REPORT ON

ARCHAEOLOGICAL TESTING OF 8GL60 AND SURVEY OF PROPOSED ACCESS ROADS & ANALYSIS OF POTENTIAL SECONDARY AND CUMULATIVE IMPACTS TO THE MOORE HAVEN DOWNTOWN HISTORIC DISTRICT (8GL411) AND THE MOORE HAVEN RESIDENTIAL HISTORIC DISTRICT (8GL368)

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February 2007

SECTION 1: ARCHAEOLOGICAL TESTING OF 8GL60 AND SURVEY OF PROPESED ACCESS ROADS

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SECTION 2: ANALYSIS OF POTENTIAL SECONDARY AND CUMULATIVE IMPACTS TO THE MOORE HAVEN DOWNTOWN HISTORIC DISTRICT (8GL411) AND THE MOORE HAVEN RESIDENTIAL HISTORIC DISTRICT (8GL368)

PREPARED BY
GOLDER ASSOCIATES, INC.

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SECTION 1:
ARCHAEOLOGICAL TESTING OF 8GL60 AND SURVEY OF PROPOSED ACCESS ROADS

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INTRODUCTION

At the request of Golder Associates, on behalf of Florida Power & Light Company (FPL), Janus Research conducted archaeological testing of an unnamed site, 8GL60, located within the proposed FPL Glades Power Park Site in August, 2006. The survey is a continuation of the 2006 reconnaissance survey that Janus had conducted for the FPL (Janus Research 2006). For a copy of the reconnaissance report and resulting State Historic Preservation Office (SHPO) letter concurring with the findings, please refer to Appendix A. The purpose of this survey was to

- determine the presence or absence of site 8GL60 within the area identified as its original location in the Florida Master Site File (FMSF), assess the integrity of the site, and gather additional data to make a determination of significance in terms of eligibility for listing on the *National Register of Historic Places (NRHP)* according to criteria set forth in 36 CFR Section 60.4; and
- determine if any archaeological sites are located within or adjacent to the two proposed access roads.

This survey complied with Section 106 of the *National Historic Preservation Act* (*NHPA*) *of 1966* (Public Law 89-655, as amended), as implemented by 36 CFR Part 800 (*Protection of Historic Properties*, effective January 2001) and Chapters 267 and 872, *Florida Statutes.* It also complies with the standards of the Florida Division of Historical Resources' (FDHR) *Cultural Resource Management Standards and Operational Manual* (February 2003) and Chapter 1A-46 (*Archaeological and Historical Report Standards and Guidelines*), Florida Administrative Code. All work conforms to professional guidelines set forth in the *Secretary of Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716, as amended and annotated).

Principal investigators meet the minimum qualifications for archaeology, history, architecture, architectural history, or historic architecture contained in 36 CFR 61 (*Procedures for Approved State and Local Historic Preservation Programs*, Appendix A, Professional Qualifications Standards). Archaeological investigations were conducted under the direction of James Pepe, M.A.

The FPL Glades Power Park site is located approximately two miles north of US 27, one mile west of State Highway 78, and one and one-half mile west of Lake Okeechobee. The southern boundary of the project site is the South Central Florida Express Railway (SCFE). Within the eastern portion of the FPL Glades Power Park Site, 8GL60 is located 220 m north of Potato Farm Grade at the proposed park entrance within the southeastern quarter of Section 20 of Township 41 South, Range 32 East, on the Lakeport (1970) USGS Quadrangle (Figure 1). The project site consists mostly of cultivated sugar cane fields with numerous artificially bounded wetlands. The location of 8GL60 is within a large field of active sugar cane. During the reconnaissance, the site was unable to be located due to the thickness and height of the cane. As part of the additional testing, the cane immediately adjacent to the location of the site (as provided by UTM coordinates from the Lakeport Quad) was cleared to allow a visual determination of the site location and easy access to subsurface testing of the area.

Two access roads are proposed east of 8GL60 and connect the FPL Glades Power Park Site to State Road 78. The roads are proposed to replace existing dirt roads with paved roads. The primary plant access road is the Potato Farm Grade and is located in Section 28 of Township 41 South, Range 32 East, on the Lakeport (1970) USGS Quadrangle. The secondary plant access road is proposed to replace an unnamed dirt road located in Section 16 of Township 41 South, Range 32 East, on the Lakeport (1970) USGS Quadrangle.

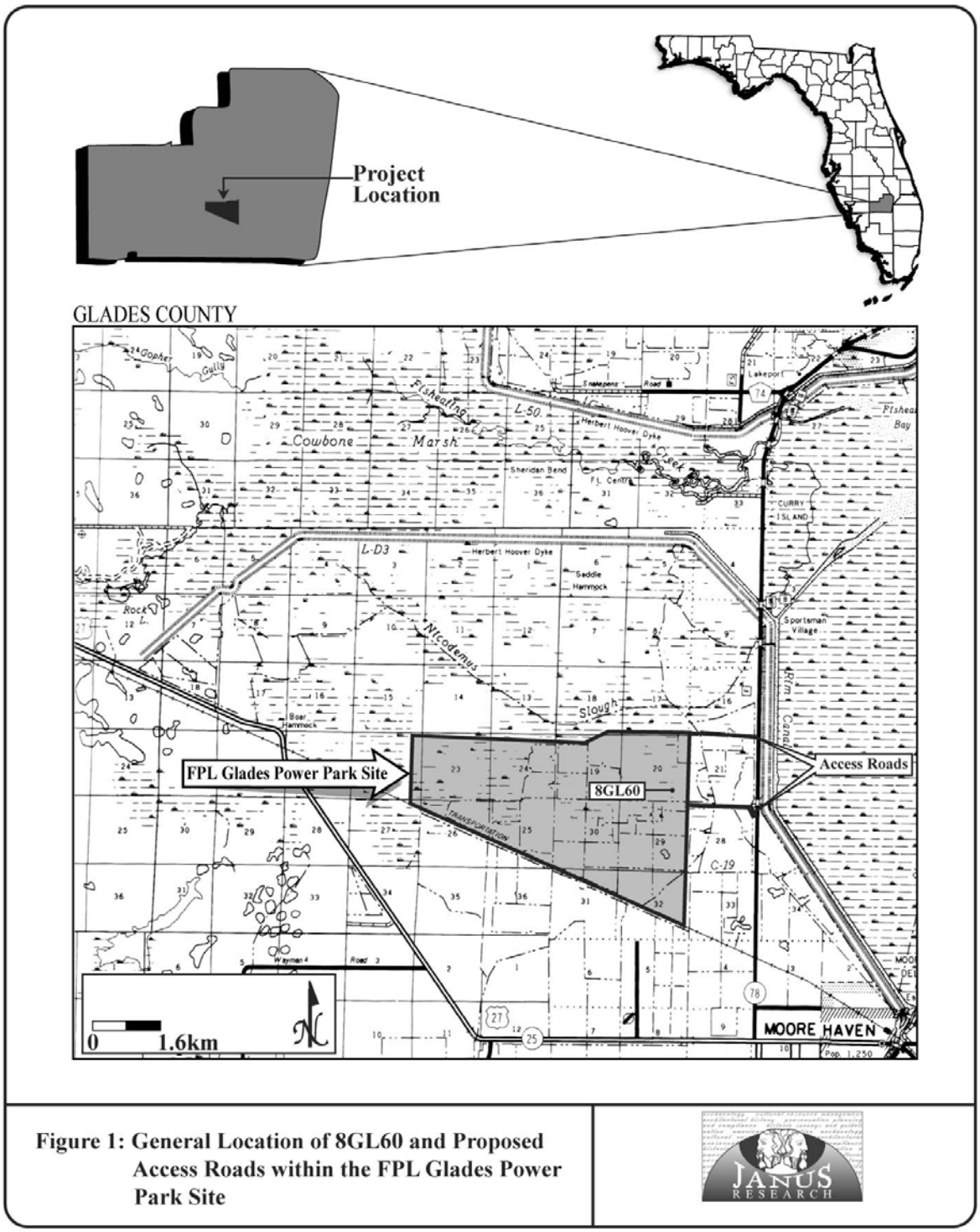

Figure 1: General Location of 8GL60 and Proposed Access Roads within the FPL Glades Power Park Site

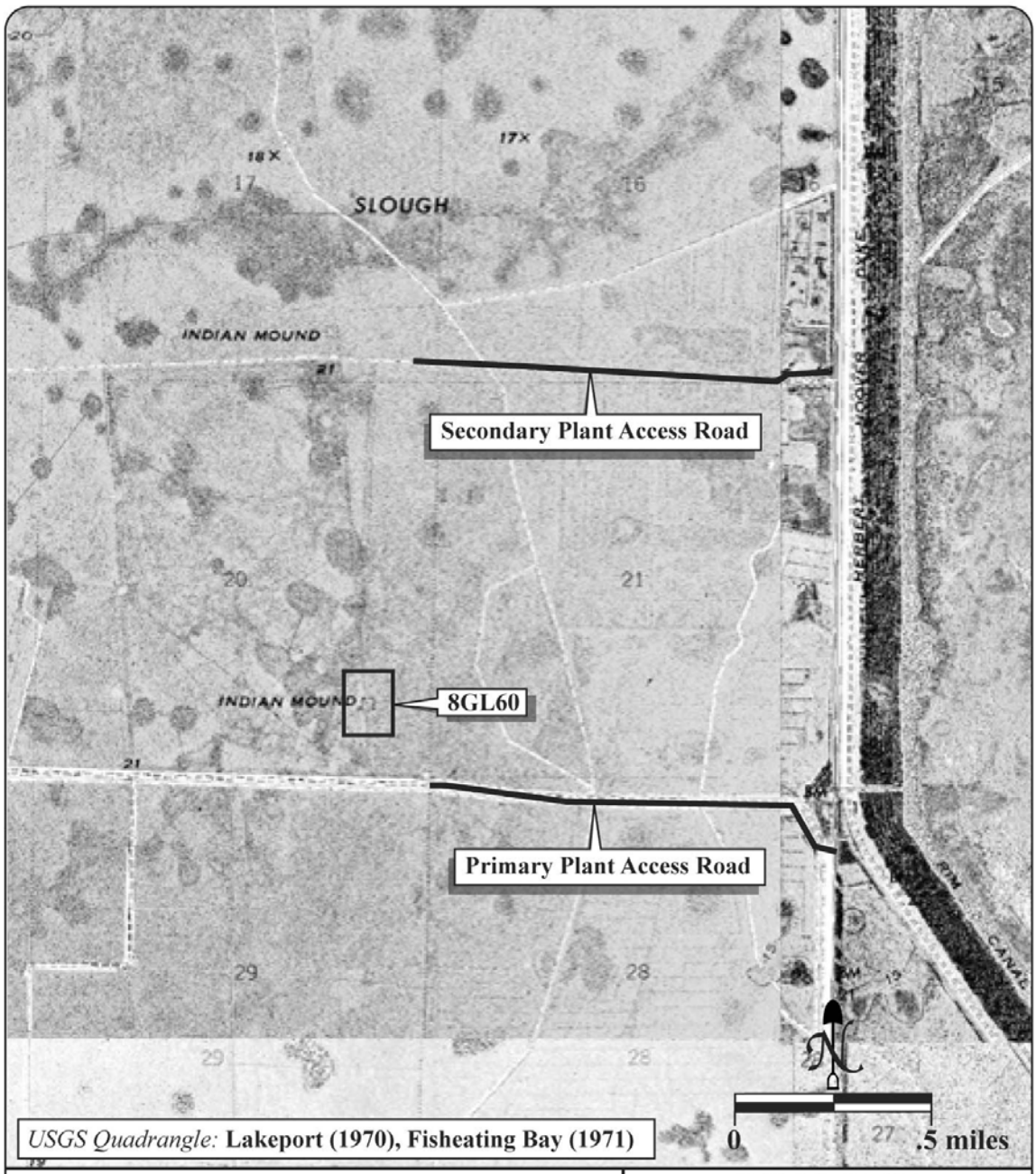

Figure 2: Location of 8GL60 and Proposed Access Roads within the FPL Glades Power Park Site

BACKGROUND RESEARCH

Background research was conducted as part of the reconnaissance for the FPL Power Park Project (Janus Research 2006). The results of the FMSF research, archival research, environmental, and land use research is located within the report which has been included in Appendix A. Pertinent information regarding the site and its location, as well as the proposed access roads, has been repeated below.

Archival Research

During the background research for the reconnaissance, the FDHR was contacted in order to identify previously recorded archaeological sites and historic resources and areas of archaeological site potential. This analysis included an archaeological and historical literature and background information search pertinent to the project site. This included a search of the Florida Master Site File (FMSF), county and local site inventories, books and journal articles, and unpublished Cultural Resource Management (CRM) reports. Historic plat maps of the location as well as other historic maps and aerials were also examined.

The FDHR search indicated that only one survey had been conducted within the area of 8GL60 and the access roads. Robert S. Carr's survey of Lake Okeechobee was mostly carried out through the use of aerial photographs which were then employed to locate earthwork and sand mound sites located around 8GL60 and in the vicinity of the FPL Power Park Project Site (1975:1). Carr's survey did not locate 8GL60 nor did it mention the location of a mound in the vicinity of 8GL60 on USGS quad maps.

The FMSF research resulted in the identification of only one site within the project boundaries; an unnamed site, 8GL60. The site is recorded as a prehistoric mound and is located within the project site boundaries in the southeastern quarter of Section 20 in Township 41 South, Range 32 East. The site was not visited by Carr but was recorded as a Belle Glade mound based on its designation as an "Indian Mound" on a topographic map and other nearby sites (FMSF Form, 8GL60, 1976). The Lakeport USGS Quadrangle map (1970) shows this site indicated by the label "Indian Mound" (Figure 3). A review of the historic plat map of Township 41 South, Range 32 East (Florida Department of Environmental Protection [FDEP] 1871b, 1918, and 1926) and a 19th century map of the Atlantic and Gulf Coast Canal and Okeechobee Land Co. purchases (Kreamer n.d.) does not illustrate an Indian mound for this area. Due to lack of previous field investigation of the site, it has not been evaluated for its *NRHP*-eligibility (FMSF form, 8GL60, 1976).

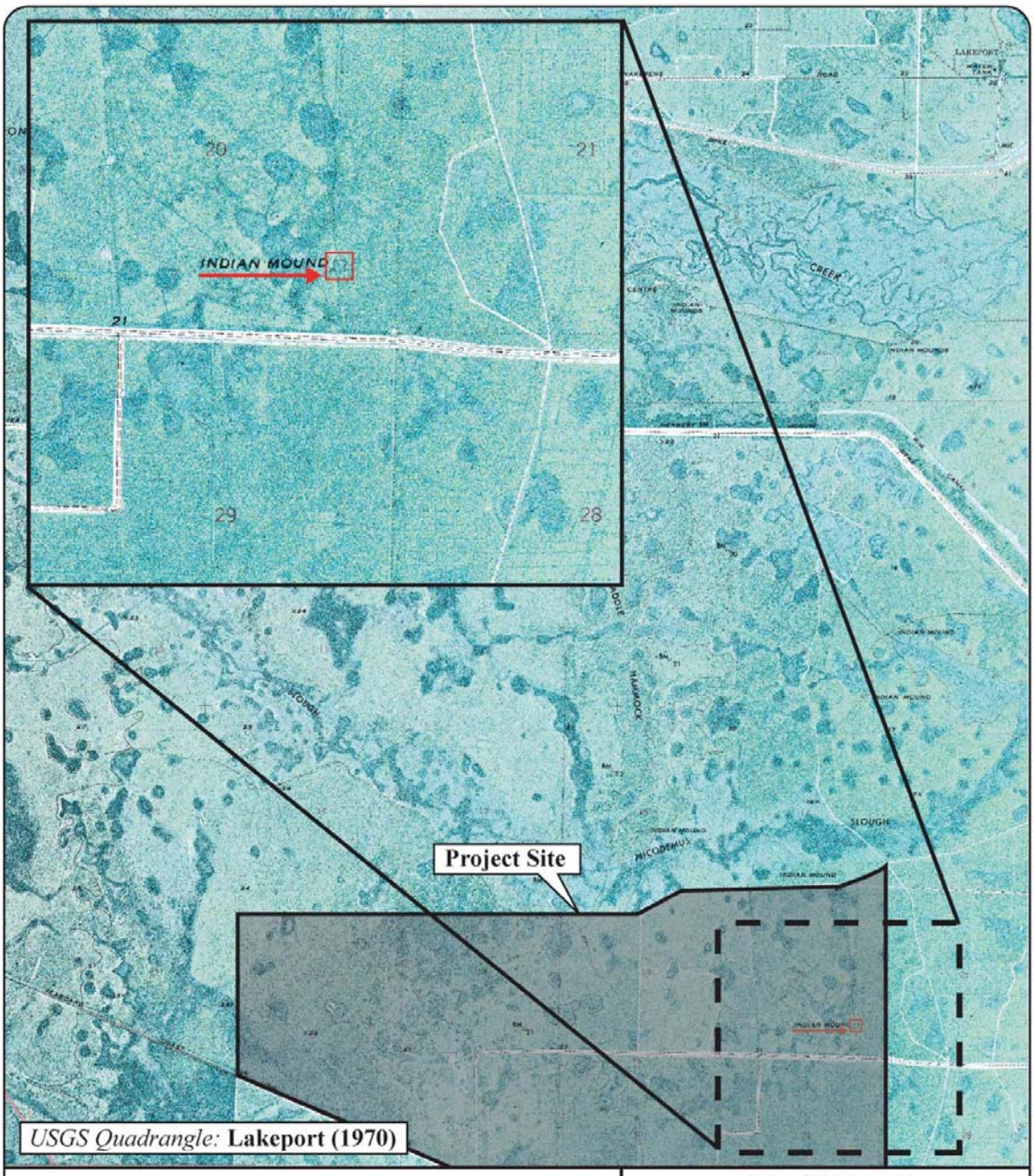

Figure 3: Closeup of "Indian Mound" indicated on Lakeport Quad

Environmental Research and Land Use History

A review of a 19th century map (Kreamer n.d.) and the historic plat map of Township 41 South, Range 32 East (FDEP 1871b, 1918, and 1926) indicate the location of 8GL60 and the proposed access roads previously consisted of poorly drained low flats of scrubby or hardwood trees, palmetto hammocks, and sawgrass marsh related to the drainage of Lake Okeechobee. Surveyor's field notes indicate that the area was low lying prairie prone to inundation from Lake Okeechobee. A review of the tract book records indicate this area was first purchased in 1883 by the Florida Land and Improvement Co. with the intent of draining and developing the land.

During the late 19th century, full scale attempts were made to drain the land and make it suitable for agriculture and for transit systems such as the Atlantic Coast Line Railway. In 1881, Philadelphia millionaire Hamilton Disston negotiated with Florida Governor Bloxham and the Internal Improvement Fund to drain all of the lands overflowed by Lake Okeechobee and the Kissimmee River in exchange for one-half of the reclaimed land. Disston's companies, the Okeechobee Land Company and the Atlantic and Gulf Coast Canal Company, undertook the first attempt to drain the Everglades and put their chief engineer, J.A. Kreamer, in charge of surveying the purchased lands around the lake. During 1881 and 1882, channels were dug between the lake systems to the north and the Kissimmee River (Tebeau 1971:288). The Atlantic and Gulf Coast Canal and Okeechobee Land Company were responsible for opening up Lake Okeechobee to the Gulf of Mexico by dredging a channel to the Caloosahatchee River. Drainage operations began and the Florida Land and Improvement Company and Kissimmee Land Company were formed to help fulfill the drainage contract (Hetherington 1980:6).

Disston changed Florida from a wilderness of swamps, heat, and mosquitoes into an area ripe for investment. This enabled Henry B. Plant to move forward with his plans to open the west coast of Florida with a railroad-steamship operation called the Jacksonville, Tampa & Key West Railway. Through the Plant Investment Company, he bought up defunct rail lines such as the Silver Springs Railroad, South Florida Railroad, and Florida Southern Railroad to establish his operation (Mann 1983:68; Harner 1973:18–23). In 1902, Henry Plant sold all of his Florida holdings to the Atlantic Coast Line, which would become the backbone railroad of the southeast (Mann 1983:68).

Historic aerials from the late 1940s (1948 and 1949) show the eastern portion of the project site as open fields with dirt roads and a few drainage canals most likely for the drying of the land for cattle grazing. The 1957 aerials show a few small patches of land where there is patterned ditch construction. By 1968 (1962 and 1968 aerials) the ditching for sugar cane fields are evident but still only within small patches of land in the eastern property area. A possible tree island and nearby water source are indicated on 1948, 1957, and 1962 aerials in the location of 8GL60, as reported by an "Indian Mound" on the Lakeport USGS quad.

An interview with Jon Tallent from Lykes Brothers (personal communication, November 2006) indicated that Lykes Brothers has owned the project site and area for about 69 years. The property was purchased primarily between 1937 and 1938 with smaller outparcels

purchased in the early 1940s. When the land was purchased, some improvements were made, such as tree removal, plowing, and discing. This disturbance was minor due to the technology of the time. Portions of the project site were later turned into improved pasture for cattle about 40 years ago. Other areas remained relatively open grassland with cabbage palm hammocks and oak hammocks similar to the Nicodemus Slough area to the north of the project site. The northwest portion of the project site remains this way.

Sugarcane has been on the project site for almost 30 years in the southeast portion of the project site and 20 years in other areas. Cane field preparation includes bulldozing and burning existing trees. The area is then disced and ditched. The ditches are dug to between 2.5 and 5 ft. deep. The initial field preparation involves heavy duty discing between 18 and 24 in deep. Laser leveling is undertaken to eliminate rises and slight depressions. This is a minor undertaking and lasering is only undertaken to between six in and one foot deep. Every three years the land is allowed to go fallow. The land is then disced and laser leveled again. This maintenance discing typically goes 12 in deep.

In the 1970s, the area appears very similar to what is depicted on the historic aerials. The 1970 Lakeport quadrangle shows the eastern boundary of the FPL Glades Power Park site and the area of 8GL60 as having been cleared but with wetland areas and ditch patterning nearby. In his 1975 survey, Robert Carr noted that the area around 8GL60 was being used for cattle pasture. Today, 8GL60 is within an active sugar cane field with artificially confined wetlands to the east, north and west.

8GL60 is located in an area of Pineda fine sand which is a soil type within the Immokalee-Myakka soil association. Pineda fine sand is a poorly drained soil in broad, low flats and in large drainage ways in areas of flatwoods (United States Department of Agriculture [USDA] 2000). The access roads are located in an area of Felda fine sand and Boca fine sand which are soil types within the Basinger-Valkaria soil association. Felda fine sand is a poorly drained soil on broad, low flats and in large drainageways in areas of flatwoods (USDA 2000). Boca fine sand is a poorly drained soil in areas of cabbage palm flatwoods adjacent to sloughs, depressions, and drainageways (USDA 2000).

Expected Results

According to Robert S. Carr (1975:9) the types of sites typical for this area include middens, sand mounds, and earthworks. Habitation sites most commonly occur on the edges of hammocks and creek and river levees. Mounds are found in the hammocks as well as in the savannahs. Due to the wet conditions of the area, sometimes artificial sand mounds were constructed for temple and habitation foundations, for burial preparation or interment, or to create dry fields for maize agriculture.

