



**TOWN OF LAKE PARK
SPECIAL CALL
PLANNING & ZONING BOARD
MEETING AGENDA
SEPTEMBER 14, 2015
7:00 p.m.
535 PARK AVENUE
LAKE PARK, FLORIDA**

PLEASE TAKE NOTICE AND BE ADVISED: If any interested person desires to appeal any decision of the Planning & Zoning Board with respect to any matter considered at the Meeting, such interested person will need a record of the proceedings, and for such purpose, may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. *Persons with disabilities requiring accommodations in order to participate in the Meeting should contact the Town Clerk's Office by calling (561) 881-3311 at least 48 hours in advance to request accommodations.*

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

Judith Thomas, Chair	<input type="checkbox"/>
Erich Von Unruh, Vice-Chair	<input type="checkbox"/>
Martin Schneider	<input type="checkbox"/>
Michele Dubois	<input type="checkbox"/>
Ludie Francois	<input type="checkbox"/>
Anne Lynch, Alternate	<input type="checkbox"/>

APPROVAL OF AGENDA

APPROVAL OF MINUTES

- Planning & Zoning Board Meeting Minutes of August 20, 2015

PUBLIC COMMENTS

Any person wishing to speak on an agenda item is asked to complete a Public Comment Card located in the rear of the Commission Chambers, and provide it to the Recording Secretary. Cards must be submitted before the agenda item is discussed.

ORDER OF BUSINESS

The normal order of business for Hearings on agenda items is as follows:

- Staff presentation
- Applicant presentation (when applicable)
- Board Member questions of Staff and Applicant
- Public Comments – 3 minute limit per speaker
- Rebuttal or closing arguments for quasi-judicial items
- Motion on floor
- Vote of Board

NEW BUSINESS

- A. **AN APPLICATION BY THE PALM BEACH COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES MANAGEMENT (PBC DERM), APPLICANT AND AGENT OF THE LAKE PARK SCRUB NATURAL AREA LOCATED ON THE NORTH SIDE OF SILVER BEACH ROAD (APPROXIMATELY 0.35 MILES EAST OF CONGRESS AVENUE), TO CONSTRUCT A 5 CAR/1 BUS PARKING AREA, A CONCRETE NATURE TRAIL, A WILDLIFE OBSERVATION PLATFORM AND AT-GRADE HIKING TRAILS.**

COMMUNITY DEVELOPMENT DIRECTOR COMMENTS

ADJOURNMENT

THE NEXT SCHEDULED PLANNING & ZONING BOARD MEETING WILL BE HELD ON MONDAY, OCTOBER 5, 2015 AT 7:00 P.M.



**TOWN OF LAKE PARK
SPECIAL CALL
PLANNING & ZONING BOARD
MEETING MINUTES
AUGUST 20, 2015**

CALL TO ORDER

The Planning & Zoning Board Meeting was called to order by Chair Judith Thomas at 7:00 p.m.

PLEDGE OF ALLEGIANCE

ROLL CALL

Judith Thomas, Chair	Present
Erich Von Unruh	Not Present
Martin Schneider	Present
Michele Dubois	Present
Ludie Francois	Present
Anne Lynch, Alternate	Present

Also in attendance were Thomas J. Baird, Town Attorney; Nadia DiTommaso, Community Development Director and Kimberly Rowley, Recording Secretary.

APPROVAL OF AGENDA

Chair Thomas requested a motion for the approval of the Agenda as submitted. Board Member Lynch made the motion, and it was seconded by Board Member Schneider. The vote was as follows:

	Aye	Nay
Judith Thomas	X	
Martin Schneider	X	
Michele Dubois	X	
Ludie Francois	X	
Anne Lynch	X	

The Motion carried 5-0, and the Agenda was approved as submitted.

APPROVAL OF MINUTES

Chair Thomas requested a motion for the approval of the June 29, 2015, Planning & Zoning Board Meeting Minutes as submitted. Board Member Lynch made a motion for approval, and it was seconded by Board Member Schneider. The vote was as follows:

	Aye	Nay
Judith Thomas	X	
Martin Schneider	X	
Michele Dubois	X	
Ludie Francois	X	
Anne Lynch	X	

The Motion carried 5-0, and the Minutes of the June 29, 2015, Planning & Zoning Board Meeting were approved as submitted.

PUBLIC COMMENTS

Chair Thomas reviewed the Public Comments procedure.

ORDER OF BUSINESS

Chair Thomas outlined the Order of Business.

NEW BUSINESS

- A. A SPECIAL EXCEPTION APPLICATION BY KHALED GRAYEB, AGENT FOR WATERTOWN, LLC., TO ESTABLISH AN AUTO PAINT AND BODY SHOP AT 1145 WATERTOWER ROAD.**

STAFF PRESENTATION

Scott Schultz, Town Planner, addressed the Planning & Zoning Board. Mr. Schultz stated the Application was submitted by Kyle Grayeb, Agent for Watertown, LLC, for the Special Exception Use of an auto paint and body shop at 1145 Water Tower Road. He stated the site is located within the C-4 Commercial District, bounded by the CLIC to the south and the C-4 Commercial District to the east, west and north, and the future land use of the entire area is commercial light industrial. Mr. Schultz explained that the C-4 and CLIC Zoning Districts cater to automotive uses and Staff feels it is an appropriate site for the auto paint and body shop use.

Mr. Schultz outlined the proposed business model as follows:

- An auto paint and body shop with operating hours of 8:00 a.m. - 5:00 p.m. Monday – Friday, and Saturdays from 8:00 a.m. - 1:00 p.m.
- Servicing 4 cars at a time with a 2-3 day turnaround time; averaging 7 cars during a one week period

Mr. Schultz stated that due to the large square footage of the building (5,000 + sq. ft.), Code requires 21 parking spaces, however, emphasis is being given to employee and customer parking, which will be accommodated along Watertower Road with ten (10) employee/customer parking spaces. The remaining spaces will be devoted for auto repair within the interior of the auto paint and body shop.

Mr. Schultz outlined the six (6) Findings of Fact in regard to the Criteria required for granting a Special Exception Use, as follows:

Criteria 1:

Staff finds the proposed Special Exception Use meets Criteria 1 because it is consistent with the Town's Comprehensive Plan, specifically Chapter 3, Objective 5, regarding infill development.

Criteria 2:

Staff finds that the proposed Special Exception Use meets Criteria 2 because it is consistent with the Land Development and Zoning Regulations of the Code, so long as the Applicant complies with the following:

The Applicant:

- Does not expand the structure's western wall since it encroaches on the minimum required side yard setback. (at 0 feet- required 12 feet)
- Provides all customer, employee and ADA parking spaces in the front and eastern side yards and uses the garage for the storage and parking of the vehicles received for repair; and,
- Adds additional landscaping and screening, per the proposed Site Plan.

Criteria 3:

Staff finds the proposed Special Exception Use meets Criteria 3 because it is compatible in character and with uses of the surrounding properties.

Criteria 4:

Staff finds the proposed Special Exception Use meets Criteria 4 because it will not create a concentration or proliferation of the same or similar type of Special Exception Use. The C-4 and CLIC Zoning Districts make up the only region where the proposed use is allowed and it is already an area which caters to automotive uses by design.

Criteria 5:

Staff finds the proposed Special Exception Use meets Criteria 5 because it will not have a detrimental impact on surrounding properties based on the number of individuals working at the site, potential nuisance factors, or generation of traffic. *Staff recommends a Condition for the Applicant to implement best practices in regard to vehicle painting so odor is minimized and the garage doors are kept closed to minimize noise.*

Criteria 6:

Staff finds the proposed Special Exception Use meets Criteria 6 because it does not:

- reduce light and air to adjacent properties;
- adversely affect adjacent property values;
- deter improvement or development to surrounding properties; or,
- impact adjacent sensitive lands.

STAFF RECOMMENDATION

Mr. Schultz stated Staff finds the proposed Special Exception Use meets all six (6) Criteria required for the granting of a Special Exception Use and recommends approval, with the following three (3) Conditions:

1. The Applicant is required to implement landscaping, parking and screening pursuant to the Site Plan, as identified as SP-1.
2. The Applicant is required to keep the two (2) garage bay doors closed at all times except when vehicles are entering/exiting the building.
3. The Applicant is required to implement best practices to mitigate any potential odors produced from painting.

APPLICANT PRESENTATION

Mr. Khaled Grayeb, Agent for Watertown, LLC, addressed the Planning & Zoning Board and stated he has been in the body shop business since 2003 in the City of Lake Worth. Mr. Grayeb stated that he likes the site in Lake Park and the surrounding area very much. His proposal is for a body shop with top of the line equipment for safety. He stated that the paint spray booth will be in an enclosed room with a multi-filter infiltration system and the equipment and paint materials which will be used are safe, non-flammable and environmentally friendly.

PUBLIC COMMENTS

There were no public comments.

BOARD DISCUSSION

Board Member Francois questioned if the painting will only take place inside the building. Mr. Grayeb responded that painting will be done indoors within an enclosed isolated room with an air filter system.

Board Member Dubois asked how many cars will be painted per day. Mr. Grayeb stated that he and his three (3) employees will average about 10-12 cars per week, depending on how busy they are. He stated the minimum turnaround time is 2 days with small bumper repair, however, the average turnaround time is 3-4 days, depending on the extent of damage on the vehicle.

Board Member Schneider clarified with Mr. Grayeb that cars will be sitting indoors for periods of time. He recommended that Council be provided with the layout of the interior of the building, indicating where the paint room will be located; where the eleven (11) cars will be parked; and verify there is drive aisle access while the cars are parked in order to allow for the movement of vehicles. Board Member Schneider requested this be a Condition and that the information be provided prior to the Town Commission Meeting so they can verify that the required eleven (11) parking spaces can be met inside. Ms. DiTommaso confirmed the request will be met.

Board Member Schneider asked if the vehicles will be washed outside and asked for verification that all body work and painting will be conducted indoors. Mr. Grayeb stated all the body work and painting will be inside, and washing the vehicles will take place outdoors. Board Member Schneider recommended another Condition that all painting and body work shall take place indoors, with the exception of washing which will take place outside. Board Member Schneider asked Staff the previous use of the building to which Ms. DiTommaso responded the building was previously used for auto repair. Board Member Schneider asked for clarification about the garage doors on the east side of the building and asked if they will be adding a garage door. Mr. Schultz verified there are two (2) existing garage doors and there will be no structural changes to the outside of the building. Board Member Schneider questioned if the ADA parking space in front of the front door needs to be restriped, and will handicap access have to be met since it looks like there is a step up to enter the building. Mr. Schultz verified that per Town Code, handicap access will need to be met.

Board Member Lynch asked Mr. Grayeb how many employees he will have and if they currently have a business following from his former location in Lake Worth. She inquired about ingress/egress and the ability to drive around the building for Citizens on Patrol (COPS) for safety purposes. Mr. Grayeb stated the building will be gated. Additionally, Board Member Lynch asked if cars will be kept overnight to which Mr. Grayeb responded that there will be vehicles kept inside overnight.

Chair Thomas asked what is the purpose of the spray foam insulation on the ceiling and Mr. Grayeb replied the insulation is for noise. She asked where the spray booth will be located and if a permit will be required. Mr. Schultz stated that a permit will be required for the spray booth and the permit will be reviewed by the Building Official and Palm Beach County Fire Rescue. Chair Thomas questioned if the auto repair would be for auto body or mechanical to which Mr. Grayeb replied it will be auto body repair only. Ms. Thomas asked how often the ventilation system in the

spray booth will be changed to which Mr. Grayeb replied it will be changed every 7-10 days, depending on the amount of usage. Chair Thomas confirmed with Mr. Schultz that the purpose of the Applicant coming forth is for auto body repair. Mr. Schultz replied that mechanic and repair shops are allowed by right, but that auto paint and body is allowed by special exception only.

PLANNING & ZONING BOARD RECOMMENDATION

Upon conclusion of the discussion, Chair Thomas requested a motion for the approval of the Special Exception Use Application for Watertown, LLC. Board Member Schneider made a motion to approve the Special Exception Use Application with two (2) Conditions, as follows: #1: to provide a floorplan to show the location of the required indoor parking spaces and adequate interior drive aisles and #2: that all body work and painting shall be take place indoors, with the exception of cleaning and washing of vehicles. The motion was seconded by Board Member Dubois. Before the vote on the motion took place, Chair Thomas questioned Ms. DiTommaso regarding provisions for a car wash regarding filtration or drainage requirements. Ms. DiTommaso replied there are no specific requirements within the Town Code, however, there is a water reclamation requirement which Staff will look into prior to the matter being brought to the Town Commission. Chair Thomas requested this be added as Condition #3, and requested the motion be amended to reflect Condition #3: the owner shall install a water reclamation system as warranted. Board Member Schneider agreed to the addition of the Condition #3 and the vote was as follows:

	Aye	Nay
Judith Thomas	X	
Martin Schneider	X	
Michele Dubois	X	
Ludie Francois	X	
Anne Lynch	X	

The Motion carried 5-0 and the Special Exception Use for Watertown, LLC was approved with three (3) Conditions.

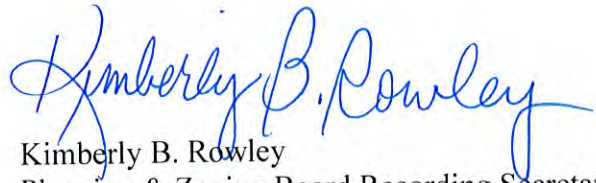
COMMUNITY DEVELOPMENT DIRECTOR COMMENTS

Ms. DiTommaso announced that Staff is looking to move forward the mixed-use corridor vision and in doing so a Joint Workshop Meeting of the Town Commission and the Planning & Zoning Board has been scheduled for September 21, 2015 @ 6:30 p.m. Ms. DiTommaso stated Staff will be following up with an e-mail and that she hopes the Planning & Zoning Board Members will be able to attend so that we can refocus on the mixed-use corridor for U.S. One.

ADJOURNMENT

There being no further business before the Board, the Meeting was adjourned by Chair Thomas at 7:30 p.m.

Respectfully Submitted,



Kimberly B. Rowley
Planning & Zoning Board Recording Secretary

PLANNING & ZONING BOARD APPROVAL:

Judith Thomas, Chair
Town of Lake Park Planning & Zoning Board

DATE:



**TOWN LAKE OF PARK
SPECIAL CALL
PLANNING & ZONING BOARD MEETING
Meeting Date: Monday, September 14, 2015**

STAFF REPORT

AN APPLICATION BY THE PALM BEACH COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES MANAGEMENT (PBC DERM), APPLICANT AND AGENT OF THE LAKE PARK SCRUB NATURAL AREA LOCATED ON THE NORTH SIDE OF SILVER BEACH ROAD (APPROXIMATELY 0.35 MILES EAST OF CONGRESS AVENUE), TO CONSTRUCT A 5 CAR/1 BUS PARKING AREA, A CONCRETE NATURE TRAIL, A WILDLIFE OBSERVATION PLATFORM AND AT-GRADE HIKING TRAILS.

BACKGROUND:

Applicant(s): Palm Beach County Department of Environmental Resources Management (*David Gillings; Branda Hovde; Kraig Krum*)
Owner(s): Palm Beach County – Department of Environmental Resources Management
Address/Location: Not Assigned – Located north of Silver Beach Road; 1,865 feet (0.35 miles) east of Congress Avenue
Net Acreage: 54.93 acres
Property Control Number: 36-43-42-20-00-000-7450
Existing Zoning: Conservation
Future Land Use: Conservation

Adjacent Zoning District

North: Campus Light Industrial/Commercial (CLIC)
South: City of Riviera Beach (Residential)
East: Campus Light Industrial/Commercial (CLIC)
West: Campus Light Industrial/Commercial (CLIC)

Adjacent Existing Land Use Designation

North: Commercial/Light Industrial; Public Buildings and Grounds
South: Commercial/Light Industrial
East: Commercial/Light Industrial
West: Commercial/Light Industrial

ENCLOSURE(S):

- ➔ Applicant Application, including Cover Letter and Plans and copies of 2013 correspondence letters between PBC and the Town
- ➔ 2004 Scrub Area Management Plan
- ➔ 2003 Interlocal Agreement between the Town/County/State for the Scrub Area

Figure 1: LOCATION MAP



Figure 2: IMAGES OF SITE FROM SILVER BEACH ROAD

(NORTH)



(WEST)



(EAST)



BACKGROUND AND REQUEST

In 2003/2004, the Town entered into an Interlocal Agreement with Palm Beach County and the State of Florida on the Lake Park Scrub Natural Area, for which a management plan was created. This management plan remains unchanged in 2015. It was created to identify the Lake Park Scrub Area as a Conservation site and identifies the overall management activities, monitoring requirements, resource enhancement controls and future structure and improvement requirements. In 2014, PBC DERM received correspondence from the Florida Communities Trust (FCT) indicating that they were in significant non-compliance of their grant contract since the intended public use facilities outlined in the future structure and improvement requirements of the 2004 management plan, never moved forward.









Consequently, the County submitted an application for site plan review for a proposed 5 car/1 bus parking area; a concrete nature trail; an observation platform; and at-grade hiking trails, pursuant the enclosed plans. The proposed parking lot is being proposed adjacent to Silver Beach Road and PBC DERM has coordinated with PBC Roadway construction to ensure their proposed alignment is consistent with Silver Beach roadway improvement plans. With this being said, the original intent of the Management Plan identified a parking lot along the northern boundary of the Scrub Area, adjacent to Joule Road and the future Park Avenue extension road. In an attempt to expedite the improvements and adhere to the FCT grant requirements, the County is currently required to construct the public use facilities with access from Silver Beach Road (since the Park Avenue Extension Road has not yet been finalized). The County is committed to create a future access along the Park Avenue extension road one the extension is completed and Staff has included this as a condition of approval. Additionally, the improvements and parking lot location came up in discussion in 2013 and correspondence between the Town and the County are enclosed. The County had indicated that while the Town Commission at the time preferred a parking lot location on the north side of the site, the County discussed the matter with the (then) Town Manager (Mr. Dale Sugerman) and the County was provided with verbal confirmation through a telephone conversation that Mr. Sugerman confirmed that he has shared the County's information requiring the initial parking lot adjacent to Silver Beach Road and the Commission understood the issues and did not need the County to appear before the Commission to receive confirmation and could proceed through site plan approval.

Finally, the Interlocal Agreement and the Management Plan identifies that the Town shall be responsible for opening and closing the entrance gate; remove trash from the site; and mow the perimeter. The Town's Public Works has been notified and is preparing cost estimates for these requirements. A condition of approval is recommended for an automated gate with timer to facilitate the opening and closing of the entrance gate.

Figure 3: PROPOSED LAKE PARK SCRUB NATURAL AREA PUBLIC USE MAP



Legend

-  Parking Lot
-  Kiosk and Bike Rack
-  Wildlife Observation Platform
-  Future Kiosk and Bike Rack
-  Public Access
-  Paved Nature Trail
-  Hiking Trail
-  Natural Area Boundary

STAFF ANALYSIS

ZONING AND LAND USE: The proposal is consistent with the Conservation District and Conservation Land Use Designation, which prohibits the construction of permanent structures that are not directly related to the recreation and passive public recreation intent for this area.

LIGHTING: The preservation area is only open from sunrise to sunset and no lighting is proposed or is envisioned for the area.

ENGINEERING DETAILS AND PLANS: The plans have been reviewed by the Town's consulting engineer who has stated they appear to be in general conformance with the Town of Lake Park Standards and requirements. A pre-construction meeting is recommended and has been included as a condition of approval.

PARKING: The Town Code does not specifically identify the parking requirements for open-air passive recreation areas. While the code identifies parking requirement for outdoor attraction and recreation areas, these are more closely related to active outdoor areas with seating, employees and fixed attractions. The Town Code also identifies a parking requirement for agricultural uses which are outdoor uses that employ a certain number of employees. These uses require a minimum of 5 parking spaces. Staff is comfortable with the County's proposal of 5 parking spaces, inclusive of 1 handicap accessible (ADA) space and a bus parking zone. The parking spaces will need to comply with the Town Code size requirements of 10 feet by 18.5 feet and incorporate the minimum one-way drive aisle width of 15 feet and a minimum 25 feet for a two-way driveway entrance. Additionally, a condition of approval whereby the parking lot must provide an ADA connection to the external entrance on Silver Beach Road is being recommended by Staff (ADA trail is already being proposed).

LANDSCAPING: Additional landscaping is not being proposed. The entire area is open green space and there is a need to maintain better views to help limit vandalism and other illegal activities. Staff is comfortable with the existing vegetation given the nature and use of the area.

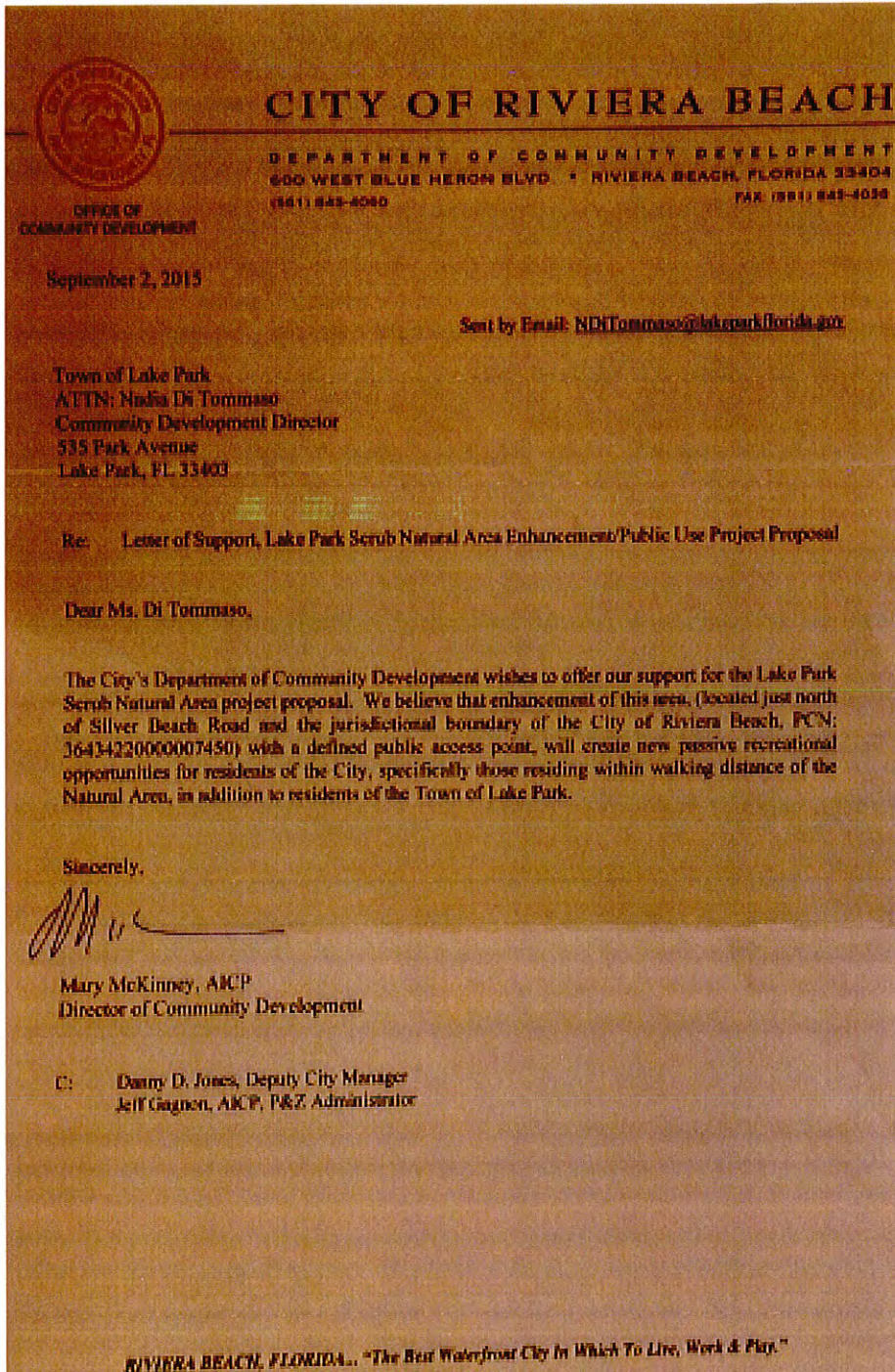
SECURITY AND HOURS: The Palm Beach County Sheriff's Office (Lieutenant Vassalotti) reviewed the proposal and indicated that all looks good and their Wild Lands Unit has been contracted with PBC for adequate patrolling throughout the site when the improvements are completed. The hours of the area will remain from sunrise to sunset (unless a special permit is granted by the County for a Boy Scout night hike, for example).

SIGNAGE: A two-side entrance sign will be placed near the fence line at the driveway entrance (4 feet tall by 6 feet wide). An additional Florida Communities Trust acknowledgement sign (2 feet tall by 6 feet wide) is proposed immediately underneath the entrance sign plate. They will mirror these sample images from other natural areas and these signs (identifying County sites and related-activities) are exempt from Town Code signage permit requirements:

(SAMPLE)



NEIGHBORING JURISDICTION REVIEW: The City of Riviera Beach reviewed the application and issued a letter of support to the Town:



STAFF RECOMMENDATION

APPROVAL with the following conditions of approval:

- (1) The Owner (County) shall submit an updated copy of the management plan addressing the public use facilities language and figures; the proposed Silver Beach Road parking lot location and future Park Avenue extension road secondary parking lot location (which is still required); and updated cost figures for the related maintenance costs.**
- (2) This Owner shall develop the site consistent with the following plans:
 - Title Sheet, Notes & Details, Overall Site Plan, Plans and Profiles, Signing and Striping, and Structural Drawings, as Sheet No. 1, 2-3, 4, 5-7, 8, and S1.0-S7.2, respectively, signed and sealed on 6-5-15 (No. 2-3, 5-7, 8) by Jeff Trompeter, Engineer of Record, and on 5-19-15 by Jeffrey R. Bergman, Structural Engineer of Record, all of which was received and dated by the Department of Community Development on 07-13-15.****
- (3) The Owner shall install an automated entrance gate with a timer to facilitate the Town's responsibility in opening and closing the gate per the Interlocal requirements.**
- (4) The Owner shall revise the Site Plan to include an ADA parking lot connection to the external entrance on Silver Beach Road and coordinate the connection with the Palm Beach County Roadway Construction Division handling the Silver Beach Road improvement plans.**
- (5) A pre-construction meeting is required with Town staff and consulting Engineer. Prior to scheduling a pre-construction meeting, the following items will be required:
 - (a) A Maintenance of Traffic Plan (MOT) for the driveway connection and associated work within the Palm Beach County Right-of-Way of Silver Beach Road.**
 - (b) A copy of the Driveway Connection Permit (Roadway Alteration Permit) from Palm Beach County for work within the Palm Beach County Right-of-Way.**
 - (c) A Palm Beach County ERM Permit for their review and approval of both the Engineering Plans and Structural Plans.**
 - (d) Plans and details for the proposed construction entrance to minimize/eliminate the tracking of dirt and debris offsite and into the Palm Beach County Right-of-Way.**
 - (e) Evidence of a Palm Beach County ERM permit for their review and approval of the Structural Plans must be provided to the Town.****



Department of Environmental
Resources Management
2300 North Jog Road, 4th Floor
West Palm Beach, FL 33411-2743
(561) 233-2400
FAX: (561) 233-2414
www.pbcgov.org/erm



Palm Beach County
Board of County
Commissioners

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Mary Lou Berger, Vice Mayor

Hal R. Valeche

Paulette Burdick

Steven L. Abrams

Melissa McKinlay

Priscilla A. Taylor

County Administrator

Robert Weisman

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Community

JUL 13 2015

Development

July 9, 2015

Nadia Di Tommaso, Community Development Director
Town of Lake Park
535 Park Avenue
Lake Park, Fl 33403

Dear Ms. Di Tommaso:

**SUBJECT: APPLICATION FOR CONSTRUCTION PERMIT AT
LAKE PARK SCRUB NATURAL AREA**

Palm Beach County Department of Environmental Resources Management (ERM) is in receipt of your email correspondence of July 1, 2015 regarding the construction of the Public Use Facilities at Lake Park Scrub Natural Area. As per your request, you will find attached to this letter: the Building Permit Application Form, the Contractor's Registration Application and Permit Authorization Form, a copy of the construction plans, the purpose of the project, the reasoning behind the selected entrance location and a revised Figure 6 from the proposed Lake Park Scrub Natural Area Management Plan revisions showing the future Public Use Facility locations.

The purpose of this project is to construct Public Use Facilities, including a 5 car/1 bus parking area, a concrete nature trail, a wildlife observation platform and at grade hiking trails, to provide safe access to the natural area for passive recreational purposes. Additionally, this project is required so that ERM and the Town of Lake Park can satisfy the terms and conditions of our agreements with Florida Communities Trust (FCT).

On May 22, 2013, I sent a letter to Mr. Dale Sugarman, Ph.D., who at the time was Town Manager, detailing the reasoning behind the selected entrance location off of Silver Beach Road. Attached is a copy of that letter.

ERM will be issuing a Work Order to Wynn & Sons Environmental Construction Co., Inc. for the construction of these facilities once we receive the permits from the Town of Lake Park. Once the Work Order is approved by Palm Beach County's Board of County Commissioners, we expect that all construction activities will be completed within 6 months.

Ms. Nadia Di Tommaso

Page 2

July 9, 2015

ERM looks forward to the opening of the Public Use Facilities at Lake Park Scrub Natural Area so that we can share this remarkable property with the visitors and residents of Lake Park and Palm Beach County. Please confirm with us the dates and locations of any meetings that you would like us to attend. If you have any additional questions, please contact me at 561-233-2400 or Mr. Kraig Krum at 561-233-2527 or kkrum@pbcgov.org.

Sincerely,



Robert Robbins, Director
Environmental Resources Management

RR:kk

Enclosures (5)



Figure 6. Lake Park Scrub Natural Area Public Use Map



Office of the
Town Manager

April 23, 2013

Mr. Robert Robbins, Director
PBC Environmental Resources Management
2300 N. Jog Road, 4th Floor
West Palm Beach, FL 33411-2743

RE: Palm Beach County Nature Center and Trails
Palm Beach County Scrub Area

Dear Mr. Robbins:

At their meeting of April 17, 2013 the Lake Park Town Commission, on a vote of 4-0, instructed me to communicate the following message to you:

It is the preference of the Town Commission of the Town of Lake Park that when Palm Beach County submits its site plan application for the construction of the Nature Center and trails within the Palm Beach County Scrub Area located within the Town of Lake Park, that the site plan should reflect an entrance off of the existing Joule Road or the proposed extension of Park Avenue.

Should you have any questions about this matter, please be sure to contact me directly.

Very truly yours,

TOWN OF LAKE PARK

Dale S. Sugerman, Ph.D.
Town Manager

cc: Honorable Mayor and Members of the Town Commission
Nadia DiTommaso, Development Director
Vivian Mendez, Town Clerk

535 Park Avenue
Lake Park, FL 33403
Phone: (561) 881-3304
Fax: (561) 881-3314

www.lakeparkflorida.gov



Department of Environmental
Resources Management
2300 North Jog Road - 4th Floor
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Palm Beach County
Board of County
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May 22, 2013

Community

JUL 13 2015

Development

Mr. Dale S. Sugarman, Ph.D.
Town Manager
Town of Lake Park
Lake Park, FL 33403

SUBJECT: Lake Park Scrub Natural Area; Public Use Facilities

Dear Mr. Sugarman:

Palm Beach County Department of Environmental Resources Management (ERM) is in receipt of your correspondence dated April 23, 2013 regarding the proposed Lake Park Scrub Natural Area public use facilities. As you know, ERM committed to constructing the project with an entrance off of Silver Beach Road. We made this commitment at the compelling insistence of the Lake Park Town Council at its March 6, 2013 meeting.

Please understand that ERM is committed to working closely with the Town of Lake Park (Town) pursuant to our existing Interlocal Agreement. However, the proposed change in direction, moving the entrance to the natural area facilities back to the Park Avenue location, is problematic. Our concerns are summarized below:

- Currently, the Park Avenue extension is not identified in the Palm Beach County (County) 5-year road plan for construction. It is our understanding that the County has not acquired all of the right-of-way necessary for the road. Therefore, even preliminary designs are not available.
- The changes in topography in the area of the Park Avenue extension would make construction of public facilities at this location challenging. The impact to the environment would be greater at the Park Avenue location since a large amount of fill would be needed to achieve the appropriate grades in compliance with Americans with Disability Act (ADA).
- Designing safe access to a parking facility which is located on a curve in the road, as seemingly would be the case with the Park Avenue location, would be problematic.
- The concept of constructing, one temporary facility now and one permanent facility concurrent with the Park Avenue extension is not financially feasible.

Mr. Dale S. Sugarman, Ph.D.

May 22, 2013

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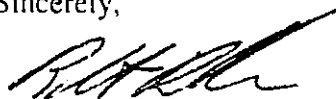
- ERM does not recommend a temporary facility at the existing Joule Road location. The undeveloped property to the west of the natural area has a history of off road vehicle usage and illegal dumping activity. This area is somewhat remote and is more industrial than residential in nature. Remote locations with reduced traffic invite vandalism and trash dumping which would increase security needs and maintenance/repair costs for the facilities.
- Further delay may be unacceptable to Florida Communities Trust (FCT). Both the Town and ERM made a commitment to FCT to provide safe access to the natural area for passive recreational purposes. In the management plan that was approved by FCT and the Town, there is a commitment to having the public use facilities opened to the public by 2005. While FCT has been tolerant of delays to date, they may not be receptive to further delay when a construction option is at hand. The FCT grant agreement states that if the FCT recipient fails to meet the terms and conditions of the agreement, which includes construction of the public use facilities, the FCT recipient will lose fee simple title to all interest in the project site (Lake Park Scrub Natural Area) which will be conveyed to the Board of Trustees of the Internal Improvement Trust Fund.

Currently, the Silver Beach Road improvements are slated for construction within two years. ERM is prepared to have the construction of the public use facilities at this location completed within a two-year time frame which would satisfy our FCT obligations. The Silver Beach Road location does not have the topographical challenges that apply to the Park Avenue location. Therefore, the impacts to the environment at the Silver Beach Road location would be significantly less.

In consideration of these logistical issues, ERM recommends that when the Park Avenue extension is constructed, appropriate signage be installed along Park Avenue directing visitors to the facilities off of Silver Beach Road. The signage would acknowledge the partnership between the Town and ERM.

Again, ERM remains committed to working with the Town on the public use facilities proposed for the Lake Park Scrub Natural Area. Towards this end, we would be willing to appear again before the Town Council to explain why the construction of the natural area entrance at the Park Avenue location is problematic.

Sincerely,



Robert Robbins, Director
Environmental Resources Management

cc: Bob Weisman, County Administrator
Commissioner Hal R. Valeche



**TOWN OF LAKE PARK
COMMUNITY DEVELOPMENT DEPARTMENT**

APPLICATION FOR SITE PLAN REVIEW OR AMENDMENT

For Planned Unit Development (PUD) applications, please refer to Section 78-77 of the Town Code of Ordinances for additional requirements

Project Name: Lake Park Scrub Natural Area - Public Use
 Project Address: North Side of Silver Beach Rd Facilities
 Property Owner: Palm Beach County L-PCN: (below)

APPLICANT INFORMATION:

Applicant Name: DERM (Kraig Krum)
 Applicant Address: 2300 North Jog Rd, 4th Floor, WPB 33411-2743
 Phone: (561) 233-2527 Fax: (561) 233-2414 E-Mail: KKrum@pbcgov.org

SITE INFORMATION:

General Location: north side Silver Beach Rd ; 0.35 miles east of Congress Avenue
 Address: N/A
 Zoning District: Conservation Future Land Use: Conservation Acreage: 54.93 acres
 Property Control Number (PCN): 36-43-42-20-00-000-7450

ADJACENT PROPERTY:

DIRECTION	ZONING	BUSINESS NAME	USE
North	CLIC / Public	Various / Town PW	Comm / Industrial + town facilities
East	CLIC	thousand Parts	Salvage / junkyard
South	Riviera Beach	N/A	residential
West	CLIC	vacant	vacant

JUSTIFICATION:

Information concerning all requests (attach additional sheets if needed)

1. Please explain the nature of the request:

see attached documentation

2. What will be the impact of the proposed change to the surrounding area?

see attached documentation

3. How does the proposed Project comply with the Town of Lake Park's zoning requirements?

see attached documentation

LEGAL DESCRIPTION:

The subject property is located approximately 0.35 mile(s) ^(east) from the intersection of Congress / Silver Beach, on the north, east, south, west side of the Silver Beach (street/road).

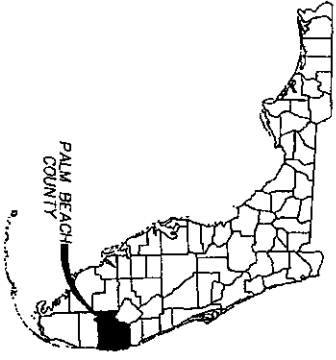
Legal Description:

see attached

I hereby certify that I am the owner(s) of record of the above described property or that I/we have written permission from the owner(s) of record to request this action.


