



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
STUART REGULATORY OFFICE
218 ATLANTA AVENUE
STUART, FLORIDA 34994

October 15, 2002

RECEIVED

OCT 17 2002

ENVIRONMENTAL PROGRAMS

Regulatory Division
South Permits Branch
198501054 (IP-TKA)
Modification

Mr. Marc Bruner
Solid Waste Authority
7501 North Jog Road
West Palm Beach, Florida 33412

Dear Mr. Bruner:

Reference your request received on October 19, 2001, in which you asked to modify Department of the Army permit number 198501054 issued on October 20, 1986, and due to expire on October 20, 2001. The project is located in Section 3, Township 43 south, Range 42 east, and in Sections 22, 27, and 34, Township 42 south, Range 42 east, Palm Beach County, Florida.

The original permit authorized construction of a resource recovery facility and sanitary landfill resulting in 162 acres of fill in wetlands. The modification includes a 20-year permit extension to allow for build out of all permitted landfill cells. The permit extension does not cover additional fill but rather it allows for completion of work described in the original permit.

The impacts of the modification on the environment have been evaluated and found to be insignificant. The permit is hereby modified in accordance with your request and will expire on October 20, 2021. All other conditions of the permit remain in effect. You should attach this letter and the attached drawings to the permit. If you have any questions regarding this letter, please contact Tori Agramonte at the letterhead address or by telephone at 772-781-8085.

Sincerely,

for John R. Hall
Chief, Regulatory Division

RECEIVED
MAR 25 1999
ENVIRONMENTAL PROGRAMS

DEPARTMENT OF THE ARMY PERMIT

MAR 25 1999

Permittee: Palm Beach Solid Waste Authority

Permit No: 198521054 (IP-TM)

Issuing Office: U.S. Army Engineer District, Jacksonville

NOTE: The term "you" and its derivatives, as used in this permit, mean the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: To excavate 366,720 cubic yards from 12.28 acres of open water within the eastern half of the southeast borrow lake at an existing landfill. The dredged material will then be placed over 15.82 acres within the western half of the lake. Included with the dredge quantity impacts is 0.67 acres of an existing littoral shelf. The project will be constructed in accordance with the enclosed plans 1 through 10, dated 14 August 1998.

Project Location: The project is located in waters of the United States at the southeast corner of 45th Street and Jog Road in Section 3, Township 43 South, Range 42 East, West Palm Beach, Palm Beach County, Florida.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on MAR 25 2004. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General

Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

4. If you sell the property associated with this permit, you must obtain the signature and mailing address of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special conditions:

1. The permittee shall create 5.60 acres of freshwater wetlands within the southwest borrow lake as shown on sheets 1 through 20 of the enclosed drawings. The mitigation will include a lake transitional zone, littoral zone, wetland transitional zone, and an upland zone.

2. The mitigation shall be completed in accordance with the attached timeline schedule of construction.

3. The mitigation shall be performed as described by the narrative on pages 1 through 4 of the monitoring and maintenance plan.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

() Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

(X) Section 404 of the Clean Water Act (33 U.S.C. 1344).

() Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, and local authorization required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5.

The referenced enforcement procedures provide for the issuance of an administrative order requiring you comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

Donald L. Lockhart
(PERMITTEE)

3/19/99
(DATE)

Donald L. Lockhart, Executive Director
(PRINT/TYPE WITH TITLE IF APPROPRIATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Robert W. Paulsen
(DISTRICT ENGINEER)

3/25/1999
(DATE)

FOR
Joe R. Miller
Colonel, U.S. Army

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEE - SIGNATURE)

(DATE)

(NAME-PRINTED)

(ADDRESS)

(CITY, STATE, AND ZIP CODE)

Activity ID	Activity Description	2000											
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
100	Notice to Proceed												
110	Pre - Application Meeting w/ DEP & ACOE												
120	Topo Survey												
130	Permitting Preliminary Mitigation Plans												
140	SWA Mitigation Plan Review												
150	DEP & ACOE Preliminary Mitigation Plan												
160	Begin Final Mitigation Plans												
170	Begin Construction Plans												
190	Prepare Const. Bidding Documents												
330	Amend PPSC PA 84-20												
200	SWA Review of Contract Bidding Documents												
210	Bidding Document Revisions												
340	Submit PPSC PA 84-20 to SFWMD												
350	Review Comments for PPSC PA 84-20												
360	Resubmit for Permit Issuance												
220	SWA Approved and Advertise Project												
230	Distribute Bidding Documents to Contractors												
240	Bid Opening												
250	Evaluation of Bids and Recommendations												
260	Contractor Ranking and Selection												
270	Contractor NTP												
280	Contractor Begin Construction												
290	Construction Duration												
300	Construction Completion												
310	Final Cross-Sections and Certifications												
320	Complete Project												
370	Get 3 Bids for Mitigation												
380	Select Mitigation Contractor												
390	Plant Mitigation Site												
400	Install Photo Ref. Points & Monitoring Stas.												
401	Inspect Final Mitigation Planting w/Contr & SWA												
402	Establish. of Plants for Warranty												
450	Conduct Monthly Mnt. Visits												
430	Inspect Mitig. Site After 90 Day Warranty												
440	Conduct Baseline (time-zero) Report												
470	Conduct April/May Sampling & Data Coll.												
460	Conduct Quarterly Mnt. Visits												
480	Conduct Sept/Oct Sampling & Data Coll.												
490	Submit Annual Monitoring Report												

		2000											
		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Project Start	29MAY98	[Bar chart showing project duration from May 1998 to November 2000]											
Project Finish	15NOV00												
Data Date	29MAY98												
Run Date	02MAR99												

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Lake Transitional Zone W.R.A.P. Category:	X4 With Project	Description
Wildlife Utilization	2.5	Shallow marsh species including amphibians and wading birds
Overstory/Shrub Canopy	N/A	
Vegetative Ground Cover	2.5	Scripus, Eleocharis, Sagittaria, Sawgrass
Adjacent Upland/Wetland Buffer	2.5	Surrounded by lake and wetlands
Wetland Hydrology	2.5	Hydrologic Regime Adequate to Maintain Wetland System
Water Quality Inputs and Treatment	2.75	$LU(1.0 \times 3.0) + PT(1.0 \times 2.5) / 2$ LU=open space/nat. undevel. Areas=3 PT=berms which prevent runoff from entering wetland=2.5
TOTAL	12.75	Total = Total applicable points
TOTAL POTENTIAL	15	# of applicable categories x 3
FCI	0.850	FCI=Total/total potential
DELTA	0.567	Delta=with project FCI- without project FCI (see P6) = 0.850-0.283
ACRES	0.511	Acreage of wetland polygon
CREDIT	0.290	Debit =Delta x acreage

POTENTIAL CREDITS: 2.582

***Credit Adjustment:**

Part of the mitigation plan includes an allocated 2.5 acre parcel from the East Lake (previous mitigation). Because there is no way to separate this parcel from the new mitigation site on the West Lake, a credit adjustment is made below.