The Lakeport USGS Quadrangle map (1970) shows many of the previously recorded sites within the vicinity of the project site (see Figure 2). All of these sites are located near wetlands, and most are situated in current or historic areas of scrubby and/or hardwood trees. The presence of a potential tree hammock on historic aerials from 1949, 1957, and 1962 (Figure 4) located at the same location of the “Indian Mound” on the Lakeport Quad and

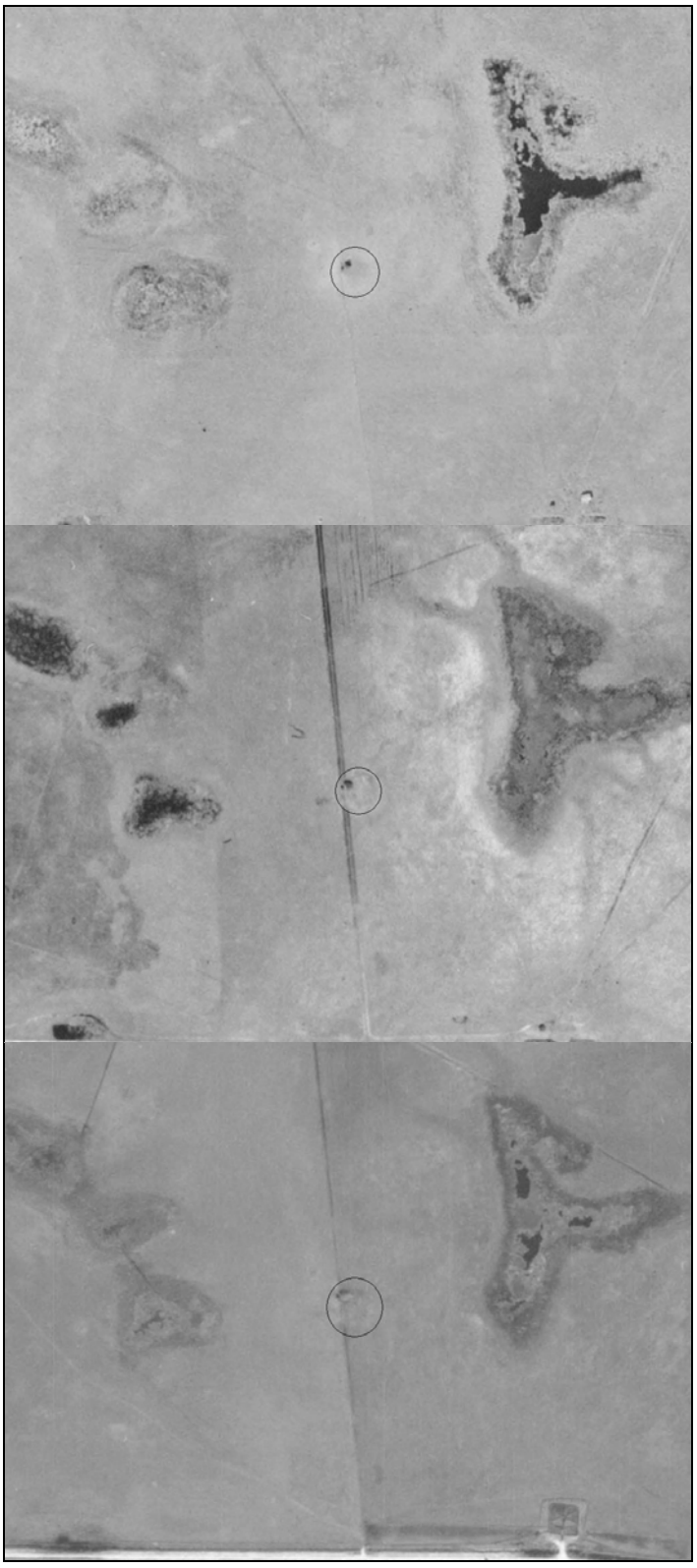

Figure 4: Historic Aerials Showing the Tree Island and Adjacent Water Source in the Location of Site 8GL60. *Top*: 1948 aerial, *Center*: 1957 aerial, *Bottom*: 1962 aerial.

reported in the 8GL60 site file indicate that there is a high probability for the location of a site. There is also what looks to be a water source immediately northwest of the tree island, which would have made it an exceptionally favorable spot for a habitation. The presences of numerous sites in the area, several of which indicate permanent habitation, suggest that this site may also be a habitation site. In addition to areas of current or former hardwood scrub hammocks and the numerous circular wetlands, the flowing water of Nicodemus Slough would also have attracted prehistoric settlers to this tree island.

METHODS

Archaeological Field Methods

Prior to the start of fieldwork, the location of the mound was covered with thick sugar cane plants. Visibility was very low and access was limited. As part of the requirements for the additional survey of 8GL60, clearing of the cane field in the vicinity of the mound was necessary. Once the area was cleared, a large mound shape was apparent in the location of 8GL60.

The archaeological field survey included a pedestrian survey, which consisted of a visual inspection of exposed ground on and around the mound. The surface inspection focused on areas of minimal vegetation and/or upturned soil such as drainage ditches, recent clearings, and animal burrows. Subsurface testing employed conventional shovel testing throughout the investigation. In total, 95 shovel tests were excavated during this investigation. Shovel tests were round and measured 50 cm in diameter. They were dug to a minimum depth of 1 m (39 in), unless excavation was inhibited by pit slumping due to the influx of water or by subsurface obstructions such as concreted clay or limestone. All excavated soil was dry screened through ¼-in hardware cloth suspended from portable wooden frames.

Shovel tests were placed systematically at 10-meter intervals within the vicinity of the mound. Testing was performed at the specified interval unless obvious ground disturbance or standing water was encountered. The field crews were instructed to place additional shovel tests in areas where artifacts were encountered on the surface of the ground.

Since the proposed access roads will be utilizing preexisting dirt roads and will not be affecting any area outside of the right of way, the area was windshield surveyed and photographs were taken.

Standard archaeological methods for recording field data were followed throughout the project. The identification number, location, stratigraphic profile, and soil descriptions were recorded for every shovel test performed. Field notes also included artifact counts, provenience information, and description of any cultural feature encountered during testing. The location of all shovel tests was recorded on graph paper using a 1 cm=10 m interval (Appendix B). All artifacts discovered during surface inspection were collected, bagged by provenience and their location marked on the project aerial maps. Whenever possible, artifacts were recovered in place, with both the vertical and horizontal position of the artifacts recorded.

Local Informant Interviews

In accordance with Chapter 1A-46, attempts were made to contact and interview local informants. In many cases, local informants possess invaluable knowledge regarding nearby cultural resources that may be unavailable to the academic or professional Cultural Resource Management (CRM) communities. Jon Tallent, of Lykes Bros., was contacted during the

reconnaissance survey in order to gain information about the extent of ground disturbance associated with initial clearing and regular maintenance of sugar cane fields.

Neither the City of Okeechobee nor the Okeechobee County is included on the January 2006 list of Certified Local Governments posted on the Florida Division of Historical Resources website at http://dhr.dos.state.fl.us/preservation/compliance /local/docs/CLG_list.doc.

Laboratory Methods

All artifacts recovered from the field during this project were processed at the laboratory facilities at Janus Research. Laboratory procedures and analysis employed were necessary to meet with the project objectives. Specific methods for each artifact class are described below.

Ceramic Artifacts

The ceramics were carefully brushed clean of sand and dirt, and allowed to air-dry and then were subjected to detailed ceramic analysis. Each sherd was examined both macroscopically and under an American Optical 7x to 42x binocular microscope to determine the kind of temper used, identify any major aplastic inclusions, and observe any interior and/or exterior surface treatments. All observations were made from freshly broken edges. The counts, proveniences, weights, traditional ceramic types, and methods of surface decoration were recorded. Definition of the ceramic types recovered during this investigation follow those in Willey (1949a), Goggin (1950), Sears (1982), Austin (1996), and Griffin (2002). These ceramic types are described below.

Sand-tempered plain: Sand-tempered pottery is one of the most common types of precontact ceramics identified in Florida. Tempered with sand ranging from fine quartz sand to coarse quartz grit, these sherds are often undecorated, but decorative variants (e.g., incised, punctate) are sometimes recovered. While this category is not a formal type, its use has become widely accepted. This category now subsumes Glades plain and Glades Gritty ware. It is found at sites dating from the Florida Transitional phase through the Historic era (Luer and Almy 1982), and is not, in itself, a good chronological indicator.

Glades Red. Goggin and Sommer (1949) defined the type of Glades Red to indicate a sand-tempered (Glades) ware that was painted red on its outer surface. Willey (1949b) expanded this definition to include those with red paint on inner, outer, or both surfaces.

Belle Glade Plain. Belle Glade Plain ceramics are characterized as a spiculite, sand tempered ceramic ware with a distinctive surface treatment caused by dragging or scraping a tool across a nearly dry surface. Although sherds often have a chalky feel, it is not a necessary characteristic to be classified as this type (Austin 1996). This surface treatment results in drag marks, facets, and extruded sand grains. Belle Glade vessels often have a distinctive beveled rim configuration. A seriation of ceramic types recovered at Belle Glade sites concluded that, while the exact timing of the appearance of Belle Glade Plain is unclear, it was present in significant amounts by AD 1000, after which it became the dominant ware (Austin 1996:75). This would correspond to the Glades IIb period (AD 900-1100) (Griffin 2002).

St. Johns Plain. St. Johns ceramics are found at sites throughout most of peninsular Florida. A soft, chalky feel and the presence of sponge spicules in the paste are the identifying characteristics of this type. The core of St. Johns sherds is often dark gray or black, and the surface tan to buff. According to Austin (1996a:75-76), this ware was present throughout the Belle Glade chronology within the northern portion of the Okeechobee region. However, it was a trade ware in the Glades region and may have been utilized throughout the Glades chronology (Griffin 2002).

Faunal Material

Most of the collected faunal remains were rinsed under tap water and allowed to air dry. However, some of the bone was too fragile to be washed and were gently brushed clean of sand instead. Due to the statistically skewed nature of the faunal assemblage recovered using ¼ in screen, all faunal specimens were identified to the lowest taxonomic class possible using skeletal specimens in the Janus Research type collection for comparison.

As most of the bone was very fragmentary, analysis consisted only of weight and number of identified specimens (NISP) by taxon. NISP is a numerical count of each bone or bone fragment identified in an assemblage. Counts have been used previously to determine changes in frequency of faunal taxa from archaeological sites (Grayson 1984). Although this quantification method has some limitations, including inflated frequency due to post-deposition fragmentation and higher incidences of nondiagnostic specimens due to differential survivability of various bone specimens, it provides a preliminary profile regarding relative frequencies of taxa represented (Lyman 1994). Bone weight quantification was also used to balance out the shortcomings of the use of NISP (Reitz and Wing 1999).

Worked Shell and Bone

All faunal materials were scanned for any worked shell or bone artifacts. Worked shell, primarily tools, are analyzed in terms of their general form, dimensions, weight, and if possible, function and species of original shell. Similar analytical techniques have been used previously by Marquardt (1992). A tool typology was developed by Marquardt (1992) for the Caloosahatchee area based on Goggin's (n.d.) typology in his unpublished manuscript. This typology includes tools and objects made from whelks (e.g., hafted tool blanks, hafted and unhafted cutting-edged tools, hammers, pounders, adzes, celts, pulverizers, dippers, cups, and net mesh gauges), gastropod columnella (e.g., perforators, hammers, cutting-edged tools, sinkers, plummets, planes, adzes, and celts), bivalves (adzes, celts, scrapers/knives, choppers, net mesh gauges. The two most common species for such tools are Lightning Whelk (*Busycon contrarium*) and Southern Quahog (*Mercenaria campechienses*). In addition, Marquart (1992) classifies several varieties of shell beads (e.g., tubular, faceted, seed, disk, and square). Two possible columnella tools were found during this survey, and are described in the Results section of this report.

Worked bone tools and objects were also analyzed in terms of their general form, dimensions, weight, and if possible, function and species of original shell. This methodology follows that used by Karen Jo Walker (1992) during her assessment of bone artifacts from several sites in the Caloosahatchee area. Her study was utilized as a comparative work for

interpretation of identified bone artifacts recovered in this survey. She bases her typology on previous works, including those of Willey (1949), Goggin (n.d.), and Griffin (1988). She classifies worked bone objects using the following categories: single-pointed bone points, bi-pointed bone points, several variations of bone pins (e.g., peg-topped, spike-topped, t-shaped, etc.), hollow-shafted pointed implements, daggers, modified teeth, several variations of beads (disc-shaped, tubular, tubular-waisted, etc.), net mesh gauges, and several unclassified items (e.g., carved bone objects and perforated bone objects). The only worked bone identified during this survey was a single bone bead blank, and this artifact is described in the Results section of this report.

Human Remains

During the course of faunal analysis, two human teeth were identified by Dr. Alison Elgart. The teeth were recovered from a shovel test (ST 73) placed in the center of the mound. As soon as the human remains were found, coordination occurred between Janus Research, state archaeologist Ryan Wheeler, and Briana Delano, Unmarked Human Burial Coordinator with the Division of Historical Resources (DHR). Copies of the correspondence are included in Appendix C.

Miscellaneous Artifacts

A single sherd of Chinese porcelain was collected during this survey that falls within this category. Modern artifacts are usually collected from archaeological deposits solely as an indicator of disturbance.

RESULTS

Additional Testing of 8GL60 resulted in the identification of the location of 8GL60, determination of site type as a midden, and the assessment of its integrity. The survey also resulted in no additional archaeological sites or occurrences in the vicinity of the proposed access roads and photographs were taken for records. A copy of the FMSF form for 8GL60 is included in Appendix D and photographs of the areas surveyed are included in Appendix E.

Site 8GL60

8HN54 is located in the SE¼ of the SE¼ of Section 20, Township 41 South and Range 32 East on the Lakeport USGS Quadrangle (1970) in Glades County (Figure 5 and 6). The site is at an elevation of 2 m above mean sea level. This site was previously recorded by Carr (FMSF Form, 8GL60, 1976) as a Belle Glade mound. He recorded the mound based on Lakeport USGS Quadrangle information and the cultural information of nearby sites. He did not visit the site.

Figure 5: East Side of Site 8GL60 after Harvesting of Sugar Cane, Facing West

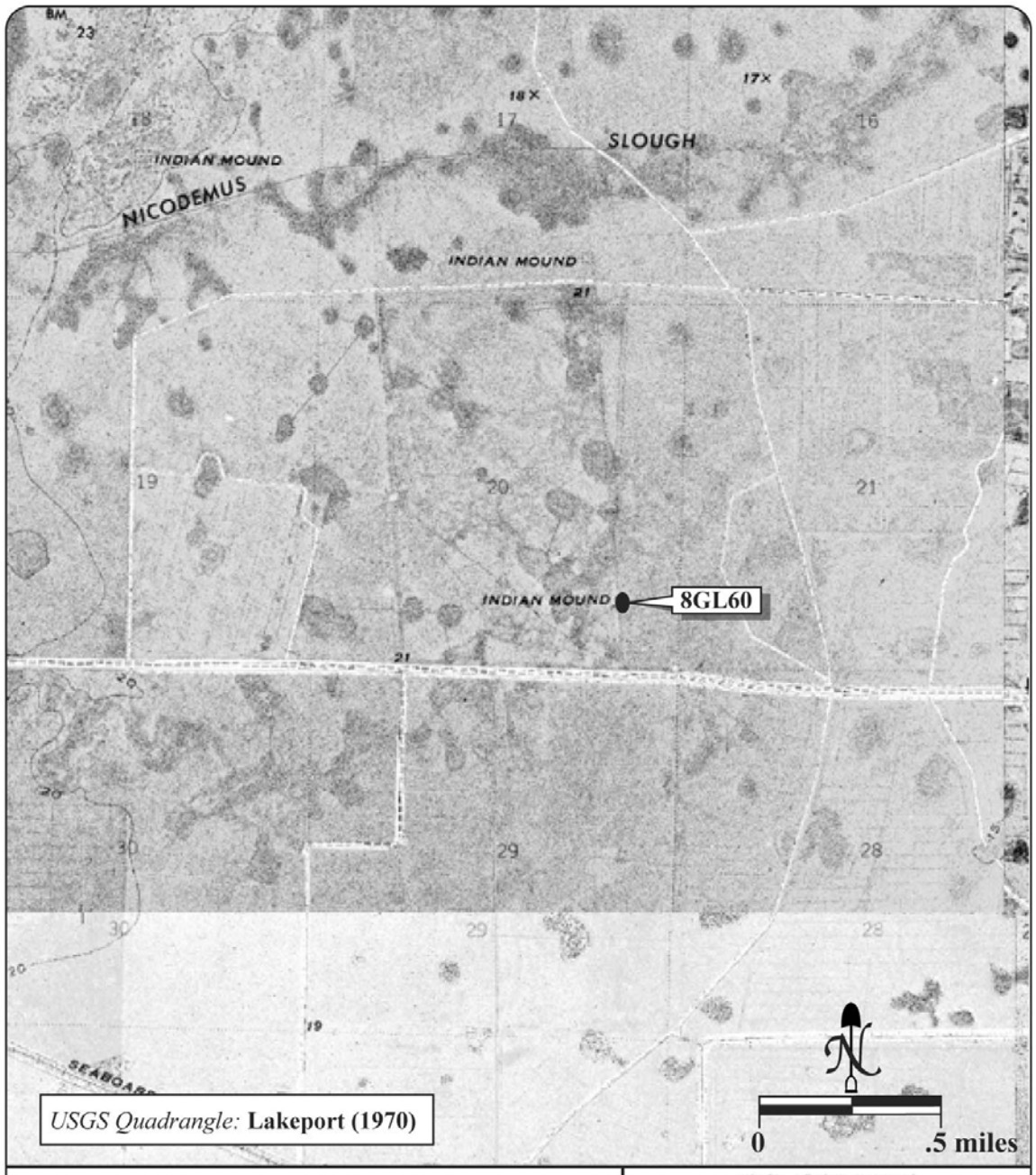

Figure 6: Location of 8GL60

During the reconnaissance testing of the FPL Glades Power Park Site, attempts were made to test in the location of 8GL60 provided by the FMSF form and the Lakeport (1970) USGS quadrangle. Systematic testing within the recorded location of 8GL60 was not feasible as the site was located within an active sugar cane field. Two tests were placed in the vicinity of 8GL60; both of which were negative.

Once the sugar cane was harvested, a raised area was evident in the location of 8GL60. Testing was conducted for the raised area itself as well as in all cardinal directions. In total, 95 shovels tests were placed in and around the raised area at 10 m intervals. 43 tests were positive with prehistoric ceramic sherds, various faunal remains, a single porcelain sherd, and two human teeth.

Testing of the area resulted in the identification of thick midden deposits located on the top of a limestone ridge. The top 20-30 cm had been disturbed by plowing and discing of the land or sugar cane planting. Large disturbed portions were located away from the intact deposits atop the ridge. The tests in these areas resulted in some positive shovel tests with a lower density of ceramic and faunal remains as was found in the midden. The artifacts were also recovered from the plow and disc zone. It is likely that the disturbed portion of the site may have been the result of plowing and "smearing" of the midden deposits farther south and north than the original location of these deposits.

The midden is elliptical in shape, 50 m east-west and 70 m north-south for a total area of approximately 3500 m^2. The top 20-30 cm was disturbed but intact midden deposits continue to exist below the plow zone until approximately 90 cm below surface (cmbs). Additional positive tests occurred outside the midden due to spread from plowing. Cultural material was spread out to an area approximately 16500 m^2. The general stratigraphic sequence encountered during testing of the midden consisted of black muck from 0 to 85 cmbs, pale brown sand from 85 to 105 cmbs, and light gray sand from 105 to 128 cmbs. The general stratigraphic sequence encountered during testing of the area outside of the midden consisted of black muck from 0 to 17 cmbs, dark brown sand from 17 to 24 cmbs, yellowish brown sand from 24 to 62 cmbs, and yellowish limestone encountered 62 cmbs.

During analysis of the faunal remains, two human molar crowns were identified from ST 73, located at the very top of the midden. From previous studies of prehistoric Indian teeth (Elgart-Berry 2003), it is certain that they are prehistoric in age and of North American ancestry. The degree and type of wear exhibited by one tooth is characteristic of prehistoric Indians. Furthermore, both teeth are discolored from their long deposition and display extensive calculus deposits. Both teeth are deciduous molars, one of which is worn and one unworn. The difference in attrition is indicative that either the teeth are derived from two children or they are from a child burial, as these two teeth would erupt within six months to a year of one another, and one should not have considerably more wear than the other. It is possible that the worn tooth naturally fell out as the permanent tooth erupted.

Cultural material included 1 possible shell tool fragment, 1 possible columella gouge, 1 possible bone pin fragment, 1 possible bone point, 538 ceramic sherds, and 1 historic ceramic

sherd collected from all positive shovel tests, and 2149.0 grams of faunal remains sampled from two positive shovel tests from within the midden.

The possible shell tool fragment was recovered from ST 72 between 0 and 80 cmbs. It is a small columnella fragment and it appears to have been made from a conch of the *Busycon* genus (Figure 7). The tool measures approximately 3 cm long and weighs 2.6 grams. As this tool is made from a marine species, it was transported to the site from either the coast on the Gulf of Mexico or the Atlantic coast.

The possible columnella gouge was recovered from ST 75 between 0 and 70 cmbs below surface. It is a small columnella cutting-edged tool (cf. Marquardt 1992:207) and it appears to have been made from a conch of the *Busycon* genus (Figure 8). Marquardt (1992:204) indicates that this tool type was used for chiseling and gouging. The tool measures approximately 7.4 cm long and weighs 18.0 grams. As this tool is made from a marine species, it was transported to the site from either the coast on the Gulf of Mexico or the Atlantic coast.

The possible bone pin fragment was recovered from ST 76 between 0 and 65 cmbs surface. It is a small bone pin fragment and it appears to have been made from the long bone of an unidentified mammal (Figure 9). The tool measures approximately 4.1 cm long and weighs 1.5 grams. The possible bone point was recovered from ST 72 between 0 and 80 cmbs. It is a small bone tool with sharpened points on both ends. It appears to have been made from the long bone of an unidentified mammal (Figure 10). The tool measures approximately 4.9 cm long and weighs 2.0 grams.