OWNER/APPLICANT Signature

2-1-15
Date



COUNTY OF PALM BEACH STATE OF FLORIDA

LAKE PARK SCRUB NATURAL AREA PUBLIC USE FACILITIES

BOARD OF COUNTY COMMISSIONERS

HAL R. VALBECH
District 1

PRISCILLA A. TAYLOR
District 7

PAULETTE BURDICK
District 2

MELISSA MCKINLAY
District 6

SHELLEY VANA
District 3

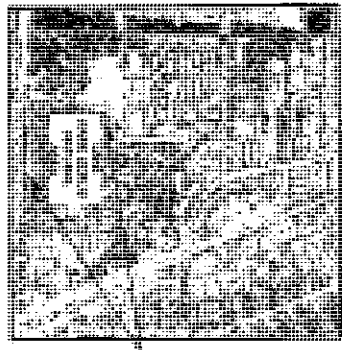
MARY LOU BERGER
District 5

STEVEN L. ABRAMS
District 4



INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-3	NOTES & DETAILS
4	OVERALL SITE PLAN
5-7	PLANS & PROFILES
8	SIGNING & STRIPING
S10-872	STRUCTURAL DRAWINGS

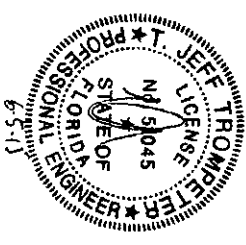


LOCATOR MAP

AREAS OF INTEREST

Community
JUL 13 2015
Development

Community
JUL 13 2015
Development



PALM BEACH COUNTY
DEPARTMENT OF ENVIRONMENTAL
RESOURCES MANAGEMENT
2500 NORTH JOE ROAD, 4TH FLOOR
WEST PALM BEACH, FLORIDA 33411-2745
(561) 233-2400

Project: **LAKE PARK SCRUB NATURAL AREA**
PROPOSED SILVER REACT ROAD
PARKING AND PUBLIC USE FACILITIES
TITLE SHEET

Sheet No. **1**

GENERAL NOTES

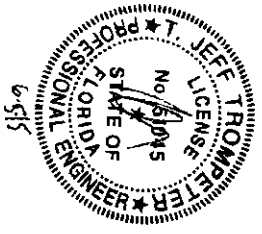
1. ALL NORTHING AND EXISTING COORDINATES ARE GRID PER THE MAD 83/1990 ADJUSTMENT STATE PLANE.
2. ALL ELEVATIONS ARE IN THE NAVD 88 DATUM.
3. THE CENTERLINE GEOMETRY OF THE CONCRETE WALKWAYS IS BASED ON GPS FIELD LOCATES PERFORMED BY PBC. THE INTENT OF THE WALKWAYS IS TO BE RADIAL ALONG THE CENTERLINE BASED ON A POINT-TO-POINT LAYOUT TO BE FIELD VERIFIED BY PBC PRIOR TO CLEARING, FORM WORK, AND PLACEMENT OF CONCRETE.
4. ALL PEOPLE SHEETS ARE PROVIDED FOR REFERENCE AND BASIC DESIGN INTENT TO CONFORM ADA ACCESSIBILITY OF THE CONCRETE WALKWAY.
5. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH CURRENT FOOT ROADWAY TRAFFIC DESIGN SPECIFICATIONS AND STANDARDS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D., LATEST EDITION).
6. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING OBTUSURED, AND HAS NOT BEEN PROPERLY RECOVERED, THE CONTRACTOR SHALL NOTIFY THE PALM BEACH COUNTY STREET SECTION WITHOUT DELAY AT PRECAUTIONS NECESSARY TO AVOID DAMAGE TO SURVEY MARKERS DURING CONSTRUCTION, UNLESS OTHERWISE DIRECTED BY THE LOCATION OF UTILITIES SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY IF OTHER UTILITIES (NOT SHOWN ON PLANS) EXIST WITHIN THE AREA OF CONSTRUCTION SHOULD THERE BE UTILITY CONFLICTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND THE RESPECTIVE UTILITY OWNER(S) TO RESOLVE THE UTILITY CONFLICTS AND PERFORM UTILITY ADJUSTMENTS AS REQUIRED.
7. PROTECTION OF UNDERGROUND UTILITIES SHALL COMPLY WITH FLORIDA STATUTE 553.851 FOR THE PROTECTION OF UNDERGROUND GAS PIPELINES.
8. THE CONTRACTOR SHALL NOTIFY SUNSHINE STATE ONE-CALL OF FLORIDA, INC. AT 1-800-432-4770 AND ALL AFFECTED UTILITIES 48 HOURS IN ADVANCE OF ANY EXCAVATION INVOLVING THEIR FACILITIES SO THAT A COMPANY REPRESENTATIVE MAY BE PRESENT.
9. ALL UTILITIES ARE TO BE ADJUSTED OR RELOCATED BY OTHERS AS DIRECTED BY THE COUNTY.
10. ALL EXISTING DAMAGE STRUCTURES AND PIPES WITHIN THE LIMITS OF THE PROJECT SHALL REMAIN UNLESS OTHERWISE NOTED.
11. FOR FURTHER UTILITY INFORMATION CONTACT THE FOLLOWING:
 - 13.1. FLORIDA POWER AND LIGHT LEONARD CHAOCCA 561-742-2024
 - 13.2. AT&T DISTRIBUTION OTIS KEEVE 954-723-2540 (CELL)
 - 13.3. COMCAST HENRY PATLINO 561-464-5897
 - 13.4. SEACOAST UTILITY AUTHORITY JOHN CALLAGHAN 561-627-2900
12. THE CONTRACTOR SHALL UTILIZE CONSTRUCTION METHODS AND DEVICES SUCH AS TURBIDITY CURTAINS AND FLOATING SILT BARRIERS WHERE NECESSARY IN ORDER TO COMPLY WITH STATE AND LOCAL WATER QUALITY STANDARDS. COST OF SUCH METHODS OR DEVICES SHALL BE INCORPORATED IN THE COST OF THE PROJECTS NEEDS COMPLIANCE.
13. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION (FOOT STANDARD SPECIFICATIONS).
14. ALL PAVING AND RELATED WORK SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE STANDARDS OF PALM BEACH COUNTY, TOWN OF LAKE PARK AND FLORIDA DEPARTMENT OF TRANSPORTATION.
15. ALL EXCAVATED OR GRUBBED UNSUITABLE MATERIAL SUCH AS MUCK, MARL, AND DEBRIS, SHALL BE REMOVED FROM THE LIMITS OF CONSTRUCTION AND DISPOSED OF LEGALLY.
16. ADDITIONAL FILL MATERIAL FOR SUBBASE SHALL BE FREE OF MUCK, STUMPS, ROOTS, UNDERBRUSH, VEGETATIVE MATTER, CARBAGE, TRASH OR ANY MATERIAL THAT WILL NOT PROVIDE A SUITABLE STABLE, CLEAN SUBGRADE.
17. NO CONSTRUCTION SHALL COMMENCE UNTIL ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN SECURED, AND THE CONTRACTOR IS ISSUED A NOTICE TO PROCEED. MEETING WITH THE COUNTY PRIOR TO ANY SITE WORK BEING PERFORMED, JOB SITE SUPERINTENDENT AND APPROPRIATE MANAGEMENT PERSONNEL SHALL BE IN ATTENDANCE.

PAVING & GRADING NOTES

1. ALL CONCRETE SURFACES SHALL BE 0" TO 1" ABOVE THE GRADE ADVANCEMENT TO THE CONCRETE UNLESS OTHERWISE SHOWN ON THE DRAWINGS.
2. ALL CONSTRUCTION SHALL BE VERIFIED IN THE FIELD AND ADJUSTED TO MINIMIZE IMPACTS TO SURROUNDING AREAS INCLUDING MINIMIZING CUT/FILL REQUIREMENTS TO THE MAXIMUM EXTENT POSSIBLE WHILE STILL PROVIDING AN ADA ACCESSIBLE TRAIL.
3. SUBBASE SHALL BE COMPACTED IN ACCORDANCE WITH THE FOOT STANDARD SPECIFICATIONS. IF UNABLE TO REACH COMPACTOR REQUIREMENTS, SUBGRADE WILL NEED TO BE STABILIZED UNTIL REQUIREMENTS ARE MET.
4. SUBBASE SHALL BE TESTED FOR MUCK, STUMPS, ROOTS, UNDERBRUSH, VEGETATIVE MATTER, CARBAGE, TRASH OR ANY MATERIAL THAT WILL NOT PROVIDE A SUITABLE STABLE, CLEAN SUBGRADE.
5. ANY MUCK ENCOUNTERED ON THE SITE MUST BE COMPLETELY REMOVED TO 5 FEET OUTSIDE THE EDGE OF ANY PROPOSED PAVEMENT.
6. WHERE GUMED OR OTHER PLASTIC CLAY IS ENCOUNTERED, IT SHALL BE REMOVED FROM WITHIN THE PROJECT SITE UP TO ONE FOOT BELOW THE COMPACTED SUBGRADE, EXTENDING HORIZONTALLY TO BEYOND THE EDGE OF PROPOSED PAVEMENT.
7. THE SEQUENCE OF CONSTRUCTION SHALL BE SUCH THAT ALL UNDERGROUND INSTALLATIONS OF ANY KIND, INCLUDING IRRIGATION AND ELECTRICAL CONDUITS THAT WILL REMAIN UNDER THE PROPOSED PAVEMENT OR WITHIN 10 FEET OF ITS EDGES SHALL BE INSTALLED PRIOR TO CONSTRUCTION OF THE BASE.
8. ALL SIDEWALK CONCRETE SHALL BE 6 INCHES THICK AND DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4,000 P.S.I. AT 28 DAYS, UNLESS SPECIFIED OTHERWISE. ALL CEMENT SHALL BE TYPE 1.
9. RE-GRADE FROM EXISTING TO PROPOSED ELEVATIONS SHALL INCLUDE A COMPACTED 1" WIDE FLAT AREA ADVANCEMENT TO THE CONCRETE WALKWAY AND THEN GRADED DOWN TO EXISTING NO STEEPER THAN 4H:1V NOR FLATTER THAN 20H:1V, UNLESS OTHERWISE SPECIFIED.

UTILITIES NOTES:

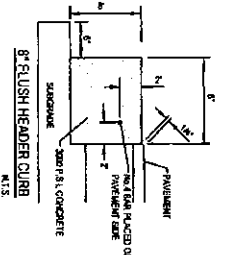
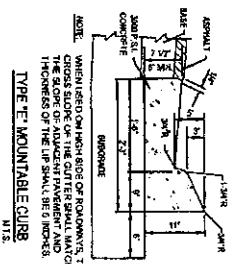
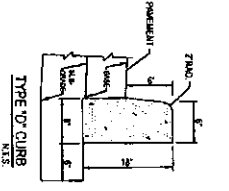
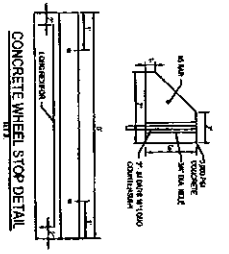
1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE EXACT LOCATIONS OF ALL EXISTING UNDERGROUND UTILITIES WHETHER SHOWN OR NOT PRIOR TO CONSTRUCTION, NOTIFY ALL UTILITIES INVOLVED PRIOR TO CONSTRUCTION.
2. EXISTING UTILITIES, ROADWAY AND DRAINAGE FACILITIES ARE LOCATED AND IDENTIFIED BASED ON THE AVAILABLE INFORMATION. THE CONTRACTOR IS TO VERIFY, WHERE NECESSARY, FOR PROPOSED CONSTRUCTION. ALL COSTS ASSOCIATED WITH VERIFICATION, PROTECTION OF EXISTING SYSTEMS OR CONNECTION TO THOSE ITEMS AS CALLED FOR ON THE PLANS IS INCLUDED IN THE BASE BID.



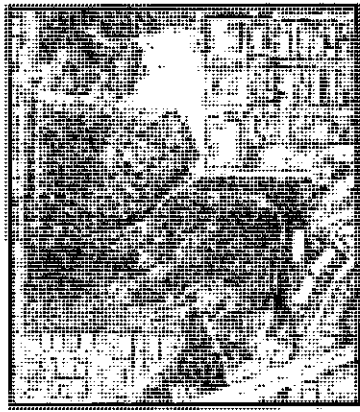
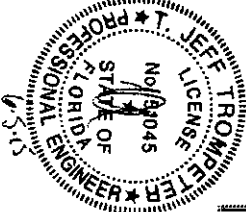
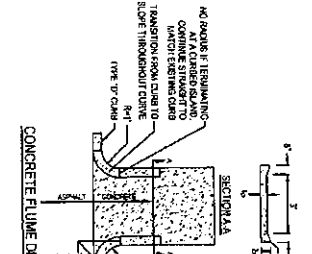
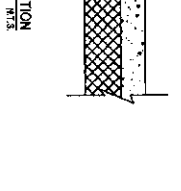
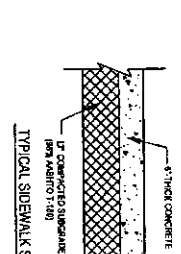
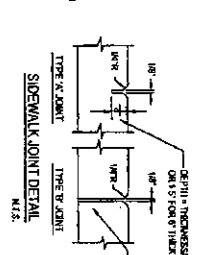
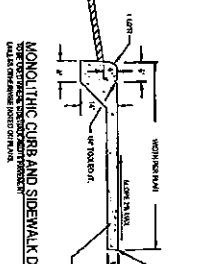
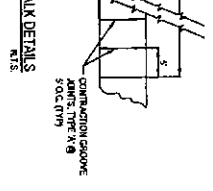
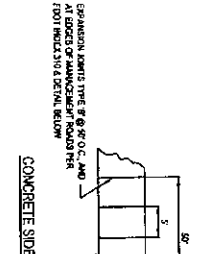
LAKE PARK SCRUB NATURAL AREA
 PROPOSED SILVER BEACH ROAD PARKING AND PUBLIC USE FACILITIES
NOTES & DETAILS

NO.	DATE	BY	DESCRIPTION

PALM BEACH COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES MANAGEMENT
 2300 NORTH JOE ROAD, 4TH FLOOR
 WEST PALM BEACH, FLORIDA 33411-2745
 (561) 233-2400



TYPE	FINISH SPECIFICATIONS	REQUIREMENTS
CONCRETE	1. 3\"/>	
ASPHALT	1. 2\"/>	



SHEET INDEX TO
PLAN SHEETS

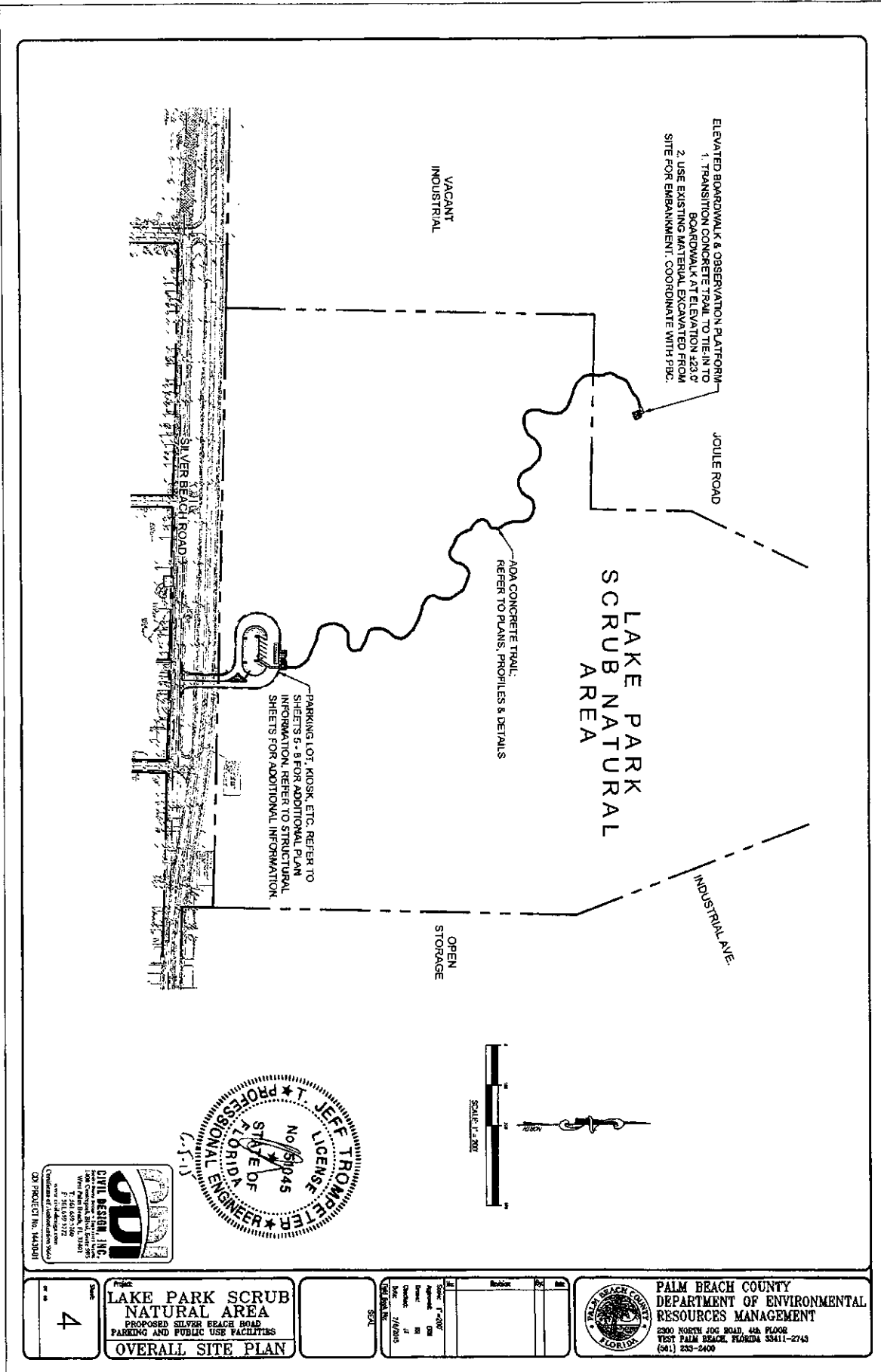
EDI
CIVIL DESIGN, INC.
 1800 Cleveland Blvd., Suite 305
 West Palm Beach, FL 33411
 Tel: 561.699.7100
 Fax: 561.699.7172
 CDR PROJECT NO. 1440011

LAKE PARK SCRUB NATURAL AREA
 PROPOSED SILVER BEACH ROAD
 PARKING AND PUBLIC USE FACILITIES

NOTES & DETAILS

3

PALM BEACH COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES MANAGEMENT
 280 NORTH BEACH ROAD, 4th FLOOR
 WEST PALM BEACH, FLORIDA 33411-3743
 (561) 233-2400



ELEVATED BOARDWALK & OBSERVATION PLATFORM
 1. TRANSITION CONCRETE TRAIL TO TIE IN TO BOARDWALK AT ELEVATION +23.0'
 2. USE EXISTING MATERIAL EXCAVATED FROM SITE FOR EMBANKMENT. COORDINATE WITH PBC.

VACANT INDUSTRIAL

JULE ROAD

LAKE PARK SCRUB NATURAL AREA

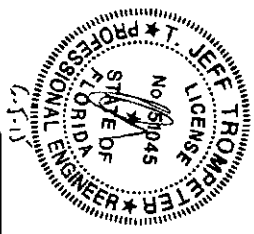
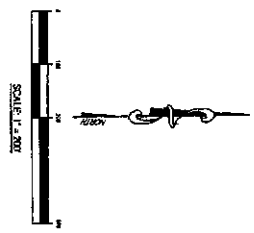
ADA CONCRETE TRAIL. REFER TO PLANS, PROFILES & DETAILS

PARKING LOT, KIOSK, ETC. REFER TO SHEETS 5 - 8 FOR ADDITIONAL PLAN INFORMATION. REFER TO STRUCTURAL SHEETS FOR ADDITIONAL INFORMATION.

SILVER BEACH ROAD

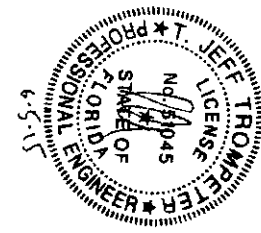
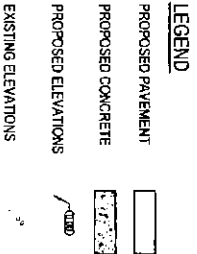
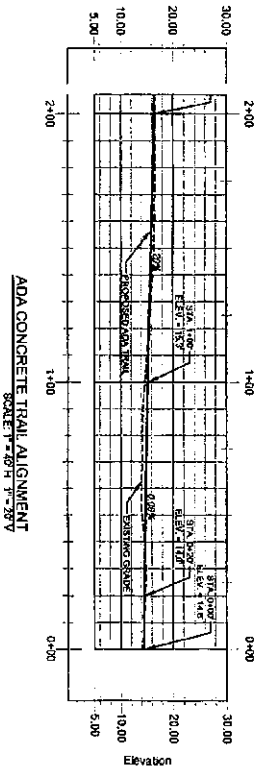
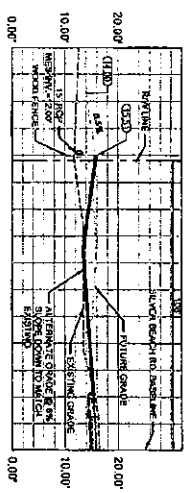
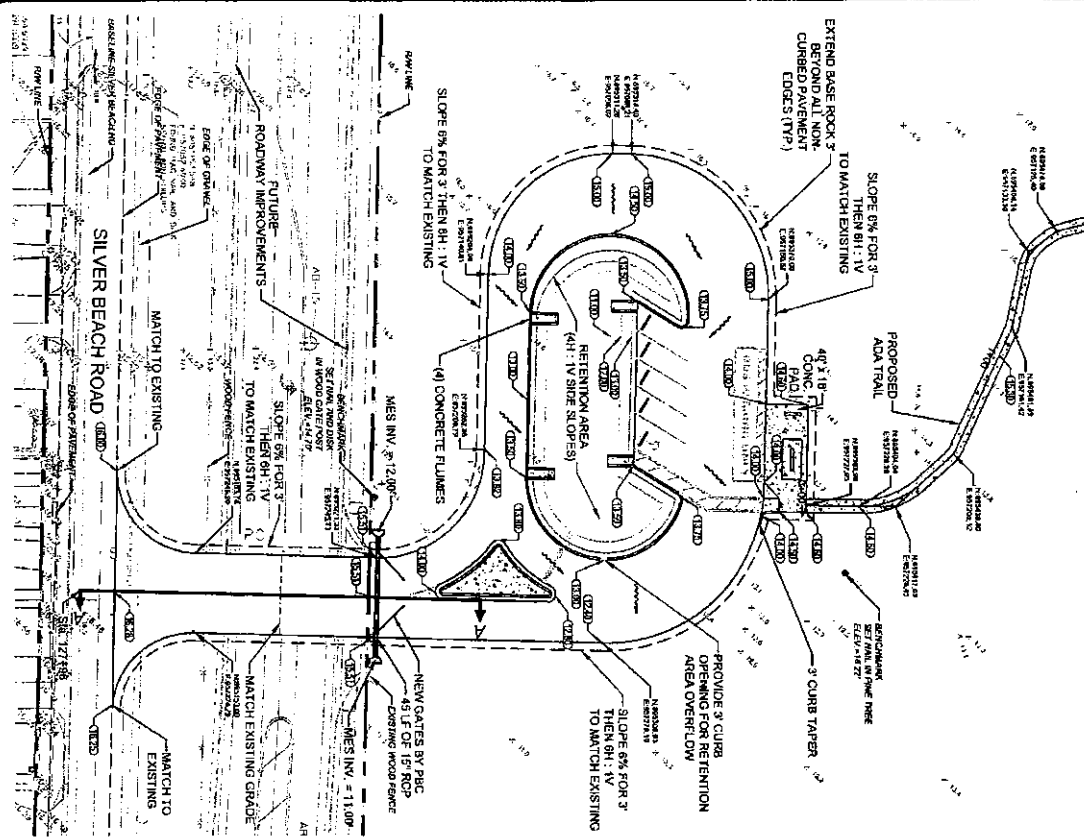
INDUSTRIAL AVE

OPEN STORAGE



CDI CIVIL DESIGN, INC.
 2000 Commercial Blvd., Suite 205
 West Palm Beach, FL 33411
 P: 561.999.1172
 F: 561.999.1172
 CDD PROJECT NO. 1420011

SHEET NO. 4	PROJECT: LAKE PARK SCRUB NATURAL AREA PROPOSED SILVER BEACH ROAD PARKING AND PUBLIC USE FACILITIES OVERALL SITE PLAN	SCALE:	REVISIONS:		PALM BEACH COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES MANAGEMENT 2300 NORTH 100 BLDG. 4th FLOOR WEST PALM BEACH, FLORIDA 33411-2745 (561) 253-2400
	DATE:				

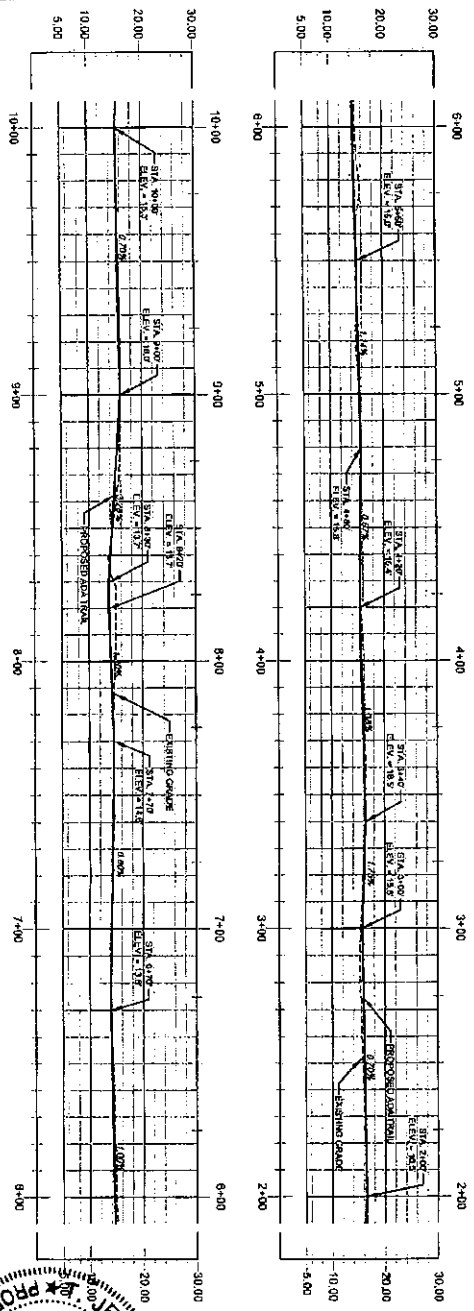
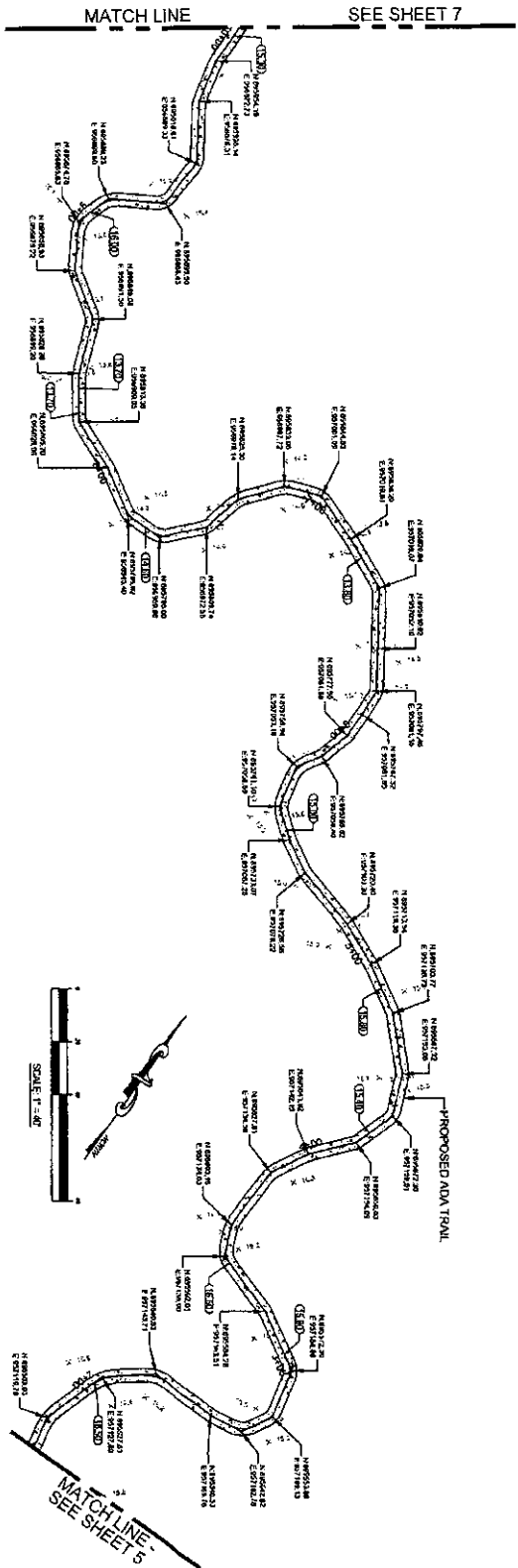


PALM BEACH COUNTY
DEPARTMENT OF ENVIRONMENTAL
RESOURCES MANAGEMENT
 2200 NORTH ROE ROAD, 4th FLOOR
 WEST PALM BEACH, FLORIDA 33411-8743
 (561) 232-2490

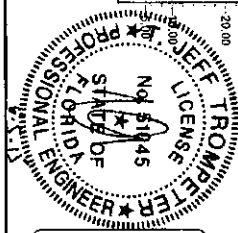
No.	Revised	By	Date
1	11-10	JDI	
2	04-11	JDI	
3	07-11	JDI	
4	10/2015	JDI	

LAKE PARK SCRUB
NATURAL AREA
 PROPOSED SILVER BEACH ROAD
 PARKING AND PUBLIC USE FACILITIES
PLANS & PROFILES

Sheet No. **5** of 5

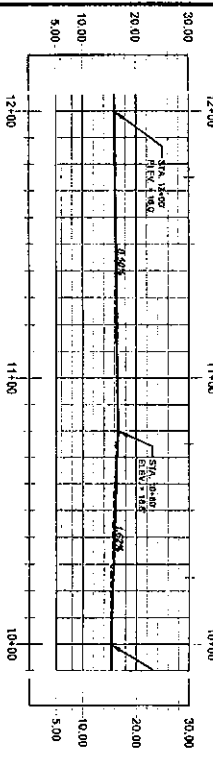
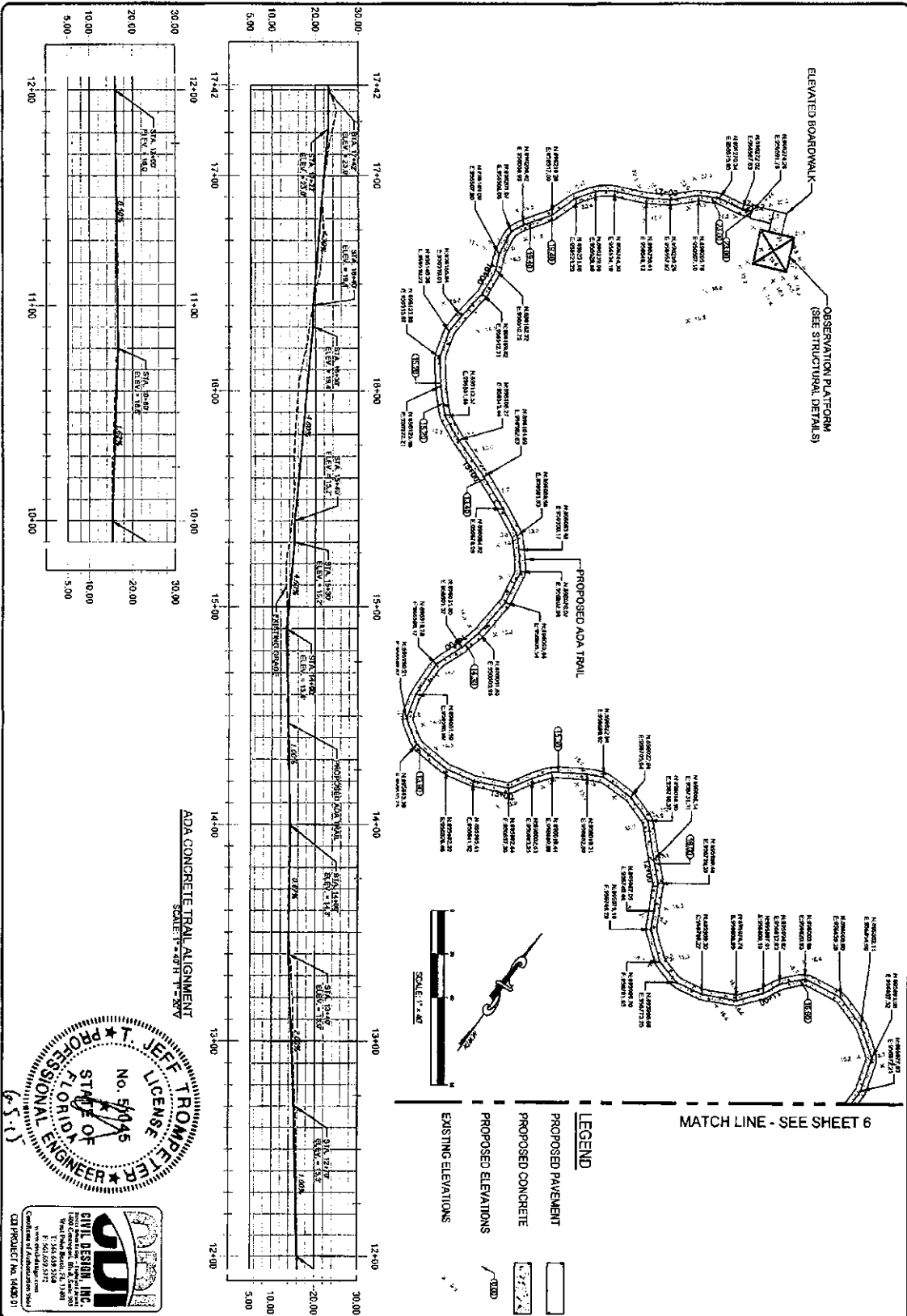


ADA CONCRETE TRAIL ALIGNMENT
SCALE: H = 40' V = 20'



- LEGEND**
- PROPOSED PAVEMENT
 - PROPOSED CONCRETE
 - EXISTING ELEVATIONS
 - PROPOSED ELEVATIONS

<p>Sheet No. 6</p>	<p>LAKE PARK SCRUB NATURAL AREA PROPOSED SILVER BEACH ROAD PARKING AND PUBLIC USE FACILITIES PLANS & PROFILES</p>	<p>Scale: 1" = 40' Approved: [Signature] Date: 1/26/2011</p>	<p>Revised: [Signature] Date: [Signature]</p>	<p>PALM BEACH COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES MANAGEMENT 3500 NORTH US 90 ROAD, 4TH FLOOR WEST PALM BEACH, FLORIDA 33411-2743 (561) 233-2400</p>
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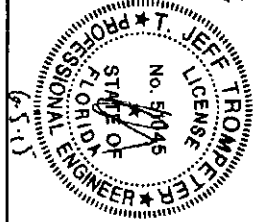


ADA CONCRETE TRAIL ALIGNMENT
SCALE: 1" = 40' H, 1" = 8' V

MATCH LINE - SEE SHEET 6

LEGEND

- PROPOSED PAVEMENT
- PROPOSED CONCRETE
- PROPOSED ELEVATIONS
- EXISTING ELEVATIONS



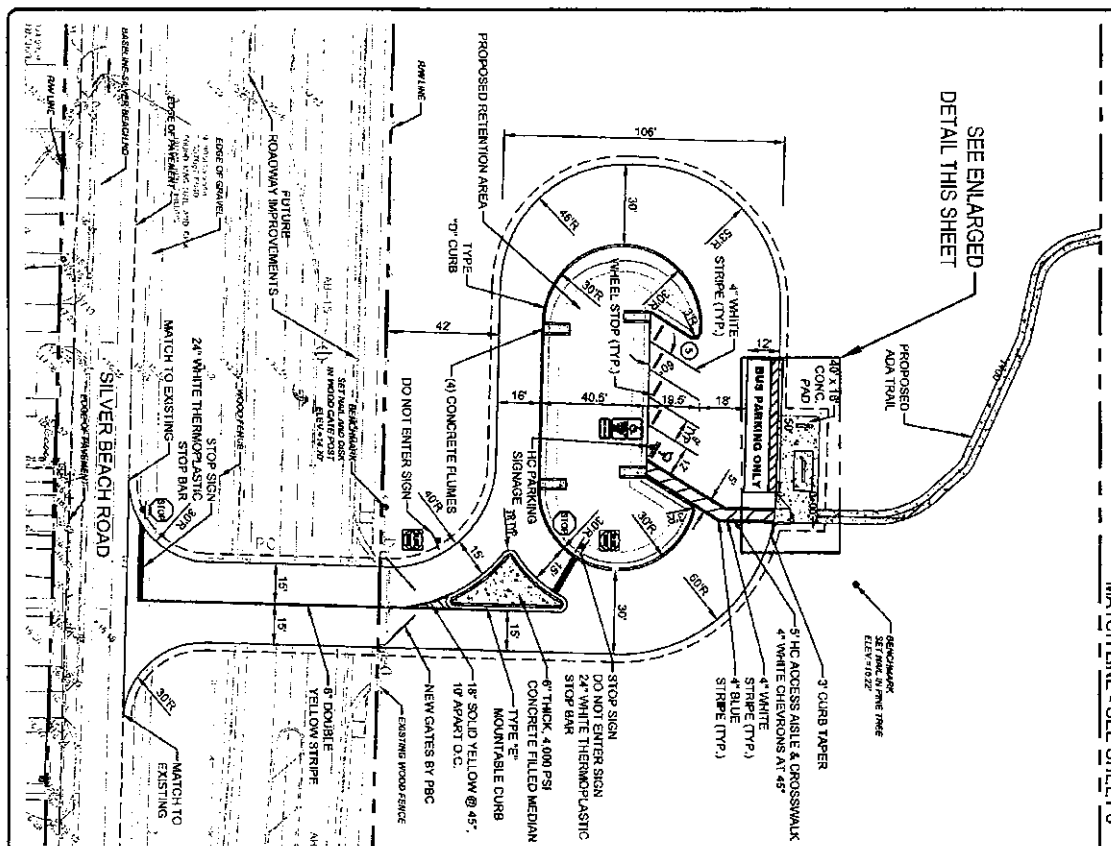
Project: **LAKE PARK SCRUB NATURAL AREA**
 PROPOSED SILVER BEACH ROAD
 PARKING AND PUBLIC USE FACILITIES
PLANS & PROFILES

Scale: 1" = 40'
 Date: 2/1/2009
 Drawn: J.T.R.
 Checked: J.T.R.
 Date: 2/1/2009

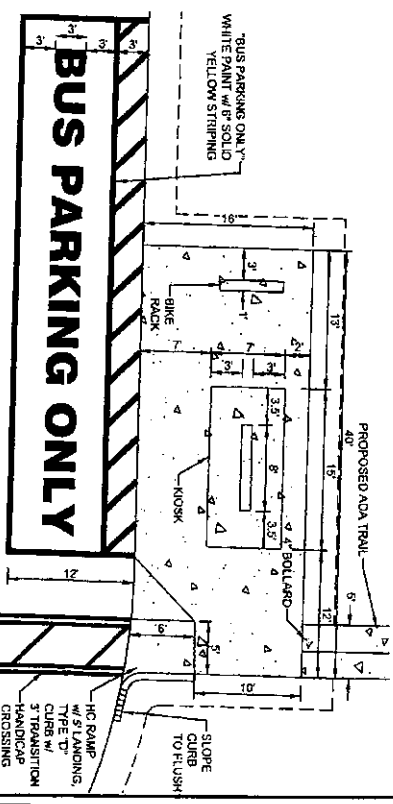
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Scale	1" = 40'
Approved	J.T.R.
Checked	J.T.R.
Date	2/1/2009

PALM BEACH COUNTY
 DEPARTMENT OF ENVIRONMENTAL
 RESOURCES MANAGEMENT
 2500 NORTH US HWY. BUILD. 400 FLOOR
 WEST PALM BEACH, FLORIDA 33411-8745
 (561) 235-2460

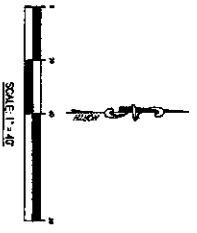
MATCH LINE - SEE SHEET 6



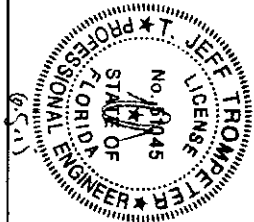
SEE ENLARGED
DETAIL THIS SHEET



ENLARGED DETAIL
SCALE: 1"=10'



- LEGEND**
- PROPOSED PAVEMENT
 - PROPOSED CONCRETE
 - STOP SIGN & 2 STOP BAR (THERMO)
 - STOP SIGN (R1-1)
 - HANDICAP (F17-20-06) & \$250 FINE SIGN (F17-22-05)
 - DO NOT ENTER SIGN (R5-1)



8

LAKE PARK SCRUB NATURAL AREA
PROPOSED SILVER BEACH ROAD
PARKING AND PUBLIC USE FACILITIES
SIGNING & STRIPING

Scale	1"=40'
Approved	DM
Drawn	DM
Checked	JR/DM
Date	2/2/2018
Sheet	8 of 8

PALM BEACH COUNTY
DEPARTMENT OF ENVIRONMENTAL
RESOURCES MANAGEMENT
2300 NORTH JOG ROAD, 4th FLOOR
WEST PALM BEACH, FLORIDA 33411-2743
(561) 233-2469

STRUCTURAL NOTES

DESIGN CODE
 FEDERAL BUILDING CODE 2010

MINI LOAD DESIGN

MINI LOAD DESIGN PER ACI 308-10

PER ACI 308-10 (2.3.2.2.1)

PER ACI 308-10 (2.3.2.2.2)

PER ACI 308-10 (2.3.2.2.3)

PER ACI 308-10 (2.3.2.2.4)

PER ACI 308-10 (2.3.2.2.5)

PER ACI 308-10 (2.3.2.2.6)

PER ACI 308-10 (2.3.2.2.7)

PER ACI 308-10 (2.3.2.2.8)

PER ACI 308-10 (2.3.2.2.9)

PER ACI 308-10 (2.3.2.2.10)

PER ACI 308-10 (2.3.2.2.11)

PER ACI 308-10 (2.3.2.2.12)

PER ACI 308-10 (2.3.2.2.13)

PER ACI 308-10 (2.3.2.2.14)

PER ACI 308-10 (2.3.2.2.15)

PER ACI 308-10 (2.3.2.2.16)

PER ACI 308-10 (2.3.2.2.17)

PER ACI 308-10 (2.3.2.2.18)

PER ACI 308-10 (2.3.2.2.19)

PER ACI 308-10 (2.3.2.2.20)

PER ACI 308-10 (2.3.2.2.21)

PER ACI 308-10 (2.3.2.2.22)

PER ACI 308-10 (2.3.2.2.23)

PER ACI 308-10 (2.3.2.2.24)

PER ACI 308-10 (2.3.2.2.25)

PER ACI 308-10 (2.3.2.2.26)

PER ACI 308-10 (2.3.2.2.27)

PER ACI 308-10 (2.3.2.2.28)

PER ACI 308-10 (2.3.2.2.29)

PER ACI 308-10 (2.3.2.2.30)

PER ACI 308-10 (2.3.2.2.31)

PER ACI 308-10 (2.3.2.2.32)

PER ACI 308-10 (2.3.2.2.33)

PER ACI 308-10 (2.3.2.2.34)

PER ACI 308-10 (2.3.2.2.35)

PER ACI 308-10 (2.3.2.2.36)

GENERAL NOTES

1. ALL ELEVATIONS SHOW UNLESS OTHERWISE NOTED. SEE ALSO 1988

2. EXISTING LOCATIONS AND ELEVATIONS ARE APPROXIMATE.

3. CONTRACTOR IS RESPONSIBLE TO PROVIDE PROPER MAINTENANCE OF PROTECTIVE SHEET PILING, ROAD BARRIERS, ETC. THROUGHOUT CONSTRUCTION AND MAINTAIN PROPER ADVANCEMENT RECORDS AND FIELD NOTES AS REQUIRED.

