FINAL
CULTURAL RESOURCE ASSESSMENT SURVEY REPORT

S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway

Project Development and Environment Study
Pinellas County, Florida

Work Program Item Segment No: 410755 1

Prepared for:

Florida Department of Transportation
District Seven
11201 N. Malcolm McKinley Drive
Tampa, Florida 33612

February 2006

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February 2006

EXECUTIVE SUMMARY

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study which includes the evaluation of improving or replacing the existing low-level bascule bridge (Bridge No. 150049) on S.R. 679 (Pinellas Bayway Structure E) at the Intracoastal Waterway in Pinellas County. Structure E, built in 1961, is a 23-span bascule bridge with an overall length of 1,430 feet. The main span, over the Intracoastal Waterway, is a double leaf bascule span. The study limits for the project are from south of Madonna Boulevard (milepost 8.242) in Tierra Verde to south of S.R. 682 (milepost 9.335), a distance of 1.093 miles. A cultural resource assessment survey (CRAS) was undertaken to comply with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended, and the implementing regulations 36 CFR 800 (revised May 1999), as well as the provisions contained in the revised Chapter 267, *Florida Statutes* (*F.S.*). All work was carried out in conformity with Part 2, Chapter 12 ("Archaeological and Historical Resources") of the FDOT's *Project Development and Environment Manual* (revised January 1999), and the standards contained in the *Cultural Resource Management Standards and Operational Manual* (FDHR 2002).

The purpose of the CRAS was to locate, identify, and bound any cultural resources within the project area of potential effects (APE) and to assess their significance in terms of eligibility for listing in the National Register of Historic Places (NRHP). The historical/architectural and archaeological field surveys were conducted in September 2005. This report documents the results of the CRAS component of the PD&E Study.

Background research, including a review of the Florida Master Site File (FMSF) and the NRHP, indicated an absence of previously recorded archaeological sites and historic resources. As a result of field survey, no new archaeological sites or historic structures were identified within the project APE. Thus, no significant cultural resources, including archaeological sites and historic resources that are listed, determined eligible, or considered potentially eligible for listing in the NRHP will be affected by this project. No further work is recommended.

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Section 1.0
INTRODUCTION

The Florida Department of Transportation (FDOT) is conducting a Project Development and Environment (PD&E) Study for roadway and bridge improvement alternatives along S.R. 679 at the Gulf Intracoastal Waterway. The location map (Figure 1.1) illustrates the location and limits of the study.

1.1 PURPOSE

The purpose of the PD&E Study is to provide documented environmental and engineering analyses to assist the FDOT and the United States Coast Guard (USCG), the lead federal agency, in reaching a decision as to the type, location, and conceptual design of roadway and bridge improvements to the S.R. 679 crossing of the Gulf Intracoastal Waterway. The PD&E Study satisfies the requirements of the National Environmental Policy Act (NEPA) and other Federal regulations. No Federal funding is being sought since toll revenues are expected to fund the proposed improvements.

The PD&E Study documents the need for the improvements, and presents the procedures that FDOT utilized to develop and evaluate various improvement alternatives including rehabilitation and replacement of the existing double-leaf bascule bridge (Bridge Number 150049, or 'Structure E') known locally as the Tierra Verde Bridge. FDOT collected information relating to the engineering and environmental characteristics essential for alternatives and analytical decisions. FDOT then established design criteria, and developed preliminary alternatives. The comparison of alternatives is based on a variety of parameters utilizing a matrix format. This process identifies the alternative which would have the least impact, while providing the necessary improvements. The study also solicits input from the community and users of the facility. The design year for the analysis is 2030.

S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway

Bridge No: 150049

Pinellas County, Florida

PROJECT LOCATION MAP

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Figure 1.1

1.2 PROJECT DESCRIPTION

The PD&E Study limits encompass the portion of S.R. 679 from south of Madonna Boulevard (milepost 8.242) in Tierra Verde to south of S.R. 682 (milepost 9.335) in Pinellas County, Florida, a distance of 1.093 miles. The project is located within Sections 8, 17, and 20, Township 32 South, Range 16 East, and within the Pass-A-Grille Beach United States Geological Survey (USGS) quad map (quad Number 3022). Structure E is a low-level bascule structure that spans the Gulf Intracoastal Waterway, a marked federal navigational channel which generally runs between the mainland and the nearly contiguous barrier islands along the Gulf of Mexico. S.R. 679 is not part of the National Highway System, the Florida Intrastate Highway System, or the Strategic Intermodal System (SIS); however, the Intracoastal Waterway within the study area is on the SIS. In addition, both S.R. 682 and S.R. 679 are designated hurricane evacuation routes.

S.R. 679 was originally constructed in 1961 to join the man-made islands of Tierra Verde with Isla Del Sol in St. Petersburg in Pinellas County. S.R. 679 is a north-south urban minor arterial that provides the only vehicular access to the islands of Tierra Verde and Mullet Key, where Fort Desoto Park is located. S.R. 679 is part of the Pinellas Bayway toll system, which also includes S.R. 682.

1.3 CULTURAL RESOURCE ASSESSMENT SURVEY

The purpose of the Cultural Resource Assessment Survey (CRAS) was to locate, identify, and bound any prehistoric and historic period archaeological sites and historic structures within the project are of potential effects (APE), and to assess the significance of these resources in terms of eligibility for listing in the National Register of Historic Places (NRHP) according to the criteria set forth in 36 CFR 60.4. The historical/architectural and archaeological surveys were conducted by Archaeological Consultants, Inc. (ACI) in September 2005. Field surveys were preceded by background research. Such work served to provide an informed set of expectations concerning the kinds of cultural resources that might be anticipated to occur within the project APE, as well as a basis for evaluating any new sites discovered.

This survey was initiated in order to comply with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended, and the implementing regulations 36 CFR 800 (revised May 1999), as well as the provisions contained within the revised Chapter 267, *Florida Statutes*. All work was carried out in conformity with Part 2, Chapter 12 ("Archaeological and Historical Resources") of the FDOT's *Project Development and Environment Manual* (revised January 1999), and the standards contained in the *Cultural Resource Management Standards and Operational Manual* (FDHR 2002).

1.4 AREA OF POTENTIAL EFFECTS

Various alternatives for rehabilitating or replacing the bridge, including the No Build Alternative, are being evaluated as part of the PD&E Study. However, no additional lanes will be considered for the existing two-lane undivided bascule structure. The bridge currently has no shoulders and 3-foot sidewalks on the outside separated from the travel lanes by a concrete curb and guardrail. If the bridge is replaced, the new typical section is expected to include 10-foot outside shoulders and 6-foot sidewalks. The APE for the archaeological survey was defined as the land within and adjacent to the existing right-of-way. The existing right-of-way measures approximately 200-feet over land and 1000-feet over the Intracoastal Waterway. For the historical/architectural survey, the APE extended approximately 400 feet in each direction from the centerline of the existing S.R. 679 right-of-way, to take into account both the direct and indirect effects for all alternatives, including the possibility of a high level bridge alternative.

Section 2.0
ENVIRONMENTAL SETTING

Environmental factors such as geology, topography, relative elevation, soils, vegetation, and water resources are important in determining where prehistoric and historic period archaeological sites are likely to be located. These variables influenced what types of resources were available for utilization in a given area. This, in turn, influenced decisions regarding settlement location and land-use patterns. Because of the influence of the local environmental factors upon the aboriginal inhabitants, a discussion of the effective environment is included.

2.1 PROJECT LOCATION AND EXISTING CONDITIONS

The S.R. 679 (Pinellas Bayway Structure E) PD&E Study project is located in Sections 8, 17, and 20 of Township 32 South, Range 16 East (USGS Pass-A-Grille Beach, Fla. 1956, PR 1981, PI 1983). Bridge Structure E connects the islands of Tierra Verde on the south to Isla del Sol on the north, a distance of 0.389 miles.

The project study area is located in the Southwestern Flatwoods Physiographic District, which is characterized by low plateaus and ridges, flatwoods, prairies, rocklands/marl plains, and a variety of coastal features (Brooks 1981b, 1981c). Holocene sediments of medium fine sands and silts comprise the surface lithology (Arthur 1993; Brooks 1981a; Knapp 1980; Scott 2001; Scott et al. 2001). The topography is gently flat, with elevations ranging from sea level to five feet above mean sea level (AMSL).

The soils in the project area reflect human modification of the natural landscape. The local soils are of the Made Land-Palm Beach association, described as nearly level, extensively altered, and formed by diking, dredging, and filling (USDA 1972). The soil within the project area consists entirely of Palm Beach sand, which is a nearly level, well drained sand mixed with shells and fine shell fragments. It consists mainly of material dredged from nearby shallow waters to fill dikes (USDA 1972:16).

S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway

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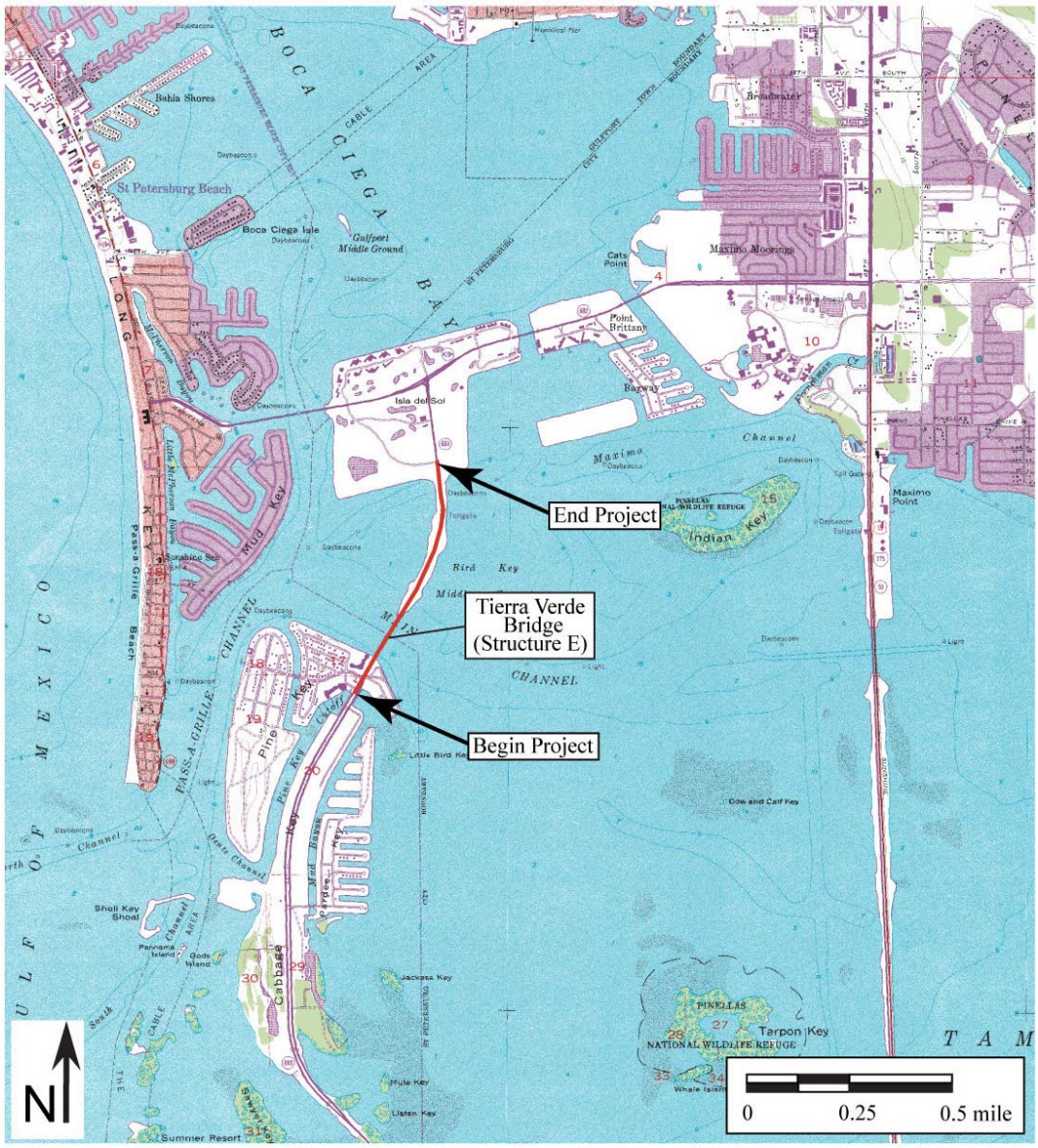
Pinellas County, Florida

Environmental Setting of the S.R. 679 (Pinellas Bayway Structure E) PD&E Study.
Township 32 South, Range 16 East (USGS Pass-A-Grille, Fla. 1956, PR 1981, PI 1983).