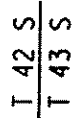
Average FCI from the proposed mitigation site:	0.843
FCI for West Lake Open Water w/o project (see P6):	0.283
Delta = 0.843 - 0.283	0.56
Acreage designated from the East Lake:	2.500
Credit Adjustment:	-1.400

TOTAL POTENTIAL CREDITS: 1.182 Potential Credit - Credit Adjustment = 2.582 - 1.400

W.R.A.P. SUMMARY:

Total Debits - East Lake	-0.880
Total Credits with Mitigation -	1.182
Net Mitigation Credits -	0.302
Total Acreage affected by Construction & Mitigation -	21.693
Total mitigation Acreage -	4.624

NOTES:
Debits to Open Water Included in Proposed Mitigation Calculations

$$\begin{array}{r} R\ 42\ E \\ \hline R\ 43\ E \end{array}$$


T 42 S	T 43 S
--------	--------



PROJECT
LOCATION

PROJECT
LOCATION

WEST LAKE

FLORIDA

45TH

MILITARY

HATHERILL

ROEBUCK RD

HP 7HS

CUMBERLAND

IX

4

1

CONGRESS

1

PROJECT DESCRIPTION

S.W.A. BORROW LAKE WEST OF TURNPIKE

TWP: 43 S

RNG: 42 E

CCV

CERTIFICATE NO. 44194

NAME: C. EARL WILLS

SIGNATURE

**PALM BEACH COUNTY
SOLID WASTE AUTHORITY**

NAME: C. FARI WILLIS

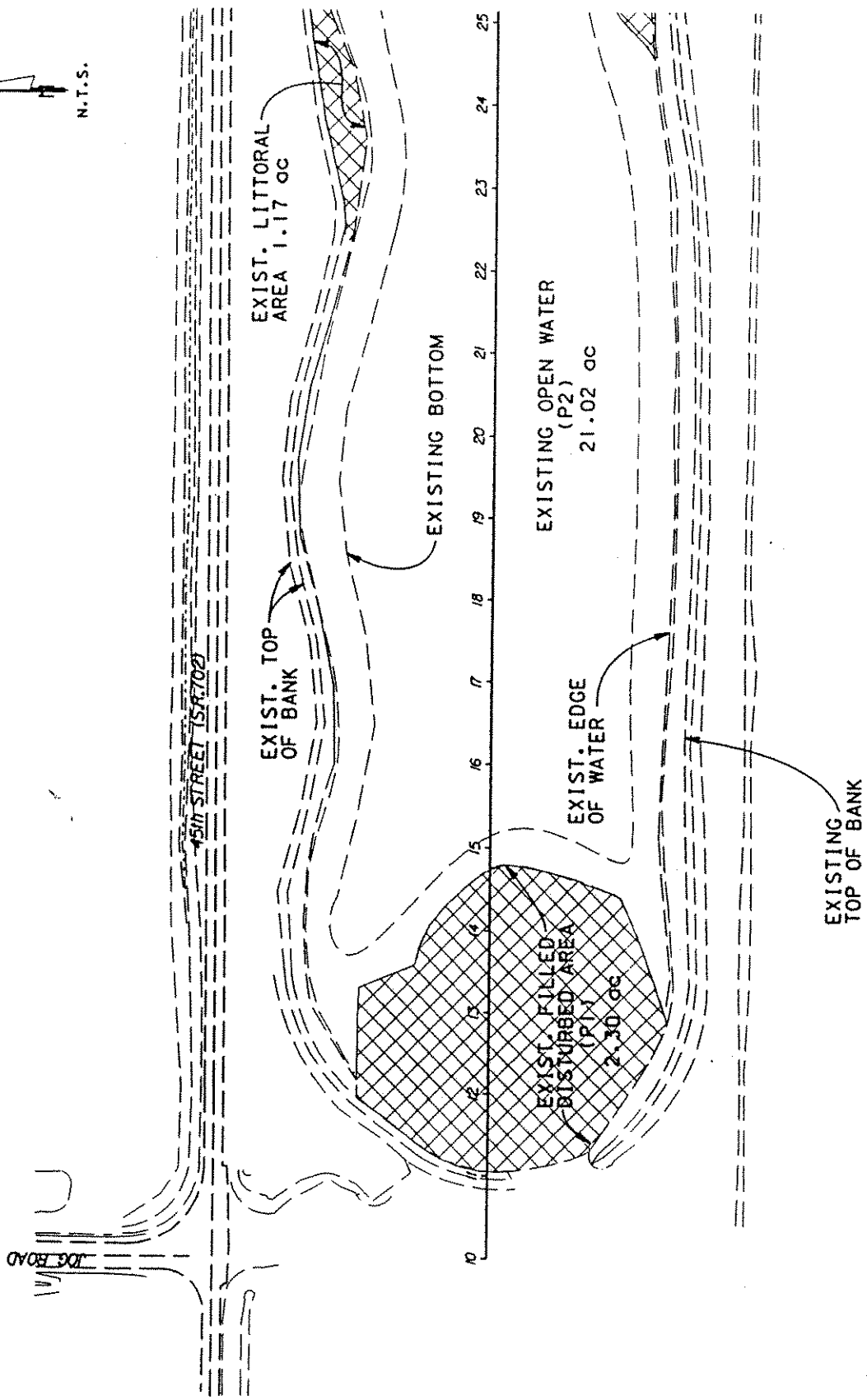
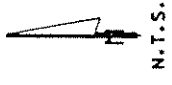
SIGNATURE

