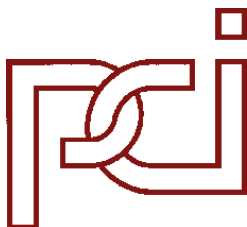


**A CULTURAL RESOURCE ASSESSMENT SURVEY
OF THE BV-24A DREDGED MATERIALS
MANAGEMENT AREA, BREVARD COUNTY, FLORIDA**



Prepared for:

Taylor Engineering, Inc.
10199 Southside Boulevard, Ste 310
Jacksonville, Florida 32256



Prepared by:

Panamerican Consultants, Inc.
5337 North Socrum Loop Rd, Ste. 144
Lakeland, Florida 33809

October 2018

**A CULTURAL RESOURCE ASSESSMENT SURVEY
OF THE BV-24A DREDGED MATERIALS
MANAGEMENT AREA, BREVARD COUNTY, FLORIDA**

Prepared for:
Taylor Engineering, Inc.
10199 Southside Boulevard, Ste 310
Jacksonville, Florida 32256

Prepared by:
Panamerican Consultants, Inc.
5337 North Socrum Loop Rd, Ste. 144
Lakeland, Florida 33809

A handwritten signature in black ink that reads "Gregory A. Mikell". The signature is written in a cursive style with a horizontal line underneath the name.

Gregory A. Mikell, M.A., RPA
Senior Archaeologist
RPA No. 10806

Jelane M. Wallace
Field Director

October 2018

TABLE OF CONTENTS

List Of Figures	iii
List Of Tables	iv
Introduction.....	1
Section I	4
Archival Research	4
Historic Maps.....	4
Historic Aerial Photographs.....	6
Previous Investigations	9
Section II.....	11
Environmental Setting	11
Physiography, Geology, and Hydrology.....	11
Present Climate and Vegetation.....	11
Soils.....	13
Section III.....	14
Culture History.....	14
Prehistoric Context.....	14
Historic Context	20
Research Design.....	23
Objectives	23
Expected Results	24
Field Methods	24
Laboratory Methods.....	25
Criteria for NRHP Eligibility.....	27
Procedures to Manage Unanticipated Discoveries	28
Section V.....	29
Survey Results and Recommendations	29
Archaeological Results	30
Historic Results.....	34
References Cited	36
Appendix A: Design Plans	
Appendix B: Materials Recovered	
Appendix C: Florida Master Site File Forms	

LIST OF FIGURES

Cover: Western portion of the BV-24A project area near pond, facing east (PCI October 2018).	
Figure 1. Location of the BV-24A project area in Grant-Valkaria, Brevard County, Florida.	1
Figure 2. Location of the project area and nearby recorded cultural resources surveys on the Grant, Fla. 1949 (PR 1970) USGS 7.5-minute series topographic quadrangle.	2
Figure 3. Detail of the BV-24A project area from plans provided by Taylor Engineering, Inc. (2018).	3
Figure 4. 1845 plat map for Township 29 South, Range 38 East with the project area in blue (BLM-GLO 1845).	4
Figure 5. 1896 plat map for Township 29 South, Range 38 East with the project area in blue (BLM-GLO 1896).	5
Figure 6. 1936 Florida State Road Department map showing the project area in red (USF 2018).	5
Figure 7. Aerial photograph with the project area in blue, taken February 14, 1943 (PALMM 2018).	6
Figure 8. Aerial photograph with the project area in blue, taken April 24, 1958 (PALMM 2018).	7
Figure 9. Aerial photograph with the project area in blue, taken November 30, 1979 (PALMM 2018).	7
Figure 10. Project area, clockwise from upper left corner: Indian River from pipeline easement, facing north; pond in southern portion of DMMA project area, facing west; push-piles and powerline corridor crossing pipeline easement, facing north; paved parking in pipeline easement, facing southeast (PCI October 2018).	12
Figure 11. 1827 map showing Musquito County, Florida (USF 2018b).	21
Figure 12. Left: Photograph of Grant Station on the FEC Railroad, 1965; now relocated to Fisherman’s Landing Park; Right: Smith brothers’ 1880s homestead on Mullet Creek, near Grant. See 1896 plat map, Figure 5, for location (State Archives of Florida 2018b-c).	22
Figure 13. Aerial photograph showing the project area and shovel tests.	29
Figure 14. Drainage canal, view from Indian River looking west, toward US 1 (8BR2697) and Site 8BR3903, to the right of canal (PCI October 2018).	30
Figure 15. Site map for 8BR3903 on an aerial image.	31
Figure 16. Prehistoric pottery, spiculate tempered (left) and sand tempered (right) from ST 5 (PCI October 2018).	32
Figure 17. AO-1 at ST 2, facing north (PCI October 2018).	34
Figure 18. FEC Railroad at pipeline easement, facing north (PCI October 2018).	35

LIST OF TABLES

Table 1. Summary Of The Land Records For The Project Area.	8
Table 2. Archaeological Sites Located Within a 1.0-Mile Radius of the Project Area.	10
Table 3. Historic Linear Resources Located Within A 1.0-Mile Radius of the Project Area.	10
Table 4. Previous Surveys Conducted Within a 1.0-Mile Radius of the Project Area.	10
Table 5. Soil Types Within The Project Area.	13
Table 6. Representation Of The Malabar And St. Johns Region Chronologies.	17

INTRODUCTION

Panamerican Consultants, Inc. (PCI) of Lakeland, Florida conducted a Phase I cultural resources assessment survey of a 112.4-acre property and 3.8-acre pipeline easement which constitutes the BV-24A Dredged Materials Management Area (DMMA) project. The BV-24A property represents parcels held by individuals, the Florida Inland Navigation District (FIND), and Brevard County, Florida (Brevard County Property Appraiser [BCPA] 2018; Florida Natural Areas Inventory [FNAI] 2018). This work was performed under contract to Taylor Engineering, Inc. of Jacksonville, Florida, in order to comply with U.S. Army Corps of Engineers (USACE) and Florida Department of Environmental Protection (FDEP) permitting requirements. The investigation was designed to adhere to the guidelines of the Florida Division of Historical Resources (DHR), as well as those of Chapter 1A-46 of the Florida Administrative Code, and Chapter 267, as revised, and Chapter 373, *Florida Statutes*. The purpose of this survey was to identify and record any detectable cultural resources, including archaeological sites, historic structures, and historic features and assess their eligibility for listing in the National Register of Historic Places (NRHP).

The BV-24A project area is located in the town of Grant-Valkaria, in southeastern Brevard County (*Figure 1*). It is immediately adjacent to the Atlantic Intercoastal Waterway (ICW)-Indian River, west of U.S. Highway 1 (US 1) and Old Dixie Highway. It is south of Valkaria Road and north of Atlantic Ridge Lane. The project area is mapped in Sections 20 and 21 of Township 29 South, Range 38 East as shown on the Grant, Fla. 1949 (photorevised [PR] 1970) U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangle (*Figure 2*).

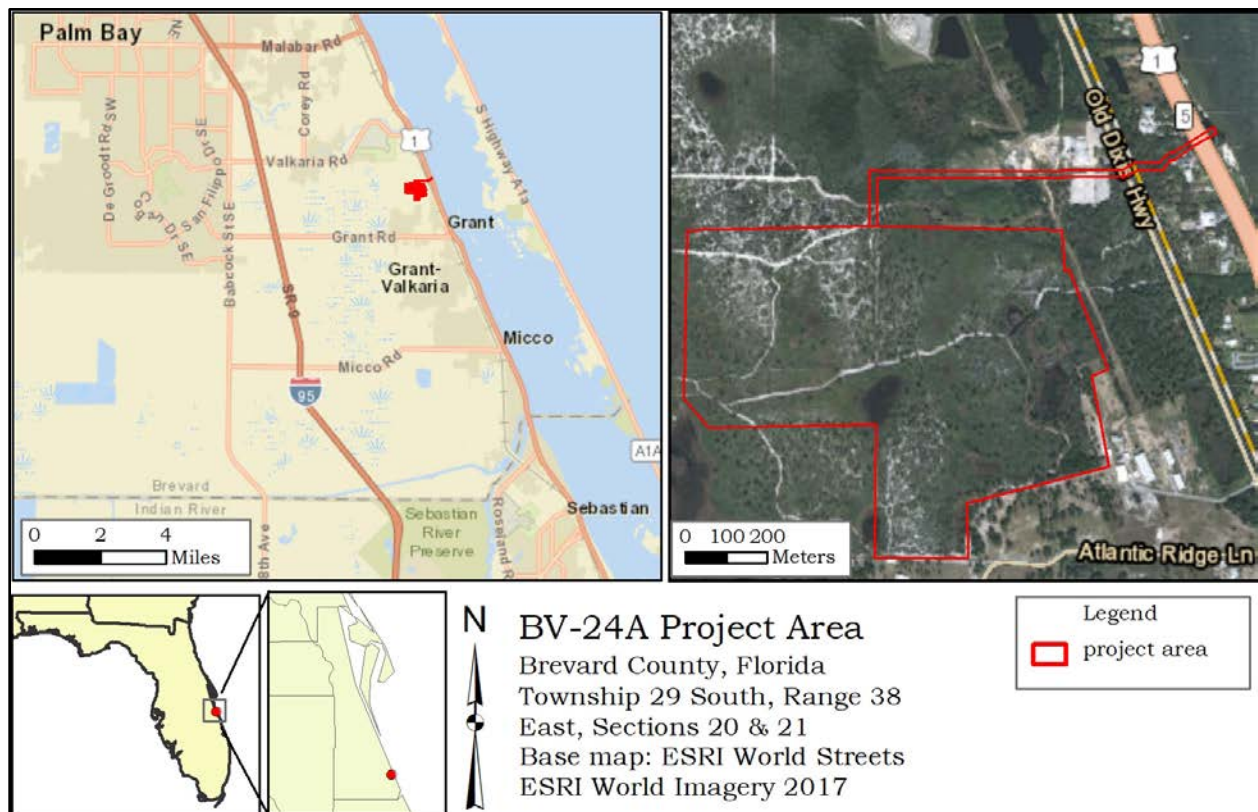


Figure 1. Location of the BV-24A project area in Grant-Valkaria, Brevard County, Florida.

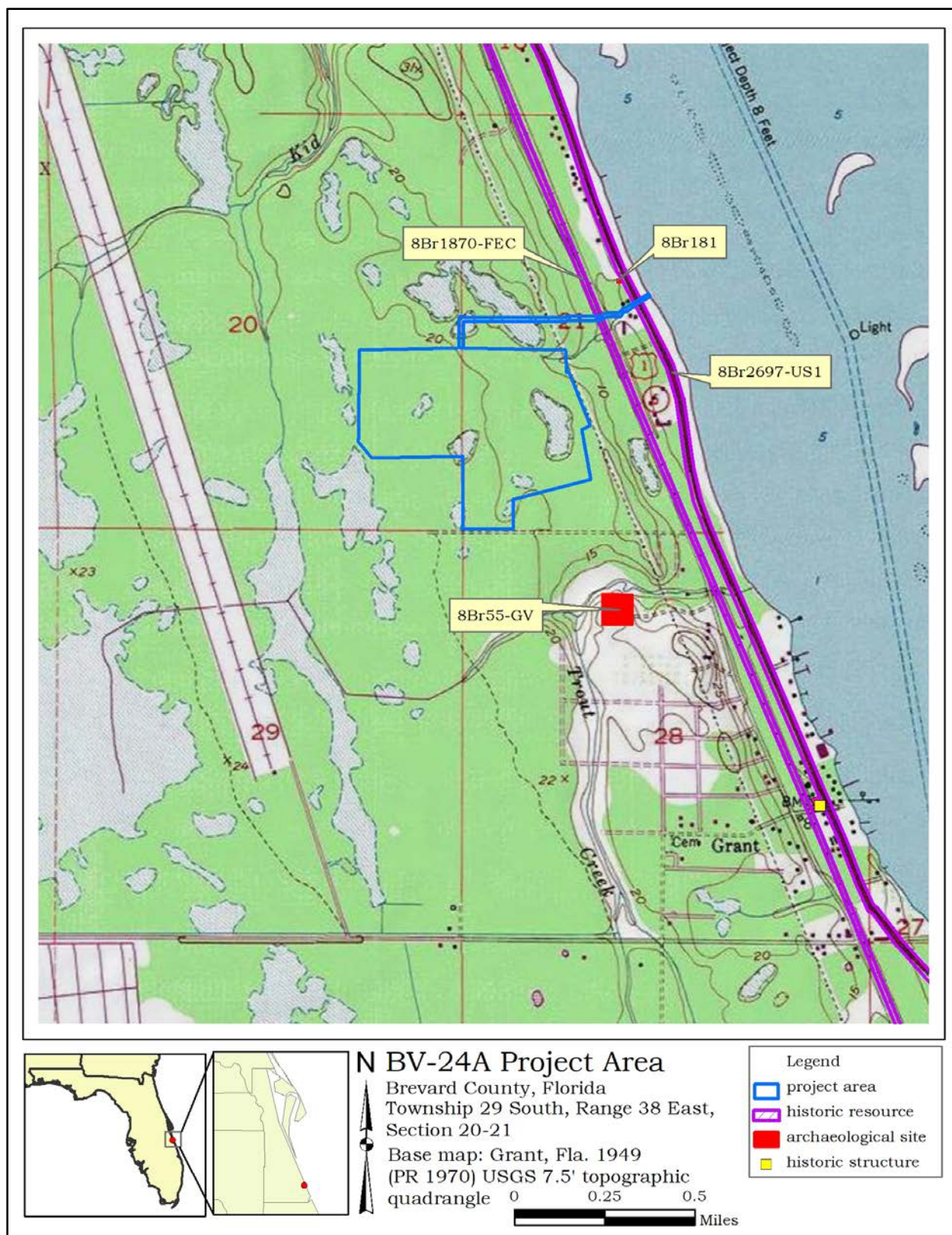


Figure 2. Location of the project area and nearby recorded cultural resources surveys on the Grant, Fla. 1949 (PR 1970) USGS 7.5-minute series topographic quadrangle.

The project would include the 112.4-acre (45.5-hectare [ha]) DMAA location which is inland (*Figure 3*). Connecting it to the ICW would be a 3.8-acre (1.5-ha) pipeline and access easement which would be 60-ft. (18-m) wide and 2,759-ft. (841-m) long. The pipeline and access easement traverses roads, railroads, and utility corridors. Fieldwork within this project area was conducted from October 4 through 7, 2018, by Jessica Flint and Rachel Westfall, Archaeological Field Technicians, and Joseph Culen, Kathleen Goodwin, and Jelane Wallace, Archaeological Field Directors, under the supervision of Gregory Mikell, M.A., RPA, Senior Archaeologist for Panamerican Consultants, Inc.

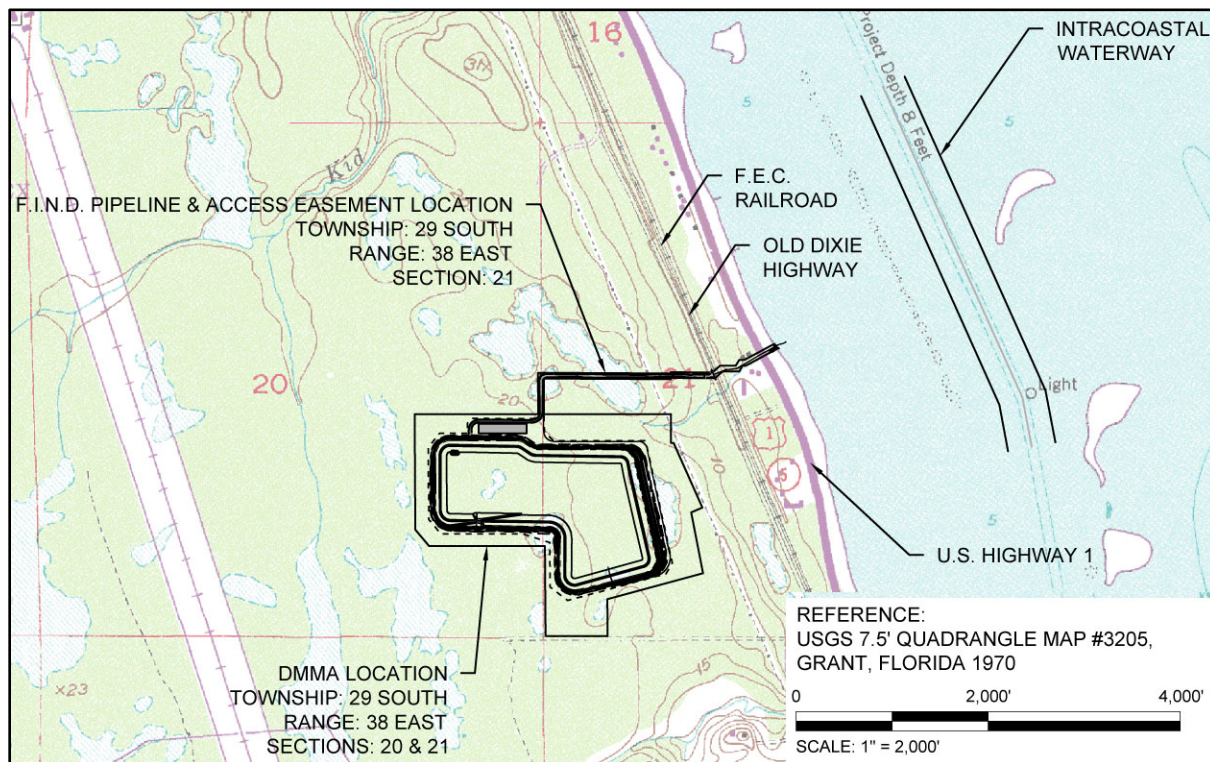


Figure 3. Detail of the BV-24A project area from plans provided by Taylor Engineering, Inc. (2018).

During the course of the survey, one historic archaeological occurrence (AO) was noted and one archaeological site, 8BR3903, was newly recorded. AOs by definition are not significant and the newly recorded site was recommended as ineligible for listing on the NRHP, at least as it is known from being expressed within the current project area, but it likely extends beyond the boundaries of the current survey area and significant features may yet be found elsewhere on the site. In addition to these, previously recorded historic linear resources, NRHP-eligible 8BR1870-Florida East Coast (FEC) Railroad and the NRHP-ineligible 8BR2697-US Highway 1, were also noted in the APE. As long as no alteration to the alignment of the FEC Railroad corridor is proposed, no adverse effect is expected from this project. Based on the results of this field investigation the development of the BV-24A project area will not have an effect on sites or properties that have historical, cultural, or sacred significance, or that otherwise meet the minimum criteria for NRHP listing. Development will not affect any cultural resources that are of local or regional significance. No further archaeological work is recommended within the current project area.

SECTION I

ARCHIVAL RESEARCH

Historic Maps

The land records of the Bureau of Land Management-General Land Office (BLM-GLO), which contain some of the earliest American records for Florida, were examined for the project area. The BV-24A project area is located in the southeast quarter of Section 20 and the southwest quarter of Section 21, Township 29 South, Range 38 East (*Figure 4*). George Mackay, Deputy Surveyor, ran the boundaries and sectioned lands in the second quarter of 1844. Alexander McKay and Antonio Pond served as his chainmen. The field notes and sketches were examined by the Surveyor General, Valentine Y. Conway, and the map was approved March 10, 1845 (BLM-GLO 1845, 2018). This map was fractional and included lands west of Indian River. It was not until over 50 years later that the survey of lands on the east side of the Indian River was completed. From December 17 to 23, 1895, Deputy Surveyor R.B. Burchfield surveyed and sectioned this area (*Figure 5*). The Surveyor General, William H. Milton, Jr., approved this additional map on May 18, 1896 (BLM-GLO 1896, 2018).