WPI Segment No : 410755-1

Figure 2.1



The physical environment of the S.R. 679 (Pinellas Bayway Structure E) PD&E Study project area has been heavily influenced by both natural and human actions. Comparison of maps of the Boca Ciega Bay area from 1883 and 1997 serves to illustrate more than one century of radical land alterations (Davis and Barnard 2000) (Figure 2.2). These changes include the conjoining of small keys to the larger barrier island, and the enlargement of the general land area, including the creation of Isla del Sol and Point Brittany to the north. Prior to the mid-1970s, there was an almost 30% reduction in the surface area of Boca Ciega Bay through the extensive dredge-and-fill activities (Mehta et al. 1976).

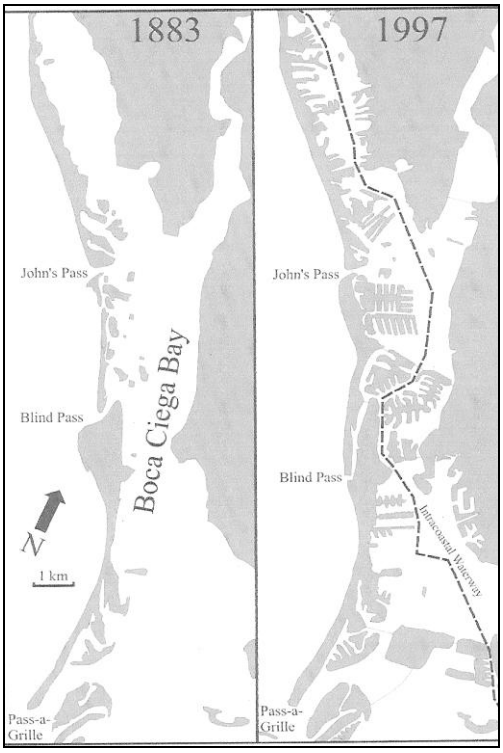


Figure 2.2. 1883 and 1997 Comparison of the Boca Ciega Bay Landforms (in Davis and Zarillo 2003).

While the original barrier island environment of the project area would have been a productive area for aquatic resources, including fish and shellfish, any trace of precontact and early historic settlement has most likely been erased through storms, dredge and fill, and modern residential and commercial construction.

2.2 LITHIC RESOURCES

Stone played an important role in the lifeways of the prehistoric people that lived in this part of Florida. Due to the highly acidic nature of the Florida soils, preservation of organic cultural material is quite poor. Thus, stone tools and the debris from their manufacture are the most prevalent archaeological material present at inland prehistoric sites. Besides providing the medium from which implements utilized in hunting, butchering, and hide processing were produced, stone was also used in the production of tools for working bone, wood, shell, and vegetal fiber (Purdy and Beach 1980).

Two kinds of lithic raw material were utilized by prehistoric populations in west-central Florida, namely silicified limestone, known by geologists and archaeologists as chert, and silicified coral. Chert and silicified coral are the result of silicification of two host materials, i.e., Miocene limestone and coral, respectively (Upchurch et al. 1982). Over the past several decades, researchers have attempted to isolate and identify the origins of specific types of chert based on physical properties, e.g., trace elements, chemical, mineralogical, and petrological properties (Purdy 1976; Purdy and Blanchard 1973; Upchurch et al. 1982).

The most successful efforts have been produced by Upchurch and his students, whose work focused on the identification of quarry clusters. Quarry clusters are defined as geographical areas containing outcrops of chert which are uniform in fabric, composition, and fossil content and which were visited and utilized by early humans (Upchurch et al. 1982). Nineteen quarry clusters have been identified in Florida, as well as several sub-areas within individual quarry clusters (Upchurch et al. 1982). The identification of quarry clusters has allowed archaeologists to recognize variation in regional cherts and place them into a spatial framework with respect to location of archaeological sites.

The project area lies outside of any defined cluster. The Turtlecrawl Point Quarry Cluster (QC) is located north of the project area while the Hillsborough River QC is located to the northeast. Cherts from the Hillsborough River cluster vary widely in color and fabric, and contain few diagnostic fossils. The presence of organics in the soil and exposure to ground water containing a large amount of pyrite has resulted in the generic Hillsborough

River chert appearing translucent to opaque and dark gray/black in color, as well as red and brown (Upchurch et al. 1982). Chert from the Turtlecrawl Point QC is dark, opaque gray to medium gray in color and is most likely associated with the Hawthorn Formation. No discernible fossils, however, are present within the chert matrix (Upchurch et al. 1982:145). The sources of this chert all appear to have been inundated, as the recovered materials came from dredge spoil associated with the Intracoastal Waterway.

Silicified coral is the product of the replacement of the original coral aragonite skeletal material with silicates. Such replacement often preserved the fabric of the coral resulting in the distinctive "star" pattern in the stone if it is broken perpendicular to the plant's axis. The fossil genus most common is *Siderastrea* (Upchurch et al. 1982). Silicified coral cannot yet be identified as to source location. Outcrops occur in the Green Swamp and along the Hillsborough River (Upchurch et al. 1982). Silicified coral was frequently thermally altered by prehistoric humans in order to improve its workability. Silicified coral that has been thermally altered often appears deep pink/red in color, possesses a waxy luster, and occasionally exhibits spalling in the form of potlid fractures, as well as small fissures known as crazing.

2.3 PALEOENVIRONMENTAL CONSIDERATIONS

The prehistoric environment of Pinellas County was different from that which is seen today. Sea levels were much lower, the climate was drier, and potable water was scarce. Dunbar (1981:95) notes that due to the arid conditions during the period 16,500 to 12,500 years before the present (B.P.), "the perched water aquifer and potable water supplies were absent." Palynological studies conducted in Florida and Georgia suggest that between 13,000 and 5000 years ago, this area was covered with an upland vegetation community of scrub oak and prairie (Watts 1969, 1975). The rise of sea levels severely reduced xeric habitats over the next several millennia.

By 5000 years ago, the mid-Holocene hypsithermal, a climatic event marking a brief return to Pleistocene climatic conditions, induced a change towards more open vegetation. Southern pine forests replaced the oak savannahs. Extensive marshes and swamps developed along the coasts and subtropical hardwood forests became established

along the southern tip of Florida (Delcourt and Delcourt 1981). Northern Florida saw an increase in oak species, grasses, and sedges (Carbone 1983). At Lake Annie, pollen cores are dominated by wax myrtle and pine. The assemblage suggests that by this time a forest dominated by longleaf pine, along with cypress swamps and bayheads existed in the area (Watts 1971, 1975). By about 3500 B.C., surface water was plentiful in karst terrains and the level of the Floridan aquifer rose to about five feet above present levels. After this time, modern floral, climatic, and environmental conditions began to be established (Watts 1975).

Faunal changes are more difficult to document due to the mixing of the species record and the lack of accessibility of sites containing faunal remains. Lists of extinct mammal species that occupied the southeastern continent some 14,000 years ago have been compiled (Webb 1981, 1990). These include the giant land tortoise, giant ground sloth, mastodon, mammoth, camel, bison, giant beaver, wolf, jaguar, and horse. The predominant species were large grazers, some of which were herd ungulates (Carbone 1983:10). Within Florida, the presence of long-nosed peccary, spectacled bear, southern llama, and giant armadillo indicate that this region possessed a rich and diverse environment (Carbone 1983).

Section 3.0
PRECONTACT REVIEW

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

Archaeologists summarize the prehistory of a given area (i.e., an archaeological region) by outlining the sequence of archaeological cultures through time. Archaeological cultures are defined largely in geographical terms, but also reflect shared environmental and cultural factors. The project area is located within the Central Peninsular Gulf Coast archaeological region (Milanich and Fairbanks 1980). This region extends from the northern portion of Charlotte Harbor to north of Tampa Bay (Figure 3.1). Within these zones, Milanich and Fairbanks (1980), and, more recently, Milanich (1994) have defined the Paleo-Indian, Archaic, Formative, Mississippian, and Acculturative stages on the basis of unique sets of material culture traits such as characteristic stone tools and ceramics, as well as subsistence, settlement, and burial patterns. These broad temporal units are further subdivided into culture phases, horizons, or periods: Paleo-Indian (Clovis, Suwannee, Dalton), Archaic (Early [Bolen, Kirk, and post-Kirk], Middle [Newnan], Pre-ceramic Late Archaic, and Orange), Florida Transitional, Manasota, Weeden Island, and Safety Harbor (Englewood, Pinellas, Tatham, and Bayview) (cf. Austin 2001; Milanich 1994; Mitchem 1989).

Aboriginal populations have inhabited Florida for at least 14,000 years. The earliest cultural stages are fairly similar throughout the southeastern U.S. Cultural regionalism began to develop approximately 7000 years ago, during the Middle Archaic, as evidenced by varying settlement and subsistence patterns across the state. With the advent of fired clay pottery, regionalism became more pronounced and was clearly evident by 500 B.C. A brief summary of the major cultural stages follows.

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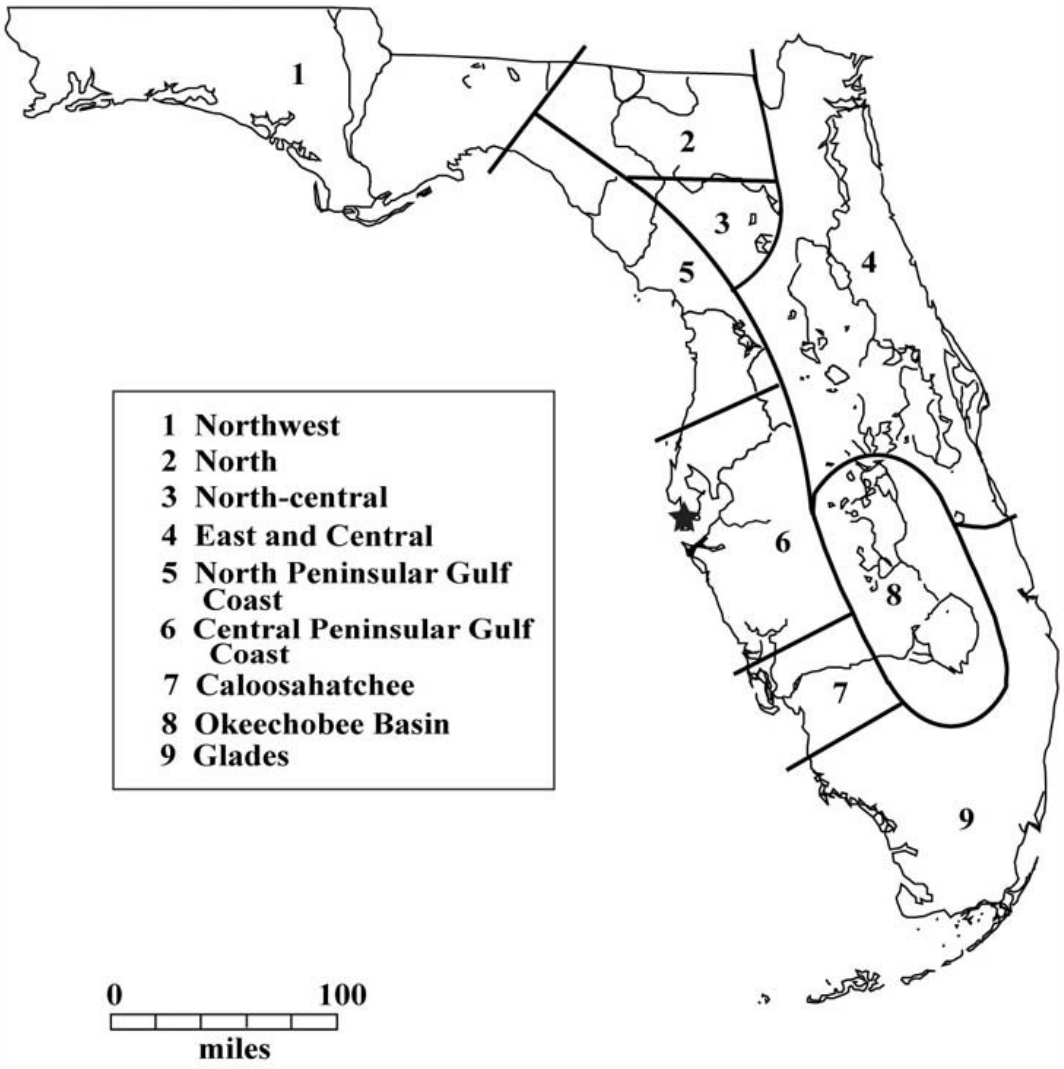
Florida Archaeological Regions (Milanich 1994:xix).
The project area (★) is located in the
Central Peninsular Gulf Coast Region.

