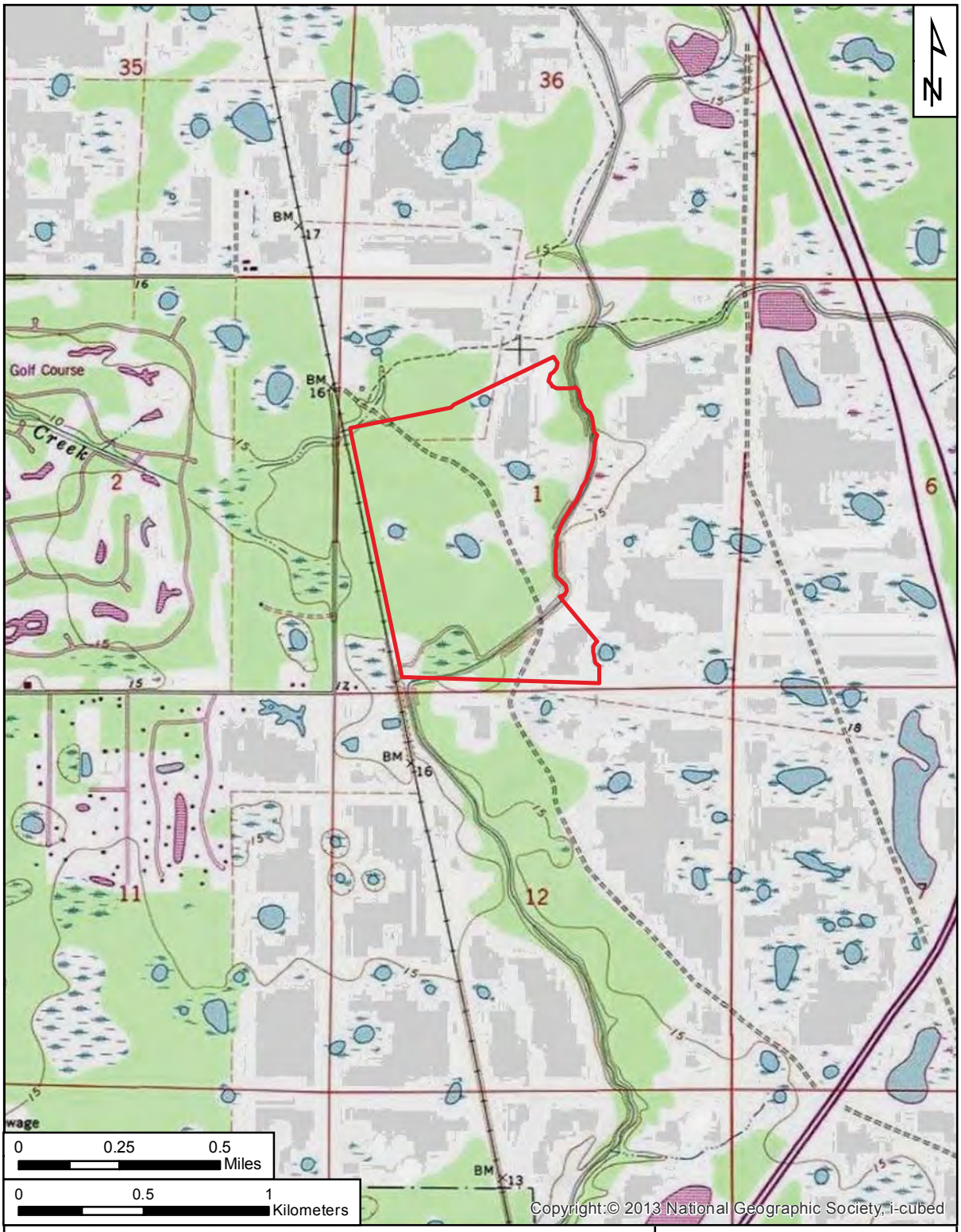


Figure 2.1. Environmental setting of the Palmer Ranch South 900 project area; Section 1 of Township 38 South, Range 18 East; USGS Laurel.

occupation in Florida cannot be founded upon observations of the contemporary environment. Aboriginal inhabitants would have developed cultural adaptations in response to the environmental changes taking place. These alterations were reflected in prehistoric settlement patterns, site types, site locations, artifact forms, and variations in the resources used.

Dunbar (1981:95) notes that due to the arid conditions during the period between 16,500 and 12,500 years ago, "the perched water aquifer and potable water supplies were absent." Palynological studies conducted in Florida and Georgia suggest that between 13,000 and 5000 years ago, this area was covered with an upland vegetation community of scrub oak and prairie (Watts 1969, 1971, 1975). The rise of sea level severely reduced xeric habitats over the next several millennia.

By 5000 years ago, southern pine forests were replacing the oak savannahs. Extensive marshes and swamps developed along the coasts and subtropical hardwood forests became established along the southern tip of Florida (Delcourt and Delcourt 1981). Northern Florida saw an increase in oak species, grasses and sedges (Carbone 1983). At Lake Annie in south-central Florida, pollen cores are dominated by wax myrtle and pine. The assemblage suggests that by this time a forest dominated by longleaf pine, along with cypress swamps and bayheads, existed in the area (Watts 1971, 1975). Roughly five millennia ago, surface water was plentiful in karst terrains and the level of the Floridan aquifer rose to five feet above present levels. After this time, modern floral and climatic and environmental conditions began to be established (Watts 1975). With the onset of the modern environmental conditions, numerous micro-environments were available to the aboriginal inhabitants in the Tampa Bay area. By 4000 Before Common Era (BCE), ground water had reached current levels, and the shift to warmer, moister conditions saw the appearance of hardwood forests, bayheads, cypress swamps, prairie, and marshlands.

2.5 Current Conditions

Today, much of the natural vegetation has been removed and the area is used as pasture (**Photo 2.1**). Some of the vegetation that remains includes oaks, palm trees, pine trees, saw palmetto, and miscellaneous weeds. Some invasive Brazilian pepper was also noted along South Creek. Scattered wetlands are located in the project area, vegetated by grasses and water-tolerant vegetation **(Photo 2.2)**. Alterations to the natural landscape include limited ditching, dredging of South Creek (with adjacent spoil along the eastern project boundary), trails and a corral with a feeding area for the cattle (**Photos 2.1-2.4**).

Photo 2.1. Looking south-southwest at pasture and access trail within the project area.

Photo 2.2. Looking southwest at one of the scattered wetlands within the project area.

Photo 2.3. Looking southwest at a segment of South Creek traversing the project area.

Photo 2.4. Looking at southeast a corral and feeding area in the southeast project region.

3.0 CULTURE HISTORY

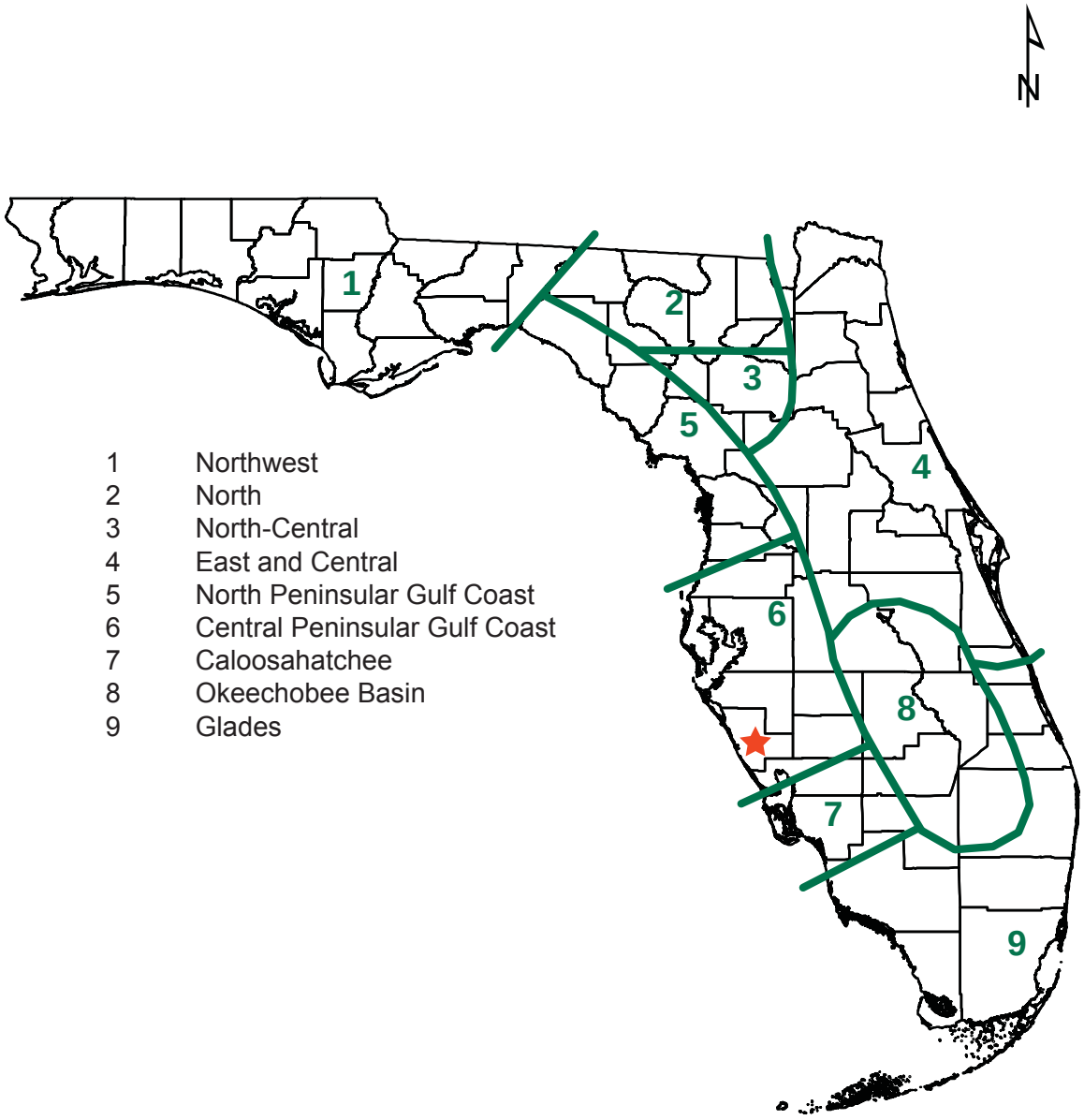
A discussion of the regional culture history is included to provide a framework within which the local historical and archaeological records can be examined. Archaeological sites and historic features are not individual entities, but rather are part of once dynamic cultural systems. As a result, individual sites cannot be adequately examined or interpreted without reference to other sites and resources in the general area.

In general, archaeologists summarize the culture history of an area (i.e., an archaeological region) by outlining the sequence of archaeological cultures through time. These are defined largely in geographical terms but also reflect shared environmental and cultural factors. The project area is located in the Central Peninsular Gulf Coast archaeological region (Milanich 1994; Milanich and Fairbanks 1980). This region extends from just north of Tampa Bay southward to the northern portion of Charlotte Harbor (**Figure 3.1**). Within this zone, the Paleo-Indian, Archaic, Formative, Mississippian, and Acculturative stages have been defined based on unique sets of material culture traits such as stone tools and ceramics as well as subsistence, settlement, and burial patterns. These broad temporal units are further subdivided into culture phases or periods.

The local history of the region is divided into four broad periods based initially upon the major governmental powers. The first period, Colonialism, occurred during the exploration and control of Florida by the Spanish and British from around 1513 until 1821. At that time, Florida became a territory of the U.S. and 21 years later became a State (Territorial and Statehood). The Civil War and Aftermath (1861-1899) period deals with the Civil War, the period of Reconstruction following the war, and the late 1800s, when the transportation systems were dramatically increased and development throughout the state expanded. The Twentieth Century period includes subperiods defined by important events such as the World Wars, the Boom of the 1920s, and the Depression. Each of these periods evidenced differential development and utilization of the region, thus effecting the historic site distribution.

3.1 Paleo-Indian

The Paleo-Indian period is the earliest known cultural manifestation in Florida and dates from roughly 11,000 to 7500 BCE (Austin 2001). Archeological evidence for Paleo-Indians consists primarily of scattered finds of diagnostic lanceolate projectile points. The majority of these sites are associated with the rivers in the north-central portion of Florida. During this period, the climate was cooler and drier. Vegetation was typified by xerophytic species with scrub oak, pine, and open grassy prairies (Milanich 1994:40). Since sea levels were as much as 115 ft below present levels and the coastal regions extended miles beyond present-day shorelines (Milliman and Emery 1968), many of the sites dating from this time period have been inundated (Clausen et al. 1979; Ruppé 1980; Scholl et al. 1969). Much of the information about the Paleo-Indian Period in Sarasota County is derived from underwater excavations at two inland spring sites: Little Salt Spring and Warm Mineral Springs (Milanich 1994:44). There is also good evidence that Paleo-Indians in southwest Florida and elsewhere hunted now extinct species like mastodon, mammoth, ground sloth, and giant tortoise (Clausen et al. 1979; Dunbar and Waller 1983).



Kilometers
0 50 100

Post-500 BCE regions of precolumbian Florida

(adapted from Milanich 1994:xix)

Miles
0 25 50

Figure 3.1. Florida Archaeological Regions. The project area (★) is within the Central Peninsular Gulf Coast Region.

Traditionally, the Paleo-Indian period is characterized by small nomadic bands of hunters and gatherers. However, Daniel (1985) has proposed a model of an early hunter-gatherer settlement that suggests that some Paleo-Indian groups may have practiced a more sedentary lifestyle than previously believed. Archaeologists also speculate that since the climate was cooler and much drier, it is likely that these nomadic bands traveled between permanent and semi-permanent sources of water, exploiting seasonally available resources. This has been referred to as the Oasis hypothesis (Dunbar 1991). These watering holes would have attracted the animals upon which the Indians hunted, thus providing both food and drink.

Excavations at the Harney Flats Site in Hillsborough County (8HI507) have provided a rich body of data concerning Paleo-Indian lifeways in west-central Florida (Daniel and Wisenbaker 1987). Such data supports the theory that Paleo-Indian settlement may not have been related as much to seasonal changes as generally postulated for the succeeding Archaic period, but instead movement was perhaps related to the scheduling of tool-kit replacement, social needs, and the availability of water, among other factors (Daniel and Wisenbaker 1987:175). During the Late Paleo-Indian Period, the large lanceolate Suwannee and Simpson points were replaced by the smaller Tallahassee, Santa Fe, and Beaver Lake types (Milanich 1994:53). Other research in the region has shown that at least portions of coastal shell deposits, bordering now submerged river channels in Tampa Bay, were probably Paleo-Indian middens (Goodyear and Warren 1972; Goodyear et al. 1983). Austin (2001), however, notes that while some researchers have suggested that the disappearance of Pleistocene megafauna forced early Holocene groups to the coast to exploit maritime resources, such a change seems unlikely.

In addition to Warm Mineral and Little Salt Springs, evidence of the Paleo-Indian Period in Sarasota County has been identified at a lithic scatter component of the Myakkahatchee Site in the City of North Port and along the Gulf beach at Venice where a Simpson-like projectile point was recovered near a spring (ACI 1985).

3.2 Archaic

As the Paleo-Indian period gradually ended, climatic changes occurred, and the last of the Pleistocene megafauna disappeared from the landscape. Archaeological evidence suggests a slow cultural change, which led toward an increasingly intensive exploitation of localized food resources. These changes may reflect a transition from the Late Pleistocene to the Holocene, which was characterized by a more seasonal, modern climate. Some archaeologists have hypothesized that with the extinction of some Pleistocene mammals, Archaic populations turned to the hunting of smaller game like deer, raccoon, and opossum, as well as a reliance on wild plants and shellfish (Milanich 1994).

The Archaic Period has been divided into three sub-periods: Early, Middle, and Late (or Ceramic) Archaic. The Early Archaic period, ca. 7500 - 5000 BCE, is well-documented in Florida, and generally recognized by the presence of Dalton and/or Bolen type projectile points (Bullen 1975). The archaeological record appears to indicate a diffuse, yet well-scheduled pattern of exploiting both coastal and interior resources. The Early Archaic tool assemblage is more diverse than the preceding Paleo-Indian tool kits, and includes specialized stone tools for performing a variety of tasks. In addition, many Early Archaic sites are small, seasonal campsites suggesting seasonal migration or travel in search of food (Milanich and Fairbanks 1980). Widmer (1988) has hypothesized a post-Kirk Horizon within the Early Archaic for South Florida as a bridge between the preceding Late Paleo-Indian (Kirk Horizon) and the subsequent Middle Archaic. Austin (2001) notes possible post-Kirk Horizon sites such as the Fletcher Davis, Tampa

Palms, and West Williams sites in Hillsborough County. Discoveries at Little Salt Spring in Sarasota County (Clausen et al. 1979) and the Windover Site (Doran 2002) in Brevard County indicate that bone and wood tools were manufactured and used for a variety of tasks during the Early to Middle Archaic.

During the Middle Archaic, ca. 5000 to 3000 BCE, the archaeological record (a procession of Middle Archaic projectile point types) indicates the spread of people across Florida (Milanich 1994; Purdy 1981). There may have been a shift from the dispersed settlement pattern of the preceding period to a system of central-base camps with numerous, smaller satellite or special-use camps. These changes in settlement pattern may have resulted in maximizing the use of forest resources and the ability of larger bands of people to live together for part of the year. Russo (1991) has also suggested that research on Horr's Island in southwest Florida provides evidence of a large, permanent (year-round) preceramic Archaic habitation with a large and diverse assemblage of shell and bone tools.