Figure 7: Possible Shell Tool (Columnella) from Site 8GL60

Figure 8: Possible Columnella Gouge from Site 8GL60

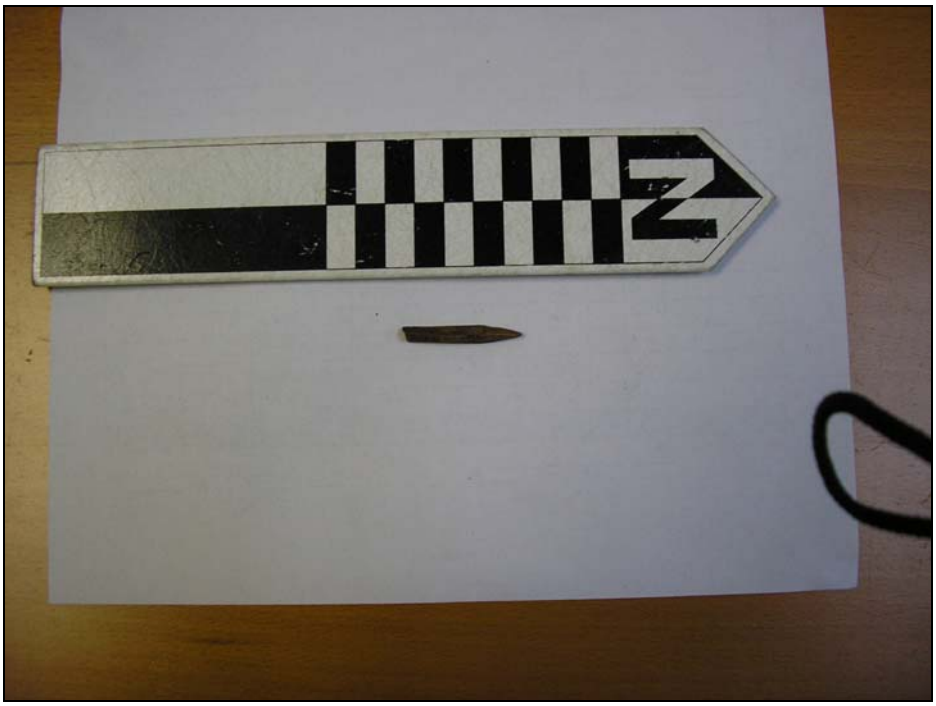

Figure 9: Possible Bone Pin Fragment from Site 8GL60

Figure 10: Possible Bone Point from Site 8GL60

A total of 538 ceramic sherds (1125.2 g) were recovered from the site (Table 1). Ninety percent of the total weight of the sherds recovered is sand-tempered plain at 1016.0 g. Other wares represented, but to a much lesser degree, include a sand-tempered zone punctated sherd (Figure 11), Belle Glade Plain, St. Johns Plain, and other sherds that could be tentatively labeled as possible St. Johns stamped and possible Glades Red (sand-tempered with a red slip). The sand-tempered wares, including Glades Plain (with and without a slip) and Glades Red are all considered part of the Glades series of ceramics and are associated with the Glades culture of south Florida (Griffin 2002). A single porcelain sherd was recovered from ST 71 between 0 and 10 cmbs. It is a small Chinese porcelain sherd (possibly from a teacup) that has been hand painted blue and covered with a glaze (Figure 12). It was weighed at 2.1 grams.

Table 1: Ceramic Types from Site 8GL60 by Count and Weight

Ceramic Type	Count	Percent	Weight (g)	Percent Weight
Belle Glade Plain	9	1.7%	27.7	2.5%
possible Glades Red	2	0.4%	3.0	0.3%
possible St. Johns stamped	2	0.4%	5.4	0.5%
possible St. Johns Plain	1	0.2%	0.7	0.1%
sand-tempered plain	507	94.2%	1016.0	90.3%
sand-tempered plain with possible slip	2	0.4%	2.3	0.2%
St. Johns Plain	14	2.6%	60.1	5.3%
unidentified zoned punctated	1	0.2%	10.0	0.9%
Total	**538**	**100.0%**	**1125.2**	**100.0%**

Figure 11: Unidentified Zone Punctated Ceramic Sherd from Site 8GL60

Figure 12: Chinese Porcelain Sherd from Site 8GL60

The high number of sand-tempered plain and relatively low number of Belle Glade Plain indicates that the vast majority of the site dates between 500 B.C. and AD 1100. The one or two possible St. Johns stamped sherds may indicate that the site was used slightly later. St Johns stamping shows up in southern Florida around AD 1200, although earlier dates have been obtained for around AD 1100 at Jupiter Inlet in Palm Beach County. The unknown zoned punctated sherd is made of a local paste, but it does not match any known type. It is far too well made to be Ft. Drum Punctated and doesn't really seem to match the Carabelle Punctated type description, either. It is very well made indicating that it is probably not an early ceramic type. Its appearance in the midden may indicate some contact with Weeden Island peoples.

The Chinese porcelain might indicate a possible contact period component. However, no other artifacts were found from this time period, and it could just as likely be associated with a Seminole or pioneer camp.

A total of 2140.0 g of faunal material was recovered from ST 73 and ST74 located within the midden (Table 2). Other than unidentified vertebrates, the highest percentage of the total weight was unidentified turtles at about 24.6 percent (527.5 g), followed by unidentified snakes at 7.9 percent (169.0 g), bony fishes at 7.7 percent (164.5) and freshwater clams at about 7.2 percent (155.0 g). Faunal taxa identified indicate that local freshwater wetlands and creeks were heavily relied upon for subsistence, as well as the flatwood environment to the west and Lake Okeechobee to the east. The large amounts of freshwater fauna, such as freshwater clams and other mollusks, indicate a large reliance on the resources from the nearby waters of Okeechobee.

Based on the total artifact assemblage recovered during this survey, site 8GL60 is a habitation midden with intact deposits below the plow zone that dates from the Glades I period (500 BC to AD 1100). Influence by the Belle Glade culture is noted in the presence of Belle Glade plain ceramics. Since this site has retained intact deposits below the plow zone that contain potentially significant data regarding the subsistence of this cultural group and data on interaction and/or influences between the Glades and Okeechobee (Belle Glade) cultural groups, it is considered potentially eligible for listing in the *NRHP*. The human remains identified within this site are protected under Chapter 872, F.S.

Table 2: Sample of Faunal Taxa Recovered from Site 8GL60 by Count and Weight

Taxa	Common Name	Count	Percent	Weight (g)	Percent Weight
AMPHIBIA	Amphibians				
Siren lucerino	Siren	70	1.4%	13.2	0.6%
AVES	Birds				
	UID Bird	5	0.1%	2.1	0.1%
MAMMALIA	Mammals				
Procyon lotor	Raccoon	4	0.1%	3.0	0.1%
Odocoileus virginianus	White-Tailed Deer	4	0.1%	12.8	0.6%
	UID Mammal	23	0.4%	27.9	1.3%
REPTILIA	Reptiles				
Alligator mississippiensis	Alligator	21	0.4%	103.8	4.9%
Ancistradon piscivaris	Moccasin	2	0.0%	3.0	0.1%
Serpentines	UID Snake	550	10.7%	169.0	7.9%
Chelydra serpentina	Snapping Turtle	12	0.2%	9.4	0.4%
Pseudemys Floridano	Florida Cooter	5	0.1%	7.0	0.3%
Gopherus polyphemus	Gopher Tortoise	3	0.1%	3.4	0.2%
Apalone Ferox	Florida Softshell Turtle	13	0.3%	18.7	0.9%
Testudinata	UID Turtle	708	13.8%	527.5	24.6%
OSTEICHTHYES	Bony Fishes				
Lepisosteus spatula	Alligator Gar	19	0.4%	2.7	0.1%
Cyprinidae formes	Minnows	8	0.2%	1.6	0.1%
	UID Bony Fishes	608	11.8%	164.5	7.7%
PELECYPODAA					
Unionidae *spp*	Freshwater Clam	440	8.6%	155.0	7.2%
	UID Salt Water Clam	1	0.0%	1.0	0.0%
GASTROPODA	Gastropods				
Ampullariidae *spp*	Apple Snail	7	0.1%	3.0	0.1%
	UID Freshwater Snail	6	0.1%	2.6	0.1%
	UID Saltwater Conch	17	0.3%	18.3	0.9%
UID	Unidentified Specimens	2613	50.8%	890.5	41.6%
Total		**5139**	**100%**	**2140.0**	**100.0%**

CONCLUSIONS AND RECOMMENDATIONS

No archaeological sites were identified in the vicinity of the two proposed plant access roads. The archaeological testing identified site 8GL60 in the location that was indicated on the Lakeport USGS quadrangle. This site was located in an active sugar cane field, after which the cane was harvested. 8GL60 is a Glades I midden that dates to between 500 B.C. and AD 1100. The presence of a sherd of Chinese porcelain may indicate a contact period or later component. No historical Indian ceramics were found.

Additionally, two human deciduous molar crowns of varying wear were recovered from a shovel test placed in the center of the midden. The amount and type of human remains does not provide a clear picture about the nature of the deposit at this time. Site 8GL60 is considered potentially eligible for listing in the *NRHP* and the human remains found at the site are protected under Chapter 872, F.S.

With regards to future site development by Florida Power & Light Company (FPL), FPL has agreed[1] to leave the midden in place and has made the decision to avoid this site in their future plans. FPL also plans to place a fence around the site during construction activities as an added precaution.

Prior to site development by FPL, Lykes Bros. has agreed not to disturb the midden during the state and the tribe review period. Lykes will be using the buffer area as a turnaround zone for equipment but not the midden itself. If it is determined that the midden is significant, then Lykes requests some indication as to whether or not that would preclude them from continuing to farm as they have in the past.

Finally, if desired by the state and tribes, the two human teeth will be re-buried on-site in the shovel test from which they were recovered. Following identification and limited analysis, the recovered faunal remains and artifacts will also be re-buried in the shovel tests from which they were recovered.

Unanticipated Finds

In the event that human remains are found during construction or maintenance activities, the provisions of Chapter 872.05 of the *Florida Statutes* will apply. Chapter 872.05 states that, when human remains are encountered, all activity that might disturb the remains shall cease and may not resume until authorized by the District Medical Examiner or the State Archaeologist. The District Medical Examiner has jurisdiction if the remains are less than 75 years old or if the remains are involved in a criminal investigation. The State Archaeologist has jurisdiction if the remains are more than 75 years of age.

[1] Please note that Florida Power & Light is the option holder and Lykes Brothers Inc.is the property owner.

Curation

An updated FMSF form (Appendix D) and Survey Log Sheet (Appendix F) is curated at the Florida Master Site File in Tallahassee, along with a copy of this report. Field notes, artifacts and other pertinent project records are temporarily stored at Janus Research until the property owner or client requests them.

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APPENDIX A:

2006 RECONNAISSANCE SURVEY AND DESKTOP OF THE GLADES POWER PARK PROJECT SITE AND SHPO CONCURRENCE LETTER

FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Ms. Kathleen Hoffman, Ph.D.
Janus Research
1300 North Westshore Blvd, Suite 100
Tampa, Florida 33607

February 1, 2007

Re: DHR Project File No. 2007-00050 / Date Received by DHR: January 12, 2006
Archaeological Reconnaissance Survey and Historic Resources Desktop of the FPL Glades Power Park Site, Glades County, Florida

Dear Dr. Hoffman:

Our office received and reviewed the above referenced survey report in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992; *36 C.F.R., Part 800: Protection of Historic Properties*; and Chapter 267, *Florida Statutes*, for assessment of possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the *National Register of Historic Places (NRHP)*, or otherwise of historical, architectural or archaeological value.

Janus Research conducted a cultural resource assessment survey of the proposed FPL Glades Power Park Site on behalf of Golder Associates, Inc. Janus Research did not locate any archaeological or historical sites during the course of the investigation.

It is the opinion of Janus Research that additional survey work needs to be conducted to confirm the presence of a previously recorded site (8GL60) that is known to have contained human remains. Janus research recommended additional Phase I testing be conducted after the harvest of sugar cane.

Based on the information provided, our office concurs with these determinations and finds the submitted report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code*.

If you have any questions concerning our comments, please contact Scott Sorset, Historic Sites Specialist, by phone at (850) 245-6333, or by electronic mail at srsorset@dos.state.fl.us. Your continued interest in protecting Florida's historic properties is appreciated.

Sincerely,

Frederick P. Gaske

Frederick P. Gaske, Director, and
State Historic Preservation Officer

500 S. Bronough Street • Tallahassee, FL 32399-0250 • http://www.flheritage.com

❒ Director's Office (850) 245-6300 • FAX: 245-6436
❒ Archaeological Research (850) 245-6444 • FAX: 245-6452
■ Historic Preservation (850) 245-6333 • FAX: 245-6437
❒ Historical Museums (850) 245-6400 • FAX: 245-6433
❒ Southeast Regional Office (561) 416-2115 • FAX: 416-2149
❒ Northeast Regional Office (904) 825-5045 • FAX: 825-5044
❒ Central Florida Regional Office (813) 272-3843 • FAX: 272-2340

ARCHAEOLOGICAL RECONNAISSANCE SURVEY AND HISTORIC RESOURCES DESKTOP OF THE FPL GLADES POWER PARK SITE GLADES COUNTY

Prepared for:

Golder Associates Inc.
5100 West Lemon Street
Suite 114
Tampa, Florida 33609

Prepared by:

Janus Research
1300 North Westshore Boulevard
Suite 100
Tampa, Florida 33607

December 2006

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INTRODUCTION

At the request of Golder Associates, on behalf of Florida Power & Light Company (FPL), Janus Research conducted a reconnaissance survey for the proposed FPL Glades Power Park Site in August, 2006. The FPL Glades Power Park site is located approximately two miles north of US 27 and one mile west of State Highway 78 and one and one-half miles west of Lake Okeechobee. The southern boundary of the project site is the South Central Florida Express Railway (SCFE). The project site lies in Sections 23-27 of Township 41 South, Range 31 East, and Sections 16-17, 19-21, and 29-33 of Township 41 South, Range 32 East, on the Lakeport (1970) and Lake Hicpochee (1971) USGS Quadrangles (Figure 1). The 4,900 ± acre project site consists mostly of cultivated sugar cane fields with numerous artificially bounded wetlands and an area of hardwood scrub hammocks and pasture in the northwest portion of this site. Photographs of the project site are provided in Appendix A.

Please note that the reconnaissance survey complied with the Reconnaissance Survey Guidelines of the Florida Division of Historic Resource (FDHR). This type of survey was intended to provide a basis for the "formulation of estimates of the necessity, type, and costs of further identification work and the setting of priorities for individual tasks involved". As stated in the guidelines, "In some cases, a reconnaissance survey may show that historic properties are so unlikely to occur that there is no need for more intensive survey. In other cases, reconnaissance survey work may permit further survey work to be focused only on particular subareas or types of properties".

Following the reconnaissance survey, a meeting was held with representatives of the Florida Department Historic Resources (FDHR) to review the results (September 2006), determine the scope of work needed to ensure compliance with Chapter 267, F.S., and to meet the requirements of the FDHR Complete and Sufficient review. At that time, the FDHR requested this reconnaissance report as well as additional testing at the recorded location of site 8GL60, a previously recorded archaeological site located in a sugar cane field within the project area. The FDHR also requested that a desktop analysis of the surrounding area be completed as a first step in addressing indirect effects on historic resources. It was recommended that the desktop analysis encompass a radius that included the town of Moore Haven and focus on identifying previously recorded *National Register of Historic Places (NRHP)*-listed or potentially eligible historic buildings and districts.

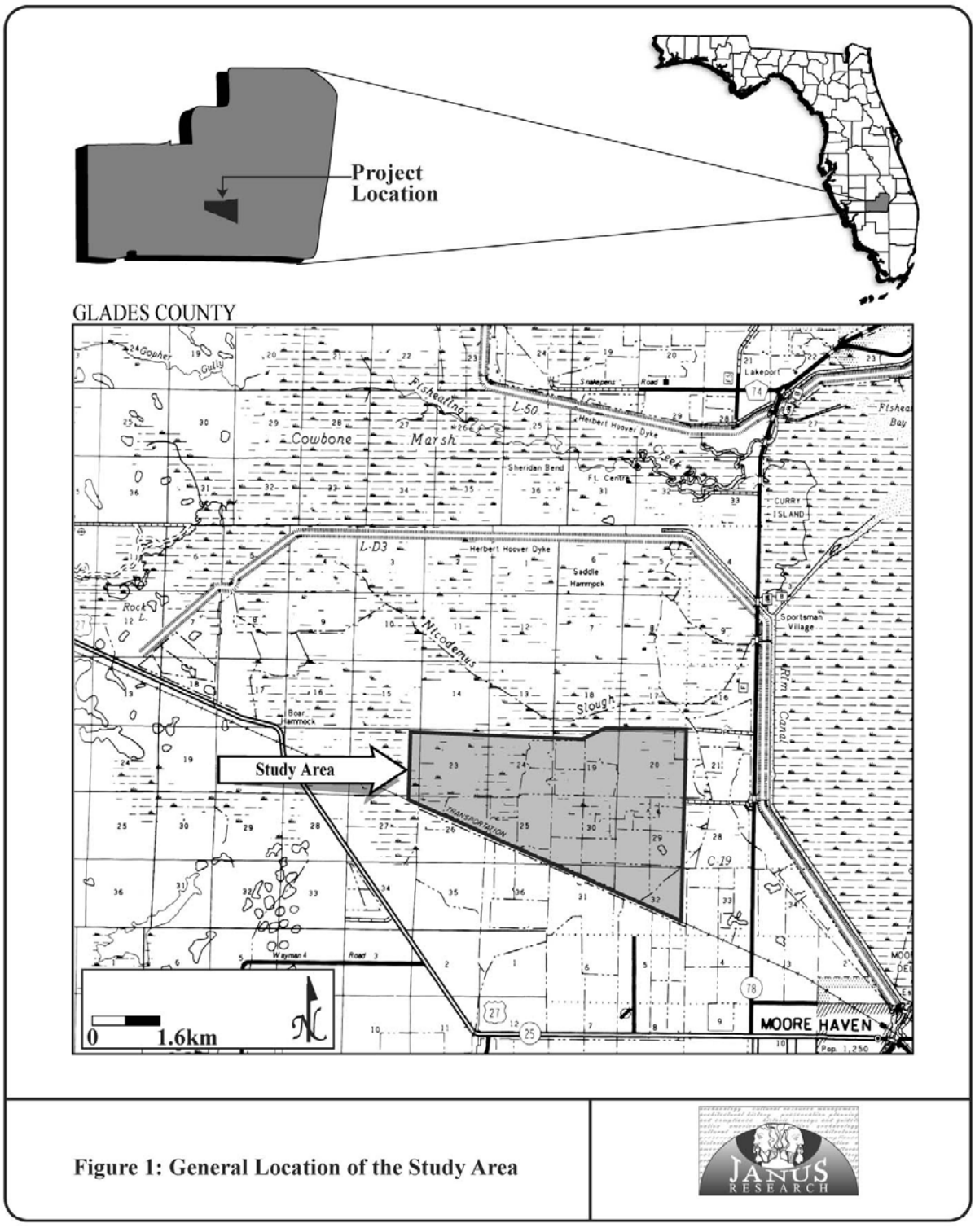

Figure 1: General Location of the Study Area

RECONNAISSANCE SURVEY

Background Research

Archival Research

Background research of the project site was performed to identify previously recorded archaeological sites and historic resources and areas of archaeological site potential. This analysis included an archaeological and historical literature and background information search pertinent to the project site. This included a search of the Florida Master Site File (FMSF), county and local site inventories, books and journal articles, and unpublished Cultural Resource Management (CRM) reports. Historic plat maps of the location as well as other historic maps and aerials were also examined.

The FDHR search indicated that six cultural resource management surveys have been conducted within the general vicinity of the project site (Table 1). No previous surveys have been conducted within the boundaries of the project site. Carr's survey of Lake Okeechobee was mostly carried out through the use of aerial photographs which were then employed to locate earthwork and sand mound sites (1975:1).

Table 1. Previously Conducted Surveys in the Vicinity of the Project Site

Survey	Survey #
An Archaeological and Historical Survey of Lake Okeechobee [Glades, Palm Beach, Okeechobee and Martin Counties, Florida]. (Carr 1975)	118
A Report of Investigations on the West Okeechobee Basin Archaeological Survey. (Johnson 1990)	2366
Cultural Resource Assessment Surveys of Four Bridge Replacement Projects in Collier, Glades and Polk Counties. (McMurray 1991)	2866
Cultural Resources Assessment Survey Lake Okeechobee Scenic Trail (L.O.S.T.) from the Palm Beach/Hendry County Line North to the Okeechobee/Martin County Line, Okeechobee, Glades, and Hendry Counties, Florida. (Almy and Hinder 2002)	7072
Status of Fort Center Archaeological Site and Recommendations for Management and Protection of Sites. (Newman 2003)	8827
Cultural Resource Assessment Survey SR 78 from South of Nicodemus Slough to Bridge No. 050056 Glades County, Florida. (Pracht 2003)	8903

The FDHR was contacted about the location of known archaeological sites and historic structures within or near the project site. A search of the FMSF records revealed five previously recorded archaeological sites (8GL9, 8GL38, 8GL53, 8GL60, 8GL61), one archaeological district (8GL13), and one historic district (8GL421) within the vicinity of the project site (Figure 2). All five sites are of the type that usually contains human remains.

One archaeological site (8GL60), recorded as a prehistoric mound, is located within the project site boundaries in the southeastern quarter of Section 20 in Township 41 South, Range 32 East. The site was not visited by Carr but was recorded as a Belle Glade mound based on its designation as an "Indian Mound" on a topographic map and other nearby sites.

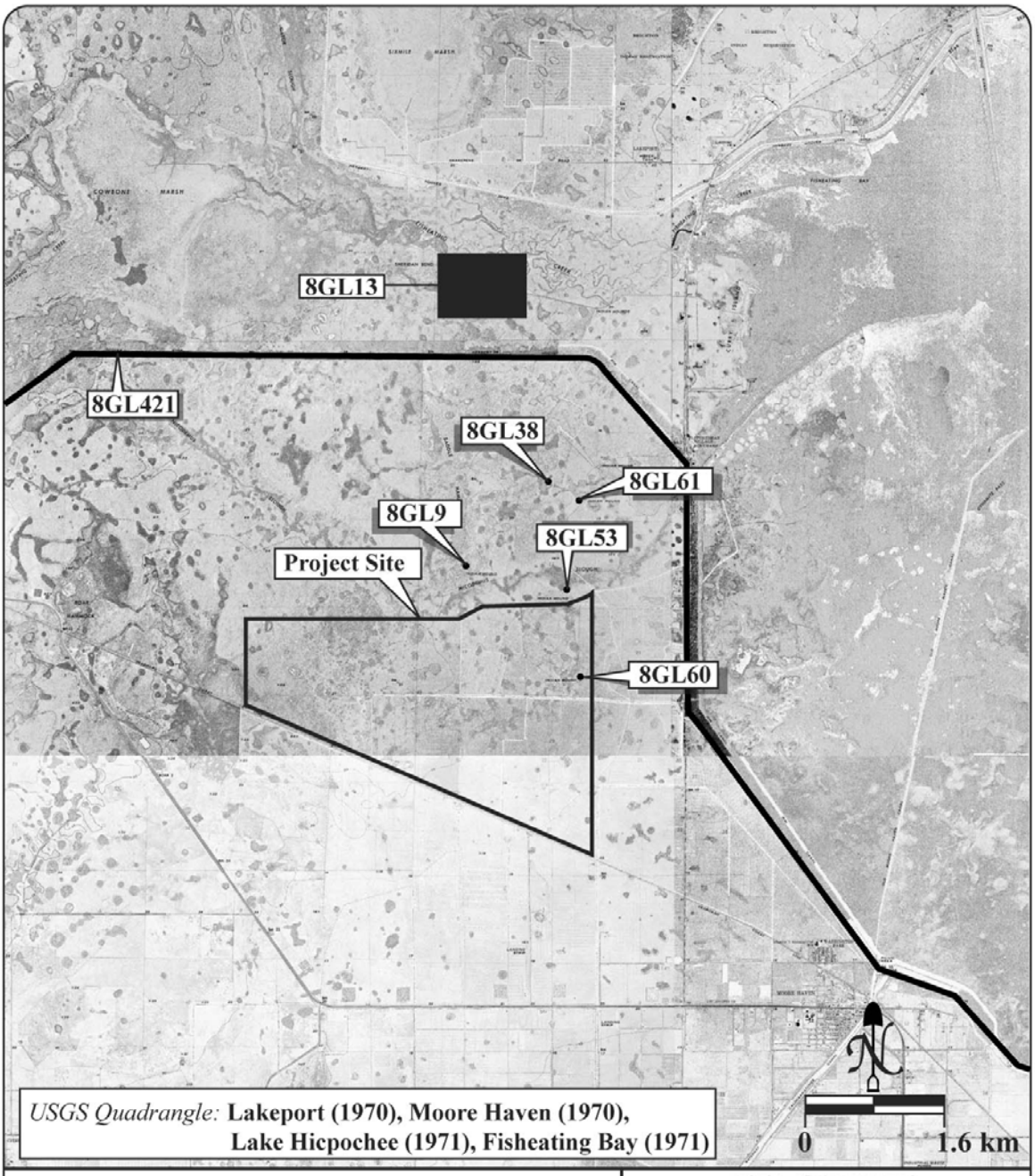

Figure 2: Previously Recorded Cultural Resources in the Vicinity of the FPL Glades Power Park Site

The Lakeport USGS Quadrangle map (1970) shows this site indicated by the label "Indian Mound" (Figure 3). A review of the historic plat map of Township 41 South, Range 32 East (Florida Department of Environmental Protection [FDEP] 1871b, 1918, and 1926) and a 19th century map of the Atlantic and Gulf Coast Canal and Okeechobee Land Co. purchases (Kreamer n.d.) does not illustrate an Indian mound for this area. Due to lack of previous field investigation of the site, it has not been evaluated for its *NRHP*-eligibility (FMSF form, 8GL60, 1976).