MINI LOAD DESIGN
 PER ACI 308-10 (2.3.2.2.1)

PER ACI 308-10 (2.3.2.2.2)

PER ACI 308-10 (2.3.2.2.3)

PER ACI 308-10 (2.3.2.2.4)

PER ACI 308-10 (2.3.2.2.5)

PER ACI 308-10 (2.3.2.2.6)

PER ACI 308-10 (2.3.2.2.7)

PER ACI 308-10 (2.3.2.2.8)

PER ACI 308-10 (2.3.2.2.9)

PER ACI 308-10 (2.3.2.2.10)

PER ACI 308-10 (2.3.2.2.11)

PER ACI 308-10 (2.3.2.2.12)

PER ACI 308-10 (2.3.2.2.13)

PER ACI 308-10 (2.3.2.2.14)

PER ACI 308-10 (2.3.2.2.15)

PER ACI 308-10 (2.3.2.2.16)

PER ACI 308-10 (2.3.2.2.17)

PER ACI 308-10 (2.3.2.2.18)

PER ACI 308-10 (2.3.2.2.19)

PER ACI 308-10 (2.3.2.2.20)

PER ACI 308-10 (2.3.2.2.21)

PER ACI 308-10 (2.3.2.2.22)

PER ACI 308-10 (2.3.2.2.23)

PER ACI 308-10 (2.3.2.2.24)

PER ACI 308-10 (2.3.2.2.25)

PER ACI 308-10 (2.3.2.2.26)

PER ACI 308-10 (2.3.2.2.27)

PER ACI 308-10 (2.3.2.2.28)

PER ACI 308-10 (2.3.2.2.29)

PER ACI 308-10 (2.3.2.2.30)


PER ACI 308-10 (2.3.2.2.31)

PER ACI 308-10 (2.3.2.2.32)

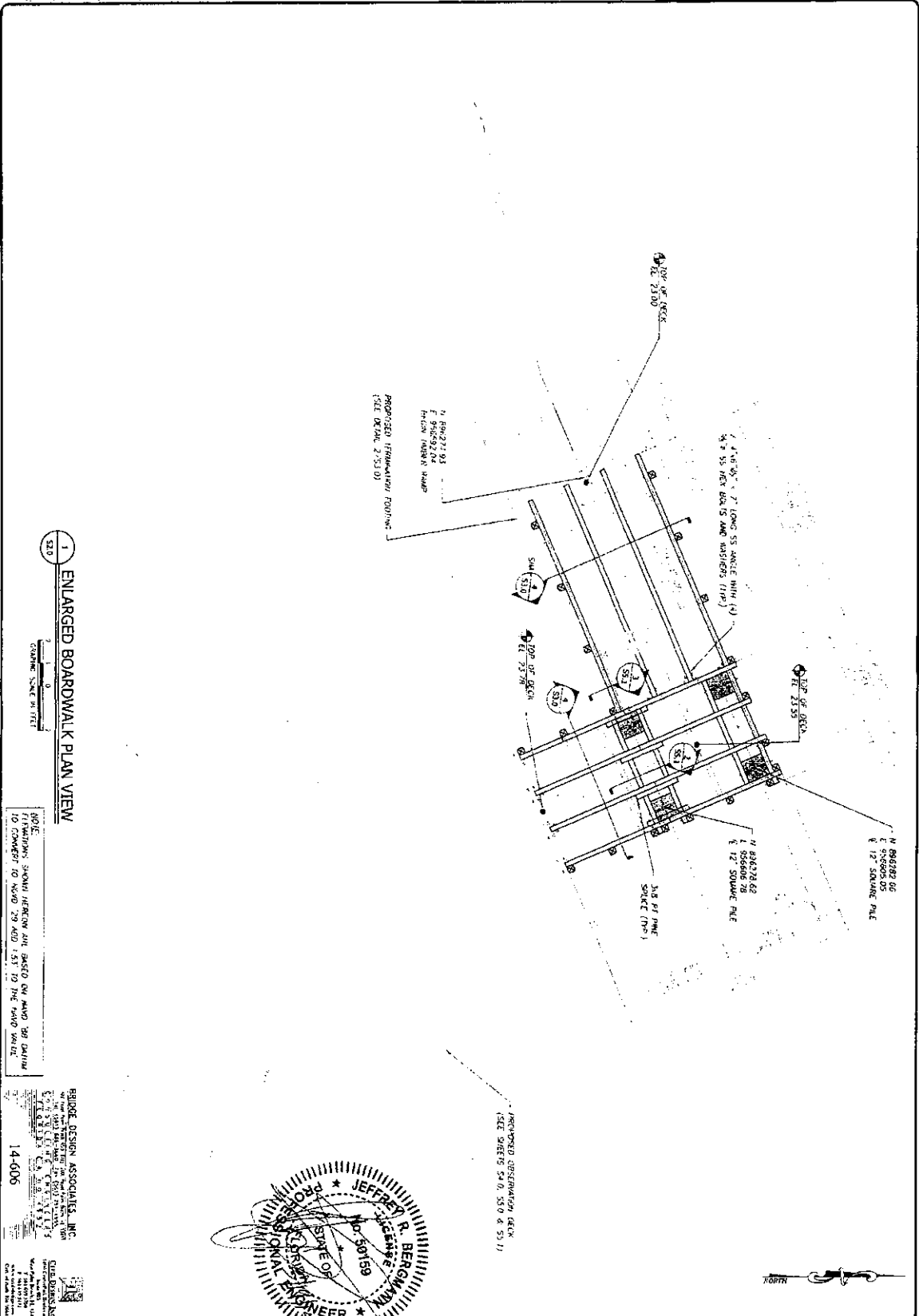


NOTE: ALL ELEVATIONS SHOW UNLESS OTHERWISE NOTED. SEE ALSO 1988 FEDERAL BUILDING CODE 2010.

BRIDGE DESIGN ASSOCIATES, INC.
 14-606


PALM BEACH COUNTY
 DEPARTMENT OF ENVIRONMENTAL
 RESOURCES MANAGEMENT
 2260 NORTH LOC ROAD, 4TH FLOOR
 WEST PALM BEACH, FLORIDA 33411-2743
 (561) 274-2160

SL10



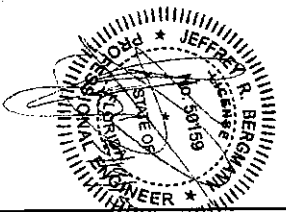
1 ENLARGED BOARDWALK PLAN VIEW

GRAPHIC SCALE IN FEET

NOTE: DIMENSIONS SHOWN HEREON ARE BASED ON AASHTO 200 DATING TO CORRECT TO MOVD 79 AND 1.5' TO THE ROAD WIDTH

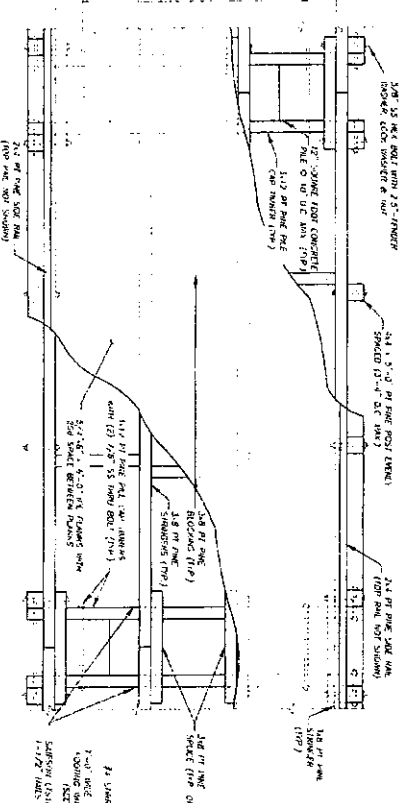
BRIDGE DESIGN ASSOCIATES, INC.
 14-406

DATE DIMENSIONS
 11/11/11

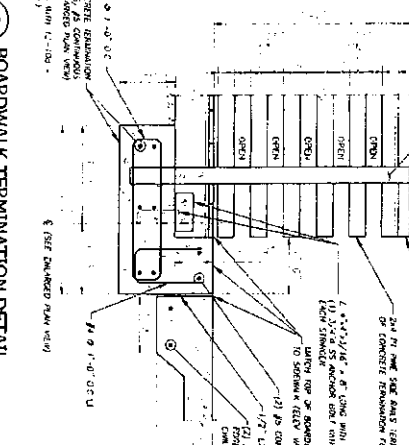


UNAPPROVED OBSERVATION ONLY
 (SEE SHEETS SA 0, SA 0 & SA 1)

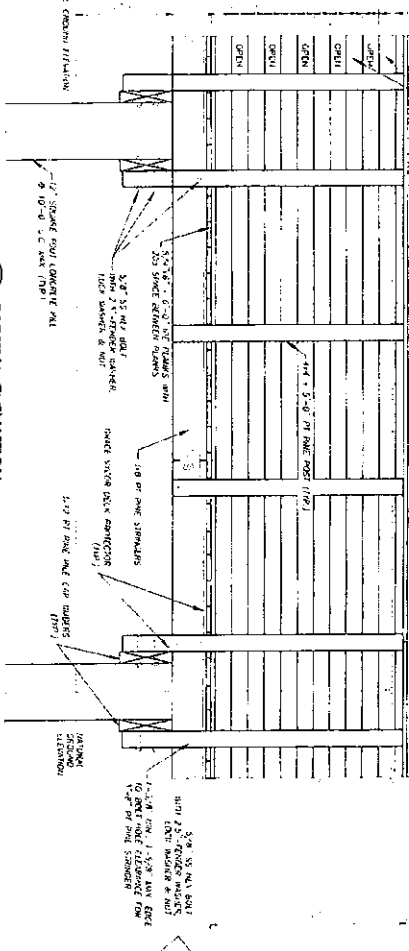
<p>S2.0</p>	<p>CLUB PARK TRUB IMPROVEMENTS PROPOSED SILVER BEACH TRUB PARKING AND PUBLIC USE FACILITIES</p>	<p>Jeffrey R. Bergmann Professional Engineer License No. 50916199</p>	<p>DATE: 11/11/11</p>		<p>PALM BEACH COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES MANAGEMENT 2300 NORTH 10th ROAD, 11th FLOOR WEST PALM BEACH, FLORIDA 33411-2743 (561) 231-2100</p>
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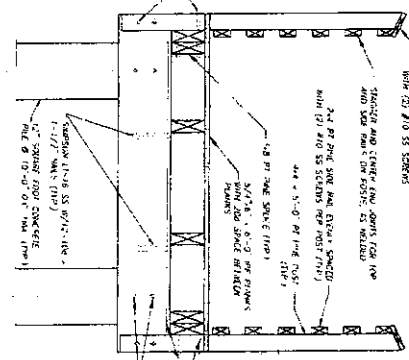
1 PARTIAL PLAN VIEW
 SCALE: 1/8" = 1'-0"



2 BOARDWALK TERMINATION DETAIL
 SCALE: 1/8" = 1'-0"



3 PARTIAL ELEVATION
 SCALE: 1/8" = 1'-0"

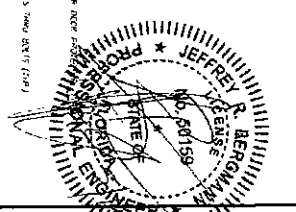


4 BOARDWALK CROSS-SECTION
 SCALE: 1/8" = 1'-0"

- FINISHES:**
- 1 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 2 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 3 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 4 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 5 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 6 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 7 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 8 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 9 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 10 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 11 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 12 ALL WALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"

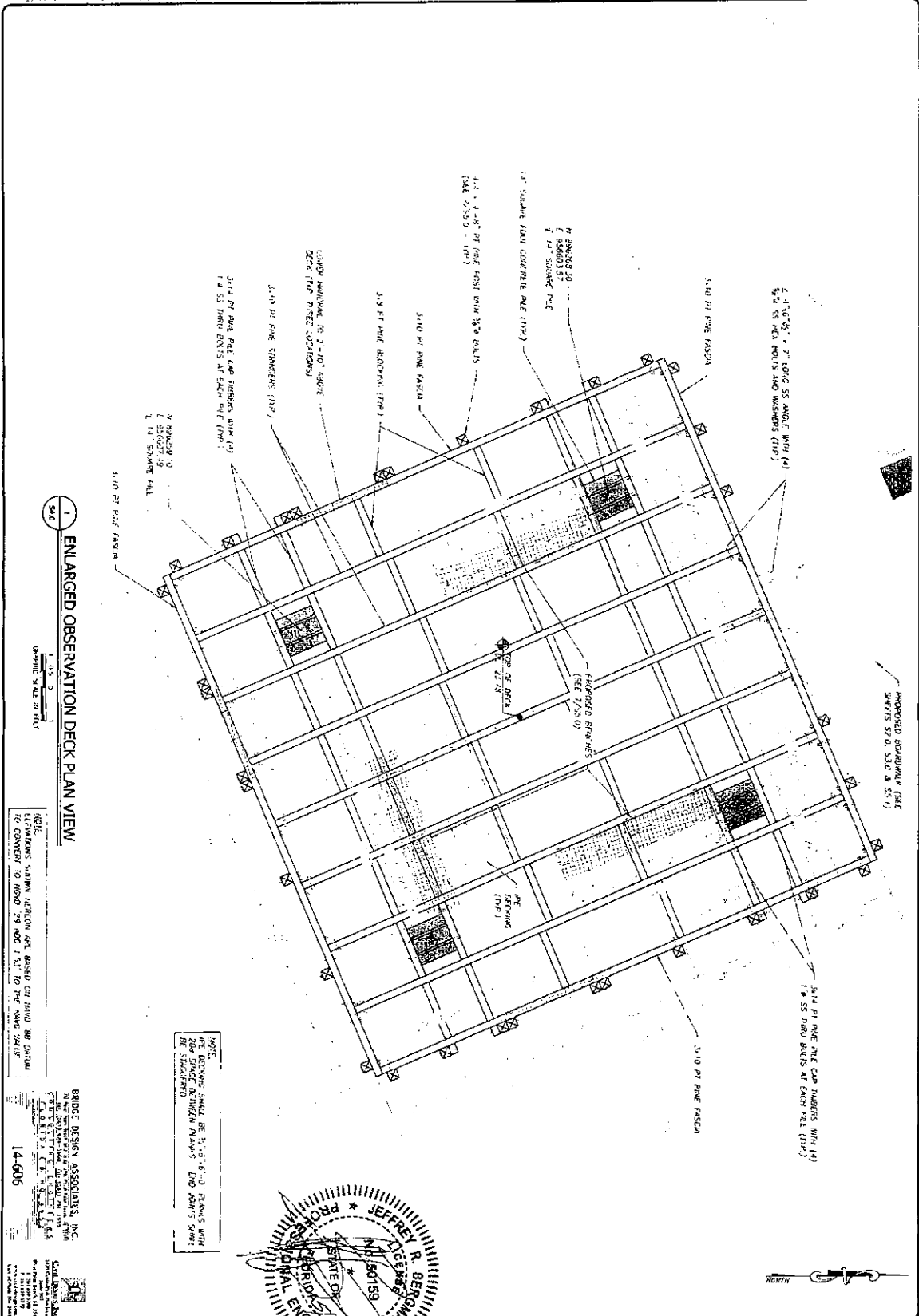
- NOTE:**
- 1 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 2 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 3 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 4 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 5 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 6 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 7 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 8 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 9 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 10 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 11 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"
 - 12 BOARDWALK SHALL BE FINISH TO A UNIFORM FINISH OF 15'-0"

BRIDGE DESIGN ASSOCIATES, INC.
 14-606



PALM BEACH COUNTY
 DEPARTMENT OF ENVIRONMENTAL
 RESOURCES MANAGEMENT
 2300 NORTH US ROAD, 4TH FLOOR
 WEST PALM BEACH, FLORIDA 33411-2710
 (561) 243-2400

STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION
 PROJECT: SILVER BEACH ROAD PARKING AND PUBLIC USE FACILITIES
 SHEET: S3.0



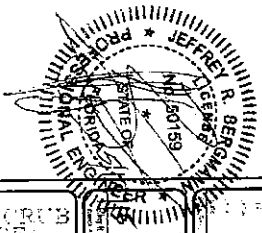
1 ENLARGED OBSERVATION DECK PLAN VIEW

1/8" = 1'-0" (SEE SHEET S4.0)

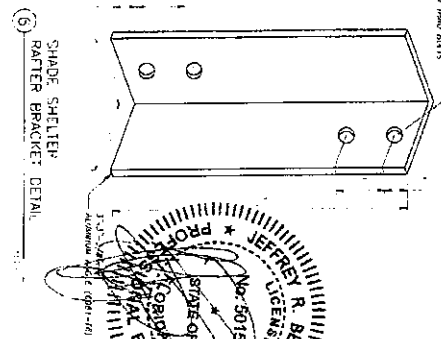
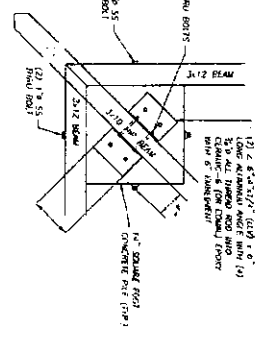
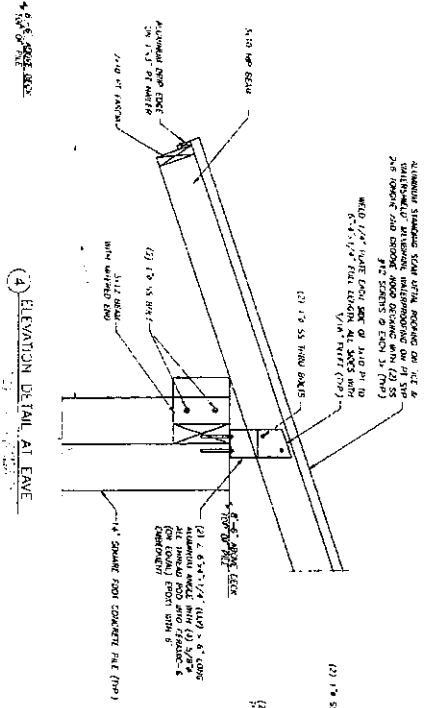
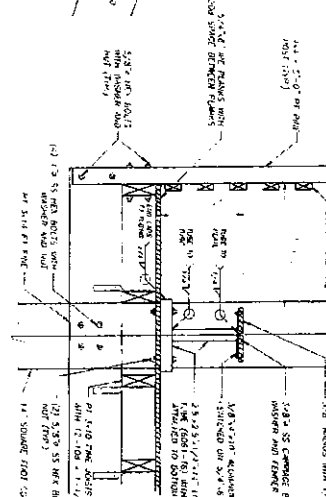
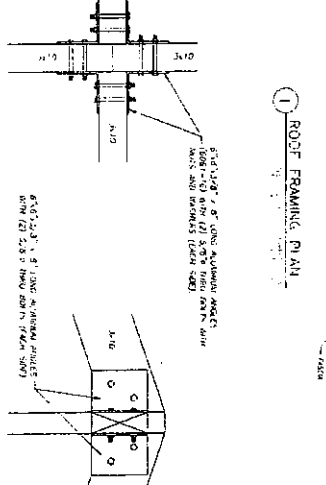
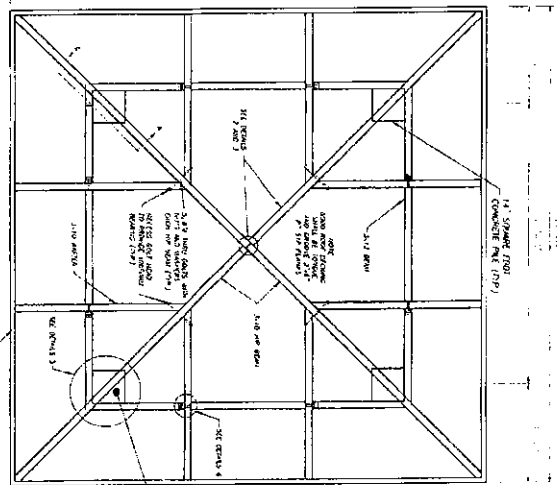
NOTE: DIMENSIONS SHOWN ARE BASED ON LAND BEING CONVEYED TO NODD 79 NOV 1 5:17 TO THE LAND VALUE

BRIDGE DESIGN ASSOCIATES, INC.
 14-006

NOTE: DIMENSIONS SHOWN ARE BASED ON LAND BEING CONVEYED TO NODD 79 NOV 1 5:17 TO THE LAND VALUE



<p>S4.0</p>	<p>LAKE MARI MORRIS PROPOSED BEACH REST PARKING AND PUBLIC USE FACILITIES</p>	<p>DATE: 11/11/2011 TIME: 10:00 AM</p>	<p>PROJECT NO: 14-006 SHEET NO: S4.0</p>	<p>FLORIDA PALM BEACH COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES MANAGEMENT 2400 NORTH JOE ROAD, 116 FLOOR 700 PALM BEACH, FLORIDA 33411-2714 (561) 435-5400</p>
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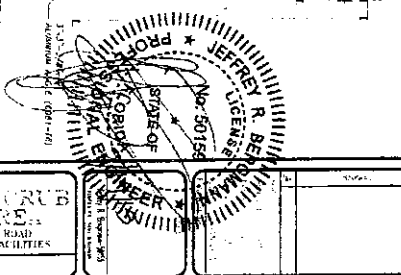


- NOTES**
1. ALL ROOF, GUTTERS, AND DOWNSPOUTS SHALL BE VANDERBILT STEEL 140E 12x15 (150)
 2. VANDERBILT STEEL DOWNSPOUTS SHALL BE VANDERBILT STEEL 140E 12x15 (150)
 3. VANDERBILT STEEL DOWNSPOUTS SHALL BE VANDERBILT STEEL 140E 12x15 (150)
 4. VANDERBILT STEEL DOWNSPOUTS SHALL BE VANDERBILT STEEL 140E 12x15 (150)
 5. VANDERBILT STEEL DOWNSPOUTS SHALL BE VANDERBILT STEEL 140E 12x15 (150)

- FINISH NOTES**
1. ALL FINISH SHALL BE GRABBAR 1044 UNIFORM FINISHMENT OF 15-0"
 2. ALL FINISH SHALL BE GRABBAR 1044 UNIFORM FINISHMENT OF 15-0"
 3. ALL FINISH SHALL BE GRABBAR 1044 UNIFORM FINISHMENT OF 15-0"
 4. ALL FINISH SHALL BE GRABBAR 1044 UNIFORM FINISHMENT OF 15-0"
 5. ALL FINISH SHALL BE GRABBAR 1044 UNIFORM FINISHMENT OF 15-0"

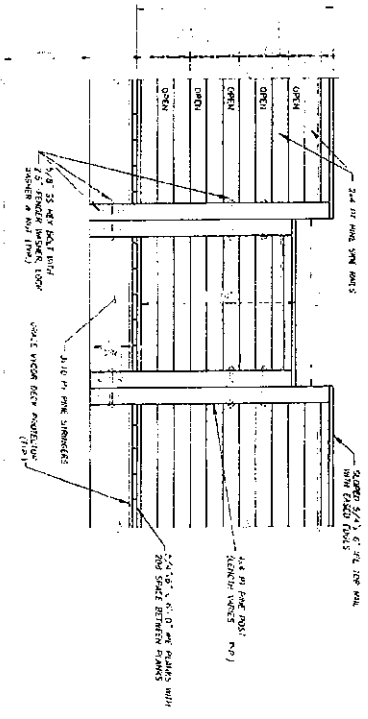
DETAIL
 FILTHINGS SHOWN HEREON ARE BASED ON WINDS AND PRESSURE COEFFICIENTS TO COMPLY TO WINDS 79 AND 1-53 OF THE WIND CODE.

BRIDGE DESIGN ASSOCIATES, INC.
 1715 W. UNIVERSITY AVENUE, SUITE 200
 PALM BEACH, FLORIDA 33411-2711
 (561) 850-4400
 14-606

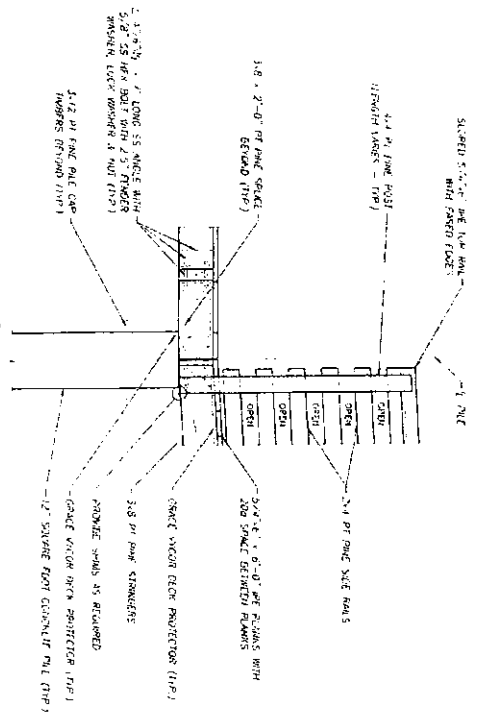


PALE PARK SURROUNDING NATURAL AREA
 PROPOSED SILVER BIRCH ROAD PARKING AND PUBLIC USE FACILITIES

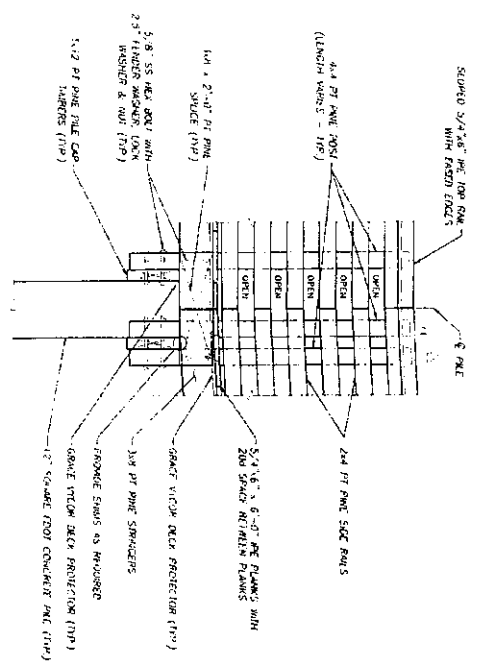
PALM BEACH COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES MANAGEMENT
 2100 NORTH JOG ROAD, 4TH FLOOR
 WEST PALM BEACH, FLORIDA 33411-2711
 (561) 235-2300



1 PARTIAL ELEVATION
GRAPHIC SCALE IN FEET



1 SECTION
GRAPHIC SCALE IN FEET



1 SECTION
GRAPHIC SCALE IN FEET

- NOTES:**
- ALL WOOD JOINTS AND MEMBERS SHALL BE SHOWN WITH THE GRAIN OF THE WOOD.
 - TRIMMER STAYS INDICATED ARE W/STAYS.
 - TRIMMER STAYS BE 0.4 PRESSURE TREATED (PT) SOUTHWEST YELLOW PINE (SP) EXCEPT FOR STRUCTURAL LUMBER WHICH SHALL BE OSG PT SP AND EXCEPT FOR THE TRIMMER STAYS FOR ROOF WHICH SHALL BE REDWOOD.
 - BRONZE DECOR TOP RAFTS AND BRICK TOP SHALL BE CONSTRUCTION OF THE PROPOSAL NUMBER OF 72 AND 153 TO THE SAND WALL JOINTWORK.
 - CONSTRUCTION SHALL VERIFY SAND DYNAMICS FOR WIND AND AIRFLOW ENJOY TO JOINTWORK.

SCALE
DIMENSIONS SHOWN BETWEEN ARE BASED ON MAIN 30 DATUM TO CORNER TO MAIN 79 AND 153 TO THE SAND WALL.

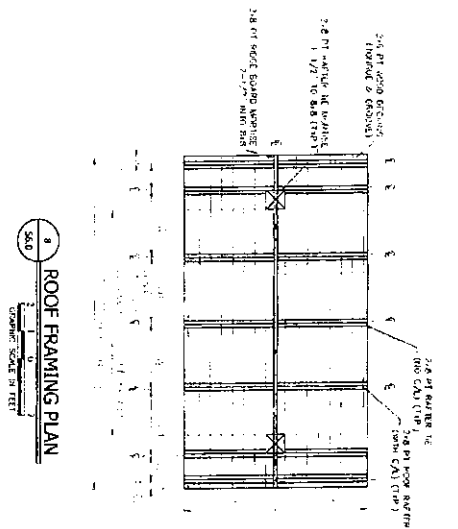
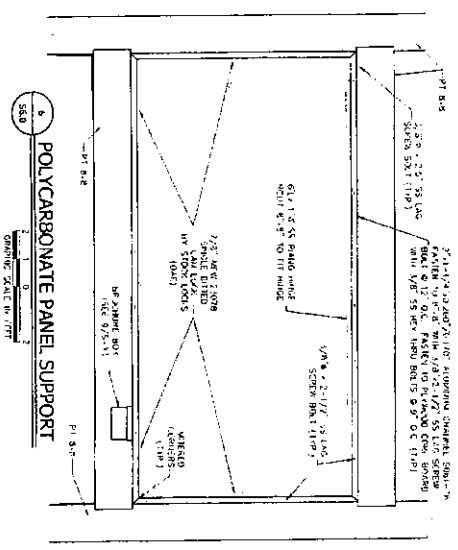
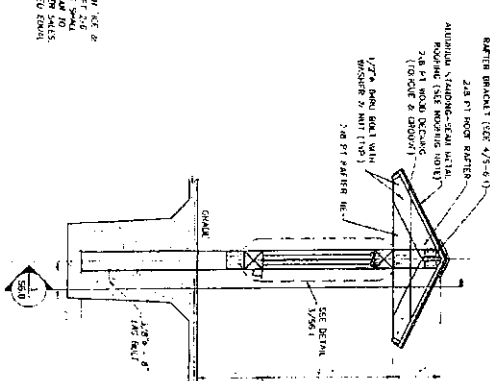
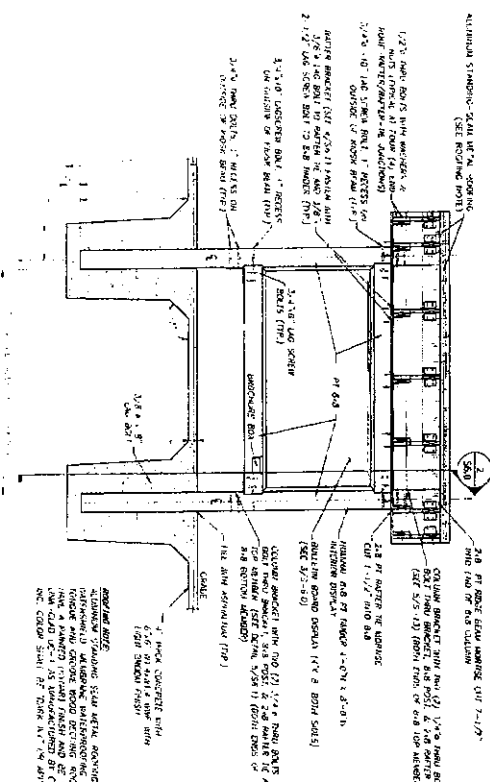
RIDGE DESIGN ASSOCIATES, INC.
5115 W. STATE ROAD 10, SUITE 200
WEST PALM BEACH, FLORIDA 33411-2748
TEL: 561-833-1111
FAX: 561-833-1112
WWW.RIDGEDESIGN.COM

PROFESSIONAL ENGINEER
STATE OF FLORIDA
LICENSE No. 50159
JEFFREY R. BERGMAN
1989

PALM BEACH COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES MANAGEMENT
2100 NORTH JUD ROAD, 4TH FLOOR
WEST PALM BEACH, FLORIDA 33411-2748
(561) 231-2100

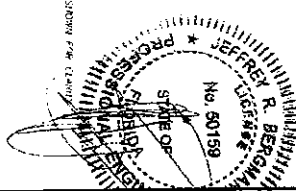
ST.1

PROPOSED SILVER BEACH ROAD PARKING AND PUBLIC USE FACILITIES



NOTES:
 1. DIMENSIONS SHOWN HEREON ARE BASED ON STANDARD CONDITIONS UNLESS OTHERWISE NOTED.
 2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 3. ALL DIMENSIONS ARE TO BE VERIFIED BY THE CONTRACTOR.
 4. ALL DIMENSIONS ARE TO BE VERIFIED BY THE CONTRACTOR.

BRIDGE DESIGN ASSOCIATES, INC.
 14-606



DATE: 11/15/15
 DRAWING NO: 14-606
 SHEET NO: 14-606

1915

FLORIDA BEACH COUNTY
 DEPARTMENT OF ENVIRONMENTAL
 RESOURCES MANAGEMENT
 2300 NORTH US1 ROAD, 110 FLOOR
 WEST PALM BEACH, FLORIDA 33411-2743
 (561) 233-2400

LAST REVISION
01/01/14

REVISION DESCRIPTION

FDOT 2015 DESIGN STANDARDS

NOTES AND DETAILS FOR SQUARE PRESTRESSED CONCRETE PILES

INDEX NO. 20600

SHEET NO. 1 OF 1

PRESTRESSED CONCRETE PILE NOTES:

DESIGN SPECIFICATIONS:
 American Association of State Highway and Transportation Officials (AASHTO) UNFD Bridge Design Specifications, current edition.