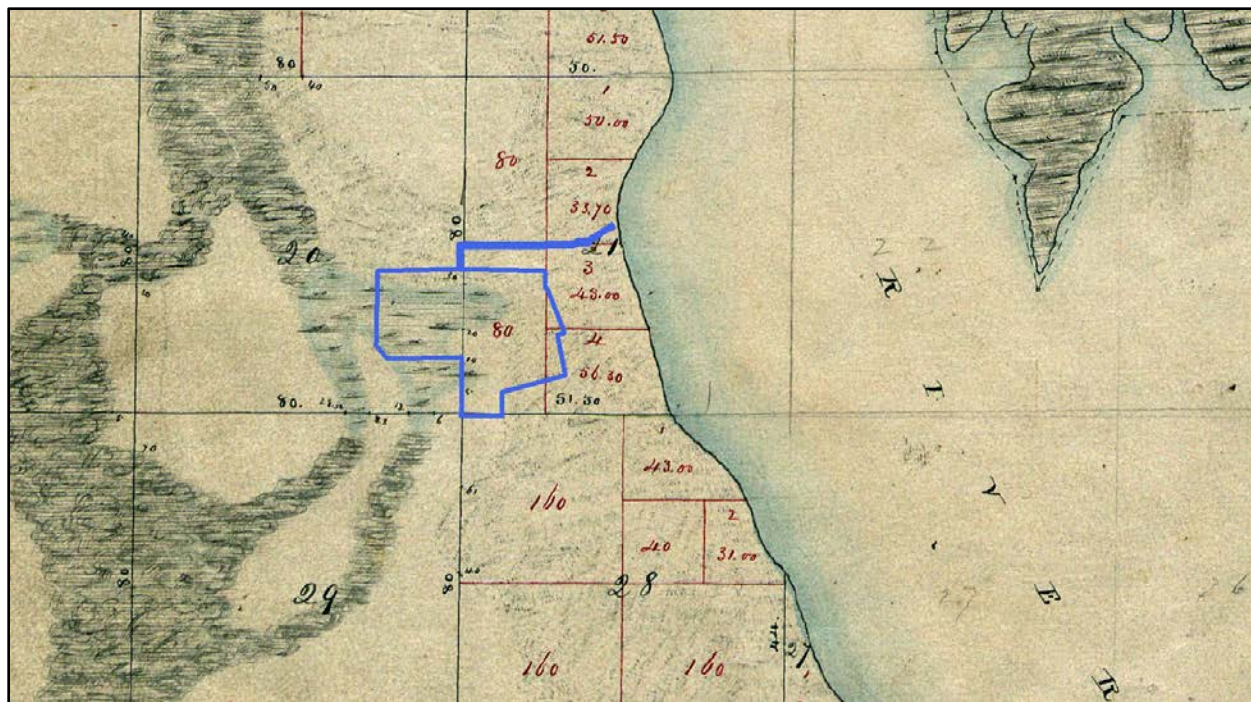


Figure 4. 1845 plat map for Township 29 South, Range 38 East with the project area in blue (BLM-GLO 1845).

The 1845 plat shows marsh wetlands covering much of the project area. No homesteads, roads, fields, or other features are depicted in or near the sections that contain the project area. The most prominent feature is the Indian River, while the barrier island to the east is denoted as 'worthless'. This had apparently changed by 1896, as the plat map shows small homesteads directly east of the project area, on this island. In the immediate vicinity of the project area the FEC Railroad (8BR1870) had been constructed. Some vegetation (likely pines) and a road are

depicted along the river. Noted across the river are homesteads for B.A. Circle, R.A. Conklin, C.W. Horne, Charles Latham, Fred Prang, J.E. Raney, C.A. Smith, and R.T. Smith.

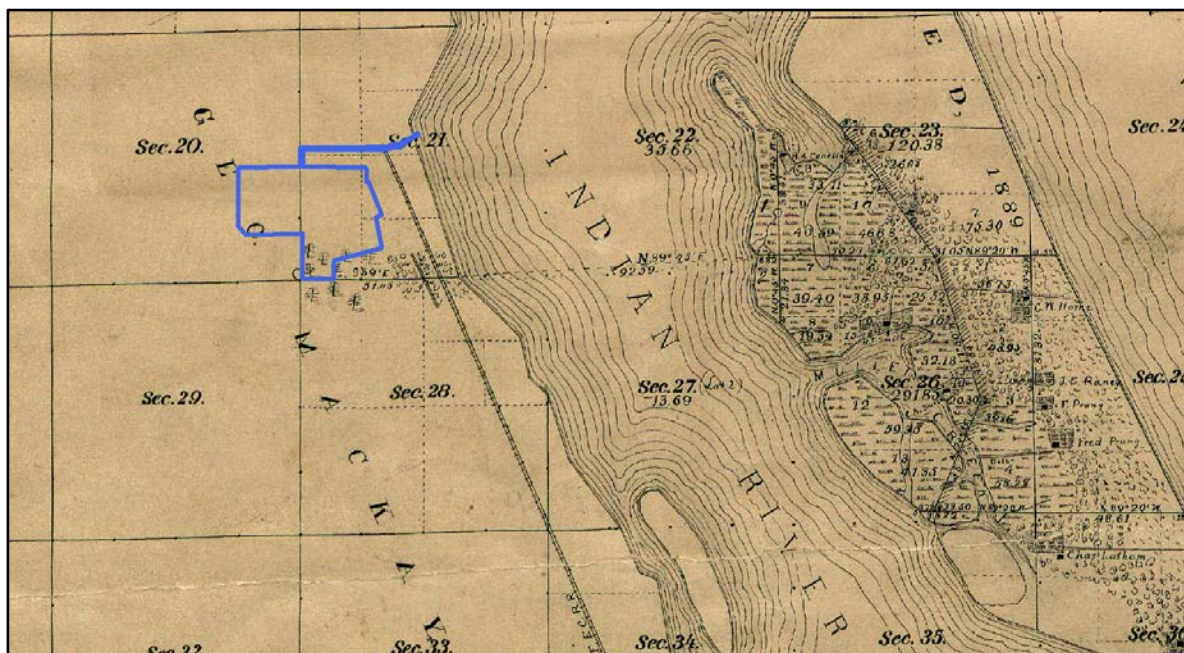


Figure 5. 1896 plat map for Township 29 South, Range 38 East with the project area in blue (BLM-GLO 1896).

A 1936 Florida State Road Department, now the Florida Department of Transportation (FDOT), map of Brevard County was examined as well (Figure 6). This map indicated that US 1 (8BR2697), the FEC Railroad (8BR1870), and State Highway 4 (now Old Dixie Highway) were the main features near the current project area (University of South Florida [USF] 2018a). No structures are indicated within the project area, but the small communities of Valkaria and Grant are to the north and south, respectively.

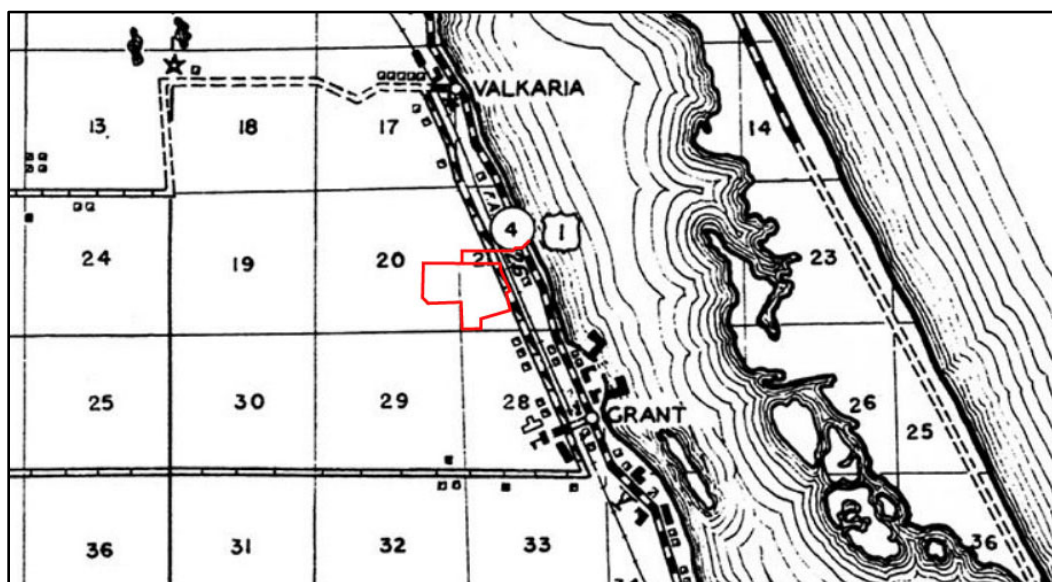


Figure 6. 1936 Florida State Road Department map showing the project area in red (USF 2018a).

Historic Aerial Photographs

A review of historic aerial photographs from the University of Florida, Publication of Archival Library and Museum Materials (PALMM) digital archives (PALMM 2018) as well as those of the USGS (2018) showed the development through time of the project area. The earliest aerial available from these databases dates to 1943 (*Figure 7*). There does not appear to be any structures on the property, but ponds abound. The FEC Railroad (8BR1870), Old Dixie Highway, and US 1 (8BR2697) are crossed by the pipeline easement portion of the project area. Some minor clearing and development have taken place along these transportation routes, but not within the DMMA portion of the project area. It is of note that both US 1 and the shoreline were narrower at this time. The aerial from 1958 shows the ponds within the project area more clearly (*Figure 8*). Development and land clearing are indicated along the pipeline easement, and a utility corridor runs directly east of the DMMA portion of the project area, paralleling the FEC, but further inland. By 1979, the DMMA portion of the project area is much more overgrown (*Figure 9*). Along the pipeline easement several structures can be seen. Also, US 1 (8BR2697) is significantly wider and the shoreline has been built out or silted up out into the Indian River.



Figure 7. Aerial photograph with the project area in blue, taken February 14, 1943 (PALMM 2018).



Figure 8. Aerial photograph with the project area in blue, taken April 24, 1958 (PALMM 2018).



Figure 9. Aerial photograph with the project area in blue, taken November 30, 1979 (PALMM 2018).

Land Use History

The land document records were examined for Sections 20 and 21 of Township 29 South, Range 38 East, which contains the project area (State of Florida 2018). In addition to the records of the State of Florida, the land patent records of the BLM-GLO were also searched for land records within the sections containing the project area (BLM-GLO 2018). During the survey of lands for the government, sections were further sub-divided into fractional sections, blocks, or lots (in the case of uneven parcels). Land patents are the transfer of land from the Federal government to individuals; there are three patents recorded in Section 21. The information for these federal and state land records is summarized below (*Table 1*).

Table 1. Summary Of The Land Records For The Project Area.

Township	Range	Section	Aliquot	Grantee	Date
29 South	38 East	20	E ½ of NE ¼	George M. Robbins	January 9, 1893
			E ½ of SE ¼		
			NW ¼ of NW ¼	Florida Coast Line Canal and Transportation Company	January 18, 1897
			All less E ¼		
		21	Lot 4	George W. Haines	February 13, 1884
			W ½ of NW ¼	William Murray	March 25, 1885
			Lots 1, 2, 3	Lagee Brainard	February 13, 1891
			W ½ of SW ¼	George M. Robbins	January 9, 1893

The patents fell into two different categories: the Land Act of 1820, and the Homestead Act of 1862. The first, the Land Act of 1820, was enacted April 24, 1820 (*3 Stat. 566*) and changed the way public domain lands were purchased by individuals. Rather than through ‘preemption’ or a form of financing through the government where lands were paid for after they were settled, the law was changed to require individuals to pay cash up front for the purchase of acreage at a minimum rate of \$1.25/acre (U.S. National Archives & Records Administration 2018). The patents held by Haines and Murray were such sales. The Homestead Act of May 20, 1862 (*12 Stat. 392*) was signed into law by President Abraham Lincoln and granted lands to any individual who had not taken up arms against the United States, was at least 21 years old or the head of a household, and who would be able to show improvements to their patented lands after five years (U.S. National Archives & Records Administration 2018). The lands held by Brainard were gained through this process. The project area lies on lands patented or owned by Brainard, Haines, Robbins, and the Florida Coast Line and Transportation Company (FCLCTC).

In 1881, the private company, Florida Coast Line Canal and Transportation Company (FCLCTC), was chartered to dredge a channel along the east coast of Florida between the mainland shore and the barrier islands. The state offered land in exchange for the dredging and construction work. Dredging began in 1883 on the portion from St. Augustine to Daytona. In the early 1890s the canal had reached the Hillsboro Inlet. In 1914, the canal was completed and stretched from the St. Johns River in Jacksonville south to Biscayne Bay. Work proceeded in several parts, and to minimize cost and effort, existing bays and waterways were utilized. As originally commissioned, the canal was 50 ft. wide, 5 ft. deep and 340 miles long. The deal granted the FCLCTC a certain amount of acreage in Florida for every mile of canal dredged. Additional revenue was to be raised from tolls to boaters using the canal. Between 1896 and

1914 only \$7,289 was collected. This lack of expected toll monies, coupled with constant maintenance problems due to shoaling and shifting sand, caused the company to change hands several times. Henry Flagler and his East Coast Railroad even owned the canal briefly when it received the dredging company in exchange for debts. In 1923, it went into receivership and the state purchased its holdings (Bland and Johnston 1998; Butler 1995; Crawford 1997). Florida Inland Navigation District is the current incarnation of this organization.

George McLellan Robins (b. January 3, 1862 d. October 8, 1912) was born in Maine, went to college in Worcester, Massachusetts, and eventually settled in Titusville, Florida. He listed his occupation on the census as a farmer in 1900 and a lawyer in 1910; at his death he was employed by the FEC Railroad. Nathan Lagee Brainard (b. October 20, 1843, d. April 23, 1908), was born in Exeter, New York, studied law at the University of Albany, New York in 1867, worked in Chicago, Illinois from 1870-1877 as a lawyer for Brainard & Co., had moved to Malabar, Florida by 1885, and died in Melbourne, Florida. The 1900 census lists his occupation as a farmer. George W. Haines is listed on the patent as a resident of Duval County, but no conclusive records for him could be located though federal and state census records (Ancestry.com 2018).

Previous Investigations

A search of the records of the Florida Master Site File (FMSF) dated July 2018, in Geographic Information Systems (GIS) format, was completed. No resources are listed on the NRHP within a 1.0-mile radius, nor are there any historic bridges, structures, or cemeteries noted within this search area. There are two archaeological sites (*Table 2*), and two linear resources (*Table 3*) that have been recorded (see *Figure 2*) by the three previous cultural resource surveys conducted within a 1.0-mile radius of the project area (*Table 4*). One of these, Survey No. 20495, dealt with the railroad Right-of-Way (ROW) and thus included a portion of the pipeline easement, but did not involve any archaeological testing in the current project area (Janus Research 2013).

The two linear resources are within the pipeline easement. Resource 8BR1870 designates the Florida East Coast (FEC) Railroad. The railroad in Brevard County was variously the following four railways: Palatka and Indian River Railroad (1881-1883), Atlantic Coast, St. Johns, and Indian River Railroad (1883-1886), Jacksonville, Tampa and Key West Railroad (1886-1896), Florida East Coast Railroad (1896-1994) (FMSF Site Form 8BR1870). Its alignment has remained remarkably unchanged and is in continuous use in the vicinity of the current project area (compare *Figures 2* and *5*). Resource 8BR1870 was determined by the SHPO to be eligible for listing on the NRHP beginning as far back as August 21, 2009, and confirmed as recently as September 27, 2017. Resource 8BR2697 designates US Highway 1. Portions of this road replaced the earlier dirt track and road that was Dixie Highway. In Brevard County, US 1 was improved and paved starting in the mid-1920s (FMSF Site Form 8BR2697). In the vicinity of the current project area, US 1 and Old Dixie Highway follow different routes and the alignment for US 1 has changed somewhat (compare *Figures 7* and *9*). The SHPO has previously determined that Resource 8BR2697 is ineligible for listing on the NRHP.

Table 2. Archaeological Sites Located Within a 1.0-Mile Radius of the Project Area.

FMSF No.	Site Name	Site Type	Cultures	Survey No.	SHPO Evaluation
8BR55	NN	Prehistoric shell midden	Prehistoric	-	Not Evaluated by SHPO
8BR181	South of Valkaria	Prehistoric midden(s)	Transitional, 1000 B.C.-700 B.C.; St. Johns, 700 B.C.-A.D. 1500	-	Ineligible for NRHP

Table 3. Historic Linear Resources Located Within A 1.0-Mile Radius of the Project Area.

FMSF No.	Site Name	Time Period	Survey No.	SHPO Evaluation
8BR1870	Florida East Coast Railroad	American, 1821-present; Boom Times, 1921-1929	24358	Eligible for NRHP
8BR2697	US Highway 1/Cocoa Blvd	Twentieth century American, 1900-present; Boom Times 1921-1929	24365	Ineligible for NRHP

Table 4. Previous Surveys Conducted Within a 1.0-Mile Radius of the Project Area.

Survey No.	Title	Date	Authors	Survey Sponsor
8381	Application No. 199300089 (NW-PW) Cypress Creek Development, Brevard County, Florida	1994	Jones, Greg	RNR Properties, Ltd
8554	An Archaeological and Historical Survey of the Grant/ Palm Bay Tower Location in Brevard County, Florida	2001	Sims, Cynthia L.	GeoSyntec Consultants, Inc.
20495	Cultural Resource Assessment Report for the All Aboard Florida Passenger Rail Project from Orlando to West Palm Beach	2013	Janus Research	All Aboard Florida Operations, LLC

Of the archaeological sites, 8BR181-South of Valkaria Site is mapped approximately 100 m (328 ft.) to the north of the current project's pipeline easement portion. It appears to have undergone a hasty salvage excavation as a 'Field Activity' for Brevard Community College in 1975 (8BR181 FMSF site recording form). Excavation pits measuring 4-x4-ft., in an area about to be paved as a parking lot, produced St. Johns Plain, St. Johns Check Stamped, Belle Glades, and Incised Glades pottery, some with red pastes and exhibiting sand, limestone, and shell tempers. Shell tools, a shell bead, a perforated and grooved tiger shark tooth, and midden materials were noted too. The site was interpreted as disturbed midden, affected by road construction and fill material mining. No site map was included in the form and its placement may be questionable since no parking lot appears on the 1979 aerial at the currently mapped location of 8BR181.

SECTION II

ENVIRONMENTAL SETTING

Physiography, Geology, and Hydrology

The BV-24A project area lies within the Atlantic Coast Lowlands of the Eastern Valley physiographic province, just west of the Atlantic Coastal Lagoons physiographic province and within the Central or Mid-Peninsular Zone. The Atlantic Coast Lowlands region includes a low-lying strip along the eastern coast of Florida running from the mouth of the St. Johns River in the north to the Lake Okeechobee area in the south. A series of ridges representing relic beach shorelines and sandbars makes up the Ten Mile Ridge, which exists a few miles to the west of this area (White 1970). The topography is generally flat and exhibits little relief, except for low sand ridges and swales approximately 0-4 m (0-13 ft) high. These shallow dune ridges generally extend north to south and parallel the coast.

The surface lithology of Brevard County in the vicinity of the current project area is of Quaternary age. It represents the Anastasia Formation, which is variably lithified shells and sands mixed with unlithified fossiliferous sand (Scott 1993). This is Pleistocene age (up to 3 to 2 million years old) medium to fine sand and silt deposited during past sea level fluctuations (Lane et al. 1980). Across much of Brevard County the Pleistocene surface deposits of sand represent only a thin veneer, sometimes only 10-ft. (3-m) thick (Lane et al. 1980). Underlying the sands are shell beds. Upchurch et al. (1982) indicate lithic resources sufficient for exploitation by past peoples are scant in Brevard County and that the closest quarry cluster locations are approximately 50 miles (80 km) to the west, namely the Peace River quarry cluster (Upchurch et al. 1982: Figure 20H).