COUNTY PALM BEACH

DER

8

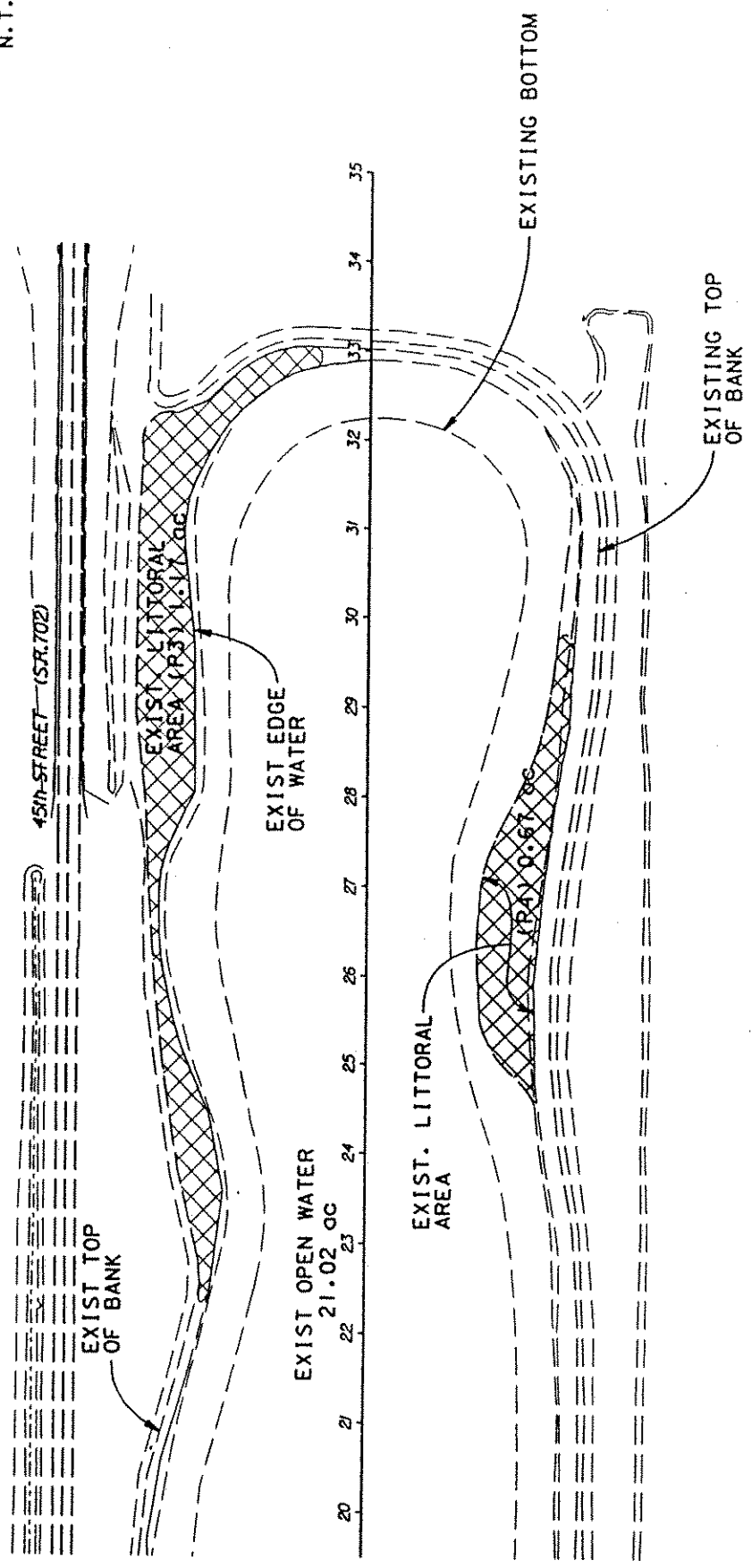
SHEET 1 OF 10



SEE SHEET 3 OF 10

EXISTING LITTORAL AREAS (1 OF 2) - EAST BORROW LAKE

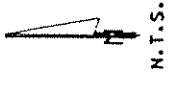
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S.W.A. EAST BORROW LAKE WEST OF TURNPIKE		NAME: C. EARL WILLS		DER	CG
TWP: 43 S		SIGNATURE <i>E. Wills</i> 2/10/98		SHEET 2 OF 10	
RNG: 42 E		CERTIFICATE NO. 44194			



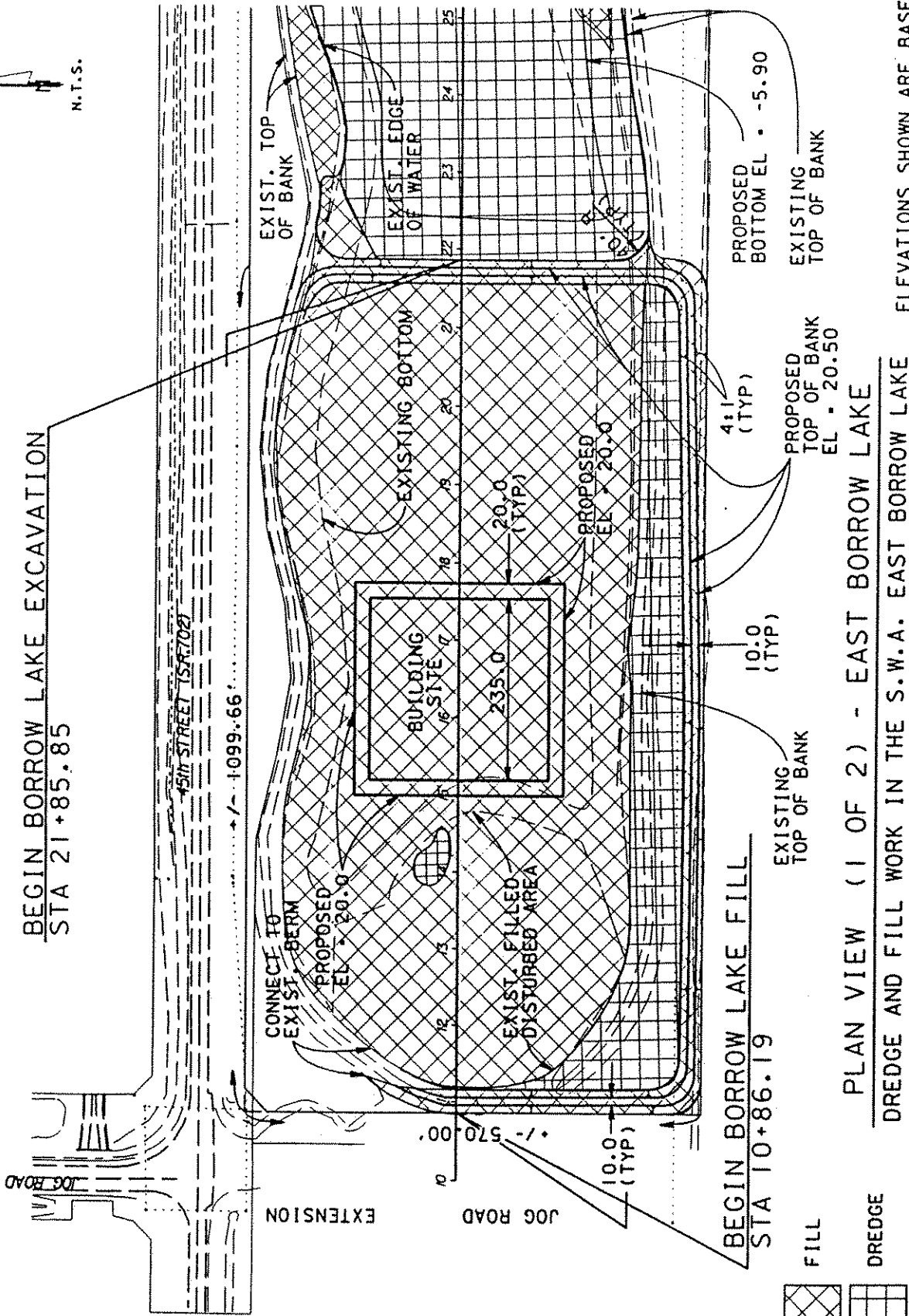
SEE SHEET 2 OF 10

EXISTING LITTORAL AREAS (2 OF 2) - EAST BORROW LAKE

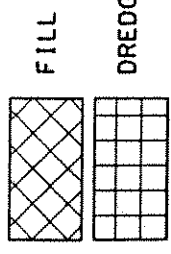
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S.W.A. EAST BORROW LAKE WEST OF TURNPIKE		NAME: G. EARL WILLS		DER	CG
TWP: 43 S		SIGNATURE: <i>G. Earl Wills</i>		SHEET 3 OF 10	
RNG: 42 E		CERTIFICATE NO. 44194		DATE: 9/6/99	



BEGIN BORROW LAKE EXCAVATION
STA 21+85.85



BEGIN BORROW LAKE FILL
STA 10+86.19



PLAN VIEW (1 OF 2) - EAST BORROW LAKE
DREDGE AND FILL WORK IN THE S.W.A. EAST BORROW LAKE

ELEVATIONS SHOWN ARE BASED ON
1929 NGVD DATUM.