SPRINK TIES:
 Each wrap of spirals shall be tied to at least two corner strands. One turn required for spiral spirals.

CONCRETE CLASS:
 Concrete for all piles shall be Class V (Special) except designated High Moment Capacity Piles (Index 20631) shall be Class VI.

Concrete for the right Capacity Class V (Special) shall be Class V (Special).
 See GENERAL NOTES in Structures Plans for any specific locations where the use of silica fume is required.

CONCRETE STRENGTH:
 The pile cylinder strength shall be 6,000 psi minimum at 28 days and 4,000 psi minimum at time of transfer of the prestressing force. The cylinder strength for designated High Moment Capacity Piles (Index 20631) shall be 8,500 psi minimum at 28 days and 6,500 psi minimum at time of transfer of the prestressing force.

SPLICE BONDING MATERIAL:
 The material to fill dowel holes and form the joint between pile sections shall be a Type B Epoxy Compound in accordance with Specification Section 326 and shall be contained on the approved products list (ASLI). Use Epoxy Bonding Compound or Epoxy Mortar as recommended by the manufacturer. For Epoxy Mortar only use sand or other filler material supplied by the manufacturer and in the proportions recommended.

PICK-UP POINTS:
 Piles shall be marked at the pick-up points to indicate proper joints for stacking, handling lines.

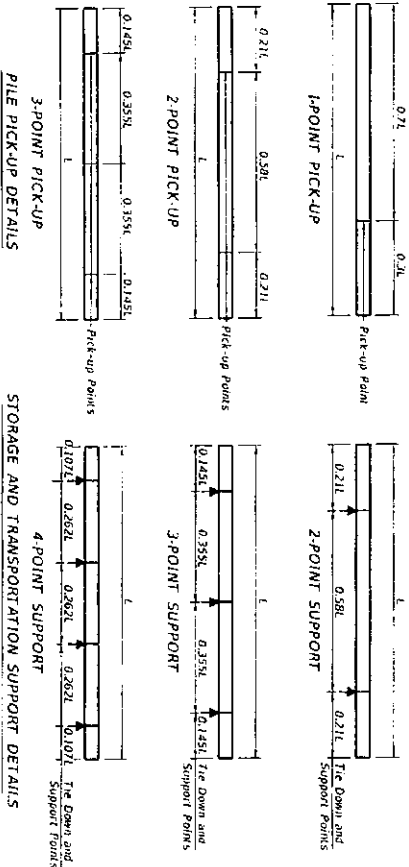
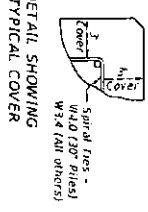
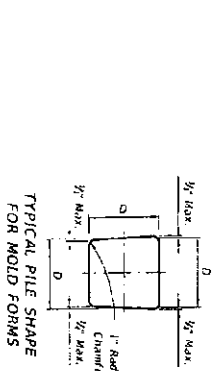
REINFORCING STEEL:
 All reinforcing steel shall meet the requirements of Specification Section 450.

PRESTRESSING STEEL:
 Prestressing steel shall be seven-wire strand, Grade 270, low-relaxation Strand II-51.

CORROSION PROTECTION OF EXPOSED STRANDS:
 For all pile ends exposed to the environment and not embedded under final conditions, protect strands in accordance with Specification Section 450.

TABLE OF MAXIMUM PILE PICK-UP AND SUPPORT LENGTHS

D = Square Pile Size (inches)	12	14	18	20	24	30	Required Storage and Transportation Detail	Pick-Up Detail
Maximum Pile Length (feet)	46	52	59	62	68	87	2, 3, or 4 point	1 Point
	69	75	85	89	98	124	2, 3, or 4 point	2 Point
	99	107	121	128	140	178	3 or 4 point	3 Point



BRIDGE DESIGN ASSOCIATES, INC.
 14-606

PALM BEACH COUNTY
 DEPARTMENT OF ENVIRONMENTAL
 RESOURCES MANAGEMENT
 2350 NORTH JUNG ROAD, SUITE 700
 WEST PALM BEACH, FLORIDA 33411-2745
 (561) 243-2100

SP 0

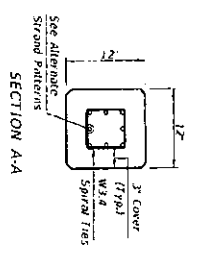
LAST REVISION 01/01/12

REVISION DESCRIPTION

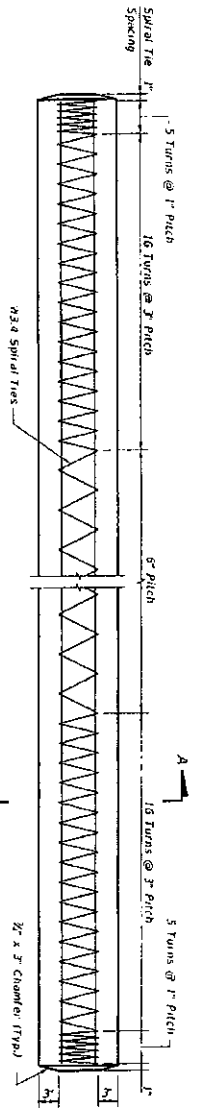
FDOT 2015 DESIGN STANDARDS

12" SQUARE PRESTRESSED CONCRETE PILE

INDEX NO. 20612 SHEET NO. 1 OF 1



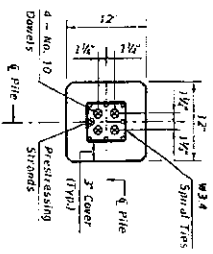
ELEVATION



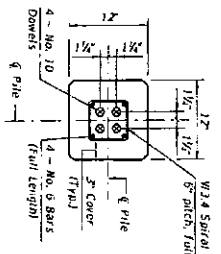
- ALTERNATE STRAND PATTERNS
- A - 0" @ 8" Grade 270 ULS at 44 kips
 - 1 - 0" @ 8" Grade 270 ULS at 20 kips
 - 2 - 0" @ 8" Grade 270 ULS at 25 kips
 - B - 1" @ 0" Grade 270 ULS at 24 kips
 - 4 - 1" @ 0" Grade 270 ULS at 23 kips
 - 12 - 1" @ 0" Grade 270 ULS at 16 kips

PILE SPICE REINFORCEMENT DETAILS

(See Drivable Unfriction Reinforced Precast Pile Splice Detail)



(See Nondrivable Unfriction Reinforced Precast Pile Splice Detail)



- NOTES:
1. Show this index with index No. 20609. Notes and details for Nondrivable Unfriction Reinforced Precast Pile Splice Detail and Drivable Unfriction Reinforced Precast Pile Splice Detail.
 2. Any of the open Alternate Strand Patterns may be utilized. The strands shall be located as follows. Place one strand at each corner and place the remaining strands equally spaced between the corner strands. The total strand pattern shall be concentric with the nominal concrete section of the pile.

BRIDGE DESIGN ASSOCIATES, INC.
 14-606
 14-606

S7.1

STATE OF FLORIDA
 DEPARTMENT OF TRANSPORTATION
 PALM BEACH COUNTY
 PARKING AND PUBLIC USE FACILITIES

DATE: 12/15/11
 DRAWN BY: J. B. BROWN
 CHECKED BY: J. B. BROWN

SCALE: AS SHOWN
 SHEET NO. 1 OF 1



PALM BEACH COUNTY
 DEPARTMENT OF ENVIRONMENTAL
 RESOURCES MANAGEMENT
 2300 NORTH U.S. HWY. 1, 4th FLOOR
 WEST PALM BEACH, FLORIDA 33411-2711
 (561) 833-4343 FAX (561) 833-2800

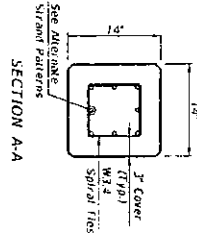
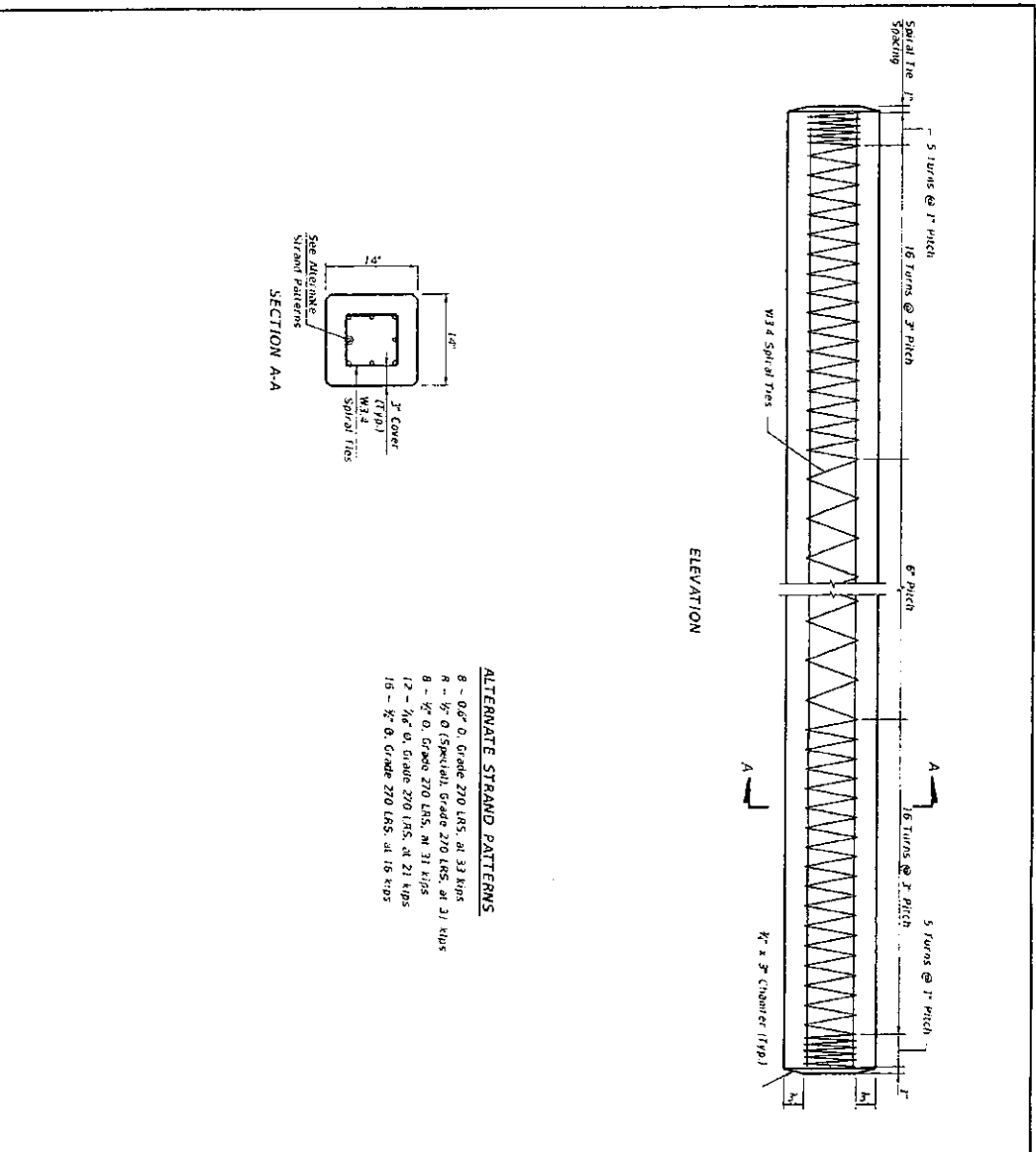
LAST REVISION 01/01/12

DESCRIPTION:

FDOT 2015 DESIGN STANDARDS

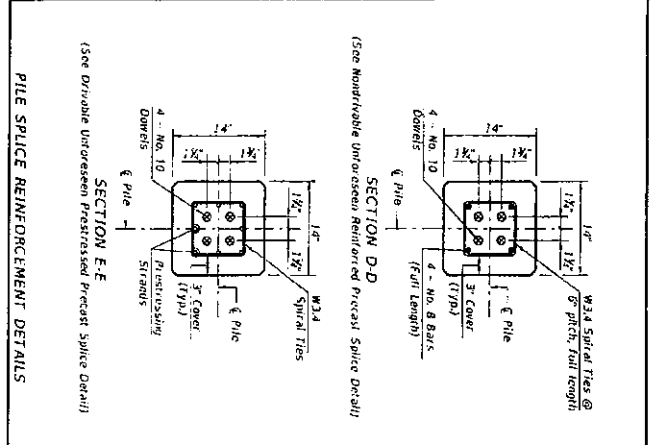
14" SQUARE PRESTRESSED CONCRETE PILE

INDEX NO. 20614 SHEET NO. 1 OF 1



ALTERNATE STRAND PATTERNS

- 8 - 0.6" Ø, Grade 270 LRS, at 33 kips
- 8 - 1/2" Ø (Special), Grade 270 LRS, at 31 kips
- 8 - 1/2" Ø, Grade 270 LRS, at 31 kips
- 12 - 1/4" Ø, Grade 270 LRS, at 21 kips
- 18 - 1/2" Ø, Grade 270 LRS, at 16 kips



PILE SPICE REINFORCEMENT DETAILS

(See Non-Drivable Undersea Reinforced Precast Splice Detail)

(See Drivable Undersea Reinforced Precast Splice Detail)

NOTES:

1. Work this index with Index No. 20600 - Notes and Details for Square Prestressed Concrete Piles and Index No. 20601 - Square Prestressed Concrete Pile Splices.
2. Any of the given Alternate Strand Patterns may be utilized. The strands shall be located as follows:
 - a. The strands shall be located at each corner and place the remaining strands evenly around the pile.
 - b. The total strand pattern shall be concentric with the nominal concrete section of the pile.

BRIDGE DESIGN ASSOCIATES, INC.
 1400 N. W. 10th Ave., Suite 200
 Fort Lauderdale, FL 33309
 14-606

STATE OF FLORIDA
 PALM BEACH COUNTY
 PARKING AND PUBLIC USE FACILITIES

DATE: 01/01/12
 DRAWN BY: [Name]
 CHECKED BY: [Name]

FLORIDA
 PALM BEACH COUNTY
 DEPARTMENT OF ENVIRONMENTAL
 RESOURCES MANAGEMENT

2900 NORTH 296 ROAD, 116 FLOOR
 WEST PALM BEACH, FLORIDA 33411-2741
 (561) 231-2400

INTERLOCAL AGREEMENT

THIS AGREEMENT, made and entered into on this 6th day of August, 2003 by and between the Town of Lake Park, a Florida municipal corporation, (the "Town"), and Palm Beach County, Florida, a political subdivision of the State of Florida, (the "County")

WITNESSETH:

WHEREAS, on March 9, 1999 the voters of Palm Beach County approved a \$150 million bond referendum for the acquisition of lands for conservation purposes; and

WHEREAS, the Lake Park Scrub Natural Area (the "Natural Area") is located within the Town of Lake Park and was designated as one of the high-priority sites to be acquired with funds from this bond referendum; and

WHEREAS, on July 14, 2000 the County acquired 58.9116 acres of the Natural Area and that acquisition was made with funds from the bond referendum; and

WHEREAS, for a public purpose the County declared approximately 5.8 environmentally disturbed acres of the Natural Area as surplus to its conservation lands program, to accomplish, in part, a more manageable boundary; and

WHEREAS, pursuant to an Interlocal Agreement executed July 11, 2000 between the Town and the County, the County conveyed to the Town approximately 2.674 acres of land in the Natural Area to be used primarily for road right-of-way for the western extension of Park Avenue and the Town conveyed to the County approximately 2.794 acres along the western boundary of the Natural Area to be added to the Natural Area to form a more manageable natural area boundary; and

WHEREAS, the above purchase and exchange and surplus actions resulted in a 52.88-acre natural area of significant biological, environmental and educational value to the Town and the County; and

WHEREAS, in August 2001 the County and the Town submitted a partnership application to Florida Communities Trust (FCT) for state Florida Forever matching funds for the acquisition of 52.88-acres of the Natural Area; and

WHEREAS, on October 14, 2002 FCT executed a Conceptual Approval Agreement (CAA) with the County and the Town outlining the terms and conditions under which state Florida Forever matching funds for acquisition of 52.88-acres of the Natural Area would be released; and

WHEREAS, the CAA contains conditions that require a project plan and a management plan to be prepared for the Natural Area, which project plan is described under Article III - Responsibilities of the County, Paragraph 17 (the "Project Plan") and which management plan is

described under Article III - Responsibilities of the County, Paragraph 18 (the "Management Plan"); and

WHEREAS, the acreage included in the FCT Project Site was subsequently reduced to 50.08 acres at the request of FCT; and

WHEREAS, on January 25, 2002 the County purchased an additional 1.87 acres adjacent to and now a part of the Natural Area and that acquisition was made with funds from the bond referendum; and

WHEREAS, it is in the best interests of the residents and citizens of the Town and the County for the entire 53.75-acre Natural Area in County ownership to be managed by the County in cooperation with the Town as part of the County's system of natural areas, in order to preserve the site in its natural state for future generations as a nature preserve with intact native Florida ecosystems; and

WHEREAS, the Town and the County wish to establish management responsibilities for the Natural Area; and

WHEREAS, the execution of this Agreement is in the best interest of both governmental units and the residents and citizens of same; and

WHEREAS, the Florida Interlocal Cooperation Act of 1969 (Section 163.01, Florida Statutes) allows governmental units to enter into intergovernmental agreements to make the most efficient use of their powers by enabling them to cooperate with each other on a basis of mutual advantage.

NOW, THEREFORE, in consideration of the mutual covenants, agreements and restrictions set forth herein, the parties to this Agreement agree as follows:

ARTICLE I - IN GENERAL

1. The parties hereto acknowledge and agree that the WHEREAS clauses set forth above are true and correct, and are fully incorporated into this Agreement.

2. The County and the Town agree that the County has acquired, and shall manage, in cooperation with the Town and, in coordination with the management of all natural areas acquired by the County, in a manner to protect ecosystems and populations of listed species throughout the County, the real property located within the corporate limits of the Town of Lake Park, Florida, hereinafter known as the "Lake Park Scrub Natural Area". This real property is more particularly described in Exhibit A attached hereto and made a part hereof (the "Natural Area").

3. The County and the Town agree that the name of the Natural Area may be changed by the County's Natural Area Management Advisory Committee (NAMAC) during its review of the Management Plan and that any such change in name will not change any term or condition of this

Agreement. If the name is not changed by NAMAC, then the Natural Area will continue to be known as the "Lake Park Scrub Natural Area" and identified as such on all signs, literature and advertisements. If the name is changed by NAMAC, then the County and Town agree that the Natural Area will be known by the name given to it by NAMAC and identified as such on all signs, literature and advertisements.

4. It is the intent of the parties that the Natural Area shall be used solely as a nature preserve, to provide scientific and educational benefits, and to provide passive recreational opportunities that are compatible with the conservation, protection and enhancement of the Natural Area for residents of, and visitors to the Town and the County. The Natural Area shall be kept in its natural state, such that present and future generations will be able to experience the natural values currently exhibited on the property, acts of God or other events beyond the control of the County and the Town notwithstanding. To this end, the County or the Town may make and maintain physical improvements to the property, such as, fencing, observation platforms, firebreaks/management roads, nature trails, and hiking trails; but only as appropriate for passive resource-based uses and only as provided for in the Management Plan or Paragraph 5 of this Agreement.

5. The County, in cooperation with the Town, shall manage the Natural Area as provided for in the Management Plan. Management activities that may take place prior to approval of the Management Plan are securing the Natural Area by installing perimeter fencing and gates; posting signs to discourage unauthorized activities, such as the dumping of trash and off-road vehicle usage; removal of trash and invasive vegetation from the Natural Area; and permitting limited public access to the Natural Area for passive recreational activities, environmental education and scientific research. Long-term management of the Natural Area shall include controlling invasive vegetation and exotic or nuisance animals, monitoring listed plant and animal species, and prescribed burning and other mechanical or chemical methods of maintaining healthy natural community structure and function in accordance with the Management Plan.

6. The parties shall use their best efforts to prevent the unauthorized use of the Natural Area or any use not compatible with the management of the site as a natural area or nature preserve, or any use not provided for in the approved Management Plan.

7. The Natural Area shall be open to the public. Facilities shall be developed and operated in a manner that allows the general public reasonable access for observation and appreciation of the significant natural resources within the Natural Area without causing harm to those resources.

8. In the management and maintenance of the Natural Area, each party shall be responsible for its own actions and negligence.

9. This Interlocal Agreement shall be filed with the Clerk of the Circuit Court of Palm Beach County, Florida, in accordance with applicable law.

10. This Interlocal Agreement shall be deemed to be the sole agreement between the parties related to the Natural Area and no prior agreements or other prior writings shall supersede that which is contained in this Interlocal Agreement.

11. For the purposes of this Interlocal Agreement, notices to the other party shall be deemed sufficient when addressed to the following address and deposited in the United States Mail:

- a. Mayor, Town of Lake Park
535 Park Avenue
Lake Park, Florida 33403

With copy to :
Manager, Town of Lake Park
535 Park Avenue
Lake Park, Florida 33403

- b. Palm Beach County
Department of Environmental Resources Management
3323 Belvedere Road, Bldg. 502
West Palm Beach, Florida 33406-1548

With copy to:
County Attorney's Office
Palm Beach County
301 N. Olive Avenue
West Palm Beach, Florida 33401

ARTICLE II - JOINT RESPONSIBILITIES

12. The locations of public access points and any restrictions on access will be jointly agreed to by the County and the Town and described in the Management Plan.

13. Subject to annual appropriations by the County's Board of County Commissioners and the Town Council of the Town of Lake Park, personnel time and expertise, professional services contracts, equipment, materials and supplies for the ongoing, site-specific management of this site shall be provided by both parties. A detailed division of responsibilities for the management of the Natural Area shall be provided in the Management Plan. The County may apply for any applicable funds available from the State for management purposes, and shall minimize management costs through the involvement of volunteers.

14. The Natural Area shall be identified as being publicly-owned and operated as a passive, natural resource-based public outdoor recreational site in all literature and advertising.

15. Both parties shall encourage students, residents and visitors to use the Natural Area for educational and passive recreational purposes.

16. Should any unforeseen events or activities, either natural or man-made, severely limit or eliminate the natural values presently on the Natural Area, the future of the Natural Area will be determined by the County in consultation with the Town in the manner provided for in the Management Plan.

ARTICLE III - RESPONSIBILITIES OF THE COUNTY

17. The County shall be primarily responsible for development of the Project Plan as specified in Section V of the CAA, and prescribed by Rules 9K-7 and 9K-8.011, Florida Administrative Code.

18. The County shall be primarily responsible for development of the Management Plan for the Natural Area. The Management Plan shall be developed to meet all of the requirements specified in Sections IV, VI, VII, VIII, IX and X of the CAA, and prescribed by Rule 9K-7.01, Florida Administrative Code. The Management Plan shall address the entire Natural Area including any areas that are not part of the FCT Project Plan. The Management Plan shall address the treatment of any remnants of prior use on the site. The County shall seek input from the Town in development of the Management Plan and prior to presentation of a draft of the Management Plan to NAMAC. In addition, any subsequent scheduled revisions of the Management Plan shall be made in cooperation with the Town. The Management Plan and any scheduled revisions will be subject to approval by the Palm Beach County Board of County Commissioners, and, should FCT provide funds reimbursing a portion of the acquisition costs, subject to approval by FCT, as well.

19. The County shall secure the Natural Area with perimeter fencing, gates and signage to discourage unauthorized activities, such as the dumping of trash and off-road vehicle usage, while permitting limited public access to the Natural Area for passive recreational activities, environmental education and scientific research. This may occur prior to approval of the Management Plan. The County shall maintain these fences, gates and signs.

20. The County shall perform the initial management activities of removing trash and invasive vegetation from the Natural Area. These activities may occur prior to approval of the Management Plan.

21. The County shall make and pay for physical improvements to the Natural Area including those that would encourage public use of the Natural Area as a nature preserve. These improvements shall be subject to a budget approved by the Palm Beach County Board of County Commissioners and to approval by the Town Council as required for public use facilities located on property within the Town and as required by the Town Code. These physical improvements may include, but are not limited to, fencing, hiking and interpretive trails, educational displays (kiosks and informational signs), and observation platforms. The physical improvements will be limited to those included in the Management Plan and shall not be constructed prior to approval of the Management Plan, except as otherwise provided for in Paragraph 5 of this Agreement. The County shall use its best effort to construct these facilities, taking into consideration primarily the sensitivity and needs of the biological communities and secondarily the intended research, educational and recreational uses of the Natural Area.

22. The County shall maintain all trails, kiosks and observation platforms constructed within the Natural Area. The County shall maintain all kiosk displays, trail guides, fact sheets, brochures and other educational materials describing the natural resources, uses, and joint management of the Natural Area.

23. The County shall identify a County employee as a contact person to interact with the Town in planning for and managing the Natural Area.

24. The County shall identify a County employee as the public contact person to coordinate group usage and research on the Natural Area and to answer public inquiries about the site.

25. The County Sheriff shall assume primary responsibility for public safety and law enforcement on the Natural Area as long as the Town's law enforcement is provided through the County Sheriff.

ARTICLE IV - RESPONSIBILITIES OF THE TOWN

26. The Town hereto agrees to review its zoning ordinances and comprehensive plan and to take such actions as may be necessary to designate the Natural Area with a conservation land use and complimentary zoning designation consistent with its intended use as a nature preserve. Amendment to the Town's comprehensive land use plan and zoning ordinance shall be proposed at the next available comprehensive plan or zoning amendment cycle, respectively. A copy of the approved amendment shall be submitted to the County within thirty (30) days of the approval of the amendment by the appropriate governing entity. A copy of any approved comprehensive plan or zoning amendment shall also be submitted to the FCT within thirty (30) days of the approval of the amendment by the appropriate governing entity.

27. The Town agrees to provide weekly garbage pick-up for trash receptacles located in the parking areas in the Natural Area.

28. The Town shall assume responsibility for the daily opening and closing of the main entry gate providing public access to the Natural Area.

29. Should the Town establish its own law enforcement service, the Town shall assume primary responsibility for public safety and law enforcement on the Natural Area, with the County Sheriff's Office as backup.

30. The Town shall provide regular maintenance (e.g., mowing and weed control) of the perimeter firebreak and any area immediately outside the perimeter fence of the Natural Area that is the jurisdictional responsibility of the Town.

31. The Town shall promptly execute and provide the County with all documents required of the Town pursuant to FCT requirements for the Project Plan and the Management Plan.

32. During volunteer activities, the Town agrees to assist the County, subject to the availability of Town funds, staff and equipment, in maintenance activities, including removal of invasive vegetation, trash and debris. The Town also agrees to assist the County with periodic prescribed burns at the Natural Area in accordance with the Management Plan.

33. The Town agrees to expeditiously review, through appropriate Town departments and boards, any engineering design plans which cover the Natural Area and require approval by the Town. The Town also agrees to waive any fees required for construction or management activity permits issued by the Town for the Natural Area.

34. The Town agrees that in reviewing any proposed changes to, uses of, or activities on, real property immediately adjacent to the Natural Area, it shall consider the protection of the biological communities on the Natural Area and the potential for adverse impacts to the species present.


35. The Town shall identify a Town employee as the contact person to interact with the County in planning for and managing the Natural Area.

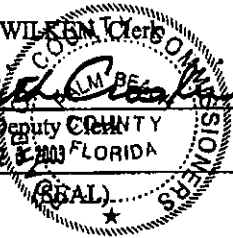
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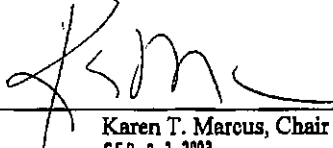
WHEREFORE, the parties hereto have set their hands and seals on the day set forth next to their signatures.

ATTEST:

PALM BEACH COUNTY, FLORIDA, BY
ITS BOARD OF COUNTY COMMISSIONERS

DOROTHY H. WILSON, Clerk
BY: 
Deputy COUNTY CLERK
PALM BEACH COUNTY, FLORIDA
DATE: SEP 2 3 2003



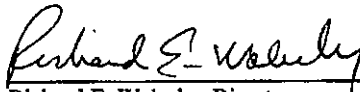
BY: 
Karen T. Marcus, Chair
DATE: SEP 2 3 2003

R2003 1551

APPROVED AS TO FORM AND
LEGAL SUFFICIENCY:

APPROVED AS TO TERMS AND
CONDITIONS:

BY: 
Heidi Juhl
Assistant County Attorney


Richard E. Walesky, Director
Palm Beach County Dept of
Environmental Resources Management

ATTEST:

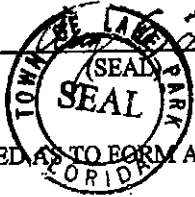
TOWN OF LAKE PARK, FLORIDA BY
ITS COUNCIL

BY: Carol Simpkins

BY: Paul Castro
Paul Castro, Mayor

DATE: 2003

DATE: August 6, 2003



APPROVED AS TO FORM AND LEGAL SUFFICIENCY:

BY: Thomas J. Baird
Thomas J. Baird, Town Attorney

DATE: 7-20-03

EXHIBIT A

LEGAL DESCRIPTION OF LAKE PARK SCRUB NATURAL AREA

A parcel of land lying in Section 20, Township 42 South, Range 43 East, Palm Beach County, Florida, and being more particularly described as follows:

Commencing at the West one-quarter (W ¼) corner of said Section 20, THENCE South 01°21'11" West, along the West line of said Section 20, a distance of 1350.73 feet to a point at the intersection of the North line of the South half (S1/2) of the Southwest one-quarter (SW ¼) of said Section 20; THENCE South 88°29'41" East, along said North line of the South half (S ½) of the Southwest one-quarter (SW ¼), a distance of 845.77 feet; THENCE South 01°22'57" West, a distance of 29.99 feet; THENCE South 88°29'35" East, a distance of 3.34 feet; THENCE South 01°18'43" West, a distance of 60.01 feet to the POINT OF BEGINNING; THENCE South 88°29'42" East, a distance of 292.46 feet to the beginning of a curve whose radius point bears North 01°30'18" East, a distance of 330.00 feet; THENCE East along the arc of said curve through a central angle of 77°47'07" a distance of 448.01 feet; THENCE North 13°43'11" East, a distance of 247.46 feet to the beginning of a curve whose radius point bears South 76°16'49" East, a distance of 270.00 feet; THENCE Northeast along the arc of said curve through a central angle of 38°22'05" a distance of 180.81 feet; THENCE continue East along said curve, through a central angle of 47°42'30", a distance of 224.82 feet; THENCE South 80°12'14" East, a distance of 683.41 feet; THENCE South 20°55'38" East, a distance of 129.75 feet; THENCE South 69°04'22" West, a distance of 293.55 feet to a point on the aforesaid Northeasterly line of the old Drake Lumber Company railroad; THENCE South 49°56'03" East, along said Northeasterly line a distance of 353.36 feet to a point on the Southerly RIGHT-OF-WAY line of Industrial Avenue; THENCE North 69°06'22" East, departing aforesaid Northeasterly line of the old Drake Lumber Company railroad and along the Southerly RIGHT-OF-WAY line of Industrial Avenue, a distance of 130.30 feet to the Northwest corner of that certain parcel of land as described in DEED BOOK 699, at PAGE 533 of the public records of Palm Beach County, Florida; THENCE South 20°55'38" East, a distance of 67.00 feet; THENCE North 69°06'22" East, a distance of 128.00 feet; THENCE North 20°55'38" West, a distance of 67.00 feet to the aforesaid Southerly RIGHT-OF-WAY line of Industrial Avenue and the Northeast corner of that certain parcel of land as described in DEED BOOK 699, at PAGE 533 of the public records of Palm Beach County, Florida; THENCE North 69°07'42" East, along said Southerly RIGHT-OF-WAY line a distance of 145.41 feet to a point on the West line of that certain RIGHT-OF-WAY as described in OFFICIAL RECORD BOOK 1541, at PAGES 43 THROUGH 44, public records of Palm Beach County, Florida, said point also being the point of curvature of a curve concave to the Southwest, having a radius of 12.00 feet; THENCE departing said Southerly RIGHT-OF-WAY line and along said West line, along the arc of said curve, through a central angle of 89°56'40", a distance of 18.84 feet to the point of tangency; THENCE South 20°55'38" East, a distance of 232.68 feet; thence South 69°04'22" West departing said West RIGHT-

X 299.8

OF-WAY line, a distance of 146.00 feet; THENCE South 20°55'38" East, a distance of 186.00 feet; THENCE North 69°04'22" East, a distance of 146.00 feet to a point on the aforesaid Westerly RIGHT-OF-WAY line of that certain deed recorded in OFFICIAL RECORDS BOOK 1541, PAGE 43, public records of Palm Beach County, Florida; THENCE South 20°55'38" East, along said Westerly RIGHT-OF-WAY line, a distance of 524.99 feet to a point on the Southwesterly line of the aforesaid old Drake Lumber Company railroad; THENCE North 49°56'03" West, departing said Southwesterly line of said deed, and along said Southwesterly line of the old Drake Lumber Company railroad, a distance of 921.25 feet; THENCE South 69°03'57" West, departing said Southwesterly line, a distance of 268.32 feet to the Northwest corner of that certain parcel of land as described in ORB 3809, PAGE 283, public records of Palm Beach County, Florida; THENCE South 01°18'46" West, along the West line of said parcel, a distance of 1060.37 feet to the North line of that certain 73 foot RIGHT-OF-WAY for Silver Beach Road as described in OFFICIAL RECORD BOOK 10644, PAGE 971, public records of Palm Beach County, Florida; THENCE North 88°30'30" West, departing said West line and along said North RIGHT-OF-WAY line, a distance of 1481.85 feet; THENCE North 01°18'43" East, departing said North line, a distance of 1,152.53 feet to the POINT OF BEGINNING.

917.56

LESS AND EXCEPTING THE FOLLOWING DESCRIBED PARCEL:

Commencing at the intersection of the old Drake Lumber Company railroad line and the Westerly right-of-way line of Old Dixie Highway; THENCE North 49°56'03" West, along the Southwesterly line of said old Drake Lumber Company railroad, a distance of 1121.64 feet to the POINT OF BEGINNING; THENCE South 69°06'43" West, departing said Southwesterly RIGHT-OF-WAY line a distance of 237.64 feet; THENCE North 20°53'17" West, a distance of 279.30 feet; THENCE North 69°06'43" East, a distance of 138.89 feet; THENCE South 26°22'53" East, a distance of 228.66 feet; THENCE North 69°04'22" East, a distance of 48.41 feet to the aforesaid Southwesterly line of the old Drake Lumber Company railroad, THENCE South 49°56'03" East, along said Southwesterly line, a distance of 59.16 feet to the POINT OF BEGINNING.

LESS AND EXCEPTING THE FOLLOWING DESCRIBED PARCEL:

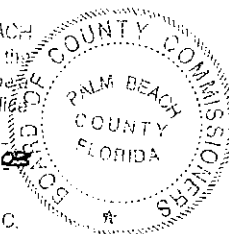
Commencing at the Northeast corner of Lot 1, Block D, said point also being the Northeast corner of the Plat of Tri-City Industrial Park, recorded in PLAT BOOK 28, PAGE 100 in the public records of Palm Beach County, Florida; THENCE South 69°03'57" West along the North line of said Lot 1 and its Westerly extension, a distance of 268.32 feet; THENCE North 40°03'50" West, a distance of 157.08 feet to a point on the South line of the property described in OFFICIAL RECORD BOOK 3609, PAGE 283 public records of Palm Beach County, Florida; THENCE North 69°06'43" East along said South line, being the South RIGHT-OF-WAY line of Industrial Avenue, a distance of 237.64 feet; THENCE North 68°01'33" East along said South RIGHT-OF-WAY line, a distance of 113.22 feet; THENCE North 69°06'22" East along said South RIGHT-OF-WAY line, a distance of 130.30 feet; THENCE South 20°55'38" East, a distance of 67.00 feet; THENCE North 69°06'22" East, a

57 distance of 128.00 feet; THENCE North 20°55'38" West, a distance of 67.00 feet to a point on said South RIGHT-OF-WAY line; THENCE North 69°07'42" East along said South RIGHT-OF-WAY line, a distance of 145.41 feet to the beginning of a curve whose radius point bears South 20°53'18" East, a distance of 12.00 feet; THENCE Southeast along the arc of said curve through a central angle of 89°56'40" a distance of 18.84 feet to a point on the West RIGHT-OF-WAY line of Old Dixie Highway; THENCE South 20°55'38" East along said RIGHT-OF-WAY line, a distance of 232.68 feet; THENCE South 69°04'22" West, a distance of 146.00 feet; THENCE South 20°55'38" East, a distance of 186.00 feet; THENCE North 69°04'22" East, a distance of 146.00 feet to a point on said West RIGHT-OF-WAY line; THENCE South 20°55'38" East along said West RIGHT-OF-WAY line, a distance of 534.99 feet to a point on the East line of said Plat of Tri-City Industrial Park; THENCE North 49°56'03" West along said East line, a distance of 921.25 feet to the POINT OF BEGINNING.

TOGETHER WITH THE FOLLOWING DESCRIBED PARCEL:

Commencing where the Dixie Highway intersects Dixie Way in Kelsey City, measure 464.35 feet in a Southerly direction along the center line of Dixie Highway; THENCE 90° Westward to the intersection of the RIGHT-OF-WAY of the Drake Lumber Company railroad to the POINT OF BEGINNING; THENCE in a Northwesterly direction along the RIGHT-OF-WAY of said railroad, a distance of 296.5 feet; THENCE Northeasterly making an angle (included) of 61° with the last named course, a distance of 353.76 feet; THENCE 90° to the Southeast, parallel to the Dixie Highway, a distance of 159.35 feet; THENCE 90° to the Northeast, a distance of 82.0 feet; THENCE 90° to the Southeast, a distance of 100.0 feet; THENCE 90° to the Southwest, a distance of 292.0 feet to the POINT OF BEGINNING.

STATE OF FLORIDA, COUNTY OF PALM BEACH
DOROTHY H. WILKEN, ex-officio Clerk of the
Board of County Commissioners certify this to be a
true and correct copy of the original filed in my office
on 9/23/2003
DATED at West Palm Beach, FL on 10/6/2003
DOROTHY H. WILKEN, Clerk
By: Judith Crozier D.C.