The eastern portion of Brevard County is fed by the Floridan aquifer system, sometimes termed the Shallow aquifer and the Floridan Aquifer. The Floridan aquifer system underlies all of Florida and parts of Alabama, South Carolina, and Georgia, but it does not come to the surface in south Florida (Miller 1986). Its source of recharge closest to the project area lies in Lake and Polk counties in central Florida. Water will rise in artesian wells to a height ranging from a few feet above mean sea level (AMSL) on the coast to more than 130 ft. (39.6 m) in Polk County. The Shallow aquifer is a non-artesian aquifer present throughout much of the state. Due to the presence of a better supply of ground water from other aquifers in most areas, it usually is not important; however, the Shallow aquifer is the main source of ground water in south Florida, including Brevard County (Hyde 1975). The nearest water source to the project area is the Indian River, which runs to the east of the project area. Several smaller canals and ditches cut through the pipeline easement portion of the project area and there are several ponds within the DMMA portion of the project area.

Present Climate and Vegetation

The current climate of Brevard County is characterized by long, humid summers and mild, dry winters. The climate is moderated somewhat by the Indian and Banana rivers and the Atlantic Ocean. Temperatures fluctuate throughout the year and fluctuate in winter with an average of 60 to 70 degrees Fahrenheit (F) and summer commonly sees 80- to 90-degree (F) temperatures.

Occasional frost threatens the citrus crops in the area, and is due to local low temperature occurrences rather than generalized freeze conditions. The rainy season occurs from June through October, when the county receives 65 percent of its annual precipitation. Rainfall typically occurs in the form of afternoon and evening showers and thunderstorms. Prevailing winds are generally from the north and east, except during March, when the winds are primarily from the south. Tropical storms can affect the county from June through mid-November. Although Brevard County is located along Florida's eastern peninsula, it is less frequently impacted by direct hurricane landfalls than portions of the Panhandle or South Florida (U.S. Department of Agriculture [USDA] 1974, 2018).

The BV-24A project area is located within a rural setting with some residential and commercial development along the major transportation routes (Old Dixie Highway and US 1), but the majority is undeveloped lands. On the Indian River and US 1, the land is built up with fill, and vegetation consists of Australian pines, mangroves, Brazilian Peppers, saw palmettos, and cabbage palms. Along the pipeline easement there is a drainage ditch, the built-up railroad corridor, a cleared utility corridor, and paved sections with building debris (*Figure 10*). The DMMA area shows less disturbance and is scrubby flatwoods with depressional wetland ponds (see Cover). Vegetation in this area consists of pines, oaks, palmetto, and grasses.



Figure 10. Project area, clockwise from upper left corner: Indian River from pipeline easement, facing north; pond in southern portion of DMMA project area, facing west; push-piles and powerline corridor crossing pipeline easement, facing north; paved parking in pipeline easement, facing southeast (PCI October 2018).

Soils

Two soil associations are mapped for the project area. The first, along the shoreline and the pipeline easement is the Felda-Floridana-Winder Association. This is grouped under the heading “Soils of the St. Johns River Flood Plains” and tends to contain poorly to very poorly drained soils. The second soil association is the Paola-Pomello-Astatula association, which is grouped under the heading “Soils of the Sand Ridges.” These soils tend to be sandy throughout and moderately to excessively well drained. There are eight specific soils mapped within the project area (USDA 1974, 2018). These tend to be sandy throughout with a dark, organic subsoil. The specific soil types mapped for the project area are listed and pictured below (*Table 5*). The majority of the DMMA portions of the project area is covered by either Immokalee or Pomello sands, which are not well drained.

Table 5. *Soil Types Within The Project Area.*

Unit No.	Soil Type	Slope	Drainage	Location
9	Canaveral-Anclote complex	Gently undulating	Somewhat poorly drained	Ridges and dunes on marine terraces
28	Immokalee sand	0 to 2 percent slopes	Poorly drained	Flatwoods on marine terraces
36	Myakka sand	0 to 2 percent slopes	Poorly drained	Flatwoods on marine terraces
38	Myakka sand, depressional	0 to 2 percent slopes	Very poorly drained	Depressions on marine terraces
43	Paola fine sand	0 to 8 percent slopes	Excessively drained	Ridges and knolls on marine terraces
49	Pomello sand	0 to 5 percent slopes	Somewhat poorly drained	Ridges and knolls on marine terraces
56	St. Lucie fine sand	0 to 5 percent slopes	Excessively drained	Ridges, dunes, and knolls on marine terraces
67	Tomoka muck, frequently ponded	0 to 1 percent slopes	Very poorly drained	Depressions on marine terraces

SECTION III

CULTURE HISTORY

Prehistoric Context

Native Americans have inhabited Florida for at least 14,000 years. Evidence from the earliest periods is relatively uniform across the northern reaches of the state, while later periods exhibited differing cultural traits in the various archaeological areas around the region. Jerald Milanich and Charles Fairbanks (1980) synthesized the earlier work of Gordon Willey, John Goggin (1947; 1949), Irving Rouse, Ripley Bullen, and others in Florida. Milanich (1994) updated and revised much of the work he and Fairbanks had presented earlier. Their chronology will be followed in this overview, which will serve as a framework for understanding prehistoric occupation in the region.

The BV-24A project area is situated in the southern margins of the East and Central archaeological area as defined by Milanich (1994) and Milanich and Fairbanks (1980). This region covers the northern half of the Atlantic Coast of Florida and the central region between north-central Florida and the Okeechobee Basin. The East and Central archaeological region of Florida is one of the largest archaeological regions found in the state. Although the area encompasses land that stretches from the eastern boundary with northern Georgia to the northern boundary of the Kissimmee River drainage (approximately the southern Indian River County boundary) and from the east coast of Florida to within 30 miles of Tampa Bay, the archaeological region is not a reflection of a unified culture area, but rather encompasses at least four distinct culture variations. Seven cultural regions border the extensive East and Central archaeological region creating distinct cultural areas within the region based on the mixing of archaeological traditions with neighboring culture areas. The primary trait by which this archaeological region is distinguished is the presence of St. Johns pottery, distinguishable from other pottery types by the inclusion of varying amounts (although typically a large amount) of sponge spicules in the paste. The four cultural areas found within the East and Central archaeological region include the St. Johns Heartland, Northeast Coastal Florida, Indian River Area, and the Central Lakes District (Russo 1992). The project area lies within the Indian River Area, which will be discussed at more length at the end of this section.

Paleoindian Stage (12,000 to 7500 B.C.)

The earliest documented prehistoric cultural manifestation in Florida is the Paleoindian Stage. It began approximately 12,000 B.C. and persisted until 7500 B.C. The earliest evidence for human occupation of Florida comes from the investigations at Little Salt Springs (Clausen et al. 1975; Clausen et al. 1979) and at Warm Mineral Springs (Royal and Clark 1960), where human skeletal remains have been radiocarbon dated at approximately 10,000 B.C.

Paleoindians lived a nomadic lifestyle based on hunting and gathering, including the hunting of the large, now extinct, Pleistocene animals like the mastodon and mammoth. Excavations of

Paleoindian sites have contributed to the development of increasingly sophisticated models of early hunter-gatherer settlement that consider the adaptive responses of human populations to both short and long-term environmental change. These models suggest that Paleoindian groups in Florida may have practiced a more sedentary lifestyle than had previously been believed (Daniel and Wisenbaker 1987).

The environmental conditions in Florida at the close of the Pleistocene were much different from those of Florida today. The ice fields of the Wisconsin glacial period retained large quantities of the earth's available water. This resulted in a worldwide reduction of sea levels. Florida's west coast extended out as much as 70 miles from its present location (Fairbridge 1974). Scrub oak woodlands separated by patches of grassland prairie covered much of peninsular Florida. Temperatures were cooler and the climate was drier (Watts and Hansen 1988). Freshwater may have only been available from aquifer-fed lakes and sinks and shallow seasonal ponds (Clausen et al. 1979). Paleoindian groups were probably small groups subsisting by gathering wild foods and hunting both now extinct Pleistocene megafauna and several smaller animal species. By late Paleoindian times, the large Pleistocene animals had disappeared, the climate changed and the sea levels rose, and the large lanceolate points considered diagnostic of this stage were replaced by smaller side and corner notched varieties. The Paleoindian Database of the Americas (PIDBA) only notes four points dating to this time period having been found in Brevard County (PIDBA 2017).

Archaic Stage (7500 to 500 B.C.)

The Paleoindian Stage is followed by the Archaic Stage, which began approximately 7500 B.C. The Archaic has been subdivided into three periods: Early, Middle, and Late, based primarily on certain types of stone tools (Bullen 1975; Purdy and Beach 1980). The Early Archaic dates from 7500 to 5000 B.C., the Middle Archaic from 5000 to 3000 B.C., and the Late Archaic from 3000 to 500 B.C. (Milanich 1994). Environmental and cultural changes mark the introduction of this stage. By 7500 B.C., sea levels fluctuated near present levels and the Pleistocene/Holocene transition was complete (Anderson et al. 1996). The middle Holocene Hypsithermal (6000 to 3000 B.C.) was a period of hotter, dryer conditions across the peninsula. A return of wetter conditions and a corresponding fluctuation in the level of the Floridan Aquifer resulted in the appearance of vast swamps and extensive bayheads. By 3000 B.C., the scrub oak - prairie vegetation cover of post-Pleistocene Florida had given way to extensive stands of slash and longleaf pine, cypress swamps, and bayheads (Delcourt and Delcourt 1987).

These environmental changes had an impact on the ecological zones important for prehistoric groups. Archaic populations hunted, fished, and collected plants and shellfish. Acorns and other hardwood nuts were also harvested. Settlement patterns and social organization focused on effectively exploiting seasonally available resources. Larger populations could congregate at those times of the year when plant and animal resources were locally abundant and separate into smaller social units during less plentiful times. Seasonality is reflected in both site function and settlement patterning. Centralized base camps or villages, defined by the number and diversity of artifacts present, are habitation sites for larger social

groups. Less extensive, limited activity/extractive camps and quarry sites suggest resource use by fewer people for shorter periods.

The Late Archaic period (3000 to 500 B.C.) is best described as a continuation of Middle Archaic life ways in an environment similar to that of Florida today. Late Archaic populations exploited inland, riverine, and coastal resources and Late Archaic sites are more often coastal or riverine shell middens, small inland sites, or single components of larger, multi-component sites. Recent studies have indicated that there may not have been a population shift during the Late Archaic as previously believed (Milanich 1994). Coastal and riverine wetland areas could have supported much larger, more sedentary populations than would the interior forests. People did not move, but population grew more quickly in areas that were best able to support more people. By around 2000 B.C., fiber-tempered pottery known as Orange ceramics began to be produced (Bullen 1972). Orange ceramics are generally crude, thick wares made with Spanish moss and other vegetation used as a tempering agent. The introduction of this new technology did little to change the settlement and food-gathering strategy of Late Archaic peoples. It did result in an increase of archaeological evidence for this period, but no dynamic cultural changes have been documented.

During the late Orange phase, also known as the Florida Transitional period (1200-500 B.C.), changes in pottery and technology occurred in Florida that marks the beginning of the Woodland Stage. A decline in the use of fiber (Spanish moss) and an increase in the use of sand as a tempering agent in ceramics occurred during this time. The temperless St. Johns ceramic series also begins to appear and three different projectile-point styles, basally notched, corner-notched, and stemmed, all occur in relatively contemporaneous contexts. This profusion of ceramic and tool traditions is considered indicative of increased social interaction between the various regions of Florida and the Southeast. Other changes include the possible use of domesticated plants, such as maize and some gourds (Milanich and Fairbanks 1980).

Woodland Stage (500 B.C. to A.D. 1513)

These four cultural areas have the presence of St. Johns pottery in common. The chronology for St. Johns pottery is divided into two parts, St. Johns I (500 B.C.–A.D. 800) and St. Johns II (A.D. 800-1565). The inception of St. Johns II is marked by the production of St. Johns Check-stamped, and the terminus of this period is marked by the arrival of the Spanish. The two St. Johns periods are further subdivided based on adoption of incising techniques, red-slipping, and the presence of trade wares.

Indian River Area. Goggin (1952) and Rouse (1951) believed that the Indian River Area, from its northern headwaters to its southern boundary near the St. Lucie Inlet, was remarkably different than the St. Johns heartland area found to the north. The lack of corn production and different social linguistic and religious customs were observed by the initial Spanish observers who came to the area. Archaeologically, this area is differentiated by an increase in sand-tempered pottery, although St. Johns (spiculate) wares are still dominant. Rouse (1951) gave this area a slightly different chronology termed Malabar and separated this chronology into two parts, Malabar I and Malabar II, based on similar variations as those found within the St. Johns heartland area (*Table 6*). Due to the lack of differentiation found archaeologically, many

archaeologists did not follow Rouse's example and grouped this area as a variation of the St. Johns culture region. In general differences extend to burial practices and site types. Although snails are the common midden type located in the heartland, mussels are the preferred shellfish middens located in the Indian River area. In addition, evidence suggests (Russo 1986) that the Indian River people inhabited inland areas during winter months, unlike those groups located to the north.

Table 6. Representation Of The Malabar And St. Johns Region Chronologies.

Rouse (1951)	Timeline	Milanich (1998)
Orange	1000 B.C. – 500 B.C.	Late Archaic
Malabar I (around 1 B.C.)	500 B.C. – A.D. 100	St. Johns I
Malabar I' (A.D. 1-1000)	A.D. 100 – 500	St. Johns Ia
	A.D. 500 - 750	St. Johns Ib
Malabar II (A.D. 1000-c.1763)	A.D. 750 - 1050	St. Johns IIa
	A.D. 11050-1513	St. Johns IIb
	A.D. 1513-1565	St. Johns IIc

Clarence B. Moore was a wealthy Philadelphia businessman who was also an amateur archaeologist. In his steamboat the Gopher, Moore excavated many sites in the south, including those in Florida and Arkansas. During his tenure along the Florida waterways, Moore excavated sites along the Indian and Banana Rivers near Cape Canaveral. The first ceramic sequence for the area was created using the data that Moore had collected during his excavations. Eventually, in the late 1940s, Goggin would refine the chronology of the area into the Malabar Sequence (Goggin 1947). Rouse (1951) would eventually further refine this sequence, eliminating a distinction between Malabar IIa and Malabar IIb in Goggin's series and the inclusion of a Malabar I' which is marked ceramically by the development of chalkyware.

Malabar I. This period is marked by St. Johns pottery replacing the fiber-tempered ware of the Late Archaic/orange period. Sand tempered plain sherds, sometimes referred to as glades ware or glades gritty ware is also present. Most wares are undecorated but some incised St. Johns wares are present (Rouse 1951).

Malabar I'. This period is similar to Malabar I period, with the exception that St. Johns incised pottery is not represented and that some Belle Glade wares are present. The most prevalent type is St. Johns Plain (Rouse 1951).

Malabar II. This period continues the trend of few incised wares. The most diagnostic feature of this period is the presence of St. Johns Check Stamped (Rouse 1951).

Goggin and Rouse both note the similarities and differences between the Indian River Area and the surrounding areas, essentially noting that the area is a confluence or admixture of the Glades and the St. Johns River areas. Rouse (1951:69) and Goggin (1952) also note that the Indian River culture “appears remarkably nondescript” compared to surrounding cultural areas. Although Goggin noted that this may be a lack of data, Rouse (1951:69) asserts that this is a real “phenomenon”.

Milanich (1994) calls this area a transition zone or regional variation and notes that Rouse's Malabar I corresponds with St. Johns I, and Malabar II with St. Johns II, ceramic

chronologies. Milanich (1994) and others (Jordan et al. 1963) note that Rouse (1951) identified the sand tempered plain wares as Belle Glade or Glades wares, when these wares were not necessarily indicative of southern influences, but of the natural sand content of the clay in the area. Cordell (in Milanich 1994) notes that the ceramics she sampled from sites in southern Brevard show continuity in manufacture from the Orange period through the Malabar II period, with an increase of sand tempering occurring in all sites during the Malabar I period. The continuity of the area indicates that the Indian River region appears to be a discrete culture area; differentiated from the St. Johns area and the Glades culture area to the south. However, the similarity in ceramics to the St. Johns area has led many archaeologists to use the St. Johns ceramic chronology when describing the area.

St. Johns I. St. Johns ware, both plain and incised, is the dominant ceramic during this time period, although there are still remnant sand and fiber tempered wares. St. Johns pottery is distinguishable by a heavy amount of sponge spiculate tempering. There are some Deptford-like decorations (Milanich 1994).

St. Johns Ia. The dominant pottery type for this period is St. Johns plain, with some Swift Creek, late Deptford pottery copies or originals traded to the area. Dunns Creek Red is also present (Milanich 1994).

St. Johns Ib. The dominant pottery type remains St. Johns plain wares, with some Dunns Creek Red and Weeden Island influenced wares present, especially in sacred contexts (Milanich 1994).

St. Johns IIa. This period marks the first appearance of St. Johns Check Stamped pottery in both secular and sacred contexts. This period also marks the increase in size and number of mound and village sites, indicating an increase in population (Milanich 1994).

St. Johns IIb. The dominant pottery remains St. Johns Check Stamped, with some Fort Walton and Safety Harbor pottery and Southeastern Ceremonial complex items usually found in sacred site contexts (Milanich 1994).

St. Johns IIc. St. Johns Check Stamped pottery remains dominant, but this period marks an increase in European artifacts and trade goods in both sacred and secular contexts (Milanich 1994).

Another distinguishing factor of the Indian River area is the different subsistence practices of the area as opposed to the more northern St. Johns people. Instead of horticulture, the abundant wetland, marine, and estuarine resources fed large populations of people. Village or groups of families would occupy larger sites, with surrounding campsites being used for special-uses such as procurement of locally available resources. It is thought likely that the people who inhabited the Indian River region would travel from inland to coastal areas as seasons warranted for logistical subsistence; with further separation by individuals to campsites for gathering of specific resources. Site types, although similar to St. Johns, are also distinguished by the dominant faunal material. This difference is mostly determined by locally available resources, such as the dominance of freshwater mussel middens in the Indian River

area as opposed to the dominance of snail in middens in the St. Johns area. But this is explainable by the dominance of marsh resources in the Indian River area as opposed to the riverine, lake, and swamp resources of the St. Johns region (Russo 1992).

Burial patterns are similar to the St. Johns region, including sand burial mounds with a variety of internment types (including group burials, individuals, flexed, extended, bundled, all with few grave goods). Unlike the St. Johns area, however, non-mounded burials have been observed in the upper St. Johns River valley (including the Gauthier site-8BR193 and Cemetery Hammock-8BR252) (Russo 1992).

Contact/Protohistoric Period (A.D. 1513 –1730)

The arrival of the Spanish to Florida during the early 1500s initiated a period of profound social and cultural upheaval among the indigenous aboriginal cultures inhabiting the state. Many traditional ways of life were destroyed or abandoned, while the remaining cultures were modified by the acquisition of Spanish traits and adaptation to the presence of a new and dominant culture. Spanish explorer Hernando de Soto had noted that the fertile environment of Florida supported a population of 7,000 to 10,000 (Milanich 1995). Little more than a century after contact, the native populations of Florida had declined drastically due to disease and enslavement.

The Indian River area was inhabited by the Ais Indians at the time of contact with Europeans (Milanich 1994). An early contact with the Ais in the Indian River area occurred in 1565 when the Frenchman, Jean Ribault, rescued two sailors who had been captives of the Ais for fourteen years. A major tribe with several subgroups, the Ais had political ties with other groups in the region including the Calusa to the west, Timucua to the north, and Tequesta to the south. The Ais subsisted primarily by hunting, fishing, and gathering, with a large portion of their diet composed of oysters and other shellfish, fish, turtles, palm berries, and sea grapes. Similar to the Calusa of southwestern Florida, the Ais had a complex sociopolitical system with a paramount chief, who held power over local village chiefs. Tribal alliances were often cemented by rather tenuous elite marriages, and as marriages dissolved, alliances ceased as well. Like their neighbors to the south, the Ais became proficient wreckers, recovering precious metals and other European goods from the numerous Spanish shipwrecks that occurred along the coast. Unlike the Timucuan-speaking peoples to the north, the Ais were more like their neighbors to the south, and they never had adopted corn and field agriculture.