Lithic artifacts associated with the Middle Archaic include broad-bladed, stemmed projectile points such as the Newnan, Marion, and Putnam types. In addition, specialized tools such as microliths and burins, large chopping implements, as well as an array of expedient tools, have been found at archaeological sites. Ste. Claire (1987) has reported extensive use of thermal alteration, which enabled poor-quality, raw material to be used for the manufacture of tools, principally hafted bifaces. Other researchers report a noticeable decrease in the use of shaped tools other than bifaces as well as a dependency on flake tools (Austin 2001). In addition, several cemetery sites, with human burials in bogs, springs, and other wetlands, provide the first evidence for mortuary ceremonialism during the Middle Archaic. One of these, the Hazeltine Site, also known as the Little Salt Spring Slough Site (Luer 2002:20), is associated with a large Archaic Period camp or village site in southern Sarasota County (Clausen et al. 1979).

During the Late Archaic, ca. 3000 to 500 BCE, many settlements were located near wetlands. The abundance of resources located in and near the wetlands permitted larger settlements. Broad bladed, stemmed projectile points of the Middle Archaic continued to be manufactured. However, hafted scrapers, thumbnail scrapers, and discoidal scrapers appear in the archaeological records. Austin (2001:47) writes that "…presumably this is related to maintenance activities associated with habitation…" Other researchers note that a greater reliance on marine resources is indicated at coastal sites as subsistence strategies and technologies were adapted to maximize the rich source of aquatic foods. In Sarasota County, a number of very large coastal and riverine shell middens began to accumulate along the bays (Almy 1976; Williams et al. 1990). This apparent increased exploitation of maritime resources might be due to rising sea levels. Early coastal sites might lie offshore along the former shorelines (Goodyear and Warren 1972; Faught 1996 and 2004)

During the Late, or ceramic, Archaic, the earliest pottery, a fiber-tempered ware, was introduced in Sarasota and elsewhere in Florida (Bullen and Bullen 1976; Sassaman 2003). This innovation was documented at the Canton Street Site, in St. Petersburg (Bullen et al 1978) and at the Hill Cottage Midden in Sarasota County (Bullen and Bullen 1976). Fiber-tempered pottery of the general project area includes both Orange plain and decorated (Milanich 1994:101). With the introduction of pottery, the previously widespread Culbreath points are replaced by Lafayette, Hernando, and Citrus points (Milanich 1994:101).

To the south in Collier County, recent investigations at Heineken Hammock (8CR231) have evidenced a temporary camp site dating to 2500 BCE and situated "…well back from the Gulf shore suggesting the presence of a stable community within a practical hiking or canoeing

distance…" off the coast (Lee et al. 1998:223). Based on a surface collection at the Cedar Point shell midden (8CH18/8CH61) on Lemon Bay that included sand and fiber-tempered sherds and a thick, chalky fiber-tempered ware, Luer (1999a) has hypothesized a Late or Terminal Archaic period occupation just north of Charlotte Harbor.

3.3 Transitional

The Transitional period (1200 - 500 BCE) was defined by Bullen (1959) to explain the transition from the Late Archaic, fiber-tempered period to the Formative or Woodland stage, which manifests a greater regional diversity. However, the period remains difficult to identify clearly in the archaeological record (Milanich 1994). Nonetheless, it appears that as population size increased, fiber-tempered pottery was replaced by sand-tempered or limestone- and sand-tempered wares. For example, limestone-tempered and sand-tempered pottery developed along the west-central and southwest coast, whereas a temperless chalky ware developed along the St. Johns River and northeast coast of Florida. In addition, there is evidence of regional interaction with other cultures such as the Poverty Point complex of the lower Mississippi Valley. Among the west-central Florida sites dating to the Transitional Period are the Canton Street Site in St. Petersburg (Bullen et al. 1978) and the Apollo Beach Site on Tampa Bay (Warren 1968).

3.4 Formative

The 1300 years from ca. 500 BCE to 800 Common Era (CE) in the Central Peninsular Gulf Coast archaeological region is known as the Manasota Period. The subsistence practices of the Manasota people combined marine and hinterland exploitation. Large shoreside sites, i.e., major villages, were located on or very near the mainland. Small, perhaps seasonal villages or campsites were located 12 to 18 miles inland from the shore. During this long period, sand-tempered pottery became the dominant ceramic type, and burial practices became more elaborate, evolving from interments, often in shell middens, to sand burial mounds (Luer and Almy 1982). As currently defined, the Manasota culture is a coastal manifestation, and recent research has helped (Ardren et al. 2003) to define further the coastal subsistence patterns dating between 400-800 CE on Lemon Bay. While not directly assignable to the Manasota period, several small sites in the interior part of the region may be contemporaneous with coastal Manasota sites, including those along Fox and Salt Creeks (ACI 2003a; Williams et al. 1990).

Gradually, the people of the region were influenced by the Weeden Island culture from the north, and became what archaeologists refer to as a Weeden Island-related culture (Milanich 1994). The subsistence pattern continued to be based on a hunting and gathering of land, marine, riverine, and swamp resources. The people seem to have led a sedentary lifestyle, with villages located along the coast as well as at inland areas. Barrier islands like Manasota, Longboat, and Siesta Keys were utilized for both habitation as well as burials (Dickel 1991; Luer and Almy 1979; ACI 2001a).

Usually sites are identified by the presence of shell middens or habitation areas and a sand burial mound. As not all villages possessed the labor force to construct a mound, it is likely that many communities shared a single continuous-use mound (Willey 1949). Burial mound customs, artifactual evidence of an extensive trade network, and settlement pattern data suggest a complex socio-religious organization for this period. Weeden Island-related sites in the interior portion of the Central Peninsular Gulf Coast region include the Parrish Mound 5 (Willey 1949)

and Stanley Mound (Deming 1976) in Manatee County, as well as the South Prong I Site in Hillsborough County (Martin 1976). A sand mound situated to the south of Payne Creek in Hardee County, discovered by Batcho (Batcho and Milanich 1978), may also date to this period.

One of the best-known archaeological complexes in Sarasota County is Historic Spanish Point near Osprey (Bullen and Bullen 1976). The earliest record of this 29-acre tract dates to 1867, when John G. Webb homesteaded the property (Almy and Luer 1993). The complex consists of nine archaeological sites that range in date from the Late Archaic Period to the Weeden Island period. Recently, Hutchinson (2004), a physical anthropologist, reevaluated the skeletal population of the Palmer Burial Mound (ca. 800 to 1000 CE; 8SO2) using currently available technologies. Hutchinson's analysis has elucidated the health status, dietary practices, and population dynamics not only of the Palmer Burial Mound, but also of comparative sites along the Florida Gulf Coast. Overall, the Palmer population appears to have enjoyed good health with sustained nutrition and fewer infectious diseases, cavities, and cranial blunt trauma than interior populations. However, as with most coastal groups, they did suffer greater periodontal (gum) infections (the likely result of dental damage due to shell inclusions in the diet), anemia (the probable consequence of intestinal parasites), and osteoarthritis (Hutchinson 2004:151). Interestingly, of the Gulf Coastal populations, the inhabitants of Tampa Bay exhibited a greater degree of outer ear canal damage (external auditory exostese). This pathology may be congenital or environmentally induced by recurrent ear infections associated with swimming and diving (Hutchinson 2004:120). Isotopic analyses and dental microwear studies have determined that the inhabitants of the Palmer Burial Mound were primarily utilizing nearshore fish species and shellfish. The presence of the Atlantic sharpnose and bonnethead shark specimens in the archaeological record suggests deeper water fishing as well (Hutchinson 2004:50). Terrestrial species were recovered, but were much less abundant. As for much of peninsular Florida, no evidence of agricultural activities was found (Hutchinson 2004:151).

3.5 Mississippian

During the Mississippian period, the Weeden Island–related culture evolved into the Safety Harbor culture. As in the previous periods, major Safety Harbor sites remained primarily along the shore and many were situated at the same locations as Late Manasota sites (Luer and Almy 1981). Large towns, many having a temple mound, plaza, midden, and nearby burial mound, characterized the Safety Harbor Period which can be correlated with the growth of a religious-political complex. This is evidenced in the archaeological record of increasingly complex mortuary practices and burial goods (Luer 1999b). Although most Safety Harbor sites are located along coastal bays and rivers, inland sites are also known in Sarasota County (Willey 1949).

The large population centers of the Safety Harbor Period are recorded near Tampa Bay at Safety Harbor (Sears 1958; Griffin and Bullen 1950), Maximo Point (Bushnell 1962; Sears 1958), the Narvaez Midden (Bushnell 1966; Simpson 1999), and Tierra Verde (Sears 1967), all in Pinellas County. Inland Safety Harbor sites include Parrish Mounds 1, 2, and 3 in Manatee County (Willey 1949), the Davis Mound in Hardee County (Bullen 1954), and the Arcadia Site (Willey 1949) and Keen Mound (Willis and Johnson 1980) in DeSoto County. In Sarasota County, the Whitaker temple mound, nearby burial mound and village site, were situated on Sarasota Bay in today's Indian Beach neighborhood (Luer 1992). This complex appears to be the southern-most manifestation of the temple mound and plaza complex typically associated with Safety Harbor ceremonial centers (Luer and Almy 1981; Luer 1992).

Recently, Luer (2005) published data on the Sarasota Bay Mound (8SO44), a large sand burial mound, which was excavated by the Bullens several decades ago. The mound exhibited a black basal zone; apparently a prepared base. Sherds were recovered from this zone and probably were scattered across the area when construction of the mound was begun (Luer 2005:42). Cordell (2005:22) provides an extensive analysis of recovered ceramics that are typical of the Safety Harbor period. The skeletal remains were analyzed by Freas and Warren (2005) who concluded that the population endured periods of relatively severe metabolic stress and illness, especially during childhood. While Hutchinson (2004) noted some dental problems in the population of the Palmer Burial Mound, Freas and Warren note higher incidence of dental pathology in this slightly later population.

Whereas the earlier cultural periods are defined exclusively with the archaeological record, historical documents provide the tribal names of the bearers of the Safety Harbor culture. These groups were variously referred to as the Tocobaga, Uzita, Mocoso, Pohoy and Alafay by writers during the Contact Period. Although these groups were associated with the Tampa region, it should be noted that "... during the sixteenth and seventeenth centuries, the name 'Tampa' was not associated with today's Tampa Bay area. Instead, the name was associated with the Charlotte Harbor, Pine Island Sound, and Estero Bay area's" (Luer 2000:9). Cartographers did not move the name Tampa northward until the eighteenth century (Luer 2000:9). Thus, the location of aboriginal groups along the coast of west-central and southwest Florida is difficult to document.

South of Sarasota County, the Calusa dominated Florida's southwest coast during the Mississippian Period. Utilizing the warm, shallow, food-rich estuaries, they developed a powerful chiefdom. Widmer (1988) has argued for the appearance of the Calusa chiefdom in the region as a result of population growth and a need to control fixed territories and limited fishing resources. Luer (1986) has hypothesized increasing social complexity through the controlled production and access to valued shell tools, particularly those fashioned from robust whelk shells. According the Hernando d' Escalante Fontaneda, a Spanish captive, the Calusa King, Calos, controlled a vast empire with 50 towns along the southwest coast and extending eastward to Lake Okeechobee (Milanich and Hudson 1993). The principal town of the Calusa is thought to be the site of Mound Key in Estero Bay near Fort Myers Beach. The presence of Glades Tooled pottery at the Yellow Bluffs-Whitaker mound at Indian Beach "… suggests direct contact with the Calusa of coastal southwest Florida …" (Luer 1992: 239). Thus, the archaeological record suggests that southern Sarasota County was at a cultural boundary and was influenced by both the Safety Harbor culture of the north and the Calusa chiefdom of the south.

3.6 Colonialism

The cultural traditions of the native Floridians ended with the European expeditions to the New World. The initial events, authorized by the Spanish crown in the 1500s, ushered in devastating European contact. After Ponce de Leon's landing and circumnavigation of the peninsula in 1513, official Spanish explorations were confined to the west coast of Florida until 1565. Florida's east coast, lacking deep-water harbors like Tampa Bay and Charlotte Harbor was left to a few shipwrecked sailors from treasure ships, which, by 1551, sailed through the Straits of Florida on their way to Spain.

Between 1513 and 1558, Spain launched several expeditions of exploration and, ultimately failed colonization of *La Florida*. Along west-central Florida, archaeological evidence of contact can be found in the form of European trade goods such as glass beads, bells, and trinkets recovered from village sites. The Blackburn Site (8SO403) reportedly contained glass

beads as well as Culbreath and Pinellas type bifaces. Williams et al. (1989) placed the mound in the Englewood/Safety Harbor and Contact periods. Similarly, glass beads were reported from the Crowley Homestead Mound (8SO72) in east Sarasota County, suggesting a Contact period of utilization (Williams et al. 1989).

Prior to the settlement of St. Augustine in 1565, European contact with the indigenous peoples was sporadic and brief; however, the repercussions were devastating. The southeastern Native American population of 1500 has been estimated at 1.5 to 2 million (Dobyns 1983). Following exposure to Old World diseases such as bubonic plague, dysentery, influenza, and smallpox, epidemics to which they had no immunity, the Native American population of the New World was reduced by as much as 90% (Ramenofsky 1987). The social consequences of such a swift and merciless depopulation were staggering. Within 87 years of Ponce de Leon's landing, the Mississippian cultures of the Southeast were collapsed (Smith 1987).

Recently, Luer has speculated that "perhaps half, or slightly more than half (ca. 700?), of Sarasota County's total population during the early post-contact Safety Harbor Period might have lived in the southern Sarasota Bay area. Their population probably had a low rate of growth" (Luer 2005:410).

In northern Florida, much of the surviving Native American population was converted by Jesuit and Franciscan missions (McEwan 1993). However, similar efforts in peninsular Florida were unsuccessful because the remaining peninsular populations were intractable (Hann 1991). In time, some of the missionized Indians fled south along the Gulf Coast (Luer 1999b). Evidence of missionized Indians has been found around Tampa Bay at locales like the Safety Harbor and Narvaez sites, and at the Fort Brooke Midden in downtown Tampa. South of Tampa Bay, archaeological evidence is scarce (cf., Luer 1994 re: Cedar Point), but historic documents mention various activities along the Gulf Coast in the 1600s and early 1700s, as refugees fleeing mission sites probably joined indigenous Indians (Luer 1999b).

Along the Gulf Coast between Charlotte Harbor and Tampa Bay, Spanish and Cuban fishermen established communities, or "ranchos," with the earliest being at Useppa Island and San Carlos Bay (Hammond 1973). There is growing archaeological evidence that the surviving Native Americans of the region were assimilated into these Creole communities (Almy 2001; Hann 1991; Neill 1968). These west coast ranchos supplied dried fish to Cuban and northern markets until the mid-1830s, when onset of the Seminole Indian Wars and customs control closed the fisheries.

During the two centuries following the settlement of St. Augustine, the Spanish widened their Florida holdings to include the settlement at Pensacola and a garrison at Saint Marks. With the English to the north, the French to the west, and surviving portions of the Muskogean Creek, Yamassee, and Oconee moving into interior Florida, the Spanish colony of *La Florida* was extremely fragile. The Treaty of Paris (1763) reallocated the English, French, and Spanish holdings in the New World. As a result, Florida was ceded to the English, who created East and West Florida in 1763. Sarasota was part of east Florida. The ensuing decades witnessed the American Revolution during which English loyalists immigrated to Florida. Following the Revolution, the Treaty of Paris (1783) returned Florida to Spain; however, Spanish influence was nominal during this second period of ownership. For the next 36 years, Spain, from the vantage of Florida, watched with growing concern as the infant American Nation to the north gained momentum. When the United States acquired the Louisiana Purchase from France in 1803, Spain was hemmed in by the aggressive young nation. When Andrew Jackson conducted cross border raids into Florida under the pretext of suppressing Indian hostilities, he set in motion the chain of

events that culminated in the cession of Spanish Florida to the United States in exchange for lands west of the Sabine River.

During the political machinations between 1763 and 1819, Native Americans continued to move into the unchartered lands of Florida. These migrating groups became known to English speakers as Seminioles or Seminoles. This term is thought to be either a corruption of the Creek *ishti semoli* (wild men) or the Spanish c*imarron* (wild or unruly). Their presence curtailed settlement of the region and hostilities increased. The conflict between the Americans and the Seminoles over Florida came to a head in 1818, and was subsequently known as the First Seminole War.

3.7 Territorial and Statehood

As a result of the First Seminole War and the Adams-Onis Treaty of 1819, Florida became a United States territory in 1821. However, settlement was slow and scattered during the early years. Andrew Jackson, named provisional governor, divided the territory into St. Johns and Escambia Counties. At that time, St. Johns County encompassed all of Florida lying east of the Suwannee River, and Escambia County included the land lying to the west. In the first territorial census in 1825, some 317 persons reportedly lived in South Florida; by 1830 that number had risen to 517 (Tebeau 1971:134). Although the project area in present-day Sarasota County was initially included in St. Johns County, the area transferred to Mosquito County when it was created in 1824 and then to Hillsborough County when it was established in 1834 (Grismer 1946). The earliest American attempts to settle what is now Sarasota County occurred in 1842 when William H. Whitaker homesteaded 145 acres along Sarasota Bay (Marth 1973:12).