Figure 3.1



Post- 500 B.C. regions of precolumbian Florida

3.1 PALEO-INDIAN

The earliest known cultural period in the region is the Paleo-Indian, which began with the first human arrivals in Florida at the end of the Pleistocene epoch, ca. 10,000 to 12,000 B.C., and which terminated about 6500 B.C. (Milanich and Fairbanks 1980:38). The Florida peninsula at this time was quite different than today. The climate was cooler and drier, and was typified by xerophytic species of plants, with scrub oaks, pine, open grassy prairies, and savannas most common (Milanich 1994). When human populations were arriving in Florida, the sea levels were still as much as 115 feet below present levels and coastal regions of Florida extended miles beyond present-day shorelines (Milliman and Emery 1968). Paleo-Indian sites are known to exist below the waters of the Gulf of Mexico and off the Atlantic coast (Dunbar et al. 1989, 1991; Faught 1996, 2004; Ruppé 1980). Evidence of this includes sites that were discovered as a result of dredging activities in the Gulf (Karklins 1970) while other research has shown that some of the shell deposits bordering submerged river channels in Tampa Bay may have been Paleo-Indian midden deposits (Goodyear et al. 1983; Goodyear and Warren 1972).

The Paleo-Indian period has been sub-divided into three horizons based upon characteristic tool forms (Austin 2001). The Clovis Horizon (13,000-12,000 B.P.) represents the initial occupation of Florida. It is defined based upon the presence of the fluted Clovis points. These are somewhat more common in north Florida, although Robinson (1979) does illustrate a few points from the central Gulf Coast area. The Suwannee Horizon (12,000-11,000 B.P.) is the most well known of the three Paleo-Indian horizons. The lanceolate-shaped, unfluted Simpson and Suwannee projectile points are diagnostic of this time period (Bullen 1975; Daniel and Wisenbaker 1987; Purdy 1981). The Suwannee tool kit includes a variety of scrapers, adzes, spokeshaves, unifacially retouched flakes, flakes with beaked projections, and blade-like flakes as well as bone and ivory foreshafts, pins, awls, daggers, anvils, and abraders (Austin 2001:23). Following the Suwannee Horizon is the Late Paleo-Indian (Dalton?) Horizon (11,000-10,000 B.P.). The smaller Tallahassee, Santa Fe, and Beaver Lake projectile points have traditionally been attributed to this horizon (Milanich 1994). However, Austin (2001:27) indicates that many of these points have been recovered stratigraphically from late

Archaic and early Woodland period components and thus, may not date to this time period at all.

Archaeologists hypothesize that Paleo-Indians lived in migratory bands and subsisted by gathering and hunting, including the now-extinct Pleistocene megafauna. Since it was cooler and much drier, it is likely that these nomadic hunters traveled between permanent and semi-permanent sources of water, such as artesian springs, exploiting the available resources. This has been referred to as the Oasis theory (Dunbar 1991). These watering holes would have attracted the animals that the Indians hunted, thus providing both food and drink. In addition to being "tethered" to water sources, most of the Paleo-Indian sites are also proximate to sources of good quality lithic resources. This settlement pattern is considered to be logistical, i.e., the establishment of semi-permanent habitation areas and the movement of the resources from their sources of procurement to the residential locale by specialized task groups (Austin 2001:25).

Some of the information about this period has been derived from the underwater excavations at two inland spring sites in Sarasota County: Little Salt Spring and Warm Mineral Springs (Clausen et al. 1979). Excavation at the Harney Flats Site in Hillsborough County has provided a rich body of data concerning Paleo-Indian lifeways. Analysis indicates that this site was used as a quarry-related base camp with special use activity areas (Daniel and Wisenbaker 1987). The Colorado Site, a Paleo-Indian campsite and lithic workshop in Hernando County, also provided data relative to this period (Horvath et al. 1998).

3.2 ARCHAIC

The beginning of the Archaic is denoted by interrelated environmental and cultural changes. The environmental changes associated with the end of the Pleistocene necessitated modification of the extant prehistoric settlement patterns and subsistence economies. Whereas the Paleo-Indians depended more heavily on the Pleistocene megafauna and the relatively limited number of freshwater sources, Archaic populations hunted smaller game and learned to efficiently exploit their new environment. These adaptive changes resulted in an increase in the number and types of archaeological sites,

such as marine and freshwater shell middens. The effects of the changing environment can be seen in the variation in site locations. Although Early Archaic materials are often found in association with Paleo-Indian deposits, especially around water sources, other Early Archaic sites are located in areas devoid of Paleo-Indian components.

The Archaic stage has traditionally been divided into three periods: Early, Middle, and Late (Milanich 1994). Bullen (1959, 1975) separates the Orange [ceramic Archaic] (2000 to 1000 B.C.) and the Transitional (1200 to 500 B.C.) periods from the Late Archaic. Milanich (1994:35, 88) notes that even with the advent of fired clay pottery, the basic lifestyles of the aboriginal occupants of the Late Archaic remained relatively unchanged, and due to the difficulty of identifying Transitional period sites, suggests that its use be discontinued. A recent synthesis of the Paleo-Indian and Archaic periods of the Middle Hillsborough River drainage has proposed even further subdivisions, all based on diagnostic tool forms and tool kits (Austin 2001).

The Bolen Horizon, ca. 10,000 to 9000 B.P., is well documented in Florida, and generally recognized by the presence of the side-notched projectile points such as the Bolen variants and possibly the Greenbriar (Austin 2001). Included in the tool kit are a variety of scrapers, Waller knives, spokeshaves, adzes, and flake tools, as well as bone, antler, and wood implements. Austin (2001:35) suggests that the Bolen people continued to practice a logistical strategy with periodic movements between permanent sources of water.

The Kirk Horizon dates from 9000-8000 B.P. and is identified by the presence of Kirk Stemmed and Serrated projectile points. The Hardee Beveled, Sumter, and Thonotosassa points may also be indicative of an Early Archaic component (Bullen 1975; Milanich 1994). This time period is poorly understood due to the lack of controlled excavations of sites containing Kirk materials. Austin suggests that some of the problems in identifying these sites may be with the identification of the Kirk point which may have been misclassified as the more common Florida Archaic Stemmed point (Austin 2001:36).

A post-Kirk Horizon (8000-7000 B.P.) was suggested to bridge the gap between the Kirk Horizon and the subsequent Middle Archaic period (Austin 1997; Widmer 1988). The

only site that can firmly be attributed to this period is the Windover Site in Brevard County (Doran 2002). Bone and wood tools and textiles were important items in their technological system (Adovasio et al. 2002; Andrews et al. 2002; Penders 2002).

During the Middle Archaic, ca. 7000 to 5000 B.P., a shift from the dispersed settlement pattern of the preceding period to a system of base camps with numerous, smaller satellite camps has been hypothesized (Milanich 1994). It has been suggested that the Middle Archaic people were actually more mobile than their predecessors, with seasonal sedentism (Daniel 1985). Chance's (1983a, 1983b) discussion of the Diamond Dairy Site (8HI476) suggests a more flexible system, with varied uses and lengths of stay depending on specific and variable conditions (Austin 2001:43). Where resources are more dependable and abundant, such as along the coast (cf., Russo 1991; Ste. Claire 1990) and the St. Johns River, permanent settlements could be achieved, with special-use extractive camps away from the home base. For the rest of the state, however, people had to move to find the resources they required. This is seen in the variety of chert types within individual site lithic assemblages (Austin 1997; Austin and Estabrook 2000).

Geographically, there are several Middle Archaic horizons in the state, the best known of which is the Mount Taylor Horizon along the St. Johns River. In the central interior part of Florida, it is referred to as the Newnan Horizon. Artifacts associated with this period include broad-bladed, stemmed projectile points such as the Levy, Alachua, Hillsborough, Newnan, Marion, and Putnam types. Austin (2001:3) notes that there was a decrease in the used of shaped tools other than bifaces and an increased dependence on expedient flake tools. Thermal alteration of lithic raw materials also is a temporal marker for this time (cf., Ste. Claire 1987). A few regional cemetery sites (e.g., Bay West in Collier County, Republic Groves in Hardee County, and the Nona Site in Sarasota County), with interments in bogs, springs and other wetlands, provide evidence for mortuary ceremonialism during this time (Beriault et al. 1981; Luer 2002; Wharton et al. 1981). The excavations at the West Williams Site (8HI509) in Hillsborough County have provided new information on the Newnan Horizon due to the recovery of subsurface features and faunal remains (Austin et al. 2001). The features suggest that structures were present and the faunal materials are indicative of reliance on aquatic as well as terrestrial

resources. Faunal remains were also recovered from the Enclave C Site (8PA1269) in Pasco County indicating use of fish, turtle, alligator, deer, raccoon, and dog, among others (Estabrook et al. 2000; Quitmyer et al. 2001). No evidence, however, was recovered to suggest use of freshwater shellfish.

During the Late Archaic, ca. 5000 to 2500 B.P, populations increased and became more sedentary as the result of the arrival of essentially modern environmental conditions (Milanich 1994). Vegetation had changed from those species that preferred moist conditions to pines and mixed forests (Watts and Hansen 1988). The beginning of this period is referred to as the Preceramic Late Archaic Horizon (5000-3000 B.P.) and is followed by the Orange Horizon (3000-2500 B.P). The preceramic horizon began during the "climatic optimum" which was a period of high rainfall and higher temperatures than today (Austin 2001:45). Sea levels rose, inundating coastal sites. It is during this time that the earliest dugout canoes are reported (Newsom and Purdy 1990; Wheeler et al. 2003). Broad-bladed, stemmed projectile points of the Middle Archaic continued, in addition to the basally-notched Culbreath and the corner-notched Clay and Lafayette points (Bullen 1975). Other items in the tool kit include a variety of scrapers, ovate and triangular bifaces, and stone "picks" (Austin 2001:46). A greater reliance on marine resources is indicated in coastal areas, as evidenced by the preceramic strata of the shell middens at Bay Pines (Braley 1978) and Maximo Beach (Williams 1979). The Palmer Site in Sarasota is one of the best-known and preserved sites of this type. It is a horseshoe-shaped shell midden apparently encircling a freshwater spring adjacent to Sarasota Bay (Bullen and Bullen 1976). Culbreath Bayou along the shores of Tampa Bay also has a preceramic component (Warren et al. 1967).

The introduction of fiber-tempered (Spanish moss or palmetto) ceramics, the earliest pottery manufactured, marks the Orange Horizon (Bullen 1972; Milanich and Fairbanks 1980). These wares are referred to as Orange or Norwood ceramics. Early chronologies suggested that they lacked decoration until about 1650 B.C. when they became decorated with geometric designs and punctations (Bullen 1955, 1972). However, recent research has called this ceramic chronology into question; AMS dates from a series of incised Orange sherds from the middle St. Johns River Valley indicate contemporaneity with the

plain varieties (Sassaman 2003). In addition, the occurrence of sand and sponge spicules as tempering agents has also been documented in these early wares (Cordell 2004; Sassaman 2004; Saunders 2004). Other than the addition of ceramics, the basic lifestyles and technologies were virtually the same as the preceding Preceramic Horizon (Milanich 1994). Fiber-tempered sherds have been recovered from the Canton Street Site in Pinellas County (Bullen et al. 1978).