The Ais population density was greatest along the estuaries, rather than on the beaches (Dickel 1992). This group existed as a cohesive political entity for 150 years after European contact, which began with Spanish settlement of Florida in 1565. The Ais maintained a distant relationship with the Spanish officials in St. Augustine. Spanish mission outposts among the Ais were infrequent and largely unsuccessful, which probably explains the persistence of these peoples well into the eighteenth century. Ultimately, attack from the north by invading Indians and Englishmen literally drove the Ais into extinction. The Yamassee and Creek Indians foraged in to the peninsula, and by 1750, Creeks were reported on the Indian River. By 1760, the only residents of the Indian River region were several Spaniards, who annually established fishing quarters along the coast, and a few Indians (Rouse 1951).

Historic Context

When the British took Florida from the Spanish in 1764, more than 3,000 colonists left the region. The English offered land grants to encourage settlement, and a few plantations were established between 1763 and 1775 along the Indian River; however, the outbreak of the American Revolution altered the development of British Florida (Schene 1976). During the revolution, Florida remained loyal to the crown, and therefore English loyalists seeking political asylum came to Florida. The population of east Florida swelled from 3,000 in 1776 to 17,000 by 1782. The British government distributed many land grants at this time (Adams 2003). By 1784, Spain had reclaimed the Florida territory. With the departure of the British, the population of East Florida decreased and numerous plantations were abandoned. To encourage agriculture in Florida, the Spanish began issuing land grants to anyone who would swear an oath of allegiance to Spain, even non-Catholics (Tanner 1963). There were seven land grants in what would become Brevard County: Acosta, Delespine, Fleming, Fontaine, Garvin, Pouchard, Segui (Shofner 1995:31). The Delespine Grant was a major tract of land privately held in the Titusville area. Governor Jose Coppinger awarded the tract to Joseph Delespine in 1817. The grant originally encompassed 43,000 acres and was one of the largest grants awarded by Spain (although the 1852 plat map notes an area within Township 22 South, Range 35 East as encompassing only 13,009.74 acres) (Adams 2003). The Fleming Grant was at the southern end of Brevard County, encompassing mainly lands now in Indian River County. In 1816, George Fleming had been awarded these lands. Fleming, a commissioned captain of the British military, was loyal to the Spanish crown during the uprising of 1812. Fleming established cash crops such as sugar cane and citrus on his 20,000-acre land grant along the Indian River, near present-day Sebastian (Tebeau 1980).

Florida became a U.S. territory in 1821 and was granted statehood in 1845. Fort Ann was established in 1837-1838, in the Titusville area of northern Brevard County during the Second Seminole War. The fort was used to protect the transportation route between the Mosquito Lagoon and the Indian River. This fort formed the original settlement in northern Brevard County. To the south of Brevard County, the military constructed several forts. Among these were Fort Pierce, also established in 1838, approximately 4 mi. (6.4 km) south of the Indian River Inlet and Post No. 2, established in 1839 approximately 18 miles (29 km) northwest of Fort Pierce, in what is now Indian River County. Fort Pierce and Post No. 2 remained in operation until 1842 when the war ended. The Armed Occupation Act of 1842 led to the settlement of the area along the Indian River, primarily on the river's west side near the abandoned Fort Pierce and as far south as the Jupiter Inlet (Van Landingham 1988). In anticipation of renewed hostilities with the Seminoles, Post No. 2 was reactivated in 1849 and renamed Fort Vinton. Also, Fort Capron (8SL41) was built in 1850 to replace Fort Pierce, which had burned down in 1843. This fort was located on the Indian River north of Fort Pierce, where the historic Saint Lucie Village is located today. A military road from Fort Capron running past Fort Vinton and eventually to Fort Brooke (Tampa) was, for some time, the only road connecting the east and west coasts of Florida. Both Fort Vinton and Fort Capron were abandoned at the end of the Third Seminole War in 1859 (St. Lucie Historical Society, Inc. 2018a, 2018b; Van Landingham 1988).

The Second Seminole War (1835-1842) had a deleterious effect on new settlement in the region. To encourage settlement in the middle portion of the territory after the war, the Armed Occupation Act of 1842 was passed. Under this act, title to 160 acres of land could be obtained by any adult male who would construct a habitable dwelling, bring at least five acres under cultivation, and live on this land for five years (Tebeau 1980). During the Civil War (1861-1865), the Indian River, as was most of Florida's coastline, subjected to blockades. Goods and vessels attempting to run the blockade were seized by the Union navy. After the war, settlers began to trickle back into the area. The Homestead Acts of 1866 and 1876 were passes as a further incentive to settlers. The 1866 Act gave newly freed African-Americans and loyal Euro-Americans the opportunity to receive 80-ac (32-ha) tracts in Florida. However, former Confederates were not eligible to receive homesteads until the Act of 1876, when for the next 12 years the same lands were open to unrestricted sale (Tebeau 1980). Brevard had only 139 residents in 1850 (Shofner 1995).

Colonel Douglas Dummett was an influential settler in the early 1800s, who developed the citrus industry in Brevard County, which was then called Mosquito County (*Figure 11*). Dummett grafted the Spanish sour-orange trees with the sweeter variety to produce a tree that was both hardy and sweet. This would later become the area where Indian River citrus was grown (Adams 2003). It was in 1844 that St. Lucie County was carved from Mosquito County

and in 1855 it was renamed for State Comptroller, Theodore Washington Brevard. The county seat was in the north, in Titusville. Transportation in the county was mostly along the coastline, in the form of steamboats or other vessels, as inland travel proved much more difficult, so the bulk of settlement was along the coast.

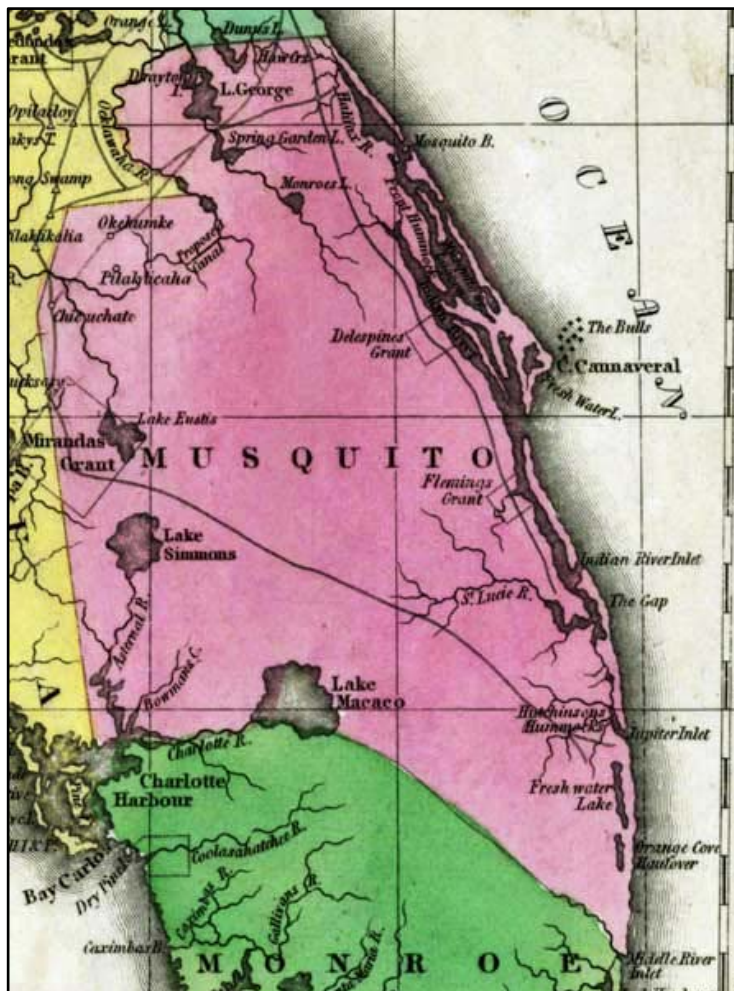
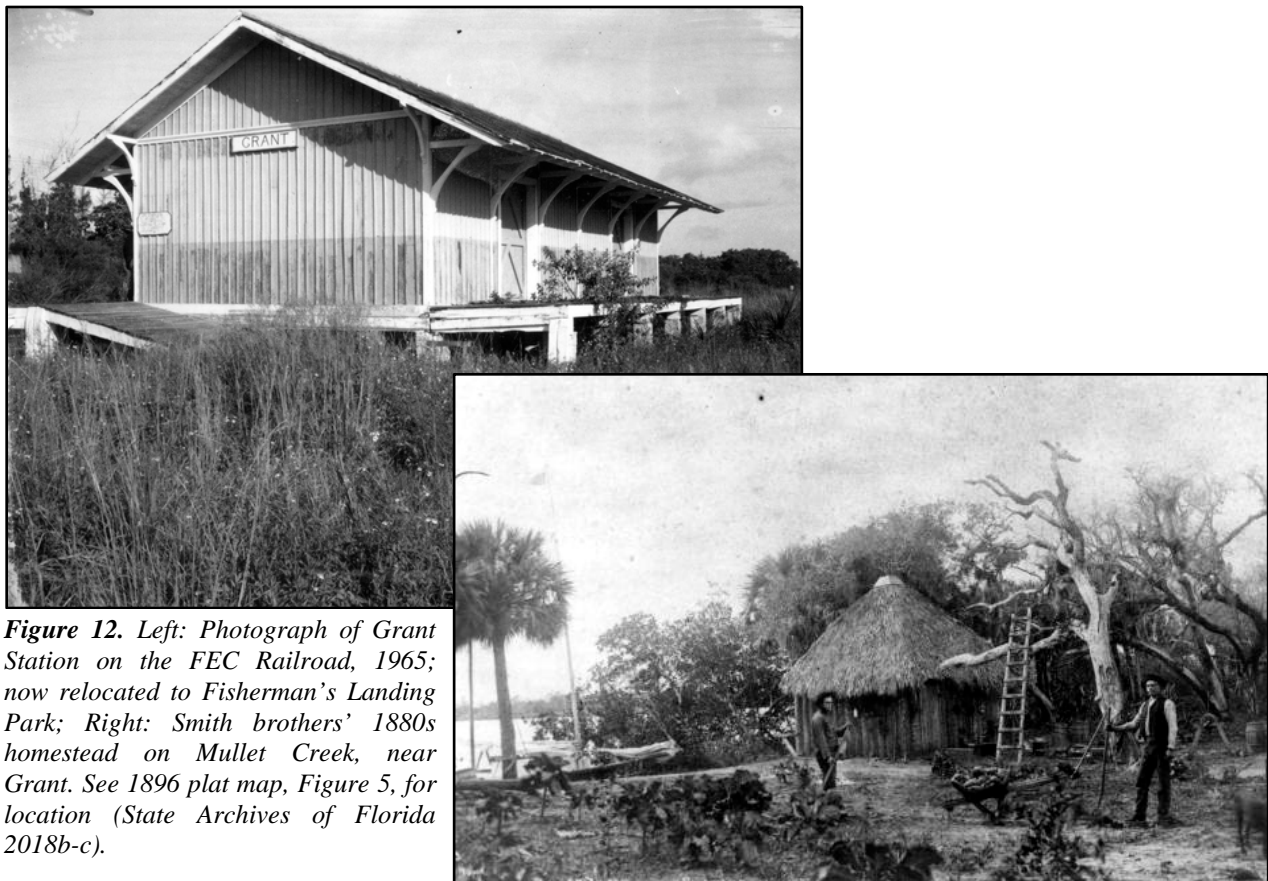


Figure 11. 1827 map showing Musquito County, Florida (USF 2018b).

There are two small communities on the southern coast of Brevard County which are immediately adjacent to the current project area: Valkaria and Grant. Grant obtained a post office on August 4, 1891, with Edwin Nelson as its first postmaster, providing service to an estimated 30 individuals. Valkaria, originally intended to be called Valkyries by founding settler Ernest Svedelius, received its post office and name (through clerical error) in 1890. Svedelius worked for the Ocean Fish Company, which operated out of Valkaria, and in 1913 registered one of the first automobiles in the area: a 25 horsepower Reo (State Archives of Florida 2018a). Edward Cecil was the community's first postmaster and it was estimated that he would serve 50 people in the small community. Steamboat along the Indian River served as transportation for the area prior to the arrival of the railroad. What would become Flagler's FEC railroad passed through both small communities, with Grant having a station stop opened in 1893 (*Figure 12*). Around that same time a school and Grant Grocery Store (8BR1710-Jorgensen's General Store) were opened in Grant, the latter begun by Danish immigrants. Homesteads were very basic at first but over time more people came to the area with increases in opportunity, transportation, and industry (*Figure 12*). Within a decade George W. Scobie, a pioneer of the fishing industry in the area, built his fish house on the coast and by the 1890s there was a fishing fleet in Grant. In 1909, Brevard County planned for the construction of a public dock in Grant. Fish were packed in barrels and shipped on ice via the FEC Railroad. Other industries included citrus cultivation, logging and the turpentine harvesting, oyster and clam harvesting, extraction of tannic acid from palmettos, land drainage and development for speculation, as well as cattle and hog ranching. In fact, from his ranch house in Valkaria, early settler W.L. Graddik owned and oversaw 75,000 acres of cattle lands in southern Brevard County (Town of Grant-Valkaria 2018; Shofner 1995).



SECTION IV

RESEARCH DESIGN

A research design is a plan to coordinate the investigation from the inception to the completion of the project. This plan should minimally account for three things: it should make explicit the goals and intentions of the research, define the sequence of events to be undertaken in pursuit of the research goals, and provide a basis for evaluating the findings and conclusions drawn from the investigation.

Objectives

The goal of this archaeological and historical survey was to locate and document the existence of any evidence of potentially important historic or prehistoric occupation or use within the project area. These activities typically manifest as archaeological or historic sites, historic structures, or archaeological occurrences (defined as fewer than three non-diagnostic artifacts within a 30-m [98-ft.] area) (DHR 2017). Cultural resource assessment surveys attempt to locate evidence of any past human activities that are archaeologically discernible with current investigative techniques. The techniques employed must be able to identify the kinds of sites expected in the region, yet be cost effective, as not to expose the public to excessive expense.

The research strategy was composed of four interrelated and roughly sequential components: a background investigation, a historic document search, the formulation of an aboriginal site location predictive model, and the field survey. A review of the relevant archaeological literature produced a summary of previous archaeological work in east-central Florida and a discussion of previous survey work undertaken near the project area. The FMSF was checked for any previously recorded sites within the project area and to provide an indication of the prehistoric settlement and land-use patterns for the region. Current soil surveys, vegetation maps, and relevant literature were consulted to provide a description of the physiographic and geological region of which the project area is a part.

The historic document search involved a review of both primary and secondary historic sources. Relevant historical sources were checked for any information pertaining to the existence of historic structures, sites of historic events, and historically occupied or noted aboriginal settlements within the project limits. A prehistoric site location predictive model for the survey tract was formulated based on the variables of soil drainage characteristics, distance to permanent sources of potable water, and topography (relative elevation).

Archaeological and historical surveys in Florida have demonstrated that certain environmental locales were preferred for prehistoric and early historic people. Predictive models enable the researcher to assess potential for habitation in the area of the site based upon the co-occurrence of relevant environmental variables. The relative importance of each of these variables depends upon the composite environmental setting. In a sand hills environment, for example, a majority of the known sites are located near a water source on a ridge slope. If a water source is not located in the vicinity, the probability of site occurrence decreases dramatically. Water will not be the determining factor, however, if another resource with more limited distribution, such

as stone for tool manufacture, is available. In areas of relatively low relief and abundant wetlands, areas of higher elevation relative to the surrounding terrain would be considered more likely to contain sites.

Expected Results

The most common prehistoric sites recorded in eastern Brevard County are typically shell mounds and middens, which are the result of a subsistence based on maritime resources. These sites typically consist of ceramics, shell, bone, and tools modified from these shells and bones. Coastal, riverine, lacustrine, and estuarine sites tend to be generally larger, representing areas of higher population density in the region, the most common type being shell middens, although site types range from small middens to village complexes. Sometimes these sites are seasonal but occasionally they show signs of year-round occupation. The most common historic sites in Brevard County consist of late-nineteenth to early twentieth century homestead or farming sites. Many are related to either the citrus or pineapple industry or the packing and shipping of fruits and vegetables. Evidence of these activities would include structural remains and artifact scatters located near water sources, productive land, or historic roads or transportation routes.

Although predictions can be made about where both prehistoric and historic sites are most frequently discovered, sites have been found in just about every environment that is defined in Florida. Judgmental testing and surface inspection is used to check locations where sites may be found, regardless of probability zone.

Field Methods

An archaeological and historical survey was conducted within the project area. Shovel tests measured 50 cm² (19.7 sq. in.), with all soil dry screened through 1/4-in. (6.4-cm) hardware cloth mesh. Shovel tests were dug to a minimum depth of 1 m (3.3 ft.) below surface (bs) or until hydric soils or inundation precluded further excavation. Archaeological testing was conducted per DHR (2017) guidelines. All exposed ground, such as cuts, scrapes or tree falls, were closely inspected for artifacts or evidence of artifacts, shell, or black earth middens.

The project area was considered to have a moderate to high probability for containing a prehistoric or historic archaeological site along the pipeline easement due to proximity to the Indian River, the FEC, Old Dixie Highway, and US 1. It was, however, considered to have a low probability for containing either prehistoric or historic cultural materials in the western, DMMA portion of the survey, where poorly drained soils and ponds abound. As such, shovel tests were excavated at 25-m (82-ft.) intervals for high, 50-m (164-ft.) intervals for moderate, and 100-m (328-ft.) to judgmental intervals for low probability areas, per DHR guidelines. Shovel tests that contained cultural materials ('positive' for artifacts) were delineated in all cardinal directions, where possible, at 10-m (33-ft.) to 25-m (82-ft.) intervals. All shovel tests were backfilled and their locations were plotted on an aerial field map. The Universal Transverse Mercator (UTM) coordinates of all shovel tests were recorded using a Trimble® Geo7X hand-held Global Positioning System (GPS) device set to North American Datum (NAD) 83. All exposed areas were subject to a pedestrian walkover in an effort to locate any surface artifacts or features.

The historical fieldwork methods included a search of the online database for the Brevard County Property Appraiser (BCPA 2018) as well as a pedestrian survey within the project area in a search for standing structures more than 45 years of age or other historic features. None were noted. The search for historic archaeological remains employed the same methods as the search for prehistoric archaeological remains, described above. The field notes and copies of the project maps will be kept on file at the office of PCI, Lakeland. During the course of the survey several local informants, residents or passersby in the area who declined to give their names, questioned the field crew about the survey work but none noted any archaeological sites in the area.

Laboratory Methods

Artifacts and ecofacts recovered were segregated by provenience, given a field specimen (FS) number, and bagged accordingly. Laboratory procedures entailed analyses of data collected during fieldwork and preparation of the artifacts and records for curation. All data was analyzed using currently acceptable scientific methods. All artifacts and other materials collected were catalogued utilizing currently acceptable formats. Following collection or excavation, artifacts were assigned FS numbers for each recovery provenience in the field. Artifacts collected were returned to the laboratory at Panamerican Consultants, Inc. in Lakeland, Florida. All artifacts returned to the lab that appeared sufficiently stable were washed in water and allowed to air-dry. Once dry, the artifacts were separated into material types for analysis. Once the analysis was complete, the materials were bagged in standard curation 4-mil polyvinyl bags.