Gator Mound (8GL53) lies just outside the project boundary near the northeastern corner of the FPL Glades Power Park site and just south of Nicodemus Slough. It is located in the southeastern quarter of Section 17 in Township 41 South, Range 32 East. This site is recorded as a prehistoric mound and earthworks of unknown cultural affiliation. This site was not visited by Carr (1975:38-39) but was located via its designation as an "Indian Mound" on the USGS Lakeport Quad and aerial photographs. It has not been evaluated for its *NRHP*-eligibility (FMSF form, 8GL53, 1975).

Site 8GL9, the Nicodemus Earthworks, is located approximately 2,500 ft. north of the project site and Nicodemus Slough. It lies within the southern half of Section 18 in Township 41 South, Range 32 East. It is recorded as a destroyed white sand burial mound and unlinear crescent earthworks with linear ridge and mound components (Carr 1975:28-33) that are associated with the Belle Glade Culture. The burial mound has been recorded as containing human remains. This site has not been evaluated for its *NRHP*-eligibility.

Site 8GL61, an unnamed site, is located approximately 6,500 ft. north of the project site. It lies within the southeastern quarter of Section 8 in Township 41 South, Range 32 East. It is recorded as a prehistoric mound associated with the Belle Glade culture. This site has not been evaluated for its *NRHP*-eligibility (FMSF form, 8GL61, 1976).

Site 8GL38, the Glades Circle Ditch, is located approximately 7,000 ft. north of the project site and Nicodemus Slough. It is located within the southeastern quarter of Section 8 in Township 41 South, Range 32 East, not far from 8GL61. This site is recorded as a prehistoric earthwork associated with the Glades culture. It has not been evaluated for its *NRHP*-eligibility.

The Fort Center Archaeological District (8GL13) is composed of numerous middens and earthworks associated to the Belle Glade I and II culture. The earthworks include mounds, linear embankments, burial mound, borrow areas and circular ditches. This complex includes archaeological sites 8GL11- 8GL13, 8GL15-8GL25, 8GL375 and 8GL376. The site is named for a nineteenth century Seminole War fort (8GL23) built on the prehistoric site (Sears 1982:ix). The complex is situated in both hammock and savannah adjacent to the south bank of Fisheating Creek. Some erosion has occurred to the site components from bank cutting. Mounds A and B (8GL12) were excavated by Sears between 1967 and 1971. He indicates that this is a multi-component site with varying depths of cultural deposits (Sears 1971, 1982). Mounds and middens with additional earthworks in the form of circular borrows were

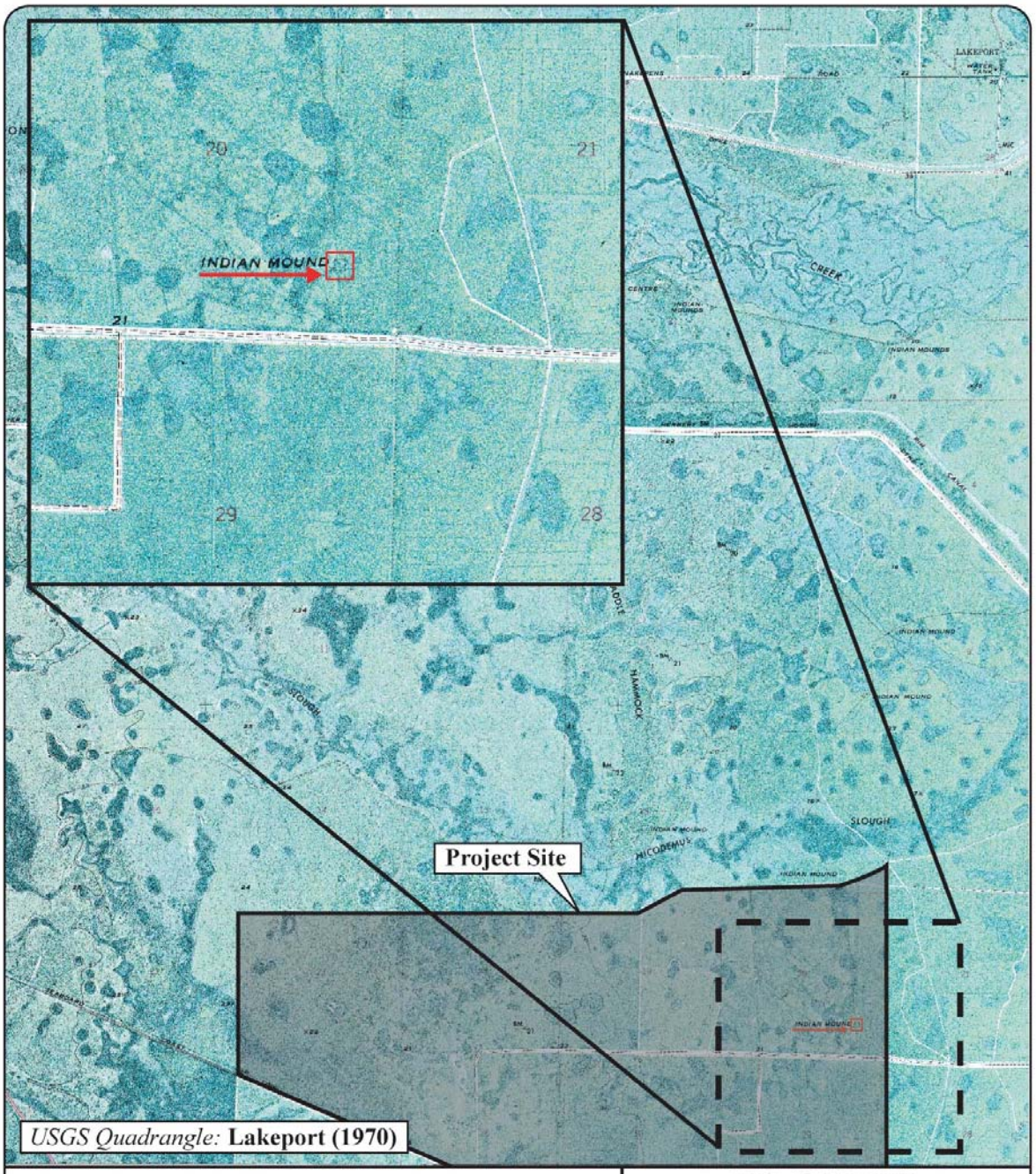

Figure 3: Closeup of "Indian Mound" indicated on Lakeport Quad

identified through aerial photographs (Carr 1975; Johnson 1991). The sand mounds have eroded and earthworks are damaged from cattle grazing. The Fort Center Archaeological District is an important prehistoric site group with the potential to be a state park, but it has not been evaluated for its *NRHP*-eligibility.

The Herbert Hoover Dike (8GL421) that surrounds Lake Okeechobee is listed in the FMSF as a district or resource group. This site consists of 5 historic structures in 5 different counties; 8GL421A is the historic structure site number for the segment located in Glades County. Construction of the dike began in the early 1930s by the U.S. Army Corps of Engineers and was completed in 1938. The 34 ft. high dike is composed of shell, rock and gravel covered with grass, trees, and a service drive on top of the levee. It is considered to be the largest civil engineering work in South Florida and continues to control the waters around Lake Okeechobee. It lies approximately one and one-half mile east of the project site. This historic resource has been previously determined by the State Historic Preservation Officer (SHPO) to be *NRHP*-eligible (FMSF form, 8GL421, 2002).

A review of the historic plat map of Township 41 South, Range 31 East (FDEP 1871a) and Township 41 South, Range 32 East (FDEP 1871b, 1918, and 1926) did not reveal any military forts, encampments or roads, battle sites, homesteads, farmsteads, trails, or Native American villages located within 3 miles of the project site.

Environmental Research and Land Use History

A review of a 19th century map (Kreamer n.d.) and the historic plat map of Township 41 South, Range 31 East (FDEP 1871a) and Township 41 South, Range 32 East (FDEP 1871b, 1918, and 1926) indicate the project site previously consisted of poorly drained low flats of scrubby or hardwood trees, palmetto hammocks, and saw grass marsh related to the drainage of Lake Okeechobee. Surveyor's field notes were not available for this area. A review of the tract book records indicate this area was first developed in 1883 and 1884 when the Atlantic and Gulf Coast Canal and Okeechobee Land Co. and Florida Land and Improvement Co. began purchasing large portions of land in the area. Table 2 shows the historic land ownership of the project site.

Table 2. Land Apportionment in the Project Site as Recorded in the Tract Book Records

Township 41 South, Range 31 East			
Section	**Portion Owned**	**Owner**	**Date of Deed or Sale**
23	All	The Atlantic and Gulf Coast Canal and Okeechobee Land Co.	December 15, 1884
24	All	Florida Land and Improvement Co.	December 15, 1883
25	All	The Atlantic and Gulf Coast Canal and Okeechobee Land Co.	December 15, 1884
26	All	Florida Land and Improvement Co.	December 15, 1883
27	All	The Atlantic and Gulf Coast Canal and Okeechobee Land Co.	December 15, 1884
Township 41 South, Range 32 East			
Section	**Portion Owned**	**Owner**	**Date of Deed or Sale**
16	All unsurveyed	James M. Kreamer	May 5, 1892
17	Unsurveyed part	Heirs of J.A. Henderson	December 28, 1904
	All	The Atlantic and Gulf Coast Canal and Okeechobee Land Co.	December 15, 1884
19	All	The Atlantic and Gulf Coast Canal and Okeechobee Land Co.	December 15, 1884
20	All	Florida Land and Improvement Co.	December 15, 1883
21	All	The Atlantic and Gulf Coast Canal and Okeechobee Land Co.	December 15, 1884
	All unsurveyed	Heirs of J.A. Henderson	December 28, 1904
	See copy of deed	David G. Click	March 1, 1945
29	All	The Atlantic and Gulf Coast Canal and Okeechobee Land Co.	December 15, 1884
30	All	Florida Land and Improvement Co.	December 15, 1883
31	All	The Atlantic and Gulf Coast Canal and Okeechobee Land Co.	December 15, 1884
	Unsurveyed part	Heirs of J.A. Henderson	December 28, 1904
32	Unsurveyed part	Heirs of J.A. Henderson	December 28, 1904
	All	Florida Land and Improvement Co.	December 15, 1883
33	All unsurveyed	Heirs of J.A. Henderson	December 28, 1904

During the late 19th century, full scale attempts were made to drain the land and make it suitable for agriculture and for transit systems such as the Atlantic Coast Line Railway. In 1881, Philadelphia millionaire Hamilton Disston negotiated with Florida Governor Bloxham and the Internal Improvement Fund to drain all of the lands overflowed by Lake Okeechobee and the Kissimmee River in exchange for one-half of the reclaimed land. Disston's companies, the Okeechobee Land Company and the Atlantic and Gulf Coast Canal Company, undertook the first attempt to drain the Everglades and put their chief engineer, J.A. Kreamer, in charge of surveying the purchased lands around the lake. During 1881 and 1882, channels were dug between the lake systems to the north and the Kissimmee River (Tebeau 1971:288). The Atlantic and Gulf Coast Canal and Okeechobee Land Company were responsible for opening up Lake Okeechobee to the Gulf of Mexico by dredging a channel to the Caloosahatchee River. Drainage operations began and the Florida Land and Improvement Company and Kissimmee Land Company were formed to help fulfill the drainage contract (Hetherington 1980:6).

Disston changed Florida from a wilderness of swamps, heat, and mosquitoes into an area ripe for investment. This enabled Henry B. Plant to move forward with his plans to open the west coast of Florida with a railroad-steamship operation called the Jacksonville, Tampa & Key West Railway. Through the Plant Investment Company, he bought up defunct rail lines such as the Silver Springs, South Florida Railroad, and Florida Southern Railroad to establish his operation (Mann 1983:68; Harner 1973:18–23). In 1902, Henry Plant sold all of his Florida holdings to the Atlantic Coast Line, which would become the backbone railroad of the southeast (Mann 1983:68).

Historic aerials from the late 1940s (1948 and 1949) show the eastern portion of the project site as open fields with dirt roads and a few drainage canals most likely for the drying of the land for cattle grazing. The 1957 aerials show a few small patches of land where there is patterned ditch construction. By 1968 (1962 and 1968 aerials) the ditching for sugar cane fields are evident but still only within small patches of land in the eastern property area. Aerials depicting the western portion of the project site (1949, 1957 and 1962) show hardwood hammocks with cleared patches interspersed with small ponds.

An interview with Jon Tallent from Lykes Brothers (personal communication, November 2006) indicated that Lykes Brothers has owned the project site and area for about 69 years. The property was purchased primarily between 1937 and 1938 with smaller outparcels purchased in the early 1940s. When the land was purchased, some improvements were made, such as tree removal, plowing, and discing. This disturbance was minor due to the technology of the time. Portions of the project site were later turned into improved pasture for cattle about 40 years ago. Other areas remained relatively open grassland with cabbage palm hammocks and oak hammocks similar to the Nicodemus Slough area to the north of the project site. The northwest portion of the project site remains this way.

Sugarcane has been on the project site for almost 30 years in the southeast portion of the project site and 20 years in other areas. Cane field preparation includes bulldozing and burning existing trees. The area is then disced and ditched. The ditches are dug to between

2.5 and 5 ft. deep. The initial field preparation involves heavy duty discing between 18 and 24 in deep. Laser leveling is undertaken to eliminate rises and slight depressions. This is a minor undertaking and lasering is only undertaken to between six inches and one foot deep. Every three years the land is allowed to go fallow. The land is then disced and laser leveled again. This maintenance discing typically goes 12 in deep.

In the 1970s, the area appears very similar to what is depicted on the historic aerials. The 1970 Lakeport and 1971 Lake Hicpochee quadrangle show the western portion of the project site as hammocks while the eastern portion is clear with the parcels of ditch patterning. In his 1975 survey, Robert Carr noted that the area around 8GL60 (located in the east portion of the project site) was being used for cattle pasture. Today, the project site is mainly sugar cane fields interspersed with artificially confined wetlands. The northwestern portion of the project site is still scrubby or hardwood trees interspersed with cleared areas and small ponds that are being used for cattle grazing.

Two general soil associations have been identified within the project site. The Immokalee-Myakka soils are associated with flatwoods and the Basinger-Valkaria soils are associated with sloughs and hammocks (United States Department of Agriculture [USDA] 2000). Table 3 shows the soil types found within the project study site and their drainage characteristics.

Table 3. Drainage Characteristics of Soil Types within the Project Site

Drainage Characteristics	Soil Types	Environmental Association
Poorly drained	Hallandale fine sand	low, broad flats and cabbage palm hammocks
	Valkaria fine sand	low flatwoods, in sloughs, and poorly defined drainage ways
	Malabar fine sand	narrow to broad sloughs and in poorly defined drainage ways in areas of the flatwoods
	Pople fine sand	on low flats and on cabbage palm hammocks
	Felda fine sand	broad, low flats and in large drainage ways in areas of flatwoods
	Boca fine sand	cabbage palm flatwoods adjacent to sloughs, depressions, and drainage ways
	Basinger fine sand	low flats and in sloughs and poorly defined drainage ways
	Pineda fine sand	broad, low flats and in large drainage ways in areas of flatwoods
	Oldsmar sand	flatwoods adjacent to sloughs and streams
	Immokalee sand	broad areas of flatwoods
	Ft. Drum fine sand	flats next to sloughs, depressions, and drainage ways
	Malabar fine sand, high	slightly higher areas in flatwoods
Very poorly drained	Gator muck, depressional	marshes, swamps, and wet depressions
	Floridana fine sand, depressional	wet depressions
	Okeelanta muck, depressional	depressions, marshes, and swampy areas
	Astor fine sand, depressional	depressions and along the edges of swamps and marshes

Site Probabilities and Expected Results

Additionally, the environmental conditions and the cultural context of the project site were reviewed as they relate to the prediction of the location of precontact and historic archaeological sites. The designation of zones based on their potential for containing archaeological sites, or site potential zones, was based on previous research conducted within the various archaeological regions of Florida. Four environmental factors were employed in predicting site locations: soil type (soil drainage), distance to fresh (potable) water, distance to hardwood hammocks, and relative topography. The relative importance of each of these variables depends upon the composite environmental setting. In a sand hills environment, for example, a majority of the known sites are located near a water source on a ridge slope. If a water source is not located in the vicinity, the probability of site occurrence decreases dramatically. Water will not be a determining factor, however, if another resource with more limited distribution, such as stone for tool manufacture, is available. In areas of relatively low relief and abundant wetlands, areas of higher elevation relative to the surrounding terrain would be considered more likely to contain sites.

According to Robert S. Carr (1975:9) the types of sites typical for this area include middens, sand mounds, and earthworks. Habitation sites most commonly occur on the edges of hammocks and creek and river levees. Mounds are found in the hammocks as well as in the savannahs. Due to the wet conditions of the area, sometimes artificial sand mounds were constructed for temple and habitation foundations, for burial preparation or interment, or to create dry fields for maize agriculture.

The Lakeport USGS Quadrangle map (1970) shows many of the previously recorded sites within the vicinity of the project site (see Figure 2). All of these sites are located near wetlands, and most are situated in current or historic areas of scrubby and/or hardwood trees. The presence of numerous sites in the area, several of which indicate permanent habitation, suggest there are similar, unrecorded sites located within or next to the FPL Glades Power Park site. In addition to areas of current or former hardwood scrub hammocks and the numerous circular wetlands, the flowing water of Nicodemus Slough would also have attracted prehistoric settlers. Based on all of these variables, there are numerous areas of moderate to high potential for unrecorded archaeological sites within the project site (Figure 4).[1] The Fort Center Archaeological District, a group of Bell Glade middens, mounds, burial mounds, and earthworks as well as a Seminole fort, located over 3 miles to the north of the project area was reviewed on historic and modern aerial photographs. This review assisted in refining what a mound complex would look like on aerials maps (i.e “targets”) and was used comparatively to identify any similar “targets” in the project site.

[1] The Seaboard Coast Railway, originally owned by the Atlantic Coast Line Railway, is located in proximity to the project site but outside of the project site. The C19 canal and the L306 Levee are both adjacent to the eastern portion of the project site but outside of the project site. They were not recorded as part of the reconnaissance survey. Should the project site boundaries change to include these resources, it is recommended that these resources be recorded and evaluated.

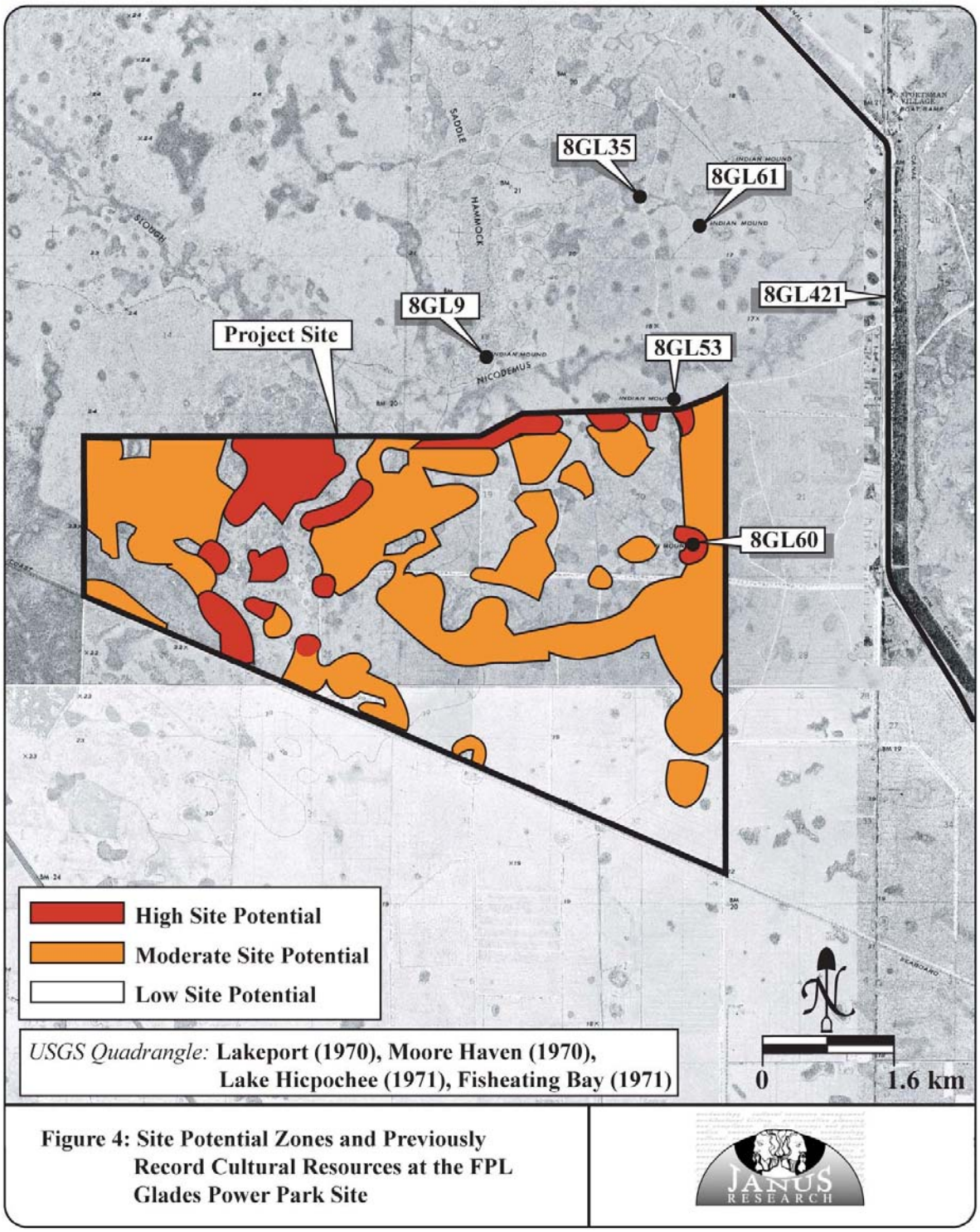

Figure 4: Site Potential Zones and Previously Record Cultural Resources at the FPL Glades Power Park Site

Methods

The archaeological reconnaissance survey included a pedestrian survey supplemented by subsurface shovel tests to field-check the archaeological site potential zones developed during the background research. A total of 64 judgmentally-placed shovel tests were excavated within the project site (Appendix B) with a particular focus on the location of the previously recorded archaeological site, 8GL60, and any areas that contained current or former hammocks.