PROJECT DESCRIPTION		PALM BEACH COUNTY SOLID WASTE AUTHORITY	
S.W.A. BORROW LAKE WEST OF TURNPIKE		COUNTY	PALM BEACH
TWP: 43 S	RG: 42 E	DER	CG
SHEET 3		DATE: 9/10/98	
NAME: C. EARL WILLS		SIGNATURE: <i>C. Earl Wills</i>	
CERTIFICATE NO. 44194			

SEE SHEET 5 OF 10

END BORROW LAKE EXCAVATION
STA 33+04.50

BEGIN BORROW LAKE EXCAVATION
STA 21+85.85

N.T.S.

45th STREET (SR 702)

EXIST TOP
OF BANK

EXIST EDGE
OF WATER

EXISTING BOTTOM

EXISTING TOP
OF BANK

PROPOSED
BOTTOM EL. - -5.90

PROPOSED
TOP OF BANK
EL. 20.00

PROPOSED
TOP OF BANK
EL. 20.50

PROPOSED
TOP OF BANK
EL. 20.50

FILL

DREDGE



PLAN VIEW (2 OF 2) - EAST BORROW LAKE

DREDGE AND FILL WORK IN THE S.W.A. EAST BORROW LAKE

ELEVATIONS SHOWN ARE BASED ON
1929 NGVD DATUM

PROJECT DESCRIPTION

S.W.A. BORROW LAKE WEST OF TURNPIKE

TWP. 43 S

RNG. 42 E

SEC 3

PALM BEACH COUNTY
SOLID WASTE AUTHORITY

NAME: C. EARL WILLS

SIGNATURE

CERTIFICATE NO. 44194

DATE: 9/8/98

COUNTY PALM BEACH

DER

CC

WMO

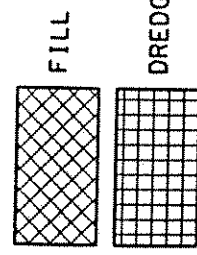
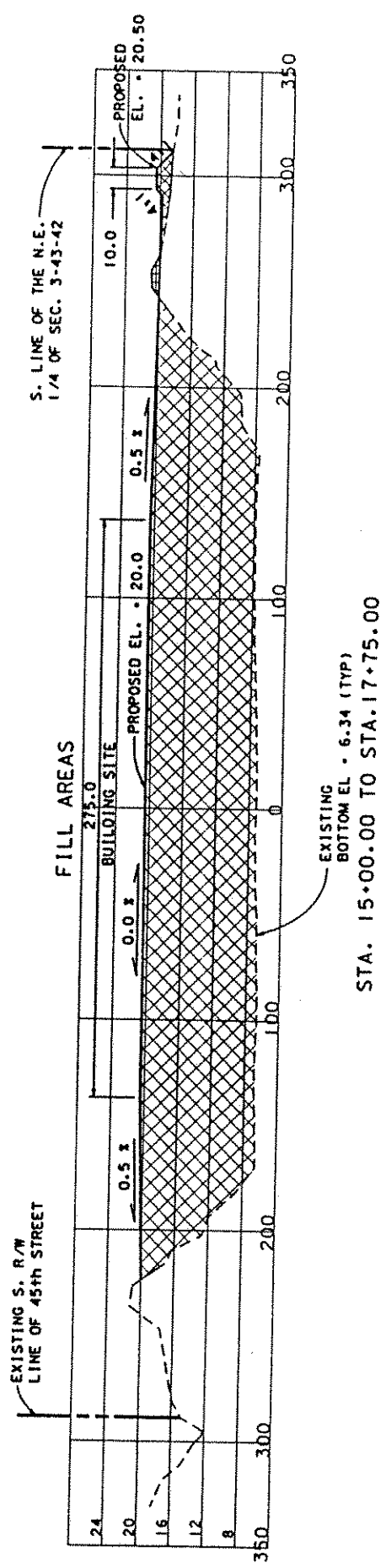
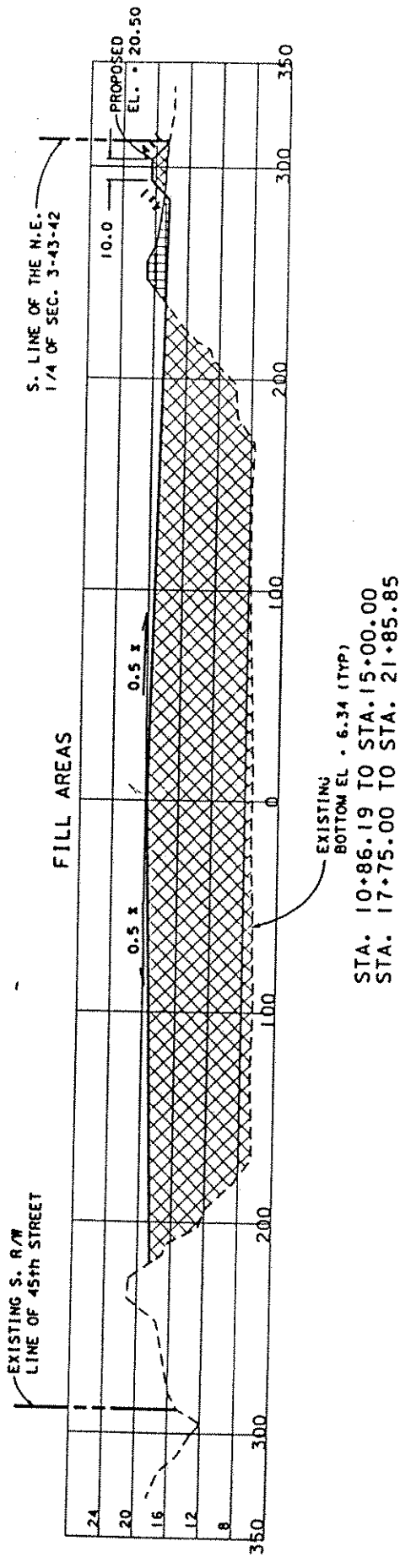
SHEET 5 OF 10