Artifact Classification and Interpretation. PCI cultural material classifications incorporate mutually exclusive categories based primarily on morphological and metric attributes. Previously defined types are often used to facilitate chronological assessments and inter-site comparisons. Following are category definitions coupled with descriptions of selected specimens recovered during the investigation. Type frequencies by provenience are summarized in the artifact inventory included as Appendix B.

Prehistoric Materials

The only prehistoric materials collected were pottery. These are discussed below. Shell, which appeared to be from a potential midden context, was observed in one shovel test but was not collected. It is also discussed below.

Prehistoric Pottery. Prehistoric pottery represents an important, typically chronologically sensitive, class of artifacts. Morphological attributes such as surface treatment, rim shape and stance, and temper type are used to place sherds (fragments of pottery) into chronologically sensitive typological categories. Pottery specimens are classified following previously established typologies (Florida Museum of Natural History [FLMNH] 2018; Willey 1949). Specimens not fitting into published types are placed into residual categories based on paste characteristics and surface treatments. Morphological attributes of each sherd 2 cm or greater in size are recorded in order to determine not only techniques of manufacture, but also characteristics that relate to the probable use of the vessel, such as wall thickness, orifice diameter and shape. Sherds measuring less than 2 cm (“sherdlets”) are too small to analyze in the manner described above and are merely counted and weighed.

Invertebrate Remains. Shell was observed in one shovel test (ST 5) which appeared to be from a potential midden context. It was not collected as no signs of modification or use was noted on the few shells present. The midden context was inferred from the larger, intact shells present, as opposed to the uniformly broken down, smaller shells in the fill material along US 1, as well as the dark black, organic soils which contained the shell and the recovery of two sherds of prehistoric pottery in this location. Oyster and Clam (cf. *Crassostrea virginica* and quahog) were noted.

Historic Materials

All historic artifacts are recorded according to material, count, and weight. Materials were sorted into the following categories: building materials, metals, ceramics, and glass. When the artifact assemblage is sufficiently large, historic artifacts are sorted and analyzed according to functional groups, following South (1977), e.g., architectural, kitchen, arms, clothing, furniture, personal, tobacco, etc. Any distinguishing maker's marks are recorded and researched when present on historical materials.

South's Interpretive Groups. Although historic artifacts were sorted by material and type, they can also be categorized and discussed in terms of the functional groups defined by Stanley South (1977). Such groups are useful when attempting to interpret sites, particular buildings and/or areas within sites. Patterning in the form of the level of representation of different groups at these sites can be used to investigate the activities that were performed. South identified nine functional groups, which he labeled Activities, Architectural, Arms, Bone, Clothing, Furniture, Kitchen, Personal, and Tobacco Pipe.

Activities Group. This rather general group includes artifacts related to general human activities that are not subsumed under the other artifact groups. Common Activities Group artifacts include tools, items used in recreational activities such as hunting and fishing, and items used in leisure time activities such as musical instruments.

Architectural Group. Architectural materials include those artifacts related to the construction of a structure, including raw materials and hardware. Nails, bricks, metal, mortar, slate tile, and window glass are important parts of an architectural artifact assemblage since all can be temporally sensitive.

Arms Group. Artifacts from the Arms group are those related to the use of weapons, particularly guns. Ammunition is the most common form of Arms Group materials recovered from archaeological sites.

Bone Group. The Bone group includes animal bones that likely were present at the site as a result of human activity; however, it is understood that some of the bones, especially small mammal remains, may have been deposited as a result of natural processes. Bones within this group may show cut marks or intentional modification, but often show no such marks.

Clothing Group. This group of artifacts includes many items that can be identified definitively as belonging to an article of clothing. Hardware from clothing such as buttons, buckles, or hooks typically survive longer than cloth or leather.

Furniture Group. The Furniture group includes materials such as tacks, upholstery buttons, lamp finials, and brass handles or furniture escutcheons. Given the deterioration of wood and cloth, it is typically limited to furniture hardware.

Kitchen Group. The Kitchen group is a large and inclusive group made up of historic ceramic, glass, and metal artifacts relating to the cooking, consumption, or serving of food and medicine. The historic ceramics were classified by ware type, decoration, and maker's marks. Glass was morphologically identified where possible and sorted by color and manufacturing technique.

Personal Group. The Personal group artifacts are those that are related to the personal belongings or activities of an individual and can include objects such as clay marbles, porcelain toy tea set pieces and doll parts, perfume glass stoppers, coins, pocket watch or parts, a shaving brush, a hair combs, or pieces of jewelry.

Tobacco Pipe Group. South (1977) created the Tobacco Pipe group because in earlier historic contexts, pipes are found in large numbers and can help assign temporal dates to stratigraphic contexts if the maker is known. A mean dating system exists for these pipes, which relies on the measurement of the diameter of the stem hole.

Turpentine Industry Group. To South's artifact groups, we would add a "Turpentine Industry Group" to account for artifacts and features unique to the industry and which are frequently found in Florida. Artifacts would include any type of turpentine (sap) collection cup (Herty cup), metal or ceramic, turpentine tools such as hack blades, box axes, tin and gutter pullers, yearling box and long-handled pullers, and gutter and apron parts. Features unique to turpentine stills include dross piles and the characteristic circular brick foundation for the still.

Laboratory Documentation

Excel™ spreadsheets were used to record data concerning recovered cultural materials for the compilation of tabular summaries. All pertinent information including sample type, catalog numbers assigned, date of analysis, and initials of analysts were recorded. As analysis proceeded, summary tables were generated to provide data on diagnostic and other pertinent material recovered. This provided rapid access to cultural, temporal, and, in particular cases, functional information, and thus aided interpretations. Eventually, all material recovered was tabulated by specific provenience. The data are presented by site, intrasite provenience, and analytical class. During laboratory analysis, materials were cataloged in the following manner. Materials were grouped into lots by artifact type and provenience. Thus, materials from a single unit and level were grouped together into lots based on size, material, and other key classification distinctions within that particular provenience. Materials were bagged by lot number in appropriately sized, polyvinyl bags with ziplock closures.

Criteria for NRHP Eligibility

Cultural resources are evaluated for potential NRHP eligibility based on several criteria (NRHP 1998:2). "The quality of significance in American history, architecture, archaeology,

engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting materials, workmanship, feeling, and association.”

To be considered significant, the historic property must meet one or more of the four National Register of Historic Places criteria *in addition* to possessing integrity:

- A. Be associated with events that have made a significant contribution to the broad patterns of our history; or
- B. Be associated with the lives of persons significant in our past; or
- C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. Have yielded, or may be likely to yield, information important in prehistory or history.

Criterion D is most commonly applied to archaeological sites, while Criteria A, B, and C are most often used to evaluate buildings and structures (NRHP 1998).

Procedures to Manage Unanticipated Discoveries

Every reasonable effort has been made during this investigation to identify and evaluate possible locations of prehistoric and historic archaeological sites; however, the possibility that evidence of prehistoric or historic resources may yet be encountered within the project limits remains. Should any evidence of historic resources be discovered during ground-disturbing activities, all work in that portion of the project site should stop. Evidence of prehistoric resources includes aboriginal or historic pottery, prehistoric stone tools, bone or shell tools, historic trash pits, and historic building foundations. Should questionable materials be uncovered during the excavation of the project area, representatives of PCI will assist in the identification and preliminary assessment of the materials.

In the unlikely event that human skeletal remains or associated burial artifacts are uncovered within the project area, all work in that area must stop. PCI should be contacted immediately to determine whether the discovery must be reported to local law enforcement, who will in turn contact the medical examiner, or whether the State Archaeologist should be contacted per the requirements of Chapter 872.05, Florida Statutes instead.

SECTION V

SURVEY RESULTS AND RECOMMENDATIONS

PCI performed an archaeological and historical survey of the 112.4-acre property and 3.8-acre pipeline easement which constitute the BV-24A project area. Fieldwork was conducted from October 4 through 7, 2018, by Jessica Flint and Rachel Westfall, Archaeological Field Technicians, Joseph Culen, Kathleen Godwin, and Jelane Wallace, Archaeological Field Directors, under the supervision of Gregory Mikell, M.A., RPA, Senior Archaeologist. A total of 85 shovel tests were placed at 12.5-, 25-, and 100-m intervals (*Figure 13*). The results are discussed below.

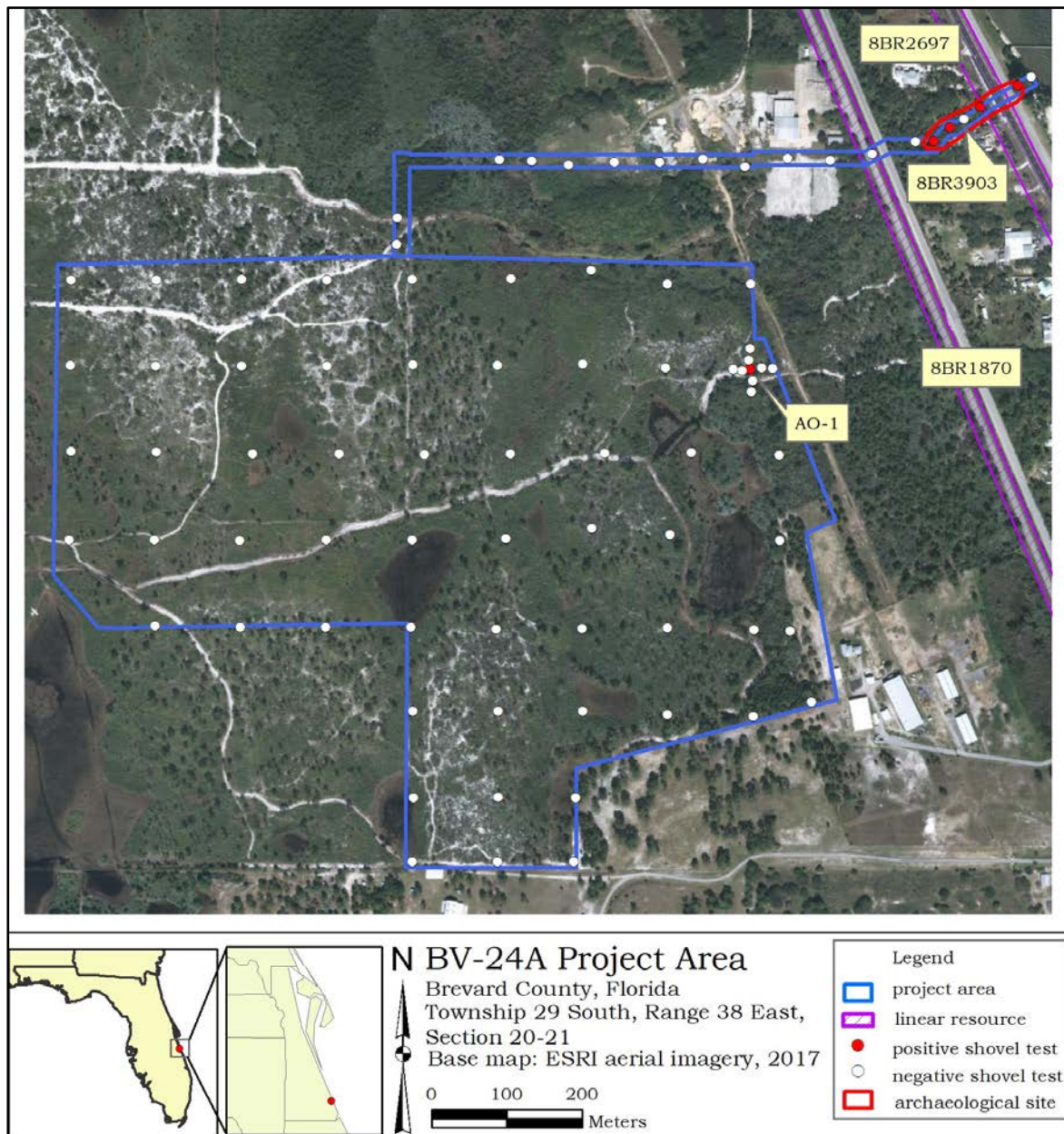


Figure 13. Aerial photograph showing the project area and shovel tests.

Archaeological Results

Site 8BR3903 (Valkaria Not Valkyries)

Site Type: prehistoric midden/historic scatter

Cultural Affiliation: prehistoric-St. Johns nonspecific; 20th century American

USGS Quadrangle Reference: Grant, Fla.1949 (PR 1970); T29S, R38E, Section 21 (NW)

Elevation: 5 ft. (1.5-m) AMSL

Landform: drainage

Nearest Water Source/Distance-Direction: small drainage and Indian River/~20-m east

Soil Classification: Map Unit 9 & 36, Canaveral-Anclote complex and Myakka sand, depressional

Present Vegetation: Brazilian Pepper, Australian pine, palms, palmetto, weeds (*Figure 14*)

NRHP Eligibility: recommended not eligible

Site 8BR3903 was discovered and newly recorded during the course of this current survey (see *Figure 13*). It is located on the east and west sides of US Highway 1 (8BR2697) approximately 0.6 miles north of Atlantic Ridge Lane and 1.5 miles south of Valkaria Blvd. The site is north of a small drainage canal that constitutes the path of the pipeline easement for this current BV-24A survey and lies east of the Dixie Highway/FEC Railroad (8BR1870) ROW. The site area not immediately along the road ROW is overgrown with Brazilian Pepper, palms, palmettos, and weeds. The very narrow (18-m/60-ft. wide) pipeline easement limited delineation of the site to a single transect of shovel tests. It is estimated to be approximately 130 m roughly east-west and 25 m north-south, with an area of 3,900 m² (0.97 acres). A total of 7 shovel tests were excavated near the site, of which 4 shovel tests were positive for prehistoric and historic artifacts (*Figure 15*). Based on the artifact assemblage, this appears to be a multi-component site representing twentieth century historic structural remains or fill material/trash-dumping activities as well as prehistoric, likely St. Johns period, midden materials from a disturbed context.



Figure 14. Drainage canal, view from Indian River looking west, toward US 1 (8BR2697) and Site 8BR3903, to the right of canal (PCI October 2018).

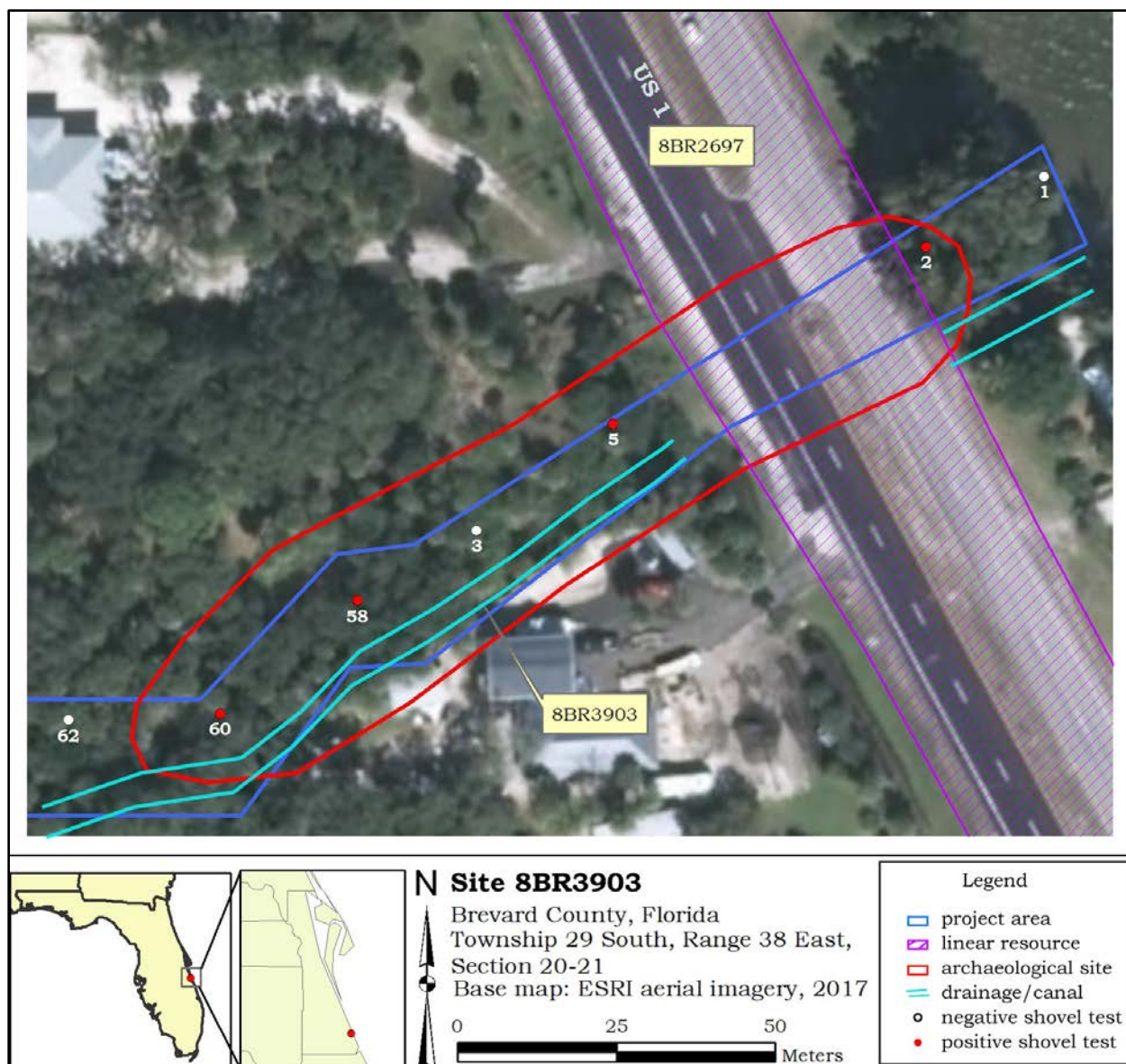


Figure 15. Site map for 8BR3903 on an aerial image.

Delineation of the site was conducted with shovel tests placed at 20- to 25-m (66- to 82-ft.) intervals and boundaries were based on negative shovel tests within the current project area and the limits of the easement portion of the survey area. Shovel tests were not possible in the paved area of US Highway 1, its median, or built-up and ditched shoulders. Nor were tests possible in the drainage canal/ditch in the southern portion of the pipeline easement. Prehistoric artifacts were only observed within ST 5; presumably twentieth century historic to modern materials were observed in all the tests marked positive (STs 2, 5, 58, and 60). The soils at Site 8BR3903 showed marked disturbance, even to the point of being fill material or having been redeposited. Inundation by ground water terminated all of the tests in the site area at depths ranging from 60 to 80 cm below surface (bs).

Soil profiles differed, with ST 2 and 5 being unique from ST 58 and 60. Shovel test 2 consisted entirely of shell and sand fill material. The soil profile for ST 5 consisted of three strata. Stratum I was light grey sand (10YR 7/1) from 0 to 15 cmbs. Stratum II was very dark grey (10YR 3/1) sand with large, mostly intact shells (oyster and clam) from 15 to 25 cmbs. Below this, Stratum II consisted of brown (10YR 4/3) sand with large (greater than 20 cm in length), broken concrete chunks from 25 to 70 cmbs, where water terminated the test. The prehistoric pottery sherds were found in Stratum II, with the shell, in what was presumed to be disturbed or redeposited midden matrix based on the present of dark organic soils, intact shells, and pottery. No faunal bone was observed in this Stratum though. The historic to modern materials were observed from the surface to the base of excavation, indicating disturbance and likely redeposition of the soils. This was assumed to be in connection with the immediately adjacent canal/drainage. The historic artifacts were found in Strata I-III, at depths of 0 to 60 cmbs. The soil profiles for ST 58 and 60 had two strata; Stratum I was very dark grey (10YR 3/1) sand to a depth of 30 or 40 cmbs which was underlain by the grey (10YR 5/1) sand of Stratum II, terminating with water at 60 or 80 cmbs.