Although what was to become known as the First Seminole War (the cross border hostilities between the United States and the Seminoles) was fought in north Florida, the Treaty of Moultrie Creek in 1823, at the end of the war, was to affect the settlement of south Florida. In exchange for occupancy of approximately four million acres of reservation land south of Ocala and north of Charlotte Harbor, the Seminoles relinquished their claim to the remainder of the peninsula (Covington 1958; Mahon 1985:46-50). The treaty satisfied neither the Native Americans nor the settlers. The mounting demands of would-be settlers would soon produce another conflict. For their part, the Seminoles were starving on the unfertile reservation land, "*There is not at this moment, I will venture to say, in the whole (Seminole) nation a bushel of corn, or any adequate substitute for it…many of the warriors' guns had been confiscated during a recent alarm so that they could not hunt*" (Indian Agent Gad Humphries to Governor of Florida March 6, 1827 in Peters 1979).

By 1835, the Second Seminole War was underway. During this war, Fort Armistead was established at the Oliviella Rancho on Sarasota Bay (Archaeological and Historical Conservancy 1989). The federal government decided to end the conflict by withdrawing troops from Florida. At the war's end, some of the battle-weary Seminoles were persuaded to emigrate to the Oklahoma Indian Reservation where the federal government had set aside land for Native American inhabitation. Occupied from November 1840 to May 1841, Fort Armistead operated as a deportation site for Seminoles sent to Oklahoma. The encampment was abandoned due to sickness of the troops (Matthews 1983; Luer 1992). The Seminoles who wished to remain in Florida were allowed to do so, but were pushed further south into the Everglades and Big Cypress Swamp. This area became the last stronghold for the Seminoles (Mahon 1985:321).

Encouraged by the passage of the Armed Occupation Act in 1842, which was designed to promote settlement and protect the Florida frontier, settlers moved south through Florida. The Act made available 200,000 acres south of Gainesville to the Peace River, barring coastal lands and those within a two-mile radius of a fort. The Armed Occupation Act stipulated that any family or single man over 18 years of age able to bear arms could earn title to 160 acres by erecting a habitable dwelling, cultivating at least five acres of land, and living on it for five years. During the nine-months that the law was in effect, 1184 permits were issued totaling some 189,440 acres (Covington 1961:48; Dunn 1989:24-25).

The resulting increase in settlement of the region precipitated the need for cadastral cartographic surveys. In 1843, Samuel Reid surveyed the exterior lines of Township 38 South, Range 18 East (State of Florida 1843). At that time, Reid described the north boundary of Section 1 as "low wet pine land" (State of Florida 1843:419). In 1847, A. H. Jones surveyed the southern exterior line and interior lines of the Township and Range (State of Florida 1847a). In his survey notes, Jones describes the general project area as "3rd rate pine" along the southern line of Section 1, and "3rd rate high pine covered with saw palmetto" along the western boundary; he also notes a creek and pond in the general northeast region of the project area (State of Florida 1847a:286, 288). The resulting Plat depicts no historic features within the project area (State of Florida 1847b).

In 1845, the Union admitted the State of Florida with Tallahassee as the state capitol. Ten years later, Manatee County was carved from portions of Hillsborough and Mosquito Counties with the village of Manatee as the county seat (Marth 1973:13; Purdum 1994:82). In December of 1855, the Third Seminole War, or the Billy Bowlegs War, started as a result of additional pressure placed on the few remaining Native Americans in Florida to emigrate west (Covington 1982). The war started when Seminole Chief Holatter-Micco, also known as Billy Bowlegs, and 30 warriors attacked an army camp south of present-day Immokalee, killing four soldiers and wounding four others. The attack was in retaliation for damage done by several artillerymen to property belonging to Billy Bowlegs. This hostile action renewed state and federal interest in the final elimination of the Seminoles from Florida. Despite this effort, military action was not decisive during the war. Therefore, in 1858 the U.S. government resorted to monetary persuasion to induce the remaining Seminoles to migrate west. Chief Billy Bowlegs accepted $5,000 for himself and $2,500 for his lost cattle; each warrior received $500, and $100 was given to each woman and child. On May 4, 1858, the ship *Grey Cloud* set sail from Fort Myers with 123 men, women, and children. At Egmont Key, 42 additional individuals were added. On May 8, 1858, the Third Seminole War was declared officially over (Covington 1982:78-80).

Cattle ranching served as one of the earliest important economic activities reported in Manatee County. Mavericks left by early Spanish explorers such as DeSoto and Narvaez provided the stock for the herds raised by the mid-eighteenth century "cowkeeper" Seminoles. As the Seminoles were pushed further south during the Seminole Wars and their cattle were either sold or left to roam, settlers captured or bought the cattle. By the late 1850s, the cattle industry of southwestern Florida was developing on a significant scale. Hillsborough and Manatee Counties constituted Florida's leading cattle producing region. By 1860, cattlemen from all over Florida drove their herds to Fort Brooke (Tampa) and Punta Rassa (south of Ft. Myers) for shipment to Cuba, at a considerable profit. During this period, Jacob Summerlin became the first cattle baron of southwestern Florida. Known as the "King of the Crackers," Summerlin herds ranged from Ft. Meade to Ft. Myers (Covington 1957).

3.8 Civil War and Aftermath

In 1861, Florida followed South Carolina's lead and seceded from the Union as a prelude to the American Civil War. Florida had much at stake in this war as evidenced in a report released from Tallahassee in June of 1861. It listed the value of land in Florida's 35 counties as $35,127,721 and the value of the slaves in the state at $29,024,513 (Dunn 1989:59). Although the Union blockaded the coast of Florida during the war, the interior of the state saw very little military action. Florida became one of the major contributors of beef to the Confederate government (Shofner 1995:72). Summerlin originally had a contract with the Confederate government to market thousands of head a year at eight dollars per head. However, by driving his cattle to Punta Rassa and shipping them to Cuba, he received 25 dollars per head (Grismer 1946:83). In an attempt to limit the supply of beef transported to the Confederate government, Union troops stationed at Ft. Myers conducted several raids into the Peace River Valley to seize cattle and destroy ranches. In response, Confederate supporters formed the Cattle Guard Battalion, consisting of nine companies under the command of Colonel Charles J. Mannerlyn (Akerman 1976:91-93).

The cattlemen and the farmers in the state lived simply. The typical home was a log cabin without windows or chinking, and settlers' diets consisted largely of fried pork, corn bread, sweet potatoes, and hominy. The lack of railway transport to other states, the federal embargo, and the enclaves of Union supporters and Union troops holding key areas such as Jacksonville and Ft. Myers prevented an influx of finished materials. As a result, settlement remained limited until after the Civil War.

Immediately following the war, the South underwent a period of "Reconstruction" to prepare the Confederate States for readmission to the Union. The program was administered by the U.S. Congress, and on July 25, 1868, Florida officially returned to the Union (Tebeau 1980:251). In most of the early settlements, development followed the earlier pattern with few settlers, one or two stores, and a lack of available overland transportation. Those communities along the coast developed a little faster due to the accessibility of coastal transportation.

The State of Florida faced a financial crisis involving title to public lands in the early 1880s. By Act of Congress in 1850, the federal government turned over to the states for drainage and reclamation all "swamp and overflow land." Florida received approximately 10,000,000 acres. To manage that land and the 5,000,000 acres the state had received on entering the Union, the state legislature in 1851 created the Board of Trustees of the Internal Improvement Fund. In 1855, the legislature established the actual fund (the Florida Internal Improvement Fund), in which state lands were to be held. The fund became mired in debt after the Civil War and under state law no land could be sold until the debt was cleared. In 1881, the Trustees started searching for a buyer capable of purchasing enough acreage to pay off the fund's debt and permit the sale of the remaining millions of acres that it controlled. Hamilton Disston, a member of a prominent Pennsylvania saw manufacturing family, in 1881, entered into agreement with the State of Florida to purchase four million acres of swamp and overflowed land for one million dollars. In exchange, he promised to drain and improve the land. This transaction, which became known as the Disston Purchase, enabled the distribution of large land subsidies to railroad companies, inducing them to begin extensive construction programs for new lines throughout the state. Disston's Florida Land and Improvement Company gained title to all of Section 1, Township 38 South, Range 18 East, where the project area is located (State of Florida n.d.:48). The purchase, although technically legal, was extremely generous with the designation "swamp and overflow land." Grismer (1946) estimated that at least half of the acreage was "high and dry." Disston's purchase effectively removed four million acres of public lands from would-be homesteaders.

Even worse, some of the earliest homesteaders of Sarasota County actually lost their properties because, in the absence of the land survey information, they could not file their claims (Grismer 1946).

During the early 1880s, Florida Southern Railroad acquired the old railroad charter and land grant of the Gainesville, Ocala, and Charlotte Harbor Railroad which was due to expire in 1885. To hold this charter and secure lands, immediate railroad construction was necessary. Construction started in the Bartow area in Polk County and continued southward to Punta Gorda. In 1892, the Florida Southern Railroad was reorganized and placed under a board of directors headed by Henry Plant. In November 1895, the Southern was absorbed by the Plant System, which eventually became part of the Atlantic Coastline Railroad (Pettengill 1952:68-73). With the railroad as a catalyst, the 1880s witnessed a sudden surge of buying land for speculation, agriculture, and settlement in what was then Manatee County. This sudden rush of land purchasing prompted the creation of DeSoto County in 1887 out of eastern Manatee County.

Settlers in the Sarasota area, most of whom had settled their land under the Homestead Act of 1862, were disgruntled with the sale of the swamp and overflowed land, which included nearly 700,000 acres in Manatee County. In response, Sarasota area residents established the Vigilance Committee to retaliate against land speculators (Marth 1973: 16). In 1884, two men suspected of cooperating with the developers were murdered. The resulting trial in the county seat of Pine Level divided the county. Tax records reveal that most of the 700,000 acres in Manatee County was sold to eight companies, including three railroad companies and the Florida Mortgage & Investment Co. of Britain, which is credited with founding the town of Sarasota (Marth 1973:15-16).

3.9 Twentieth Century

The turn of the century prompted optimism and excitement over growth and development. In 1902, the United States & West Indies Railroad & Steamship Co., a subsidiary of the Seaboard line, started laying track from Tampa through Bradenton into Sarasota. The first train arrived in March 1903, and the track was extended into Venice by 1912 (Marth 1973:40).

In 1910, Mrs. Bertha Honoré Palmer, widow of Chicago financier Potter Palmer, traveled to Sarasota. Mrs. Palmer was accompanied by her brother Adrian Honoré and her sons Potter Jr. and Honoré. The quartet was so taken with the area that they established companies that would ultimately come to hold a fourth of the land of present day Sarasota County (Matthews 1997). Mrs. Palmer established a showplace estate along Little Sarasota Bay, a 30,000-acre cattle ranch, the Palmer Experimental Farms, and the Bee Ridge Farms, Bee Ridge Homesites, and Sarasota-Venice real estate ventures (Matthews 1997).

In 1915, Mrs. Palmer's company, the Sarasota-Venice Company filed a Plat for the town of Venice. The Plat was never developed and in August of 1924, Dr. Fred Albee purchased 30 miles of Gulf and bay front property from The Sarasota-Venice Company. Dr. Albee hired Harvard University Landscape Architect John Nolan to design his "crown jewel city." In 1925, along with 53,000 acres east of the city, the Brotherhood of Locomotive Engineers (BLE) purchased the bay front property from Albee and retained Nolan to implement his master plan (Turner 2000).

Nolan's plan, an excellent example of "The New Urbanism," included segregated residential, civic, recreational, municipal, and agricultural elements (Stephenson 2002). East of

the city, Nolan envisioned "Venice Farms," a series of five and ten acre tracts. These farms were to be bisected by the Curry Creek and Blackburn Canal System (8SO2632) which would serve to drain the land and, eventually, become "water highways." By June 1926, Phase I of the Venice Plan was completed. This Phase included six hotels, a bank, theater, pharmacy, train depot, bathhouse, city water plant, sidewalks and gutters, storm sewers, six miles of graded streets, a 40-acre demonstration farm and a 160-acre dairy farm (BLE 1926). By March 1928, there were 188 residences, 141 apartments, and 83 stores. Unfortunately, the BLE was spending $500,000 a month to develop the plan. By June 30, 1927, the BLE had losses totaling $3.4 million for the Venice project and the union voted to extract themselves from the venture. In total, the BLE lost $18,000,000 on the plan which was never fully implemented (Sarasota County History Center 2000).

The general investment in infrastructure contributed to the Florida land boom of the early 1920s. Several other contributing factors include the growing number of tourists, greater use of the automobile, prosperity of the 1920s, and, perhaps most importantly, the promise by the state legislature never to pass state income or inheritance taxes. Growing populations necessitated more governmental facilities; in 1921, Sarasota County was formed from the southern portion of Manatee County, and Charlotte County was carved from Desoto County.

These halcyon days were short-lived, however, and during 1926-27, the Florida real estate market collapsed. The wild land speculation that preceded the land "bust" resulted in banks finding it impossible to track loans or property values. The hurricanes of 1926 and 1928, the Mediterranean fruit fly invasion and subsequent paralysis of the citrus industry, the October 1929 stock market crash, and the onset of the Great Depression only worsened the situation. Sarasota County, along with the rest of Florida, was in a state of economic stagnation.

By the mid-1930s, federal programs implemented by the Roosevelt administration provided jobs for the unemployed who were able to work. The programs were instrumental in the construction of parks, bridges, and public buildings. The Public Works Administration was responsible for the construction of an airport hangar at Albee Field in Venice, a soft water treatment plant and municipal auditorium in Sarasota, a water works extension to Sarasota Heights, and the repairing and paving of a section of U.S. 41 in south Sarasota County (Wise 1995:102).

After the war, car ownership increased, making the American public more mobile, and vacations less expensive. Many of the service members stationed in the area during the war returned with their families. This influx of young families resulted in the development of small tract homes in new subdivisions. In 1954, Arthur Frizell sold massive tracts in Sarasota (approximately 72 square miles) and Charlotte Counties to Florida West Coast Land Development Company of Miami (Matthews 1983:150). Part of this acreage encompassed both the Myakka River and Big Slough. This area eventually became known as North Port. When the city was incorporated on June 16, 1959, the area had a total of 23 residents (North Port Times Union 1989).

In the late 1950s, an inland navigation route along Florida's west coast from Tarpon Springs south to Punta Rassa was planned. The West Coast Inland Navigation District, WCIND, constructed the intra-coastal waterway. In 1961, the Tamiami Trail, originally constructed in the 1920s, was widened to four lanes (Matthews 1983:160). Between 1960 and 1970 the population of Sarasota County exploded by 64% when the number of residents increased from 76,895 to 120,413 (Tebeau 1980:492).

Since 1960, Sarasota County, along with the rest of Florida, has benefited from the influx of retirees and tourists that have made Florida one of the fastest growing states in the nation. Modern suburb and mall construction changed the character of most of Florida's cities. Development and settlement have followed the construction of I-75 along Florida's west coast.

3.10 Project Area Specifics

A review of the USGS Laurel, Fla., quadrangle maps dating to 1943 and 1973, and aerial photographs dating from 1948 to 1969 from the Publication of Archival, Library & Museum Materials (PALMM) (**Figure 3.2**), and the 1954 USDA soil survey, indicates that the project area had been undeveloped (PALMM 1948, 1957, and 1969; USDA 1954; USGS 1943). It appears that a number of trees have been removed from the property since 1969. All of these resources show the Seaboard Air Line Railway corridor along the western boundary. By 1943, an unimproved trail appears to have traversed the project area. Today, a segment of that trail in the northwest project area follows the same route as in the 1940s, but the present-day route was created between 1957 and 1969, at which point the trail was altered to cross South Creek via what appears to be a bridge. In addition, by 1948, portions of South Creek may have been dredged to connect wetlands within a naturally occurring slough system. Based on review of historic aerials, canalled South Creek was dredged between 1957 and 1969. No buildings are visible within the project area since 1943.