DATE

SEE SHEET 4 OF 10

FINAL SUMMARY TABLE EAST & WEST BORROW LAKES				
	DREDGE		FILL	
	EAST	WEST	EAST	WEST
AREA	12.28 ac (4.969 ha)	-	11.71 ac (4.739 ha)	4.11 ac (1.665 ha)
VOL	183404 yd3 (140201.893 M3)	-	135926 yd3 (103907.671 M3)	47390 yd3 (36226.951 M3)
				28.10 ac (11.373 ha)
				366720 yd3 (280336.514 M3)

PROJECT DESCRIPTION		PALM BEACH COUNTY SOLID WASTE AUTHORITY		COUNTY	PALM BEACH	CG	SHEET 6 OF 10
J.W.A. EAST & WEST BORROW LAKES WEST OF TURNPIKE		NAME: C. EARL WILLS		DER			
WP: 43 S		SIGNATURE: <i>Earl Wills</i>					
RNG: 42 E							



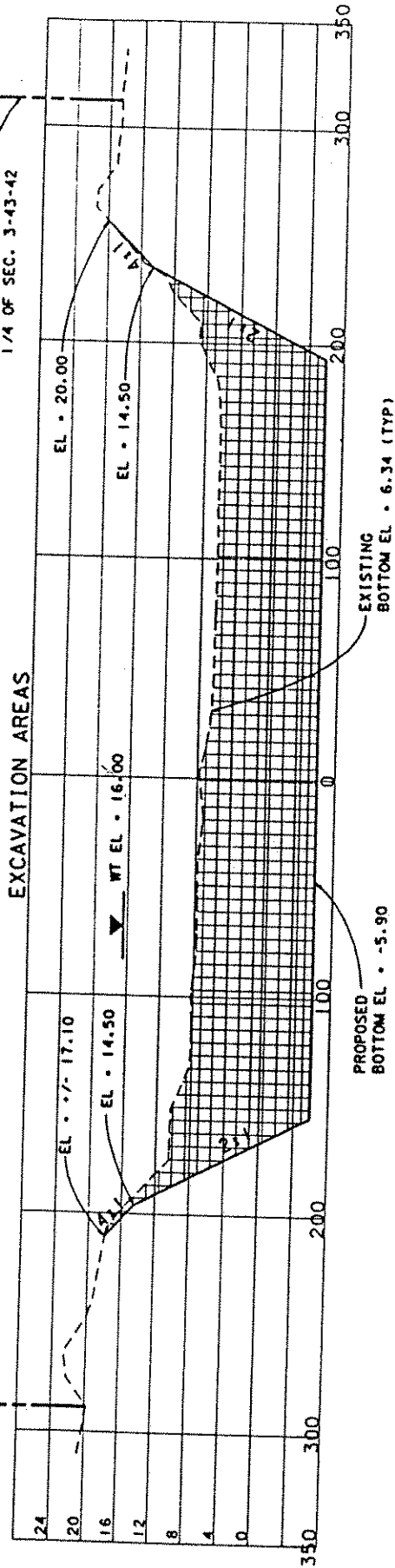
TYPICAL CROSS SECTIONS NORTH TO SOUTH - EAST BORROW LAKE DREDGE AND FILL WORK IN THE S.W.A. EAST BORROW LAKE

ELEVATIONS SHOWN ARE BASED ON 1929 NGVD DATUM.

PROJECT DESCRIPTION	PALM BEACH COUNTY		
	SOLID WASTE AUTHORITY		
S.W.A. BORROW LAKE WEST OF TURNPIKE	COUNTY PALM BEACH		
TWP: 43 S	DER	CG	SHEET 7 OF 10
SEC: 3	SIGNATURE <i>Earl Wills</i> 9/2/98		
	CERTIFICATE NO. 44194		

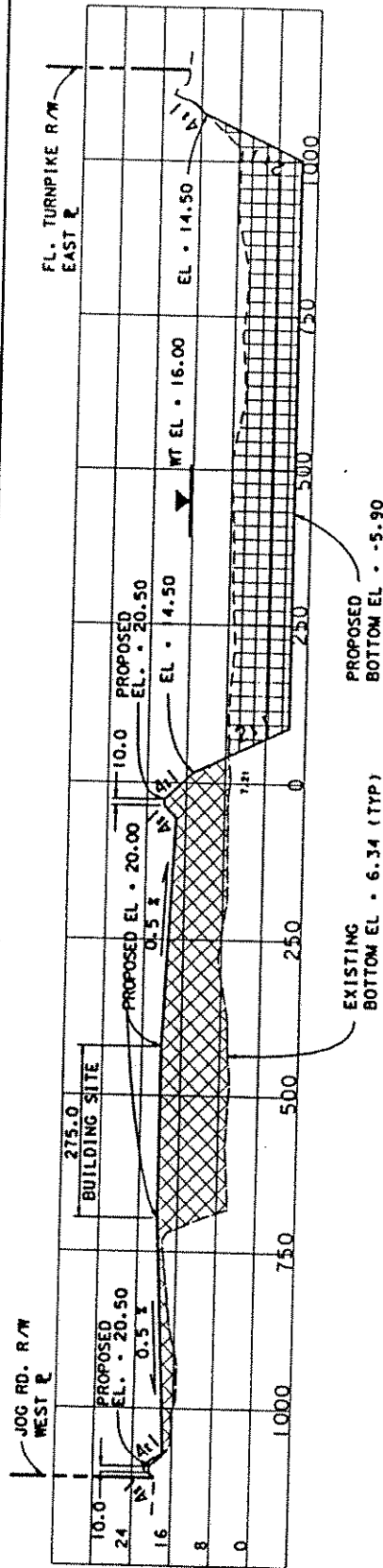
EXISTING S. R/W
LINE OF 45th STREET

S. LINE OF THE N.E.
1/4 OF SEC. 3-43-42



TYPICAL CROSS SECTION NORTH TO SOUTH - EAST BORROW LAKE
DREDGE AND FILL WORK IN THE S.W.A. EAST BORROW LAKE

STA. 21+85.85 TO STA. 33+04.50



FILL

DREDGE

TYPICAL CROSS SECTION EAST TO WEST - EAST BORROW LAKE
DREDGE AND FILL WORK IN THE S.W.A. EAST BORROW LAKE

ELEVATIONS SHOWN ARE BASED ON
1929 NGVD DATUM.