The prehistoric artifacts were two sherds of pottery (*Figure 16*). Neither showed signs of decoration, but were small fragments, approximately 3 cm in size. One was spiculate tempered and considered St. Johns Plain, the other was simply a sand tempered sherd. In the absence of more clear temporal indicators, the pottery generally indicates an unspecified St. Johns period (approximately 700 B.C. to A.D. 1500) component to the site. Site 8BR181 was recorded in the 1970s approximately 100 m (328 ft.) northwest along US 1 from the current Site 8BR3903. Records of the excavation for that site were scant and the accuracy of the plot could not be evaluated in the absence of a site map for Site 8BR181. These sherds, and the thin lens of presumed midden soils in which they were found, may be related to that previously recorded site, which also included midden material and St. Johns period ceramics.



Figure 16. Prehistoric pottery, spiculate tempered (left) and sand tempered (right) from ST 5 (PCI October 2018).

The historic to possibly modern artifacts which were present on the site were various glass, metal, and ceramic artifacts from the twentieth century; modern materials (plastics, aluminum cans, modern beer bottles, etc.) were also observed but not collected. The glass historic artifacts included clear (n=64), amber (n=23), and olive/green (n=67) container glass, as well as a mirror fragment and a green/white glass marble. In terms of architectural materials,

concrete was observed but not collected due to its large size. Other architectural items included window glass (n=8), asbestos (n=1), yellow glazed tile (n=1), ferrous metal wire nails (n=2), a bolt, a large washer, a fixture/plate with holes for screws, a knob, and indeterminate fragments (n=11) (Appendix B). None of these items were temporally sensitive enough to determine an actual time frame any more specific than generally mid to late twentieth century. These generally fit with being trash or debris dumped near US 1 or along the drainage canal, or used as fill material. No structures were shown on the historic aerials in the vicinity of the pipeline easement (see *Figure 7*) so it is likely not from a structure in the project area, but could be from nearby.

Based on this investigation of the current project area, Site 8BR3903 does not meet the minimum criteria for listing on the NRHP under Criteria D. Notably there is strong evidence of redeposition in the disturbed stratigraphy of the single shovel test to produce prehistoric materials. Further, the possibly historic to modern materials are not clearly dateable nor are they associated with an historic structure or historic land uses of the project area beyond presumed dumping or filling activities. Site 8BR3903 does not appear to meet the minimum criteria for listing on the NRHP nor is it part of a locally significant and listed site. It is recommended as ineligible for listing on the NRHP and no further work in the current project area is recommended. It is, however, of note that the boundaries of the site are unknown and it may possibly extend north or south of the current corridor tested. Significant resources or features may be found beyond the current project area.

Archaeological Occurrence 1 (AO-1)

Site Type: isolated historic glass artifact

Cultural Affiliation: late nineteenth to early twentieth century American

USGS Quadrangle Reference: Grant, Fla.1949 (PR 1970); T29S, R38E, Section 21 (SW)

Elevation: 15 ft. (4.6-m) AMSL

Landform: ridge slope

Nearest Water Source/Distance & Direction: Indian River/ 1,741 ft. (530-m) east

Soil Classification: Immokalee sand, 0 to 2 percent slopes, Map Unit 28

Present Vegetation: sand pine scrub; pine, palmetto, scrub oak (*Figure 17*)

NRHP Eligibility: not eligible

A historic artifact consisting of a fragment of amethyst container glass was recovered in Stratum I of ST 22 at a depth of 30 to 40 cmbs (Appendix B). AO-1 is located approximately 260-m (860 ft.) west of the FEC Railroad (8BR1870) corridor (see *Figure 13*). The area around AO-1 is sand pine scrub and is in the DMMA portion of the project. Amethyst, or ‘sun-purpled’ glass is typically manganese dioxide induced colorless glass, which was commonly used from the 1880s to about 1920, after manganese dioxide use declined largely because it did not work as well as other chemical decolorizers in machine-made bottle manufacture (Kendrick 1966; Lockhart 2006). Soils in ST 22 consisted of two strata. Stratum I, from surface to 40 cmbs (15.7 in.) was a very pale brown (10YR 7/3) fine sand. Stratum II consisted of a dark greyish brown (10YR 4/2) loamy sand with organic materials from 40 cmbs (15.7 in.) to 100 cmbs (39.4 in.). The occurrence was delineated in all four cardinal directions by negative shovel tests placed at 12.5-m (41 ft.) and 25-m (82 ft.) intervals. As an AO, this non-diagnostic occurrence does not

meet the minimum requirements to constitute an archaeological site and is not significant or NRHP eligible.



Figure 17. AO-1 at ST 2, facing north (PCI October 2018).

Historic Results

The two linear resources are within the pipeline easement. Resource 8BR1870 designates the FEC Railroad (*Figure 18*). In Brevard County, this consisted variously of the following four railways: Palatka and Indian River Railroad (1881-1883), Atlantic Coast, St. Johns, and Indian River Railroad (1883-1886), Jacksonville, Tampa and Key West Railroad (1886-1896), Florida East Coast Railroad (1896-1994) (FMSF Site Form 8BR1870). As it is in use to this day, undoubtedly the tracks, ties, signage, and other materials have been constantly repaired, replaced, or upgraded over the years; however, the alignment has remained relatively unchanged in the vicinity of the current project area (compare *Figure 2* and 5). Resource 8BR1870 has been determined by the SHPO to be eligible for listing on the NRHP.

Resource 8BR2697 designates US Highway 1. Portions of this road replaced the earlier dirt track and road that was Dixie Highway. In Brevard County, US 1 was improved and paved starting in the mid-1920s (FMSF Site Form 8BR2697). In the vicinity of the current project area, US 1 and Old Dixie Highway follow different routes and the alignment for US 1 has changed somewhat (compare *Figure 7* and 9). The SHPO has previously determined that Resource 8BR2697 is ineligible for listing on the NRHP.



Figure 18. FEC Railroad at pipeline easement, facing north (PCI October 2018).

Recommendations

During the course of the survey, one historic archaeological occurrence (AO) was noted and one archaeological site, 8BR3903, was newly recorded. AOs by definition are not significant and the newly recorded site was recommended as ineligible for listing on the NRHP, at least as it is known from being expressed within the current project area, but it likely extends beyond the boundaries of the current survey area and significant features may yet be found elsewhere on the site. In addition to these, previously recorded historic linear resources, NRHP-eligible 8BR1870-Florida East Coast (FEC) Railroad and the NRHP-ineligible 8BR2697-US Highway 1, were also noted in the APE. As long as no alteration to the alignment of the FEC Railroad corridor is proposed, no adverse effect is expected from this project.

Based on the results of this field investigation the development of the BV-24A project area will not have an effect on sites or properties that have historical, cultural, or sacred significance, or that otherwise meet the minimum criteria for NRHP listing. Development will not affect any cultural resources that are of local or regional significance. No further archaeological work is recommended within the current project area.

REFERENCES CITED

Adams, William R.

- 2003 Historical Development of Titusville, from the Historical Properties Survey, Titusville Florida. Electronic document, <http://www.nbbd.com/godo/history/NBrevHist/>, accessed October 20, 2018.

Ancestry.com

- 2018 Various Federal Census, State Census, City Directory, and Death Records. Electronic documents and data bases, <https://www.ancestry.com/search/>, accessed October 4, 2018.

Anderson, David G., Lisa D. O'Steen, and Kenneth E. Sassaman

- 1996 Environmental and Chronological Considerations. In *The Paleoindian and Early Archaic Southeast*, edited by D.G. Anderson and K.E. Sassaman, pp. 3-15. The University of Alabama Press, Tuscaloosa.

Bland, Myles C.P., and Sidney Johnston

- 1998 *A Cultural Resource Assessment Survey of Peanut Island, Palm Beach County, Florida*. ESI Report of Investigations No. 149. Prepared by Environmental Sciences, Inc. Submitted to the U.S. Army Corps of Engineers, Jacksonville District.

Brevard County Property Appraiser (BCPA)

- 2018 Brevard County Property Appraiser. Electronic database, <https://www.bcpao.us/>, accessed September 28, 2018.

Bullen, Ripley P.

- 1972 The Orange Period of Peninsular Florida. *Florida Anthropological Society Publications*, Number 8.
1975 *A Guide to the Identification of Florida Projectile Points*. Kendall Books, Gainesville, Florida.

Bureau of Land Management, General Land Office (BLM-GLO)

- 1845 Survey Plat Maps, Township 29 South, Range 38 East. Electronic document, https://glorerecords.blm.gov/details/survey/default.aspx?dm_id=13581&sid=i5taefwk.1vz/, accessed October 1, 2018.
1896 Survey Plat Maps, Township 29 South, Range 38 East. Electronic document, https://glorerecords.blm.gov/details/survey/default.aspx?dm_id=13584&sid=i5taefwk.1vz/, accessed October 1, 2018.
2018 Land Patent Records Search, Township 29 South, Range 38 East. Electronic database, <http://www.glorerecords.blm.gov/search/>, accessed October 1, 2018.

Butler, David F.

- 1995 "Early History of Hillsboro Inlet," in *Broward Legacy*, Vol. 18, Numbers 3-4, Summer/Fall. Broward County Historical Commission, Fort Lauderdale.

Clausen, Carl J., H.K. Brook, and A.B. Wesolosky

1975 The Early Man Site at Warm Mineral Springs, Florida. *Journal of Field Archaeology* 2:191-213.

Clausen, Carl J., A.D. Cohen, C. Emiliani, J.A. Holman, and J.J. Stipp

1979 Little Salt Spring, Florida: A Unique Underwater Site. *Science* 203:609-614.

Crawford, William G., Jr.

1997 A History of Florida's East Coast Canal: The Atlantic Intracoastal Waterway from Jacksonville to Miami. *Broward Legacy* Summer/Fall 2-27.

Daniel, I. Randolph and Michael Wisenbaker

1987 *Harney Flats*. Baywood Publishing Co., Farmingdale.

Delcourt, Paul A. and Hazel R. Delcourt

1987 *Long Term Forest Dynamics of the Temperate Zone: A Case Study of Late-Quaternary Forest in Eastern North America*. Springer-Verlag, New York.

Dickel, David N.

1992 *An Archaeological Survey of Indian River County, Florida*. Ms. No. 3170 on file, Florida Division of Historical Resources, Tallahassee.

Division of Historical Resources (DHR)

2017 *Cultural Resource Management Standards and Operational Manual: Modules One through Five*. On file, Division of Historical Resources, Florida Department of State, Tallahassee.

Fairbridge, Rhodes W.

1974 The Holocene Sea Level Record of South Florida. In *Environments of South Florida: Present and Past*, edited by P.J. Gleason. *Miami Geological Society Memoir* 2:223-229.

Florida Museum of Natural History (FLMNH)

2018 Ceramic Technology Lab, Florida Museum of Natural History. Electronic database, <https://www.floridamuseum.ufl.edu/ceramiclab/>, accessed October 8, 2018.

Florida Natural Areas Inventory (FNAI)

2018 Florida Natural Areas Inventory, GIS database and shapefiles. Electronic documents and data bases, <http://www.fnai.org/webmaps/ConLandsMap/>, accessed October 4, 2018.

Goggin, John

- 1947 A Preliminary Definition of Archaeological Areas and Periods in Florida. *American Antiquity* 13(2):114-127.
- 1949 Cultural Traditions in Florida Prehistory. In *The Florida Indian and His Neighbors*, edited by James W. Griffin, pp. 13-44. Rollins College Inter-American Center, Winter Park, Florida.
- 1952 *Space and Time Perspective in Northern St. Johns Archaeology, Florida*. Yale University Publications in Anthropology No. 47. Yale University Press, New Haven.

Hyde, Luther W.

- 1975 *Principal Aquifers in Florida*. Map Series No. 16 (revised). Bureau of Geology, Florida Department of Natural Resources, Tallahassee.

Janus Research

- 2013 Cultural Resources Assessment Report for All Aboard Florida Passenger Rail Project From Orlando to West Palm Beach, Orange, Brevard, Indian River, St. Lucie, Martin, and Palm Beach Counties. Prepared for All Aboard Florida Operations, LLC of Coral Gables, Florida. Janus Research, Tampa, Florida. Survey report 20495, on file, FMSF, Tallahassee.

Jordan, Douglas F., Elizabeth E. Wing, and Adelaide K. Bullen

- 1963 *Papers on the Jungerman and Goodman Sites, Florida*. Contributions of the Florida State Museum, Social Sciences 10. Florida State Museum, Gainesville.

Kendrick, Grace

- 1966 *The Antique Bottle Collector*. Third edition. Western Printing and Publishing, Nevada.

Lane, Ed, Michael S. Knapp, and Thomas M. Scott

- 1980 Environmental Geology Series: Fort Pierce Sheet. Map Series No. 80 (revised). Bureau of Geology, Florida Department of Natural Resources, Tallahassee. Electronic document, <http://ufdc.ufl.edu/UF90000332/00001/>, accessed October 12, 2018.

Lockhart, Bill

- 2006 The Color Purple: Dating Solarized Amethyst Glass Containers. In *Historical Archaeology* 40 (2).

Milanich, Jerald T. and Charles Fairbanks

- 1980 *Florida Archaeology*. University of Florida Press, Gainesville.

Milanich, Jerald T.

- 1994 *Archaeology of Precolumbian Florida*. University Press of Florida, Gainesville.
- 1995 *Florida Indians and the Invasion from Europe*. University Press of Florida, Gainesville.

Miller, James A.

- 1986 *Hydrogeologic Framework of the Florida Aquifer System in Florida and in Parts of Georgia, Alabama, and South Carolina*. Regional Aquifer-System Analysis, U.S. Geological Survey Professional Paper 1403-B. U.S. Government Printing Office, Washington, D.C. Electronic document, <https://pubs.usgs.gov/pp/1403b/report.pdf>, accessed October 16, 2018.

National Register of Historic Places

- 1998 *How to Apply the National Register Criteria for Evaluation* (updated). National Register Bulletin No. 15. Interagency Resources Division, Cultural Resources, National Park Service, U.S. Department of the Interior, Washington, D.C.

Paleoindian Database of the Americas (PIDBA)

- 2017 Paleoindian Database of the Americas. Last updated 9 October 2017. The University of Tennessee, Department of Anthropology. Electronic database, <http://pidba.utk.edu/database.htm>, accessed October 2, 2018.

PALMM (Publication of Archival Library and Museum Materials)

- 2018 Historic Aerial Photography. Electronic database, <http://ufdc.ufl.edu/aerials>, accessed October 1, 2018.

Purdy, Barbara A and Laurie M Beach

- 1980 The Chipped Stone Tool Industry of Florida's Preceramic Archaic. *Archaeology of Eastern North America* 8:105-124.

Rouse, Irving

- 1951 A Survey of Indian River Archaeology, Florida. *Yale University Publications in Anthropology* No. 44. Yale University Press, New Haven.

Royal, William and Eugenie Clark

- 1960 Natural Preservation of Human Brain, Warm Mineral Springs, Florida. *American Antiquity* 26(2):285-287.

Russo, Michael

- 1986 *The Coevolution of Environment and Human Exploitation of Faunal Resources in the Upper St. Johns River Basin*. Non-thesis master's project, department of Anthropology, University of Florida, Gainesville.
- 1992 East and central Florida (3200 B.P. – A.D. 1565) in *Florida's Cultural Heritage: A View of the Past*. Division of Historical Resources, Florida Department of State, Tallahassee.

Schene, Michael

- 1976 *Hopes, Dreams, and Promises*. Daytona Beach, Florida.

Scott, Thomas M.

- 1993 Geologic Map of Brevard County. Open File Map Series No. 49. Florida Geological Survey, Florida Department of Natural Resources, Tallahassee. Electronic document, http://publicfiles.dep.state.fl.us/FGS/FGS_Publications/OFMS/CountyMaps/OFMS49-BREVARD.pdf, accessed October 12, 2018.

Shofner, Jerrell H.

- 1995 *History of Brevard County, Volume I*. Southeastern Printing Co., Stuart, Florida.

South, Stanley A.

- 1977 *Method and Theory in Historic Archaeology*. Academic Press, New York.

St. Lucie County Historical Society

- 2018a Fort Capron. Electronic document, <http://www.rootsweb.com/~flslchs/capron.htm>, accessed September 25, 2018.
2018b Fort Vinton, Post No. 2. Electronic document, <http://www.rootsweb.com/~flslchs/vinton.htm>, accessed September 25, 2018.

State Archives of Florida

- 2018a *Early Auto Registrations, 1905-1917*. State Archives of Florida, Florida Memory, digital database, <https://www.floridamemory.com/items/show/316081>, accessed October 6, 2018.
2018b *FEC Railway station at Grant, Florida*. 1965. Black & white digital image, State Archives of Florida, Florida Memory. Digital Image, <https://www.floridamemory.com/items/show/259689>, accessed October 6, 2018.
2018c *Smith brother's homestead by Mullet Creek - Grant, Florida*. 188-. Black & white photoprint by Seth Shear, State Archives of Florida, Florida Memory. Digital Image, <https://www.floridamemory.com/items/show/29341>, accessed October 6, 2018.

State of Florida

- 2018 *Land Document Search*. Electronic document, <http://prodenv.dep.state.fl.us/DslBtlds/public/piSearchDocumentLoad>, accessed October 5, 2018.

Tanner, Helen

- 1963 *Zespedes in East Florida, 1784-1790*. University of Miami Press, Coral Gables, Florida.

Tebeau, Charlton W.

- 1980 *A History of Florida (revised)*. University of Miami Press, Coral Gables, Florida.

Town of Grant-Valkaria

- 2018 *The Town of Grant-Valkaria History*. Electronic document, <http://www.grantvalkaria.org/community/history>, accessed October 5, 2018.

Taylor Engineering, Inc.

- 2018 Location Map: F.I.N.D BV-24A Dredged Material Management Area, Brevard County, Florida, Preliminary Drawings. Dated February 2018. Provided by Taylor Engineering, Inc.

University of South Florida (USF)

- 2018a 1936 Brevard County Road Map. Florida State Road Department, Tallahassee, Florida. *Maps ETC digital collection*, digital image, <https://fcit.usf.edu/florida/maps/pages/300/f346/f346z.htm>, accessed October 9, 2018.
- 2018b 1827 map of Florida. *Maps ETC digital collection*, digital image, <https://fcit.usf.edu/florida/maps/pages/9800/f9847/f9847.htm>, October 9, 2018.

Upchurch, Sam B., Richard N. Strom, and Mark G. Nuckels

- 1982 Methods of Chert Provenance Determination of Florida Cherts. Report prepared for the Florida Division of Archives, History, and Records Management, Bureau of Historic Sites and Properties, Tallahassee.

U.S. Department of Agriculture (USDA)

- 1974 *Soil Survey of Brevard County, Florida*. Edited by Horace F. Huckle, Hershel D. Dollar and Robert F. Pendleton. U.S. Department of Agriculture Soil Conservation Service in cooperation with University of Florida Agriculture Experiment Stations, Cocoa, Florida.
- 2018 Web Soil Survey (WSS). Brevard County, Florida. Electronic data base and maps, <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>, accessed October 3, 2018.

U.S. Geological Survey (USGS)

- 2018 *Earth Explorer*. Digital database search, <http://earthexplorer.usgs.gov/>, accessed October 1, 2018.

U.S. National Archives & Records Administration

- 2018 *Teaching with Documents: The Homestead Act of 1862*. Electronic document, <http://www.archives.gov/education/lessons/homestead-act/index.html>, accessed October 4, 2018.

Van Landingham, Kyle S.

- 1988 *Pictorial History of Saint Lucie County 1565-1910*. Revised Edition. SunBank/Treasure Coast, N.A., and the St. Lucie Historical Society, Sportsman's Park, Florida.