Janus Research's work for the South Florida Water Management District (SFWMD) Acceler8 projects has confirmed the destructive nature of sugar cane cultivation. It is clear that unless the sites were protected prior to land preparation activities, the leveling of the field to the muck removed almost all of the natural soil or cultural deposits that may have originally existed above the muck. Therefore, it is unlikely that any intact and significant archaeological material would be found in a field that has been used for continual sugar cane cultivation and subject to repeat plowing. Based on this, our pedestrian survey and judgmental testing in sugar cane fields focused on the following areas:

1) locations of previously recorded sites;
2) locations within the cane fields that have not been disturbed by the cultivation, which typically border wetlands;
3) other undisturbed areas bordering wetlands;
4) areas that contained existing or relic hammocks, as indicated on historic aerials or county soil surveys.

Pedestrian survey and judgmental testing occurred in the northwest section of the property site where there has been no sugar cane cultivation. This area has been left for cattle and existing hardwood hammock. A pedestrian survey was conducted for portions of this area that were easily accessible and provided clear ground visibility. Judgmental testing focused on those areas within the high potential zones that would be more likely to yield sites, such as the center or edge of the historic hammocks (Carr 1975), as determined from historic aerials.

Standard archaeological methods for recording field data were followed throughout the project. The identification number, location, stratigraphic profile, and soil descriptions were recorded for each shovel test. Shovel tests were circular and roughly 50 cm (20 in.) in diameter. They were dug to a minimum depth of 1 m (3.3 ft.), unless excavation was inhibited by pit slumping due to the influx of water or by subsurface obstructions such as limestone bedrock or concreted clay. All excavated soil was dry screened through 6.4-mm (¼-in.) hardware cloth suspended from portable wooden frames. The location of each shovel test was plotted on 1"=200 m field aerials (Appendix B).

Results

All of the shovel tests were negative and yielded no any archaeological material. The pedestrian survey did not indicate the presence of any above-ground archaeological sites.

Systematic testing within the recorded location of 8GL60 was not feasible as the site is located within an active sugar cane field. Two tests were placed in the vicinity of 8GL60; both of which were negative. Additional testing of the recorded location of 8GL60 will take place once the sugar cane is harvested. This testing will include the location of the site as recorded on the USGS map as well as a 100-ft. buffer extending in the four cardinal directions of its recorded location.

HISTORIC RESOURCES DESKTOP ANALYSIS

At the request of the FDHR, a desktop analysis was performed to identify previously recorded *NRHP*-listed or potentially eligible historic buildings and districts within a 5 mile radius of the project site, to include the city of Moore Haven. This analysis included an archaeological and historical literature and background information search pertinent to this area.

The FMSF search indicated that eight cultural resource management surveys have been conducted within 5 miles of the project site (Table 4).

Table 4. Previously Conducted Surveys within 5 miles of the Project Site

Survey	Survey #
An Archaeological and Historical Survey of Lake Okeechobee [Glades, Palm Beach, Okeechobee and Martin Counties, Florida]. (Carr 1975)	118
A Report of Investigations on the West Okeechobee Basin Archaeological Survey. (Johnson 1990)	2366
Cultural Resource Assessment Surveys of Four Bridge Replacement Projects in Collier, Glades and Polk Counties. (McMurray 1991)	2866
Cultural Resource Assessment, Survey US 27 (Moore Haven Bridge) from North of CR 720 to West of First Street, Glades County, Florida. (Janus Research 1992)	3411
Historic Properties Survey of Moore Haven. (Hartig 1995)	4074
Cultural Resources Assessment Survey Lake Okeechobee Scenic Trail (L.O.S.T.) from the Palm Beach/Hendry County Line North to the Okeechobee/Martin County Line, Okeechobee, Glades, and Hendry Counties, Florida. (Almy and Hinder 2002)	7072
Status of Fort Center Archaeological Site and Recommendations for Management and Protection of Sites. (Newman 2003)	8827
Cultural Resource Assessment Survey SR 78 from South of Nicodemus Slough to Bridge No. 050056 Glades County, Florida. (Pracht 2003)	8903

The FMSF revealed 33 individual historic buildings, two historic districts, and one historic dike within a five mile radius of the FPL Glades Power Park Project site (Table 5). The majority of the previously recorded resources are located within the city of Moore Haven. The two historic districts, Moore Haven Downtown Historic District (8GL368) and Moore Haven Residential District (8GL411) are listed in the *NRHP* (Figure 5). The Herbert Hoover Dike (8GL421 and 8GL421A) has been determined eligible for listing in the *NRHP* on an individual basis. The remaining 33 historic buildings have not been evaluated by the SHPO.

Table 5. Previously Recorded Historic Resources within 5 Miles of the Glades Power Park

FMSF #	Site Name/ Address	Style	Date	*NRHP* Status
8GL368	Moore Haven Downtown Historic District	various	various	*NRHP*-Listed
8GL411	Moore Haven Residential District	various	various	*NRHP*-Listed
8GL421 & 8GL421A	Herbert Hoover Dike	N/A	c. 1930	*NRHP*-Eligible
8GL84	50 US 27	Frame Vernacular	1929	Not Evaluated
8GL85	62 US 27	Masonry vernacular	1945	Not Evaluated
88GL86	156 US 27	Frame Vernacular	1925	Not Evaluated
88GL258	315 Avenue K	Frame Vernacular	c. 1923	Not Evaluated
88GL259	301 Avenue K	Frame Vernacular	c. 1923	Not Evaluated
8GL273	299 Avenue K	Frame Vernacular	c. 1928	Not Evaluated
8GL282	499 Avenue K	Frame Vernacular	c. 1940	Not Evaluated
8GL283	470 Avenue J	Frame Vernacular	c. 1940	Not Evaluated
8GL284	Tatum House/ 429 J Avenue	Frame Vernacular	c. 1940	Not Evaluated
8GL285	471 Avenue J	Frame Vernacular	c. 1925	Not Evaluated
8GL286	First Baptist Church Parsonage/ 285 J Avenue	Frame Vernacular	1919	Not Evaluated
8GL288	Lundy, Ed Building/ 198 J Avenue	Masonry vernacular	1947	Not Evaluated
8GL292	62 Avenue J	Frame Vernacular	c. 1925	Not Evaluated
8GL297	Glades County Courthouse/ J Avenue	Neo-Classical Revival	1926	Not Evaluated
8GL298	242 Avenue N	Frame Vernacular	1930	Not Evaluated
8GL299	Bussell House/ 270 N Avenue	Frame Vernacular	1930	Not Evaluated
8GL300	298 Avenue N	Frame Vernacular	c. 1925	Not Evaluated
8GL301	300 Avenue N	Frame Vernacular	c. 1927	Not Evaluated
8GL302	Sheriffs House/ 314 N Avenue	Frame Vernacular	c. 1927	Not Evaluated
8GL316	Altamonte Hotel/ 143 L Avenue	Frame Vernacular	c. 1917	Not Evaluated
8GL322	315 Avenue L	Frame Vernacular	c. 1925	Not Evaluated
8GL323	384 Avenue L	Frame Vernacular	c. 1945	Not Evaluated
8GL324	442 Avenue L	Frame Vernacular	c. 1925	Not Evaluated
8GL325	360 Avenue R	Frame Vernacular	c. 1930	Not Evaluated
8GL326	399 Avenue R	Frame Vernacular	c. 1945	Not Evaluated
8GL328	Horwitz, Marion House/ 400 Riverside Drive	Frame Vernacular	c. 1917	Not Evaluated
8GL329	500 Riverside Drive	Frame Vernacular	c. 1929	Not Evaluated
8GL330	Moore Haven Ice Company/ Florida Avenue	Frame Vernacular	1926	Not Evaluated
8GL331	Cannery-Warehouse/ Florida Avenue	Frame Vernacular	c. 1926	Not Evaluated
8GL332	401 4th Street	Frame Vernacular	c. 1927	Not Evaluated
8GL333	428 Railroad Avenue	Frame Vernacular	c. 1945	Not Evaluated
8GL334	Moore Haven Hotel/ 300 Riverside Drive	Frame Vernacular	1916	Not Evaluated
8GL335	400 5th Street	Frame Vernacular	1920	Not Evaluated

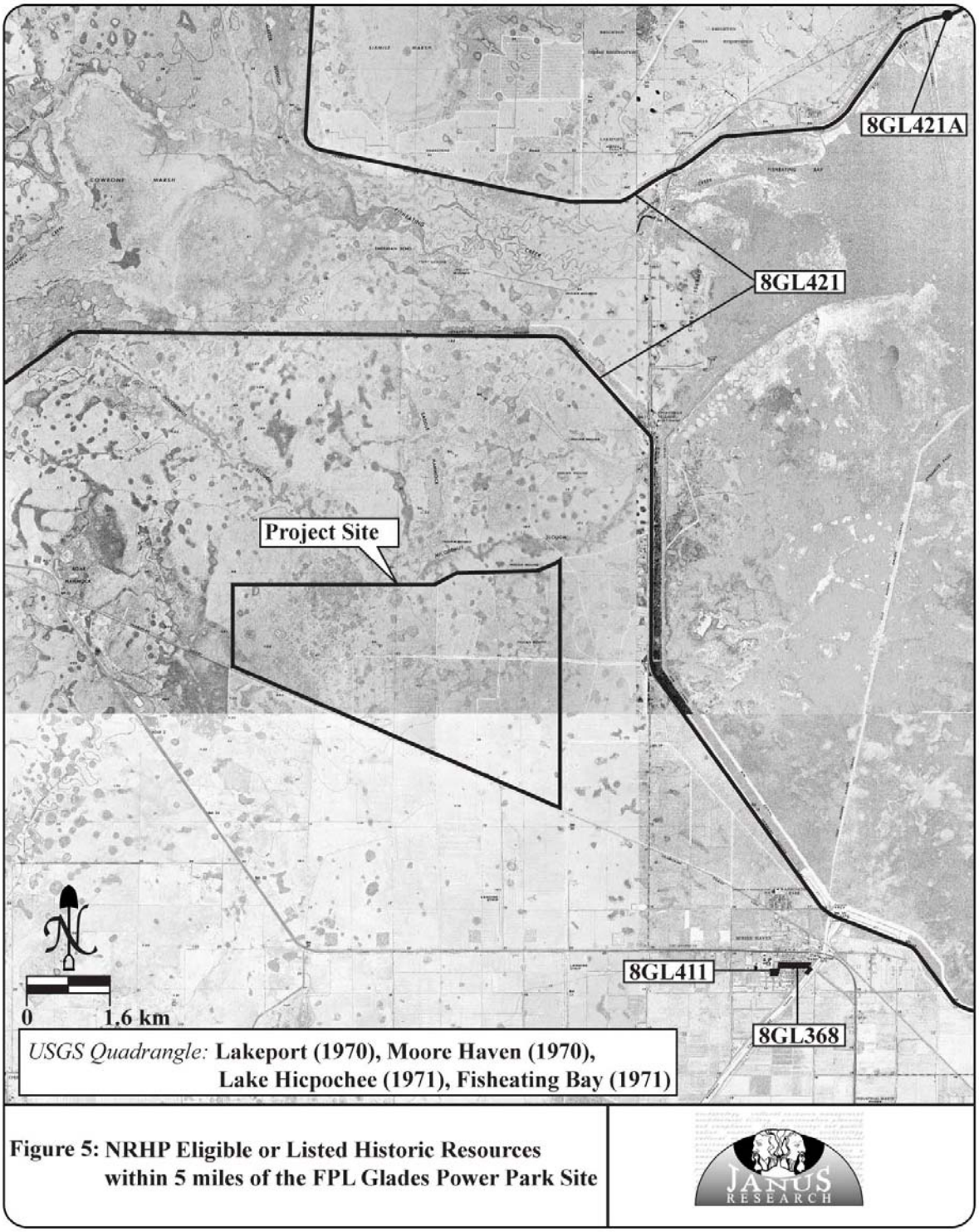

Figure 5: NRHP Eligible or Listed Historic Resources within 5 miles of the FPL Glades Power Park Site

The construction of the Herbert Hoover Dike (8GL421) that surrounds Lake Okeechobee began in the early 1930s by the U.S. Army Corps of Engineers and was completed in 1938. The 34 ft. high dike is composed of shell, rock and gravel covered with grass, trees, and a service drive on top of the levee. It is considered to be the largest civil engineering work in South Florida and continues to control the waters around Lake Okeechobee. The Herbert Hoover Dike segment (8GL421A), which is also part of the Herbert Hoover Dike Resource Group (8GL421) which spans five counties is located approximately one and one-quarter mile east of the project site. The segment (8GL421A) and the resource group (8GL421) were determined eligible for listing in the *NRHP* by SHPO in 2002.

CONCLUSIONS AND RECOMMENDATIONS

No archaeological sites were identified during the reconnaissance survey. The background research identified one previously recorded archaeological site (8GL60) within the project site boundaries. This site is located in an active sugar cane field, which precluded systematic testing of the recorded location of this site. Additional testing will be conducted once the sugar cane has been harvested. It is also recommended that the hammock located in the northwestern part of the project site be subjected to a systematic survey should any ground disturbing activities of any nature take place within the hammock area. FPL's development plans currently exclude this hammock area.

The desktop analysis revealed 33 individual historic buildings, two historic districts, and one historic dike within a five mile radius of the Glades Power Park Project site. The majority of the previously recorded resources are located within the city of Moore Haven and their *NRHP* eligibility has not been determined. The two historic districts, Moore Haven Downtown Historic District (8GL368) and Moore Haven Residential District (8GL411) are listed in the *NRHP*. The Herbert Hoover Dike (8GL421 & 8GL421A) was determined *NRHP*-eligible by the SHPO in 2002. Coordination with the FDHR is recommended to discuss specific project plans, such as height and lighting issues, for these off-site resources.

Unanticipated Finds

In the event that human remains are found during construction or maintenance activities, the provisions of Chapter 872.05 of the *Florida Statutes* will apply. Chapter 872.05 states that, when human remains are encountered, all activity that might disturb the remains shall cease and may not resume until authorized by the District Medical Examiner or the State Archaeologist. The District Medical Examiner has jurisdiction if the remains are less than 75 years old or if the remains are involved in a criminal investigation. The State Archaeologist has jurisdiction if the remains are more than 75 years of age.

Curation

Survey Log Sheet (Appendix C) is curated at the Florida Master Site File in Tallahassee, along with a copy of this report. Field notes and other pertinent project records are temporarily stored at Janus Research until the property owner or client requests them.

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APPENDIX A:

PHOTOGRAPHS OF PROJECT SITE

Property entrance, view facing west

North boundary, west side, view facing west

Photograph of wetland irrigation ditch running southwest, view facing south

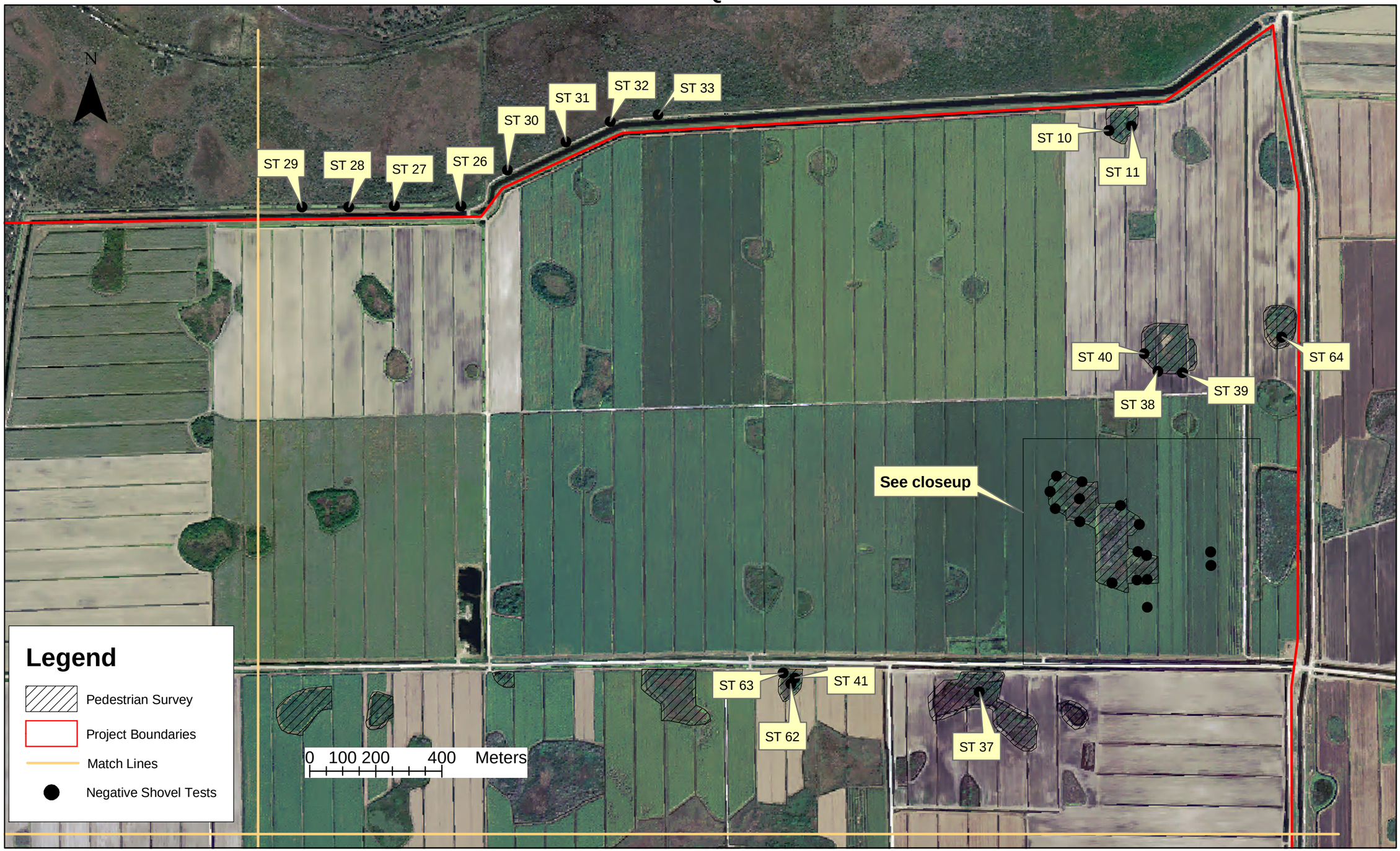
Shovel Test #34 within wetland, view facing west.

APPENDIX B:

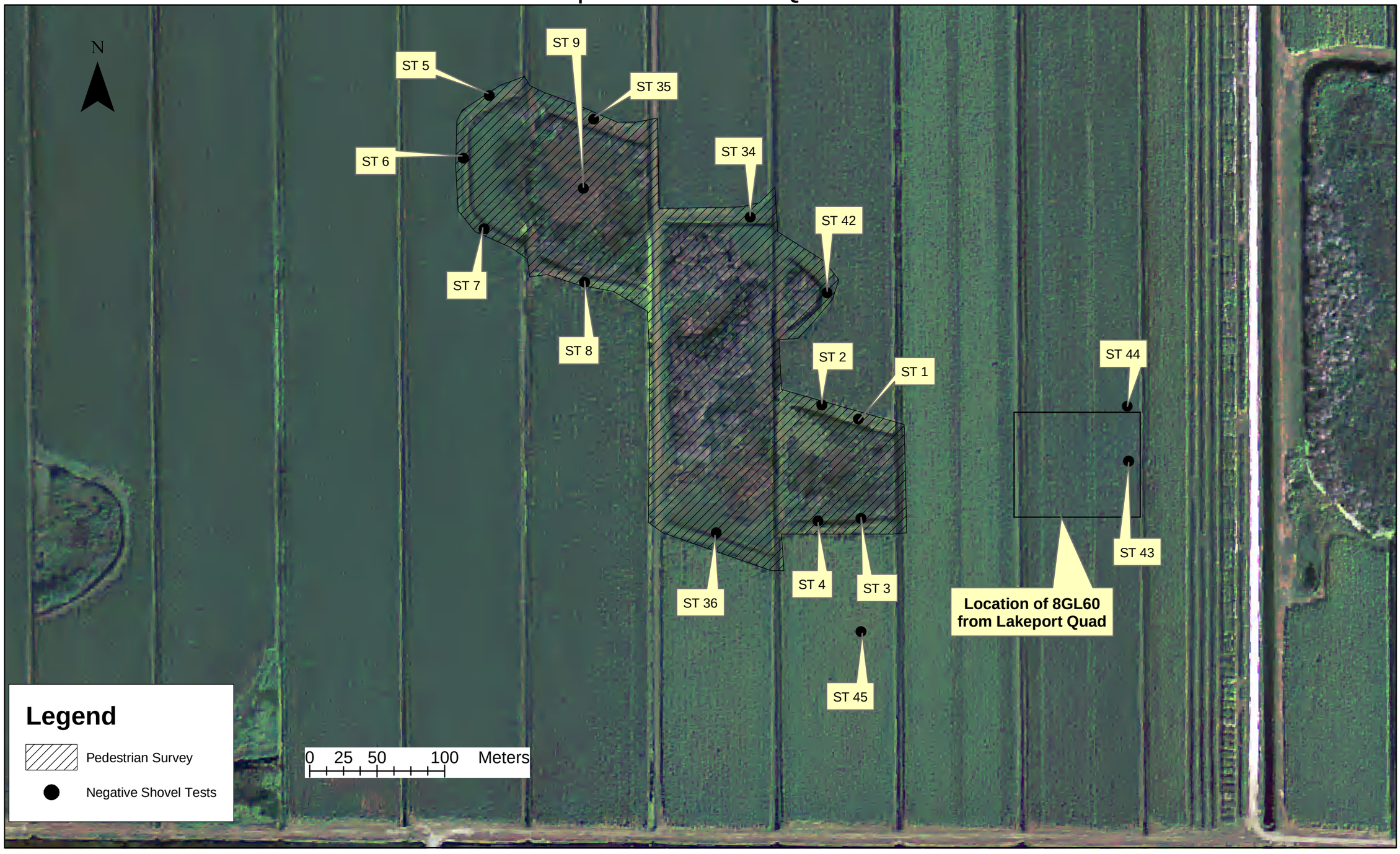
FIELD AERIAL MAPS WITH SHOVEL TEST LOCATIONS

Glades Power Park Site
Northwest Quadrant

Glades Power Park Site
Northeast Quadrant



Glades Power Park Site
Closeup of Northeast Quadrant



APPENDIX C:

SURVEY LOG SHEETS

Ent D (FMSF only)__/__/__

Survey Log Sheet

Florida Master Site File
Version 2.0 9/97

Survey # (FMSF only) _____

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

Identification and Bibliographic Information

Survey Project (Name and project phase)
Archaeological Reconnaissance Survey of the Glades Power Park Project Site, Glades County, Florida

Report Title (exactly as on title page)
Archaeological Reconnaissance Survey of the Glades Power Park Project Site, Glades County, Florida

Report Author(s) (as on title page— individual or corporate; last names first)
Janus Research

Publication Date (year) 2006 **T**otal Number of Pages in Report (Count text, figures, tables, not site forms) 30

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*.)
Janus Research, 1300 N. Westshore Blvd, Suite 100, Tampa FL 33607

Supervisor(s) of Fieldwork (whether or not the same as author[s]; last name first) Janus Research

Affiliation of Fieldworkers (organization, city) Janus Research, Tampa

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.)
Glades County, Lake Okeechobee, Moore Haven

Survey Sponsors (corporation, government unit, or person who is directly paying for fieldwork)
Name Golder Associates Inc.
Address/Phone _____

Recorder of *Log Sheet* Janus Research Date *Log Sheet* Completed 10/2/06

Is this survey or project a continuation of a previous project? ☑ No ☐ Yes: Previous survey #(s) [FMSF only]

Mapping

Counties (List each one in which field survey was done - do not abbreviate; use supplement sheet if necessary)
Glades

USGS 1:24,000 Map(s) : Map Name/Date of Latest Revision (use supplement sheet if necessary):
Lakeport/ 1970
Lake Hicpochee/ 1971

Description of Survey Area

Dates for Fieldwork: Start 7/31/06 End 8/8/06 **T**otal Area Surveyed (fill in one) _____ hectares 4900 acres
Number of Distinct Tracts or Areas Surveyed 1
If Corridor (fill in one for each): **W**idth _____ meters _____ feet **L**ength _____ kilometers _____ miles

Survey Log Sheet of the Florida Master Site File

Research and Field Methods

Types of Survey (check all that apply): ☑ archaeological ☑ architectural ☑ historical/archival ☐ underwater ☐ other:_____

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

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

☑ other (describe) Janus Research Library

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.