MANAGEMENT PLAN FOR

LAKE PARK SCRUB

NATURAL AREA

FCT PROJECT # 01-036-FF1 - LAKE PARK SCRUB NATURAL AREA

May 2004

Prepared by:

Palm Beach County
Department of Environmental Resources Management
3323 Belvedere Road, Bldg. 502
West Palm Beach, Florida 33406-33418

BCC 08-17-2004

THE PALM BEACH COUNTY NATURAL AREAS SYSTEM

MANAGEMENT STATEMENT

The Palm Beach County Natural Areas System is comprised of those environmentally sensitive lands that are owned or leased by the County and managed as natural areas by the County's Department of Environmental Resources Management. These natural areas were selected on the basis of their biological characteristics and were acquired to preserve the rare and diverse native ecosystems present on these sites and the endangered, threatened, and rare species of plants and animals that live there.

Purpose and Goals of the Natural Areas System

- o The purpose of the Natural Areas System is to protect historic native ecosystems and their biological diversity throughout Palm Beach County. Examples of each ecosystem shall be acquired and managed to preserve in perpetuity the full complement of plants and animals characteristic of that ecosystem. The management of each natural area shall be coordinated with that of the other natural areas in the system to support existing populations and to reflect in perpetuity the subtropical biological diversity characteristic of Palm Beach County in pre-development times.*
- o The wilderness values of each natural area shall be preserved.*
- o Where a natural area currently is physically or biologically connected to another publicly- or privately-owned natural area, attempts shall be made to maintain that connection through additional land acquisitions, regulatory preserve set-asides, conservation easements, interlocal agreements, and other appropriate actions.*

Management Considerations

- o The natural areas in the system shall be available to the public for passive, resource-based recreation, environmental education, and scientific research. Public use shall not take precedence over ecosystem protection. Proposed public uses shall take into account the specific environmental conditions of each natural area, and may be modified in response to changing environmental conditions.*
- o Facilities for passive public use shall be provided on each site. These facilities shall be designed to have a minimal impact on native ecosystems and shall be located in previously disturbed areas as much as possible.*
- o Facilities, structures, or roads other than management or access roads that would*

BCC 08-17-2004

cause fragmentation of a natural area shall not be permitted within a natural area. The establishment of compatible land uses and activities on lands adjacent to a natural area shall be encouraged.

- o To the extent possible, fire-maintained native ecosystems shall be burned at the appropriate interval and season, as determined by historical data, to maintain those ecosystems. Burns shall be conducted by trained personnel, using a prescribed burn plan that addresses safety and smoke concerns. The seasonality of prescribed burns may be adjusted for initial fuel reduction burns and site safety constraints.*
- o Where ecosystems within a natural area have been impacted by invasive, non-native plant infestations, land-clearing activities, drainage, or flooding, attempts shall be made to restore those ecosystems to their previous condition or to a natural ecosystem best suited to the existing conditions on the natural area.*
- o The special requirements of listed species shall be considered in developing management strategies for each natural area, but management for an individual species shall not take precedence over management of an entire ecosystem or be allowed to have a detrimental impact on that ecosystem's complement of species.*

Management Plan Development

- o A specific management plan, based on biological, hydrological, and historical information and interpretation of this information, shall be written for each natural area that takes into account the environmental conditions found on that natural area.*
- o Each management plan shall address the strategies and techniques that will be used to manage and restore native ecosystems, to protect listed species, to control the occurrence of invasive, non-native plants and animals, to allow for appropriate public access, and to prevent unauthorized access and activities.*
- o Each plan shall be reviewed by the Palm Beach County Natural Areas Management Advisory Committee (NAMAC), a citizens' advisory board, and the public shall be invited to comment on the plan at a public hearing held by NAMAC in the community in which the site is located. Following NAMAC review of the comments received, the plan shall be sent to the Board of County Commissioners for approval.*
- o Each approved plan shall be subsequently reviewed at least every five years by NAMAC.*

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EXECUTIVE SUMMARY

The Lake Park Scrub Natural Area is located in the Town of Lake Park in Palm Beach County, Florida. This 56.51-acre site in the northeastern portion of the county has been acquired as a natural area by Palm Beach County. The natural area was purchased in July 2000 and January 2001. Funds were provided from the Palm Beach County Conservation Lands Bond Issue Referendum of March 9, 1999. Matching funds for the acquisition have been approved by the Florida Communities Trust through its Florida Forever Program. The primary purpose of acquiring this natural area is to preserve important remnants of high-quality scrub, scrubby flatwoods, and mesic flatwoods vegetation communities. The secondary purposes are to provide for passive recreation, environmental education, and scientific research.

The acquisition of the project site and associated activities will assist the Town of Lake Park and Palm Beach County to implement several policies within their respective Comprehensive Plans. The natural area is located in the Eastward Hol Corridor, and a low income community. Portions of the site are located in a Community Redevelopment Area, as designated by the Town in 1996. All of these areas are considered to be priority investment areas.

Scrub and scrubby flatwoods are the predominant natural communities found on the site, with smaller areas of mesic flatwoods, former wet prairie and disturbed scrub communities present. Scrub is one of the rarest natural communities in the state of Florida. Scrubby flatwoods also are considered to be very rare in the state. The acquisition and management of this site preserves important habitat for rare plant and animal species, including six plant and three animal species that have been listed by at least one government agency or nonprofit environmental organization.

Fire exclusion, off-road vehicle (ORV) trespass, exotic plant invasions, soil removal, industrial development, hydrological modifications, placement of fill materials, illegal dumping and construction of adjacent roads and buildings have all impacted this site. The managers of this site also face special challenges unique to fragmented natural communities located within urban and suburban environments. In recognition of the significance of the natural vegetation communities on the site, public use must remain limited to passive, non-consumptive recreation, and environmental education, and scientific study. Footpaths, a handicapped-accessible nature trail and wildlife observation platform, and interpretive displays will provide a valuable opportunity for the public to observe the site's distinctive natural communities and species, while also imparting an appreciation of their biological uniqueness. Scientific research will include monitoring of populations of rare and/or endemic species and evaluation of restoration and management activities.

This management plan has been developed to achieve two major goals: 1) to provide specific information required by the Florida Communities Trust's Florida Forever Program and 2) to provide additional information and management recommendations so that management activities can begin promptly. A stewardship report will be provided to the Florida Communities Trust each year. The management plan will be reviewed at least once every five years by the Palm Beach County Natural Areas Management Advisory Committee and revised as necessary on the basis of new information, improvements in management techniques, or other relevant factors.

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1. INTRODUCTION

This management plan is intended to provide guidance in the future use and management of the entire Lake Park Scrub Natural Area. The natural area contains 56.51 acres and was acquired in July 2000 and January 2001. Funds were provided from the Palm Beach County Conservation Lands Bond Issue Referendum of March 9, 1999. The County submitted a grant application to the Florida Communities Trust (FCT) for state matching funds from the Florida Forever program for 52.88 acres of the natural area. FCT has given conceptual approval for these matching funds. Negotiations for the acquisition and other acquisition-related services were provided by the County's contractor, The Nature Conservancy (TNC). This management plan was developed to ensure that the Lake Park Scrub Natural Area (FCT Project 01-038-FF1) will be developed in accordance with the Grant Award Agreement (Appendix J), and in furtherance of the purpose of the grant application.

The acquisition of the Lake Park Scrub Natural Area represents part of a much larger effort to acquire the most important privately-held natural areas left in Palm Beach County (Palm Beach County Department of Environmental Resources Management [ERM] 2001). The County endorsed the concept of a Wilderness Islands Program, which included an inventory of the remaining high-quality natural areas (Iverson and Austin 1998). Based on this study and recommendations of citizens' advisory committees, 14 of the 39 sites identified in the study were given high priority for acquisition by the County's Environmentally Sensitive Lands Acquisition Advisory Committee in 1990. The Lake Park Scrub was identified in this original inventory, but was not selected as a priority acquisition site. On March 12, 1991, the voters of Palm Beach County approved a \$100 million bond referendum to purchase environmentally sensitive lands. In 1998, the County's Environmentally Sensitive Lands Acquisition Selection Committee (ESLASC) identified 38 un-acquired environmentally sensitive land sites that were to be targeted for acquisition under the proposed \$150 million Conservation Lands Bond Referendum. The Lake Park Scrub was one of the 38 sites. The referendum was approved by the voters on March 9, 1999, and the project site was acquired a little more than one year later.

This management plan is organized in eleven sections dealing with specific topics. Associated appendices, figures, and tables are attached and referenced where applicable in each section. Common names are used in the text for species recorded on the natural area. Scientific names of plants are listed in Appendix B; those of animals are listed in Appendix C. The scientific name is used in the text when a unique common name does not exist for the species, or the species has not been recorded for the project site.

1.1 SITE LOCATION

The Lake Park Scrub Natural Area is located approximately two miles from the Atlantic Ocean and one mile from the Lake Worth Lagoon and Atlantic Intracoastal Waterway (ICW). It is located in the Town of Lake Park, which is in a coastal portion of northeastern Palm Beach County. The southern boundary of the site is Silver Beach Road, a two-lane local arterial road that is the boundary between the Town and the City of Riviera Beach to the south. The western boundary of the site is undeveloped light industrial land that has been purchased by a sprinkler-manufacturing company. The northern boundary is formed by the right-of-way for the future extension of Park Avenue. The eastern boundary is comprised of the Town public works facility, surplus County-owned land, and the Troop and Thousand of Parts automobile junkyards (Figure 1).

Other nearby properties to the natural area include the EVI emergency vehicle fabrication facility, the Maschmayer concrete plant, MAACO Auto Painting, Kelsey Business Park and other industrial, warehouse, and commercial facilities to the north; industrial buildings in the Tri-City Industrial Park along Miller and Newman roads to the east; and the Acrehome Park subdivisions and the Hurst Chapel AME Church in Riviera Beach to the south.

1.2 HISTORY

The Lake Park Scrub Natural Area historically encompassed both the coastal scrub ridge that runs the length of Palm Beach County, and an inland slough system that separated the ridge from the broad expanse of pine flatwoods to the west. Just north of the natural area, the coastal scrub ridge has one of its few gaps, and the ridge is largely missing from the present-day location of the Village of North Palm Beach. The inland slough system was separated from Lake Worth by a low ridge in the gap area, but this ridge would be overtopped during major storm events. Otherwise, the water from the inland slough flowed northwards through sawgrass marshes until it reached Lake Worth Creek, which emptied into the Loxahatchee River. These sawgrass marshes were considered prime farm land if they were drained.

The first major human disturbance in the vicinity of the natural area was the construction of Henry Flagler's Jacksonville, St. Augustine and Indian River railroad just east of the site. This railroad, known today as the Florida East Coast (FEC) Railway, reached West Palm Beach in 1894, and was constructed next to the natural area during the same year. The arrival of the railroad stimulated development and land speculation in the areas adjacent to it. In the late 1890s, a land company dug a ditch through the low ridge north of the natural area to connect the inland marshes to Lake Worth. The ditch was called Dimick's Ditch after one of the principals in the land company. A torrent of water rushed out through the shortcut ditch from the marsh system into Lake Worth, scouring the ditch and creating meanders that made the ditch look like a natural waterway. A local resident would later promote calling the ditch "Earman River" after himself, and he may have possibly extended the ditch. An delta formed from eroded sand where the ditch entered Lake Worth. The ditch was very effective in draining the sawgrass marshes adjacent to it and a farming settlement called Prosperity sprang up on the drained mucklands.

In the late 1890s, the area that would become the present-day Town of Lake Park was known as Silver Beach (Gooding 1990). The scrub vegetation came down to the shores of Lake Worth in this location, creating a white sandy beach. While sand also drifted southwards from the erosion deltas of Dimick's Ditch and the Florida East Coast Canal (present-day Atlantic Intracoastal Waterway) farther to the north, adding to the white sand beach. When a channel for the Florida East Coast Canal was dredged through Lake Worth in 1898, some of that spoil may also have washed up at Silver Beach. Despite the attractive name, nobody actually lived in the Lake Park area until the 1920s.

The first development occurred to the south, in present-day Riviera Beach. In 1883, Judge Allen Heyser, built a home in the vicinity of the present-day Port of Palm Beach. The house grew into the Oak Lawn Hotel, and a settlement known as Oak Lawn grew up around it. The area was given a post office in 1889, and Judge Heyser changed the name to Riviera in 1893 when a visitor referred to the shores of Lake Worth as the "Riviera of America" (Brink 1976). Several subdivisions were platted in the Riviera area in the 1910s,

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including Acrehome Park, which came within one-half mile of the southwestern corner of the natural area. This subdivision stretched southward on a low narrow scrub ridge for nearly a mile, and was accessed by Acrehome Boulevard (present-day Avenue S) and Center Street (present-day 28th Street). Currie Investments platted the subdivision, which consisted of long, narrow, nearly one-acre lots averaging 65 by 635 feet and targeted to African-Americans. The odd lot size was not popular and the lots did not sell well.

In 1911, Palm Beach County had been newly formed from Dade County and the County Commission authorized construction of a shutoff "main line county road" that would run north-south through the county in the vicinity of the FEC Railway tracks. This 8-foot-wide road was built just west of the FEC tracks on the east side of the natural area. In 1915, an organization known as the Dixie Highway Association was formed in Chattanooga, Tennessee. It was the brainchild of Carl Fisher, a backer of the Lincoln Highway and the Indianapolis Motor Speedway. The association promoted highways to connect the Midwest and the South. Two north-south mainlines were established with numerous cross-connections. The State of Florida joined the association and was soon busy establishing the Dixie Highway East from Jacksonville to Miami, and the Dixie Highway West from Tallahassee through central Florida to Arcadia, where it swung west to Ft. Myers and then back southeast to Miami (Droz 2001).

Existing roads, like the County main line road, were incorporated into the Dixie Highway system. It is not known what the County road was called prior to 1915, but since 1915 it has been called the Dixie Highway. According to Linehan (1980) the State was widening and improving Dixie Highway around 1916. The Dixie Highway system was completed in 1927 and the association was disbanded. Most of the roads were designated as parts of the U.S. Highway system established in the mid-1920s, such as U.S. Highway 1 (Droz 2001). In areas where the U.S. Highways were constructed on different routes from the Dixie Highway, such as the natural area, the segments of the Dixie Highway retained their identity, but gradually became "Old" Dixie Highway.

The new road, the existing railroad, and the high and dry land with a white sand beach made the Lake Park vicinity an attractive area for development. Harry Kelsey came to Palm Beach in 1919 to recover from a bout of pneumonia. He was the president of Waldorf Systems, a Boston-based chain of 112 restaurants, bakeries, and commissaries. He liked what he saw and bought the land now occupied by Lake Park, North Palm Beach, and the old section of Palm Beach Gardens. His land company, East Coast Finance Corporation, would eventually control 100,000 acres of land between Okeechobee Road and Jupiter (Gooding 1990). Kelsey hired the Olmstead Brothers, designers of New York's Central Park, to lay out the proposed municipality of Kelsey City, the predecessor of the Town of Lake Park. Kelsey City was the first zoned city in Florida, with separate residential, commercial, and industrial sections. The plat for the city was recorded in 1921 with 25-foot-wide lots. The area west of the FEC railroad tracks containing the natural area was the industrial section (Gooding 1990).

The Flagler interests had built a building on the west side of the County main line road at the northern end of the present-day Kelsey Business Park. This building was used to supply the FEC Railway workers and became known as the Commissary. Harry Kelsey purchased this building and it became the center of his early Kelsey City operation. Another building, known as the Community Building, was constructed by Kelsey on the east side of Dixie Highway opposite the Commissary.

Kelsey sent for his business associate, Samuel Blakely, to landscape his new town. Blakely created a park

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on Lake Worth, known today as Kelsey Park. Blakely also established Kelsey City Nursery, which was located just north of the natural area. This former nursery is now the present-day Kelsey Business Park. The nursery was the source of exotic plants, such as Australian umbrella tree and Surinam cherry, and out-of-place native plants, such as cherry-laurel, that invaded the northern edge of the site. By 1922, Dixie Way (present-day Park Avenue) was shellrocked and oiled. Kelsey City was incorporated in 1923 with city water and electricity already available. The water wells were located northwest of the natural area on Watertower Road, which was the highest point in the City (Gooding 1990). Munyon Island was part of the original city and a bridge to the island and beyond to the ocean was planned but never built (Lake Park Library Board 1973).

The residential lots were marketed in the following manner. Potential buyers were brought by boat from Palm Beach and other lakelike areas to Kelsey Park, and given tours of nearby model homes. They climbed a tall observation tower built in 1926 to pick out their choice of lots. The lots would be sold in auctions conducted in a tent in Kelsey Park. By 1928, Kelsey City had an estimated 1,500 residents. Concurrent with the residential development, Harry Kelsey was also developing the industrial area on and adjacent to the natural area. Industrial Avenue was extended as a shellrock road westward from Dixie Highway and various industries sprang up along it and Dixie Highway. Kelsey City promotional literature dating around 1923 indicates that Kelsey City Brick and Supply, Kelscite Manufacturing, the Stonecraft Company, Kelsey City Dairy, American Fibre, and Kelsey City Nursery were built and operational. The literature indicates that Royal Palm Cord Tire, Drake Lumber, and Fagg Lumber were under construction and twelve diversified industries were expected to be in operation by February 1924 (Gooding 1990). Another history (Lake Park Library Board 1973) also lists an ice plant, a laundry, and a "Spanish-American" tile plant as being present in the industrial area, and local residents have mentioned an ice cream plant and an ornamental iron works.

Only limited amounts of information is available to indicate where these industries were. A 1926 deed to the Kelscite Manufacturing Company links it to land south of Industrial Avenue that is currently occupied by S & S Alignment and Brake Service. Other historical accounts place the Kelscite plant north of the present-day Lake Park Public Works compound, and indicate that the S & S Alignment site may have been where Wilson Ornamental Iron was located. Kelscite was a mixture of concrete and glass that was cast into building products. A 1937 Dolph's Land Atlas shows Fagg Lumber and Millwork Company as owning the present-day Tri-City Industrial Park southeast of the natural area, and Drake Lumber Company owning land along Watertower Road northwest of the natural area. Gooding (1990) confirms that Drake Lumber was located on Watertower Road. The dairy was known to be located on low-lying land more than a mile north of the natural area, and the location of the nursery is north of the site.

The Kelsey City Brick and Supply Company is believed to have been located on the Town of Lake Park tract that lies to the east of the Baxter tract and on the site of the Lake Park Public Works compound. A circa 1923 photograph (Gooding 1990) show that it was located next to Dixie Highway and the FEC railroad tracks. The promotional literature said that it was a \$140,000 modern sand lime brick plant capable of producing 42,000 bricks daily with three cylinder ovens 56 feet long and 7 feet high. Scrap wood from the lumber companies may have been used to fire the ovens. Gooding (1990) indicates that the plant was making 40,000 bricks a day in 1925. Sand lime bricks were produced by a chemical reaction that frequently used steam heat to cause the reaction, and resulted in a yellowish final brick. The Kelsey City Nursery site was reportedly mined to furnish the sand for the bricks. Royal Palm Cord Tire Company, which apparently

later became the Royal Palm Rubber Company, had a substantial aboveground building, according to photographs in the 1973 history (Lake Park Library Board 1973). It was reportedly located north of the Town public works compound.

All of these businesses can be eliminated as the source of the concrete and brick vaults and walls on the Baxter tract in the natural area. The American Fibre Company made rugs and carpets from palmetto roots, but was unlikely to need underground structures, as was also the case for the laundry and the tile plant. The Stonecraft Company, which apparently became the Reconstructed Stone Company, is credited with producing the first concrete blocks. However, it was unlikely to need underground structures either. It is possible that the Throop junkyard inholding, which has structures dating back to the Kelsey era, was the location of the ice cream plant. A raised concrete slab was located on the south side of Industrial Avenue across from the Baxter tract, and was undoubtedly part of one of the Kelsey City industries. The slab was removed in 2000.

By process of elimination, the only major industry not accounted for is the ice plant. There are substantial concrete foundations and slabs on this tract. L. J. Parker, who grew up in Lake Park, contacted Katharine Haight, who is a descendant of the owners of the ice plant and who was able to confirm the plant was located on the Baxter tract and provide details about it. The plant used ammonia as the coolant and two large concrete mounting blocks for the compressor and its motor are present on the site. The compressed ammonia was very hot, and pipes containing the hot ammonia were run through the underground vaults and tunnels, which were filled with water. The water absorbed the heat and cooled the ammonia down. The cooled ammonia was then allowed to expand into a network of capillary pipes within the brine pits, where it became very cold and absorbed heat. The main section of the vaults was arranged in a rectangular fashion, with the longest side almost 100 feet long. A large pit was formed inside the rectangular vaults, and was divided into smaller sections by cross vaults. These pits were filled with brine water, which could be cooled down to 27 degrees without freezing. Deeper sumps at the ends of the vaults were reportedly where water either entered or left the vault system.

The brine pits were covered with wood decking, which had trap doors cut into it so that large metal containers of fresh water could be lowered into the brine pit by hoists and frozen. Brick walls enclosed the vaults and brine pits on three sides, and with the roof created a cold room over the pits. The frozen ice blocks were hoisted into a water-filled trough on the south side of the cold room, and were floated to another narrow pit which was reported dug to facilitate the loading of railroad cars. Another loading dock, reportedly for trucks, was located just north of Industrial Avenue. Remnants of a concrete curb and post bases are still present in this location. The ice plant was severely damaged in the 1928 hurricane, was rebuilt and was damaged again in the 1933 hurricane, after which it was abandoned. The salvageable pipes and machinery were removed and the remnants of the cold room pushed into the brine pits, which are mostly filled with sand today.

There are piles of broken terra cotta tiles found east and north of the underground vaults and the rubble in the vicinity of the vaults that may indicate nothing more than a proximity to the brick company. It is not clear whether "Spanish-American" was the name of the tile company, or simply referred to the type of tiles made. It was not uncommon for brick works to also make tiles, since tile manufacture used many of the same raw materials and processes. The location of the ice plant next to the lumber railroad would also facilitate the loading of large ice blocks for shipment to their customers. The railroad location also facilitated the

unloading of raw materials such as scrap wood, coal, red clay, and loading of finished tiles for the nearby brick or tile company. The vaults have numerous vent holes on one side, some with sheet-metal vent pipes still protruding from them. They were made of a hodgepodge of materials - red clay bricks, yellow sand lime bricks, mortar and concrete poured in thin layers. It is clear that the vaults were used for heating or cooling something.

The Drake Lumber Company, which was one of the largest companies in the southern United States, had its own railroad that ran through the northeastern corner of the natural area to connect to the FEC railroad tracks. A level sand railbed still exists on the site today, with graded cuts through the high spots and fill areas in the lower spots. The lumber railroad extended northwestward until it reached present-day Northlake Boulevard, where it ran westward for over 15 miles into the present-day J.W. Corbett Wildlife Management Area. Approximately eight miles of Lake Park West Road (present-day Northlake Boulevard) was built on top of the abandoned railroad line. According to Gooding (1990) Drake Lumber came to Palm Beach County in 1920 and had three sawmills in operation - one on Hood Road, and the other two west of Millitary Trail. By the early 1920s, the company had cut all the usable timber east of the Loxahatchee Slough, and had built their railroad across the Slough to start cutting the timber lying west of this large marsh. Drake's facility in Kelsey City was a planing mill (Gooding 1990), which would produce smooth lumber from the rough cut timbers coming from the saw mills. The finished product would be shipped by rail to Fagg Lumber and other retail lumber yards.

South of the natural area, there was renewed interest in residential development. Currie Investments and Kelsey's East Coast Finance Corporation apparently became partners and platted the 1st Acrehome Addition to Kelsey City in 1922, the 2nd Addition in 1923, and the 3rd Addition in 1928. Their subdivisions had more conventional 25 by 110 foot residential lot sizes and sold much better than the original Acrehome subdivision. The 1st and 2nd Additions were located directly south of the natural area on the same scrub ridge and wet prairie habitat. Until the early 1950s, only the scrub ridge lots were built upon. Kelsey may have been interested in providing nearby homes for the laborers employed in his industrial area. Like the original Acrehome subdivision, these additions were targeted to African-Americans. The plats show present-day Silver Beach Road as Kelsey City Road. Present-day Avenue R was platted as Lincoln Street, and Avenue O as Douglas Street. Avenue P, which was largely not built because it ran through a wetland, was platted as Broker Street. The Town of Riviera incorporated in 1922, largely because of rumors that it was about to be annexed by West Palm Beach (Brink 1976). The Acrehome subdivisions were not part of the original town, but were annexed into it at a later date. The Town of Riviera changed its name to the City of Riviera Beach in 1941 when it bought 1,000 feet of oceanfront beach and annexed most of Singer Island.

In the mid-1920s, Harry Kelsey continued to pour money into his city. He purchased the bankrupt Florida East Coast Canal in 1925 for \$844,714, but never got around to improving it as he planned. In 1927, a large \$125,000 City Hall and a railroad depot were built. North of the city, Kelsey built the Winter Club and a golf course, which is the present-day North Palm Beach County Club. In 1928, disaster struck in the form of a major hurricane. On September 16, 1928, a hurricane struck West Palm Beach with winds estimated at 140 to 150 miles an hour. Nearby Kelsey City also experienced winds of a similar magnitude. Over \$1 million in 1928 dollars worth of damage was done to the city, destroying all the major manufacturing plants on and adjacent to the natural area, and most of the shopping areas and homes (Gooding 1990). Kelsey sold the canal to the Florida Inland Navigation District for at a \$150,000 loss in 1928 (Burgman 1930). Kelsey tried to rebuild his town, but people were now afraid to move to Florida, and the stock market crash in 1929 dried

up his money. Defeated and bankrupt, he walked away from his city in 1931, never to return. Many lot owners abandoned their lots without ever building a home. The State nullified the city's charter in 1930 (Gooding 1990). Harry Kelsey never completely gave up on his vision of creating a planned city. In 1954, he was promoting a proposed retirement village near Miami that he called Utopia (Lake Park Library Board 1973). This development never made it past the planning stages before Kelsey's death in 1957.

Kelsey City's industries were mostly construction-related. When the Florida land boom collapsed after the 1928 hurricane, there was no market for their products and no reason to rebuild the destroyed manufacturing plants. Any salvageable materials were probably removed by impoverished residents trying to rebuild their homes. The remaining pieces of wood either rotted away or burned up, while metal machinery would have been collected for scrap metal. Only the things that didn't rot or rust or were too big to remove were left - concrete foundations, vaults, slabs, and brick walls.

In 1939, Harry Oakes and his Tesdem Company bought Harry Kelsey's land holdings, which still included 80% of Kelsey City (Gooding 1990) and the natural area. A fresh start from Kelsey City was desired, so the state legislature was petitioned to rename the city Lake Park after a suggestion from the Garden Club (Lake Park Library Board 1973). The new name memorialized Kelsey's park on the lake and the park was stipulated to always remain as Kelsey Park. Dixie Way became Park Avenue, and it is believed that Kelsey City Road became Silver Beach Road about the same time. Oakes lived in the Winter Club at the golf course until his unsolved murder in the Bahamas in 1943. Tesdem reportedly poured \$12 million in improvements to Lake Park prior to Oakes' death (Gooding 1990). The 25-foot-wide lots were consolidated and sold as 75-foot-wide lots. Tesdem built fourteen new homes (Lake Park Library Board 1973), but otherwise his efforts did not yield much results. The 1946 topographical map (USGS 1946) shows the houses present and indicates that there were still only approximately 100 homes in the Town, some of which were from the Kelsey era.

Oakes' will prevented his widow from selling any Tesdem assets until their son reached 21, and she apparently did not want to invest any more money into the Town. Lake Park went into a period of stagnation and the number of homes appears to be unchanged in a 1953 aerial photograph (USDI 1953). In 1951 Ralph Stolkin bought the portion of Tesdem's holdings that contained Lake Park and the natural area. He took out a \$3 million mortgage on the property that was held by a John D. MacArthur-controlled insurance company. MacArthur gained control of 2,800 acres in what is now Lake Park, Palm Beach Shores, North Palm Beach and Palm Beach Gardens in 1954 when the loan went into default (Gooding 1990). A 1954 MacArthur aerial photograph does show a few new homes being built in the eastern sections of Lake Park.

MacArthur sold the low-lying mucklands in northern Lake Park and the present-day Village of North Palm Beach to the Ross Brothers Construction Company for \$5 million in 1955. The developer dredged lakes and canals, and used the fill to raise adjacent land to a buildable height. North Palm Beach was incorporated in 1956. Lake Park West Road was extended eastward from Dixie Highway to U.S. Highway 1, and renamed Northlake Boulevard after the two municipalities it divided. The streets in northern portions of Lake Park were built at this time, and the residential lots were sold and built upon.

Dimick's Ditch, which was dug in the late 1890s, at first ran west, then northwest to the FEC railroad tracks, and then southwest, following the lowest land. It ended just below present-day Northlake Boulevard just west of present-day Congress Avenue. The ditch was very effective in lowering the water levels in the

marshes it cut through, but only in the adjacent marshes. Its effectiveness diminished as distance from the ditch increased, in part because the narrowness of the ditch limited the amount of water that could pass through it, and in part because the sawgrass in the marshes retarded water flow. However, each year a little more water flowed out the ditch than was replenished by rainfall, and water levels slowly dropped. The natural area was initially nearly a mile away from the terminus of the ditch and water had to flow south for some distance before flowing west and then north through the regional marsh to reach the drainage ditch. Consequently, the ditch was not very effective in draining the site. An April 1940 aerial photograph (USDI 1940) shows the former wetlands on the site as still containing water.

By the early 1950s, however, the ditch had been extended southwest to end due west of Silver Beach Road. A drainage ditch was dug along the north side of the existing road with a westward extension beyond the end of the road to connect to Dimick's Ditch. The drainage ditch cut through the wetlands on the site and provided a direct route for surface waters to reach Dimick's Ditch. By February 1953, aerial photographs (USDI 1953) show the former wetlands on the site as still being present, but as no longer containing water.

In the late 1950s, the U.S. Army Corps of Engineers' Central and South Florida Flood Control project widened Dimick's Ditch and extended it southwards to near Lake Mangonia. This new canal was called the C-17 Canal and was controlled at approximately 7 feet NGVD in the vicinity of the project site. The 7-foot water control elevation was below the ground surface of the regional marsh, and essentially dried up any remaining surface water within the marsh. It also pulled down ground water levels at the natural area to around 9 feet, a drop of approximately 6 feet below historical levels. This caused the former wetlands to essentially disappear, and portions of the former wetlands to convert to mesic flatwoods. Today, standing water is only found in the lowest portions of the former wetlands for brief periods following major rain events.

South of the natural area, the lots in the Acrehome subdivisions were slowly being built upon. The Hurst Chapel AME church was present by 1946. The wetlands in these subdivisions also dried up and the first homes in wetland areas appeared in 1953. The vacant lots in these subdivisions would slowly fill up with houses through the late 1980s. The western part of the 1st Acrehome Addition subdivision was replanted as the Datura Park subdivision in the late 1950s. This subdivision had 60 by 110 foot lots and built out rapidly. Two woodframe houses were present on the south side of Industrial Avenue opposite the Baxter tract by 1946. A dirt road connected the houses to both Old Dixie Highway and Industrial Avenue. The houses were later abandoned and torn down, one in 1987, and the other in 2000. The road disappeared during the 1990s.

The late 1950s and early 1960s were also a major period of growth for Lake Park. The 1955 aerial photograph (Palm Beach County Property Appraiser 1965) shows that nearly all of the residential lots in western Lake Park were occupied and a majority of northern residential lots had houses as well. Industrial redevelopment occurred slowly in the vicinity of the natural area. William Adelmy had established a concrete contracting business on the suspected old iron works site by 1945. He sold the site in 1972 and the present building that houses S & S Alignment and Brake was built shortly thereafter. Tri-City Millworks, which is along Old Dixie Highway southeast of the site, advertises that it was established in 1951, but it is not clear whether it was a new business, or a continuation of the Fagg Lumber Company that previously owned the site. Other historic sources indicate that the Fagg Lumber Company was located elsewhere in Kelsey City.

The Thousand of Parts junkyard is present in the 1965 aerial photograph, but appears to have been recently started. Only the southern half of the site is full of junk cars - the northern half is partially empty. The Throop inholding is empty, although both it and the junkyard were owned at that time by Charles Wooten. A sand road connects the two parcels. The junkyard is full in the 1968 aerial photograph (Palm Beach County Property Appraiser 1968), but junk cars do not show up in the Throop inholding until the 1970 aerial photograph (Palm Beach County Property Appraiser 1970). The sheet metal fence around the junkyard was partially constructed in 1970, and is completely constructed in the 1973 aerial photograph (Palm Beach County Property Appraiser 1973). The sand road connection between the two junkyards was severed by the sheet metal fence construction in 1970.

The area that would become the Tri-City Industrial Park was cleared and was being leveled in 1965. This parcel, which lies to the east of the junkyard, was platted as an industrial park by Henry and Lois Miller in 1966. The 1968 aerial photograph shows the internal roads had been constructed and the first buildings were present, along with a rail spur in the northern portion of the industrial park that extended eastward across Old Dixie Highway to connect to the FEC Railway tracks. The industrial park was essentially built out in the mid-1970s. One of the businesses in the industrial park, Trans Circuits, spilled or dumped significant amounts of organic solvents and its location is listed as a federal cleanup site. The groundwater contamination plume from this site has not reached the natural area to date.

The 1965 aerial photograph (Palm Beach County Property Appraiser 1965) also shows that a few industrial buildings have been built north of the natural area along Old Dixie Highway and on the east side of the FEC Railway tracks. The Town's public works complex is present and visible adjacent to the northeast corner of the site. 13th Street extends southwards from Watertower Road within 400 feet of the natural area. Only a few sheds are visible along this street, but associated bare sand areas seem to indicate that sand is being removed from nearby sand ridges. A bare area west of the natural area also appears to be the result of sand removal activities. The natural area itself has a series of north-south lines cut through the site 200 feet apart. These lines appear to be survey cuts to determine ground elevations. The patchy vegetation and abundant bare sand in scrub area in the 1965 aerial photograph indicates that the natural area probably experienced a widespread wildfire prior to 1960.

By 1968, 13th Street had been extended 200 feet and a new sand mining area established at the end of the street (Palm Beach County Property Appraiser 1968). This sand removal area would extend into the northwest corner of the natural area and create the disturbed scrub area that exists there today. Although subsequent aerial photographs indicate that the size of the cleared area did not change, they do indicate that additional sand removal and other disturbances continued until 1973. The 1970 aerial photograph (Palm Beach County Property Appraiser 1970) shows that Old Dixie Highway has been widened from two lanes to four lanes.

The 1970s were a period of major industrial development in the area north of the natural area. Numerous industrial buildings went up along Old Dixie Highway, Watertower Road, and 13th Street. The Northlake Business and Gateway Industrial parks were platted in the late 1960s. The 1973 aerial photograph (Palm Beach County Property Appraiser 1973) shows these industrial parks, which are centered on Killian Drive and Gateway Road, as being cleared and leveled. By 1977, these areas were partially filled with buildings and by 1984, they were almost completely built out (Palm Beach County Property Appraiser 1984). In the immediate vicinity of the natural area, however, industrial development stalled in the 1980s. There were

no new buildings erected along 13th Street, and this unpaved road and Watertower Road deteriorated into a collection of potholes from heavy truck usage. The old Kelsey City watertower next to Watertower Road was torn down by 1981. By 1987, a Rinker concrete plant was established on the site, and it is currently occupied by Maschmeyer Concrete. Also by 1987, the Town had obtained ownership of the two tracts bordering the natural area adjacent to present-day 12th Street and Joule Road.

The early 1990s brought a resurgence in industrial development adjacent to the natural area. In 1990, 13th Street and Watertower Road were improved and paved, and 14th and 15th streets and Kinetic Road were constructed as paved roads west of 13th Street. In 1991, Joule Road and 12th Street were built adjacent to the site, and water and sewer lines were also extended to the area. This would trigger the construction of new industrial buildings in the area in the late 1990s and early 2000s. The EVI emergency vehicle fabrication facility next to the natural area was constructed in 2000. The Town cleared the perimeter of its triangular tract between 12th Street and the natural area in 1992, and put down a mulch road. Dumpsters were stored on this tract until 1997. The fill/spoil area in the northwestern portion of the site appears to have been created at about the same time as the mulch road was created.

Old Dixie Highway was widened to three lanes north of the Park Avenue intersection in 1994. Congress Avenue was extended northwards as a new four-lane road from Blue Heron Boulevard to Northlake Boulevard in 1999. Both Watertower Road and Silver Beach Road were extended westward to connect to this new road, which lay 0.4 miles west of the natural area. The MacArthur Foundation fenced the perimeter of its land ownership in 1997 and cleared along the property lines. The Kelsey City Nursery tract was cleared of all vegetation in 1997, although the first buildings in the subsequent business park were not erected until the 2000s. A wildfire burned the westernmost area of former wet prairie in the 1990s, but the exact year could not be determined from aerial photographs. Stephen Throop gained title to the junkyard inholding in the natural area in 1995 from Charles Woolen. This inholding was empty of vehicles in 1999 and 2001, but has been active and full of vehicles since 2002.

In 1986, the County agreed to fund an inventory of native ecosystems in Palm Beach County by two Florida Atlantic University professors (Iverson and Austin 1988). The study was completed in 1988, with additional work in 1989. The Lake Park Scrub was identified in this study and was one of the 39 "A" quality sites, 14 of which were given high priority for acquisition by the County's Environmentally Sensitive Lands Acquisition Advisory Committee in 1990. On March 12, 1991, the voters of Palm Beach County approved a \$100 million bond referendum to purchase environmentally sensitive lands. In 1998, the County's Environmentally Sensitive Lands Acquisition Selection Committee (ESLASC) identified 38 unacquired environmentally-sensitive land sites that were to be targeted for acquisition under the proposed \$150 million Conservation Lands Bond Referendum. The Lake Park Scrub was listed as one of the 38 sites. The referendum was approved by the voters on March 9, 1999.

In 1998, the John D. and Catherine T. MacArthur Foundation, which controlled the MacArthur-owned land in the natural area and the land to the west, decided to sell of its land holdings. Thousands of acres of land, including the natural area, was sold to Watermark Communities, Inc. (WCI) in 1999. WCI, in order to reduce its debt load, tried to sell off most of the acquired land immediately. A majority of the Lake Park Town Council saw this as an opportunity to shape the growth of the western areas of Lake Park, and entered into an option contract with WCI to purchase all of its land within the Town. The Town proposed to re-sell the natural area to the County, keep a charter school site and a road corridor, and sell the rest of the land to

developers who would construct the type of new development the Town preferred.