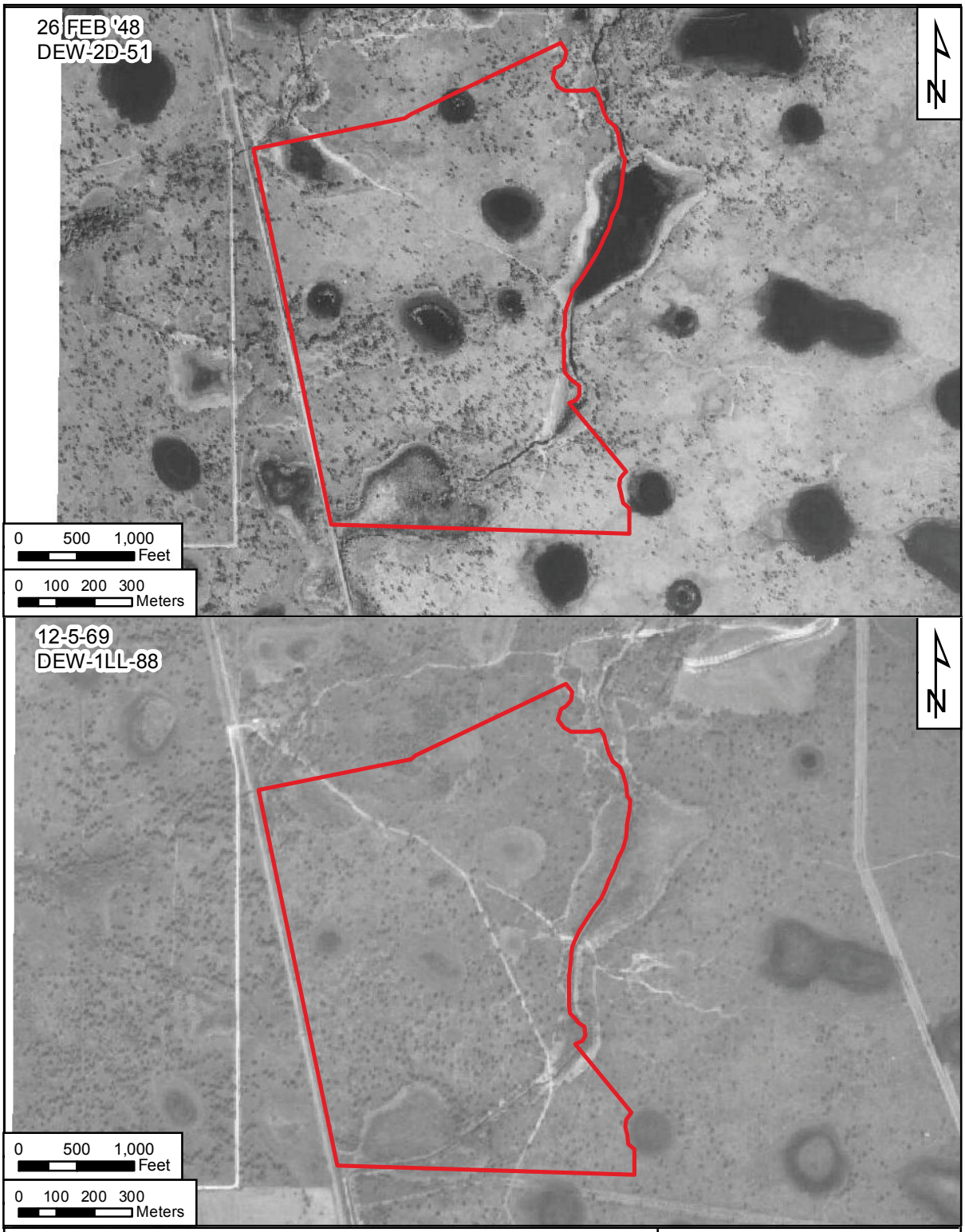


Figure 3.2. 1948 and 1969 aerial photographs of the Palmer Ranch South 900 project area (USDA 1948, 1969).

4.0 RESEARCH CONSIDERATIONS AND METHODS

4.1 Background Research and Literature Review

A review of archaeological and historical literature, records, and other documents and data pertaining to the project area was conducted. The focus of this research was to ascertain the types of cultural resources known in the project area, their temporal/cultural affiliations, site location information, and other relevant data. This included a review of sites listed in the SCRHP and NRHP, the FMSF, published books and articles, and cultural resource survey reports. No informant interviews were conducted as part of this research.

4.1.1 Archaeological Considerations

A review of the FMSF revealed that no prehistoric or historical archaeological sites were previously recorded within the project area. However, one prehistoric site, the Interstate Midden (8SO01901), was recorded just beyond a mile northeast of the project during a survey of the Palmer Ranch East project (Piper Archaeological Research 1990) (**Figure 4.1**). The Interstate Midden was determined not eligible for the NRHP by the State Historic Preservation Office (SHPO; FMSF). The site was revisited in 2002 during a survey of the I-75 Interchange at Central Sarasota Parkway (Janus Research 2002) and was again evaluated as not NRHP eligible.

A number of additional archaeological sites were found between 1.5 and 2 miles of the project area, mostly closer to the coast of Little Sarasota Bay to the west, along natural drainages (such as North Creek, South Creek, and Catfish Creek), and adjacent to other wetlands. These include a prehistoric shell midden and lithic and artifact scatters, spanning from prehistoric lacking pottery to the Safety Harbor culture, as well as one historic site.

In addition to the surveys noted above, other surveys performed within about one mile of the project area include the Palmer Venture Development, Parcel R (Piper Archaeological Research 1988a), CRAS of Tracts 3 and 4, Palmer Ranch (ACI 2003), the Sarasota Rails to Trails Corridor (PCI 2005), and the I-75 corridor and pond sites (ACI 2008a, 2008b). Most recently, ACI conducted two surveys, one of approximately 220 acres just east of the project area, and another approximately 100-acre parcel adjacent to the north of the project area, and found no archaeological sites (ACI 2014a, 2014b).

Based on these surveys, and other data for similar environmental areas, it is clear that the distribution of precontact and historic period sites in Sarasota County indicates a pattern of site location favoring relatively better drained terrain proximate to rivers, creeks, ponds, and freshwater marshes. In the pine flatwoods, sites tend to be situated on ridges and knolls near freshwater sources, or at the interface of two or more environmental zones. Sand mounds and burial mounds are most frequently found along creeks and rivers. As a result, it was determined that the survey area had a moderate to low potential for the discovery of archaeological sites.

4.1.2 Historical Considerations

Given the results of the historic research, no 19th century homesteads, forts, military trails, or historic Indian encampments were expected within the survey tract. Background

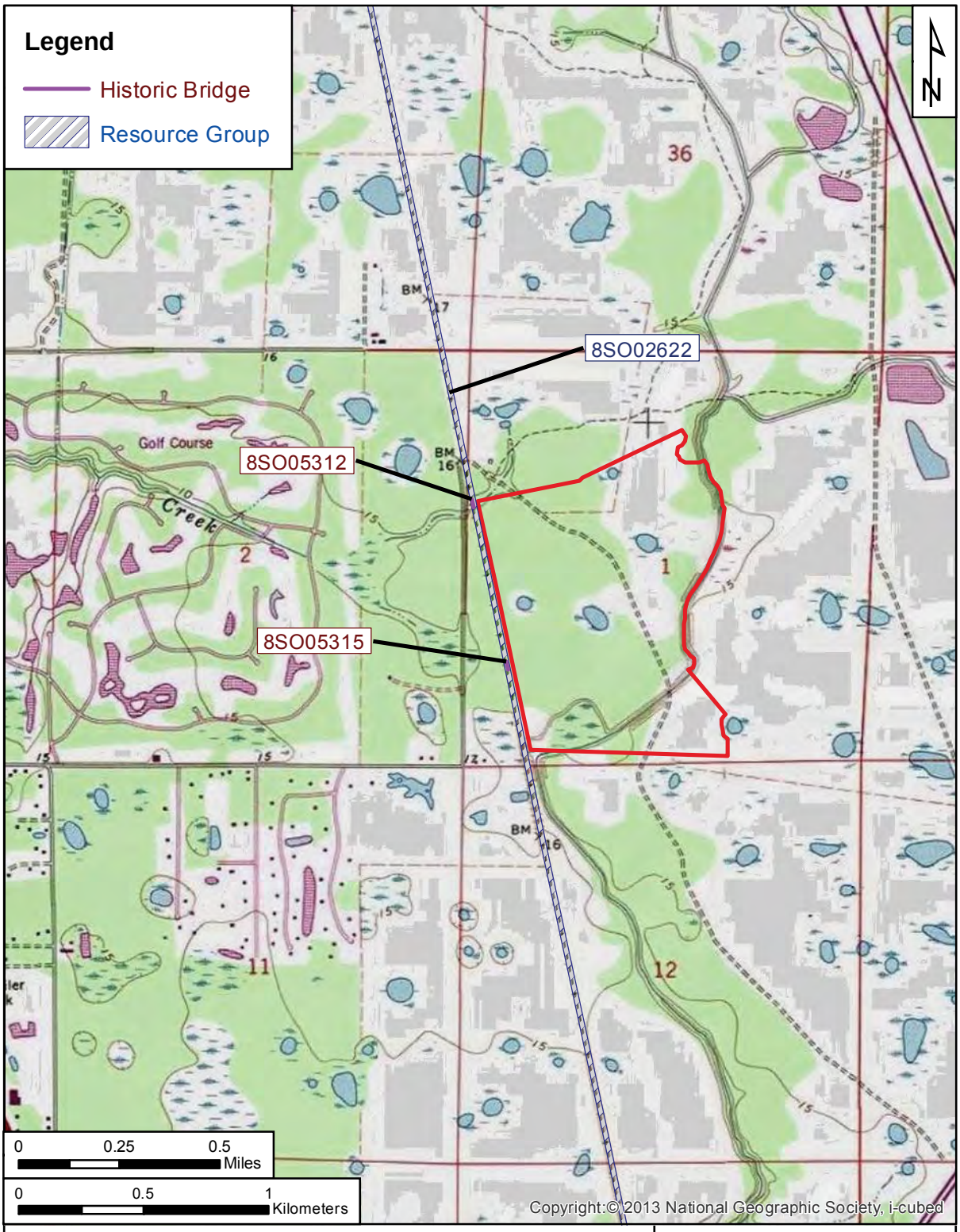


Figure 4.1. Location of historical resources within one mile of the Palmer Ranch South 900 project area; USGS Laurel.

research indicates that three historic resources, including a linear resource and two bridges, have been recorded adjacent to the west of the project area: the Seaboard Air Line Railway (8SO02622), and Seaboard Air Line Trestle Bridges 3 (8SO05312) and 6 (8SO05315). The railway and bridges were originally recorded as part of the Sarasota Rails to Trails Corridor (PCI 2005). These three resources have been determined by SHPO as eligible for listing in the NRHP. However, the segment of the railway adjacent to the project has been paved and serves as part of the Legacy Trail. An examination of the USGS Laurel, Fla., quadrangle and the property appraiser's records revealed that no historic structures are located within the project area (Furst 2015). A review of USGS quadrangle maps dating from 1943 and 1973, and aerials dating from 1948 to 1969 indicate that the project area has been undeveloped (PALMM 1948, 1957, and 1969; USDA 1954; USGS 1943, 1973). The railroad corridor is visible along the western boundary. A trail appears to have traversed the project area in the 1940s, with its route changed to cross South Creek sometime in the late 1960s. No historic data or significance of this sandy trail was found. The present-day canalled South Creek appears to have been dredged between 1957 and 1969. A structure may have stood just north of the project, east of the railroad, although no structures are visible within the project area since 1943.

4.2 Field Methodology

Archaeological field methodology consisted of a visual reconnaissance and subsurface testing. Following ground surface inspection, subsurface shovel testing was carried out in order to locate sites not exposed on the ground, as well as to test for the presence of buried cultural deposits in areas yielding surface artifacts. Subsurface testing was systematically carried out at 50 meter (m) (164 ft) and 100 m (328 ft) intervals and judgmentally.

Shovel tests were circular and measured approximately 0.5 m in diameter by at least 1 m in depth. All soil removed from the test pits was screened through 6.4 millimeter (mm) mesh hardware cloth to maximize the recovery of artifacts. The locations of all shovel tests were plotted on the aerial maps, and following the recording of relevant data such as stratigraphic profile and artifact finds, all test pits were refilled.

4.3 Laboratory Methods and Curation

No artifacts were found, therefore no analysis were necessary. All project-related material (i.e., field notes, maps, and photographs) are being stored at ACI in Sarasota unless the client requests otherwise.

4.4 Unexpected Discoveries

It was anticipated that if human burial sites such as Indian mounds, lost historic and prehistoric cemeteries, or other unmarked burials or associated artifacts were found, then the provisions and guidelines set forth in Chapter 872.05 *FS* (Florida's Unmarked Burial Law) would be followed.

5.0 SURVEY RESULTS AND RECOMMENDATIONS

5.1 Archaeological Results

Archaeological field work included ground surface reconnaissance and subsurface shovel testing. A total of 112 shovel tests were dug. Eighty-two of these were placed at 50 m (164 ft) intervals; ten were placed between at 100 m (328 ft) intervals, and twenty were excavated judgmentally at various intervals throughout the remainder of the property (**Figure 5.1**). None of the shovel tests produced evidence of prehistoric activity. Typical shovel test pit stratigraphy can be described as follows:

- 0-20 centimeters (cm) below surface (bs) of gray sand; 15-30 cmbs of light gray or gray-tan sand; 30-45 cmbs of dark orange-brown sand; 45-65 cmbs orange-brown sand; 65+ cmbs of compact limestone marl or limestone cap; or,
- 0-20 cmbs dark gray sand; 20-70 cmbs of very light gray-tan sand; 70-100 cmbs of light brown sand (with water encountered at 70 cmbs); or,
- 0-10 cmbs of gray sand; 10-45 cmbs of very light gray-tan sand; 45 to 90 cmbs of orange-brown sand; 90-100 cmbs of light orange-brown and gray sandy clay.

5.2 Historical Results

The historical survey of the project area revealed an absence of historic structures (50 years of age or older). In addition, the previously recorded Seaboard Air Line railway (8SO02622) once located adjacent, but outside this project area, has been replaced by the Legacy Trail, a paved hiking and biking trail. The associated bridges (8SO05312 and 8SO05313) were not observed during current field survey. The view of the Legacy Trail is generally obscured by vegetation along the project's western boundary. There is no historic information concerning the date of the dredging of canalled South Creek other than it occurred in the late 1960s.

5.3 Conclusions and Recommendations

Based on the background research and field survey no archaeological or historic sites listed, determined eligible, or considered potentially eligible for listing in the NRHP or the SCRHP, are located within the survey area. No further work is recommended.

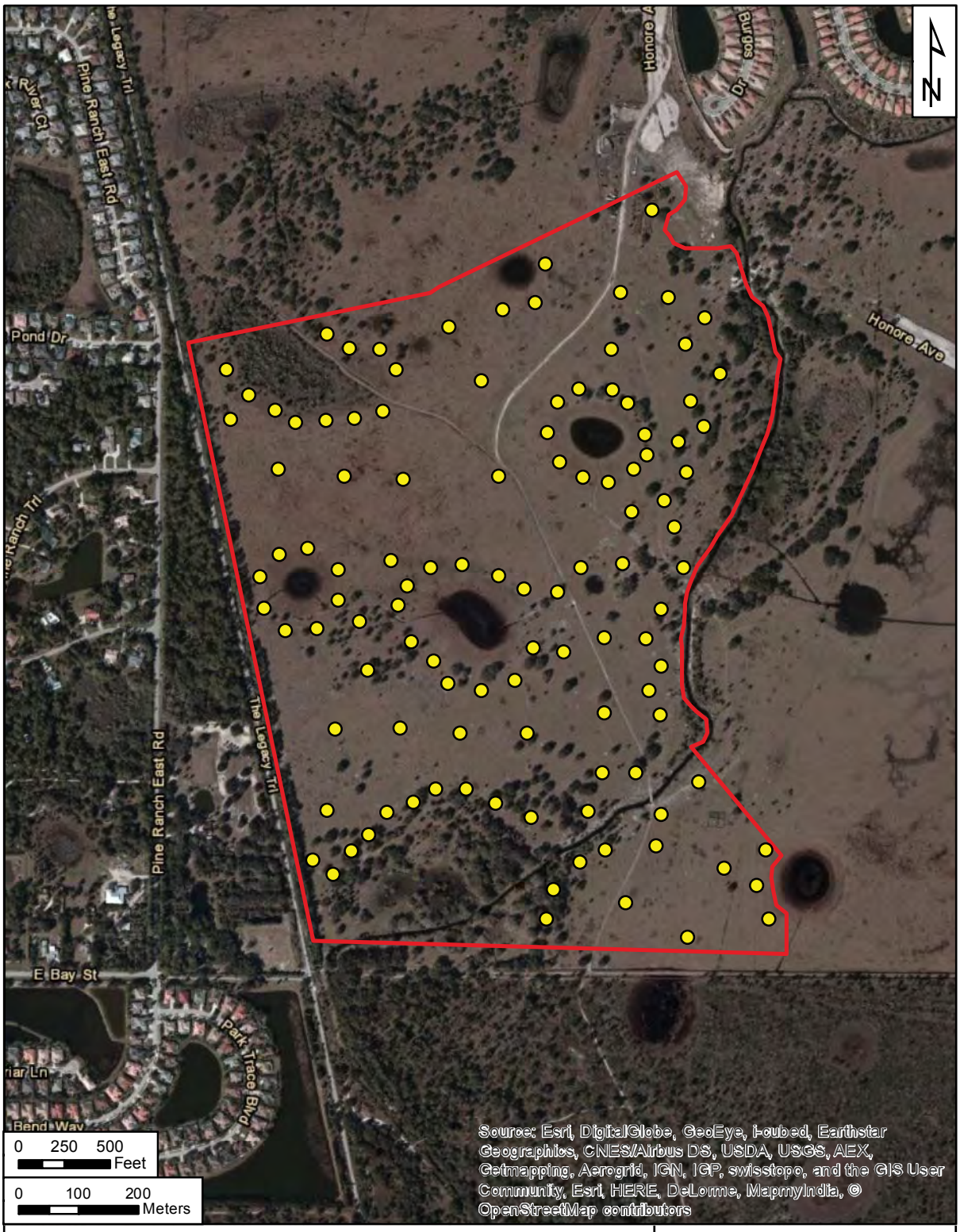


Figure 5.1. Location of the shovel tests (not to scale) within the Palmer Ranch South 900 project area.