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

___ other (describe): _____

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	___ demolition permits	___ neighbor interview	___ subdivision maps
___ commercial permits	___ exposed ground inspected	___ occupant interview	A tax records
___ interior documentation	A local property records	___ occupation permits	___ unknown

___ other (describe): _____

Scope/Intensity/Procedures

64 round shovel tests, 40-50 cm in diameter, dug to one meter when possible, judgementally, screened through 1/4 in mesh, no positive tests.

Pedestrian survey of the project area where possible.

Survey Results (cultural resources recorded)

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

Site Counts: Previously Recorded Sites 1 Newly Recorded Sites _____

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

GL60

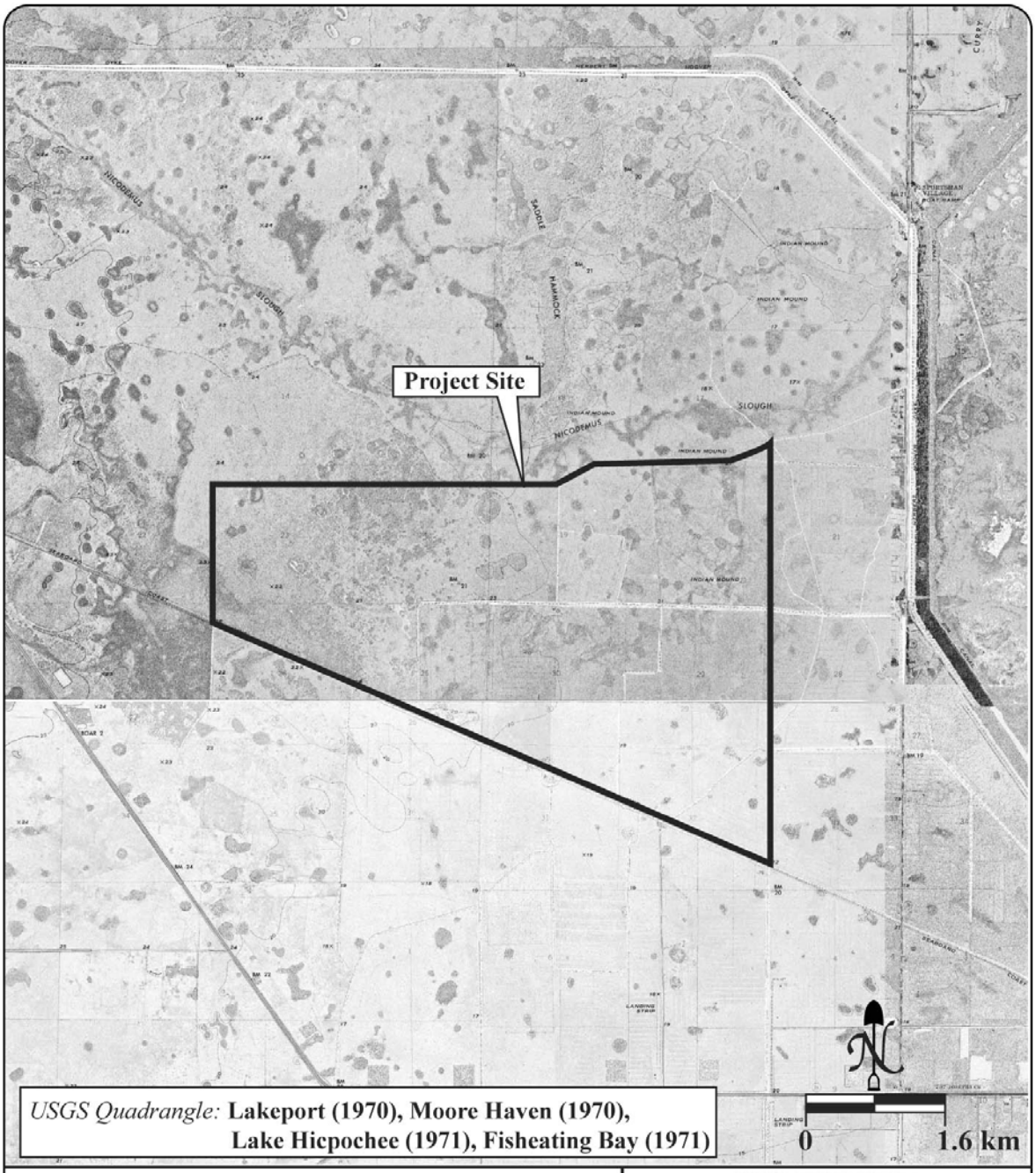
Newly Recorded Site #'s (Are you sure all are originals and not updates? Identify methods used to check for updates, ie, researched the FMSF records. List site #'s without "8." Attach supplementary pages if necessary.)

Site Form Used: ☐ SmartForm ☑ FMSF Paper Form ☑ Approved Custom Form: Attach copies of written approval from FMSF Supervisor.

DO NOT USE ~~~~~ SITE FILE USE ONLY ~~~~~ DO NOT USE

BAR Related		BHP Related
☐ 872	☐ 1A32	☐ State Historic Preservation Grant
☐ CARL	☐ UW	☐ Compliance Review: CRAT #_____

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

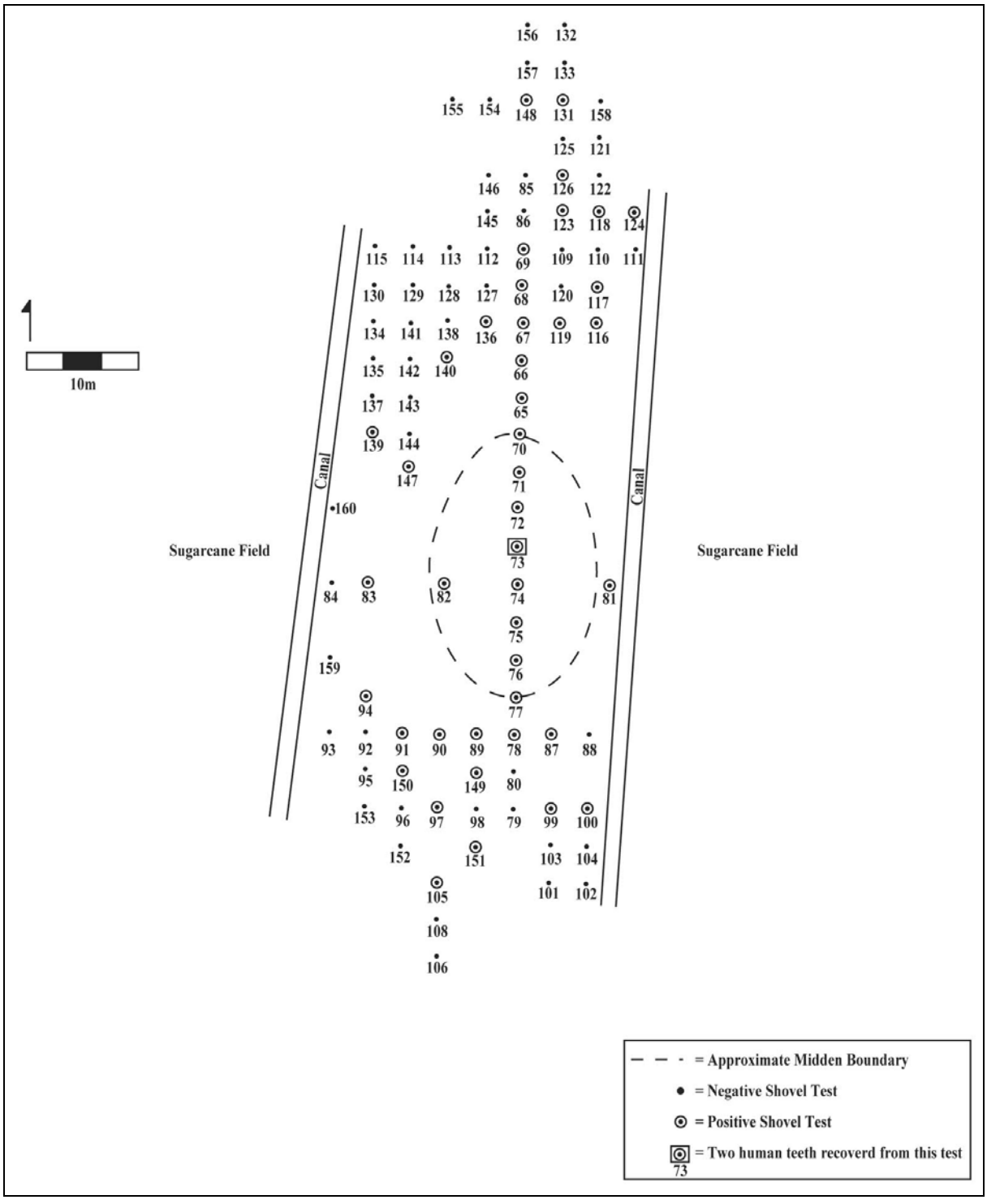


USGS Quadrangle: **Lakeport (1970), Moore Haven (1970), Lake Hicpochee (1971), Fisheating Bay (1971)**

General Location of the FPL Glades Power Park Site

JANUS RESEARCH

APPENDIX B:
MAP OF SHOVEL TEST LOCATIONS AND BOUNDARY OF 8GL60


10m
Canal
Canal
Sugarcane Field
Sugarcane Field
156 132
157 133
155 154 148 131 158
125 121
146 85 126 122
145 86 123 118 124
115 114 113 112 69 109 110 111
130 129 128 127 68 120 117
134 141 138 136 67 119 116
135 142 140 66
137 143 65
139 144 70
147 71
160 72
73
84 83 82 74 81
75
159 76
94 77
93 92 91 90 89 78 87 88
95 150 149 80
153 96 97 98 79 99 100
152 151 103 104
105 101 102
108
106
= Approximate Midden Boundary
= Negative Shovel Test
= Positive Shovel Test
= Two human teeth recoverd from this test
73

APPENDIX C:
CORRESPONDENCE REGARDING HUMAN REMAINS AT 8GL60

From: Kate Hoffman [kate_hoffman@janus-research.com]
Sent: Friday, January 05, 2007 12:41 PM
To: 'Kathy_Salvador@fpl.com'; 'Bennett, Fred'; 'Tallent, John'
Cc: 'jberger'; 'Pamela_M_Rauch@fpl.com'; 'Peter_Cocotos@fpl.com'; 'Richard Zwolak'
Subject: RE: Chapter 872 notification - please review ASAP

Importance: High
Please find below the Chapter 872 notification and the response received from the Florida Division of Historical Resources

Kathleen S. Hoffman, Ph.D.
Janus Research
1300 Westshore Boulevard, Suite 100
Tampa, FL 33607
Phone: 813-636-8200 x108
Fax: 813-636-8212
Cell: 727-423-1937
www.janus-research.com

CHAPTER 872 NOTIFICATION SENT TO THE FLORIDA DIVISION OF HISTORICAL RESOURCES

From: Kate Hoffman [kate_hoffman@janus-research.com]
Sent: Tuesday, December 26, 2006 1:39 PM
To: 'rjwheeler@dos.state.fl.us'
Cc: 'ddickel@dos.state.fl.us'; 'bedelano@dos.state.fl.us'; Ken Hardin (ken_hardin@janus-research.com); Zwolak, Richard; 'Kathy_Salvador@fpl.com'; 'Gleaton, Kelly'; 'julie_rogers@janus-research.com'
Subject: RE: Chapter 872 Notification

Importance: High

Dr. Ryan Wheeler:

This is to notify you that during archaeological testing of site 8GL60, two human teeth were identified by Janus Research during an archaeological survey on private land. The two human teeth were identified by Dr. Alison Elgart, a human skeletal analyst under contract with Janus Research. The two human teeth were found in a shovel test that predominantly contained faunal bone, prehistoric ceramic, and shell. Dr. Elgart determined the two teeth were human molar crowns, both deciduous molars, one of which is worn and one unworn. She further noted that it is possible that the teeth came from two children, and the worn tooth naturally fell out as the permanent tooth erupted. The two teeth are currently being stored in secure facilities owned by Janus Research until you inform us of final disposition.

All testing at the site has stopped. If additional testing is necessary, we understand that it shall not commence until you have completed your coordination and provided written approval to Janus Research. We have notified Lykes Bros. Inc, the property owner; Florida Power & Light Company, the option holder; and Golder Associates, the environmental consultant, that no further work or activity that may disturb the archaeological site may take place until notification from the State Archaeologist. Janus Research has staked the boundaries of site 8GL60. All parties have been provided with copies of Chapter 872, F.S.

Please let us know if you have any questions or need additional information.

Sincerely,

Kathleen S. Hoffman, Ph.D.

Janus Research
1300 Westshore Boulevard, Suite 100
Tampa, FL 33607
Phone: 813-636-8200 x108
Fax: 813-636-8212
Cell: 727-423-1937
www.janus-research.com

FLORIDA DIVISION OF HISTORICAL RESOURCES RESPONSE

From: Delano, Briana E. [BEDelano@dos.state.fl.us]
Sent: Wednesday, December 27, 2006 10:59 AM
To: Kate Hoffman
Cc: Wheeler, Ryan J.
Subject: RE: Chapter 872 Notification

Kate Hoffman,

Thank you for notifying us of this case. I have checked the databases and it appears that no other human remains have been found in that area, although I need to do a bit more investigation on it. I will write back and inform you of other necessary requirements concerning the dental remains and other pertinent research findings in due time. If your project is completed, then it seems there is no rush to figure out a plan at this moment. I thank you again for your apprise to us of this issue.

Just a passing note, you may deal with me directly via phone, e-mail, etc. regarding this case and any other 872 cases that may arise. My current position is "Unmarked Human Burial Coordinator". This position was opened recently as nobody else has time to deal with all the cases we get in. Please feel free to Cc. Ryan and anyone else you believe you should in regards to human burial cases. However, this is my job, and Ryan is extremely busy with other issues within the Bureau. Any issues regarding these cases usually involve Ryan’s insight, but I will respond and deal with you personally. Usually these issues are just forwarded to me to keep track of and deal with anyway. Thank you.

Sincerely,
Briana E. Delano
Archaeologist III
Unmarked Human Burial Coordinator
Bureau of Archeological Research
Division of Historical Resources
Mailing Address:
500 S. Bronough St., MS #8b
Tallahassee, FL 32399

Physical Address:

B. Calvin Jones Center for Archaeology, Governor Martin House
1001 de Soto Park Drive, Tallahassee, FL 32301

Phone: 850.245.6496
Fax: 850.245.6452
E-Mail: bedelano@dos.state.fl.us

From: Kate Hoffman [kate_hoffman@janus-research.com]
Sent: Tuesday, February 13, 2007 12:32 PM
To: 'BEDelano@dos.state.fl.us'
Cc: 'rwheeler@mail.dos.state.fl.us'; 'Kathy_Salvador@fpl.com'; 'Zwolak, Richard'; 'Tallent, John'; 'Ken_Hardin@janus-research.com'
Subject: Glades Power Park: 8GL60 and 872 follow-up notification

Importance: High
Dear Brianna:

Thank you for your e-mail. To answer your questions, all work has stopped at the site, as noted in our original e-mail correspondence with your office on December 26, 2006. We have notified Lykes Bros. Inc, the property owner; Florida Power & Light Company, the option holder; and Golder Associates, the environmental consultant, that no further work or activity that may disturb the archaeological site may take place unless written approval by the Bureau of Archaeological Research is received. Correspondence to and from your office has been transmitted to all of the above parties.

With regards to future site development by Florida Power & Light Company (FPL), FPL has agreed to leave the midden in place and has made the decision to avoid this site in their future plans. FPL also plans to place a fence around the site during construction activities as an added precaution.

Prior to site development by FPL, Lykes Bros. has agreed not to disturb the midden during the state and the tribe review period. Lykes will be using the buffer area as a turnaround zone for equipment but not the midden itself. If it is determined that the midden is significant, then Lykes requests some indication as to whether or not that would preclude them from continuing to farm as they have in the past.

Finally, if desired by the state and tribes, the two human teeth will be re-buried on-site in the shovel test from which they were recovered. Following identification and limited analysis, the recovered faunal remains and artifacts will also be re-buried in the shovel tests from which they were recovered.

Please let us know what further documentation, if any, is needed to complete the 872 process.

Thank you,
Kate

Kathleen S. Hoffman, Ph.D.
Janus Research
1300 Westshore Boulevard, Suite 100
Tampa, FL 33607
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Cell: 727-423-1937
www.janus-research.com

-----Original Message-----
From: Delano, Briana E. [mailto:BEDelano@dos.state.fl.us]
Sent: Friday, January 19, 2007 3:07 PM
To: Kate Hoffman; Ken Sassaman
Cc: Steve Terry; Willard Steele; Tina M. Osceola
Subject: RE: 872 notification at 8GL60

January 19, 2007

Ms. Kate Hoffman
1300 Westshore Blvd, Suite 100
Tampa, FL 33607
(via e-mail)

RE: Chapter 872.05 Notification at site 8GL60

Dear Kate:

This is a follow-up letter based on a report of discovery of unmarked human remains made on December 26, 2006. It is my understanding, based on your wording and information that all digging at the site has stopped, and if additional testing is necessary than you will wait for written approval by the Bureau of Archaeological Research. It is the Bureau's position that further testing could reveal more human remains and if so, subsequent development on this property will result in the disturbance of the unmarked human remains if the area is not fully excavated. At this juncture, I just have a few questions for you, and I am in the process of looking up the site information and notifying the Tribes of this finding.

Firstly, are you finished with the project or did you stop testing as a result of finding human remains and are waiting for the State to respond? I understand that you staked the boundaries of 8GL60, and this leads me to believe that your work there is completed, but I am not sure if this is the case and perhaps you have more land to survey. The State always recommends leaving the human remains in place if possible and in their original juxtaposition if possible (as per usual request by the Miccosukee Tribe). After I notify the Tribes I am almost sure they will agree to the same recommendation. It is preferred that the property owner and the option holder (Lykes Bros. and Florida Power and Light) avoid this area in their project plans.

That being said, given that only two human teeth were found if and if your project is finished, there are other options we can explore if the above companies can't avoid this area. These options must be agreed to by the Tribes and I have to notify them of this first. In the meantime I'll look up the Site File and see if an 872 report exists on this site yet in our database or paper file. That is about as far as I can go concerning this case now. I will forward your notification and my response to the Tribes, and keep you updated on this case and their response. The outcome depends on their response, where you are in the survey process, and the Bureau's decision on what is best. Thanks for letting us know promptly about this finding, and my apologies for the delay in response, there is a plethora of cases on my desk! I will get cracking on this case. I look forward to working with you more, and I hope you and everyone at Janus are doing well. It was nice hearing from you and please feel free to contact me if there are any questions about this letter, case, or to discuss your options regarding the unmarked human remains present on the proposed development tracts.

Just a passing note, I hold a new position with the State as the Unmarked Human Burial Coordinator, in other words, I deal with all 872 cases. Ryan, Dave Dickel, and all others working on these cases and couldn't handle them all. They realized they needed a full time person to deal with them (I say two full time people!). So any notifications, questions, or issues over unmarked human burials/872 stuff, just contact me. Ryan is already working on two jobs at one time and he can't handle all of this as well. I just wanted to inform your company of this. Thanks for your time.

Sincerely,

Briana E. Delano
Archaeologist III
Unmarked Human Burial Coordinator
Bureau of Archeological Research
Division of Historical Resources
Mailing Address:
500 S. Bronough St., MS #8b
Tallahassee, FL 32399

Physical Address:
B. Calvin Jones Center for Archaeology, Governor Martin House
1001 de Soto Park Drive, Tallahassee, FL 32301

Phone: 850.245.6496
Fax: 850.245.6452
E-Mail: bedelano@dos.state.fl.us

Kate Hoffman

From: Delano, Briana E. [BEDelano@dos.state.fl.us]
Sent: Monday, February 19, 2007 5:22 PM
Subject: Read: Glades Power Park: 8GL60 and 872 follow-up notification

Your message

To: Delano, Briana E.
Cc:
Subject: FW: Glades Power Park: 8GL60 and 872 follow-up notification
Sent: Mon, 19 Feb 2007 15:38:51 -0500

was read on Mon, 19 Feb 2007 17:22:20 -0500

APPENDIX D:
UPDATED FMSF FORM

ARCHAEOLOGICAL SITE FORM
FLORIDA MASTER SITE FILE
Version prepared by Janus Research, Inc.

Consult the Guide to Archaeological Site Forms for detailed instructions.