Bridging the close of the Archaic stage and the beginning of the Formative is the Florida Transitional period, ca. 1200 to 500 B.C., as defined by Bullen. This time is characterized by a continued exploitation of shellfish, fish, and wild plants, as well as a continued reliance on hunting (Bullen 1959; Bullen et al. 1978). Bullen hypothesized that during the Florida Transitional period, the diffusion of culture traits, resulting from the movements of small groups of people, led to the spread of several ceramic and tool traditions, or the beginning of cultural regionalism. In the Central Peninsular Gulf Coast region, sand-tempered pottery became the dominant ceramic type.

3.3 FORMATIVE

The Formative stage is comprised of the Manasota and Weeden Island-related cultures (ca. 500 B.C. to A.D. 800). Settlement patterns consisted of permanent villages located along the coast with seasonal forays into the interior to hunt, gather, and collect those resources unavailable along the coast. Most Manasota sites are shell middens found on or near the shore where aboriginal villagers had easiest access to fish and shellfish (Milanich 1994). Subsistence patterns were focused on the coastal exploitation of fish and shellfish, supplemented by hunting and gathering inland resources (Luer and Almy 1982). Investigations at Shaw's Point in Manatee County have provided a wealth of information on site formation, subsistence economies, and technology and their changes over time (Schwadron 2002). The major villages were located along the shores with smaller sites being located up to 12-18 miles inland. These inland sites, which probably served as seasonal villages or special-use campsites, were often located in the pine flatwoods on elevated lands proximate to the source of freshwater where a variety of resources could be exploited (Austin and Russo 1989; Luer and Almy 1982). Hardin and

Piper (1984) suggest that some of the larger inland sites may actually be permanent or semi-permanent settlements as opposed to seasonal campsites (cf., Austin and Russo 1989; Janus Research 1999; Piper et al. 1982; Piper and Piper 1981).

Manasota is characterized by a wide range of material culture traits such as a well-developed shell and bone tool technology, sand-tempered plain ceramics, and burials within shell middens (Luer and Almy 1982). Much of the shell and bone technology evolved out of the preceding Archaic period. Through time, the burial patterns became more elaborate, with burials being placed within sand burial mounds located near the villages and middens. The early burial patterns consisted of primary flexed burials in the shell middens, while later sites contained secondary burials within sand mounds.

Temporal placement within the Manasota period can be determined based upon diagnostic ceramic rim and vessel forms (Luer and Almy 1982). The early forms (ca. 500 B.C. - A.D. 400) are characterized as flattened globular bowls with incurving rims and chamfered lips. Pot forms with rounded lips and inward curving rims were utilized from about 200 B.C. until A.D. 700. Deeper pot forms with straight sides and rounded lips were developed around A.D. 400 and continued into the Safety Harbor period. Simple bowls with outward curving rims and flattened lips were used from the end of the Late Weeden Island period (ca. A.D. 800) into the Safety Harbor period. Vessel wall thickness decreased over time.

The lithic assemblage of the Manasota culture was scarcer along the coast especially in the more southern portions of the region where stone suitable for tool manufacture was absent. Projectile point types associated with the Manasota period include the Sarasota, Hernando, and Westo varieties (Luer and Almy 1982). Pinellas County sites with Manasota components include Bay Pines (Gagel 1976), Weeden Island (Fewkes 1924; Sears 1971; Willey 1949), and Yat Kitischee (Austin 1995). Inland shell middens such as the Myakkahatchee Site in Sarasota County (Luer et al. 1987) also have been attributed to the Manasota period.

Influences from the Weeden Island "heartland," located in north-central Florida, probably resulted in changes in burial practices and the increased variety of ceremonial ceramic

types through time. Manasota evolved into what is referred to as a Weeden Island-related culture. The subsistence and settlement patterns remained fairly consistent. Hunting and gathering of the inland and coastal resources continued. Evidence of a widespread trade network is seen by the ceramic types (Wakulla Check Stamped, St. Johns Check Stamped, and Weeden Island varieties) and other exotic artifacts present within the burial mounds. The secular, sand-tempered ware continued to be the dominant ceramic type.

Ceremonialism and its expressions, such as the construction of complex burial mounds containing exotic and elaborate grave offerings, reached their greatest development during this time period. Similarly, the subsistence economy, divided between maritime and terrestrial animals and perhaps horticultural products, represents the maximum effective adjustment to the environment. In general, Weeden Island-related period sites are found along the coast, on bay shores, or on streams, and nearly all are marked by shell refuse with burial mounds of sand situated near the middens (Willey 1949).

Many Weeden Island-related sites consist of villages with associated mounds, as well as ceremonial/burial mound sites. The artifact assemblage is distinguished by the presence of Weeden Island ceramic types. These are among some of the finest ceramics in the southeast; they are often thin, well-fired, burnished, and decorated with incising, punctation, complicated stamping, and animal effigies (Milanich 1994:211). Coastal sites are marked by the presence of shell middens, indicating a continued pattern of exploitation of marine and estuarine resources. Interaction between the inland farmer-gatherers and coastal hunter-gatherers may have developed into mutually beneficial exchange systems (Kohler 1991:98). This could account for the presence of non-locally made ceramics at some of the Weeden Island-related period sites. There is no definitive evidence for horticulture (e.g., charred cobs, kernels, or beans) in the coastal area (Milanich 1994:215).

The New Haven #1 (Austin and Estabrook 1991), Safford Burial Mound (Bullen et al. 1970), and Myers Cove Midden (Austin 1987) sites, located along the bank of the Anclote River in Pinellas County, date from this time.

3.4 MISSISSIPPIAN/ACCULTURATIVE

The Weeden Island-related cultures evolved into the Safety Harbor culture (A.D. 900-1725). This period has been divided into four phases: Englewood (A.D. 900-1100), Pinellas (A.D. 1100-1500), Tatham (A.D. 1500-1567), and Bayview (A.D. 1567-1725) (Mitchem 1989). The first two phases are Precolumbian and the second two are from the colonial period. These temporal divisions are based upon radiocarbon dates associated with certain ceramic types during the Precolumbian phases and datable European artifacts during the colonial phases. The Tampa Bay area is within the Circum-Tampa Bay regional variant locale and may be considered the heartland of Safety Harbor. The areas further north are within the Northern Safety Harbor regional variant locale.

As with the preceding Manasota/Weeden Island period, the utilitarian village wares tend to be devoid of decoration. Ceramics types include Sand-tempered Plain and Pinellas Plain. The latter is distinguished by laminated paste with quartz inclusions. To the north, Pasco Plain wares continue to dominate. It is, however, the decorated ceramics, recovered from burial mound contexts that allow for the easier dating of the sites. The projectile points most commonly associated with this period are the Pinellas, Ichetucknee, and Tampa varieties (Bullen 1975).

The settlement and land-use patterns are similar to the preceding Weeden Island culture (Luer and Almy 1982; Mitchem 1989). Often, Safety Harbor components are located on top of the earlier Weeden Island deposits. The major sites tend to be located along the coast with smaller sites located inland. Large towns or villages often had a temple mound, plaza, midden, and burial mound associated with them. The platform mound-village complex probably served as the center of a political unit (Milanich 1994). Their subsistence economy also appears to mirror the earlier Weeden Island pattern of hunting and gathering, with a focus on the coastal/estuarine resources. Evidence to date suggests that agricultural pursuits were not an important factor in the diet as was the case with the Mississippian chiefdoms (Fort Walton culture) of northern Florida. This is not to say, however, that influences from the northern areas were limited. The evolution of the

socio-political system and the influences of the Southeastern Ceremonial Complex can be seen in the burial practices and grave offerings placed in the mounds.

Coastal sites include Safety Harbor (Griffin and Bullen 1950; Sears 1958), Maximo Point (Bushnell 1962; Sears 1958), Narvaez Midden (Bushnell 1966; Central Gulf Coast Archaeological Society 1998), Tierra Verde (Sears 1967), and Shaw's Point (Schwadron 2002). Picnic Mound (Willey 1949), Buck Island (Bullen 1952), and Parrish Mounds 1, 2, and 3 (Willey 1949) are inland sites in Hillsborough and Manatee Counties dating from this period. The Bay Cadillac Site in Tampa also has a Safety Harbor component (Austin and Ballo 1988).

The Timucuan Indians are the historic counterparts of the Safety Harbor people. Locally they are referred to as the Tocobaga. There is some uncertainty about the extent and duration of the Tocabaga's importance vis-à-vis that of the Calusa and Ais as a major power among the south Florida aboriginal groups (Hann 2003:104). The Safety Harbor Site at the head of Old Tampa Bay served as the central village. This site consists of two mounds and a large habitation area. Interestingly, the Safety Harbor Site has no underlying Weeden island component (Mitchem 1989:57).

The colonial period begins with the arrival of the Pánfilo de Narvaéz expedition in 1528 and Hernando de Soto in 1539. The de Soto expedition headed north from Tampa Bay and passed through several towns on its way to Apalachee. These included one near Dade City (Plain of Guancozo), Luca that was near Lacoochee, Vicela that was reported to be near Istachatta, and Tocaste that was on Duval Island at the southern end of Lake Tsala Apopka (Milanich 1995:77). Spanish influence and contact is indicated by the presence of European objects, especially beads, at the sites. The presence of cut marks on bones that could only be the result of metal swords and knives also reflected the European presence (cf., Mitchem et al. 1985). The introduction of European diseases, warfare, and the general disruption of their cultural system resulted in the demise of the Tocobaga as an archaeological culture.

By the mid-1700s, the native populations had all but vanished from the Tampa Bay area. Around that time, Creek Indians from Georgia and Alabama began moving into Florida

to avoid the Europeans further north. These new arrivals became known as the Seminoles. Seminole sites tend to be located in the scattered oak-hickory uplands surrounding the Alachua savanna (Weisman 1989); south of that area, they tend to be located along the Brooksville Ridge. The Seminoles did not exploit heavily the maritime and riverine resources, but instead focused on hunting and horticulture.

The dispersed Seminole villages were situated within a reservation established by the 1823 Treaty of Moultrie Creek. By the early 1830s, governmental policy shifted in terms of relocating the Seminoles to lands west of the Mississippi River. Outrage at this policy of forced relocation resulted in the Second Seminole War (1835-1842). Following this conflict, the Seminoles who remained in Florida were driven further south, clearing the way for homesteaders. Seminole burials were recovered from part of the old Fort Brooke cemetery (Quad Block Site) in downtown Tampa (Piper and Piper 1982). This is one of the few known sites associated with the Seminoles in the area.

Section 4.0
HISTORICAL OVERVIEW

The following overview summarizes the historic development and land-use patterns in the general project area. It focuses on the salient events of local history, and addresses such issues as regional exploration, colonization, settlement, industry and transportation. In addition to providing pertinent background information, the historical overview provides a basis for the analysis and evaluation (in terms of NRHP eligibility criteria) of historic period archaeological sites as well as historic structures and landscapes identified in the S.R. 679 (Pinellas Bayway Structure E) project area.

The cultural traditions of the native Floridians ended with the advent of European expeditions to the New World. The initial events, authorized by the Spanish Crown in the 1500s, ushered in devastating European contact. Explorers such as Ponce de León, Pánfilo de Narvaéz, Hernando de Soto, Francisco Maria Celi, and Bernard Romans explored the Gulf Coast and the Tampa Bay area. By the early 1700s, the native populations were largely wiped out--ravaged by conquest, disease, and the typical effects of European contact.

The land which now constitutes the State of Florida was ceded to England in 1763 after two centuries of Spanish possession. England governed Florida until 1783, when the Treaty of Paris returned Florida to Spain; however, Spanish influence was nominal during this second period of ownership. Prior to the American colonial settlement of Florida, portions of the Creek Nation and remnants of other Indian groups from Alabama, Georgia, and South Carolina moved into Florida and repopulated the vacuum created by the decimation of the aboriginal inhabitants. The Seminoles, as these migrating groups of Indians became known, formed at various times loose confederacies for mutual protection against the new American Nation to the north (Tebeau 1980:72).

The bloody conflict between the Americans and the Seminoles over Florida first came to a head in 1818, and was subsequently known as the First Seminole War. In the Treaty of Moultrie Creek at the end of the war in 1823, the Seminoles relinquished their claim to

the whole peninsula in return for occupancy of an approximately four million acre reservation south of Ocala and north of Charlotte Harbor (Mahon 1967:50). As a result of the war and the Adams-Onis Treaty of 1819, Florida became a United States Territory in 1821, but settlement was slow and scattered during the early years. At that time, St. Johns County encompassed all of Florida lying east of the Suwannee River, including present day Pinellas County; Escambia County included the land lying to the west. In the first territorial census in 1825, some 5,077 persons reportedly lived east of the Suwannee River; by 1830 that number had risen to 8,956 (Tebeau 1980:134). The inadequacy of the reservation and the desperate situation of the Seminoles living there, plus the mounting demand of the whites for their removal, soon produced another conflict.