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APPENDIX: Survey Log

Ent D (FMSF only)_____

Survey Log Sheet

Florida Master Site File
Version 4.1 1/07

Survey # (FMSF only) _____

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

Identification and Bibliographic Information

Survey Project (name and project phase) Palmer Ranch South 900 Project

Report Title (exactly as on title page) Cultural Resource Assessment Survey, Palmer Ranch South 900, Sarasota County, Florida

Report Authors (as on title page, last names first) 1. ACI 3. _____ 2. _____ 4. _____

Publication Date (year) 2014 **Total Number of Pages in Report** (count text, figures, tables, not site forms) _____

Publication Information (Give series, number in series, publisher and city. For article or chapter, cite page numbers. Use the style of *American Antiquity*.)

P1275O, ACI, Sarasota

Supervisors of Fieldwork (even if same as author) Names Marion Almy

Affiliation of Fieldworkers: Organization Archaeological Consultants Inc City Sarasota

Key Words/Phrases (Don't use county name, or common words like *archaeology*, *structure*, *survey, architecture, etc.*)

1. _____ 3. _____ 5. _____ 7. _____
2. _____ 4. _____ 6. _____ 8. _____

Survey Sponsors (corporation, government unit, organization or person directly funding fieldwork)

Name Taylor Morrison Organization _____

Address/Phone/E-mail 501 North Cattlemen Road, Suite 100, Sarasota, FL 34232

Recorder of Log Sheet Katherine Baar **Date Log Sheet Completed** 2-19-2015

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

Mapping

Counties (List each one in which field survey was done; attach additional sheet if necessary)

1. Sarasota 3. _____ 5. _____
2. _____ 4. _____ 6. _____

USGS 1:24,000 Map Names/Year of Latest Revision (attach additional sheet if necessary)

1. Name LAUREL Year 1943
2. Name LAUREL Year 1987
3. Name _____ Year _____
4. Name _____ Year _____
5. Name _____ Year _____
6. Name _____ Year _____

Description of Survey Area

Dates for Fieldwork: Start 2-11-2015 End 2-17-2015 **Total Area Surveyed** (fill in one) _____ hectares 224 acres

Number of Distinct Tracts or Areas Surveyed 1

If Corridor (fill in one for each) **Width:** _____ meters _____ feet **Length:** _____ kilometers _____ miles

Survey Log Sheet

Survey #_____

Research and Field Methods

Types of Survey (check all that apply): ☒archaeological ☒architectural ☒historical/archival ☐underwater
☐damage assessment ☐monitoring report ☐other(describe): _____

Scope/Intensity/Procedures Background research, archaeological field survey, 112 shovel tests at 50 m, 100 m intervals, and judgmentally, all negative, photos taken, CRAS report prepared

Preliminary Methods (check as many as apply to the project as a whole)

☐Florida Archives (Gray Building)	☐library research- *local public*	☒local property or tax records	☒other historic maps
☐Florida Photo Archives (Gray Building)	☐library-special collection - *nonlocal*	☐newspaper files	☒soils maps or data
☐Site File property search	☒Public Lands Survey (maps at DEP)	☒literature search	☒windshield survey
☒Site File survey search	☐local informant(s)	☐Sanborn Insurance maps	☒aerial photography

☐other (describe): _____

Archaeological Methods (check as many as apply to the project as a whole)

☐Check here if **NO** archaeological methods were used.

☐surface collection, controlled	☐shovel test-other screen size	☐block excavation (at least 2x2 m)
☐surface collection, **un**controlled	☐water screen	☐soil resistivity
☒shovel test-1/4"screen	☐posthole tests	☐magnetometer
☐shovel test-1/8" screen	☐auger tests	☐side scan sonar
☐shovel test 1/16"screen	☐coring	☒pedestrian survey
☐shovel test-unscreened	☐test excavation (at least 1x2 m)	☐unknown

☐other (describe): _____

Historical/Architectural Methods (check as many as apply to the project as a whole)

☐Check here if **NO** historical/architectural methods were used.

☐building permits	☐demolition permits	☐neighbor interview	☐subdivision maps
☐commercial permits	☒exposed ground inspected	☐occupant interview	☐tax records
☐interior documentation	☒local property records	☐occupation permits	☐unknown

☒other (describe): aerial photography

Survey Results (cultural resources recorded)

Site Significance Evaluated? ☐Yes ☒No

Count of Previously Recorded Sites 0 **Count of Newly Recorded Sites** 0

Previously Recorded Site #'s with Site File Update Forms (List site #'s without "8". Attach additional pages if necessary.) NA

Newly Recorded Site #'s (Are all originals and not updates? List site #'s without "8". Attach additional pages if necessary.) NA

Site Forms Used: ☐Site File Paper Form ☒Site File Electronic Recording Form

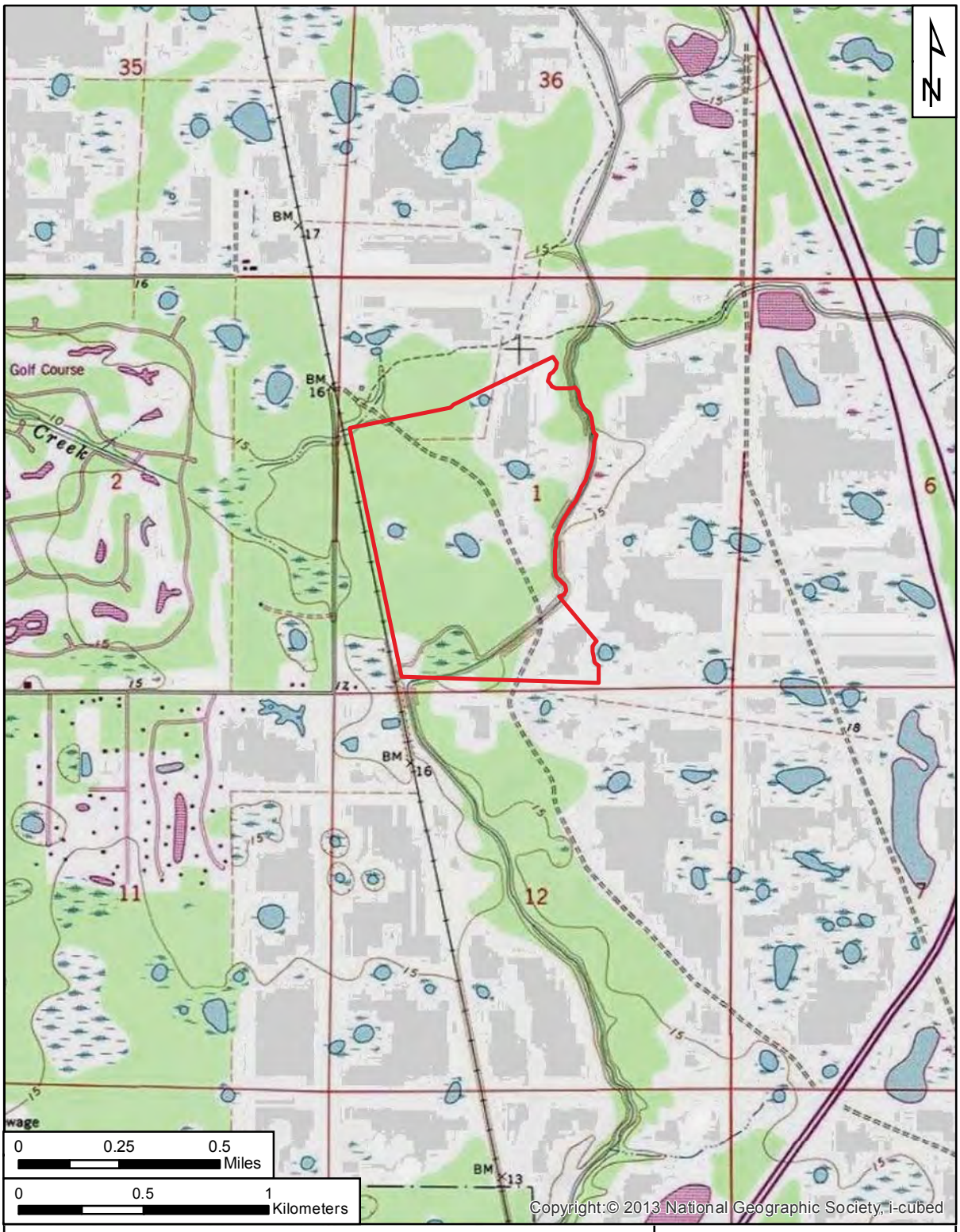
*****REQUIRED: ATTACH PLOT OF SURVEY AREA ON PHOTOCOPY OF USGS 1:24,000 MAP(S)*****

SHPO USE ONLY **SHPO USE ONLY** **SHPO USE ONLY**

Origin of Report: ☐872 ☐CARL ☐UW ☐1A32 # _____ ☐Academic ☐Contract ☐Avocational
☐Grant Project # _____ ☐Compliance Review: CRAT # _____

Type of Document: ☐Archaeological Survey ☐Historical/Architectural Survey ☐Marine Survey ☐Cell Tower CRAS ☐Monitoring Report
☐Overview ☐Excavation Report ☐Multi-Site Excavation Report ☐Structure Detailed Report ☐Library, Hist. or Archival Doc
☐MPS ☐MRA ☐TG ☐Other: _____

Document Destination: _____ **Plotability:** _____



Palmer Ranch South 900
Section 1 of Township 38 South, Range 18 East
USGS Laurel
Sarasota County

Esplanade on Palmer Ranch

APPENDIX B

UMAM ANALYSIS

Uniform Mitigation Assessment Method											
UMAM											
Palmer Ranch 9C Mitigation											
Mitigation ID	**Location/ Landscape Support**	**Water Environment**	**Community Structure**	**Summation**	**Mitigation Delta**	**Time Lag**	**Risk Factor**	**Risk*t-factor**	**Relative Functional Gain**	**Proposed Mitigation Acreage**	**RFG*acres**
Mitigation Area 1 - Wetland D2 (Enhancement)											
1) Current Condition	5.00	7.00	6.00	0.60	0.03	1.07	1.25	1.34	0.025	**4.74**	0.118
w/ mitigation	4.00	7.00	8.00	0.63							
Mitigation Area 2 - Wetland D2 (Wetland Creation)											
2) Current Condition	0.00	0.00	0.00	0.00	0.67	1.14	1.50	1.71	0.390	**1.60**	0.624
w/ mitigation	5.00	7.00	8.00	0.67							
Mitigation Area 3 - Wetland U (Enhancement)											
4) Current Condition	5.00	4.00	5.00	0.47	0.20	1.07	1.25	1.34	0.150	**3.65**	0.546
w/ mitigation	5.00	7.00	8.00	0.67							
Mitigation Area 4 - Wetland U (Wetland Creation)											
5) Current Condition	0.00	0.00	0.00	0.00	0.67	1.14	1.50	1.71	0.390	**2.96**	1.154
w/ mitigation	5.00	7.00	8.00	0.67							
Mitigation Area 5 - Wetland U2 (Enhancement)											
6) Current Condition	5.00	3.00	5.00	0.43	0.23	1.07	1.25	1.34	0.174	**0.47**	0.082
w/ mitigation	5.00	7.00	8.00	0.67							
Mitigation Area 6 - Wetland U2 (Wetland Creation)											
7) Current Condition	0.00	0.00	0.00	0.00	0.67	1.14	1.50	1.71	0.390	**1.59**	0.620
w/ mitigation	5.00	7.00	8.00	0.67							
Total										**15.01**	**3.144**

POTENTIAL WETLAND IMPACTS

Impact Areas	Location/ Landscape Support	Water Environment	Community Structure	Summation	Delta	Impacted Acreage	Functional Loss
Wetland I							
1) Current Condition	5.00	6.00	6.00	0.57	-0.57	1.14	**-0.646**
w/ Project	0.00	0.00	0.00	0.00			
Wetland J							
2) Current Condition	4.00	5.00	4.00	0.43	-0.43	0.31	**-0.134**
w/ Project	0.00	0.00	0.00	0.00			
Wetland L							
3) Current Condition	5.00	6.00	6.00	0.57	-0.57	1.22	**-0.691**
w/ Project	0.00	0.00	0.00	0.00			
Wetland M							
4) Current Condition	5.00	6.00	6.00	0.57	-0.57	2.06	**-1.167**
w/ Project	0.00	0.00	0.00	0.00			
Wetland W							
5) Current Condition	5.00	5.00	4.00	0.47	-0.47	0.22	**-0.103**
w/ Project	0.00	0.00	0.00	0.00			
South Creek							
5) Current Condition	5.00	4.00	3.00	0.40	-0.40	0.07	**-0.028**
w/ Project	0.00	0.00	0.00	0.00			
Wetland U (Re-establish Berm)							
5) Current Condition	5.00	4.00	3.00	0.40	-0.40	0.04	**-0.016**
w/ Project	0.00	0.00	0.00	0.00			
Wetland U2 (Re-establish Berm)							
5) Current Condition	5.00	3.00	3.00	0.37	-0.37	0.01	**-0.004**
w/ Project	0.00	0.00	0.00	0.00			
Total						**5.07**	**-2.79**

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL - I

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Impact	1.14

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
South Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by pasture with minimal vegetative buffer.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
N/A	Not Unique

Functions	Mitigation for previous permit/other historic use
Minimal wetland water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Sandhill crane and white ibis feeding along wetland fringe.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL I
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 5 with:	Surrounded by pasture, Honore Ave to the east, undevelopment subdivision to the north, Oscar Schrere State Park to the south. Limited wildlife value due to small size of wetland and location. Existing wetland buffer is limited to open pasture with some live oaks. Location of wetland does not allow for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization. Wetland ditching provides for hydrological connection to downstream systems.	
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 6 with:	AA is ditched to the south which has decreased the wetland hydrology and hydroperiods. Increased nutrient inputs by cattle present. Some water present in the deeper core zone at time of site visit provides limited feeding opportunity for wading birds. AA provides minimal benefits to fish and wildlife.	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 6 with:	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling. Some zonation present however outer zonation is reduced due to ditching. Limited vegetation present due to cattle impacts. Approximately 40% torpedo grass throughout the wetland.	

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres: 0.57	with: 0.000	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta (-0.57) x acres (1.14) = -0.646

-0.646

Delta = [with-current]
-0.57

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL - J

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Impact	0.31

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
South Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by pasture with minimal vegetative buffer.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
N/A	Not Unique

Functions	Mitigation for previous permit/other historic use
Minimal wetland water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Sandhill crane feeding along wetland fringe.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL J
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 4	with:	Surrounded by pasture, Honore Ave to the east, undevelopment subdivision to the north, Oscar Schrere State Park to the south. Limited wildlife value due to small size of wetland and location. Existing wetland buffer is limited to open pasture. Location of wetland does not allow for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization. No hydrological connection to downstream systems.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 5	with:	Increased nutrient inputs by cattle present. Some water present in the deeper core zone at time of site visit provides limited feeding opportunity for wading birds. AA provides minimal benefits to fish and wildlife.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 4	with:	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling. Some zonation present however limited vegetation present due to cattle impacts. Approximately 40% torpedo grass throughout the wetland.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.43	0.000

Delta = [with-current]
-0.43

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta (-0.43) x acres (0.31) = -0.134

-0.134

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL - L

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Impact	1.22

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
South Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by pasture with minimal vegetative buffer.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
N/A	Not Unique

Functions	Mitigation for previous permit/other historic use
Minimal wetland water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Sandhill crane feeding along wetland fringe.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL L
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 5 with:	Surrounded by pasture, Honore Ave to the east, Legacy Trail to the west, undevelopment subdivision to the north, Oscar Schrere State Park to the south. Limited wildlife value because of limited buffer from pasture. Existing wetland buffer is limited to open pasture. Location of wetland does not allow for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization. Wetland ditching provides for hydrological connection to downstream systems.	
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 6 with:	AA is ditched to the south which has decreased the wetland hydrology and hydroperiods. Increased nutrient inputs by cattle present. Some water present in the deeper core zone at time of site visit provides limited feeding opportunity for wading birds. AA provides minimal benefits to fish and wildlife.	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 6 with:	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling. Some zonation present however limited vegetation present due to cattle impacts. Approximately 40% torpedo grass and 30% Melaluca throughout the wetland.	