☐ Original
☑ Update (give site#)

Site #: 8GL60
Recorder Site #:
Field Date: 12/11-14/06
Form Date: 2/19/07

Site Name(s): NN — Multiple Listing [DHR only]
Project Name: Archaeological Testing of 8GL60, Glades County, Florida — FMSF Survey #:
Ownership: ☑ private-profit ☐ private-nonprofit ☐ private-indiv ☐ private-unspecifd ☐ city ☐ county ☐ state ☐ federal ☐ foreign ☐ Native Amer ☐ unknwn
USGS 7.5 Map Name / Date: Lakeport /1970 — County: Glades
Township: 41 Range: 32 Section: 20 ☐ Irregular Section ? Qtr. Section (check all that apply) ☐ NE ☐ NW ☑ SE ☐ SW
Landgrant: — Tax Parcel #(s):
City/Town (if within 3 mi): Moore Haven — In Current City Limits? ☐ Y ☑ N ☐ unknown
UTM Zone: 17 Easting: 485849 Northing: 2974070
Address/Vicinity/Route to: to Potato Farm Grade,

Name of Public Tract (e.g., park):

TYPE OF SITE (Check all choices that apply: if needed, write others in at bottom)

SETTING *

☑ Land - terrestrial
☐ Cave/Sink - subterranean
☐ terrestrial
☐ aquatic
☐ intermittently flooded
☐ Wetland - palustrine
☐ usually flooded
☐ sometimes flooded
☐ usually dry
☐ Lake/Pond - lacustrine
☐ River/Stream/Creek - riverine
☐ Tidal - estuarine
☐ Saltwater - marine
☐ marine unspecified
☐ high energy marine
☐ low energy marine

STRUCTURES - OR - FEATURES *

☐ aboriginal boat
☐ agric/farm building
☐ burial mound
☐ building remains
☐ cemetery/grave
☐ dump/refuse
☐ earthworks
☐ fort
☑ midden
☐ mill unspecified
☐ mission
☐ mound unspec.
☐ plantation
☐ platform mound
☐ road segment
☐ shell midden
☐ shell mound
☐ shipwreck
☐ subsurface features
☐ surface scatter
☐ well

FUNCTION *

☐ none specified
☐ campsite
☐ extractive site
☑ habitation (prehist)
☐ homestead (historic)
☐ farmstead
☐ village (prehistoric)
☐ town (historic)
☐ quarry

Other Site Type:

HISTORIC CONTEXTS (Check all that apply; use most specific subphase: e.g., if Glades Ia, don't use Glades I)

Aboriginal *

☐ Alachua
☐ Archaic, Early
☐ Archaic, Middle
☐ Archaic, Late
☐ Archaic Unspecified
☐ Belle Glade I
☐ Belle Glade II
☐ Belle Glade III
☐ Belle Glade IV
☐ Belle Glade Unspec.
☐ Cades Pond
☐ Deptford
☐ Englewood
☐ Fort Walton
☑ Glades I unsp
☐ Glades Ia
☐ Glades Ib
☐ Glades IIa
☐ Glades IIb
☐ Glades IIc
☐ Glades II unsp
☐ Glades IIIa
☐ Glades IIIb
☐ Glades IIIc
☐ Glades III unsp
☐ Glades unspec
☐ Hickory Pond
☐ Leon-Jefferson
☐ Malabar I
☐ Malabar II
☐ Manasota
☐ Mount Taylor
☐ Norwood
☐ Orange
☐ Paleoindian
☐ Pensacola
☐ Perico Island
☐ Safety Harbor
☐ St Augustine
☐ St Johns Ia
☐ St Johns Ib
☐ St Johns I unspecified
☐ St Johns IIa
☐ St Johns IIb
☐ St Johns IIc
☐ St Johns II unspecified
☐ St Johns unspecified
☐ Santa Rosa
☐ Santa Rosa-Swift Creek
☐ Seminole: Colonization
☐ Seminole: 1st War to 2nd
☐ Seminole: 2nd War to 3rd
☐ Seminole: 3rd War On
☐ Seminole unspecified
☐ Swift Creek, Early
☐ Swift Creek, Late
☐ Swift Creek, unspec.
☐ Transitional
☐ Weeden Island I
☐ Weeden Island II
☐ Weeden Island unspec.
☐ Prehistoric Nonceramic
☐ Prehistoric Ceramic
☐ Prehistoric unspecified

Nonaboriginal *

☐ First Spanish 1513-99
☐ First Spanish 1600-99
☐ First Spanish 1700-1763
☐ First Spanish unspecified
☐ British 1763-1783
☐ Second Spanish 1783-1821
☐ American Territorial 1821-45
☐ American Civil War 1861-65
☐ American 19th Century
☐ American 20th Century
☐ American unspecified
☐ African-American

Other Context:

* Consult the Guide to Archaeological Site Forms for preferred descriptions not listed above (data are "coded fields" at the Site File).

SURVEYOR'S EVALUATION OF SITE

Potentially eligible for local register?	☑ yes	☐ no	☐ insufficient info	Name of local register if eligible:
Individually eligible National Register?	☑ yes	☐ no	☐ insufficient info	
Potential contributor to NR district?	☐ yes	☑ no	☐ insufficient info	

Explanation of Evaluation: (Required if evaluated; limit to 3 lines; attach full justification)
Since this site has retained intact deposits below the plow zone that contain potentially significant data regarding the subsistence of this cultural group and that it contains human remains, it is considered potentially eligible.

Recommendations Owner/SHPO: Avoidance of site and protection from further disturbance.

DHR USE ONLY ********** OFFICIAL EVALUATIONS ********** DHR USE ONLY

NR DATE
DELIST DATE

KEEPER-NR ELIGIBILITY ☐ yes ☐ no — Date
SHPO-NR ELIGIBILITY ☐ yes ☐ no ☐ potentially elig ☐ insufficient info — Date
LOCAL DESIGNATION — Date
Local office

National Register Criteria for Evaluation ☐ a ☐ b ☐ c ☐ d (See National Register Bulletin 15, p.2)

ARCHAEOLOGICAL SITE FORM

Consult the Guide to Archaeological Site Forms for detailed instructions.

Site #: 8GL60
Recorder Site #:

FIELD METHODS (Check one or more methods for detection and for boundaries)

SITE DETECTION *			SITE BOUNDARIES *		
☐ no field check	☑ exposed ground	☑ screened shovel	☐ bounds unknown	☐ remote sensing	☐ unscreened shovel
☑ literature search	☐ posthole digger		☐ none by recorder	☐ insp exposed ground	☑ screened shovel
☐ informant report	☐ auger		☐ literature search	☐ posthole tests	☐ block excavations
☐ remote sensing	☐ unscreened shovel		☐ informant report	☐ auger	☐ estimate or guess

Other Methods: Visula inspecction of surface. 95 round shovel tests, 40-50cm diameter, dug to 1m when possible, at 10m intervals, screened through 1/4 in mesh. 43 positive.

SITE DESCRIPTION

Extent Size (m2): 16500 Depth and Stratigraphy of cultural deposit:
Midden: ~3500 m2; Artifacts 0-90 cmbs; Strata: black muck 0-85 cmbs, pale brown sand 85-105 cmbs, lt gray sand 105-128 cmbs. Non-midden: Artifacts 0-45 cmbs; Strata: black muck 0-17 cmbs, dk brown sand 17-24 cmbs, yellow brown sand 24-62 cmbs, limestone 62+ cmbs

Temporal Interpretation*- Components (check one): ☐ single ☐ prob single ☑ prob multiple ☐ multiple ☐ uncertain ☐ unknown

Describe each occupation in plan (refer to attached large scale map) and stratigraphically. Discuss temporal and functional interpretations:
The high number of sand-tempered plain and relatively low number of Belle Glade Plain indicates that the vast majority of the site dates between 500 B.C. and AD 1100 and indicates a Glades I timeframe.

Integrity/ Overall Disturbance* ☐ none seen ☑ minor ☐ substantial ☐ major ☐ redeposited ☐ destroyed-(document it!) ☐ unknwn

Disturbances/Threats/Protective Measures: Clearing and leveling of land for sugar cane, repeated discing and leveling have disturbed the top 20-30 cm of the midden and spread cultural material in all four cardinal directions.

Surface: Area Collected (m2): # Collection Units: Excavation: # noncontiguous blocks:

ARTIFACTS

Total Artifacts #: (C)ount or (E)stimate?: Surface #: (C) or (E)?: Subsurface #: (C) or (E)?:

COLLECTION SELECTIVITY *

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

SPATIAL CONTROL *

☐ uncollected ☑ general (not by subarea) ☐ unknown ☑ controlled (by subarea) ☐ variable spacial control ☐ other

ARTIFACT CATEGORIES and DISPOSITIONS *

Pick exactly one code from the Disposition List

A	bone-animal:		exotic-nonlocal:
R	bone-human:		glass:
	bone-unspecified:	A	lithics-aboriginal:
	bone-worked:		metal-nonprecious:
	brick/building debris:		metal-precious/coin:
A	ceramic-aboriginal:		shell-unworked:
A	ceramic-nonaborig		shell-worked:
	daub:	Others:	

Disposition List*

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

Artifact Comments: 2 possible shell tools, 2 possible bone points, 538 ceramic sherds, historic ceramic sherd collected from all positive shovel tests, and 2149.0 grams of faunal remains sampled from ST 73 and ST 74 in the midden. Two human teeth found

DIAGNOSTICS * (Type or mode, and frequency: eg, Suwannee ppk, heat treated chert, Deptford Check-stamped, ironstone/whiteware)

1:	Belle Glade Plain	N= 9	5:	poss. St. Johns Plain	N= 1	9:	Chinese glazed porcelain hand-painted blue	N= 1
2:	St Johns Plain	N= 14	6:	sand-tempered plain	N= 507	10:		N=
3:	poss. Glades Red	N= 2	7:	sand-tempered plain with slip	N= 2	11:		N=
4:	poss. St. Johns stamped	N= 2	8:	zone punctated	N= 1	12:		N=

ENVIRONMENT

Nearest Fresh Water-Type/Name: Nicodemus Slough Distance-(m)/bearing: 1433m / NNE
Natural Community (FNAI category* or leave blank):
Local Vegetation: active sugar cane
Topography: midden located on a small limstone ridge Min Elevation (m): 0 Max Elevation (m): 2
Present Land Use: active sugar cane fields
SCS Soil Series: Pineda fine sand Soil Association: Immokalee-Myakka

FURTHER INFORMATION

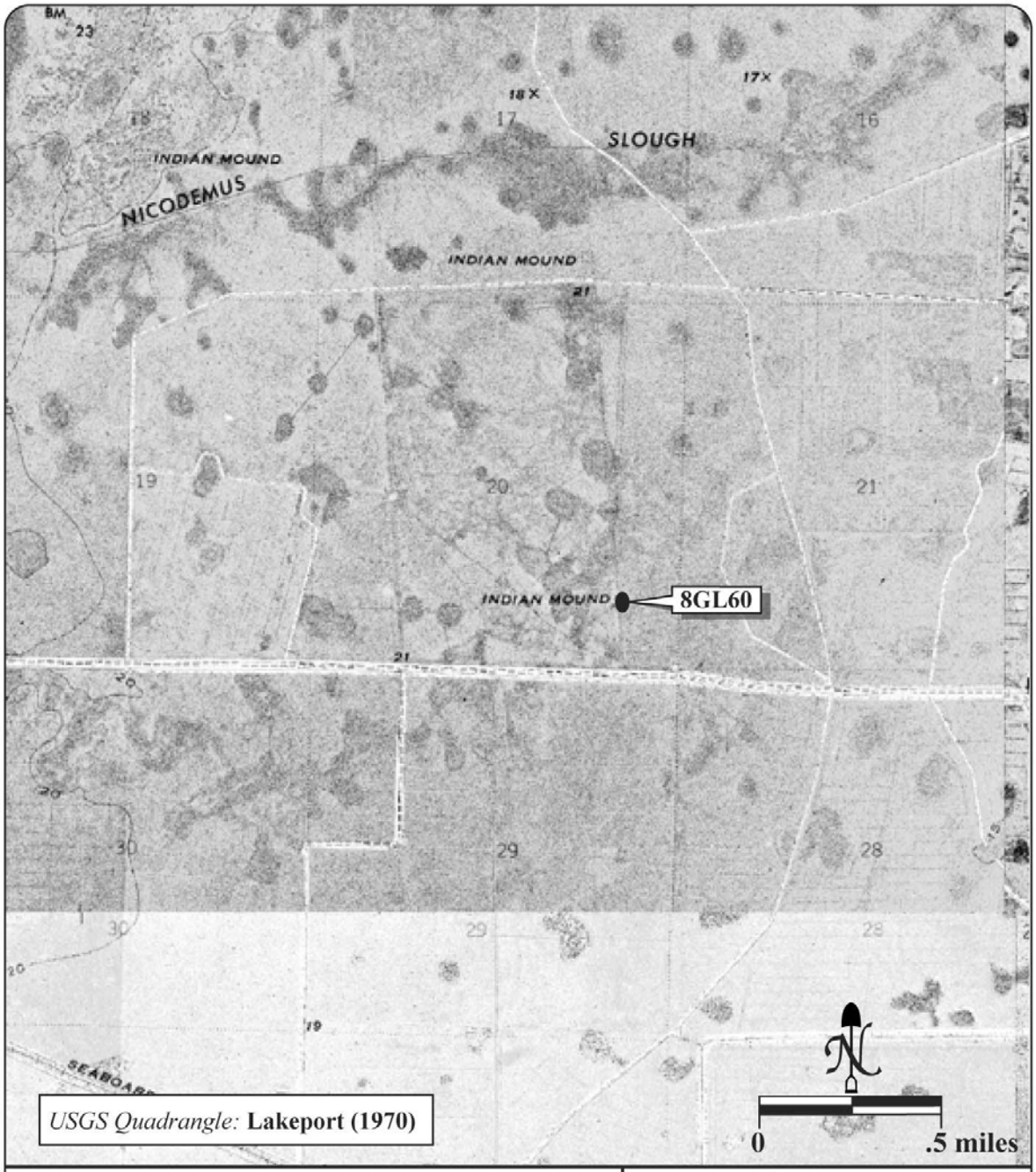
Informant(s):

Describe field analysis notes, artifacts, photos. For each, give type* (eg., notes) curating organization*, accession #s, and short description:
Janus Research, 1300 N. Westshore Blvd., Suite 100, Tampa, FL 33607, 813.636.8200, janus@janus-resarch.com

Manuscripts or publications on the site: FMSF Form, 8GL60, 1976; Archaeological Reconnaissance Survey and Historic Resources Desktop of the FPL Glades Power Park Site, Glades County (Janus 2006)
(Use continuation sheet, give FMSF# if relevant)
Recorder(s): Janus Research
Affiliation or FAS Chapter:

* Consult Guide to Archaeological Site Form for preferred descriptions not listed above (data are "coded fields" at the Site File).

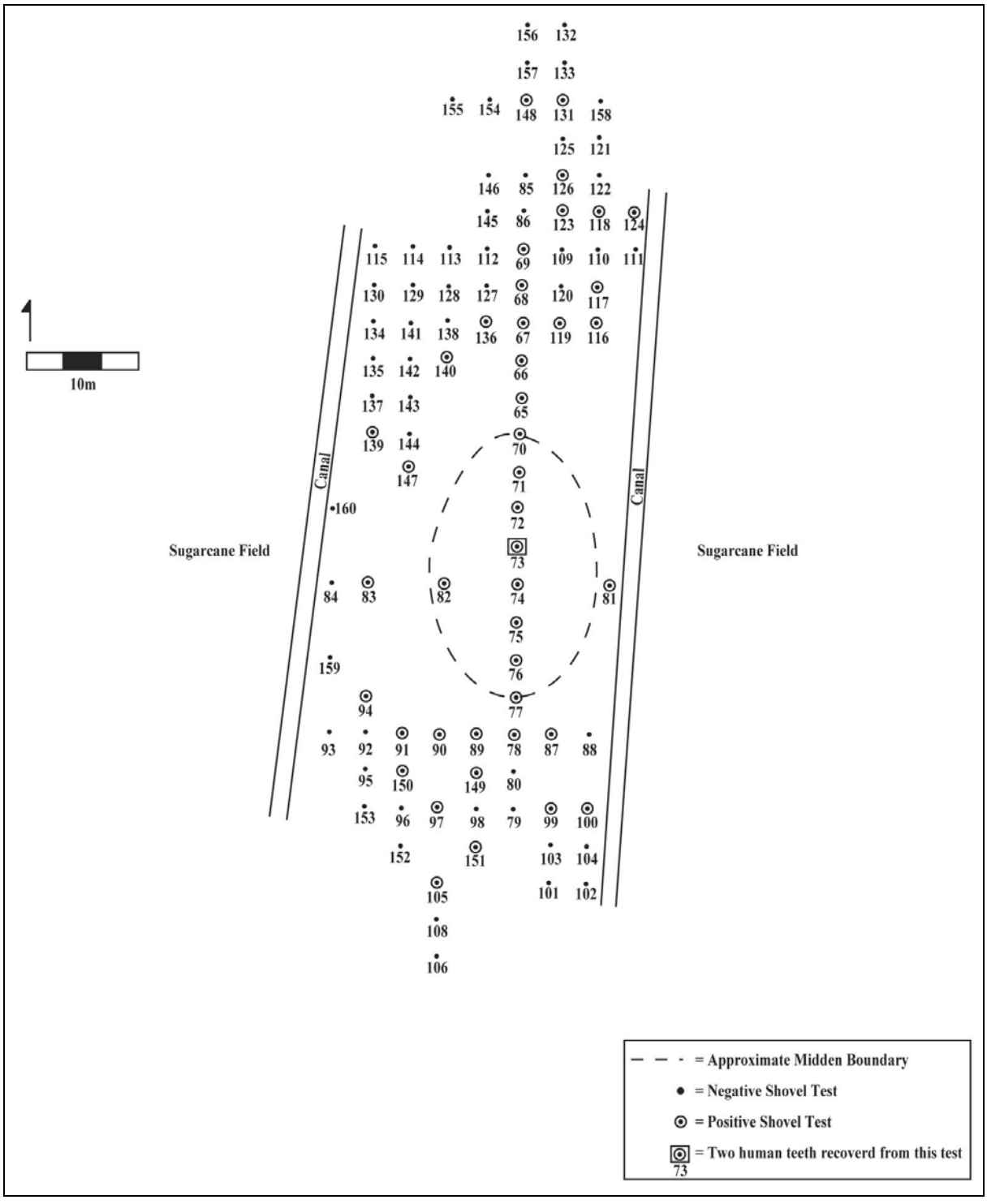
SITE PLAN _USGS REQUIRED At 1"=300' (1:3600 or larger scale, show: site boundaries, scale north arrow, datum, test/collection units, landmarks, mappers, date.



USGS Quadrangle: **Lakeport (1970)**

Location of 8GL60

JANUS RESEARCH


10m
Canal
Canal
Sugarcane Field
Sugarcane Field
156 132
157 133
155 154 148 131 158
125 121
146 85 126 122
145 86 123 118 124
115 114 113 112 69 109 110 111
130 129 128 127 68 120 117
134 141 138 136 67 119 116
135 142 140 66
137 143 65
139 144 70
147 71
160 72
73
84 83 82 74 81
75
159 76
94 77
93 92 91 90 89 78 87 88
95 150 149 80
153 96 97 98 79 99 100
152 151 103 104
105 101 102
108
106
= Approximate Midden Boundary
= Negative Shovel Test
= Positive Shovel Test
= Two human teeth recoverd from this test
73

APPENDIX E:
PHOTOGRAPHS OF 8GL60 AND PROPOSED ACCESS ROADS

Site 8GL60, Facing North

West Side of 8GL60, Facing East

Primary Plant Access Road, Facing west

Secondary Plant Access Road, Facing west

APPENDIX F:

SURVEY LOG SHEET

Ent D (FMSF only)__/__/__

Survey Log Sheet

Florida Master Site File
Version 2.0 9/97

Survey # (FMSF only) _____

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

Identification and Bibliographic Information

Survey Project (Name and project phase)
Archaeological Reconnaissance Survey of the Glades Power Park Project Site, Glades County, Florida

Report Title (exactly as on title page)
Archaeological Reconnaissance Survey of the Glades Power Park Project Site, Glades County, Florida

Report Author(s) (as on title page— individual or corporate; last names first)
Janus Research

Publication Date (year) 2006 **T**otal Number of Pages in Report (Count text, figures, tables, not site forms) 30

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*.)
Janus Research, 1300 N. Westshore Blvd, Suite 100, Tampa FL 33607

Supervisor(s) of Fieldwork (whether or not the same as author[s]; last name first) Janus Research

Affiliation of Fieldworkers (organization, city) Janus Research, Tampa

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.)
Glades County, Lake Okeechobee, Moore Haven

Survey Sponsors (corporation, government unit, or person who is directly paying for fieldwork)
Name Golder Associates Inc
Address/Phone

Recorder of *Log Sheet* Janus Research Date *Log Sheet* Completed 10/2/06

Is this survey or project a continuation of a previous project? ☑ No ☐ Yes: Previous survey #(s) [FMSF only]

Mapping

Counties (List each one in which field survey was done - do not abbreviate; use supplement sheet if necessary)
Glades

USGS 1:24,000 Map(s) : Map Name/Date of Latest Revision (use supplement sheet if necessary):
Lakeport/ 1970
Lake Hicpochee/ 1971

Description of Survey Area

Dates for Fieldwork: Start 7/31/06 End 8/8/06 **T**otal Area Surveyed (fill in one) _____ hectares 4900 acres
Number of Distinct Tracts or Areas Surveyed 1
If Corridor (fill in one for each): **W**idth _____ meters _____ feet **L**ength _____ kilometers _____ miles

Survey Log Sheet of the Florida Master Site File

Research and Field Methods

Types of Survey (check all that apply): ☑ archaeological ☑ architectural ☑ historical/archival ☐ underwater ☐ other:_____

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

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

☑ other (describe) Janus Research Library

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.

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

___ other (describe): _____

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	___ demolition permits	___ neighbor interview	___ subdivision maps
___ commercial permits	___ exposed ground inspected	___ occupant interview	A tax records
___ interior documentation	A local property records	___ occupation permits	___ unknown

___ other (describe): _____

Scope/Intensity/Procedures

64 round shovel tests, 40-50 cm in diameter, dug to one meter when possible, judgementally, screened through 1/4 in mesh, no positive tests.

~~Pedestrian survey of the project area where possible.~~

Survey Results (cultural resources recorded)

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

Site Counts: Previously Recorded Sites 1 Newly Recorded Sites _____

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

GL 60

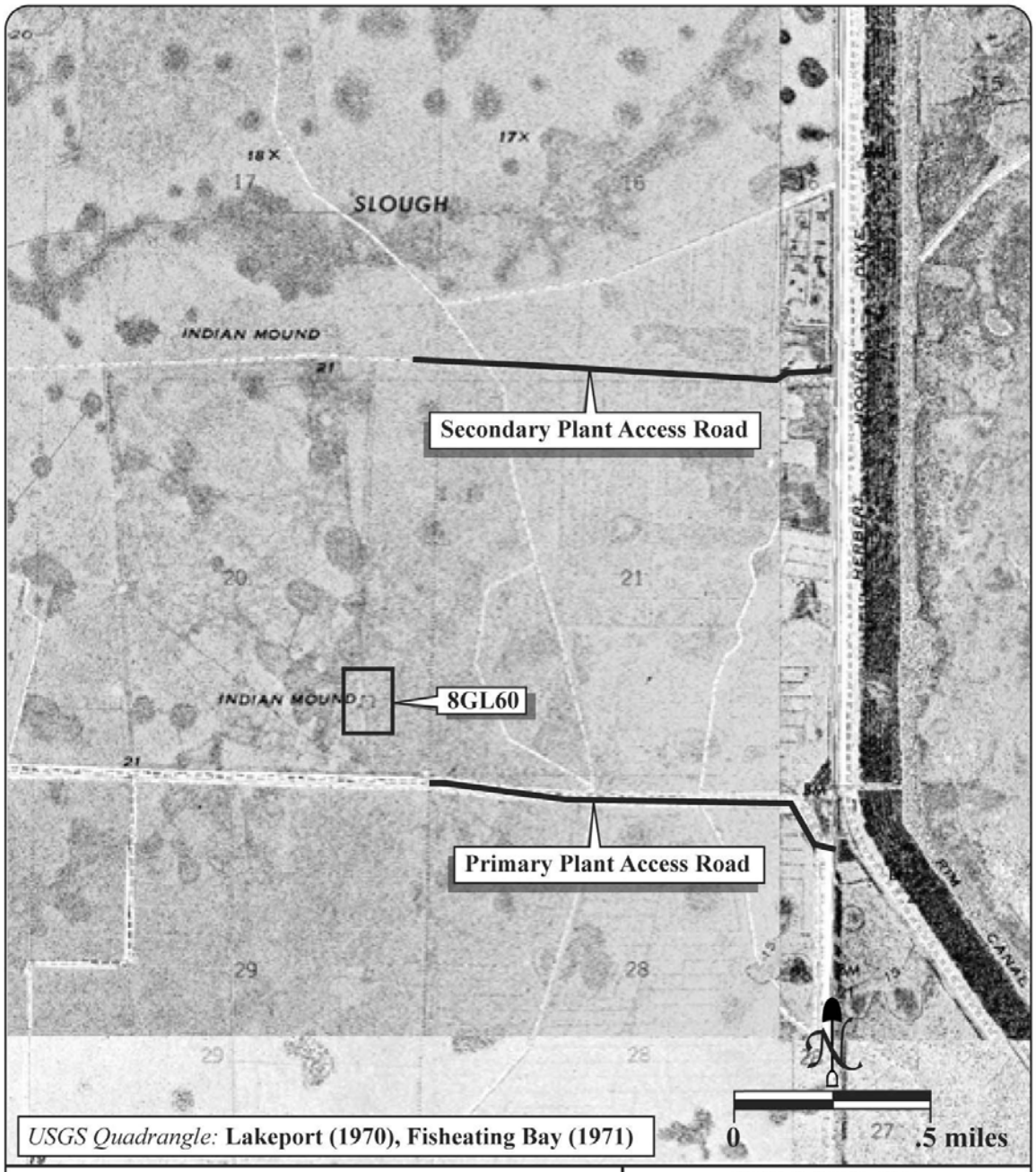
Newly Recorded Site #'s (Are you sure all are originals and not updates? Identify methods used to check for updates, ie, researched the FMSF records. List site #'s without "8." Attach supplementary pages if necessary.)