PROJECT DESCRIPTION

S.W.A. BORROW LAKE WEST OF TURNPIKE

TWP: 43 S

RNG: 42 E

PALM BEACH COUNTY
SOLID WASTE AUTHORITY

NAME: C. EARL WILLS

SIGNATURE

COUNTY PALM BEACH

DER

CG

SHEET 8 OF 10

LEGEND



POND APPLE



WATER LILY



PINE



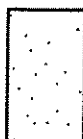
MAPLE



CYPRESS



SAWGRASS



SCIRPUS



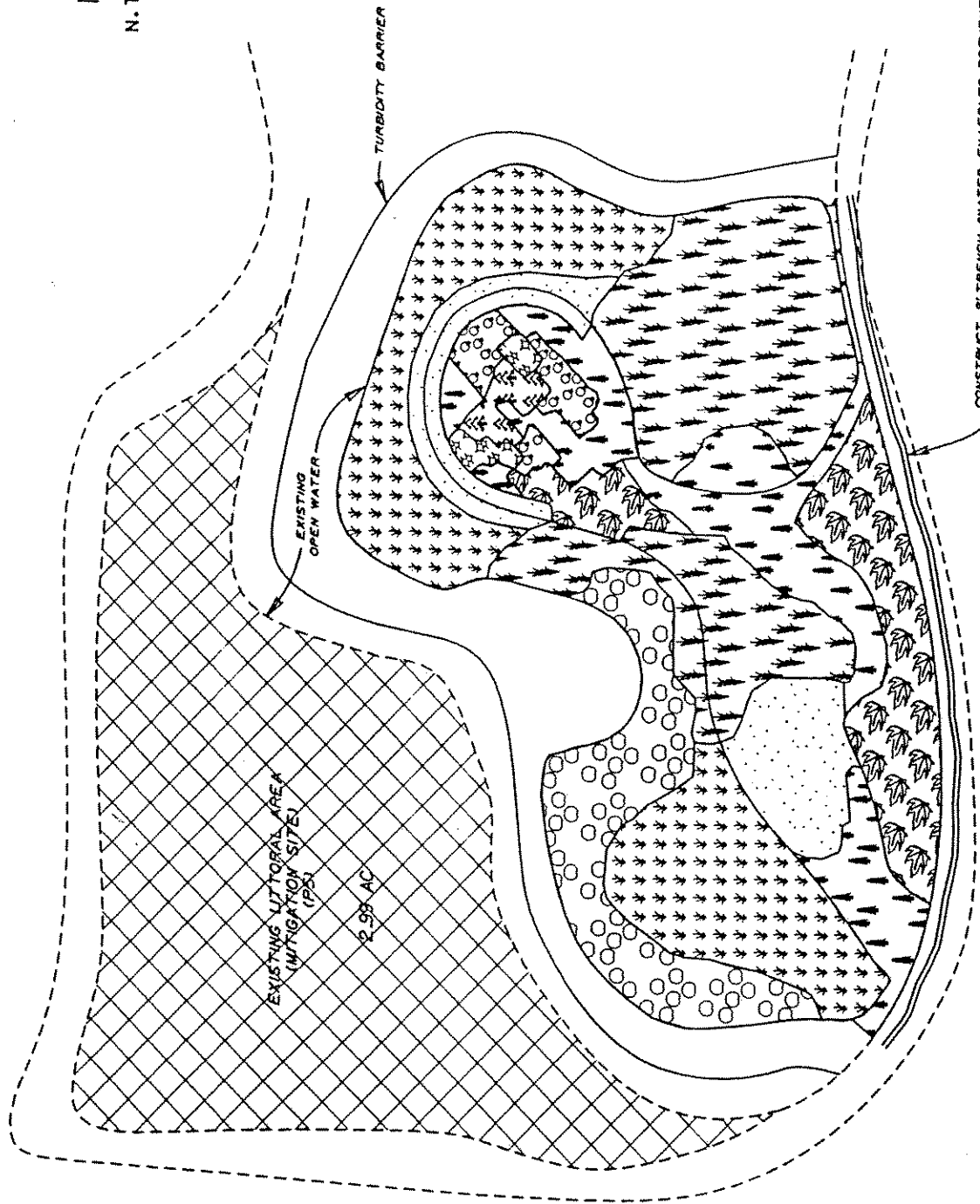
ELEOCHARIS -
SAGITTARIA



DAHOON HOLLY

NOTES:

1. ANISTIDA & FERNS IN UNDERSTORY OF UPLAND (XII) & TRANSITIONAL (XEL).
2. WATER LILIES TO SURROUND MITIGATION SITE
3. SPACING OF PLANTS IN ACCORDANCE WITH OPTIMUM GROWING RECOMMENDATIONS..



PROPOSED MITIGATION PLAN

PROJECT DESCRIPTION

S.W.A. WEST BORROW LAKE WEST OF TURNPIKE

TWP: 43 S

RNG: 42 E

PALM BEACH COUNTY
SOLID WASTE AUTHORITY

NAME:

SIGNATURE

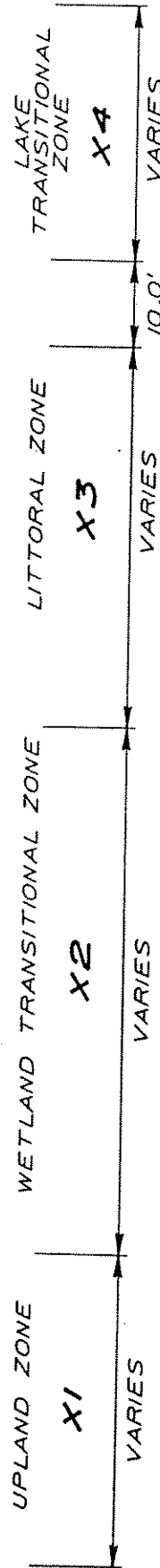
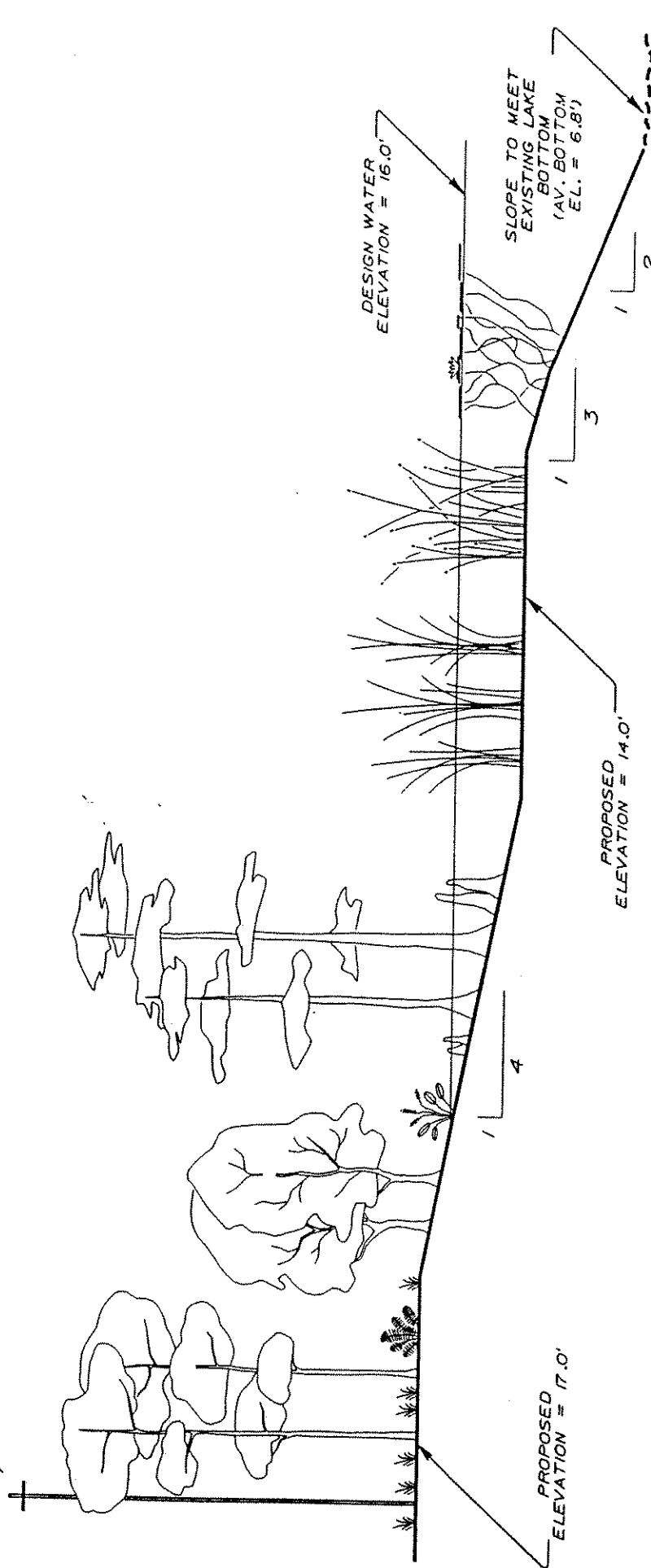
DER