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres: 0.57	with: 0.000	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta (-0.57) x acres (1.22) = -0.691

-0.691

Delta = [with-current]
-0.57

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL - M

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Impact	2.06

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
South Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by pasture with minimal vegetative buffer.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
N/A	Not Unique

Functions	Mitigation for previous permit/other historic use
Minimal wetland water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

White ibis foraging in wetland.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL M
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 5 with:	Surrounded by pasture, Honore Ave to the east, Legacy Trail to the west, undevelopment subdivision to the north, Oscar Schrere State Park to the south. Limited wildlife value because of limited buffer from pasture. Existing wetland buffer is limited to open pasture. Location of wetland does not allow for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization. Wetland ditching provides for hydrological connection to downstream systems.	
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 6 with:	AA is ditched to the south which has decreased the wetland hydrology and hydroperiods. Increased nutrient inputs by cattle present. Some water present in the deeper core zone at time of site visit provides limited feeding opportunity for wading birds. AA provides minimal benefits to fish and wildlife.	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 6 with:	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling. Some zonation present however limited vegetation present due to cattle impacts. Approximately 40% torpedo grass and 15% Melaluca throughout the wetland	

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres: 0.57	with: 0.000	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas	
FL = delta (-0.57) x acres (2.06) = -1.167	**-1.167**

Delta = [with-current]
-0.57

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL - W

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Impact	0.22

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
South Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by pasture with minimal vegetative buffer.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
N/A	Not Unique

Functions	Mitigation for previous permit/other historic use
Minimal wetland water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Sandhill crane feeding along wetland fringe.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL W
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact	T. Lyday	9/29/15

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	Surrounded by pasture, Honore Ave to the east, Legacy Trail to the west, undevelopment subdivision to the north, Oscar Schrere State Park to the south. Limited wildlife value because of limited buffer from pasture and small size of wetland. Existing wetland buffer is limited to open pasture. Location of wetland does not allow for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization. Wetland ditching provides for hydrological connection to downstream systems.	5	
.500(6)(b)Water Environment (n/a for uplands)	AA is significantly ditched to the south and east which has decreased the wetland hydrology and hydroperiods. Increased nutrient inputs by cattle present. Some water present in the deeper core zone at time of site visit provides limited feeding opportunity for wading birds. AA provides minimal benefits to fish and wildlife.	5	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling. Some zonation present however limited vegetation present due to cattle impacts. Approximately 60% torpedo grass throughout the wetland.	4	

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.47	0.000

Delta = [with-current]
-0.47

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta (-0.47) x acres (0.22) = -0.103

-0.103

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		South Creek

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Impact	0.07

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
South Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by pasture with minimal vegetative buffer.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Oscar Scherer State Park	Discharges to OFW

Functions	Mitigation for previous permit/other historic use
Minimal water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Woodstork, Little blue heron, Tricolored heron, and white ibis feeding in Creek.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		South Creek
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with:	Surrounded by pasture, Honore Ave to the east, Legacy Trail to the west, undevelopment subdivision to the north, Oscar Schrere State Park to the south. Steeply incised ditch surrounded by pasture. Limited wildlife value because of limited buffer from pasture. Location of AA provides minimal allowance for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization. Creek ditching provides for hydrological connection to downstream systems.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 4	with:	AA is significantly ditched and incised which has decreased hydrology and hydroperiods. Increased nutrient inputs by cattle present. Water present at time of site visit provides feeding opportunity for wading birds. AA provides minimal benefits to fish and wildlife.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 3	with:	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling. Some zonation present however limited vegetation present due to cattle impacts. Approximately 60% N/E vegetation throughout AA.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.40	0.000

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas	
FL = delta (-0.40) x acres (0.07) = 0.028	-0.028

Delta = [with-current]
-0.40

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL - D2

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Mitigation	4.74

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
North Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Iron, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by a small band of mixed hardwood / conifer woodland, followed by improved pasture.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
N/A	Not Unique

Functions	Mitigation for previous permit/other historic use
Minimal wetland water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

None

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL D2 Enhancement
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with: 4	Surrounded by pasture, Honore Ave to the east, undevelopment subdivision to the north, Oscar Schrere State Park to the south. Limited wildlife value due to small size of wetland and location. Existing wetland buffer is limited to open pasture with some live oaks. Location of wetland does not allow for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization. WITH MITIGATION: Enhancement area will be protected by a planted 30-ft buffer. New wetalnd creation will be placed along the west side of wetland, contiguous with wildlife connections to Legacy Trail to the west.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 7	with: 7	Some ditching to the west has decreased the wetland hydrology and hydroperiods. Increased nutrient inputs by cattle present. Some water present in the deeper core zone at time of site visit provides limited feeding opportunity for wading birds. AA provides minimal benefits to fish and wildlife. WITH MITIGATION: Removal of cattle will slightly improve water quality.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 6	with: 8	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling. Overall good zonation present however outer zonation is reduced due to ditching. Some cattle grazing to vegetation. WITH MITIGATION: Cattle will be removed from surrounding pasture will increase wetland vegetation. Maintenance program will remove N/E vegetation. Planted buffer will further protect the wetland.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.60	0.633

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta () x acres () =

Delta = [with-current]
0.03

If mitigation
Time lag (t-factor) = 1.07
Risk factor = 1.25

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.118

0.0249
0.1181

Form 62-345.900(2), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL D2 Creation
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support w/o pres or current: 0 with: 5	WITH MITIGATION: Creation area will be protected by a planted 30-ft buffer. New wetland creation will be placed along the west side of wetland, contiguous with wildlife connections to Legacy Trail to the west.	
.500(6)(b)Water Environment (n/a for uplands) w/o pres or current: 0 with: 7	WITH MITIGATION: Creation area will be placed adjacent to existing wetland to allow for proper hydrology. Removal of cattle will slightly improve water quality.	
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community w/o pres or current: 0 with: 8	WITH MITIGATION: Creation area will be planted with native vegetation within the proper zonation. Maintenance program will be implemented to maintain N/E vegetation. Preservation of existing vegetation and planted buffer, where needed, will further protect the wetland.	

Score = sum of above scores/30 (if uplands, divide by 20)		
current or w/o pres: 0.00	with: 0.667	

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta () x acres () =

Delta = [with-current]
0.67

If mitigation
Time lag (t-factor) = 1.14
Risk factor = 1.50

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.62

0.3899
0.6199

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL - U

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Impact	0.04

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
South Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by pasture with minimal vegetative buffer.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Oscar Scherer State Park	Not Unique

Functions	Mitigation for previous permit/other historic use
Minimal wetland water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Sandhill crane feeding in wetland.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL U
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact	T. Lyday	9/29/15

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with:	Surrounded by pasture, Honore Ave to the east, undevelopment subdivision to the north, Bay Street Ext and Oscar Schrere State Park to the south. Existing wetland buffer is limited to open pasture with some live oaks and mesic hammock present. Location of wetland does not allow for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 4	with:	Impact for Re-Establishing the Berm along the AA and South Creek where deficient. Increased nutrient inputs by cattle present. No water present at this impact location. AA provides minimal benefits to fish and wildlife.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 3	with:	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.40	0.000

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas	
FL = delta (-0.40) x acres (0.04) = 0.016	-0.016

Delta = [with-current]
-0.40

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL - U Enhancement

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Mitigation	3.65

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
South Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by pasture with minimal vegetative buffer.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Oscar Scherer State Park	Not Unique

Functions	Mitigation for previous permit/other historic use
Minimal wetland water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Sandhill crane feeding in wetland.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL U Enhancement
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Mitigation	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with: 5	Surrounded by pasture, Honore Ave to the east, undevelopment subdivision to the north, Bay Street Ext and Oscar Schrere State Park to the south. Existing wetland buffer is limited to open pasture with some live oaks and mesic hammock present. Location of wetland does not allow for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization. WITH MITIGATION: Enhancement area will be protected by an existing well-established buffer. New wetland creation will surround the wetland, and contiguous with wildlife connections to South Creek and Legacy Trail to the west.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 4	with: 7	Some ditching to the west has decreased the wetland hydrology and hydroperiods. Increased nutrient inputs by cattle present. Some water present in the deeper core zone at time of site visit provides limited feeding opportunity for wading birds. AA provides minimal benefits to fish and wildlife. WITH MITIGATION: Removal of cattle will improve water quality. Weir and berm will be re-established along South Creek for improved hydrology. A A Wetland Creation area will be established surrounding the existing wetland to expand the system and further provide for feeding opportunities.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 8	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling. Overall good zonation present however outer zonation is reduced due to ditching. Some cattle grazing to vegetation. WITH MITIGATION: Cattle will be removed from surrounding pasture will increase wetland vegetation. Native planting will be planted where new zonation will be established. Maintenance program will remove N/E vegetation. Well-established buffer will further protect the wetland.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.47	0.667

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta () x acres () =

Delta = [with-current]
0.20

If mitigation
Time lag (t-factor) = 1.07
Risk factor = 1.25

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.20 / (1.07 x 1.25) = 0.15 * 3.65 = 0.546

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL U Creation
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 0	with: 5	WITH MITIGATION: Creation area will be protected by a planted 30-ft buffer. New wetland creation will be placed along the west side of wetland, contiguous with wildlife connections to Legacy Trail to the west.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 0	with: 7	WITH MITIGATION: Creation area will be placed adjacent to existing wetland to allow for proper hydrology. Weir and berm along South Creek will be re-established to control water levels throughout the year. Removal of cattle wil improve water quality.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 0	with: 8	WITH MITIGATION: Creation area will be planted with native vegetation within the proper zonation. Maintenance program will be implemented to maintain N/E vegetation. Existing vegetation and planted buffer, where needed, wil further protect the wetland.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.00	0.667

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta () x acres () =

Delta = [with-current]
0.67

If mitigation
Time lag (t-factor) = 1.14
Risk factor = 1.50

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 1.154

0.3899
1.154

Form 62-345.900(2), F.A.C. [effective date]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL - U2

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Impact	0.01

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
South Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by pasture with minimal vegetative buffer.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Oscar Scherer State Park	Not Unique

Functions	Mitigation for previous permit/other historic use
Minimal wetland water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Sandhill crane feeding along wetland fringe.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL U2
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Impact	T. Lyday	9/29/15

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with:	Surrounded by pasture, Honore Ave to the east, undevelopment subdivision to the north, Bay Street Ext and Oscar Schrere State Park to the south. Existing wetland buffer is limited to open pasture with some live oaks and mesic hammock present. Location of wetland does not allow for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 3	with:	Impact for Re-Establishing the Berm along the AA and South Creek where deficient. Increased nutrient inputs by cattle present. No water present at this impact location. AA provides minimal benefits to fish and wildlife.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 3	with:	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.37	0.000

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas	
FL = delta (-0.37) x acres (0.01) = 0.004	-0.004

Delta = [with-current]
-0.37

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL - U2

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
641		Mitigation	0.47

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
South Creek / Little Sarasota Bay Watershed	N/A	N/A

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Property is located directly adjacent to South Creek and a currently undeveloped single-family subdivision to the north, Oscar Schrere State Park to the south, Honore Avenue to the east and Legacy Trail to the west. Water body is impaired for Dissolved Oxygen, Mercury (in Fish Tissue) and Nutrients (Chlorophyll-a) by EPA 303(d) list.

Assessment area description

AA is surrounded by pasture with minimal vegetative buffer.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Oscar Scherer State Park	Not Unique

Functions	Mitigation for previous permit/other historic use
Minimal wetland water quality and habitat functions.	No

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Very limited	Wading bird foraging and amphibian habitat

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Sandhill crane feeding along wetland fringe.

Additional relevant factors:

None

Assessment conducted by:	Assessment date(s):
T. Lyday	9/29/2015

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL U2 Enhancement
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: 5	with: 5	Surrounded by pasture, Honore Ave to the east, undevelopment subdivision to the north, Bay Street Ext and Oscar Schrere State Park to the south. Existing wetland buffer is limited to open pasture with some live oaks and mesic hammock present. Location of wetland does not allow for large to medium wildlife to transverse the site. AA allows for limited wading bird utilization. WITH MITIGATION: Enhancement area will be protected by a planted 30-ft buffer. New wetalnd creation will be placed along the west side of wetland, contiguous with wildlife connections to South Creek and Legacy Trail to the west.
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: 3	with: 7	Some ditching to the west has decreased the wetland hydrology and hydroperiods. Increased nutrient inputs by cattle present. Some water present in the deeper core zone at time of site visit provides limited feeding opportunity for wading birds. AA provides minimal benefits to fish and wildlife. WITH MITIGATION: Removal of cattle will improve water quality. Weir and berm will be re-established along South Creek for improved hydrology. A A Wetland Creation area will be established surrounding the existing wetland to expand the system and further provide for feeding opportunities.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: 5	with: 8	Limited native vegetation buffer surrounding the AA. Vegetation impacted by cattle grazing and trampling. Overall good zonation present however outer zonation is reduced due to ditching. Some cattle grazing to vegetation. WITH MITIGATION: Cattle will be removed from surrounding pasture will increase wetland vegetation. Maintenance program will remove N/E vegetation. Planted buffer will further protect the wetland.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.43	0.667

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta () x acres () =

Delta = [with-current]
0.23

If mitigation
Time lag (t-factor) = 1.07
Risk factor = 1.25

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.082

0.1745
0.082

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Palmer Ranch 9C		WL U2 Creation
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	T. Lyday	9/29/15

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	WITH MITIGATION: Creation area will be protected by a planted 30-ft buffer. New wetland creation will be placed along the west side of wetland, contiguous with wildlife connections to Legacy Trail to the west. Location slight degraded during to adjacency to proposed East Bay Street extension.	0	5
.500(6)(b)Water Environment (n/a for uplands)	WITH MITIGATION: Creation area will be placed adjacent to existing wetland to allow for proper hydrology. Weir and berm along South Creek will be re-established to maintain hydrology in wetland throughout the year. Removal of cattle will improve water quality.	0	7
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	WITH MITIGATION: Creation area will be planted with native vegetation within the proper zonation. Maintenance program ill be implemented to maintain N/E vegetation. Existing vegetation and planted buffer, where needed, will further protect the wetland.	0	8

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.00	0.667

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta () x acres () =

Delta = [with-current]
0.67

If mitigation
Time lag (t-factor) = 1.14
Risk factor = 1.50

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.62

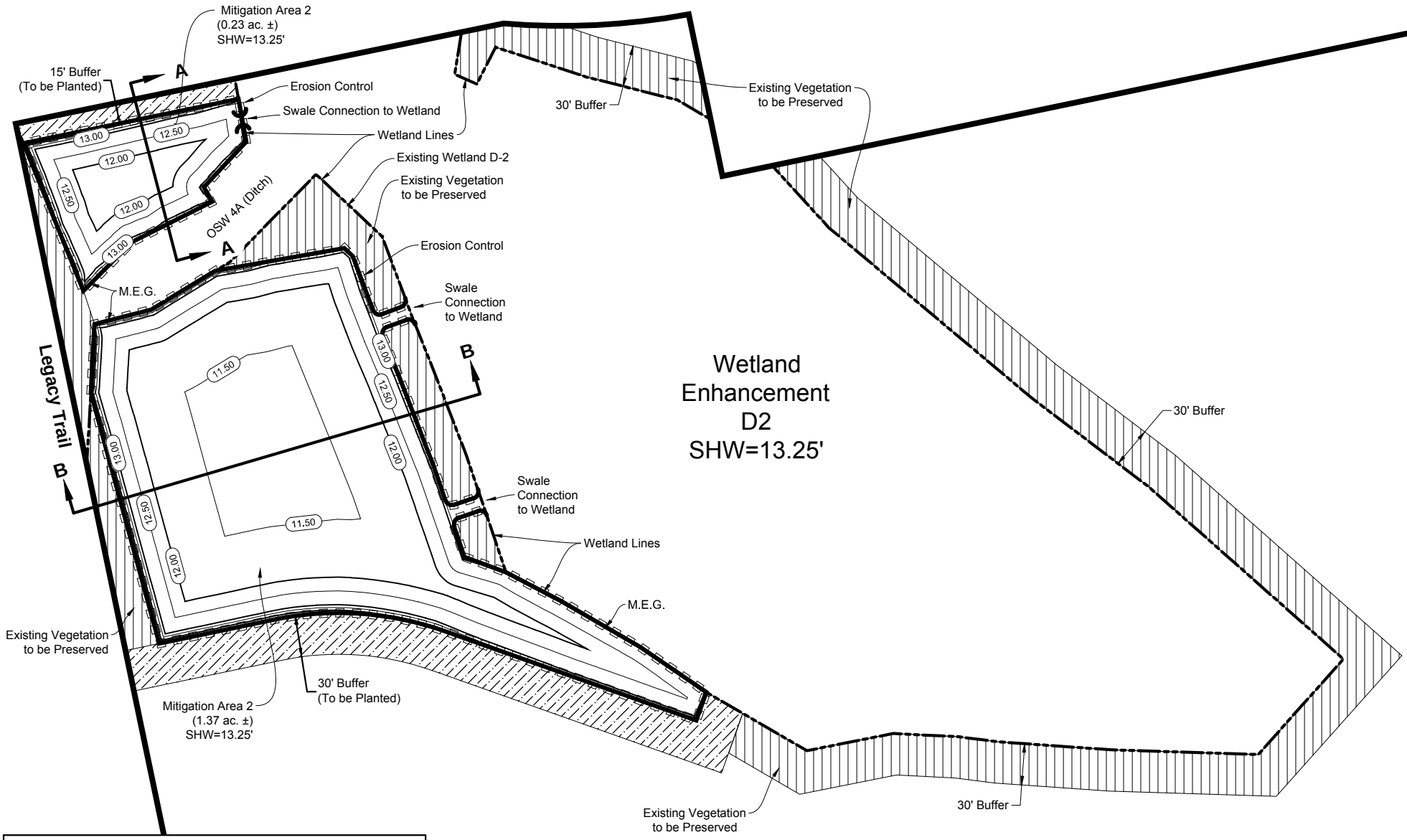
0.3899
0.6199

Form 62-345.900(2), F.A.C. [effective date]

Esplanade on Palmer Ranch

APPENDIX C

MITIGATION PLANS



Legend	
	Buffers to be Planted = 0.38 ac. ±
	Existing Vegetation to be Preserved = 1.22 ac. ±