In 1824, Fort Brooke was established on the south side of the mouth of the Hillsborough River, in what is now downtown Tampa, for the purpose of overseeing the angered Seminoles. By 1835, the Second Seminole War was underway. Although most of the fighting occurred around the Kissimmee River and Everglades regions, sporadic outbreaks of violence erupted throughout central and south Florida. In 1837, Fort Brooke was designated the headquarters for the Army of the South and the main garrison for the Seminole wars. The fort also served as a haven for settlers who left their farms to seek protection from the warring Seminoles. Small Army garrisons were maintained on Mullet Key and on Egmont Key during the Second Seminole War. Also at this time, Captain William Bunce set up a fish rancho on a small island, which is presently part of Ft. DeSoto Park. Conflict with the military regarding his employment of Seminole Indians resulted in the destruction of Bunce's rancho by federal gunboats in 1840 (Arsenault 1996:31).

In the present-day Clearwater vicinity, the army established Fort Harrison on April 2, 1841 which served as a recuperation center for sick and wounded soldiers from the Sixth Infantry. The fort, named after General William Henry Harrison, who became president in 1841 and died after a month in office, was abandoned in November 1841. The following year, the federal government decided to end the conflict by withdrawing troops from Florida (Dunn 1973:14). Some of the battle-weary Seminoles were persuaded to migrate west where the federal government had set aside land for the Native Americans.

Those who were adamant about remaining were allowed to do so, but were pushed further south into the Everglades and Big Cypress Swamp. This area became the last stronghold for the Seminoles (Tebeau 1980:158-168). The surveys, military trails, and forts resulting from the war provided invaluable assistance in the settlement of Florida.

Encouraged by the passage of the Armed Occupation Act in 1842, which was designed to promote settlement and protect the Florida frontier, Anglo-American pioneers and their families moved south through Florida. The Act made available 200,000 acres outside the already developed regions south of Gainesville to the Peace River, barring coastal lands and those within a two mile radius of a fort. The Armed Occupation Act stipulated that any family or single man over 18 years of age able to bear arms could earn title to 160 acres by erecting a habitable dwelling, cultivating at least five acres of land, and living on it for five years. During the nine month period the law was in effect, 1184 permits were issued totaling some 189,440 acres (Covington 1961:48). Twenty-four individuals filed claims under this act in the territory which would become Pinellas County (Dunn 1973:15). Among the three claimants of land within present-day St. Petersburg were Joseph Silva (Claim #588) and John Levick (Claim #589), whose lands were located in the present Jungle Prada area along North Park Street (Fuller 1972:318). John Levick is the namesake of Johns Pass.

At this time, the Treasure Island/Madeira Beach area fell under the jurisdiction of Hillsborough County, which was established in 1834. The County covered an area that today comprises Pinellas, Pasco, Polk, Manatee, Sarasota, DeSoto, Charlotte, Highlands, Hardee, and Hillsborough Counties. The Pinellas peninsula was then known as West Hillsborough. In 1840, the population of Hillsborough County totaled 452, including 287 soldiers at Fort Brooke (Dunn 1973:22). In 1845, the Union admitted the State of Florida with Tallahassee as the capital. By 1850, the population on the Pinellas peninsula numbered 178 individuals from 35 families (Dunn 1973:22). Most of the settlement concentrated around the top of Old Tampa Bay near the homestead of Dr. Odet Philippe, who established a plantation known as Saint Helena. Philippe, a titled Frenchman who served as a surgeon under Napoleon, is also credited with introducing the technique of planting citrus in rows (Sanders 1983:12; Straub 1929:33). Other early settlers included

James Stevens, Samuel Stevenson, Elias Hart, Richard Booth, and Captain James Parramore McMullen, the first of the seven McMullen brothers who settled in Pinellas County.

In 1845 and 1848, federal surveyors George Watson and R. W. Templeman surveyed the north and east exterior lines of Township 32 South, Range 16 (State of Florida 1845, 1848a). J. P. Apthorp surveyed the south township/range line as well as the islands in 1875 (State of Florida 1875). No historic features were noted on the map of the islands. However, the plat of the mainland depicts Maximo Hernandez's homestead along the shoreline in the southeast quarter of Section 10, east of today's Pinellas Bayway (State of Florida 1848b, 1876). Cabbage Island was described as second rate palm hammock with some pines (State of Florida 1875:117-130).

Johns (John's) Pass was created by the hurricane of September 23-25, 1848, which lashed the Pinellas peninsula and caused widespread damage and destruction (PCPD 1995:13; Young 1984:21). The pass, which originally measured approximately 830 feet wide, was named after John Levick (also known as Juan Levique or John Lavach), a turtle hunter variously referred to in the local histories as a Cuban (Hurley 1989), Spaniard (Arsenault 1996), and Frenchman (Fuller 1972). Both Levick and his friend Joseph Silva, in New Orleans during the "Great Gale of '48," returned to find their homes destroyed (Fuller 1972:48). According to historian John Bethell, a map drawn in the spring of 1848 by federal surveyor Watson showed the island without the pass. Johns Pass originally opened in the vicinity of 140th and Gulf Boulevard. Since then, the effects of tides and storms have shifted it south to about 127th Avenue (Young 1984:21).

In December of 1855, the Third Seminole War, also known as the Billy Bowlegs War, started as a result of pressure placed on Native Americans remaining in Florida to migrate west. The war originated in what is now Collier County when Seminole Chief Billy Bowlegs and 30 warriors attacked an army camp killing four soldiers and wounding four others. The attack was in retaliation for damage done by several artillerymen to banana plants belonging to Billy Bowlegs. This hostile action renewed state and federal interest in the final elimination of the Seminoles from Florida (Covington 1982). Military action

was not decisive in this Third Seminole War; therefore, in 1858, the U.S. Government resorted to monetary persuasion to induce the remaining Seminoles to migrate west. On May 8, 1858, the Third Seminole War was officially declared at an end (Covington 1982:78-80).

Clear Water Harbor (now Clearwater) was the first community established on the Pinellas peninsula. Prior to the establishment of a post office in the area in August 1859, mail arrived either by foot from Tampa or by steamer from Cedar Keys once a week (Bradbury and Hallock 1962:17). Supplies also arrived from Cedar Keys, where Florida's first railroad ended from Fernandina, on the east coast (Sanders 1983:13). Before the Civil War, approximately 52 deeds were issued for lands on the Pinellas peninsula (Dunn 1973:15; Sanders 1983:12). At the time, the peninsula contained 381 people from 82 families. Twenty-two houses were vacant at the time the census was taken (Dunn 1973:22). The first orange grove was planted in the 1840s by Samuel Stevenson, but most of the trees were destroyed during the "Gale of '48". If taken to market at all, citrus was shipped by boat to Cedar Keys to be shipped north. Oranges brought only about $15 per thousand. Shipped in barrels, the fruit was often carelessly packed and arrived in poor condition. Citrus did not develop into a major industry until the railroad arrived which could transport fruit to market quickly and economically. Prior to the railroad, Sea Island cotton, fishing, and cattle, which brought high returns on the Cuban market, remained the primary industries. Most pioneers managed small, self-sufficient farms with perhaps enough surplus produce to send to market (Sanders 1983; Woman's Club 1917).

In 1861, Florida followed South Carolina's lead and seceded from the Union in a prelude to the American Civil War. Florida had much at stake in this war as evidenced in a report released from Tallahassee in June of 1861. It listed the value of land in Florida's 35 counties as $35,127,721 and the value of the slaves in the state at $29,024,513 (Dunn 1989:59). Even though the coast of Florida, including the port of Tampa, experienced a naval blockade during the war, the interior of the state saw very little military action (Robinson 1928:43). Many male residents abandoned their farms and settlements to join the Union army at one of the coastal areas retained by the United States government or joined the Confederate cow cavalry. The Confederate cow cavalry provided one of the

major contributions of the state to the Confederate war effort by supplying and protecting the transportation of beef to the government (Akerman 1976:93-95). Salt works along the Gulf Coast also functioned as a major contributor to the efforts of the Confederacy (Lonn 1965). During the war, Union gun boats raided Clearwater, taking provisions and supplies from area residents. James McMullen organized a company of Confederate volunteers called the Home Guards in 1861 and served as its captain. The company disbanded within a few months, but the men soon joined other companies (Woman's Club 1917). The war lasted until 1865 when General Robert E. Lee surrendered to General Ulysses S. Grant at Appomattox Courthouse in Virginia.

Immediately following the war, the South underwent a period of "Reconstruction" to prepare the Confederate states for readmission to the Union. The program was administered by the U.S. Congress, and on July 25, 1868 Florida officially returned to the Union (Tebeau 1980:251). Civilian activity slowly resumed a normal pace after recovery from wartime depressions, and the population continued to expand. The 1866 Homestead Act was passed to encourage settlement. The act allowed freedmen and loyal United States citizens to receive 80 acre tracts in Florida and the other four public land states of the south. Former Confederates were not eligible to receive homesteads under the Act until 1876 when the lands were open to unrestricted sale (Tebeau 1980:266, 294). By 1870, the population of the Pinellas peninsula had doubled since the 1860 census to a total of 781 individuals from 164 families (Dunn 1973:22).

By 1880, the Pinellas peninsula boasted 1,111 people and 240 houses (Dunn 1973:22). The largest concentration of people living on the Pinellas peninsula resided in the Clearwater area. This growth was explained by the fact that after the Civil War, Southerners sought new homes to escape the unrest in the neighboring ex-Confederate states. In addition, the war brought prosperity to a large number of Northerners who sought vacation homes in warmer climates (Shofner 1995:83). The beginning of the local tourism industry can be dated to April 1885, when Dr. W.C. Van Bibber of Baltimore praised the Pinellas peninsula as the healthiest spot on earth at the American Medical Society Convention in New Orleans. His report prompted a flood of tourists and emigrants advised by their doctors to settle in Florida (PCPD 1995:22).

Improvements in transportation systems played a major role in establishing cities in Florida and fostering growth within the project area. The railroad era also saw increased tourism as well as a growing permanent population. The Orange Belt Railroad Company, organized by Peter A. Demens (Piotr DeMentieff), was the first railroad to service the Pinellas peninsula. Demens constructed a narrow gauge railway line from Sanford through Clearwater to St. Petersburg, a town he named after his native city of St. Petersburg, Russia. The Orange Belt arrived on the Pinellas peninsula in 1888. At the same time as the construction of the Orange Belt, Henry Bradley Plant, a prominent railroad operator in Georgia and South Carolina, wanted to expand his railway lines into Florida, a place he considered the only isolated area remaining in the south. In 1883, he purchased a charter from Alfred M. Parslow to build a railroad from Kissimmee to Tampa. Because the charter had only a seven month life remaining, Plant constructed the railroad from both ends to meet in the middle. With this segment complete, there was a cross-state railroad connecting Tampa with Sanford and Jacksonville to the north (Bruton and Bailey 1984:72). The Plant System overtook the Orange Belt Railway in 1895 due to the many financial difficulties suffered by the Orange Belt while under construction and during its early operation. Thereafter, the Orange Belt operated under the names of the Sanford & St. Petersburg Railroad and the Florida Central & Peninsular Railroad. In 1902, it became the Atlantic Coast Line which served the area until it was merged with the Seaboard Air Line Railroad in 1967 to become the Seaboard Coast Line (Covington 1957:182; Horgan et al. 1992:126, 156-157).

The original purchases of land within today's project area (Section 17) were made during the last two decades of the nineteenth century. The three small lots in Section 17 of Township 32 South, Range 16 East were purchased by Jason L. Edger in 1883 and Samuel M. Clyatt in 1900 (State of Florida n.d.:154). The remaining lands in this section are made-land, and developed in the mid 1900s. According to U.S. Census records for 1900, Mr. Edger was born in New York in 1842 (U.S. Census, 1900). He and his wife Maggie and son Buford resided in Clearwater Harbor Town in 1900. Edger was a druggist. Historical research did not reveal any information about Samuel M. Clyatt as a resident of the Pinellas peninsula.