The Council's vision was both too ambitious for the Town and the Town's finances. After spending most of the Town's reserve funds on pre-acquisition due diligence, the Town found it was unable to borrow enough money to fund the acquisition. The option contract expired, and the pre-acquisition council members were voted out of office shortly thereafter. The County purchased 58.52 acres in the natural area from WCI for \$2,987,785 in July 2000, along with some other lands to be sold as surplus. In September 2000, the County swapped 2.67 acres of disturbed vegetation along the northern edge of the site with the Town. In exchange, the Town swapped 2.79 acres of mostly high-quality native habitat adjacent to the northwest corner of the site. The Town wanted the swapped land for a future extension of Park Avenue to Congress Avenue. In January 2002, the County purchased the 1.87-acre Baxter tract in the northeastern portion of the natural area. Also in 2002, the County's Engineering and Public Works Department agreed to allow ERM to include 1.76 acres of unused Silver Beach Road right-of-way in the natural area fencing and manage it as part of the site.

In August 2001, the County and the Town submitted an application for matching funds for the Lake Park Scrub to the Florida Communities Trust's Florida Forever Program. The application did not receive enough points to be placed on the funded project list, but was placed on the contingent-funded list. In 2002, funding for the project became available and FCT has given preliminary approval for \$1,417,450 in matching funds. In February 2003, the County approved an interlocal agreement with the Town for the management of the site. Six-foot green vinyl chain-link fencing was installed on the eastern border of the Baxter Tract in March 2003. Three-rail post-and-rail fencing with wire mesh backing was installed along the southern border of the site next to Silver Beach Road in May 2003. The tract on the western border of the site had additional sand excavated and removed from it in 2002, but none since then. Field fencing with steel posts was installed on the west side of the site in December 2003.

2. PURPOSE

2.1 SPECIAL FEATURES AND REASONS FOR ACQUISITION

- The Lake Park Scrub contains high-quality scrub and scrubby flatwoods vegetation with the potential of establishing new populations of threatened and endangered species, such as the Florida scrub jay and the four-petal pawpaw.
- The Lake Park Scrub provides the opportunity to restore a small portion of the near-coastal wetlands and to protect a portion of the Pamlico dune ridge. These features were once common in Palm Beach County but have mostly disappeared.
- The Lake Park Scrub contains significant historical features, such as the Drake Lumber Company railroad, and remnant foundations, slabs, and vaults from the 1920s-era Kelsey City industrial area.

2.2 PURPOSE OF ACQUISITION

* The primary purpose for acquisition of the Lake Park Scrub Natural Area is to ensure the preservation of good-quality scrub, scrubby flatwoods, and mesic flatwoods communities, together with their component rare and/or endemic plant and animal species. It has been estimated by ERM that more than 98% of the scrub historically present in Palm Beach County has already been converted to other land uses. Six plant and three animal species recorded on the site have been listed by at least one government agency or nonprofit environmental organization (Tables 1 and 2). In addition, the acquisition of the Lake Park Scrub Natural Area will help to protect the quality and quantity of groundwater resources.

The natural area will be developed as a publicly-owned preserve and operated as a natural resource-based, passive outdoor recreational site. The site also will be used for environmental education and scientific research. Hiking trails and management roads will be constructed, using existing trails where appropriate, and interpretive markers will be placed along the nature trail to be constructed. The markers will be keyed and a trail guide containing descriptions of the site's resources and their significance. Both the preservation and recreation components of this project will help the Town of Lake Park and Palm Beach County comply with portions of their respective comprehensive plans. All signs, literature, and advertising will identify the project site as being publicly owned and operated as a natural area and passive outdoor recreational site, with recognition given to FCT for providing matching funds. Permanent recognition signs will be maintained in the entrance area on the project site that identify the site as being open to the public and having been purchased with funds from Florida Communities Trust and the County. The Lake Park Scrub Natural Area will be assigned a land use designation of Recreation/Open Space (Appendix E), and procedures to change the land use designation will be initiated within one year of the project closing. The Town will forward a copy of any approved ordinance or resolution changing the land use or zoning designations to FCT.

The Lake Park Scrub Natural Area consists largely of scrub, scrubby flatwoods, and mesic flatwoods natural communities (Figure 2). These communities, which can be mostly considered good-quality within the context of urbanized southeastern Florida, are in a somewhat degraded condition as a result of previous off-road vehicle trespass, fire exclusion, exotic pest plant invasions, construction of adjacent roads and buildings, illegal dumping, soil removal, industrial development, hydrological modifications, placement of

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fill materials, and other human-related disturbances. The maintenance and improvement of the ecological quality of these communities will be included in the future management of the preserve. These management efforts will include implementation of invasive vegetation control and prescribed burning programs throughout the entire site.

Management activities will be coordinated under the direction of the Palm Beach County Department of Environmental Resources Management (ERM), with the cooperation and assistance of the Town of Lake Park. In addition to County and Town personnel, volunteers from the community will be recruited to maintain trails, remove invasive vegetation, and perform other site management activities that may be needed. The site will be managed under the "single-use" concept, which means that it will be managed to preserve and restore natural resource values. Scientific research, environmental education, and passive resource-based recreation will be encouraged so long as they do not jeopardize the protection of natural resources. In general, passive recreation will include such activities as nature appreciation and study, hiking, and photography.

The acquisition and associated activities will assist the Town and the County to implement several policies within their respective Comprehensive Plans. This project will further the following Town Comprehensive Plan Policies: 1) by protecting, conserving, and enhancing existing natural resources including vegetative communities, fish and wildlife habitats and species of special concern (Town Goal Statement 8.2.1); 2) by ensuring that the existing and future recreational and open space facilities and programs are improved and maintained in order to meet projected needs of Town residents (Town Goal Statement 9.4.1); 3) by providing wetland protection and maintaining and enhancing groundwater resources (Local Groundwater Regulation Review, Section 6.5.3.1).

The County's Conservation Element directs the County to preserve native upland habitats, with priority given to environmentally sensitive land (Objective 2) and habitat of significant value to existing populations of listed species (Objective 3), and calls specifically for the acquisition and management of parcels identified as environmentally sensitive (Policy 2-e).

2.3 MANAGEMENT OBJECTIVES

The Lake Park Scrub Natural Area will be managed to protect and maintain native biological diversity and ecosystem functions in perpetuity. The management of this site will be coordinated with the management of other County-managed sites as part of a county-wide system of natural areas. The following objectives will guide the formulation of management policies:

- 1) Maintenance of ecological integrity by ensuring the long-term viability of native upland biological communities and the protection of listed plant and animal species on the natural area.
- 2) Provision of viable habitat for other non-listed wildlife species that use, or could potentially use, the natural area.
- 3) Implementation of a prescribed burn regime that maintains fire-dependent vegetative communities, assists in the restoration of disturbed areas, and adequately addresses safety and smoke concerns.
- 4) Reduction of exotic pest plant vegetation cover to no more than 1% of the total vegetation coverage.

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and exclusion and/or removal of exotic non-native animals having a detrimental effect.

- 5) Provision of facilities and development of policies for public use that allow for passive, resource-based recreational uses, scientific research, and environmental education activities that do not have a detrimental effect on the natural area.
- 6) Adoption of appropriate security and access control measures to prevent unauthorized activities, such as use by off-road vehicles, illegal dumping, collection of plants, poaching, and harassment of animals.
- 7) Management of disturbed areas so that they revert to natural communities and do not act as conduits for exotic species to penetrate natural communities.
- 8) Restoration of disturbed scrub and former wet prairie areas to an appropriate native vegetation community.

3. STRUCTURES AND IMPROVEMENTS

3.1 EXISTING AND PROPOSED PHYSICAL IMPROVEMENTS

The only structures and improvements currently on the Lake Park Scrub Natural Area are concrete slabs, vaults, and foundations in the northeastern portion of the site, along with a short brick wall. These structures were left over from Kelsey City industrial buildings destroyed in the 1928 hurricane. They are located in the Baxter tract, which is not part of the FCT project site. A short section of the shallrock road Industrial Avenue is located within the project site. Water mains and fire hydrants are located along Industrial Avenue and 12th Street, with storm sewers present along 12th Street.

Disturbed areas exist mostly on the perimeter of the site, and the perimeter firebreaks and fencing will be located within these areas as much as possible. No listed species were found in these disturbed perimeter areas, except for a few scattered plants of wild pine species and large-flowered rosamary, and an occasional foraging gopher tortoise. Many of the proposed improvements, including the hiking trail and nature trail, will be sited within disturbed areas and on existing trails where possible. Although listed species have not been observed within the areas proposed for the public use facilities, these improvements will be sited to minimize impacts to any listed species that may subsequently be observed in these areas. Listed plants will be relocated on the site as necessary.

The major proposed structures and improvements are described in the following sections and shown on the master site plan (Figure 3). Only structures and improvements that will help to achieve the goals of preserving and restoring the natural resources of the Lake Park Scrub Natural Area and providing for compatible public uses are proposed. Restroom facilities are not planned for this site as they are readily available in nearby commercial businesses. Proposed public-use facilities (i.e., the accessible nature trail and the parking area) will fulfill Americans with Disabilities Act (ADA) requirements. All proposed site improvements shall be designed and located to minimize or eliminate the long term risk of storm damage or flooding in conjunction with appropriate hazard mitigation agencies and experts.

Written approval from FCT will be requested prior to the construction or installation of any buildings, structures, improvements, or signs and for any removal of native vegetation or major land alteration not discussed in this management plan, and for any other significant revision of the management plan. All improvements and major land alterations will comply with applicable local, state, regional and federal laws and regulations. All required licenses and permits will be obtained prior to the commencement of any construction or major land alterations. A town building permit is needed for construction of the public use facilities. An environmental resource permit from the South Florida Water Management District may be necessary for wetland restoration activities.

3.1.1 Fencing and Gates

Due to the previous incidence of undesirable off-road vehicle traffic, as well as the illegal dumping of trash, the entire natural area will need to be fenced. Fencing, together with boundary roads and firebreaks, will shut off ORV access to the site and help to control the dumping of debris. Nearly all of the existing fencing on the site is not located on the natural area's boundaries and will be removed. Field fencing was installed

on the western boundary of the site (Figure 3). A 6-foot green-vinyl-coated chain-link fence was installed in March 2003 along the eastern boundary of the site where no chain-link fencing is present. Where the sheet metal fencing/concrete wall along the automobile junkyards is present and in good condition, no chain-link fencing will be installed. Three-rail post-and-rail fencing with wire mesh backing will be installed along the northern border of the site adjacent to the right-of-way for the proposed extension of Park Avenue and has been installed on the southern boundary adjacent to Silver Beach Road. Two-rail post-and-rail fencing will be installed around the perimeter of the parking area to limit vehicles to the parking area only. All fencing and gates will be installed within disturbed perimeter areas whenever possible, to minimize impacts on intact natural communities.

Eight gates are proposed (Figure 3). Management access gates will be installed in the chain-link fence at the end of Industrial Avenue and at the easternmost corner of the site just north of Industrial Avenue. These gates will allow vehicle access to the boundary firebreaks and other management roads. Two steel farm gates will be installed in the post-and-rail field fencing along Silver Beach Road at the southeast and southwest corners of the site to provide management access to the perimeter and interior management road/firebreaks. When the parking area is constructed, steel farm gates will be placed in the northern and southern ends of the parking area to provide management access from the parking area to the perimeter and interior management road/firebreaks. An existing steel farm gate at the intersection of 12th Street and Joule Road will be maintained until the parking area gates are installed. Two 16-foot-wide steel swing gates will be installed in the perimeter post-and-rail fence on the entry and exit drives to the parking area from 12th Street.

3.1.2 Signs

Six types of signs are proposed for the Lake Park Scrub Natural Area. All will identify the site as being publicly owned and operated as a natural area and passive outdoor recreation site. Temporary signs identifying the site as a natural area were installed on each corner of the site one month after each individual tract was acquired. A permanent recognition sign at least 2 by 3 feet in size will be maintained in the entrance area on the project site that identifies the site as a natural area open to the public, as having been purchased with funds from Florida Communities Trust and the County, and as being managed by the County and the Town. An entrance sign will be co-located with the permanent recognition sign. A main gate sign will be installed to specify the hours of operation and provide general information about the site. Perimeter signs have been placed along the site's boundaries at intervals of no greater than 500 feet; these signs state that the Lake Park Scrub Natural Area is a protected natural area and cite appropriate Town and County ordinances. Markers will be installed along the nature trail, with station numbers corresponding to an interpretive guide. Sign installations will not significantly disturb any natural communities on the site.

3.1.3 Interpretive Facilities

One educational kiosk will be constructed on the project site adjacent to the public parking area and near the entrance of the nature trail (Figure 3). This kiosk will provide general information about the natural area, such as the geologic origins of the site, its topographic features, aquifer recharge significance, natural communities, listed species and their habitat, and other natural features of interpretive value. The kiosk will be constructed within disturbed areas as much as possible to minimize impacts to any intact natural communities.

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3.1.4 Boundary and Management Roads and Firebreaks

A boundary/management road and firebreak system will be established on the perimeter of each of the three management units (Figure 4). These roads will be accessed from the six maintenance access gates. All boundary/management roads and firebreaks will be located in disturbed perimeter areas or on existing trails as much as possible. Prior to construction, all boundary/management road/firebreak locations will be surveyed for listed species. Any listed species present within the proposed road/firebreak area will be avoided if possible, or relocated on the site if necessary.

Boundary/management roads/firebreaks will provide numerous benefits, including more rapid access in the event of a wildfire, protection of adjacent areas from wildfire, and facilitation of the monitoring of dumping and other illegal activities along the preserve edge. These roads/firebreaks will be unimproved sand roads and will be no more than 15 feet wide, which is the standard width of boundary firebreaks used by the Florida Department of Environmental Protection (FDEP) on state lands. The firebreak/management roads are to be used primarily for resource management and onsite monitoring. Prior to a prescribed burn, the roads will be widened beyond a minimum 10-foot maintenance width to serve as firebreaks. After the prescribed burn, these firebreaks will be allowed to regenerate and the roads will be maintained at the minimum width. Routine maintenance of the management roads/firebreaks will be accomplished by periodic mowing of these roads. Disking of management roads will occur only around management units where a prescribed burn is planned in the near future, or where the management road borders residential or commercial development and a disked fire line is needed for safety reasons.

3.1.5 Trails

The primary interpretive feature for public access will be a handicapped-accessible nature trail. The trail will be approximately 1,000 feet long, and will originate at the public parking area. From the parking area, it will extend eastward through mesic flatwoods community and then northeastward and southeastward through scrub until it emerges at the edge of the wetlands restoration area. A wildlife observation platform with a shade shelter, benches, and interpretive signage will be constructed at the terminus of the nature trail and overlooking the restoration area (Figure 3). The nature trail will consist of 4-inch-thick poured and formed concrete with a non-slip finish and will be approximately 5 feet wide to accommodate wheelchairs. The observation platform is expected to be a raised wooden structure accessed by a ramp. Markers will be installed along the trail indicating station numbers corresponding to a trail guide with interpretive information. Handicapped-accessible interpretive facilities will be developed to fulfill federal requirements.

A 0.7-mile hiking trail will originate from the wildlife observation platform and form a large loop that extends throughout most of the central and southern portion of the project site. It will terminate at the informational kiosk at the beginning of the nature trail (Figure 3). The hiking trail will skirt the wetland restoration area and run through the former wet prairie, mesic flatwoods, scrubby flatwoods and scrub natural communities. The hiking trail will have a natural soil base and will be maintained at a width of at least 10 feet, where the trail coincides with a firebreak. Any non-firebreak sections of the hiking trail will be maintained at a width of 3 feet. The hiking trail is available for public use, but will not be improved or marked for interpretive purposes. All other firebreak/management roads also will be available for public use, but will not be improved or marked for interpretive purposes. The nature trail and the hiking trail will be constructed on existing paths.

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trails, and disturbed areas on the site as much as possible. Public use of existing secondary trails leading off the nature trail, the hiking trail, and management roads will be discouraged. Prior to construction, all trail locations will be surveyed for listed species. If listed species would be impacted by the construction of the trails, the trails will be rerouted or the listed species relocated on the site.

3.2 EASEMENTS AND CONCESSIONS

There are no active easements on the natural area. A record of a 1920s-era 10-foot road easement exists, but the record is too sketchy to determine the location of this easement or who has rights to use it. Two utilities are present on the natural area, apparently without any easement rights. A water line on the north side of Industrial Avenue does not have an easement where it crosses through the site, and a fire hydrant associated with the water line may encroach into the natural area. An overhead electric line on the north side of Industrial Avenue also crosses through the site, but the poles are located outside the natural area. An electrical service line from the Industrial Avenue line to the Throop junkyard inholding crosses through the site and a pole is located within the natural area. ERM will request that Florida Power and Light relocate this pole onto Throop's property, although some of the aerial encroachments may be allowed to continue.

No additional easements, concessions, or leases are anticipated. Any easements, concessions, or leases must be approved by FCT prior to execution. Certain activities may have negative legal and tax consequences under Florida law and federal income tax law. If the Lake Park Scrub Natural Area is to be subject to any of the following activities or interests, the County will provide FCT with at least 60 days prior written notice and will provide information to FCT, upon reasonable request, in order to evaluate the legal and tax consequences of the activity:

1. any lease or sale of any interest in, or operation of any concession on the project site by any person or organization;
2. any sales contract or option to buy things attached to the project site to be severed from the site, with any person or organization;
3. any use of the project site by any person other than in such person's capacity as a member of the general public;
4. a management contract for the project site with any person or organization for activities other than those specified in the management plan;
5. such other activity or interest as may be specified from time to time in writing by FCT to the County.

3.3 PUBLIC ACCESS

The main public access to the natural area will be provided via 12th Street to an on-site parking area. When the proposed Park Avenue extension is built adjacent to or on portions of 12th Street, the public access will be switched to Park Avenue, but the parking area will be unaffected. Bicycle racks will be provided to encourage the use of alternative transportation to the site. Concrete sidewalks are currently not present on 12th Street, but they are present along Watertower Road and Old Dixie Highway. When the extension of

Park Avenue is constructed, pedestrian-oriented walkways and bike paths will be built along the road to provide pedestrian and bicycle access to the site. The natural area will be open to the public during daylight hours. The hours of operation will be posted at the site and will be determined in consultation with the Town. Accessible parking and an accessible nature trail will be provided. There are no permanent water bodies on or adjacent to the site; therefore, no water body access is planned.

A parking area containing ten automobile parking spaces and two bus parking spaces will be constructed off 12th Street in the west-central portion of the site (Figure 3). The parking area is located in an area filled in with concrete rubble and fill dirt to help stabilize the 12th Street roadbed. If soil tests reveal that the fill area cannot be compacted enough to support a stable parking area, then portions of the fill area may have to be removed and replaced with compactable materials. The use of pervious materials as part of the parking area will be investigated. Very little native vegetation is present in the fill area and impacts to good-quality native vegetation will be negligible. A survey will be conducted within the proposed parking area to verify that its construction would not impact any listed species. Based upon previous listed species surveys of the site by County staff, it is unlikely that the construction of the parking area will impact any listed species. If any listed species are present within the proposed parking area, the parking area location will be adjusted to avoid impacts. If impacts are unavoidable, then these species will be relocated on the site. If a stormwater retention facility is required as a result of the parking area construction, it will be designed to provide recreation open space or wildlife habitat. If changes to public access or parking facilities are required, the proposed changes will be submitted to FCT for review and approval.

4. KEY MANAGEMENT ACTIVITIES

4.1 MAINTENANCE

ERM will assume primary responsibility for site management at the Lake Park Scrub Natural area. Responsibilities for the management of the natural area are outlined in the interlocal agreement between the Town and the County (Appendix E). Maintenance activities include litter cleanup, trail maintenance, and facilities maintenance (i.e., fences, gates, kiosk, and parking area). Volunteers from environmental groups, schools, and citizens organizations will assist in trail maintenance and litter pickup activities under the direction of ERM staff.

In the unlikely event that any unforeseen occurrence, either natural or human-caused, severely alters the natural values of the natural area, ERM staff will assess the nature of the alteration and will take remedial action to secure and/or stabilize the site if necessary. Natural events such as fires, floods and hurricanes may shift the ecology of the site from its present condition and cause damage to human-made structures (i.e., kiosk, signs and fencing), but in no way would severely limit or eliminate the natural values of the site. The first priority following a natural or human-caused event will be to secure the site by repairing damaged fencing to prevent dumping and vandalism.

The natural area may be closed for public use until the site is stabilized and repairs are made to the structures. The native communities on the site will be managed to regenerate naturally following such an event. If the natural values of the site are severely limited or eliminated, the County, the Town, and the State will discuss future plans for the site. All major events affecting the natural communities of the natural area will be discussed in the subsequent annual report to FCT. Management practices will be modified for the new condition of the site, and the management plan will be updated to reflect these changes.

4.1.1 Removal of Debris and Litter

Most significant debris located within the natural area was removed by the previous property owners prior to acquisition by the County. Any remaining debris will be removed in a timely manner, unless such removal would cause undesirable damage to natural communities or listed species. The installation of perimeter fencing should prevent the future dumping of trash and hazardous material on the site. The County will provide a trash receptacle at the public parking area and the Town will be responsible for servicing it at weekly intervals. Periodic site clean-ups to remove litter will be conducted as necessary by County and/or Town staff with volunteers.

4.1.2 Trail Maintenance

Periodic trail maintenance will be performed by County and/or Town staff and community volunteers. All trails which are not necessary for site management will not be maintained to discourage access from public-use trails. These unused trails will be allowed to regenerate with native vegetation.

4.1.3 Facilities Maintenance

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County staff will be responsible for the maintenance of the fences, gates, interpretive facilities, and signs on the natural area. Town staff will be responsible for periodic mowing of the perimeter firebreak/management boundary road.

4.2 SECURITY

The Town will assume primary responsibility for public safety and law enforcement at the natural area. The Town currently contracts with the Palm Beach County Sheriff's Office (PBSO) to provide these services. Security activities includes routine patrols of the boundaries and using the PBSO's best efforts to prevent vandalism, vehicular trespass, dumping, and damage to property and natural resources. The County also has contracted with the PBSO for a special natural areas law enforcement unit. This unit concentrates on stopping illegal off-road vehicle use and other prohibited activities on natural areas. It moves to natural area sites on an as-needed basis. No on-site manager or security guard currently is proposed for this site. The County will attempt to recruit a local steward for the site or to organize a neighborhood watch group.

The County has adopted a Natural Areas Ordinance (No. 94-13) that regulates public use of all natural areas managed by ERM, including the Lake Park Scrub Natural Area (Appendix F). The ordinance provides for passive recreational activities such as hiking, nature study, and photography; for environmental education; and for scientific research. It prohibits destructive uses such as off-road vehicle use, dumping, and poaching of plants and animals. The ordinance gives law enforcement personnel the authority to arrest persons damaging a natural area. No dogs, cats or other pets will be permitted on the natural area. No vehicles (e.g., ORVs and bicycles) will be permitted beyond the parking area, except during site maintenance, security, and prescribed burning activities conducted by staff or other authorized personnel.

The Lake Park Scrub Natural Area will be open to the public during daylight hours only. Access hours will be posted at the main entrance gate. The Town will be responsible for opening and closing the main access gates to the parking area. This responsibility may be delegated to a local steward or stewardship group if approved by the County. Only the County, the Town, PBSO deputies, or the local stewards will have keys for these gates.

4.3 STAFFING

Because of the relatively small size and low management needs of the Lake Park Scrub Natural Area, there will be no on-site staffing. However, ERM has created a roving management team that will assume responsibility for management at this site and other County-managed natural areas. This management team has been trained to conduct all levels of management activities, including invasive vegetation control, prescribed burning, and monitoring. Volunteers from local citizens' organizations will provide additional support where feasible and necessary.

Watson B. Duncan Middle School is located one mile northwest of the natural area, Lake Park Elementary School is located one mile east, Suncoast High School is located one mile southeast, and Washington Elementary School is located one-half mile southwest of the site. All of these schools serve the local neighborhood. Staff at these four schools will be contacted to see if they have an interest in helping to protect and manage the site and in using it as an environmental education resource. It is hoped that individuals from these schools will form the basis of a local stewardship group that will assist in the

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protection and management of the site. Individuals from the community and local environmental organizations will be trained by County staff to lead nature walks on the site.

4.4 NATURAL RESOURCE PROTECTION

The primary goal of site management is to enhance and maintain scrub, scrubby flatwoods, and mesic flatwoods natural communities, including their component species, as described in Appendix A. Particular care will be exercised to prevent the extirpation of listed species from the site. Habitats for listed species will be managed for the needs of individual species when such management would be compatible with the overall management of the ecosystems on the natural area. This site will be managed in conjunction with other publicly-owned conservation lands in northeast Palm Beach County in order to provide synergistic benefits for resource conservation and to promote the recovery and maintenance of listed animal species.

Long-term resource management of the site will begin with the baseline inventory and assessment of natural communities and listed species (Appendix A). Several half-day surveys of vegetative communities and plant and animal species on this site were conducted by ERM staff in spring 2001 and summer 2002. Additional surveys have been conducted since then to update the assessment. The information from these surveys was combined with data from a 1988 Florida Natural Areas Inventory site survey (Farnsworth 1988) in preparing the assessment. This assessment has been used as the basis for determining the management activities necessary to protect, restore, and preserve the natural resources of the site and determining the location and type of passive public recreation use facilities.

Information on all listed species described in the assessment and all new listed species observed will be reported to the Florida Natural Areas Inventory (FNAI) on the forms provided in Appendix L. A copy of the management plan will be provided to FFWCC to review for protection of listed species and any comments will be forwarded to FCT. The protection of the geologic features of the site (the Pamlico dune ridge) will be ensured through the preservation of this site. The natural groundwater recharge functions of the site will be protected and enhanced to maintain the quality and quantity of groundwater within the wildlife protection zone. Because of the upland character of the site, hydroperiod management will be undertaken only in the wetland restoration area.

4.4.1 Management of Natural Communities

The Lake Park Scrub Natural Area will be managed under the "single use" concept, which means that it will be managed to perpetuate natural resource values. Six vegetation communities are present on the site (Figure 2), including scrub, scrubby flatwoods, mesic flatwoods, former wet prairie, disturbed scrub, and fill/spoil. Where past human activities have caused the degradation of natural communities, efforts will be made to restore these communities so that they resemble undisturbed natural communities. Prescribed burning, invasive vegetation control, and hydrological restoration will be the primary management techniques used. These management activities are discussed in Section 5.1.2, Fire Management, Section 5.1.3, Invasive Species Control, and Section 5.1.4, Hydrological Restoration/Enhancement. The scrub, scrubby flatwoods, and mesic flatwoods vegetative communities occurring on the site will be preserved and properly maintained so as to ensure the long-term viability of these vegetative communities. The specific types of management and enhancement activities recommended for each vegetation community present on the natural area are described in the following sections.

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4.4.1.1 Scrub

Scrub dominated by sand pines, shrubby oaks, and saw palmettos is the largest natural community on the site. It will be enhanced and maintained primarily through the implementation of prescribed burning and invasive vegetation control programs. A prescribed burning program will be initiated in this community within two years of the approval of this management plan. Management units containing scrub will be burned at approximately 40-year intervals. Special care will be taken with regard to listed species associated with scrub that may be negatively impacted by prescribed burning. An invasive plant control program will be initiated in this community within one year of the final approval of this management plan. Australian umbrella tree, bowstring hemp, chandler plant, rosary pea, and Sprenger's asparagus fern are considered high-priority exotic species for removal in scrub. In addition, all ORV trails that are not part of the designated management road/firebreak system or the hiking trail will be closed and allowed to regenerate with native vegetation.

4.4.1.2 Scrubby Flatwoods

The scrubby flatwoods community is the second largest natural community on the site. It will be enhanced and maintained primarily through the implementation of prescribed burning and invasive vegetation control programs. A prescribed burning program will be initiated in this community within ten years of the final approval of this management plan. Management units containing scrubby flatwoods will be burned at 10 to 20-year intervals. It is expected that the young sand pines that are beginning to colonize this community will be eliminated by a short burn interval. Since this community appears to have been mostly fire-excluded since the 1950s and has developed tall growths of scrub oaks and saw palmettos, cutting and chopping of understory vegetation will be necessary prior to the initial burn to reduce flame height and fire intensity that could kill or damage the slash pine overstory. Special care will be taken with regard to listed species associated with scrubby flatwoods that may be negatively impacted by prescribed burning. An invasive plant control program will be initiated in this community within one year of the final approval of this management plan. Brazilian pepper, bowstring hemp, and woman's tongue are considered high-priority exotic species for removal in scrubby flatwoods. In addition, all ORV trails that are not part of the designated management road/firebreak system or the hiking trail will be closed and allowed to regenerate with native vegetation.

4.4.1.3 Mesic Flatwoods

Mesic flatwoods will be enhanced and maintained primarily through the implementation of prescribed burning and invasive vegetation control programs. A prescribed burning program will be initiated in this community within ten years of the final approval of this management plan. The management unit containing the majority of the mesic flatwoods will be burned at a 10 to 14-year interval, another unit containing a small portion of mesic flatwoods will be burned at a 20-year interval. Because this is a relatively young community that has developed in drained portions of former wet prairie, thick understory vegetation has not developed and pre-burn understory cutting and chopping is not expected to be needed. Special care will be taken within regard to listed species associated with mesic flatwoods that may be negatively impacted by

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prescribed burning. It is expected that the appearance of this community will change over time as the understory shrub layer becomes better developed and expands over time. An invasive plant control program will be initiated in this community within one year of the final approval of this management plan. Brazilian pepper, earleaf acacia, Guinea grass, and shrub verbena are considered high-priority exotic species for removal in mesic flatwoods. In addition, all ORV trails that are not part of the designated management road/firebreak system or the hiking trail will be closed and allowed to regenerate with native vegetation.

4.4.1.4 Disturbed Scrub

The disturbed scrub on the natural area consists of areas of former scrub that have been impacted by previous land-clearing activities, sand removal, off-road vehicle use, construction of since-destroyed industrial buildings, and exotic plant invasion. Disturbed scrub typically has many of the same plants as early successional stages of scrub, but the plants are smaller and sparser, and there are large expanses of bare sand. There is also a higher than normal percentage of ruderal and exotic plants and pioneer, high-light environment scrub plants. The overall management goal for this community is to restore it to the pre-disturbance scrub vegetation community. The disturbed scrub areas will be included in the prescribed burn program and burned whenever the adjacent scrub is burned. This will help to remove invasive vegetation and encourage scrub regeneration. An invasive plant control program will be initiated in this community within one year of the final approval of this management plan. Australian-pine, bowstring hemp, Brazilian pepper, and Gold Coast Jasmine are considered high-priority exotic species for removal in disturbed scrub. Installation of perimeter fencing and implementation of security measures should curb ORV usage.

4.4.1.5 Former Wet Prairie

The former wet prairies at the Lake Park Scrub Natural Area have lost their historic hydroperiod due to a regional lowering of the groundwater table. Approximately three acres of the lowest portion of this community in the center of the site will be scraped down below the existing high water table and restored to a functional depression marsh. The rest of the former wet prairie will be managed to encourage the ongoing succession to mesic flatwoods. A prescribed burning program will be initiated in this community within ten years of the final approval of this management plan. Former wet prairie will be combined with the majority of the current mesic flatwoods in a management unit that will be burned at a 10 to 14-year interval. An invasive plant control program will be initiated in this community within one year of the final approval of this management plan. *Melaleuca* is the primary high-priority exotic species for removal in former wet prairie. In addition, all ORV trails that are not part of the designated management road/firebreak system or the hiking trail will be closed and allowed to regenerate with native vegetation.

4.4.1.6 Fill/Spoil

The fill community occurs where approximately 10 feet of fill material was placed in the former wet prairie community to stabilize the roadbed of the adjacent 12th Street. This fill area is proposed to be used for the public parking area, and the fill community completely eliminated. No prescribed burn program will be needed for this community. Invasive exotic plants such as burrnut, castorbean, chinaberry tree, Ganges primrose, noyau vine, and smooth rattletop will be eliminated when the parking area is constructed and will be replaced where appropriate with native plant landscaping using species that already occur on the site.

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4.4.2 Protection and Enhancement of Listed Species - Flora

Six plant species recorded at the Lake Park Scrub Natural Area have been listed by at least one of the following governmental agencies or nonprofit environmental organizations: United States Department of the Interior, Fish and Wildlife Service (USFWS); Florida Department of Agriculture and Consumer Affairs (FDACS); and Florida Natural Areas Inventory (FNAI). These species are listed in Table 1 and are ranked and discussed in Appendix A. Definitions of the listing classifications are provided in Appendix D. The following sections contain a summary of the recommended procedures for management of these species.

4.4.2.1 Priority A

Priority A plant species are those that are considered by FNAI to be imperiled or critically imperiled in the state. These species should receive the highest level of management attention. Under no circumstances should extirpation of these species be allowed to occur at the Lake Park Scrub Natural Area. When possible and appropriate, efforts should be made to increase the size of each existing population. No Priority A plant species have been recorded at this site.

4.4.2.2 Priority B

Priority B plant species are those that are considered by FNAI to be rare in the state. These species should receive significant management attention. Under no circumstances should extirpation of these species be allowed to occur at the Lake Park Scrub Natural Area. When possible and appropriate, efforts should be made to increase the size of existing populations, so long as this does not adversely impact natural community level management.

Banded wild pine (*Tillandsia flexuosa*)

This epiphytic bromeliad has been recorded in the scrub natural community in the northern portion of the Lake Park Scrub Natural Area by ERM in September 2002. It is not fire-tolerant, but generally grows in areas where fires are of limited occurrence and intensity. It is threatened by habitat loss and a historically limited range in Florida (Ward 1978). It may also be susceptible to attack by an imported bromeliad weevil (Frank 1999). This species will be protected by maintaining its scrub habitat, by mapping known populations, by monitoring any mortality caused by the bromeliad weevil, by relocation to other management units prior to scheduled prescribed burns, and by protecting this plant from plant collection.

Large-flowered rosemary (*Conradina grandiflora*)

This endemic short-lived shrubby mint was recorded at the Lake Park Scrub Natural Area by Farnsworth in 1988, and by ERM in 2000, 2001, and 2002. Large-flowered rosemary is found primarily in the scrub natural community in the northeastern portion of the site, with the highest concentrations associated with the former roadbed for the Drake Lumber Company railroad. It prefers scrub communities that are in the early stages of succession. This species will be managed as a component of the scrub community. No special needs for this plant have been identified. It will be protected by maintaining a mosaic of seral stages within the scrub community at this site through the implementation of a prescribed burn and invasive vegetation control programs.

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Nodding pinweed (*Icteria cernua*)

This endemic perennial forb was recorded at the Lake Park Scrub Natural Area by Farnsworth in 1988, and by ERM in 2000, 2001, and 2002. This species is found primarily in the scrub natural community in the northeastern and southwestern portions of the site, with the highest concentrations associated with open areas just south of the former roadbed for the Drake Lumber Company railroad. It is a species of mostly open sandy areas that often tends to be located in areas of past disturbance. No special needs for this species have been identified. It will be protected by maintaining a mosaic of seral stages within the scrub community through implementation of a prescribed burning program, by eliminating ORV access to the site, and also by routing access roads and foot trails away from known plant locations.

4.4.2.3 Priority C

Priority C plant species are those that are listed as endangered or threatened by FDACS, but which are not listed by FNAI. These species should receive moderate management attention. At a minimum, extirpation of these species should be prevented at the Lake Park Scrub Natural Area. When possible and appropriate, efforts should be made to increase the size of existing populations, so long as this does not adversely impact natural community level management.

Common wild pine (*Tillandsia fasciculata*)
Giant wild pine (*Tillandsia utriculata*)

These epiphytic bromeliads were recorded at the Lake Park Scrub Natural Area by Farnsworth in 1988 and by ERM in 2000, 2001, and 2002. They occur in scattered locations throughout the scrub, disturbed scrub, mesic flatwoods, and scrubby flatwoods natural communities. They are endangered by the feeding activities of an imported bromeliad weevil that burrows through the central growing point of the plant, causing the growing point to die, which usually leads to the eventual death of the entire plant (Frank 1999). There is no known practical treatment for this bromeliad weevil, and it is not known to kill all the bromeliads in a given population. These species are not fire-tolerant. Although individual plants will be killed by prescribed burning, it is expected that the regenerating trees and shrubs will be recolonized by airborne seeds drifting in from the unburned portion of the site. These bromeliads will be protected by burning only a portion of the site at any one time in order to maintain a seed source on the unburned portion, by enhancing and maintaining the natural communities it grows in, by monitoring the mortality caused by the bromeliad weevil, and by protecting this site from plant collectors.

Relaxed wild pine (*Tillandsia balbisiana*)

This epiphytic bromeliad was recorded at the Lake Park Scrub Natural Area by ERM in 2000, 2001, and 2002. It has been observed in scattered locations in the scrub natural community. This species is not fire-tolerant, but grows in habitats that burn infrequently. It quickly recolonizes burned areas. It may also be susceptible to attack by an imported bromeliad weevil (Frank 1999). This plant will be protected by burning only a portion of the site at any one time in order to maintain a seed source on the unburned portion, by

enhancing and maintaining the natural community it grows in, by monitoring any mortality caused by the bromeliad weevil, and by protecting this site from plant collectors.

4.4.2.4 Priority D

Priority D plant species are those that are listed as commercially exploited by FDACS. These species should receive some management attention. At a minimum, extirpation of these species should be prevented at the Lake Park Scrub Natural Area. No Priority D plant species have been recorded at this site.

4.4.3 Protection and Enhancement of Listed Species - Fauna

Three animal species recorded at the Lake Park Scrub Natural Area have been listed by at least one of the following governmental agencies or nonprofit environmental organizations: FNAI, Florida Fish and Wildlife Conservation Commission (FFWCC), and USFWS (Table 2). These species are ranked and discussed in Appendix A. Recommended procedures for management of these species are described in the following sections. ERM will coordinate with FFWCC's Office of Environmental Services for appropriate guidance, recommendations, and necessary permits to avoid impacts to listed animal species on the project site.