COUNTY PALM BEACH

CG

SHEET 9 OF 10

ROOSTING POST



TYPICAL PLANTING DETAIL - WEST BORROW LAKE

ELEVATIONS SHOWN ARE BASED ON 1929 NGVD DATUM

PROJECT DESCRIPTION TYPICAL CROSS SECTION	PALM BEACH COUNTY SOLID WASTE AUTHORITY			
	NAME: C. EARL WILLS		COUNTY	PALM BEACH
	SIGNATURE		DER	CG
WP: 43 S	RNG: 42 E		SHEET 10 OF 10	

MONITORING AND MAINTENANCE PLAN

for

Palm Beach County Solid Waste Authority's Freshwater Wetland Mitigation Site Southwest Borrow Lake Site

INTRODUCTION

This Monitoring and Maintenance Plan is for the creation of 5.606 acres of freshwater wetland within Palm Beach County Solid Waste Authority (SWA)'s Southwest Borrow Lake located at the intersection of 45th Avenue and Jog Road in West Palm Beach, Florida (Township 43S, Range 42E, Section 3). Please see Exhibit 1 - Project location map.

The creation of a freshwater wetland within the Southwest Borrow Lake was proposed to mitigate for impacts to dredge and fill impacts for the creation of a future building pad within the Southeast Borrow Lake and a previous ACOE permit requirement to create a 2.5 littoral shelf. In total, approximately 28.10 acres or 366, 720 cubic yards of dredge and fill impacts are associated with the creation of the building pad and mitigation site. Included with these impacts are (1) 0.673 acres of an existing littoral shelf in the Southeast Borrow Lake and (2) 25.8 total acres of open water in both lakes.

PERMIT NUMBERS

1. FDEP Power Plant Siting Certificate Case PA 84-20 for the North Regional Resource Facility issued August 6, 1986.
2. Original ACOE Dredge and Fill Permit 85IPB-21054 issued on October 9, 1986.
3. ACOE Permit 85IPB-21054, amended February 15, 1991 for the placement of 2.5 acres of fill at the west end of the Southeast Borrow Lake.
4. For creation of a future Building pad within the Southeast Borrow Lake and creation of a freshwater wetland mitigation site the following permits are pending:
 - a. ACOE Permit amendment
 - b. Amendment to FDEP Power Plant Siting Certification

WETLAND MITIGATION PLAN

The mitigation area is hydrologically isolated from the Southeast Borrow Lake and other sources within SWA's property. Additional stormwater runoff is not being channeled into the mitigation site, therefore water quality will not be an issue.

The 5.606 acres of freshwater wetland mitigation will include a lake transitional zone, littoral zone, wetland transitional zone, and an upland zone. Plants to be planted within the different zones are:

Lake Transitional Zone:

Water lillies

Littoral Zone:

Scirpus, Sawgrass, Eleocharis, Sagittaria

Wetland Transitional Zone:

Cypress

Upland Zone:

Maple, Pond Apple, Dahoon Holly, Cocoplum

Exhibit 2 depicts the Wetland Plan View for the freshwater mitigation site.

MONITORING

The duration of the monitoring period will be for five years or until all success criteria has been satisfied in accordance with permit requirements.

Monitoring Reports

Monitoring reports will be submitted as follows:

1. A post construction report (time-zero).
2. An annual monitoring report discussing the results of a April/May and September/October sampling and data collection conducted for the mitigation site.

The reports will consist of vegetative transect data and analyses, staff gauge data, panoramic photographs and a discussion of wildlife usage and/or any other environmentally significant observations.

Vegetative Sampling

Vegetative monitoring will be used to determine the success of the mitigation site. Transects and sampling points have been systematically established to the project parameters to provide adequate coverage of all proposed vegetative community types. The size of the quadrat at will depend on the vegetative type being sampled, i.e. a 5' by 5' quadrat at will be used for the herbaceous species (Eleocharis, Sagittaria, etc.) while a 20' x 20' quadrat at will be used for the forested species (cypress, maple, etc.). A Baseline (time-zero) sampling of the mitigation site will be conducted with the following sampling frequency:

April/May sampling and data collection through success.

September/October sampling and data collection through success.

The size, location and number of quadrats will remain constant throughout the life of the project. For this project, two transects have been selected, T1 and T2. There are 4 stations in T1: Q1 through Q4. There are 6 stations in T2: Q5 through Q10. Exhibit 3 depicts the transect and station locations.

Vegetative success will be determined by calculating percent survival and the growth of trees and

shrubs will be measured to assure that plants are thriving. Plant species will be categorized by the following criteria:

Dominant species - Composition of 80% or greater

Other species - <20 % Coverage

Significant Indicator Species - Individuals or % coverage

The natural ground elevation and vegetative species that may indicate shifts in community types, including exotic or invasive plant species, will be noted. Common names, genus and species for each Vegetative type will be provided.

Hydrology

The mitigation site does not have a control elevation since it is hydrologically isolated from the Southeast Borrow Lake or other sources within the SWA property. Baseline water elevations will be noted and water elevations will be recorded at the time of sampling and data collection for the annual monitoring report. Water elevation will be taken from an existing staff gauge just east of the radio tower pad. See Exhibit 3 for location of the staff gauge.

In addition, daily rainfall data is recorded on an onsite weather station.

Fish and Wildlife Observations

Fish and wildlife observations will be conducted by visual observation while conducting the baseline and subsequent sampling periods. Species lists will be made of observed fish and wildlife throughout the vegetation monitoring program. This list will include the common name, genus and species of all fish and wildlife observed.