Among the other local land purchasers at this time was Albert E. Willard who acquired 12 acres on the Treasure Island side of Johns Pass in 1883. Willard was the captain of a steamer that made weekly travels between Cedar Keys and Tampa (Hurley 1989:63). Claude A. Sanders bought 287 acres in 1886, including most of present-day Treasure Island, the Isle of Palms, and the Isle of Capri (Hurley 1989:64). William J. Van Kirk took title to 25 acres on an island east of Madeira Beach, probably today's Crystal Island (cf., Hurley 1989:64). George E. Roberts, a "legendary fishing guide," homesteaded the north bank of Johns Pass and, in 1912, took title to 138 acres. "His tract was called Olive Island because a shallow pass at about 146th Avenue cut it off from Sand Key" (Hurley 1989:102). Roberts built a dock for charter boats, picnic tables, and a "flimsy structure" which he insisted was a hotel. "For a short interval, it may have been the only building between Indian Pass and John's Pass" (Hurley 1989:102). Real estate agent Noel A. Mitchell bought Olive Island in 1914, and re-made it into Mitchell's Beach (Hurley 1989:102). According to Frank T. Hurley, Jr. (Hurley 1989:63), these pioneers "left little to posterity."

During the winter of 1894-95, the "Great Freeze" devastated ninety percent of Florida's emerging citrus industry. In the year prior to the freeze, groves produced 5,550,367 boxes of fruit; in the year after, only 150,000 boxes were picked (Hatton 1987:29). After the freeze, some discouraged growers whose crops were destroyed turned to truck farming tobacco, cotton, and strawberries, which were faster crops to grow. The freeze served to push the frost line south a couple hundred miles. As a result, north Florida citrus growers established groves further south in areas only slightly touched by the freeze, including the Pinellas peninsula (Sanders 1983:25-26).

In late 1898, a site was cleared on Mullet Key for construction of Fort DeSoto. In 1900, during the Spanish-American War, Fort De Soto was garrisoned by a detachment of Company A, 1st Artillery. The fort became inactive in 1909. The fort was staffed by a small Army detachment during World War I, and subsequently abandoned on May 25, 1923 (Pinellas County Parks and Recreation n.d.). In addition to the U.S. Army, the end of Mullet Key was the site of a quarantine station maintained by the Hillsborough County Board of Health from December 16, 1889 until May 1899 (Pinellas County Parks

and Recreation n.d.).

During the first two decades of the new century, the Pinellas peninsula witnessed the introduction of electricity, telephone service, modern utilities, and automobile transportation. It was not until the early 1900s that the Pinellas County beaches became a focal point for development (PCPD 1995:9). Prior to this time, inaccessibility was the main reason for the slow pace of development. In 1910, Congress appropriated $29,000 to dredge Clearwater and Boca Ciega Bays to Tampa Bay. This project was completed in 1915, providing a five foot channel at low tide from the Cleveland Street dock to Tampa Bay (Dunn 1973:25-28).

After a long battle, the Florida Legislature approved the separation of Pinellas County from Hillsborough County on May 23, 1911. The division was prompted by the need for roads on the Pinellas peninsula and the refusal of the Hillsborough County government to provide them (PCPD 1995:28). After the division, a bitter dispute erupted over whether the county seat would be located in Clearwater or St. Petersburg. According to historian Ralph Reed:

> *The up-county Commissioners were served with an injunction, and, at a meeting on May 7, 1912, the Board, by a vote of three to two, awarded a contract to E. W. Parker, of Tampa, for a two-story frame courthouse, to cost $3,750. It was to be built within 30 days on lots given by the City of Clearwater on the present site of Peace Memorial Church* (Dunn 1973:27).

Thus, almost overnight, the county had a courthouse in Clearwater which, according to law, could not be moved for twenty years (Sanders 1983:47; Turner 1989:106).

In 1912, the county approved a bond issue for hard-surfaced roads, and again, four years later for brick roads. A second railroad, the Tampa and Gulf Coast, was added to the peninsula's transportation system in 1914, connecting Clearwater, Largo, and St. Petersburg with Tampa (PCPD 1995:28; Sanders 1983:49). This line eventually became part of the Seaboard Coastline Railroad. In 1917, construction of a two-mile bridge from

Clearwater to Clearwater Beach provided the first automobile access to this barrier island (PCPD 1995:35). In the next decade, this wooden bridge was replaced by a "million dollar causeway" (PCPD 1995:47).

In 1918, real estate developer William G. McAdoo staged a publicity stunt which resulted in the eventual naming of the municipality of Treasure Island (Young 1984:113). McAdoo asked a friend to help him bury chests in the sand near Blind Pass. They subsequently "dug for treasure," found the trunks, brought them to a busy street in St. Petersburg where they would be seen, then unloaded and stored the chests in the Central National vault. Everyone in town talked about the treasure, and McAdoo got his publicity "and a good name for his land" (Young 1984:113). McAdoo, who owned property in the northern part of Pass-a-Grille, built a new toll bridge to this island in 1919. The opening of the bridge allowed McAdoo to develop his property as a beach resort, which he named St. Petersburg Beach.

The great Florida land boom of the 1920s saw widespread development of towns and highways. Several reasons prompted the boom, including the mild winters, the growing number of tourists, the larger use of the automobile, the completion of roads, and the promise by the Florida Legislature never to pass state income or inheritance taxes. As part of the new growth, motels, public buildings, and subdivisions, many with a Spanish theme and Mediterranean Revival architecture, were built throughout the Pinellas peninsula. One of the most spectacular examples was the Don Ce-Sar Hotel, constructed from September 1925 through January 1928 at a cost of approximately $1.5 million. The ten-story hotel boasted 312 rooms and 312 bathrooms with 382 feet of beach frontage (Hurley 1989:143-145). Boom time prosperity also brought enough money to build the Corey Avenue Causeway and other bridges. A bond issue for $1,275,000 was sold in 1927, and the money was used to build the bridge and two smaller bridges linking the Gulf Beaches at Blind Pass and John's Pass, stringing together what would some day become St. Petersburg Beach, Treasure Island and Madeira Beach (Young 1984:110).

In 1924, the Gandy Bridge opened between Tampa and St. Petersburg, shortening the trip from 43 to only 19 miles. By 1926, a network of paved highways connected Clearwater

with Tampa, St. Petersburg and other cities in Pinellas County. David S. Welch, a Madeira Beach developer, spearheaded the drive to have a causeway built in 1926 over Boca Ciega Bay. Welch's Causeway was the first free bridge over this waterway (Young 1984:147). In 1927, Captain Ben T. Davis initiated construction of a 9.5 mile causeway connecting Clearwater to Tampa which was finally completed in 1934 (Sanders 1983:83-84).

In 1926, the bottom fell out of the Florida real estate market. Massive freight car congestion from hundreds of loaded cars sitting in railroad yards caused the Florida East Coast Railway to embargo all but perishable goods in August of 1925. The embargo spread to other railroads throughout the state, and, as a result, most construction halted. The 1926 real estate economy in Florida was based upon such wild land speculations that banks could not keep track of loans or property values. By October, rumors were rampant in northern newspapers concerning fraudulent practices in the real estate market in south Florida. Confidence in the Florida real estate market quickly diminished, investors could not sell lots, and a depression hit Florida earlier than the rest of the nation. Development virtually halted for a decade. To make the situation worse, two hurricanes hit south Florida in 1926 and 1928. The hurricanes destroyed confidence in Florida as a tropical paradise and created a flood of refugees fleeing northward. Soon after, the collapse of the Florida Land Boom, the October 1929 stock market crash, and the onset of the Great Depression left the area in a state of stagnation.

The Depression hit the citrus industry as well. In 1930, the census revealed that citrus and construction industries each employed approximately eight percent of the Pinellas County population. In that year, the Mediterranean fruit fly invaded and paralyzed the citrus industry creating quarantines and inspections which further slowed an already sluggish industry. Tourism still played a major role in the local economy but was drastically reduced from the 1920s. Most winter visitors were the wealthy northerners who did not lose their money in the stock market crash of 1929, but who now, as a result, spent their money very cautiously**.**

By the mid-1930s, the New Deal programs implemented by the Franklin D. Roosevelt

administration, started employing large numbers of workers, helping to revive the economy of the state. The programs, aimed at pulling the nation out of the Depression, were instrumental in the construction of parks, bridges, and public buildings. The late 1930s were marked by interest in further development of the Gulf beaches. While beach development had been minimal during the 1920s, largely due to limited access, inadequate utilities (especially water), and "clouds of mosquitoes" (PCPD 1995:51), the 1930s witnessed the construction of many new facilities and the provision of new services. These improvements, including the supplying of water to the beaches, were aided by the federal Public Works Administration program.

Sunshine Beach, to the south of Johns Pass, was incorporated in 1937. It had formerly been Albert B. Archibald's 200-acre Coney Island. Sunshine Beach's first mayor was civil engineer George F. Young, who served from 1937 to 1951 (Hurley 1989:173).

Treasure Island was incorporated in 1938, and one year later, construction of the Treasure Island Causeway extended Central Avenue in St. Petersburg to the Gulf of Mexico, thus providing a new transportation link between the mainland and the beaches (PCPD 1995:51; Young 1984:147). Construction was financed with assistance from the federal Reconstruction Finance Corporation. In *Florida: A Guide to the Southernmost State*, published in 1939, the Federal Writers' Project of the Work Projects Administration described the area of the Johns Pass Bridge as popular fishing grounds, "with fish houses and piers at both ends of the span" (FWP 1939:426). Treasure Island was described as "occupied by shacks, garage apartments, tourist camps, night clubs, and substantial beach cottages" (FWP 1939:426).

The population of Pinellas County grew 119.9% between 1920 and 1930, and 47.8% between 1930 and 1940. However, less than 10% of the County's total land was developed at the close of this period. "By 1940, the increasing proportion of employment in the retail trade (22%) and service (39%) sectors indicated the County's growing dependence on tourists and seasonal residents" (PCPD 1995:52).

By 1940, recovery from the Great Depression was imminent. The incoming service personnel renewed the area economy. The United States entered World War II in 1941.

Overall, the war years dramatically slowed the County's population growth, and the tourist trade was practically wiped out by travel restrictions and the rationing of gasoline and tires (PCPD 1995:60). However, federal roads, channel building, and airfield construction for the wartime defense effort brought numerous Americans into Florida, the growing Tampa metropolitan area, and Pinellas County.

In June 1941, Mullet Key returned to military status as a bombing range and became a subpost of MacDill Field (Pinellas County Parks and Recreation n.d.). In early 1942, the Army took over most of the Pass-a-Grille community, uprooting its residents in the process. Occupation by the military lasted until June of 1945 (Hurley 1989:175). In the spring of 1942, the Army Air Force selected St. Petersburg as a basic training center. Trainees occupied more than 50 hotels in the St. Petersburg area. On Sundays and days off, the G.I.s "swarmed over the beaches" (Hurley 1989:176). Also in 1942, the Army condemned and purchased the Don Ce-Sar. The former luxury hotel was used as a hospital for the St. Petersburg basic training center. Later, in 1943, the Don Ce-Sar became a sub base hospital for Mac Dill Air Force Base. Between February 1944 and June 1945 it functioned as the Army Air Force Convalescent Hospital. Also during World War II, isolated stretches of Gulf beach became aircraft gunnery and bombing ranges (Hurley 1989:1758). The government forced the sale of the Gandy Bridge and Davis Causeway. Formerly toll facilities, the government lifted the tolls so that soldiers who trained in Tampa and resided in Pinellas County would not have to pay the tolls at each crossing (Sanders 1983:84).

The end of World War II marked the start of another era of rapid growth for Pinellas County. Mullet Key (now Fort De Soto Park) was sold back to Pinellas County in 1948. From Pass-a-Grille north to Indian Rocks, the Gulf beaches underwent major changes. According to historian Karl Grismer:

> *So many new sections became built up, and even were given different names, that old-timers were hard put to keep track of them – the city of Treasure Island, Boca Ciega, Mitchell's Beach, Sunset Beach, Madeira Beach, Bennett Beach, Sunshine Beach, Belle Vista Beach, Redington*

> *Beach, and perhaps a few more. The palm-fringed shores, where picnickers and bathers went in days gone by when seeking solitude, were gone forever. Now, all the way up and down the keys there were cottages, and houses, and apartments, and bathing pavilions, and stores, and hot dog stands, and beer parlors. Yes, the beaches had become developed* (Grismer 1948:200).