Watts, W.A. and Barbara C.S. Hansen

- 1988 Environments of Florida in the Late Wisconsin and Holocene. In *Wet Site Archaeology*, edited by Barbara A. Purdy, pp. 307-324. Telford Press, Caldwell, NJ

White, William A.

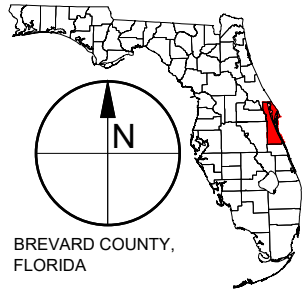
1970 *The Geomorphology of the Florida Peninsula*. Florida Geological Survey Bulletin No. 51, Tallahassee.

Willey, Gordon R.

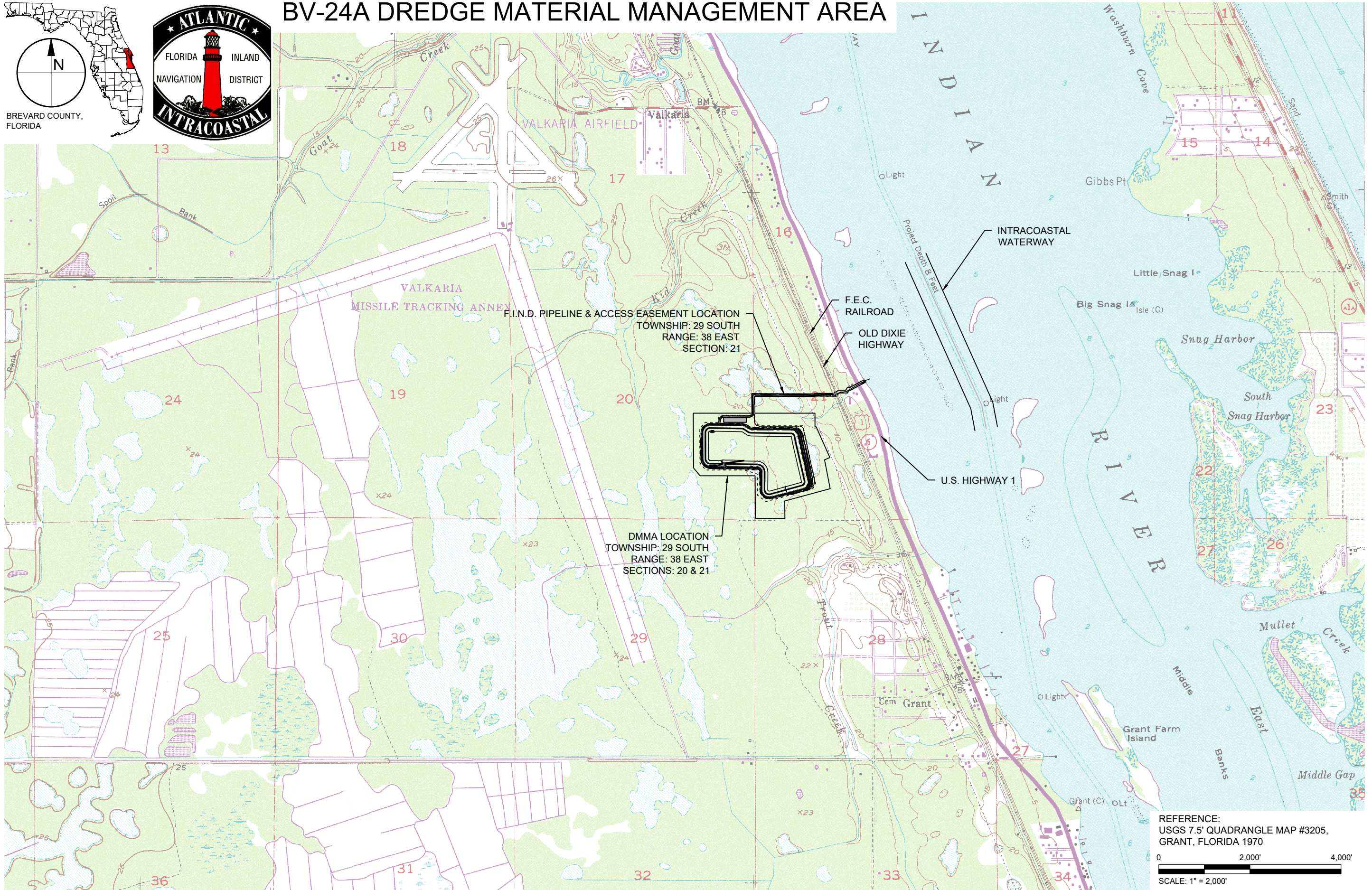
1949 *Archeology of the Florida Gulf Coast*. Reprinted with a new foreword and preface. University Press of Florida, Gainesville. Republished 1998. Volume 113, Smithsonian Miscellaneous Collections, Smithsonian Institution, Washington, D.C.

Appendix A:
Design Plan

REBECCA JOHNSON X:\SYS\PROJECTS\C2015-014 FIND BV-24A\PERMIT\C2015-014-P-LOCATION.DWG 2/9/2018 4:10:12 PM



BV-24A DREDGE MATERIAL MANAGEMENT AREA



REFERENCE:
USGS 7.5' QUADRANGLE MAP #3205,
GRANT, FLORIDA 1970

0 2,000' 4,000'

SCALE: 1" = 2,000'

TAYLOR ENGINEERING INC.

10151 DEERWOOD PARK BLVD
BLDG 300, SUITE 300
JACKSONVILLE, FLORIDA 32256
CERTIFICATE OF AUTHORIZATION # 4815

FIGURE 1
LOCATION MAP
F.I.N.D. BV-24A DREDGED MATERIAL MANAGEMENT AREA
BREVARD COUNTY, FLORIDA

PROJECT	C2015-065
DRAWN BY	RLJ
SHEET	1 of 35
DATE	FEBRUARY 2018

DRAFT

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM. BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

SEAL
KEITH A. KNIGHT P.E. #58084

Appendix B:
Materials Recovered

BV-24A Dredged Materials
Artifact Table

Site	FS	Lot	ST	Strat	Depth (cmbd)	Count	Weight (g)	Class	Material	Description	Initials/Date	Comment
8BR3903	1	1.01	2	I/I	0-60	1	0.81	Personal	glass	mirror fragment, clear glass silvered on one side	JW/KG 10/4/2018	
8BR3903	1	1.02	2	I/I	0-60	21	13.00	Kitchen	glass	amber glass, container fragment, body	JW/KG 10/4/2018	patinated
8BR3903	1	1.03	2	I/I	0-60	66	62.84	Kitchen	glass	green glass, container fragment, body (65) & threaded lip (1)	JW/KG 10/4/2018	patinated
8BR3903	1	1.04	2	I/I	0-60	61	110.91	Kitchen	glass	clear glass, container fragment, body (60) & base (1)	JW/KG 10/4/2018	patinated
8BR3903	1	1.05	2	I/I	0-60	1	0.58	Kitchen	metal	indeterminate ferrous metal	JW/KG 10/4/2018	
8BR3903	2	2.01	5	II	15-25	1	2.17	ceramic	abo pottery	St. Johns Plain sherd, body, spiculate temper	JC 10/4/2018	
8BR3903	2	2.02	5	II	15-25	1	4.68	ceramic	abo pottery	sand tempered plain sherd, body	JC 10/4/2018	
8BR3903	2	2.03	5	I/I/I	0-60	1	5.79	Activities	glass	marble, glass, green and white	JC 10/4/2018	
8BR3903	2	2.04	5	I/I/I	0-60	8	124.70	Architecture	window pane	window glass, 1 with privacy finish	JC 10/4/2018	
8BR3903	2	2.05	5	I/I/I	0-60	1	0.65	Kitchen	glass	amber glass, container fragment, body	JC 10/4/2018	patinated
8BR3903	2	2.06	5	I/I/I	0-60	1	6.79	Architecture	asbestos	asbestos tile fragment	JC 10/4/2018	
8BR3903	2	2.07	5	I/I/I	0-60	5	n/a	Architecture	concrete	large (>25cm) concrete fragments	JC 10/4/2018	observed but not collected
AO-1	3	3.01	22	II	40-50	1(4)	10.32	Kitchen	glass	amethyst glass, container fragment, body (3) & neck (1)	KG/RW 10/5/2018	x-mend
8BR3903	4	4.01	58	I/I	10-40	3	1.63	Kitchen	glass	clear glass, container fragment, body	KG/RW 10/7/2018	
8BR3903	4	4.02	58	I/I	10-40	1	0.44	Kitchen	glass	green glass, container fragment, body	KG/RW 10/7/2018	
8BR3903	4	4.03	58	I/I	10-40	1	1.06	Kitchen	glass	amber glass, container fragment, body	KG/RW 10/7/2018	
8BR3903	4	4.04	58	I/I	10-40	1	3.31	Architecture	ceramic	tile fragment, ceramic, yellow glaze	KG/RW 10/7/2018	
8BR3903	4	4.05	58	I/I	10-40	1	3.16	Architecture	metal	wire nail, ferrous metal	KG/RW 10/7/2018	
8BR3903	4	4.06	58	I/I	10-40	4	247.94	Architecture	metal	ferrous metal, indeterminate fragments	KG/RW 10/7/2018	
8BR3903	5	5.01	60	I	10-40	1	90.34	Activities	metal	washer, large, ferrous metal	KG/RW 10/7/2018	
8BR3903	5	5.02	60	I	10-40	1	262.24	Activities	metal	metal plate/fixture, w/ 2 holes, ferrous	KG/RW 10/7/2018	
8BR3903	5	5.03	60	I	10-40	1	26.07	Architecture	metal	wire nail, ferrous metal, square head	KG/RW 10/7/2018	
8BR3903	5	5.04	60	I	10-40	1	20.38	Activities	metal	handle/knob, ferrous metal	KG/RW 10/7/2018	
8BR3903	5	5.05	60	I	10-40	5	478.18	Activities	metal	bolt, ferrous metal	KG/RW 10/7/2018	
8BR3903	5	5.06	60	I	10-40	6	102.86	Architecture	metal	ferrous metal, indeterminate fragments	KG/RW 10/7/2018	
					overall total count=	194	1580.85	=overall total weight				

Appendix C:
Florida Master Site File Forms

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) BV-24A Dredged Materials Management Area

Report Title (exactly as on title page) A Cultural Resource Assessment Survey of the BV-24A Dredge Materials Management Area, Brevard County, Florida

Report Authors (as on title page, last names first) 1. Mikell, Gregory 3. _____
2. Wallace, Jelane 4. _____

Publication Date (year) 2018 Total Number of Pages in Report (count text, figures, tables, not site forms) 41

Publication Information (Give series, number in series, publisher and city. For article or chapter, cite page numbers. Use the style of *American Antiquity*.)
2018, Mikell, Gregory and Wallace, Jelane. A Cultural Resource Assessment Survey of the BV-24A Dredge Materials Management Area, Brevard County, Florida. Panamerican Consultants, Inc., Lakeland, Florida

Supervisors of Fieldwork (even if same as author) Names Mikell, Gregory M.A., RPA

Affiliation of Fieldworkers: Organization PanAmerican Consultants, Inc. City Lakeland, FL

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 Engineering, Inc.

Organization _____

Address/Phone/E-mail 10199 Southside Blvd, Ste 310, Jacksonville, FL 32256/904-731-7040

Recorder of Log Sheet Jelane Wallace

Date Log Sheet Completed 10-24-2018

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. Highlands 3. _____ 5. _____
2. _____ 4. _____ 6. _____

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

1. Name GRANT Year 1970 4. Name _____ Year _____
2. Name _____ Year _____ 5. Name _____ Year _____
3. Name _____ Year _____ 6. Name _____ Year _____

Description of Survey Area

Dates for Fieldwork: Start 10-7-2018 End 10-10-2018 Total Area Surveyed (fill in one) _____ hectares 112.4 acres

Number of Distinct Tracts or Areas Surveyed 2

If Corridor (fill in one for each) Width: 18 meters _____ feet Length: 0.84 kilometers _____ miles

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 88 shovel tests dug to DHR standards, 50cm diameter, were excavated to 1m or inundation. 10-m, 25-m, 50-m, 100-m intervals, with all soil screened through 1/4-in hardware cloth.

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, uncontrolled ☐ 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): historic aerials

Survey Results (cultural resources recorded)

Site Significance Evaluated? ☒ Yes ☐ No

Count of Previously Recorded Sites 0 Count of Newly Recorded Sites 1

Previously Recorded Site #'s with Site File Update Forms (List site #'s without "8". Attach additional pages if necessary.) 0

Newly Recorded Site #'s (Are all originals and not updates? List site #'s without "8". Attach additional pages if necessary.) BR3003

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

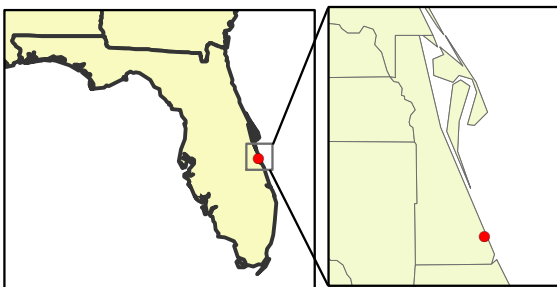
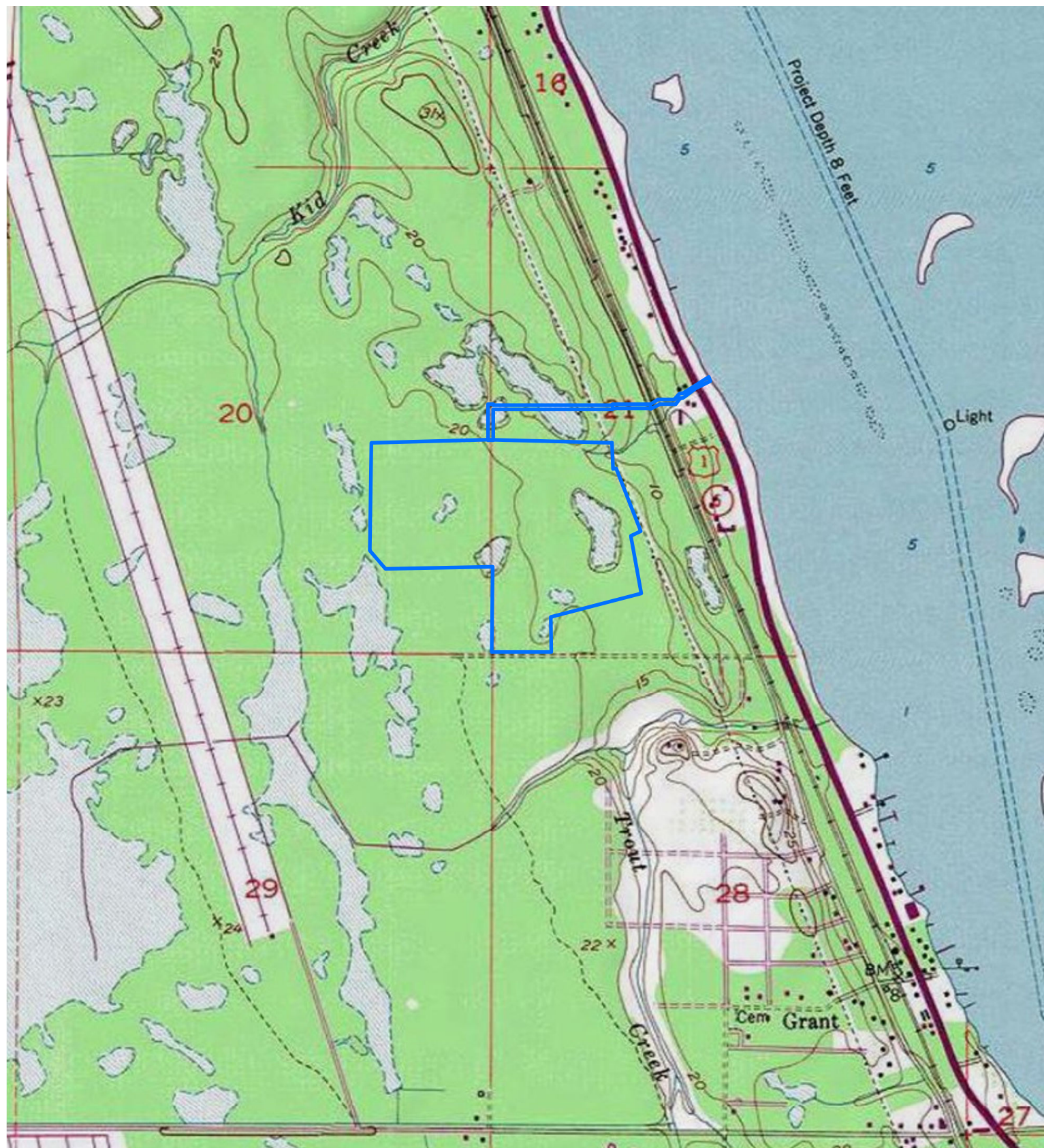
*****REQUIRED: ATTACH PLOT OF SURVEY AREA ON PHOTOCOPY OF USGS 1:24,000 MAP(S)*****

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: _____



N BV-24A Project Area

Brevard County, Florida
Township 29 South, Range 38 East,
Section 20-21

Base map: Grant, Fla. 1949
(PR 1970) USGS 7.5' topographic
quadrangle

Legend

project area

0 0.25 0.5
Miles

☒ Original
☐ Update



ARCHAEOLOGICAL SITE FORM

FLORIDA MASTER SITE FILE

Version 4.0 1/07

Site #8 **BR03903**
 Field Date 10-4-2018
 Form Date 10-19-2018
 Recorder # _____

Consult Guide to Archaeological Site Form for detailed instructions

Site Name(s) Valkaria Not Valkyries Multiple Listing (DHR only) _____
 Project Name BV-24A Dredged Materials PHI Survey # (DHR only) _____
 Ownership: ☐ private-profit ☐ private-nonprofit ☒ private-individual ☐ private-nonspecific ☐ city ☐ county ☐ state ☐ federal ☐ Native American ☐ foreign ☐ unknown

LOCATION & MAPPING

USGS 7.5 Map Name GRANT USGS Date 1970 Plat or Other Map _____
 City/Town (within 3 miles) Grant-Valkaria In City Limits? ☒ yes ☐ no ☐ unknown County Brevard
 Township 29S Range 38E Section 21 1/4 section: ☒ NW ☐ SW ☐ SE ☐ NE Irregular-name: _____
 Township _____ Range _____ Section _____ 1/4 section: ☐ NW ☐ SW ☐ SE ☐ NE
 Landgrant _____ Tax Parcel # 29-38-21-00-266
 UTM Coordinates: Zone ☐ 16 ☒ 17 Easting 545802 Northing 3091400
 Other Coordinates: X: _____ Y: _____ Coordinate System & Datum UTM NAD 83 Z17
 Address / Vicinity / Route to: East and west side of US Hwy 1, E of FEC RR, 1.5 miles S of Valkaria Blvd, .6 miles N of Atlantic Ridge Lane
 Name of Public Tract (e.g., park) US Hwy 1 ROW (cuts thru site)

TYPE OF SITE (select all that apply)