4.4.3.1 Priority A

Priority A animal species are those that are considered by FNAI to be critically imperiled, imperiled, or rare in Florida and/or which are known to occur in viable numbers with a resident or breeding population at the Lake Park Scrub Natural Area. These species should receive the highest level of management attention. Under no circumstances should extirpation of these species be allowed to occur at the natural area. When possible and appropriate, efforts should be made to increase the size of existing populations.

Gopher tortoise (*Gopherus polyphemus*)

Several active burrows of this medium-sized tortoise were recorded at the Lake Park Scrub Natural Area by ERM in 2001, 2002, and 2003. The active burrows were located in well-drained mesic pine flatwoods and scrub mostly in the northern portions of the site, and scat was observed in the former wet prairie. A thorough population survey for this species will be performed as part of the monitoring program. It is believed that the population has suffered in the past from poaching. It will be protected by installing fencing and implementing security patrols to prevent poaching, and by maintaining a mosaic of seral stages with the scrub, scrubby flatwoods, and mesic flatwoods communities at the site through implementation of a prescribed burned program. No gopher tortoises will be allowed to be relocated onto the site unless a current gopher tortoise survey shows that the site can support additional tortoises, and the tortoises to be relocated have been tested and found free from upper respiratory tract disease.

4.4.3.2 Priority B

Priority B animal species are those that are considered to be rare in Florida, but for which a viable resident population is not known to occur at the Lake Park Scrub Natural Area, or the species is transitory in northeastern Palm Beach County. These species should receive significant management attention. Under no circumstances should extirpation of resident species be allowed to occur at the natural area. When possible and appropriate, efforts should be made to increase the sizes of existing populations and to provide

suitable habitat for transitory species, so long as this does not adversely impact natural community level management. If viable numbers of a Priority B species are recorded at, or become established at the Lake Park Scrub Natural Area, then those species should be elevated to Priority A.

American redstart (*Setophaga ruticilla*)

This migratory songbird was recorded at the natural area by ERM in May 2002 in the scrub and scrubby flatwoods natural community. Kale and Maehr (1990) list its habitats in Florida as pine scrub, mangrove, hardwood swamp, cypress swamp, mesic hammock, mixed pine and hardwood forest, pine flatwoods, urban and agricultural environments, and sandhill. It is listed as transitory in coastal scrubs in the Treasure Coast Region by Fernald (1989). Habitat for this species will be enhanced through the maintenance of scrub and scrubby flatwoods communities on site by implementation of prescribed burning and invasive plant control programs.

Osprey (*Pandion haliaetus*)

This bird of prey was recorded at the Lake Park Scrub Natural Area in September 2002 soaring above the scrubby flatwoods natural community. It will be managed as a component of this community. No special needs for this species have been identified at this site. This species will utilize both natural and human-made structures to create large nests high above the ground. It is not known to nest at the natural area. If an osprey nest is discovered, visitor uses will be discouraged in the vicinity of the nest. The osprey will be protected by enhancing and maintaining the natural communities on this site.

4.4.3.3 Priority C

Priority C animal species are those listed species whose occurrence at the Lake Park Scrub Natural Area is considered to be accidental. Management specifically for these species at this site would therefore serve no meaningful purpose. No Priority C animal species have been recorded at this site.

4.5 ARCHAEOLOGICAL AND HISTORICAL RESOURCES

The 1920s-era foundations and slabs associated with the since-destroyed Kelsey City industrial buildings in the northeastern portion of the natural area may qualify as a historical site, although they currently do not have any historical designation. The County has no plans to utilize the former building areas except to possibly use them for interpretive purposes during site guided tours. In order to avoid disturbing the foundations, no machinery will be used to remove the exotic plants growing in and around them. Hand tools and herbicides will be used to treat and remove exotic plants in the foundation areas to minimize impacts. No other archaeological or historic resources are currently known from the natural area. ERM will consult with the Department of State, Division of Historical Resources (DHR) prior to any ground disturbing activities within the project site and on the protection and management of any archaeological and historical resources present on the site. The County will notify DHR immediately if evidence is found to suggest an archaeological or historic resource at the project site. The County will comply with Chapter 287, Florida Statutes, specifically Sections 267.051(2)(a) and (b), in its management of any archaeological or historic sites discovered on the site. The collection of artifacts or disturbance of any archaeological or historical site on the Lake Park Scrub Natural Area is prohibited unless prior authorization has been obtained from DHR.

4.6 COORDINATION WITH ADJACENT LAND USERS

The successful ongoing management of the Lake Park Scrub Natural Area will require the cooperation of the neighborhood residents. Many aspects of maintaining the site such as security, fence checks, and opening and closing the main gate could be simplified by utilizing a neighborhood watch, stewardship group, or a volunteer steward. ERM will attempt to recruit a local steward or organize a neighborhood watch or stewardship group.

Within 24 months of approval of this plan, ERM will begin a public education campaign to educate the community on the benefits of managed natural areas and the necessity of invasive plant control and prescribed burns in maintaining the native habitat. As part of the outreach program, local schools will be invited to use the natural area for nature study, environmental education, and community service projects.

The County will review any proposed and use changes or development orders on property adjacent to the Lake Park Scrub Natural Area and will participate in the development and review process to ensure the protection of biological communities and to avoid adverse impacts to listed species.

4.7 NATURAL AREAS MANAGEMENT ADVISORY COMMITTEE REVIEW

On August 16, 1994, the Palm Beach County Board of County Commissioners adopted Resolution 94-1051, which established a seven-member Natural Areas Management Advisory Committee (NAMAC) to review and comment on management plans developed by staff for natural areas acquired and/or managed by the County and to hold public hearings on these plans prior to their review and adoption by the Board. The members of NAMAC were appointed on November 1, 1994. The membership categories are: a member with experience in the management of natural areas, a biological scientist, a professional educator with knowledge of South Florida ecosystems, a representative of a local municipal government public recreation program, a member of the Palm Beach County Parks & Recreation Department staff, a citizen having an interest in natural areas, and a member of the County's Conservation Lands Acquisition Selection Committee (CLASC). Upon sunset of CLASC, this position will be filled by a citizen with an interest in natural areas.

As part of their responsibilities, the members of NAMAC will hold a public hearing on the proposed management plan for the Lake Park Scrub Natural Area. The public hearing will be held in the evening in a location close to the site, and will follow an afternoon open house at which the public will be able to review and discuss the management plan and a display of the plan for the public use facilities with County staff. Copies of the plan will be available at public facilities such as libraries for two weeks prior to the open house and public hearing. Members of the public who cannot attend the hearing to submit written or oral comments will be allowed to submit written comments to the County during the week following the hearing.

NAMAC members will take those comments into consideration prior to their approval of the plan and recommendation to forward it to the Board of County Commissioners. Members of the public also may comment on the plan at the time it is considered by the Board. After adoption of the plan by the Board, the plan will be reviewed at least every five years by NAMAC and revised as necessary on the basis of new information, research data, improvements in management techniques, or other relevant factors.

4.8 ENVIRONMENTAL EDUCATION AND SCIENTIFIC RESEARCH

In conjunction with the construction of the nature trail, ERM staff will prepare interpretive markers. The printed nature trail guide and a recorded nature trail guide on tape for the visually-handicapped will be developed by December 2005. The interpretive markers for the nature trail will be installed when nature trail construction is completed in December 2005. Also by December 2006, ERM staff will train local volunteers to give guided tours of the natural area as part of the development of a site stewardship group. ERM also will develop an educational slide show program by July 2005 which describes the entire Lake Park Scrub Natural Area and its resources. This slide show will be presented by ERM staff or local volunteers on a request basis. ERM staff also will be available to assist the faculty of local schools in developing educational programs for school use of the natural area. The timing and frequency of the educational programs will depend on the interest shown in the natural area by the faculty of local schools. ERM also will cooperate with the FWCC in utilizing the site for watchable wildlife and bird watching programs.

ERM does not anticipate performing any scientific research other than compiling and interpreting the data from monitoring activities, but will allow researchers affiliated with local institutions of higher learning to conduct scientific research on a permit basis.

4.9 ROAD EXTENSIONS AND WIDENING

The Town of Lake Park has obtained a right-of-way for the future extension of Park Avenue from Old Dixie Highway to Congress Avenue. This right-of-way forms the northern border of the natural area. Park Avenue West is currently under construction from Congress Avenue westward to Military Trail. The construction of the missing segment between Old Dixie Highway and Congress Avenue will turn Park Avenue into a two-lane east-west arterial extending from U.S. Highway 1 to Military Trail. The Park Avenue extension is not on the County's five year road construction plan, but is expected to be constructed at some time in the future.

When Park Avenue is built adjacent to the natural area, ERM will be involved in the design and engineering of this road to minimize the water quality and wildlife impacts, and will request that natural vegetation buffers are included in the project design. Stormwater runoff from the road will be retained within the right-of-way as much as possible, and will not be allowed to discharge to the natural area unless it has been sufficiently pre-treated to remove sediments, petroleum products and other pollutants, and otherwise meets water quality standards. The proposed parking area for this site will be designed for public access from 12th Street, but this access can be easily shifted to the Park Avenue extension when it is constructed. The only changes necessary would be a shortening of the access drives and the construction of appropriate turn lanes on Park Avenue.

There is an unused 73-foot-wide right-of-way strip on the southern border of the natural area that contains mostly native vegetation and could be used to widen Silver Beach Road to four lanes. At the time that this strip was set aside, there were no plans to extend Park Avenue, and a potential need to widen Silver Beach Road could have occurred in the future. The establishment of Park Avenue as a new east-west arterial seems to have eliminated any need to widen Silver Beach Road to four lanes. Silver Beach Road only extends from U.S. Highway 1 westward to Congress Avenue and the area it runs through is nearly all built out. Current plans by the County's Engineering and Public Works (E&PW) Department are to widen the

road to three lanes by adding a center turn lane. ERM has obtained a management agreement with E&PW to manage approximately 52 feet of the unused strip, which is approximately 1.76 acres, and include it within the natural area perimeter fencing.

If Silver Beach Road is eventually widened at some point in the future, ERM will also be involved in the design and engineering of this road to minimize the water quality and wildlife impacts, and will request that natural vegetation buffers are included in the project design. Stormwater runoff from the road will be retained within the right-of-way as much as possible, and will not be allowed to discharge to the natural area unless it has been sufficiently pre-treated to remove sediments, petroleum products and other pollutants, and otherwise meets water quality standards.

5. RESOURCE ENHANCEMENT

Resource enhancement will be required in all management units at the Lake Park Scrub Natural Area. The principal restoration and enhancement activities proposed for this site include invasive species control, wetland restoration, restoration of disturbed areas, elimination of inappropriate uses of the site, and the reintroduction of fire. Active restoration (including direct seeding and out-planting) will be necessary in some areas. The goal of these activities is to restore all native vegetation communities to a maintenance condition.

5.1 ENHANCEMENT METHODS

It should be recognized that even the largest and least disturbed sites in southeastern Florida have been impacted significantly by fragmentation from other natural areas, changes in the regional water table, air pollution, the loss of large predators, and species extinctions. These types of impacts are mostly irreversible, given the current political and social realities of southeastern Florida. In addition to these irreversible impacts, almost all sites in southeastern Florida also have been affected by reversible changes such as the exclusion of fire and invasion by exotic pest plants.

In south Florida, the exclusion of natural fire is one classic example of a reversible impact that can be at least partially mitigated through human intervention. Natural fire cannot be expected to travel between natural area fragments. However, this interrupted natural ecological function may be partially mitigated for through the use of prescribed burning as a management tool. Prescribed burns must be conducted by natural area managers in perpetuity in order to be an effective management tool.

Human intervention also can help minimize adverse impacts related to invasive exotic plant species. Management techniques such as mechanical removal, herbicide treatments, prescribed burns, and re-planting native species, when appropriate, can all help to minimize adverse impacts related to invasive exotic plants and help restore a more natural plant community.

The goal of this natural area management plan is to restore and maintain as many of the functions and values of the historically-occurring natural communities as possible. This restoration will be accomplished through the initial and maintenance removal/eradication of exotic plant species, wetland restoration and restoration planting activities, the reintroduction of fire, and exclusion of unauthorized uses. Areas of good to high quality vegetation will be enhanced and preserved through the initial and maintenance removal/eradication of relatively small areas of exotic vegetation, and the reintroduction of fire.

All natural communities at the site have been impacted by human disturbances. Based upon the historic aerial photographs, soil surveys, and reviews of the literature, it seems probable that the site has always been dominated by scrub, scrubby flatwoods, and wet prairie natural communities. The disturbed scrub, mesic flatwoods, and former wet prairie communities were created by previous off-road vehicle trespass, fire exclusion, exotic pest plant invasions, construction of adjacent roads and buildings, illegal dumping, soil removal, industrial development, hydrological modifications, and placement of fill materials. Therefore, the restoration and management activities at the site will be performed to in order restore and maintain scrub, scrubby flatwoods, and mesic flatwoods communities.

5.1.1 Management Unit Design

The Lake Park Scrub Natural Area is composed of three historic natural vegetation communities that have been modified by off-road vehicle trespass, fire exclusion, exotic pest plant invasions, construction of adjacent roads and buildings, illegal dumping, soil removal, industrial development, hydrological modifications, and placement of fill materials, and other human-related disturbances. Historically, each of the represented native communities were part of a greater regional mosaic of upland and wetland ecosystems. Today, the natural area is completely isolated from nearby remnants of natural vegetation communities and is continuously affected by human and human-induced disturbances. These disturbances include fire exclusion, the dissemination of invasive species from nearby residential and former nursery areas, and intermittent off-road vehicle use.

Successful management of fragmented ecosystems, such as those found at the Lake Park Scrub Natural Area, depends heavily upon management unit design. The site has been subdivided into three management units, using management roads as boundaries (Figure 4). Each management unit contains more than one vegetation community, although each is dominated by a single community and will be managed for the dominant community. The management units range in size from about 14 to 22 acres, averaging about 18 acres per unit. Macro-management units have been designed to allow for specific management actions to maintain the dominant natural vegetation community and the plant and animal species present in that unit. As described in Section 5.1.2, Fire Management, these units are small enough to allow for safe and practical fire management. Macro-management units may be further sub-divided into micro-management units, which represent distinct natural communities and/or seral stages within the management unit.

5.1.2 Fire Management

Scrub, scrubby flatwoods, and mesic flatwoods natural communities are dependent upon fire for long-term restoration and maintenance. However, given the extensive alterations that have been made to the local landscape, natural lightning-induced fires cannot be expected to fulfill the needs of these fire-dependent communities. In addition, the risk of damage from wildfire is considerable due to the proximity of the site to nearby residential and industrial properties, major highways, and the FEC Railway. As such, the use of controlled, prescribed fire, together with firebreaks and other safety precautions, will be necessary to fully achieve the stated management objectives.

The primary responsibility for prescribed burning will be assumed by ERM. Assistance in the form of fire-fighting staff and equipment will be requested from Palm Beach County Fire-Rescue, which has contracted with the Town to provide fire protection for the Town of Lake Park. Additional assistance may be provided by Florida Division of Forestry (DOF), FFWCC, TNC, Palm Beach County Parks personnel, and trained volunteers. Fire-related safety training will be required of all County staff and others participating in a prescribed burn. All prescribed burns will comply with the legal mandates stated in Chapter 590.125 of the Florida Statutes, Open Burning Authorized by the Division, Section (3), Certified Prescribed Burning.

ERM has written a flexible fire management plan for the Lake Park Scrub Natural Area (Appendix G). The development of the fire management plan was coordinated with DOF and FFWCC. The fire management plan was based on the information about natural vegetation communities and listed species found in the Natural Resources Inventory and Assessment (Appendix A). The plan has considered the surrounding land

uses, safety issues in the event of a wildfire, and the ecological consequences of specific fire management strategies. The overall goal of the fire management plan is to introduce a fire regime (i.e., a repeatable pattern of fire with predictable results) onto the natural area that will sustain the fire-dependent communities on the site. Specific objectives for different areas of the site will depend upon site conditions and other management objectives for that area. The plan will include the following general objectives:

- 1) To ensure the long-term existence and viability of the scrub, scrubby flatwoods, and mesic flatwoods natural communities found on the site, and the listed plant and animal species present in these habitats.
- 2) To provide viable wildlife habitat for wildlife species that use, or could potentially use, the scrub, scrubby flatwoods, and mesic flatwoods natural communities on the site.
- 3) To control the regrowth and regeneration of invasive vegetation following treatment or removal activities, thereby assisting in the restoration of disturbed areas.
- 4) To reduce the danger of wildfire by reducing the buildup of fuels that has resulted from the limited occurrence of fire in recent years.

To meet these objectives, the fire management plan will incorporate specific tools and management practices designed to minimize adverse impacts to native vegetation and wildlife, while maximizing the beneficial effects of prescribed burns. One of the tools that will be incorporated into the management plan is the use of firebreaks. Permanent firebreaks/management roads will be established along the perimeter of the Lake Park Scrub Natural Area. Similar firebreaks/management roads will be established between the three management units (Figures 3 and 4). Existing roads and trails will be used to help create the firebreak/management road system whenever possible. New firebreaks/management roads will be constructed where existing roads and trails are not sufficient to meet the goal of the fire management plan. Firebreaks will be at least 15 feet wide at the time of a prescribed burn. Vegetation may be cut along the edges of specific firebreaks, if necessary, to widen them further prior to a prescribed burn. After the burn, this cut vegetation will be allowed to regenerate naturally, and management roads will be maintained at a width of 10 feet to allow for maintenance vehicle access.

These firebreaks/management roads will help to control the spread of potentially destructive wildfires and adequately control the prescribed fires. They also will serve as the boundaries of the fire-managed macro-management units and will provide vehicular access for conducting prescribed burns. Some firebreaks or portions of firebreaks also may be used for other management activities, such as exotic pest plant control, and/or as part of the hiking trail system. Prior to the construction of a firebreak/management road, the area will be surveyed for listed species. If listed species are found, the location of the firebreak will be adjusted whenever possible to avoid impacting the listed species. Alternatively, the listed species will be relocated to another on-site location prior to construction of the firebreak/management road.

The firebreak/management road system will delineate the boundaries of the three management units. The units are as large as possible for a relatively small site, so that fires can burn through ecotones and move in a more natural, spotty fashion across the landscape. The resulting patchwork of burned and unburned stands within a management unit will produce a mosaic of vegetation at various stages of maturity, thereby maximizing diversity within and among communities. This will provide habitat for individual species which

typically use, or may even be restricted to, communities in a particular state of maturity. The size of the management units has been restricted so that control of prescribed fire and attendant smoke will be relatively easy and predictable. Depending on the specific conditions and objectives of a burn, a management unit may be further subdivided into smaller units for conducting the prescribed burn.

The fire management plan also has taken into account the seasonality and frequency of prescribed fires and seeks to approximate the natural incidence of fire in the site's communities. In general, prescribed fires should be conducted during the early growing season, which extends from March to July. Natural lightning-induced fires normally occur during the growing season. The natural incidence of winter fires is generally low. Prescribed winter fires should similarly be rare in occurrence, to ensure that fire events are synchronized with the fire-adapted life histories and reproductive cycles of resident species. However, where fire has been suppressed for a long period of time and fuel loads have become heavy, prescribed winter fires may be used to begin restoration of a natural fire regime. Winter fires are generally cooler fires and can reduce accumulations of excess fuel while limiting the undesirable destruction of vegetation. In areas such as the Lake Park Scrub Natural Area, winter fuel reduction fires may be more appropriate, at least in the short term.

Backing fires, cutting of dense understory vegetation, and other techniques will be used for prescribed burns in the scrubby flatwoods in order to reduce fire intensity and slash pine mortality and to decrease smoke generation. Slash pines are a natural component of the scrubby flatwoods community, and their population levels will be maintained in this habitat. Slash pines are not a natural component of the scrub community and no efforts will be made to maintain their population in this community. Prescribed burning in the disturbed scrub and mesic flatwoods natural communities is complicated by a spotty and uneven distribution of fuels, with much variation in fuel type. The uneven fuel distribution is a result of previous human-caused alterations at this site, and is not typical of these natural communities. Disturbed scrub and mesic flatwoods areas will be burned in the same way as undisturbed scrub and scrubby flatwoods habitats, although multiple ignition points may be necessary to overcome the patchiness of the vegetation.

If a wildfire occurs, the appropriate actions will be taken by the authorized fire emergency response agency. Active fire suppression measures will be avoided as much as possible, but will be utilized if deemed necessary by that agency. These suppression measures rely upon the use of heavy machinery and powerlines, and are extremely destructive to vegetation and other natural features. If such measures are undertaken to control a fire, all powerlines will be backfilled after the fire has been extinguished, and disturbed areas will be rehabilitated to the greatest extent possible.

Implementation of the flexible fire management program will commence within one year of the final approval of this management plan. The management units will be burned at an average rate of approximately one unit every six years. Based on this schedule, the first prescribed burn is tentatively expected to occur on Unit 3 in 2005, followed by a burn of Unit 2 in 2013, Unit 1 in 2020, Unit 2 again in 2027, Unit 3 again in 2037, and Unit 1 again in 2040. The cycle will start again with Unit 3 in 2045, Unit 2 in 2050, Unit 1 in 2060, Unit 2 in 2063, Unit 3 again in 2077, and Unit 1 in 2080. The average interval between burns at this site will be 6.3 years. The closest interval that different burn units will be scheduled under this rotation is 3 years; the longest interval is 14 years. The burn interval for each unit at the Lake Park Scrub Natural Area was chosen for the dominant natural community. An interval of 20 years was selected for Unit 1, which is dominated by scrubby flatwoods; an interval of 10 to 14 years for Unit 2, which will be dominated by mesic

flatwoods; and an interval of 40 years for Unit 3, which is dominated by scrub. The scrub portions of Unit 1 will only be burned every other burn in order to achieve a 40-year interval for this community.

A specific burn plan will be prepared for each unit prior to conducting a prescribed burn. Where fire-intolerant listed plant species are known to be present within a burn unit, a survey will be performed for these species prior to the prescribed burn. If necessary, individual plants will be relocated outside the burn area. A summary of key information on to assist with development of specific burn plans is provided in Appendix G.

A public education campaign will be developed that will include informing residents of areas surrounding the site of the necessity and benefits of fire, the safety features of prescribed burning versus wildfires, and the strategies that will be implemented to minimize the impacts of smoke on nearby communities. The County will coordinate with Palm Beach County Fire-Rescue, DOF, FFWCC, and the Florida Department of Transportation prior to conducting a prescribed burn. If requested, County staff will meet with local community groups such as homeowners' associations before each burn to coordinate with residents, to provide information on the necessity of conducting prescribed burns, and to describe the safety precautions that will be taken to protect adjacent lands.

5.1.3 Invasive Species Control

Like many fragmented natural areas in southeastern Florida, the Lake Park Scrub Natural Area has been invaded by a number of invasive plant species. Many of these species have been brought to the site by animals and birds or have originated from homesite plantings or vegetation dumping piles within the site. To date, 61 species of exotic plants have been recorded within the natural area (Appendix B), and many of these exhibit invasive tendencies. Exotic plant species currently represent 28% of the plant species recorded for the site. This percentage is not unusual for a small habitat preserve that is surrounded by residential and industrial development and has undergone significant disturbance in the past, and should not be inferred to indicate that the site is of low quality. However, additional exotic plant species may be found during the early management phases, and new exotic plant species are expected to continue to colonize the site as long as reproductive plants are present in the surrounding urban and suburban areas. A visual estimate of the site's vegetation determined that approximately 13% of the vegetative cover, or the equivalent of 7 acres, consisted of exotic species. The exotic plants are concentrated in disturbed areas in the northeastern and southeastern portions of the site.

Thirty of the exotic species found on the Lake Park Scrub Natural Area - Bahia grass, Bermuda grass, brownbud allamanda, chandelier plant, Chinese boxorange, crowfoot grass, Dixie ticklelolli, flattop mille grains, feid passionflower, Florida tassellflower, gala-ol-wind, Guinea grass, hairy sensitive pea, hybrid shrub verbena, ilia plant, lilac tassellflower, lima fanpetals, Madagascar periwinkle, mango, Mexican tea, Malaysian false pimpernel, monk orchid, noyau vine, Peruvian primrosewillow, rough Mexican clover, royal poinciana, septicroweed, shrubby false buttonweed, smooth rattlebox, smut grass, slash palm, and tropical Mexican clover - are not identified as invasive or potentially invasive exotic plants by the Florida Exotic Plant Council (FLEPPC). Many of these species prefer open, disturbed sites, and normally do not invade and disrupt functioning native plant communities. The control of those species which are normally not invasive will be given a low priority as they are generally controlled by good management practices. However, any of the exotic species listed above that are exhibiting invasive characteristics at this site will be given priority for control activities.

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Twelve exotic species - Australian almond, bowstring hemp, burrnut, Caesar's weed, castor-bean, creeping oxeye, Ganges primrose, Guinea grass, leadtree, ile plant, Natal grass, and Senegal date palm - have been identified by FLEPPC as potentially invasive, or Category II, plants (FLEPPC 2003). Most of these species prefer open, disturbed sites, and normally do not invade and disrupt functioning native plant communities. The control of many of these species which are normally not invasive will be given a low priority. They will be controlled through good management practices such as prescribed burning and the elimination of unnecessary disturbances such as off-road vehicular traffic. However, some of the exotic species listed above are exhibiting invasive characteristics at this site and will be given priority for control activities.

The remaining 19 exotic plant species found on the natural area do exhibit invasive tendencies and have been listed by the FLEPPC as Category I, or those considered to be most invasive (FLEPPC 2003). Nine species - Australian-pine, Australian umbrella tree, Brazilian pepper, earleaf acacia, Gold Coast jasmine, mala'euca, rosary pea, Sprenger's asparagus fern, and woman's tongue - constitute the major invasive plant problem at the Lake Park Scrub Natural Area at present. Other Category I invasive plant species found on the natural area are air potato, carrotwood, chinaberry tree, Indian laurel fig, Mexican wild petunia, shrub verbena, sapodilla, Surinam cherry, torpedo grass, and tuberous Boston fern. Control of the Category I invasive plants will be the primary focus of the invasive plant control efforts.

For purposes of the management plan, the phrase "invasive plant species" includes those plants listed as Category I plants by the FLEPPC, and the following three groups of plants: exotic species, species of uncertain origin, and ruderal species (species which are probably native but are found almost exclusively in disturbed areas). Although exotic species are the traditional targets of eradication activities, invasive native species can have adverse impacts upon fragmented natural vegetation communities. This is especially true of aggressive native vines, which, in the absence of fire, often shade out preferable native trees, shrubs, and herbs. Ruderal species are usually not problematic, but in some cases can slow down or arrest restoration processes. Some exotic species, such as Madagascar periwinkle (which prefers open disturbed sites) do not have the capacity to invade functioning natural communities. They will be controlled by good management practices, such as prescribed burning, and the elimination of unnecessary disturbances, such as off-road vehicle traffic.

The removal, eradication and/or control of invasive plant species will be given a high priority in the management of the natural area. In general, a two-year, four-phase invasive plant species control program will be carried out in all portions of the site. Each of the four phases will be conducted approximately six months apart. The first phase of the initial exotic plant removal activities will focus on the nine Category I plants that are the major invasive plant problems. Later phases will deal with the remainder of the Category I plants, as well as the Category II plants and other invasive plants that require removal activities. Some invasive plants will be eliminated during site trash cleanups or by the establishment and maintenance of perimeter firebreaks.

If treatments for invasive plant species are thorough, the adjacent native vegetation communities should be in a maintenance condition by the end of the two-year period. A management unit will be considered to be in a maintenance condition (with regards to invasive species) when the cover of invasive species does not exceed one percent of the canopy or understory layers within any management year. Once a maintenance

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condition is reached, follow-up treatments for invasive vegetation will be conducted on an as needed basis. After removal of invasive plants, the areas they occupied will be managed to encourage the spread of appropriate native vegetation and to prevent to the recolonization of invasive plants. In selected areas, replanting of exotic removal areas with appropriate native vegetation seeds, plants, and plugs may be undertaken.

In this plan, invasive plants are not discussed on a species-by-species basis, but are grouped by their habit (life form), preferred habitat, degree of invasiveness, and potential (or real) impacts on natural communities. Although this method is functional for strategic and operational planning purposes, each invasive plant species is unique, and control measures may need to be tailored on a species-by-species basis. Invasive vegetation species have been grouped into the following categories: (1) vines; (2) shade-tolerant trees; (3) shade-intolerant trees; (4) shade-tolerant shrubs; (5) shade-intolerant shrubs; (6) grasses; (7) perennial forbs; and (8) annual and short-lived forbs. Some invasive species do not fall easily into these categories, and specific priorities may have to be developed for these species. Preliminary management priorities and techniques for each of the categories are described in the following sections.

5.1.3.1 Vines

This category includes exotic species as well as aggressive native vines. If possible, exotic vines will be eradicated from the natural area. Aggressive native vines will be treated as invasive species until each management unit reaches a maintenance condition. After this time, aggressive native vines will be allowed to regenerate until they reach densities and cover that approximate their historic presence on the site. Vines pose a significant threat to the natural communities at the natural area because they cover the leaves of shrubs and trees and cause death through reduction of photosynthetic food production. Invasive vines recorded at the site include air potato, brownbud allamanda, fetid passionflower, Ganges primrose, Gold Coast jasmine, love vine, muscadine grape, oceanblue morningglory, noyau vine, and rosary pea.

During invasive vegetation control treatments, most species of vines will be cut at a height of six feet and again near ground level if they are growing into canopy trees. The bases of the invasive vines will be hand-pulled or treated with a systemic herbicide such as Garlon 4. The vine stems remaining in the canopy may be left to decompose in the trees. Invasive vines growing on shrubs or saplings under six feet in height will be cut near ground level and removed from the supporting plant. The bases of the vines will be hand-pulled or treated with a systemic herbicide. Lateral stems of vines growing along the ground surface will be cut, hand-pulled and/or treated with a systemic herbicide. These methods should be effective in controlling brownbud allamanda, fetid passionflower, Ganges primrose, Gold Coast jasmine, muscadine grape, noyau vine, oceanblue morningglory, and rosary pea. Love vine is a parasitic native vine that may become abundant in fire-maintained natural communities in the absence of fire. It is difficult, if not impossible, to control without fire. This species will be controlled through implementation of a prescribed burn program. Air potato has an underground tuber that must be dug up or killed by herbicides, and aerial tubers that must be collected, bagged and removed from the site.

5.1.3.2 Shade-tolerant Trees

This category includes woody plants which typically have one main stem that grows over 12 feet in height. In the past, shade-tolerant trees were not a major threat to natural communities in southeastern Florida.

However, several species of invasive shade-tolerant trees have become established within natural communities in the last ten years. These species, which have the ability to invade undisturbed intact systems, are especially problematic in hammocks, drained wetlands, and fire-maintained communities that have been fire-excluded. Shade-tolerant exotic trees found at the Lake Park Scrub Natural Area include Australian almond, Australian umbrella tree, carrollwood, Indian laurel fig, mango, royal poinciana, thatch palm, sapodilla, and Senegal date palm. Most of these species are top priorities for removal. In general, saplings and adults of these species can be controlled with basal treatments of a systemic herbicide such as Garlon 4; seedlings can be hand-pulled. Australian umbrella tree, however, is known to be highly resistant to basal treatments of Garlon 4, and is best treated by cutting down the tree and applying Garlon 3A to the stump. Senegal date palm is a suckering palm, and herbicides must be applied directly to the bud in each of the individual growing points and any subsequent new suckers.

5.1.3.3 Shade-intolerant Trees

Invasive shade-intolerant trees prefer sunny locations, and are often successful germinating on nutrient-poor soils. They generally grow in disturbed areas, and often fix nitrogen. These species are most problematic in disturbed sites and fire-dependant communities, although they also may invade wetlands, disturbed hammocks, and tidal swamps. Exotic shade-intolerant trees recorded at the Lake Park Scrub Natural Area include Australian-pine, Brazilian pepper, chinaberry tree, earleaf acacia, leadtree, melaleuca, and woman's tongue. Nearly all of the shade-intolerant trees are top priorities for removal. In general, saplings and adults of these species can be controlled with basal applications of Garlon 4; seedlings can be hand-pulled. Because Brazilian pepper is a sprawling, shrub-like tree, special treatments such as cutting and removal may be necessary in especially dense areas.

5.1.3.4 Shade-tolerant Shrubs

Shade-tolerant shrubs are similar to shade-tolerant trees, except that they generally affect a smaller area in the subcanopy and understory. Invasive exotic shade-tolerant shrubs recorded at the Lake Park Scrub Natural Area are limited to Chinese boxorange and Surinam cherry, which is a top priority for removal. In general, saplings and adults of this species can be controlled with basal treatments of a systemic herbicide such as Garlon 4; seedlings can be hand-pulled.

5.1.3.5 Shade-intolerant Shrubs

Shade-intolerant shrubs are similar to shade-intolerant trees, except that they generally affect a smaller area in the subcanopy and understory. Invasive exotic shade-intolerant shrubs recorded at the Lake Park Scrub Natural Area include castorbean, caesar weed, hybrid shrub verbena, Peruvian primrosewillow, and shrub verbena. Jack-in-the-bush is a native ruderal shrub species. Caesar weed and Peruvian primrosewillow are not expected to be problematic at this natural area, and will be monitored to determine what (if any) actions should be taken in the future. The remainder of the shade-intolerant shrubs are top priorities for removal. In general, saplings and adults of these species can be controlled with basal applications of Garlon 4; seedlings can be hand-pulled.

5.1.3.6 Grasses

Exotic grasses can become a significant problem in fragmented natural communities, especially in fire-dependent communities where they may invade open spaces and compete with shade-intolerant shrubs and groundcovers. Invasive grasses recorded at the Lake Park Scrub Natural Area include Bahia grass, Bermuda grass, common reed, crowfoot grass, Guinea grass, Natal grass, smut grass, and torpedo grass. Common reed and St. Augustine grass are of uncertain origin. Crowfoot grass is relatively ephemeral, and prefers disturbed areas; it is not expected to become a problem at this natural area. Bahia grass tends to die out and disappear over time unless it experiences regular disturbances such as mowing or grazing.

The remainder of the invasive grasses at this natural area are top priorities for removal. Common reed and Guinea grass are relatively large grasses that pose a serious threat to the natural communities at this site. These grasses should be cut near ground level and allowed to re-sprout; new growth can then be treated with Roundup or Rodeo. Natal grass is best treated through hand-pulling; seed heads should be bagged and removed from the site as both species readily reestablish from seed. Smut grass is a clump-forming grass and can be easily treated with Roundup or Rodeo. Bermuda grass and St. Augustine grass are low stoloniferous or rhizomatous species that are best treated with careful applications of Roundup or Rodeo. Where necessary, torpedo grass can be controlled by careful use of herbicides such as Roundup or Rodeo. Torpedo grass is most vulnerable when herbicides are applied to the new growth after a prescribed burn (Bodle and Henton 2001).

5.1.3.7 Perennial Forbs

Invasive perennial forbs can become a problem within all types of natural communities, and compete directly with native understory forbs. Exotic perennial forbs recorded at the Lake Park Scrub Natural Area include bowstring hemp, chandelier plant, creeping oxeye, life plant, Mexican tea, Mexican wild petunia, monk orchid, Sprenger's asparagus fern, and tuberous sword fern. Capeweed is a native perennial ruderal forb. The perennial forbs at this natural area are top priorities for removal. Successful results have been achieved with "basal" applications of Garlon 4 on Sprenger's asparagus fern. Creeping oxeye readily roots from the nodes and should be carefully hand-pulled and bagged or treated with Roundup or Rodeo. Mexican tea and Mexican wild petunia can be spot-treated with basal applications of appropriate herbicides.

Bowstring hemp is difficult to eradicate, but can be successfully eliminated with selective herbicide use in conjunction with repeated excavation of untreated or resprouting underground rhizomes. This plant readily resprouts from any vegetative fragments, so all living plant parts should be bagged and removed from the site. Tuberous sword ferns usually have underground tubers and may require repeated hand-pulling; they too should be bagged and removed from the site. Chandelier plant, life plant, and monk orchid are all capable of resprouting from vegetative fragments; after any feasible herbicide treatments has been undertaken, the remaining live plant parts should be hand-pulled, bagged, and removed from the site. Because many of these plants have thick succulent leaves that prevent herbicides from adhering or being absorbed, hand-pulling may be the only way to eliminate these plants.

5.1.3.8 Annual and Short-lived Forbs

In general, annual or short-lived forbs cause temporary problems and are difficult to eradicate due to high seed production. Most of these species respond to disturbance; therefore, minimizing disturbances will

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cause their populations to drop in numbers. They prefer disturbed areas and are not considered to be a major threat at the Lake Park Scrub Natural Area. Invasive exotic annual and short-lived forbs recorded at this site include burrmat, Dixie ticktrefoil, gale-of-wind, hairy sensitive pea, lima fanpetals, flat-top mille-graine, Madagascar periwinkle, Malaysian false pimpernel, Mexican clovers, septio-weed, shrubby false buttonweed, smooth rattlesnake, and tasselflowers. Camphorweed, Canadian horseshoe, common fanpetals, common ragweed, Indian hemp, rustweed, Spanish needles, and sweetbroom are native ruderal species in this category that have been found at this site. None of these plants are considered to be a major problem at the natural area at the present time. All of these plants will be monitored to determine what (if any) actions should be taken in the future. Control measures, when necessary, usually involve hand-pulling of each individual, and spot treatments with herbicides, if needed.

5.1.3.9 Exotic Animals

Four species of vertebrates recorded at the Lake Park Scrub Natural Area (Cuban brown anole, Eurasian collared dove, Mediterranean gecko, and domestic cat) are not indigenous to the south Florida mainland. Control of domestic cats and dogs will focus on educating the surrounding community about the negative impacts to the natural area from free-roaming pets. In addition, they will be controlled with selective live-trapping, if necessary. A stray cat has been observed in the northeastern portions of the site. Its capture and removal will be coordinated with Palm Beach County Animal Control. Little is known about the Mediterranean gecko. It is active mainly at night and may fill a niche not occupied by native lizards. The Eurasian collared dove has been seen flying overhead throughout the site. Being a predominantly urban bird introduced from Europe, it is not expected that this dove uses or affects the natural area in any significant way.

Lazell (1989), in a review of the spread of the Cuban brown anole, stated that in the 1940s and 1950s it was known only from the Florida Keys. By 1975, it was known throughout south Florida north to Palm Beach and St. Petersburg. Multiple introductions from the Bahamas and Cuba (representing two subspecies) have facilitated its spread (Lazell 1989; Ashton and Ashton, 1991). It may actively compete with the native green anole. The Cuban brown anole is not causing a problem at the natural area at this time, but potential control efforts will be explored in the future if needed.