The original town of Madeira Beach was incorporated in 1947, minus Mitchell's Beach which incorporated itself as South Madeira Beach. "In 1951, a re-incorporation united Madeira and South Madeira, thereby extending the corporate limits from John's Pass to 155th Avenue" (Hurley 1989:188). The Madeira Beach population grew from 916 in 1950 to 3943 one decade later (PCPD 1995:98). In 1955, Sunset Beach, Sunshine Beach, Boca Ciega City, and the town of Treasure Island merged into the City of Treasure Island (Hurley 1989:189). In 1960, the population of Treasure Island was 3506; it nearly doubled to 6120 in 1970 (PCPD 1995:98).

Among the hallmarks of the 1940s and 1950s were the improvements to the existing road systems. Initially undertaken to improve the transport of military vehicles during World War II, civilians continued to benefit from the improvements after the war ended. In Pinellas County, the last segment of the Gulf Coast Highway, which is now known as U.S. Highway 19, opened for traffic in St. Petersburg. This provided a direct route between St. Petersburg and Tallahassee, and the areas bordering this road developed almost immediately (PCPD 1995:4).

The inexpensive automobile meant cheaper and easier vacations available to the average American. After the war, car ownership increased making the American public more mobile. Many who had served at Florida's military bases during World War II returned with their families to live. As veterans returned, the trend in new housing focused on the development of small tract homes in new subdivisions. By the late 1950s, increasing numbers of tourists and retirees made retail and the service industries the dominant employers in Pinellas County (PCPD 1995:4). During the 1950s, the population of Pinellas County increased by more than 135%, and beach land values began to soar.

Prime Gulf frontage for motels and apartments jumped from $300 per front foot in 1950 to $1,600 by 1970 (Hurley 1989:182). “As the demand for waterfront property began to exceed the supply, developers started dredging sand to turn portions of shallow bays into dry land” (PCPD 1995:63). Dredging significantly increased the size of many barrier islands.

In 1957, the Florida Department of Transportation began construction of the Pinellas Bayway, consisting of an eight-mile roadway with three bridges. Development of this roadway and bridges enabled the creation of Isla del Sol, a 350-acre island community of residences, recreational facilities and a shopping village. Surrounded by the waters of Boca Ciega Bay, this development supports approximately 3500 households. Completion of the Pinellas Bayway also paved the way for the opening of the 1136-acre Fort De Soto Park on December 21, 1962. The largest of Pinellas County’s parks, Fort De Soto is made up of five interconnected islands (Pinellas County Parks and Recreation n.d.). Also during the late 1950s, the mangrove island known as Mud Key, located a short distance west of the Pinellas Bayway, was developed as Vina del Mar Island (Ayers 2004:27).

By 1970, dredge-and-fill had added 4800 acres to the County, mostly in Boca Ciega and Clearwater bays. Land alterations in and near Johns Pass included the widening of the pass, and the creation of finger-like lands to the south and east of the Johns Pass Bridge. In 1971, the current Johns Pass Bridge was built west of the old one. The current Johns Pass Village was built shortly after.

Citrus, once the mainstay of Pinellas County, did not rebound after the freeze of 1962 ruined the year’s crop. Land in the county was too valuable thereafter to replant with citrus trees. Subdivisions, commercial centers, and roads replaced former groves (Sanders 1983:189). Many roads were widened and bridges were replaced during the 1950s and 1960s. The State Road Department widened and improved the Davis Causeway, renaming it the Courtney Campbell Parkway to honor Courtney W. Campbell, a prominent member of the State Road Board who lived in Clearwater. In addition, the Sunshine Skyway, a modern engineering feat, opened in 1954, providing access to Manatee County and points south from the Pinellas Peninsula (Dunn 1973:32). The

Howard Frankland Bridge opened in 1960 providing more access between Pinellas and Hillsborough Counties (PCPD 1995:4).

By the late 1980s, the Gulf beaches from Belleair Beach to Pass-a-Grille were developed with "28,400 residential units, 14,357 motel units, and 5,181 hotel rooms" (Hurley 1989:186). In 1993, the population of Pinellas County was 864,953, ranking as the 5th largest county in the state with seventy percent of the population residing in the incorporated areas. The largest employers in 1993 were in the medical, health and business services, retail, electrical manufacturing, and printing and publishing trades. Only 124 farms remained in the county totaling only two percent of the land. Pinellas County was designated along with Hillsborough, Hernando, and Pasco Counties as the Tampa-St. Petersburg-Clearwater Metropolitan Area by the U.S. Bureau of the Census (Purdum 1994:104).

Section 5.0
RESEARCH CONSIDERATIONS AND METHODS

5.1 BACKGROUND RESEARCH AND LITERATURE REVIEW

A comprehensive review of archaeological and historical literature, records and other documents and data pertaining to the project area was conducted. The focus of this research was to ascertain the types of cultural resources known in the project area and vicinity, their temporal/cultural affiliations, site location information, and other relevant data. This included a review of sites listed in the NRHP, the FMSF, cultural resource survey reports, published books and articles, unpublished manuscripts, and maps. No interviews were conducted. It should be noted that the FMSF information in this report was obtained in August and October 2005 from the FMSF. However, input may be a month or more behind receipt of reports and site files.

5.1.1 ARCHAEOLOGICAL CONSIDERATIONS

For archaeological survey projects of this kind, specific research designs are formulated prior to initiating work to delineate project goals and strategies. Of primary importance is an attempt to understand, on the basis of prior investigations, the spatial distribution of known resources. Such knowledge serves not only to generate an informed set of expectations concerning the kinds of sites which might be anticipated to occur within the project area, but also provides a valuable regional perspective, and thus, a basis for evaluating any new sites discovered.

A review of the FMSF revealed that no previously recorded archaeological sites are located within one mile of the S.R. 679 (Pinellas Bayway Structure E) project APE. Six known sites are located within two miles. Of these, three FMSF numbers, 8PI51, 8PI691, and 8PI692, appear to designate the same site, the Tierra Verde Mound. The Tierra Verde Mound, located south of the S.R. 679 (Pinellas Bayway Structure E) project on Cabbage

Key, was first described by S.T. Walker in 1880. Walker noted that previous explorations in the mound by others had recovered numerous arrow-heads and ornaments of bone, human skeleton, etc. while he only recovered four crania and one bone ornament inlaid with copper (Walker 1880:404). In addition to the mound, Walker noted middens on the eastern side of the island "which in many places lie in masses many feet in thickness" (Walker 1880:404).

In 1900, Clarence B. Moore visited the site and performed some limited excavation (Moore 1900). He described the mound as irregular in shape and from 60 to 85 feet in diameter and six feet in height. Moore's excavations revealed a number of burials and associated artifacts, including shell beads and incised and punctated ceramic sherds (Moore 1900:355).

In December 1957, William Sears also visited the Tierra Verde Mound "while making a routine survey of the right-of-way for the new Bayway from the mainland to Mullet Key" (Sears 1967:25). In 1961, Sears returned to the site to perform salvage excavation, prior to the development of the Tierra Verde residential community. These investigations recovered additional burials within the mound as well as an extensive burial area adjacent to the east side of the mound. All of the burials were secondary, indicating a community charnel area. The ceramics were primarily ceremonial in nature, and dated the site to the Safety Harbor period. The lack of midden deposits on the key, and the scarcity of ceramics within these deposits, suggested to Sears that the village associated within the mound was located on the mainland, probably at Maximo Point (Sears 1967:65). Sears noted that the mound was located on a sand ridge in the center of the key, while midden deposits were located along the edges of the mangroves. In 1970, John Lunceford and John Arnaldi of the Suncoast Archaeological Society indicated that one of the middens had been covered by a golf course. They also noted that "there were originally three small burial mounds and a midden on this site with a shell causeway connecting the midden with the burial mounds." At the time of their visit, the site was "completely covered with fill" (FMSF).

To the southeast of the Tierra Verde Mound on Cabbage Key, the Tierra Verde Midden

(8PI840) was recorded and investigated by J. Raymond Williams and Roger T. Grange of the University of South Florida. As a result of limited excavation in 1980, Williams and Grange concluded that the site "appears to consist of a series of small, low mounds or ridges and midden deposits located inland just above the high tide line" (Williams and Grange 1980:17). Due to the absence of temporally diagnostic artifacts, the period of site occupation could not be ascertained.

The other two sites recorded within two miles of the PD&E Study limits are 8PI1264, a midden located on the west side of Cabbage Key, recorded by Robert Austin, and 8PI8030. The latter site was recorded by Barbara Smith and Bill McArthur of the Gulf Beaches Historical Society. While land clearing for new home construction was occurring, a scatter of historic materials, including olive jar, unglazed sherds, majolica, glass, and bone, was discovered. No other investigations have been conducted.

Examination of the *Soil Survey of Pinellas County* (USDA 1972) indicated that the soils in the S.R. 679 (Pinellas Bayway Structure E) project area consist of Palm Beach sand. These soils are nearly level, extensively altered, and formed by diking, dredging and filling. Given the artificially constructed nature of the land at the bridge approaches, the project study area was considered to have a low potential for archaeological site occurrence.

5.1.2 HISTORICAL CONSIDERATIONS

A review of the FMSF revealed that no historic resources, including those listed or determined eligible for listing in the NRHP, had been recorded previously within the PD&E Study project APE. Bridge Structure E, built in 1961, is not historic. Therefore, no historic resources were anticipated within or adjacent to the project APE.

5.2 FIELD METHODOLOGY

Archaeological field survey methods consisted of an initial surface examination followed by limited subsurface shovel testing. Given the low probability for archaeological site occurrence, and the extensive nature of land alteration and development, shovel test placement was on a judgmental basis. Shovel tests were circular and measured 20 inches

in diameter by at least 3.3 feet deep, and all soil removed was screened through a 0.25 inch mesh hardware cloth to maximize the recovery of cultural materials. The locations of all shovel tests were marked on the aerial maps, and, following the recording of relevant data such as stratigraphic profile and artifact finds, all test pits were refilled.

Historic resources field survey consisted of a preliminary reconnaissance of the area to determine the location of all buildings and other structures believed to be 50 years of age or older, and to ascertain if any resources within the project APE could be eligible or potentially eligible for listing in the NRHP. Had any historic structures been identified, an in-depth study of each would have been conducted. Photographs would have been taken, and information needed for completion of FMSF forms would have been gathered. In addition to architectural descriptions, each historic resource would have been reviewed to assess style, historic context, condition, and potential NRHP eligibility.

5.3 UNEXPECTED DISCOVERIES

If human burial sites such as Indian mounds, lost historic and precontact cemeteries, or other unmarked burials or associated artifacts were found, then the provisions and guidelines set forth in Chapter 872.05 F.S. (Florida's Unmarked Burial Law) were to be followed. However, it was not anticipated that such sites would be found during this survey.

5.4 LABORATORY METHODS AND CURATION

If cultural materials were found, they would be initially cleaned and sorted by artifact class. Lithics would be divided into tools and debitage based on gross morphology. Tools would be measured, and the edges examined with a 7-45x stereo-zoom microscope for traces of edge damage. Tool types would be classified using standard references (Bullen 1975; Purdy 1981). Lithic debitage would have been subjected to a limited technological analysis focused on ascertaining the stages of stone tool production. Flakes and non-flake production debris (i.e., cores, blanks, tested cobbles) would be measured and examined for raw material types and absence or presence of thermal alteration. Flakes would be classified into four types (primary decortication, secondary decortication, non-

decortication, and shatter) based on the amount of cortex on the dorsal surface and the shape (cf., White 1963).

Aboriginal ceramics, if recovered, would be classified into commonly recognized types based on observable characteristics such as aplastic inclusions and surface treatment (cf., Cordell 1992; Luer and Almy 1980; Willey 1949). Historic period cultural materials would be identified using a variety of resources to ascertain site function and temporal placement.

At the completion of the CRAS, all project-related materials, including field notes, were prepared for permanent storage and curation at a FDOT-designated repository. They are currently being housed at the ACI office in Sarasota pending transfer for curation.