Sheet - 01

ACOE
Sec 01
Twn 38 S
Rng 18 E

Mitigation Area 2 Grading Plan (Wetland Creation D-2)

Esplanade on Palmer Ranch
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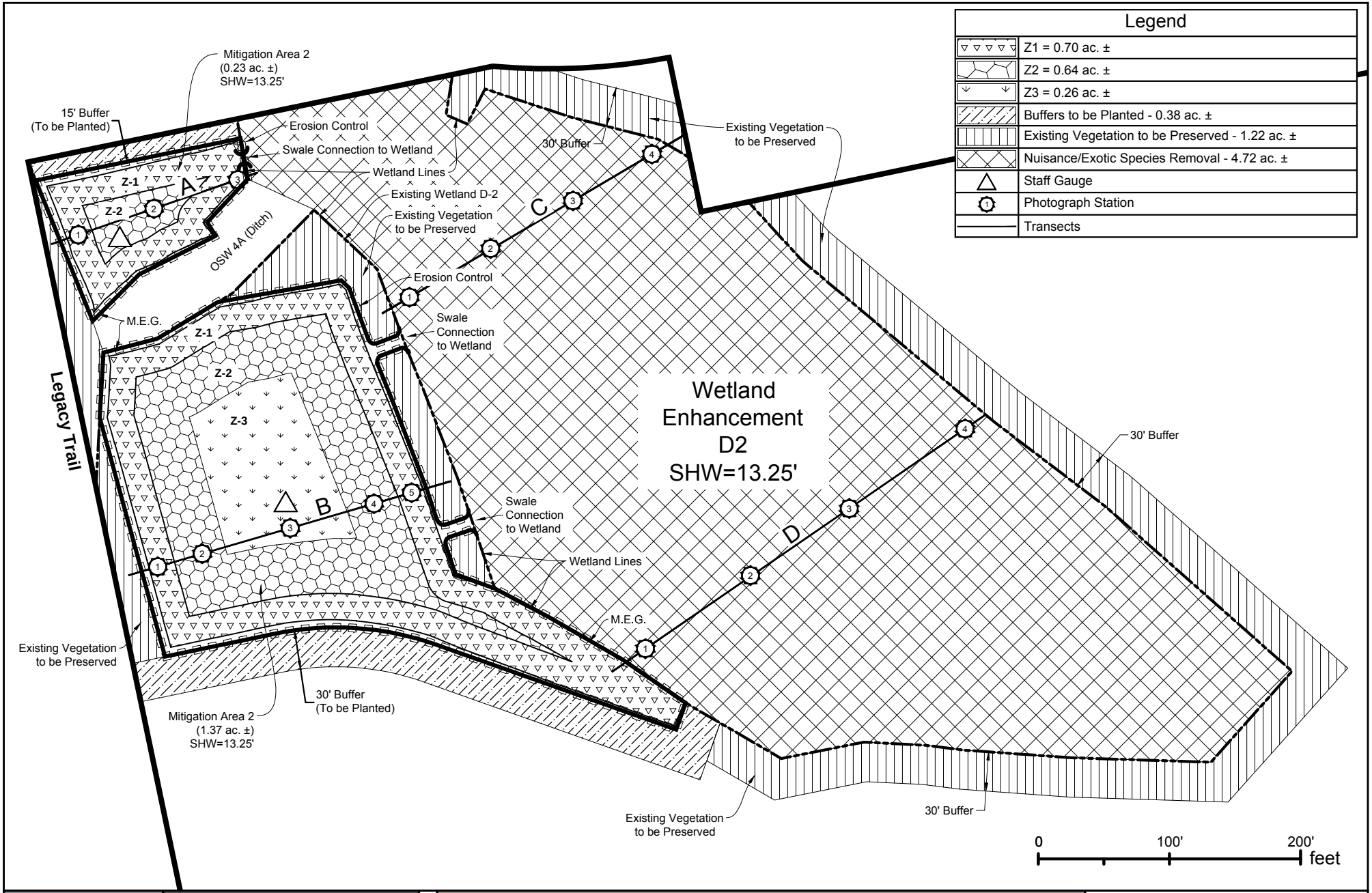

Sheet - 02

ACOE
Sec 01
Twn 38 S
Rng 18 E

Mitigation Area 1 and 2 Planting & Monitoring Plan
(Wetland Enhancement D2 and Wetland Creation D-2)

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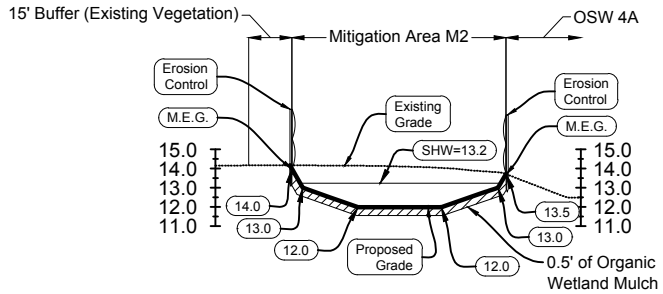
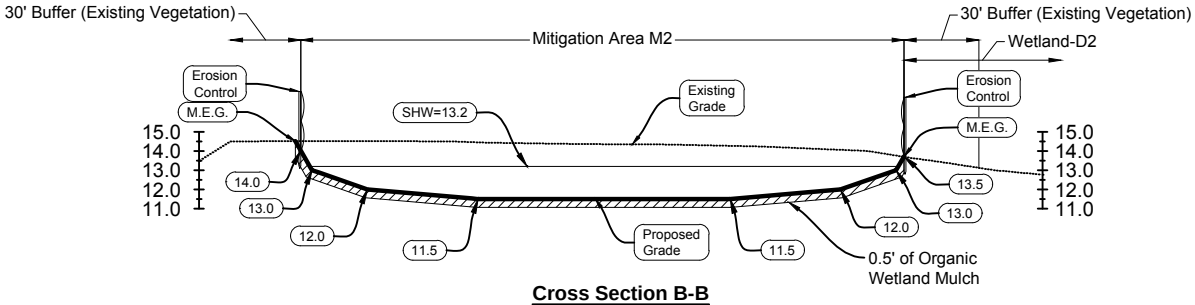


Cross Section A-A
Vert: 1"= 14' Horz: 1" = 100'



Cross Section B-B
Vert: 1"= 14' Horz: 1" = 100'

Sheet - 03

ACOE
Sec 01
Twn 38 S
Rng 18 E

Mitigation Area 2 Cross Sections (Wetland Creation D-2)

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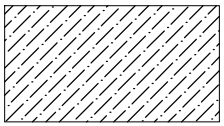
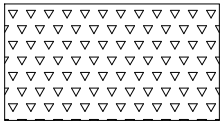
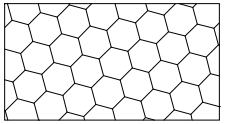
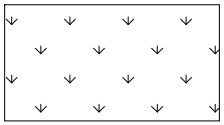
Mitigation Area 2							
Zone	**Scientific Name**	**Common Name**	**Size**	**Spacing**	**Percent**	**Acreage**	**Quantity**
Buffer Restoration 	*Pinus elliottii*	slash pine	3 gal.	10' o.c.	20%	0.38	33
	Acer rubrum	red maple	3 gal.	10' o.c.	20%		33
	Ilex glabra	gallberry	1 gal.	10' o.c.	30%		50
	Myrica cerifera	wax myrtle	1 gal.	10' o.c.	30%		50
	Spartina bakeri	sand cordgrass	qt. eq.	5' o.c.	30%		199
Mit Area 2, Zone 1 	*Canna flaccida*	golden canna	qt. eq.	3' o.c.	10%	0.70	339
	Cladium jamaicense	sawgrass	qt. eq.	3' o.c.	20%		678
	Iris sp.	Iris	qt. eq.	3' o.c.	20%		678
	Panicum hemitomon	maidencane	qt. eq.	3' o.c.	20%		678
	Spartina bakeri	sand cordgrass	qt. eq.	3' o.c.	30%		1016
Mit Area 2, Zone 2 	*Eleocharis interstincta*	knotted spikerush	qt. eq.	3' o.c.	40%	0.64	1239
	Polygonum glabrum	denseflower knotweed	qt. eq.	3' o.c.	30%		929
	Pontederia cordata	pickerelweed	qt. eq.	3' o.c.	30%		929
Mit Area 2, Zone 3 	*Pontederia cordata*	pickerelweed	qt. eq.	3' o.c.	50%	0.26	629
	Sagittaria lancifolia	arrowhead	qt. eq.	3' o.c.	25%		629

Sheet - 04

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Mitigation Area 2 Planting Legend
(Wetland Creation D-2)
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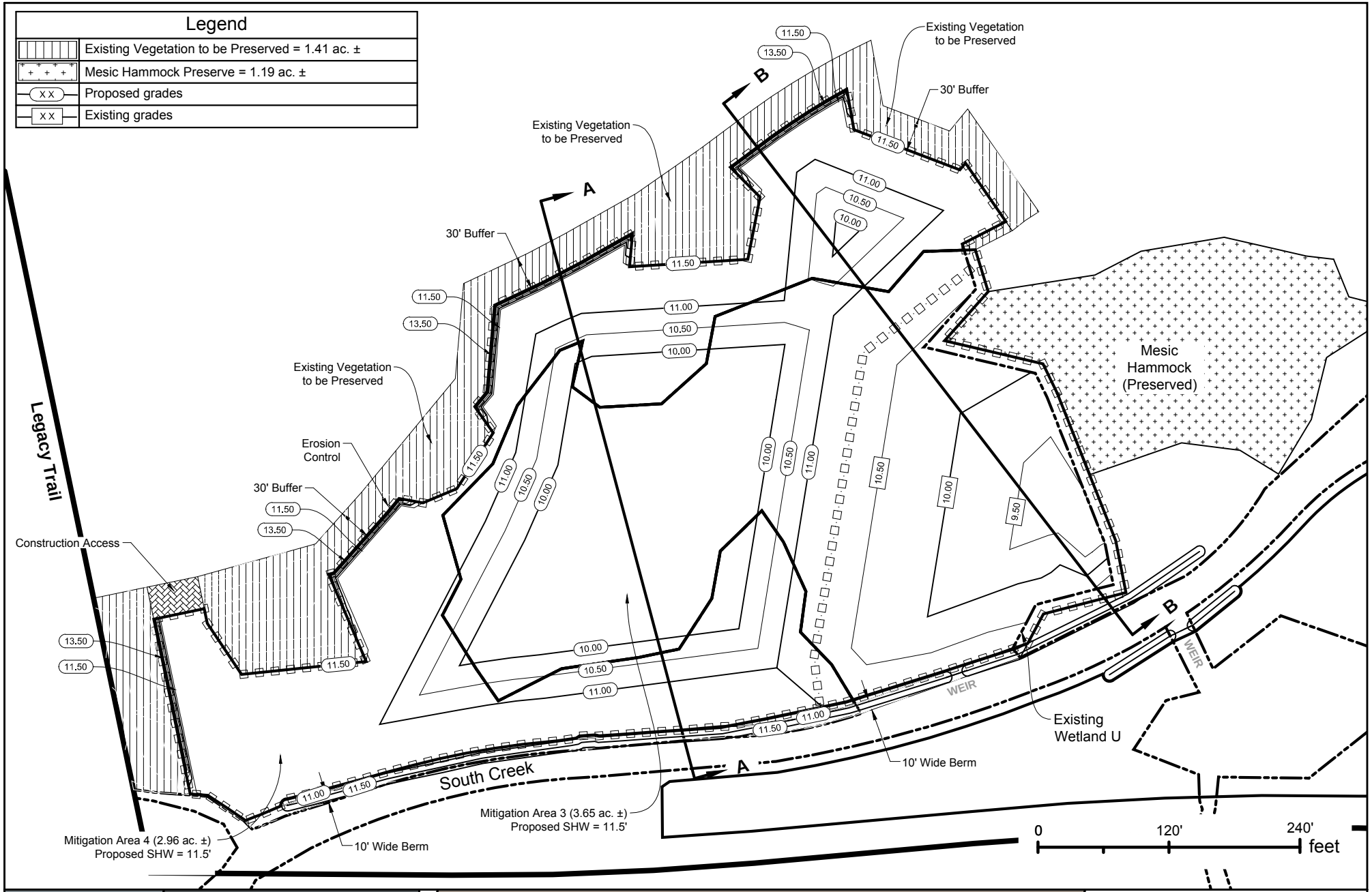

Sheet - 05

ACOE
Sec 01
Twn 38 S
Rng 18 E

Mitigation Areas 3 & 4 Grading Plan
(Wetland Enhancement U & Wetland Creation U)

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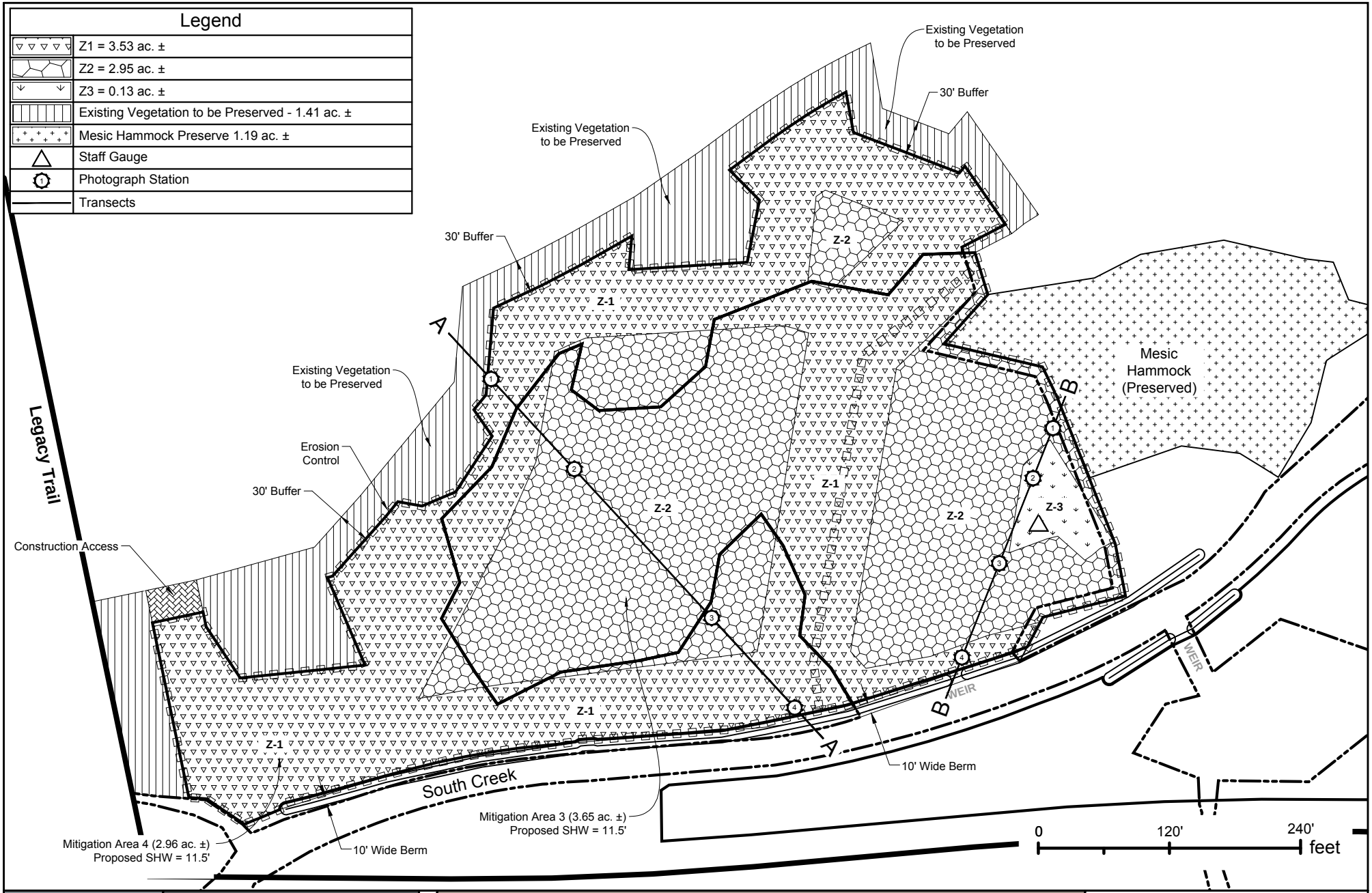

Sheet - 06

ACOE
Sec 01
Twn 38 S
Rng 18 E

Mitigation Areas 3 & 4 Planting Plan
(Wetland Enhancement U & Wetland Creation U)