SETTING		STRUCTURES OR FEATURES		FUNCTION
<input checked="" type="checkbox"/> Land (terrestrial)	<input type="checkbox"/> Wetland (palustrine)	<input type="checkbox"/> log boat	<input type="checkbox"/> fort	<input type="checkbox"/> campsite
<input type="checkbox"/> Lake/Pond (lacustrine)	<input type="checkbox"/> usually flooded	<input type="checkbox"/> agric/farm building	<input checked="" type="checkbox"/> midden	<input checked="" type="checkbox"/> extractive site
<input type="checkbox"/> River/Stream/Creek (riverine)	<input type="checkbox"/> usually dry	<input type="checkbox"/> burial mound	<input type="checkbox"/> mill	<input type="checkbox"/> habitation (prehistoric)
<input type="checkbox"/> Tidal (estuarine)	<input type="checkbox"/> Cave/Sink (subterranean)	<input type="checkbox"/> building remains	<input type="checkbox"/> mission	<input type="checkbox"/> homestead (historic)
<input type="checkbox"/> Saltwater (marine)	<input type="checkbox"/> terrestrial	<input type="checkbox"/> cemetery/grave	<input type="checkbox"/> mound, nonspecific	<input type="checkbox"/> farmstead
	<input type="checkbox"/> aquatic	<input type="checkbox"/> dump/refuse	<input type="checkbox"/> plantation	<input type="checkbox"/> village (prehistoric)
		<input type="checkbox"/> earthworks (historic)	<input type="checkbox"/> platform mound	<input type="checkbox"/> town (historic)
			<input type="checkbox"/> well	<input type="checkbox"/> quarry

Other Features or Functions (Choose from the list or type a response.)
 1. _____ 2. _____

CULTURE PERIODS (select all that apply)

ABORIGINAL				NON-ABORIGINAL
<input type="checkbox"/> Alachua	<input type="checkbox"/> Englewood	<input type="checkbox"/> Manasota	<input checked="" type="checkbox"/> St. Johns (nonspecific)	<input type="checkbox"/> First Spanish 1513-99
<input type="checkbox"/> Archaic (nonspecific)	<input type="checkbox"/> Fort Walton	<input type="checkbox"/> Mississippian	<input type="checkbox"/> St. Johns I	<input type="checkbox"/> First Spanish 1600-99
<input type="checkbox"/> Archaic, Early	<input type="checkbox"/> Glades (nonspecific)	<input type="checkbox"/> Mount Taylor	<input type="checkbox"/> St. Johns II	<input type="checkbox"/> First Spanish 1700-1763
<input type="checkbox"/> Archaic, Middle	<input type="checkbox"/> Glades I	<input type="checkbox"/> Norwood	<input type="checkbox"/> Santa Rosa	<input type="checkbox"/> First Spanish (nonspecific)
<input type="checkbox"/> Archaic, Late	<input type="checkbox"/> Glades II	<input type="checkbox"/> Orange	<input type="checkbox"/> Santa Rosa-Swift Creek	<input type="checkbox"/> British 1763-1783
<input type="checkbox"/> Belle Glade	<input type="checkbox"/> Glades III	<input type="checkbox"/> Paleoindian	<input type="checkbox"/> Seminole (nonspecific)	<input type="checkbox"/> Second Spanish 1783-1821
<input type="checkbox"/> Cades Pond	<input type="checkbox"/> Hickory Pond	<input type="checkbox"/> Pensacola	<input type="checkbox"/> Seminole: Colonization	<input type="checkbox"/> American Territorial 1821-45
<input type="checkbox"/> Caloosahatchee	<input type="checkbox"/> Leon-Jefferson	<input type="checkbox"/> Perico Island	<input type="checkbox"/> Seminole: 1st War To 2nd	<input type="checkbox"/> American Civil War 1861-65
<input type="checkbox"/> Deptford	<input type="checkbox"/> Malabar I	<input type="checkbox"/> Safety Harbor	<input type="checkbox"/> Seminole: 2nd War To 3rd	<input type="checkbox"/> American 19th Century
	<input type="checkbox"/> Malabar II	<input type="checkbox"/> St. Augustine	<input type="checkbox"/> Seminole: 3rd War & After	<input checked="" type="checkbox"/> American 20th Century
			<input type="checkbox"/> Swift Creek (nonspecific)	<input type="checkbox"/> American (nonspecific)
			<input type="checkbox"/> Swift Creek, Early	<input type="checkbox"/> African-American
			<input type="checkbox"/> Swift Creek, Late	
			<input type="checkbox"/> Transitional	
			<input type="checkbox"/> Weeden Island (nonspecific)	
			<input type="checkbox"/> Weeden Island I	
			<input type="checkbox"/> Weeden Island II	
			<input type="checkbox"/> Prehistoric (nonspecific)	
			<input type="checkbox"/> Prehistoric non-ceramic	
			<input type="checkbox"/> Prehistoric ceramic	

Other Cultures (Choose from the list or type a response. For historic sites, give specific dates.)
 1. _____ 2. _____ 3. _____ 4. _____

OPINION OF RESOURCE SIGNIFICANCE

Potentially eligible individually for National Register of Historic Places? ☐ yes ☒ no ☐ insufficient information
 Potentially eligible as contributor to a National Register district? ☐ yes ☒ no ☐ insufficient information
 Explanation of Evaluation (required if evaluated; use separate sheet if needed) Due to limited diagnostic artifacts and disturbance, site 8BR3903 is recommended ineligible for listing on the NRHP for a lack of further research potential within the current project area, but significant features may exist beyond the current project.
 Recommendations for Owner or SHPO Action No further within current project area; delineation of site to N and S, beyond current project if ground disturbance is nearby.

DHR USE ONLY	OFFICIAL EVALUATION	DHR USE ONLY
NR List Date _____	SHPO – Appears to meet criteria for NR listing: <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> insufficient info	Date _____ Init. _____
<input type="checkbox"/> Owner Objection	KEEPER – Determined eligible: <input type="checkbox"/> yes <input type="checkbox"/> no	Date _____
	NR Criteria for Evaluation: <input type="checkbox"/> a <input type="checkbox"/> b <input type="checkbox"/> c <input type="checkbox"/> d (see <i>National Register Bulletin</i> 15, p. 2)	

FIELD METHODS (select all that apply)

SITE DETECTION

- ☐ no field check
☐ literature search
☐ informant report
☐ remote sensing
☐ exposed ground
☐ posthole tests
☐ auger tests
☐ unscreened shovel
☐ screened shovel
☒ screened shovel-1/4"
☐ screened shovel-1/8"
☐ screened shovel-1/16"

SITE BOUNDARY

- ☒ bounds unknown
☐ none by recorder
☐ literature search
☐ informant report
☐ remote sensing
☐ exposed ground
☐ posthole tests
☐ auger tests
☐ unscreened shovel
☒ screened shovel
☐ block excavations
☒ estimate or guess

Other methods; number, size, depth, pattern of units; screen size (attach site plan) area shovel tested @ 25m interval; N & S
bounds unknown due to very limited easement project area/7 STs excavated to inundation at 60 to 80 cmbs/50cm
diameter/all soil screened through 1/4-in hardware cloth/4 positive tests.

SITE DESCRIPTION

Extent Size (m²) 3,900 Depth/stratigraphy of cultural deposit Prehistoric artifacts/possible midden in 1 ST from 15 to 25 cmbs/Strat II; Historic artifacts from surface to 60 cmbs/Strat I-II-III

Temporal Interpretation - Components (check one): ☐ single component ☒ multiple component ☐ uncertain

Describe each occupation in plan (refer to attached large scale map) and stratigraphically. Discuss temporal and functional interpretations:

St. Johns nonspecific period midden (which may be redeposited or disturbed from canal dredge/road

construction) & 20th century American (which may be dumped or dredged from the adjacent canal/ditch/drainage +

Integrity - Overall disturbance: ☐ none seen ☐ minor ☒ substantial ☐ major ☐ redeposited ☐ destroyed-document! ☐ unknown

Disturbances / threats / protective measures site is disturbed from ditching, fill from road building, and trash dumping/erosion

along Indian River and US 1 or from canal maint or land clearing/none recommended

Surface collection: area collected _____ m² # collection units _____ Excavation: # noncontiguous blocks _____

ARTIFACTS

Total Artifacts # 194 ☒ count ☐ estimate Surface # 0 Subsurface # 194

COLLECTION SELECTIVITY

- ☐ unknown
☐ unselective (all artifacts)
☐ selective (some artifacts)
☐ mixed selectivity

SPATIAL CONTROL

- ☐ uncollected ☐ general (not by subarea)
☐ unknown ☐ controlled (by subarea)
☐ variable spatial control
☐ other (describe in comments below)

ARTIFACT CATEGORIES and DISPOSITIONS

- A - Aboriginal ceramics
 S - Glass
 S - Metal
 A - Nonaboriginal ceramics
 O - Shell-Unworked
 S - Miscellaneous historic

select a disposition from the list below for each artifact category selected at left

- A - category always collected
 S - some items in category collected
 O - observed first hand, but not collected
 R - collected and subsequently left at site
 I - informant reported category present
 U - unknown

Artifact Comments ferrous metal wire nails (2), bolts (5), washer (1), handle (1), indeterminate fragments (11);
clear (64), amber (23), olive green (67) container glass fragments; mirror glass (1); window glass (8); tile +

DIAGNOSTICS (type or mode, and frequency: e.g., Suwanee ppk, heat-treated chert, Deptford Check-stamped, ironstone/whiteware)

- | | | | | | |
|--|-------------|----------|----------|----------|----------|
| 1. <u>St. Johns Plain body sherd</u> | N= <u>1</u> | 4. _____ | N= _____ | 7. _____ | N= _____ |
| 2. <u>sand tempered plain body sherd</u> | N= <u>1</u> | 5. _____ | N= _____ | 8. _____ | N= _____ |
| 3. _____ | N= _____ | 6. _____ | N= _____ | 9. _____ | N= _____ |

ENVIRONMENT

Nearest fresh water: Type River Name Indian River Distance from site (m) 20
 Natural community SCRUBBY FLATWOODS Topography Ridge slope Elevation: Min 0 m Max 15 m
 Local vegetation Brazilian pepper, Australian pine, palms, palmettos
 Present land use overgrown canal drainage area
 SCS soil series Canaveral-Anclote complex and Myakka sand, + Soil association Felda-Floridana-Winder Association

DOCUMENTATION

Accessible Documentation Not Filed with the Site File - including field notes, analysis notes, photos, plans and other important documents

- | | |
|---|---|
| 1) Document type <u>All materials at one location</u> | Maintaining organization <u>PanAmerican Consultants, Inc.</u> |
| Document description _____ | File or accession #'s <u>38152</u> |
| 2) Document type _____ | Maintaining organization _____ |
| Document description _____ | File or accession #'s _____ |

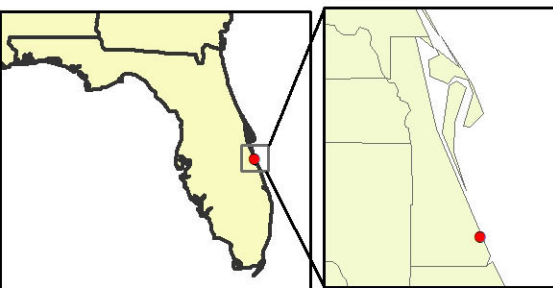
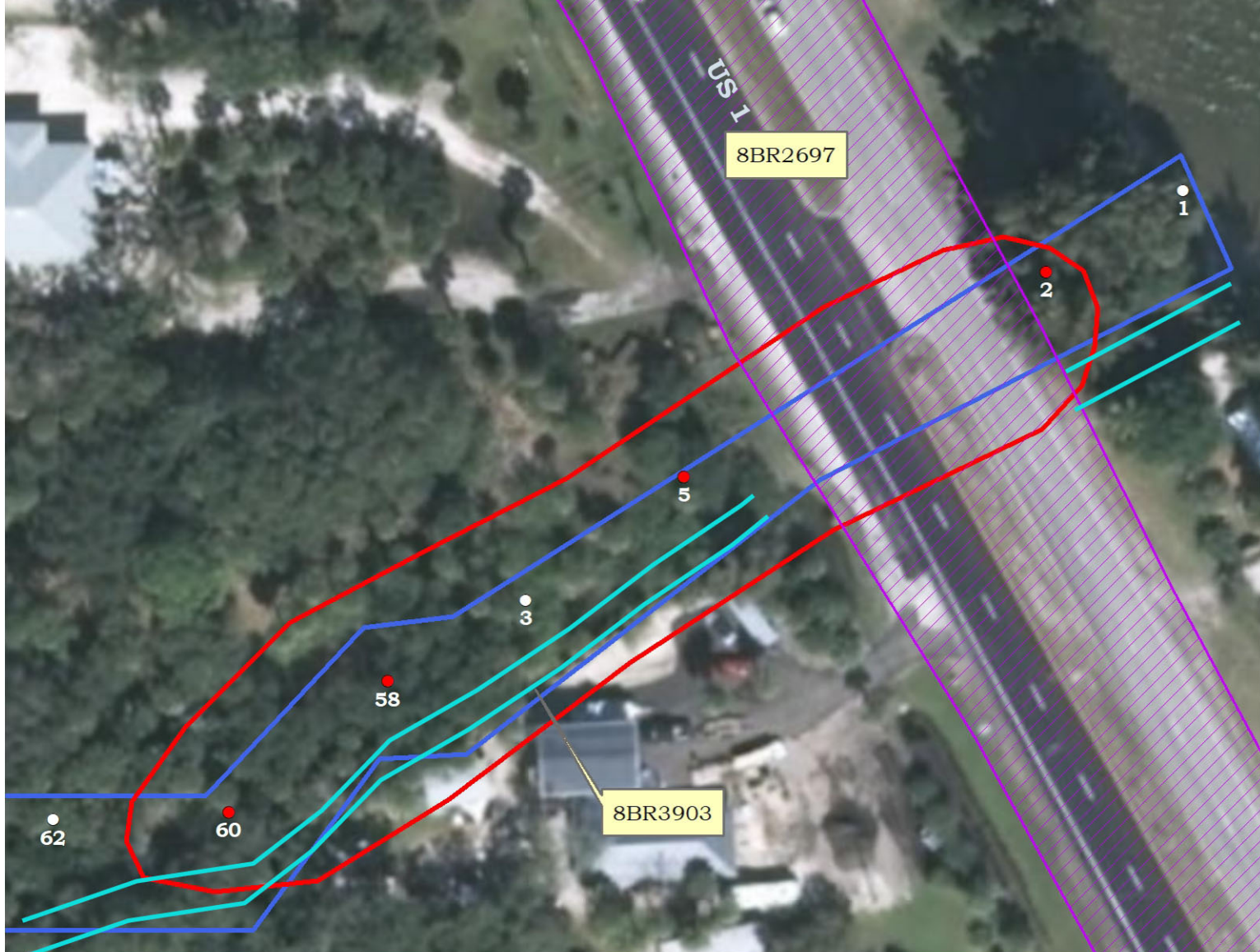
RECORDER & INFORMANT INFORMATION

Informant Information: Name _____
 Address / Phone / E-mail _____

Recorder Information: Name Jelane Wallace Affiliation PanAmerican Consultants, Inc.
 Address / Phone / E-mail 5337 N. Socrum Lp Rd, Ste144, Lakeland, FL 33809/813.684.5200/jwallace@panamconsultants.com

**Required
Attachments**

① PHOTOCOPY OF 7.5' USGS QUAD MAP WITH SITE BOUNDARIES MARKED and SITE PLAN
 Plan at 1:3,600 or larger. Show boundaries, scale, north arrow, test/collection units, landmarks and date.

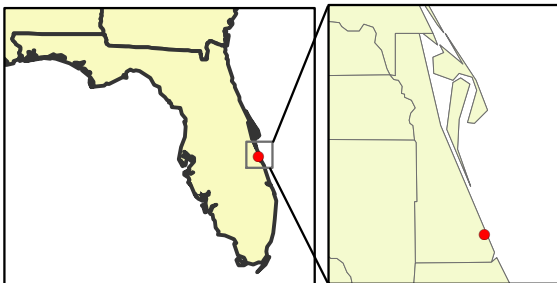
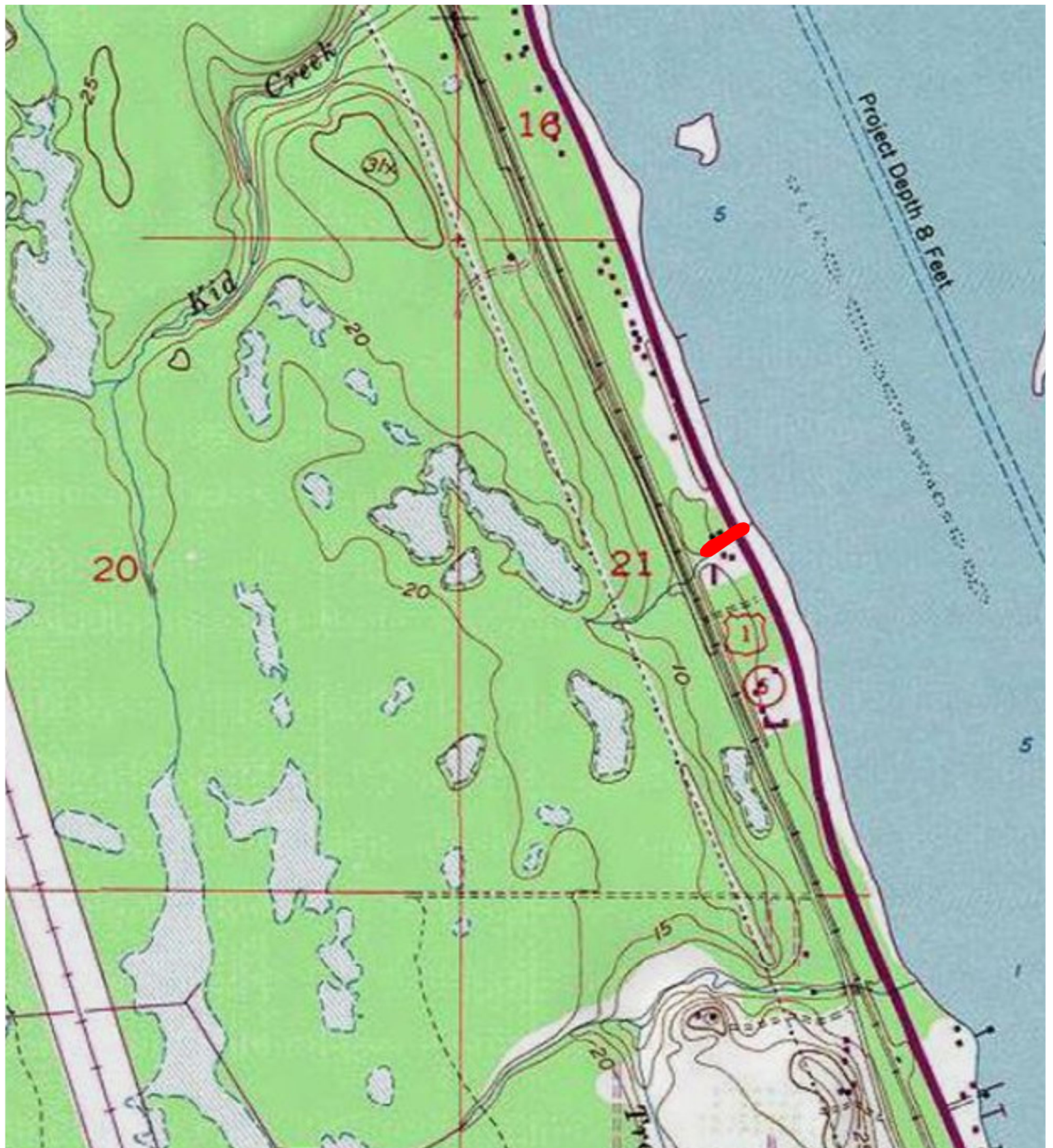


N Site 8BR3903
Brevard County, Florida
Township 29 South, Range 38 East,
Section 20-21
Base map: ESRI aerial imagery, 2017



Legend

- project area
- linear resource
- archaeological site
- drainage/canal
- negative shovel test
- positive shovel test



N 8BR3903

Brevard County, Florida
Township 29 South, Range 38 East,
Section 21

Base map: Grant, Fla. 1949
(PR 1970) USGS 7.5' topographic
quadrangle

Legend

■ archaeological site

0 0.25 0.5
Miles