Section 6.0
SURVEY RESULTS AND CONCLUSIONS

6.1 ARCHAEOLOGICAL SURVEY RESULTS

Archaeological survey of the S.R. 679 (Pinellas Bayway Structure E) PD&E Study project APE included both ground surface reconnaissance and the excavation of a total eight shovel tests within the existing right-of-way. Of these, two were placed in the south bridge approach area, on the east side of the roadway, in the general vicinity of Station 275 (Photo 6.1); two were excavated to the north of the bridge on both sides of the road in the vicinity of Station 300 (Photos 6.2-6.4); and four were placed between Stations 330-335 just south of Bahia del Mare Boulevard/Palma del Mar Boulevard (Photos 6.5-6.6). The placement of systematic subsurface shovel tests was limited due to the low archaeological site potential, and constrained by the presence of underground utilities. In general, subsurface testing indicated the presence of fill materials. No surface cultural materials were observed, nor were any sites discovered. The locations of all shovel tests are illustrated in Figure 6.1.

Photo 6.1. Looking north at the east side of S.R. 679 in the vicinity of Station 275

S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway

Bridge No: 150049

Pinellas County, Florida

Approximate Location of Shovel Tests Excavated Within the S.R. 679 (Pinellas Bayway Structure E) PD&E Study. Township 32 South, Range 16 East (USGS Pass-A-Grille, Fla. 1956, PR 1981, PI 1983). Shovel tests are not to scale.

WPI Segment No : 410755-1

Figure 6.1

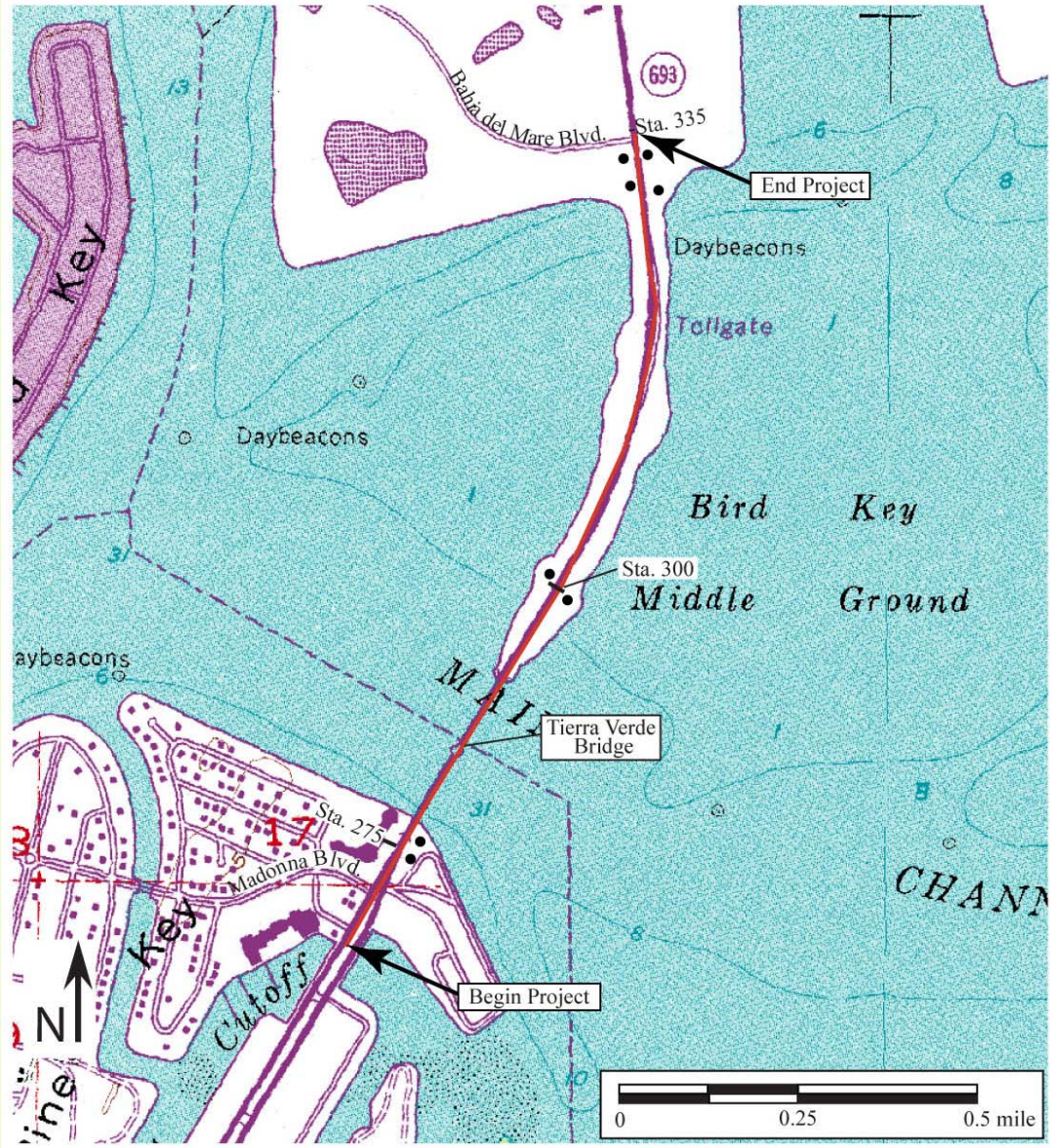


Photo 6.2. Looking southeast at the east side of S.R. 679 in the vicinity of Station 300

Photo 6.3. Looking west at the west side of S.R. 679 in the vicinity of Station 300

Photo 6.4. Looking south at the west side of S.R. 679 in the vicinity of Station 300

Photo 6.5. Looking south at the west side of S.R. 679 in the vicinity of Stations 330-335

Photo 6.6. Looking east at the east side of S.R. 679 in the vicinity of Stations 330-335

6.2 HISTORICAL/ARCHITECTURAL SURVEY RESULTS

No historic resources were identified within the project APE.

6.3 CONCLUSIONS

As the result of background research and field survey, no archaeological sites or historic resources were identified within the S.R. 679 (Pinellas Bayway Structure E) project APE. Therefore, project development will have no effect on any significant cultural resources which are listed, determined eligible, or considered potentially eligible for listing in the NRHP. No further work is recommended.

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APPENDIX

Survey Log Sheet

FMSF USE ONLY
FMSF Survey #

Form Date 11/27/05

Survey Log Sheet

Florida Master Site File
Version 2.0 9/97

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

Recorder of Log Sheet Joan Deming

Identification and Bibliographic Information

Survey Project (Name and project phase) Phase I, S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway PD&E Study

Is this a continuation of a previous project? [X] No [ ] Yes Previous survey#(s)

Report Title (exactly as on title page) Cultural Resource Assessment Survey S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway PD&E Study, Pinellas County, Florida

Report Author(s) (as on title page-individual or corporate) Archaeological Consultants, Inc. (ACI)

Publication Date (month/year) 12/05 Total Number of Pages in Report (Count text, figures, tables, not site forms) 78

Publication Information (if relevant, series and no. in series, publisher, and city. For article or chapter, cite page numbers. Use the style of *American Antiquity*. See *Guide to the Survey Log Sheet.)* Archaeological Consultants, Inc.
P.O. Box 5103, Sarasota, FL 34277-5103

Supervisor(s) of Fieldwork (whether or not the same as author[s]) Joan Deming

Affiliation of Fieldworkers (organization, city) Archaeological Consultants, Inc.

Key Words/Phrases (Don't use the county, or common words like *archaeology, structure, survey, architecture.* Put the most important first. Limit each word or phrase to 25 characters). Pinellas Bayway, Tierra Verde, Isla del Sol

Survey Sponsors (corporation, government unit, or person who is directly paying for fieldwork)
Name Florida Department of Transportation, District Seven
Address/Phone 11201 N. Malcolm McKinley Drive, Tampa, Florida 33612-6456

Mapping

Counties (List each one in which field survey was done-do not abbreviate) Pinellas

USGS 1:24,000 Map(s): Names/Dates: Pass-A-Grille Beach, Fla. 1956, PR 1981, PI 1983

Remarks (Use supplementary sheet[s] if needed) No archaeological sites and no structures. Mostly made land.

Description of Survey Area

Dates for Fieldwork: Start 9/30/05 End 9/30/05 Total Area Surveyed (fill in one) _____ hectares _____ acres

Number of Distinct Tracts or Areas Surveyed _____

If Corridor (fill in one for each) Width _____ meters _____ feet Length _____ kilometers 1.093 miles

Types of Survey (check all that apply) [X] archaeological [X] architectural [X] historical/archival [ ] underwater [ ] other: _____

Survey Log Sheet of the Florida Master Site File

Research and Field Methods

Preliminary Methods (Check as many as apply to the project as a whole. If needed write others at bottom).

- [ ] Florida Archives (Gray Building)
- [ ] Florida Photo Archives (Gray Building)
- [X] FMSF site property search
- [X] FMSF survey search
- [ ] other (describe)
- [X] library research - *(local public)*
- [ ] library-special collection- *(non local)*
- [X] Public Lands Survey (maps at DEP)
- [ ] local informant(s)
- [ ] local property or tax records
- [ ] newspaper files
- [X] literature search
- [ ] Sanborn Insurance maps
- [X] windshield survey
- [ ] aerial photography

Archaeological Methods (Describe the proportion of properties at which method was used by writing in the corresponding letter. Blanks are interpreted as "None.")

F(-ew: 0-20%, S(-ome: 20-50%); M(-ost: 50-90%); or A(-ll, Nearly all: 90-100%). If needed write others at bottom.

- [ ] Check here if NO archaeological methods were used.

___ surface collection, controlled
___ surface collection, uncontrolled
S shovel test-1/4" screen
___ shovel test-1/8" screen
___ shovel test-1/16" screen
___ shovel test-unscreened
___ other (describe):
___ other screen shovel test (size: _____)
___ water screen (finest size: _____)
___ posthole tests
___ auger (size: _____)
___ coring
___ test excavation (at least 1x2 m)
___ block excavation (at least 2x2 m)
___ soil resistivity
___ magnetometer
___ side scan sonar
___ unknown

Historical/Architectural Methods (Describe the proportion of properties at which method was used by writing in the corresponding letter. Blanks are interpreted as "None.")

F(-ew: 0-20%, S(-ome: 20-50%); M(-ost: 50-90%); or A(-ll, Nearly all: 90-100%). If needed write others at bottom.

- [ ] Check here if NO historical/architectural methods were used.

___ building permits
___ commercial permits
___ interior documentation
___ other (describe):
___ demolition permits
A exposed ground inspected
___ local property records
___ neighbor interview
___ occupant interview
___ occupation permits
___ subdivision maps
___ tax records
___ unknown

Scope/Intensity/Procedures Background research; historical/architectural field survey; archaeological reconnaissance and limited judgmental shovel testing, .5 m diameter by 1 m deep; 1/4" mesh screen; CRAS report prepared.

Survey Results (cultural resources recorded)

Site Significance Evaluated? [ ] Yes [ ] No If *Yes*, circle NR-eligible/significant site numbers below.

Site Counts: Previously Recorded Sites 0 Newly Recorded Sites 0

Previously Recorded Site #'s (List site #'s without "8." Attach supplementary pages if necessary)

Newly Recorded Site #'s (Are you sure all are originals and not updates? Identify methods used to check for updates, ie, researched the FMSF records). List site #s without "8." Attach supplementary pages if necessary.

Site Form Used: [ ] SmartForm [ ] FMSF Paper Form [X] Approved Custom Form: Attach copies of written approval from FMSF Supervisor and Supervisor-signed form.

DO NOT USE ************SITE FILE USE ONLY **************DO NOT USE**

BAR Related
- [ ] 872
- [ ] 1A32
- [ ] CARL
- [ ] UW

BHP Related
- [ ] State Historic Preservation Grant
- [ ] Compliance Review CRAT #

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

S.R. 679 (Pinellas Bayway Structure E) at Intracoastal Waterway

Bridge No: 150049

Pinellas County, Florida

S.R. 679 (Pinellas Bayway Structure E) PD&E Study.
Township 32 South, Range 16 East
(USGS Pass-A-Grille, Fla. 1956, PR 1981, PI 1983).

WPI Segment No : 410755-1