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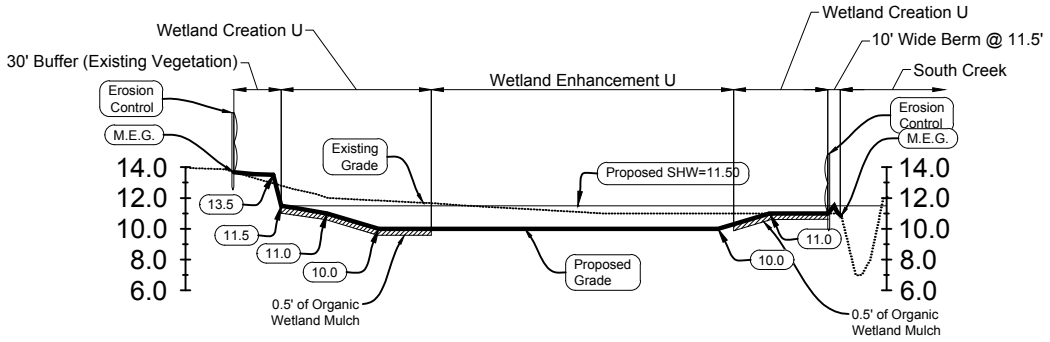
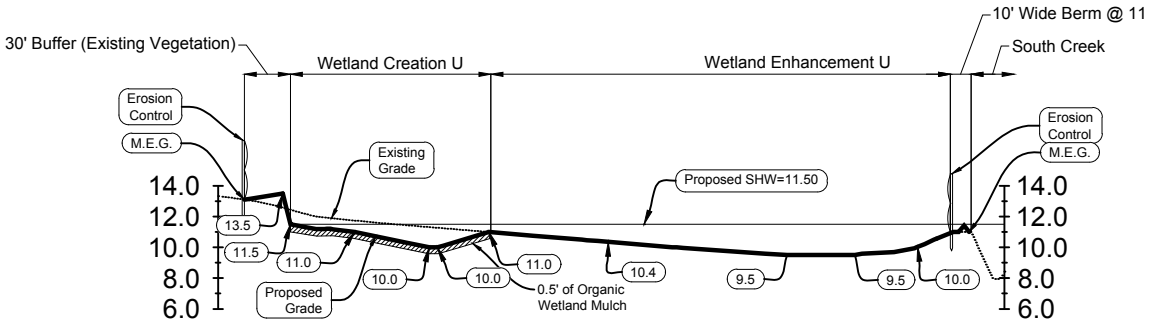


Cross Section A-A

Vert: 1"= 10' Horz: 1" = 120'



Cross Section B-B

Vert: 1"= 10' Horz: 1" = 120'

Sheet - 07

ACOE
Sec 01
Twn 38 S
Rng 18 E

Mitigation Areas 3 & 4 Cross Sections
(Wetland Enhancement U & Wetland Creation U)

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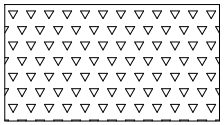
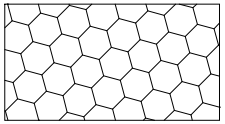
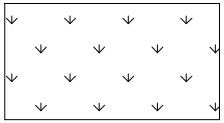
Mitigation Area 3 and 4							
Zone	**Scientific Name**	**Common Name**	**Size**	**Spacing**	**Percent**	**Acreage**	**Quantity**
Mit Area 3 & 4, Zone 1 	*Canna flaccida*	golden canna	qt. eq.	Varies	10%	3.53	1,493
	Cladium jamaicense	sawgrass	qt. eq.	Varies	20%		2,985
	Iris sp.	Iris	qt. eq.	Varies	20%		2,985
	Panicum hemitomon	maidencane	qt. eq.	Varies	20%		2,985
	Spartina bakeri	sand cordgrass	qt. eq.	Varies	30%		4,478
Mit Area 3 & 4, Zone 2 	*Eleocharis interstincta*	knotted spikerush	qt. eq.	Varies	20%	2.95	2,010
	Panicum hemitomon	maidencane	qt. eq.	Varies	20%		2,010
	Polygonum glabrum	denseflower knotweed	qt. eq.	Varies	30%		3,015
	Pontederia cordata	pickerelweed	qt. eq.	Varies	30%		3,015
Mit Area 3, Zone 3 	*Nymphaea odorata*	water lily	qt. eq.	10' o.c.	50%	0.13	28
	Sagittaria lancifolia	arrowhead	qt. eq.	10' o.c.	50%		28

Sheet - 08

ACOE
Sec 01
Twn 38 S
Rng 18 E

Mitigation Area 3 & 4 Planting Legend
(Wetland Enhancement U & Wetland Creation U)

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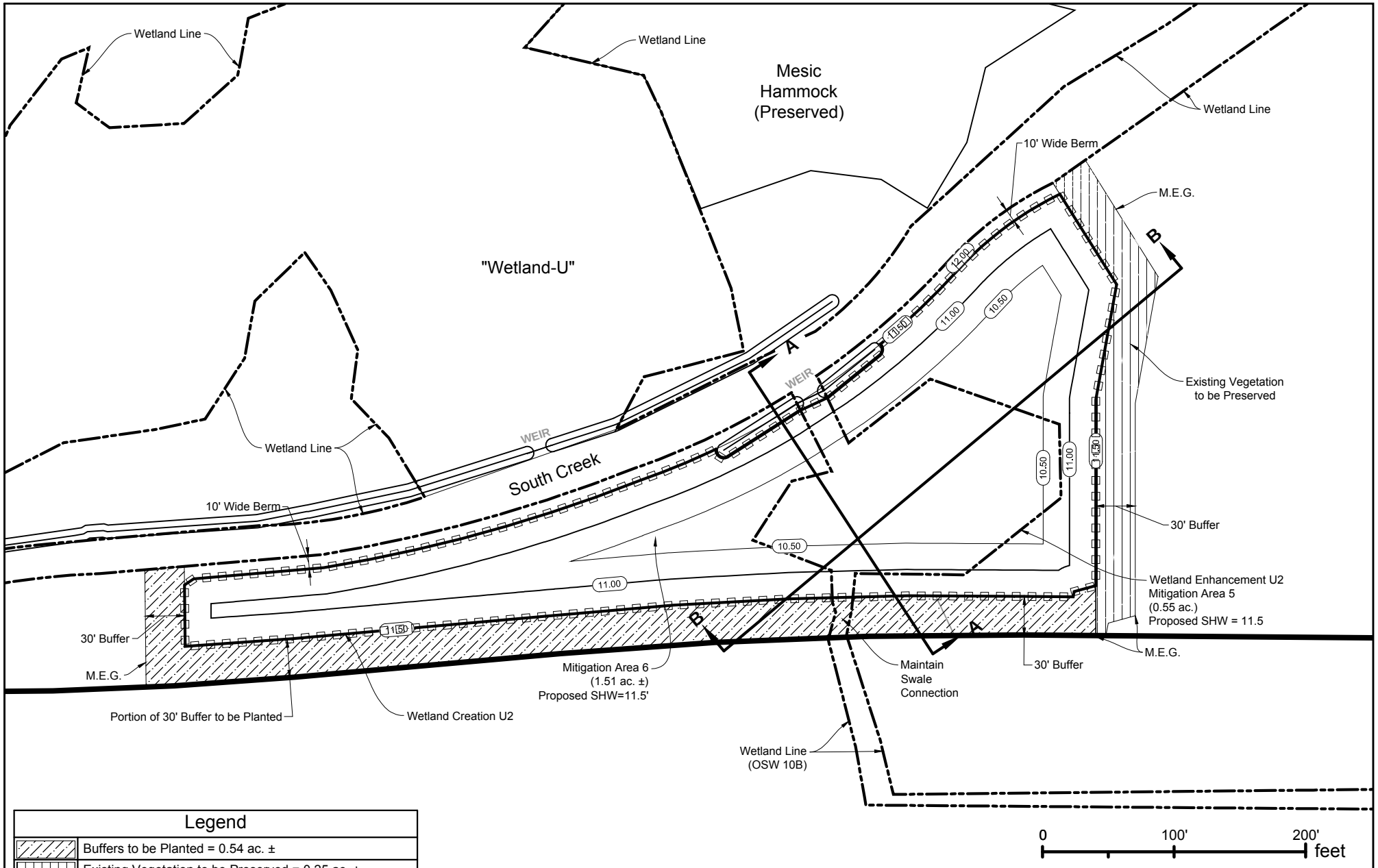

Legend	
	Buffers to be Planted = 0.54 ac. ±
	Existing Vegetation to be Preserved = 0.25 ac. ±

Sheet - 09

ACOE
Sec 01
Twn 38 S
Rng 18 E

Mitigation Areas 5 & 6 Grading Plan
(Wetland Enhancement U2 & Wetland Creation U2)

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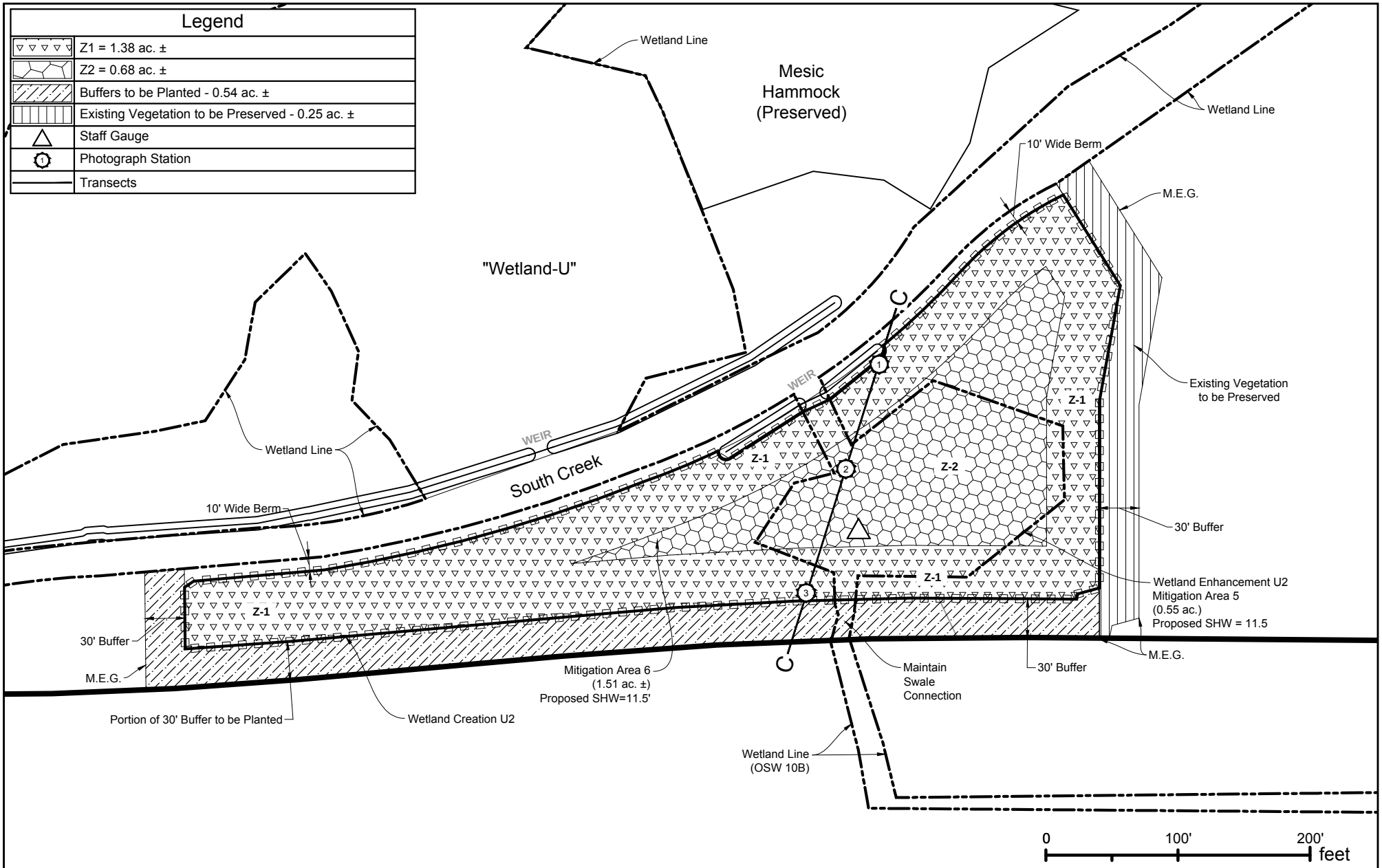

Sheet - 10

ACOE
Sec 01
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Rng 18 E

Mitigation Area 5 & 6 Planting Plan
(Wetland Enhancement U2 & Wetland Creation U2)

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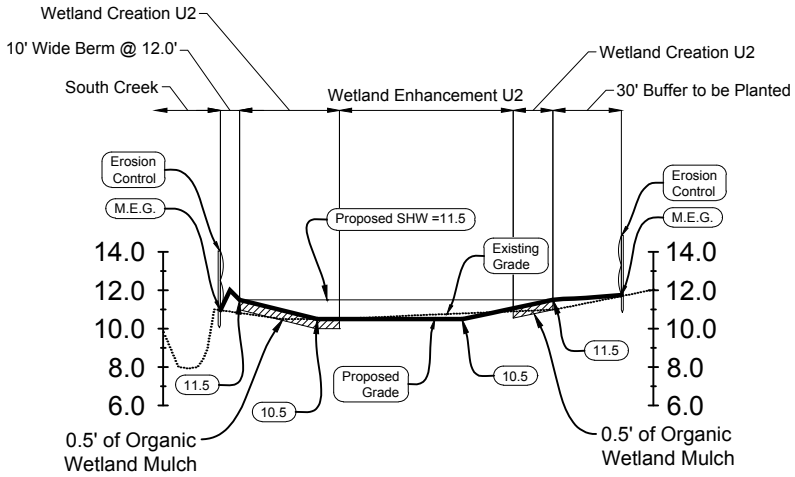
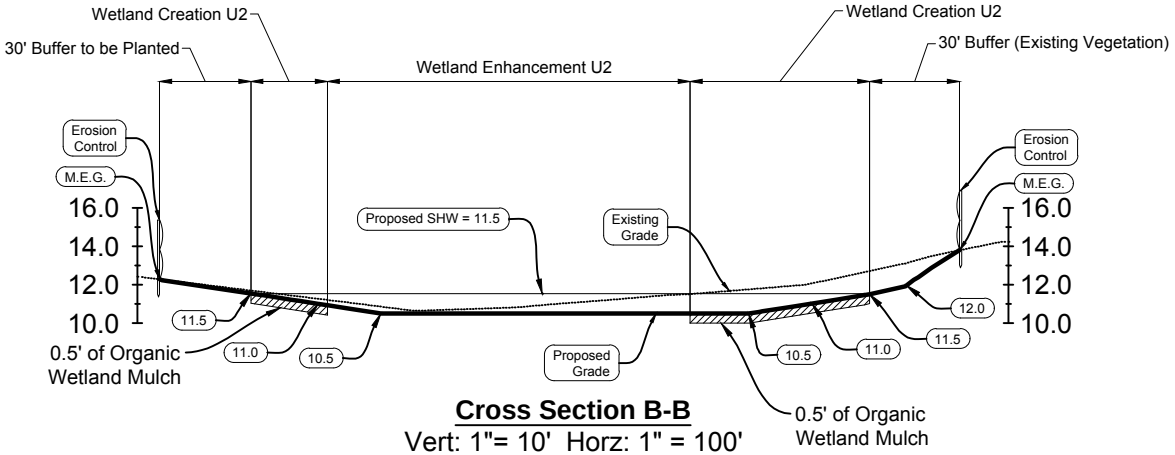


Cross Section A-A

Vert: 1"= 10' Horz: 1" = 100'



Cross Section B-B

Vert: 1"= 10' Horz: 1" = 100'

Sheet - 11

ACOE
Sec 01
Twn 38 S
Rng 18 E

Mitigation 5 & 6 Cross Sections
(Wetland Enhancement U2 & Wetland Creation U2)

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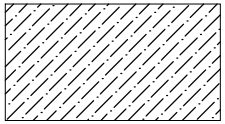
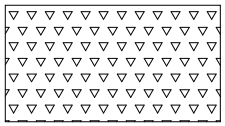
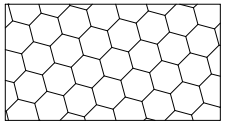
Mitigation Area 5 and 6							
Zone	**Scientific Name**	**Common Name**	**Size**	**Spacing**	**Percent**	**Acreage**	**Quantity**
Buffer Restoration 	*Pinus elliottii*	slash pine	3 gal.	10' o.c.	20%	0.54	47
	Acer rubrum	red maple	3 gal.	10' o.c.	20%		47
	Ilex glabra	gallberry	1 gal.	10' o.c.	30%		71
	Myrica cerifera	wax myrtle	1 gal.	10' o.c.	30%		71
	Spartina bakeri	sand cordgrass	qt. eq.	5' o.c.	30%		282
Mit Area 5 & 6, Zone 1 	*Canna flaccida*	golden canna	qt. eq.	3' o.c.	10%	1.38	668
	Cladium jamaicense	sawgrass	qt. eq.	3' o.c.	20%		1336
	Iris sp.	Iris	qt. eq.	3' o.c.	20%		1336
	Panicum hemitomon	maidencane	qt. eq.	3' o.c.	20%		1336
	Spartina bakeri	sand cordgrass	qt. eq.	3' o.c.	30%		2004
Mit Area 5 & 6, Zone 2 	*Eleocharis interstincta*	knotted spikerush	qt. eq.	3' o.c.	20%	0.68	658
	Panicum hemitomon	maidencane	qt. eq.	3' o.c.	20%		658
	Polygonum glabrum	denseflower knotweed	qt. eq.	3' o.c.	30%		987
	Pontederia cordata	pickerelweed	qt. eq.	3' o.c.	30%		987

Sheet - 12

ACOE
Sec 01
Twn 38 S
Rng 18 E

Mitigation 5 & 6 Planting Legend
(Wetland Enhancement U2 & Wetland Creation U2)

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