Site Form Used: ☐ SmartForm ☑ FMSF Paper Form ☑ Approved Custom Form: Attach copies of written approval from FMSF Supervisor.

DO NOT USE ~~SITE FILE USE ONLY~~ DO NOT USE

BAR Related		BHP Related
☐ 872	☐ 1A32	☐ State Historic Preservation Grant
☐ CARL	☐ UW	☐ Compliance Review: CRAT #_____

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



Location of 8GL60 and Proposed Access Roads within the FPL Glades Power Park Site

JANUS RESEARCH

SECTION 2: ANALYSIS OF POTENTIAL SECONDARY AND CUMULATIVE IMPACTS TO THE MOORE HAVEN DOWNTOWN HISTORIC DISTRICT AND THE MOORE HAVEN RESIDENTIAL HISTORIC DISTRICT

BY
GOLDER ASSOCIATES, INC.

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CHAPTER 1: INTRODUCTION AND OVERVIEW

An impact analysis of the FPL Glades Power Park (FGPP) project was conducted on the two Moore Haven Historic Districts to determine if there are any secondary or cumulative impacts associated with the project on these resources. The historic districts are located approximately 3.0 - 3.5 miles southeast of the southeast corner of the FGPP site, or approximately 5.5 - 6.0 miles from the proposed power block.

The Moore Haven Residential District is designated 8GL368 and is listed on the National Register of Historic Places (NRHP). The Moore Haven Downtown Historic District is designated 8GL411 and is also listed on the National Register of Historic Districts.

The Moore Haven Residential District consists of 40 contributing buildings constructed between 1917 and 1940. It is located south of US 27 and to the immediate south of the Moore Haven Downtown Historic District. The Moore Haven Downtown Historic District consists of seven contributing buildings and one contributing site (Lone Cypress Park). It represents the historic downtown and business district between 1915 and 1926. The contributing buildings were once the post office, a bank, offices, apartments, and a service station. The Downtown District is located adjacent to the Three Mile Canal and is bisected by US 27.

As noted in the NRHP nomination, US 27 was re-routed to the north in 1954 to align with a then newly constructed bridge over the Three Mile Canal. The construction of the bridge also compromised the original setting and serves as a visual obstruction. This re-routing resulted in many of the businesses to abandon the original downtown in favor of the new route and its higher traffic volume. As a result, many of buildings were abandoned and remain vacant today. Additionally, many of the lots within the district and in proximity are also vacant. They were either never developed or destroyed by a 1921 fire or the 1926 hurricane.

Visual Impacts

Golder Associates conducted a visual impact assessment of FGPP to determine the visibility of the proposed project from adjacent areas, certain public assembly areas, and public right-of-way. The methodology included locating the proposed stack (the tallest structure of the project) and using a helicopter to hover and represent the height and location of the stack while field teams took photographs at eight locations within the region. The results of the assessment showed that the project would generally not be visible from locations in downtown Moore Haven due in part to the existing structures which block the view of the horizon and the proposed structures. Although there may be glimpses of the plant from the Historic Districts, only the upper potions of the taller structures would be visible and only in locations in between structures north of the Historic Districts. A more detailed visual analysis found in Chapter 2 of this section, as this was of particular concern to the Florida Division of Historical Resources/State Historic Preservation Office.

Air Resources

State-of-the-art air pollution control equipment will be installed on FGPP to minimize air emissions. An air quality impact analysis was undertaken and included the emissions from the boilers, mechanical draft cooling towers, emergency generators, an auxiliary boiler and material

handling and storage equipment. The maximum concentrations of pollutants at points in the central portion of each historic district were determined and these impacts were compared to the State Ambient Air Quality Standards. The results of these analyses demonstrate that the project's emissions will be well below the ambient air quality standards that are designed to protect the health, safety and welfare of the public.

Noise Levels

The noise level predictions for FGPP were developed using the CADNA A computer model. The noise level impacts of the project on the Historic Districts were evaluated for the equipment associated with the project. The results of the noise impact analysis indicate that noise levels due to FGPP are not expected to adversely impact the Historic Districts. The predicted operation noise is estimated to be less than 30 to 35 dBA (A-weighted decibels) in the historic districts while ambient (existing) noise levels are estimated to be 40 to 45 and 50 to 55 dBA during night time and day time, respectively due to existing noise sources in and in the vicinity of the historic districts. Under most meteorological conditions, the proposed project will not be audible by occupants of the historic districts.

Train deliveries are anticipated to occur approximately once per day during operation to deliver solid fuel. In addition, about five to six deliveries of limestone will occur on a monthly basis. Deliveries will use the existing SCFE rail line that runs through Moore Haven several blocks north of the historic districts and north of US 27. If deliveries arrive from the west, rail activity will approach the historic districts no closer than about 5.5 miles to the west of the closest historic district. If deliveries arrive from the east, the duration of noticeable train noise will be of short duration due to the transitory nature of the train and only occur when deliveries occur from the east. Maximum transitory noise levels will range from 55 dBA with the passage of the engines to 47 dBA for the passage of the rail cars at 200 feet from the track. At further distances, the noise levels are greatly reduced.

The Downtown District is approximately 1,297 feet distant from the tracks, while the Residential District is approximately 918 feet from the railroad tracks. Given the transitory nature of the train noise, the infrequent passage of the trains, the fact that the trains already traverse the area, and most areas of the historic district are at distances greater than 200 feet, impacts are not considered significant and noise levels will often times be within the range of ambient conditions.

Vehicle Traffic

Approximately 1,432 vehicle trips will be generated by the 180 project employees and delivery vehicles during plant operation. PM (evening) peak hour traffic generation is estimated at 144 vehicles. Approximately 40 percent of these vehicles will use US 27 through Moore Haven. Based on this scenario, approximately 58 vehicles will traverse US 27 in proximity to the historic districts. This traffic volume represents about 7 percent of the projected traffic volume anticipated when the plant becomes operational. This traffic will not result in a reduction of roadway level of service below the adopted level of service standard or cause congestion.

Water Use

The FGPP project will obtain water from several different sources, including groundwater from the Surficial aquifer and the Floridian aquifer, surface water from the C-19/C-43 canals, and from

onsite rainfall runoff. In addition FGPP will use recycled plant wastewaters and reclaimed water from the City of Moore Haven Publicly Owned Treatment Works. The proposed project will not impact the historic districts. There are no permitted wells within the historic districts that use the Floridan aquifer and there will be no drawdown of the Surficial aquifer that would impact wells in the historic districts. The City of Moore Haven has determined that the existing potable water supply is sufficient for both the residents of Moore Haven and the potable water needs of the proposed project.

Stormwater

The proposed project will not alter offsite drainage patterns and the project will use onsite stormwater as a source of make up water. There will be no offsite discharge of stormwater that could effect the historic districts since no stormwater will be released from the project site.

Wastewater

During operation, wastewater generated by Project employees will be treated by the City of Moore Haven Publicly Owned treatment Works and treated wastewater will be returned to the Site for use by the project. The City has indicated that there is sufficient capacity to treat the domestic wastewater form the project and no impacts to either Historic District is anticipated.

Process wastewater will be disposed of onsite and as result, there will be no effects from process wastewater on the Historic District.

CHAPTER 2: VISUAL IMPACT ASSESSMENT

Introduction

Golder Associates Inc. (Golder) conducted a visual impact assessment of the Florida Power & light (FPL) Glades Power Park in order to determine the visibility of the proposed project from adjacent areas, public streets and public rights-of-way (ROW). The Glades Power Park is located in Glades County Florida (Figure 1). Golder conducted the assessment by:

- Inventorying the land use and land cover onsite and adjacent to the proposed Project Site;
- Determining public ROW and public assembly locations in the project area;
- Determining the location of the proposed stack onsite, marking the location, and using a helicopter to represent the location and height of the proposed stack;
- Viewing the site from adjacent public properties and ROW while the helicopter hovered at the prescribed location and elevation; and
- Photo-documenting existing conditions, simulating future views and mapping and/or describing the publicly accessible areas where the proposed project may be able to be viewed.

Based on the field investigation and land use evaluations, the proposed project's potential visual impacts were estimated and are documented in this report.

Proposed Project Characteristics

The proposed project consists of two ultra supercritical pulverized coal units each with the capability of generating approximately 980 megawatts (MW) of electricity for a combined total of 1,960 MW. The units would be equipped with advanced pollution control equipment. The plant and direct associated facilities will be located on about 3,960 acres within the 4,900 acre site located north of U.S. Highway 27, adjacent and to the north of the South Central Florida Express Railroad (SCFE) and approximately one mile west of State Road 78. Figure 2 presents the layout of the proposed facilities on the 4,900 acre site.

The largest facilities, including the power generation structures and equipment are proposed to be located in the central portion of the 4,900 acre project site. This location allows for a significant buffer of mostly undeveloped land, stormwater ponds, and a natural area preserve to be established around the power plant. Additional structures and equipment, including electric transmission lines and a substation, access road and perimeter fence, stormwater management and leachate collection facilities, byproduct storage, and portions of the onsite rail loop are to occupy the land surrounding the power block.

The tallest structures proposed are a 499 foot exhaust stack and a 320 foot boiler. Figure 3 presents a profile of the proposed project as viewed from the west. The heights of these structures when compared to the existing tall structures in the study area are presented on Figure 4.

Figure 5 presents a two dimensional elevation profile of the proposed project from each cardinal direction. The primary features from each direction are described as follows:

- North Elevation- the boilers and pollution control equipment will be the primary structures observed from the north. The stack will be present behind boilers and pollution control equipment;
- East Elevation- the fuel handling equipment and the stack will be located to the left and the pollution control equipment and the boiler will be to the right;
- West Elevation- the boiler and pollution control equipment will be located to the left and the stack and fuel handling equipment will be to the right; and
- South Elevation -the stack will be the primary structure observed from the south. The pollution control equipment and boilers will be present behind the stack.

These elevations are representative of the plant buildings and equipment which were superimposed on each of the aerial photos taken at the view points where the proposed project might be visible. Viewpoints were located at the intersections of major roads or public assembly/recreational areas such as the Old Sportsman Village public boat ramp. In the event, the viewpoint was located where the orientation of the viewpoint was not located at a cardinal direction; the profile (elevation) was rotated to the orientation that would represent the direction from which the photo was taken.

Methodology

In order to assess the visual impacts of the proposed project, Golder implemented a proven visual impact assessment technique that is used to determine the location and extent of a proposed project's visibility from the surrounding area. The employed technique also identifies the opportunity for visual screening or buffering of a project from adjacent land uses. In order to assess visual impacts, Golder conducted the following activities:

- Aerial photographs and U.S. Geological Survey (USGS) quadrangle maps were obtained to determine the types and intensities of existing land use and land cover (vegetation) and the topography of the project area;
- Land use and land cover was mapped and/or reviewed on aerial photographs, Water Management District land cover maps or USGS quadrangle maps.
- A helicopter was used to identify the location and height of the stack associated with the proposed project. The stack represents the tallest structure of the project;
- Field personnel, consisting of four teams of individuals from Golder and/or FPL staff were assigned to pre-designated locations. These locations represented typical views from various locations in the vicinity of the site. Global Positioning System (GPS) equipment was used to record the latitude and longitude of each view point as well as the proposed stack location;
- Locations were photo-documented, whether the helicopter was able to be viewed or not;
- The magnetic bearing for the proposed project stack from each view point was determined and hand-held compasses were used to find the precise direction that the proposed stack would be located in the existing view;
- The offsite locations where the helicopter could be viewed or was expected to be located were used to photo-simulate the proposed project onto the photographs of the existing landscape;
- AutoCAD drawings of the proposed development were used to identify the profile of the facility from each specific view point. Height, distance, and curvature of earth information was used to properly scale the proposed project onto the photograph; and
- After conducting the field investigation, analyzing the photographs, and superimposing the proposed project, an impact assessment was undertaken and conclusions were developed.

The proposed project is located in Glades County, Florida. The study area for the assessment included an approximately seven mile radius of the proposed project. The study area extended from the intersection of State Road 78 and County Road 74 at Lakeport north of the proposed Project Site, U.S. Highway 27 Bridge east of downtown Moore Haven and southeast of the proposed Project Site, and the area extended west of the proposed Project Site to the intersection of U.S. Highway 27 with SCFE Railroad. The viewpoint locations are depicted on Figure 6.

Existing Conditions

The proposed Project Site is located in southeast Glades County, Florida. From a land use and land cover perspective, the study area including the proposed Project Site and adjacent areas, are characterized as rural and are dominated by sugarcane fields and pasture. The undeveloped land is comprised of mostly improved pasture and natural vegetation communities. Boar Hammock, Saddle Hammock, and the Nicodemus Slough comprise portions of the surrounding areas of the proposed Project Site.

The physiographic features of the area are characterized by flat terrain with a slight topographic gradient Lake Okeechobee. Lower elevations occur closer to Lake Okeechobee. The topographic areas range from 11 ft. above mean sea level [(MSL), North American Datum, 1927] to 28 ft. MSL and slopes generally trend from the west to the east toward Lake Okeechobee.

The elevations surrounding the proposed stack location within the site boundary range from approximately 19 ft. MSL to 24 ft. MSL. The Herbert Hover Dike located three miles north of the proposed stack location, reaches an elevation up 21 ft. MSL to 34 ft. MSL as the dike heads east approaching Lake Okeechobee. The dike splits as it approaches Lake Okeechobee and continues north and south along the perimeter of Lake Okeechobee. According to United States Geological Survey Quadrangle maps, land elevations within one mile of the proposed stack location ranges are as follows:

- North of the proposed Project Site: land elevations range from 17 ft. to 26 ft.;
- East of the proposed Project Site: land elevations range from 15 ft. to 25 ft.;
- South of the proposed Project Site: land elevations range from 18 ft. to 22 ft.; and
- West of the proposed Project Site: land elevations range from 23 ft. to 25 ft.

Land elevations within five miles of the proposed stack location range from 13 ft. above MSL, south of the proposed stack location in the vicinity of the Caloosahatchee Canal to 30 ft. above MSL along the western boundary of the proposed stack location near Boar Hammock.

Development in the area is concentrated near the City of Moore Haven; the municipal boundary is approximately 2.3 miles southeast of the proposed Project Site. Several small areas of low-density residential use areas are within the vicinity of the proposed Project Site. The community of Lakeport is approximately 5.5 miles northeast of the proposed Project Site, the community of Palmdale is approximately 6.5 miles northwest, and low-density residential use is located along the Caloosahatchee Canal approximately six miles south of the proposed Project Site. Agricultural buildings including barns and equipment sheds found throughout the surrounding area are mostly single story structures. The correctional facility is located along State Road 78 just north of U.S. Highway 27 approximately two miles south of the proposed Project Site and is two stories in height.

The Fisheating Creek Ecosystem comprises portions of the undeveloped land located approximately three miles north of the proposed Project Site and 3.5 miles north of the proposed stack location. The Fisheating Creek Ecosystem are lands that have been acquired through the Florida Forever land acquisition program. These properties are open to the public for various types of passive recreational activities. The elevations of the Herbert Hoover Dike and varying tree lines serve to obstruct the view of the proposed stack from Fisheating Creek.

Due to the generally flat topography of the study area, view distances can be more easily obstructed or limited by tree lines or existing structures. The view of the proposed stack maybe obstructed or limited by trees or structures along the Big Water Heritage Trail, which is located approximately 2.5 miles east of the proposed stack location along State Road 78. The portion of the Big Water Heritage Trail near the proposed Project Site is a driving trail project that begins at the Kissimmee River and continues through the communities around Lake Okeechobee and south through the Everglades.

Portions of the proposed stack and other tall structures may be seen by recreationists using the Lake Okeechobee Scenic Trail, which is located approximately 3.5 miles east of the proposed stack location. The Lake Okeechobee Scenic Trail is located on top of the Herbert Hover Dike which reaches elevations of 21 ft. MSL to 34 ft. MSL. The elevation of the dike provides for portions of the proposed stack to be seen. However, the dike partially shields the proposed Project at ground level views from the north near the community of Lakeport and portion of Lake Okeechobee just east of the dike. The upper portions of the proposed stack and associated infrastructure can be viewed at the intersection of U.S. Highway 27 and State Road 78 located approximately one mile west of the city of Moore Haven. The only opportunity to obtain an extended view of the proposed Project Site is from the elevated U.S. Highway 27 Bridge. The U.S. Highway 27 Bridge is located approximately six miles southeast of the proposed stack location.

Additional land use features in the study area are a series of linear infrastructure including roads, the SCFE Railroad running through Glades County, two water towers located in the City of Moore Haven and the community of Lakeport, communication towers and irrigation/drainage ditches located throughout the sugarcane fields. There are fifteen communication towers from 212 ft. Above Ground Level (AGL) to 420ft. AGL within 14-mile radius of the proposed stack location (Figure 4). The closest communication tower to the proposed stack location is approximately 3.5 miles southwest.

Estimated Impacts

Viewpoint Locations

All eight viewpoint locations were located at least one mile away from the proposed Project Site boundary and were at the intersections of major roads or at public assembly areas. Figures 7-1 through 7-8 depict before and after photographs taken by the project participants at the view point locations identified in Figure 2. A brief description of each view point is described in Table 1.

Viewpoint (#1) (Figure 7-1) was located at the intersection of State Road 78 and County Road 74 in the community of Lakeport approximately 6.5 miles northeast of the proposed stack location. The view of the proposed stack cannot be seen from this viewpoint due to the elevation of the Herbert Hoover Dike and the tree line coverage. The average elevation of the dike obstructing the view of the proposed stack is approximately 25 ft. MSL.

Viewpoint (#2) (Figure 7-2) was located off of State Road 78 on top of the Herbert Hoover Dike approximately three miles northeast of the proposed stack location. The upper portions of the proposed Project can be seen from this viewpoint due to the elevation of the dike, approximately 24 ft. MSL. However, the vegetation and tree line minimizes the visual impacts of the proposed stack.

Viewpoint (#3) (Figure 7-3) was located at the Old Sportsman Village public boat ramp approximately 3.5 miles northeast of the proposed stack location. Old Sportsman Village provides parking areas, boat docks, and access to Lake Okeechobee. The top portion of the proposed stack can be seen through the tree line along State Road 78. The visual aesthetics for visitors to Old Sportsman Village will not be greatly impacted because the portion of the proposed stack that is visible to visitors is small. The facility is located to the west of Lake Okeechobee and it is behind a significant tree line along State Road 78.

Viewpoint (#4) (Figure 7-4) was located on top of the U.S. Highway 27 Bridge east of downtown Moore Haven approximately six miles from the proposed stack location. The proposed stack and associated infrastructure will be visible to motorists traveling west over the U.S. Highway 27 Bridge. The visibility of the proposed Project Site is due to the height elevation of the bridge and the relativity low surrounding terrain. Motorists will be able to view the stack for only a short duration in their travel due to the length of the bridge and the speed limit on the bridge. As a reference, the sugar mill located in Clewiston approximately 16 miles east of viewpoint (#4) can also be seen by motorists traveling east over the U.S. Highway 27 Bridge.

Viewpoint (#5) (Figure 7-5) was located within the city of Moore Haven at the U.S. Highway 27 light at the Glades County Courthouse approximately six miles southeast of the proposed stack location. The proposed stack and associated infrastructure can not be seen from this location. The mixed use in the area such as commercial buildings provides a visual buffer between the proposed Project Site and this location. Additional structures in the City of Moore Haven will block the view of the Project from the residences in the City of Moore Haven.

Viewpoint (#6) (Figure 7-6) was located at the intersection of U.S. Highway 27 and State Road 78 one mile west of the city of Moore Haven approximately 3.5 miles south/southeast of the

proposed stack location. The proposed stack and associated infrastructure can be seen from this viewpoint due to the improved pasture lands, sugarcane fields and limited forested areas south of the proposed Project Site boundary.

Viewpoint (#7) (Figure 7-7) was located at the intersection of U.S. Highway 27 and State Road 78 approximately five miles west of the city of Moore Haven and approximately 3.5 miles south/southwest of the proposed stack location. The proposed stack can not be seen from this location due to the thick vegetation and tree line north of U.S. Highway 27.

Viewpoint (#8) (Figure 7-8) was located at the intersection of U.S. Highway 27 with the SCFE Railroad approximately four miles west of the proposed stack location. The proposed stack can not be seen from this location due to the thick vegetation and tree line east of U.S. Highway 27.

Additional Estimated Impacts

Travelers using the roads in the study area will only experience intermittent views of the proposed Project Site and associated infrastructure in increments at a time due to the surrounding vegetation and tree cover.

The elevations of the Herbert Hoover Dike and the varying tree lines serve to obstruct the visual impact of the project to recreationists using the Fisheating Creek Ecosystem area. The Fisheating Creek Ecosystem is located approximately three miles north of the proposed Project Site and 3.5 miles north of the proposed stack location.

The Project will be visible from a portion of the Lake Okeechobee Scenic Trail. The Trail is located east of the proposed Project Site and the associated infrastructure, including the proposed stack and will be visible from the trail, which is located on top of the Herbert Hoover Dike. The Visibility will occur when trail users are oriented in a westerly direction. Visibility will not be significant due to the fact that the proposed Project Site will be located over two miles from the trail and the existing views contain several communication towers already located within the view. A similar but smaller impact is anticipated on the Big Water Heritage Trail (State Road 78). The impacts are minimal because only limited portions of the proposed Project Site and associated infrastructure can be seen from the road due to its lower elevation.

Views of the proposed project will not vary appreciably during change of season. Change of season is subtle in this part of Florida and there are no significant stands of deciduous trees that would expose the proposed project to a more substantial view during the winter.

Stack emissions will be negligible after the intermittent visible water vapor plume from the top of the proposed stack dissipates and should not result in the visual impacts in the study area. Stack lighting will have the potential to attract attention during dusk to dawn hours. The lighting is a necessary aircraft safety precaution and is required by Federal Aviation Administration. The lighting may be similar to other tall structures in the study area.

Water vapor plumes from the mechanical draft cooling towers will be visible intermittently per year during certain meteorological conditions; however, plume height is not anticipated to be significant and therefore seldom visible from the viewpoints along the roadways.

Conclusions

The results of the visual impact assessment can be summarized as follows:

- Motorists, recreational visitors, trail users, and residents in the vicinity of the Project Site will not experience significant visual impacts from the proposed Project due to the characteristics of the surrounding area including the elevation changes, vegetation changes, tree lines, and other existing communication towers.
- The proposed Project Site and associated infrastructure will be visible intermittently from viewpoint (#4) U.S. Highway 27 Bridge and viewpoint (#6) U.S. Highway 27 and State Road 78 intersection.
- The upper most portion of the proposed stack will be visible from viewpoint (#2) State Road 78 on top of the Herbert Hoover Dike and viewpoint (#3) Old Sportsman Village. The majority of the view of the proposed stack will be obstructed by the surrounding vegetation and tree line in the area.

ADD TABLES AND GRAPHICS