5.1.4 RESTORATION/ENHANCEMENT

The current estimated population of gopher tortoises on this site is only 10 animals, which is approximately one-quarter of the minimum population of 40 tortoises needed for a viable population (Cox, et al. 1987). The site is capable of supporting over 100 tortoises. Relocation of additional gopher tortoises from properties that are going to be developed will be considered as a way to boost the population size and to combat inbreeding depression. No gopher tortoises will be allowed to be relocated onto the site unless a current gopher tortoise survey shows that the site can support additional tortoises, and the tortoises to be relocated have been tested and found free from upper respiratory tract disease. The development of any gopher tortoise relocation plan will be coordinated with FFWCC and all necessary permits will be obtained from that agency.

The reintroduction of scrub lizards also from existing populations on public or private lands in the Jupiter/Juno Beach area also will be considered. The reintroduction of any scrub lizards will be coordinated with FFWCC and all necessary permits obtained. The Florida scrub-jay undoubtedly occurred at this site

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in the past, but may have been extirpated as the site changed into unsuitable habitat from fire exclusion. At approximately 55 acres, the Lake Park Scrub Natural Area may be too small to support a viable scrub-jay population, since it could only provide suitable habitat for two to three family groups at their average territory size of 23 acres (Woolfenden and Fitzpatrick, 1984). However, the site is within 4.5 miles of the viable scrub-jay population at the Juno Dunes Natural Area, which is within the normal dispersal distance for this species. After a prescribed burn program has been implemented, and the natural area again becomes suitable scrub-jay habitat, scrub-jays may recolonize the site from Juno Dunes. If this happens, the management of the site will be re-evaluated to address the needs of scrub-jays. There are no plans to actively reintroduce scrub-jays to the natural area. The reintroduction of gopher frogs from the Juno Dunes Natural Area will also be considered, provided that the wet prairie restoration is successful in creating suitable breeding habitat for these amphibians.

The four-petal pawpaw is characteristic of northeastern Palm Beach County scrub sites, but it is missing from this natural area. It was historically found as near as the Old Port Cove development, which is approximately two miles northeast. It is possible that it never occurred at this site, as a large expanse of unsuitable low wet soils in the Village of North Palm Beach may have been an insurmountable barrier to pawpaw colonization of the Lake Park Scrub. However, the species recovery plan for this endangered plant calls for additional populations to be established on suitable habitat on protected land (USFWS 1998). Since the Lake Park Scrub fits these criteria, it would seem advisable to consider the reintroduction of four-petal pawpaw from seeds collected in the nearby Paw Paw Preserve and Juno Dunes Natural Area populations.

There are extensive areas of former wet prairie on the natural area that are in need of restoration. Because of the large extent and complex nature of this restoration area, wet prairie restoration will be covered separately in the following Section 5.1.4.1.

5.1.4.1 Former Wet Prairie Restoration

The former wet prairie on the Lake Park Scrub Natural Area contains the natural community that has been most severely affected by human-caused disturbances. Within the Natural Area, there were historically approximately 15.7 acres of wet prairie. Today, no intact wet prairie with a normal hydroperiod remains. All of the wet prairie on the site has been affected by drainage and a groundwater table that has been lowered from 15 feet above sea level to approximately nine feet. The last of the surface water in the wet prairie disappeared in the early 1950s, and only wisps of maidencane and buttonbush, and clumps of swamp fern and Carolina reedroot indicate that these areas used to be wetlands. Melaleuca has formed a scattered to dense forest on portions of the former wet prairie, while mesic flatwoods vegetation, mixed with transitional wetland plants along with ruderal and exotic herbs and grasses, has colonized the sandy soils on the edges and higher spots within the wetland.

Reversing the effects of drainage and raising the water table is not possible without causing flooding in adjacent developed areas. One way to restore the wet prairie community is to scrape down a portion of this community until the soil surface is again below the ground water table. The goal of wet prairie restoration is to recreate a historic seasonal wetland that has 12 to 18 inches of standing water during the wet season, and declining water levels during the dry season. At the end of the dry season there should be a 1 to 2 month period without any surface water in the wetland. The 1 to 2 month period without surface water eliminates a permanent fish population and makes the wetland more conducive to successful amphibian reproduction, a major goal of this wetland restoration.

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Approximately three acres in the central portion of the largest former wet prairie area is targeted for wetland restoration. Starting at the edge of the restoration area, the soil surface will be scraped down at a 20 to 1 slope until it reaches the calculated bottom of the restoration area, which will be set at 12 to 18 inches below the seasonal high groundwater level. Several groundwater monitoring wells will be installed in order to gather data necessary to determine the correct elevation for a restored wetland whose water levels are determined by ground water levels. Because of the smaller size of the restored wetland compared to the original wet prairie, it will be classified as a depression marsh. Depression marshes and wet prairies are very similar in vegetation and animal life, and differ mainly in the smaller size of depression marshes.

Scattered mesic flatwoods vegetation in the wetland restoration area such as slash pines and saw palmetto clumps will be salvaged where possible and relocated into former wet prairie areas that are targeted for restoration as mesic flatwoods. Subsurface soils excavated from the restoration area will be used to form a low berm along the eastern edge of the natural area adjacent to the Thousands of Parts automobile junkyard. This berm will block the low-quality stormwater runoff that occasionally enters the natural area from the junkyard during major storm events. The junkyard has no historic or permitted drainage rights onto the natural area.

In general, the restored depression marsh will have a central standing water area with a soil elevation set at 12 to 18 inches below the seasonal high groundwater level. This standing water area will have no inlet or outfall pipes and will fluctuate with groundwater levels and rainfall. Plantings in the standing water area will target the species known to historically occur in the wetland - maidencane, buttonbush, swamp fern. Surface soils from the wetland restoration area will be stockpiled and then spread in the standing water area and adjacent transitional areas in order to provide an organic substrate and a seed source for marsh plants. Outside of the standing water area, the soil surface will slope up gradually until it reaches the current soil elevation. These sloping areas will be planted with mesic flatwoods vegetation, or the recolonization of these areas by mesic flatwoods vegetation will be encouraged.

All other portions of the former wet prairie will be managed to succeed to the mesic flatwoods natural community. Exotic vegetation will be removed, and if funding is available, plantings of mesic flatwoods vegetation will be undertaken. The restoration proposal for the former wet prairie is preliminary and conceptual in nature. All restoration work will require permits from the appropriate regulatory agency. The proposed restoration proposals may need to be modified in order to address agency requirements and comments, and the actual restoration work may differ somewhat from what was proposed above because of changes made to obtain regulatory approval.

5.2 COORDINATION WITH ADJACENT LAND USERS

Both direct and indirect impacts from adjacent land uses are expected. Direct impacts include the invasion of exotic plant species onto the Lake Park Scrub Natural Area and possible predation of wildlife by dogs and cats. Impacts related to the spread of exotic plants will be mitigated through interpretive programs, public outreach, an aggressive invasive exotic plant control program and prescribed burns. Predation of wildlife by domestic dogs and cats will be reduced/controlled through public education efforts and enforcement of Natural Areas Ordinance (Appendix F) provisions concerning the prohibition of pets. Any stray dogs or cats that take up residence on the site will be removed by Palm Beach County Animal Control or by live-trapping.

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Perhaps the greatest off-site threats to the long-term management of the Lake Park Scrub Natural Area are the public's fear of fire and the general dislike of the attendant smoke. Smoke management is one of the key issues addressed in the fire management plan (Appendix G). An active public education campaign will be developed that will describe the necessity of fire, the safety features of prescribed burning versus wildfires, and the strategies that will be developed to minimize the impacts of smoke on nearby communities. If public pressures are sufficient to reduce or prohibit the use of prescribed fire at the Lake Park Scrub Natural Area site, several of the management goals identified for this site may not be able to be met. If this is the case, alternatives to prescribed burns will then be considered to help meet the management goals for this natural area.

6. COST ESTIMATES AND FUNDING SOURCES

Cost estimates for initial site development and long-term management are provided in Tables 3 and 4, respectively. The primary funding source for site development will be funds from the \$150 million Palm Beach County Conservation Lands Bond Referendum approved by the voters on March 9, 1999. The County has primary responsibility for site development and management on this site, as described in the interlocal agreement with the Town (Appendix E). Staffing for habitat management and facility maintenance will be accomplished with existing County and Town personnel, with assistance from site stewards, County contractors, and community volunteers.

6.1 DEVELOPMENT COSTS

Initial site development and restoration is estimated to cost approximately \$460,037 (Table 3). Securing the site with fencing, signs and gates, removing exotic vegetation, construction of management roads, and wetland restoration will account for almost half of this projected cost. Other major expenditures include construction of a parking area; an accessible nature trail and a wildlife observation platform with a shade shelter; a kiosk with interpretive displays; and design, engineering, and permit fees. Funding for initial site development will be provided from the Palm Beach County Conservation Lands bond funds, although grant monies may be sought to fund construction of the nature trail and kiosk. The County and the Town will not apply for funds from any grant program whose requirements conflict with the terms and conditions of the FCT award.

6.2 KEY MANAGEMENT ACTIVITIES AND RESOURCE ENHANCEMENT COSTS

Costs of management will be minimized through the cooperation of local citizens' organizations and by coordinating the management of natural areas on a county-wide basis. The Audubon Society of the Everglades, the Palm Beach County Chapter of the Florida Native Plant Society, the Florida Trail Association, and the Sierra Club - Loxahatchee Group all have committed to providing volunteer services for the management of environmentally sensitive lands acquired by the County. However, it is recognized by the County that the management of the Lake Park Scrub Natural Area will require more than volunteer assistance. Some activities, such as prescribed burning, herbicide applications, chainsaw work, and other hazardous or technical operations are not generally suited to volunteers. County staff will provide such services, or assistance from contractors will be obtained where necessary.

The County has established a Natural Areas Stewardship Endowment Fund. Funds received from restricted gifts and other sources are invested and the interest earned is used to provide operating funds for management of County-owned and County-leased natural areas. The County also will apply for funds that may be available from the State for management purposes, including the Pollution Recovery Trust Fund administered by FDEP. In addition, funds are available as provided in Section 9.5 (Vegetation Preservation and Protection) of the Palm Beach County Unified Land Development Code. Monies from penalties for violations of the provisions of this section will be deposited into a Natural Areas Stewardship Fund, and monies from the sale of development rights on lands purchased by the County as natural areas as well as monies received from leases of County-owned land in the Agricultural Reserve are also a potential sources of funds for management purposes.

7. PRIORITY SCHEDULE

Initial site development activities will focus on securing the site against unauthorized uses. Fencing, signs, and gates were purchased and installed at the Lake Park Scrub Natural Area within 36 months of acquisition. A fire management plan (Appendix G) has been prepared and the invasive vegetation control program will be started by the end of 2003. The nature trail, wildlife observation platform, and parking area will be constructed, management roads will be cleared, and interpretive facilities and materials such as the kiosk, a slide show, and a nature trail guide will be developed within three years of final approval of the final management plan. Fencing around the parking area and entrance gates will be installed concurrently with parking area development. A priority schedule for key management activities is provided in Tab e 5.

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8. MONITORING

A monitoring program will be initiated in the year 2004 to measure whether the management objectives for natural communities and listed species are being achieved. The monitoring program will be designed to evaluate the success of prescribed fires, invasive vegetation control activities, and restoration efforts on the disturbed scrub and disturbed scrubby flatwoods communities at the Lake Park Scrub Natural Area. Management practices will be adjusted if an analysis of the monitoring data reveals that management objectives are not being met. The monitoring program also will be able to provide data to indicate whether the proposed public uses are having a negative impact on vegetation and wildlife populations.

A detailed monitoring protocol has been developed to ensure consistency in monitoring activities on all natural areas managed by ERM. A general description on the types of monitoring to be conducted is provided in the following paragraphs. Assistance will be sought from institutions of higher education and volunteers in carrying out the monitoring program, and in analysis and interpretation of the data collected. These monitoring data will be used as the basis for future revisions of the management plan.

8.1 PHOTOMONITORING

The objective of photomonitoring is to obtain a qualitative, long-term visual record of changes in vegetative composition and/or structure over time, including the effects of planned management activities. Permanent photopoints will be established in areas in which planned management activities are anticipated to occur and in areas in which natural vegetation succession of management interest is expected to occur. At a minimum, each management unit contains at least one photopoint within a vegetative community that is expected to carry fire during a wildfire or a prescribed burn. The permanent photopoints have been located with a global positioning system (GPS) receiver, which uses satellite signals to determine the longitude and latitude of a particular spot to an accuracy that is within one meter. The location of each photopoint will be clearly described on a photopoint monitoring form, along with any additional reference points (such as trees, structures, or other unique features) that can be used for easier location of the photopoint.

One set of color images will be taken at each photopoint, either annually or every two years, whichever is more appropriate for the vegetative community in which the photopoint is located. These images will be combined into a panoramic photograph, using digital imaging software, and stored electronically with the name of the site, the management unit number, and the photopoint number. Each panoramic photograph will be centered on a pre-determined and repeatable compass heading. When a management unit is burned, changes in vegetation will be measured with photos taken pre-burn and immediately post-burn. Additional post-burn photos will be taken periodically. A reference collection of all images taken will be maintained by ERM and used when the management plan is periodically reviewed. Additional information that may be collected includes the height and species name of the predominant tree, shrub, and/or herbaceous plant located at the photopoint.

8.2 WILDLIFE SURVEYS

Wildlife surveys will be performed annually. Systematic surveys will be undertaken each year when listed resident breeding species are present. Opportunistic wildlife surveys also will be conducted during other monitoring events and when migratory species are expected. The systematic surveys will consist of random

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walk-throughs of representative areas and/or transects, point counts, or quadrants as described by Elzinga et al. (2001) and will be conducted in a manner that is largely repeatable in order to obtain information that can be compared from year to year. Survey information will include qualitative and quantitative observations of animals, tracks, burrows/nests, or other signs.

8.3 WATER LEVEL MEASUREMENT

One water level staff gauge will be permanently installed in the restored depression marsh. This gauge will permit the measurement of changes in the hydroperiod. Readings from this gauge will be recorded monthly. Readings will be plotted against rainfall data obtained from the South Florida Water Management District rain gauge at the S-44 structure on the C-17 Canal which is located one mile north of the site. The data will be used to determine the relationship between rainfall and surface water levels. Readings also will be analyzed to determine the degree of success of any hydrological restoration measures.

8.4 LISTED ANIMAL SPECIES SURVEYS

Periodic population counts will be made for all endangered and threatened animal species recorded for the natural area, in order to track population trends. Populations or portions of their populations of animal species of special concern recorded for the site will be surveyed periodically to determine whether they are experiencing any unusual population declines. Locations of nests or burrows may be pinpointed and mapped with a GPS receiver. Surveys will be scheduled at the time of year when the target species is most visible and may be conducted in coordination with other activities. Specific surveys will be developed for specific species. Qualitative evaluations of individual species will be made in conjunction with all quantitative surveys.

8.5 LISTED PLANT SPECIES SURVEYS

Periodic population surveys will be made for all endangered plant species recorded for the natural area, in order to track population trends. If the population of an endangered plant is too large to practically count the individual plants, only a representative portion of the population may be surveyed. Locations of individual plants or groups of plants may be pinpointed and mapped with a GPS receiver. Annual population counts also will be made of threatened plants with extremely limited populations recorded for this site. GPS receivers and mapping will be used for these species as necessary.

Periodic population surveys will also be conducted for threatened plants with large populations (in excess of 200 individuals) recorded for the natural area, along with those listed as commercially-exploited, in order to determine whether they are experiencing any unusual population declines. Listed plants with populations in excess of 200 individuals may only have a representative portions of their population surveyed. Surveys for specific plants will be undertaken at the time of year when those plants are most visible. Qualitative evaluations of individual species will be made in conjunction with all quantitative surveys.

8.6 ANNUAL REPORT

ERM will prepare an annual stewardship report to FCT, due on January 30th of each year. Major structural improvements, management activities, and restoration plans and activities will be discussed, as will the

degree of success of these activities. The annual report also will include any changes to the monitoring plan. A general review of management efforts related to natural vegetation communities and the status of listed species also will be completed at the end of each management year and included in the annual stewardship report. If an annual stewardship report is no longer required by FCT after initial management activities and construction of the public-use facilities is completed, a general review of management efforts and the status of listed species will continue to be performed on an annual basis.

9. GLOSSARY

Commensal species - one species that benefits from another species, while the second species apparently is neither benefited or harmed by the relationship

Corridor - a route that permits the direct travel or spread of animals or plants from one area or region to another, either by the gradual spread of a population of a species along the route or by actual movement of animals, seeds, pollen, spores, or microbes

Density - the number of individual plants or animals per unit of habitable area

Diversity - the number of species that live together in an ecosystem; a measure of the variety of species in an ecosystem that takes into account the relative abundance of each species

Dominant - the characteristic species in a particular plant community, contributing most to the general appearance and influencing which other plants and animals live there; typically the largest plant species or the one with the greatest areal coverage

Ecological restoration - the process of repairing damage caused by human activity or a natural disaster to the diversity and dynamics of a native ecosystem

Ecosystem - an assemblage of living organisms (plants, animals, microorganisms, etc.) and nonliving components (soil, water, air, etc.) that functions as a dynamic whole through organized energy flows

Ecotone - a zone of transition between two ecosystems that has characteristics of both

Endemic - a species or other biological grouping with a distribution restricted to a particular region or locality

Enhancement - an action taken to introduce, reintroduce or restore vegetation and associated animals into an area where the native ecosystem has been disturbed

Extirpate - to eliminate from a given area or region

Feral - an animal that has reverted to a wild or untamed state from a domesticated state

Firebreak - a strip of land where the vegetation has been cut or removed to stop the spread of a fire; it typically does not exceed 15 feet in width and may be used as a management road and/or a hiking trail

Fire regime - a prevailing condition in which ecosystems have evolved under periodic exposure to natural fires such that the vegetative communities have adapted to, are dependent upon, and are reproductively enhanced by this exposure

Footpath - a narrow trail with a natural soil base that is intended for foot traffic only and does not have interpretive signage

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Forb - a broad-leaved herbaceous plant that is not a grass

Habitat - the area or type of environment in which a specific kind of organism normally lives

Hiking trail - an unpaved footpath with a natural soil base and directional signage only; may be combined with a management road

Hydroperiod - the average length of time that soil is saturated during a given year

Hydric - an environment that contains an abundance of moisture

Inbreeding depression - A state in which a geographically isolated population becomes vulnerable to extirpation and weakened genetically due to the accumulation of deleterious recessive genes

Kiosk - a small structure used to shelter informational displays

Listed species - a species that is considered to be endangered or threatened with extinction, or a species of special concern, or a species that has been designated in some way by a jurisdictional governmental agency or non-profit environmental organization as meriting special protection or consideration

Management road - an unimproved, single-lane dirt or sand road that is designated for vehicular management activities; it does not exceed 15 feet in width and may be used as a firebreak and/or hiking trail

Management unit - an area of predetermined size and shape that remains fixed for management and monitoring purposes

Mesic - a moist environment that is drier than a hydric environment, but seldom contains standing water

Micro-management unit - a small management unit that contains only one ecosystem and is normally part of a larger management unit

Mitigation - an action taken to lessen the severity or intensity of a human impact on a native ecosystem or offset the impact, either on the site where the impact occurs or at another location

Mosaic - a pattern of vegetation in which two or more different plant communities are interspersed in patches

Natural area - an area containing one or more aquatic, terrestrial, or transitional ecosystems or a combination of ecosystems that has essentially retained its primitive conditions; an area that is a least-disturbed known example of a type of natural ecosystem

Nature trail - a hard-surfaced, accessible walking trail with interpretive signage

Off-road vehicle - a vehicle capable of traveling in roadless areas

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Outstanding Florida Water - a water body designated by the State of Florida Environmental Regulation Commission as worthy of special protection because of its natural attributes

Passive recreation - any recreational activity which has minimal or no impact on natural resources or land such as trail-walking, photography, and plant and wildlife observation

Physiographic region - a region delineated by a specific topography

Relict population - a remnant population of a species that once was widespread

Restoration - the process of repairing damage caused by human activity or a natural disaster to the diversity and dynamics of a native system

Rookery - the breeding ground of certain other birds or animals, such as penguins and seals

Ruderal - a species which generally is considered to be native, but often grows in disturbed areas

Saltwater intrusion - the introduction of saltwater into a previously fresh water aquifer as a consequence of disturbance of the water pressure in the aquifer; saltwater intrusion often is associated with excessive pumping of wells

Seed rain - a sudden dispersal of seeds, which can be triggered by fire or another extreme environmental event

Seral stage - one of the stages in a series of more or less predictable changes in vegetation and animal life as one kind of ecosystem is replaced by another

Serotinous - cones that remain closed and on the tree, or plants that retain seeds in pods long after maturity, until the heat from a fire or some other event causes the seeds to be released

Soil phase - a subdivision of a soil type that deviates from the typical character of the soil type

Sovereign lands or sovereignty lands - those lands including, but not limited to: tidal lands, islands, sandbars, shallow banks, and lands waterward of the ordinary or mean high water line, to which the State of Florida acquired title on March 3, 1945, by virtue of statehood, and of which it has not since divested its title interest

Subcanopy - the layer of shrubs or trees that is below the canopy or uppermost layer of vegetation in a forest or woodland

Systemic herbicide - a chemical agent used to destroy or inhibit plant growth that is absorbed into and is effective throughout the entire organism

Transect - a long, narrow area used for sampling vegetation or counting animals; transects are used for the collection and analysis of data such as frequency of occurrence, size, or number of organisms or kinds of organisms

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Transitory species - a species that is present on a site only for a brief period, often as a response to changing environmental conditions

Vegetative community - the plant component of an ecosystem

Viability - the capability of a seed or organism to grow and develop or the capability of a population of a species or a biological community to reproduce and maintain itself indefinitely

Water table - the level below which soil is saturated with water; the surface of the zone of saturation

Xeric - an environment or habitat that is low or deficient in moisture

10. ACRONYMS

ADA - Americans with Disabilities Act
CLASC - Palm Beach County Conservation Lands Acquisition Selection Committee
DOF - Florida Department of Agricultural and Consumer Services, Division of Forestry
DHR - Florida Department of State, Division of Historical Resources
E&PW - Palm Beach County Engineering and Public Works Department
ESLASC - Palm Beach County Environmentally Sensitive Lands Acquisition Selection Committee
ERM - Palm Beach County Department of Environmental Resources Management
FCT - Florida Communities Trust
FDACS - Florida Department of Agricultural and Consumer Services
FDEP - Florida Department of Environmental Protection
FFWCC - Florida Fish and Wildlife Conservation Commission
FLEPPC - Florida Exotic Pest Plant Council
FNAI - Florida Natural Areas Inventory
GPS - Global Positioning System
ICW - Atlantic Intracoastal Waterway
NAMAC - Palm Beach County Natural Areas Management Advisory Committee
NGVD - National Geodetic Vertical Datum
ORV - Off-road Vehicle
PBSO - Palm Beach County Sheriff's Office
SCS - United States Department of Agriculture, Soil Conservation Service
SFWMD - South Florida Water Management District
TNC - The Nature Conservancy
USFWS - United States Department of the Interior, Fish and Wildlife Service

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Figure 1
Location Map of the Lake Park Scrub Natural Area

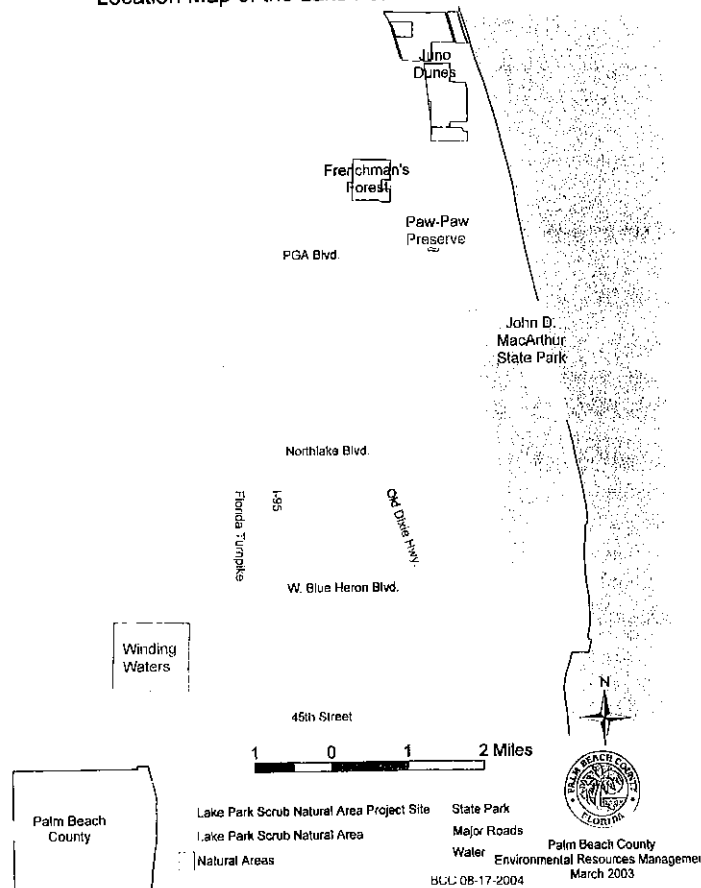


Figure 2
 Natural Communities Map for the Lake Park Scrub Natural Area

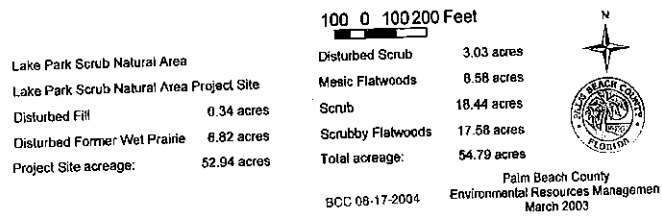


Figure 3
 Master Site Plan for the Lake Park Scrub Natural Area

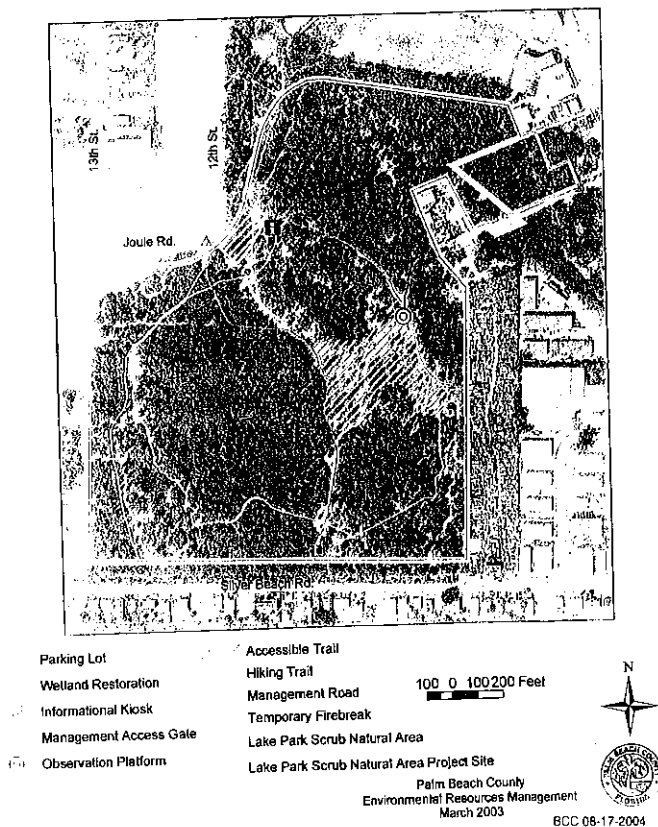
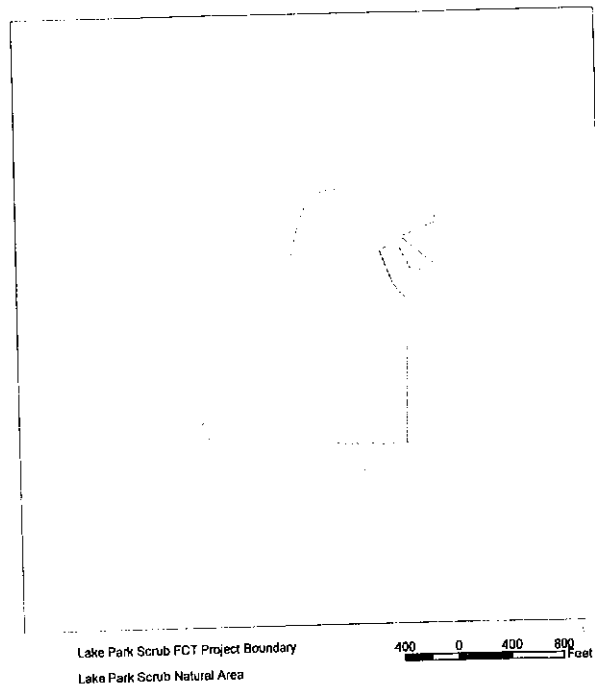
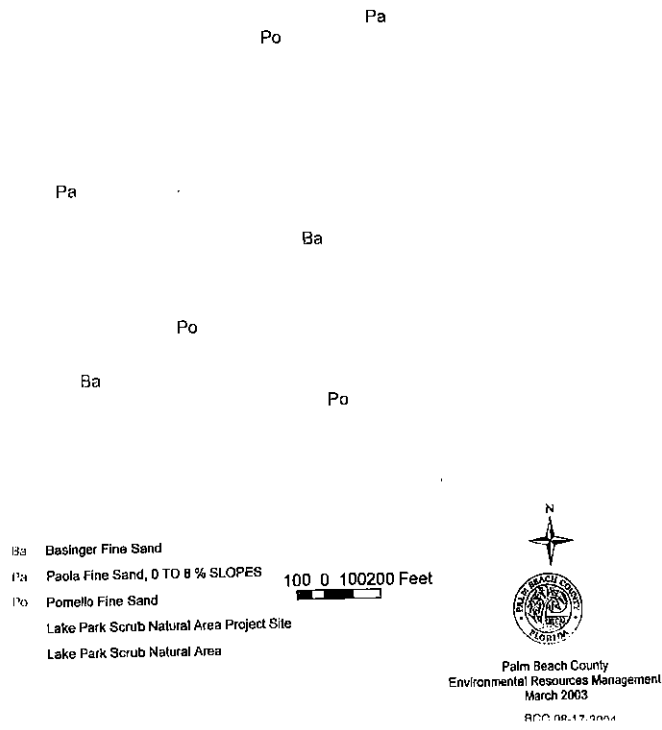


Figure 5
Soil Classification for Lake Park Scrub Natural Area



- AE - An area inundated by 100-year flooding, for which base flood elevation is determined.
- AH - An area inundated by 100-year flooding having shallow water depths and/or unpredictable flow paths between 1 and 3 feet, for which base flood elevation is determined.
- X - An area that is determined to be outside the 100- and 500-year floodplains.
- X500 - An area inundated by 500-year flooding. The area is inundated by 100-year flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile; or is an area protected by levees from 100-year flooding.

Figure 6 - 100 year Flood Plain

TABLE 1: LISTED PLANT SPECIES RECORDED AT THE LAKE PARK SCRUB NATURAL AREA

SCIENTIFIC NAME	COMMON NAME	FNAI	LISTING STATUS	
			USFWS	FDACS
<i>Conoclinium grandiflorum</i>	Large-flowered rosemary	G3/S3	N	T
<i>Lechea cernua</i>	Nodding pinweed	G3/S3	N	T
<i>Tillandsia balbisiana</i>	Reflexed wild pine	N	N	T
<i>Tillandsia fasciculata</i>	Common wild pine	N	N	E
<i>Tillandsia flexuosa</i>	Banded wild pine	G4/S3	N	T
<i>Tillandsia utriculata</i>	Giant wild pine	N	N	E

Notes:
 N = Not listed
 FNAI = Florida Natural Areas Inventory
 FDACS = Florida Department of Agriculture and Consumer Services
 USFWS = United States Fish and Wildlife Service

Occurrences determined through field surveys by Farnsworth (1988) and ERM (2000-2002). Listings by FNAI are from a June 2000 FNAI booklet; listings by FDACS are from Chapter 58-40, Florida Administrative Code; and listings by the United States Fish and Wildlife Service (USFWS) are from a April 2002 list. Listing categories are defined in Appendix D.

TABLE 2: LISTED ANIMAL SPECIES RECORDED AT THE LAKE PARK SCRUB NATURAL AREA

COMMON NAME	SCIENTIFIC NAME	LISTING STATUS		
		FNAI	USFWS	FFWCC
<i>Setophaga ruticilla</i>	American redstart	G5/S3	N	N
<i>Gopherus polyphemus</i>	Gopher tortoise	G3/S3	N	SSC
<i>Pandion haliaetus</i>	Osprey	G5/S3S4	N	SSC

Notes:
 N = Not listed
 FNAI = Florida Natural Areas Inventory
 FFWCC = Florida Fish and Wildlife Conservation Commission
 USFWS = United States Fish and Wildlife Service

Occurrences determined through field surveys by Farnsworth (1988) and ERM (2000-2002). Listings by FNAI are from a June 2000 booklet; listings by FFWCC are from Chapter 68A-27, Florida Administrative Code; listings by USFWS are from an April 2002 list. Listing categories are defined in Appendix D.

TABLE 3. COST ESTIMATES AND FUNDING SOURCES FOR PUBLIC USE FACILITIES

ITEM	ESTIMATED COST	FUNDING SOURCE
Maintenance access gate, 14-ft. steel stock, (4 @ \$400 ea.)	\$ 1,600	Bond funds
Field fencing (1,368 ft. @ \$4.50/ft.)	\$ 6,156	Bond funds
Two-hole post-and-rail fence (2,700 ft. @ \$6.50/ft.)	\$ 17,550	Bond funds
Three-hole post-and-rail fence with wire mesh (2,077 ft. @ \$6.50/ft.)	\$ 13,500	Bond funds
Green vinyl chain-link fence and gates (890 ft. @ \$15.90/ft.)	\$ 14,151	Bond funds
Entrance gates, 16 ft. steel swing (2 @ \$1,800)	\$ 3,600	Bond funds
Temporary signs (7 @ \$25 ea.)	\$ 175	Bond funds
Entrance sign (1 @ \$5,000 ea.)	\$ 5,000	Bond funds
Recognition sign (1 @ \$150 ea.) and natural areas rules sign (1 @ \$200 ea.)	\$ 350	Bond funds
Perimeter signs (15 @ \$15 ea.)	\$ 225	Bond funds
Educational kiosk, displays, and interpretive markers	\$ 20,000	Bond funds
Parking area with parking stops and striping	\$ 105,230	Bond funds
Mounted trash receptacle	\$ 1,000	Bond funds
Concrete nature trail (1,000 ft. @ \$24.50/ft.)	\$ 24,500	Bond funds
Wildlife observation platform with shade shelter	\$ 21,000	Bond funds
Bicycle rack (1 @ \$3,000 ea.)	\$ 3,000	Bond funds
Wetland restoration	\$ 100,000	Bond funds
Exotic vegetation removal	\$ 50,000	Bond funds
Design, engineering and permit fees	\$ 40,000	Bond funds
Construction of access trails/firebreaks/management/boundary roads, and vegetation clearing and disposal	\$ 25,000	Bond funds
Fuel reduction burns (1 @ \$8,000 ea.)	\$ 8,000	Bond funds
TOTAL PROJECTED COSTS (IN 2004 DOLLARS)	\$ 460,037	

NOTE: Bond funds from Palm Beach County Conservation Lands Bond Referendum, March 9, 1999.

TABLE 4. ESTIMATED ANNUAL MAINTENANCE AND OPERATION COSTS (IN 2004 DOLLARS)

<u>Town responsibilities</u>	
Opening and closing of entrance gates	\$ 9,561†
Emptying of trash receptacles (1 location @ \$760 per location)	780†
Mowing of boundary/management road/firebreaks (2 miles) 3 times a year @ \$235 each mowing	705†
Subtotal	\$11,026
<u>County responsibilities</u>	
Replacement of fences and gates \$55,257 initial cost with 15-year expected life	3,684**
Repair/replacement of signs, kiosk, trash receptacle, parking area, bicycle rack, wildlife observation platform and handicapped-accessible nature trail \$180,305 initial cost with 15-year expected life	12,020**
Prescribed habitat burns (personnel and equipment) \$8,000 cost per burn - 1 burn every 6.3 years	1,270*
Maintenance of management roads and hiking trails	730*
Maintenance exotic plant control \$80 per acre for 55 acres	4,400**
Site management - monitoring program, management plan updates and reports, listed species protection, volunteer coordination and supervision, educational materials, intergovernmental coordination - to be performed by ERM staff	22,273*
Subtotal	\$44,377
TOTAL COSTS	\$ 55,403

* To be performed by existing Palm Beach County personnel
 ** To be paid for from the Natural Areas Stewardship Endowment Fund.
 † To be performed by existing Town of Lake Park personnel

TABLE 5. PRIORITY SCHEDULE FOR PREPARATION OF THE LAKE PARK SCRUB NATURAL AREA FOR PUBLIC USE

TARGET DATE - MONTH AND YEAR	12/01	12/02	12/03	12/04	12/05
Install perimeter signs	X	X			
Install temporary Natural Areas signs	X	X			
Complete detailed vegetation survey and analysis		X			
Install fencing and gates			X		
Write fire management plan			X		
NAMAC review of management plan			X		
Provide a copy of management plan to FFWCC for review and comment			X		
Contract and obtain permits to clear (bushhog) management roads			X	X	
Clear (bushhog) management roads			X	X	
Initial invasive plant removal			X	X	X
Volunteer day - cleanup of site			X	X	X
Change land use and zoning designation to Recreation/Open Space				X	
Management plan public hearing				X	
County Commission approval of management plan				X	
Contract and obtain permits to construct parking area, nature trail, and boardwalk				X	
Initiate prescribed burning program					X
Wetland restoration work					X
Volunteer day - remove exotics, clear and mark access trails and mark nature trail interpretive stations					X
Construct parking area, nature trail, and wildlife observation shelter					X
Develop slide show					X
Design and print nature trail guide					X
Adapt and record nature trail guide on tape for handicapped use					X
Purchase supplies for nature trail interpretive stations					X
Design and contract for kiosk display					X
Install kiosk					X
Design and erect entrance and recognition signs					X

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BCC 09-17-2004