Photographic Documentation

Photographs will be taken during all sampling events for the entire mitigation area. Photographs will also be taken at all stations within the transect at 90 degrees to the transect. Please see Exhibit 3 for location of photo reference points.

MAINTENANCE

Monthly maintenance visits will be conducted to oversee the progress of the mitigation efforts, remove any exotic nuisance plant species that may be invading the mitigation site and assure that plants are clearly established for the first year. Maintenance during this period will occur as needed and will consist of the removal of any nuisance/exotic plant species by selective hand clearing or by approved EPA herbicides by licensed herbicide applicators. Plants will be replaced that are dead or not expected to survive through the Contractor's warranty period.

After the first year of maintenance, quarterly field maintenance visits will be conducted to oversee the progress of the mitigation efforts, remove any exotic nuisance plant species that may be invading the mitigation site and assure that plants an 80% coverage or appropriate survival rate for planted or recruited plant species is maintained. Maintenance during this period will occur as needed and will consist of the removal of any nuisance/exotic plant species by selective hand clearing or by approved EPA herbicides by licensed herbicide applicators. If an 80% survival coverage, which includes the original wetland species planted or appropriate native wetland species, is not maintained after two consecutive quarterly maintenance visits, the area in need of remediation will be replanted with the necessary plant species. If replanting fails, possible cause(s) of mitigation failure will be investigated and remediation will be discussed with the ACOE. Remediation other than replanting the original species will be approved by the ACOE prior to implementation. Maintenance of the mitigation site after the success criteria is met will be kept in force in perpetuity.

SCHEDULE OF EVENTS

The schedule of events will be as follows: (beginning after x months of permit issuance)

- Construct mitigation site, fill in Southwest Borrow Lake to design specifications.
- Install photo reference points.
- Conduct AS-Built survey of mitigation site.
- Plant mitigation site as detailed in Mitigation Construction Plans.
- Conduct Baseline (time-zero) Report.
- Conduct Monthly maintenance field visits to ensure establishment of plant species. First year only.
- Conduct Quarterly maintenance field visits through success.
- Conduct April/May sampling and data collection through success.
- Conduct September/October sampling and data collection through success.
- Submit Annual Monitoring Reports in November through success.
- Field review and acceptance of mitigation site by ACOE for compliance with success criteria.
- Submit Final Monitoring Report.
- Quarterly maintenance of mitigation site, in perpetuity, after meeting success criteria.

SOLID WASTE AUTHORITY - W.R.A.P. ANALYSIS

EXISTING EAST LAKE

Dredge/fill Impact to East Lake

W.R.A.P. Category:	P2 - Open Water		Description
	Without Project	With Project	
Wildlife Utilization	0.5	0.0	Very few fish species noted due to sandy bottom
Overstory/Shrub Canopy	N/A	N/A	
Vegetative Ground Cover	0.0	0.0	Sandy Bottom, no vegetation
Adjacent Upland/Wetland Buffer	1.0	1.0	Open Water surrounded by berm/road
Wetland Hydrology	0.0	0.0	Open Water Plant Community
Water Quality Inputs and Treatment	2.75	2.75	LU(1x3)+PT(1.0x2.5)/2 LU=open space/nat. areas=3 PT=berms which prevent runoff from entering wetland=2.5
TOTAL	4.25	3.75	Total = Total applicable points
TOTAL POTENTIAL	15	15	# of applicable categories x 3
FCI	0.283	0.250	FCI=Total/total potential
DELTA		-0.033	Delta=with project - without project
ACRES		21.020	Acreege of wetland polygon
DEBIT		-0.701	Debit =Delta x acreage

W.R.A.P. Category:	P4 - Littoral Shelf		Description
	Without Project	With Project	
Wildlife Utilization	1.5	0.0	Killdeer, gulls, armadillo, vultures, gator, raccoons, great blue heron
Overstory/Shrub Canopy	N/A	N/A	
Vegetative Ground Cover	0.5	0.0	Eleocharis, Cattails, Torpedo grass, Bacopa, Andropogon
Adjacent Upland/Wetland Buffer	0.5	0.5	50% adj. Berm/road; 50% adj to open water Buffer=(.5x1) + (.5x0) = 0.5
Wetland Hydrology	2.0	0.0	Hydrologic Regime Adequate to maintain littoral shelf
Water Quality Inputs and Treatment	1.50	1.50	LU(1.0x3.0)+PT(1.0x2.5)/2 LU=open space/nat. undevel. Areas=3 PT=berms which prevent runoff from entering wetland=2.5
TOTAL	6.00	2.00	Total = Total applicable points
TOTAL POTENTIAL	15	15	# of applicable categories x 3
FCI	0.400	0.133	FCI=Total/total potential
DELTA		-0.267	Delta=with project - without project
ACRES		0.673	Acreege of wetland polygon
DEBIT		-0.179	Debit =Delta x acreage

EXISTING WEST LAKE

Create wetlands mitigation site to cover debits from East Lake construction

W.R.A.P. Category:	P6 - Open Water		Description
	Without Project		
Wildlife Utilization	0.5		Very few fish species noted due to sandy bottom
Overstory/Shrub Canopy	N/A		
Vegetative Ground Cover	0.0		Sandy Bottom, No vegetation
Adjacent Upland/Wetland Buffer	1.0		Open Water surrounded by berm/road
Wetland Hydrology	0.0		Open Water Plant Community
Water Quality Inputs and Treatment	2.75		LU(1.0x3.0)+PT(1.0x2.5)/2 LU=open space/nat. undevel. Areas=3 PT=berms which prevent runoff from entering wetland=2.5
TOTAL	4.25		Total = Total applicable points
TOTAL POTENTIAL	15		# of applicable categories x 3
FCI	0.283		FCI=Total/total potential
DELTA			
ACRES			
DEBIT			

TOTAL DEBITS WITH PROJECT: -0.880

PROPOSED MITIGATION SITE AT WEST LAKE:

Upland Zone		Description
W.R.A.P. Category:	X1 With Project	
Wildlife Utilization	2.5	Includes utilization of a roosting post
Overstory/Shrub Canopy	2.5	Stratification of plant species
Vegetative Ground Cover	2.5	Grass species
Adjacent Upland/Wetland Buffer	2.5	Surrounded by lake and wetlands
Wetland Hydrology	2.5	Hydrologic Regime Adequate to Maintain Wetland System
Water Quality Inputs and Treatment	2.75	$LU(1.0 \times 3.0) + PT(1.0 \times 2.5)/2$ LU=open space/nat. undevel. Areas=3 PT=berms which prevent runoff from entering wetland=2.5
TOTAL	15.25	Total = Total applicable points
TOTAL POTENTIAL	18	# of applicable categories x 3
FCI	0.847	FCI=Total/total potential
DELTA	0.564	Delta=with project FCI - without project FCI (See P6) =0.847-0.283
ACRES	0.453	Acreage of wetland polygon
CREDIT	0.255	Credit = Delta x acreage

Wetland Transitional Zone		Description
W.R.A.P. Category:	X2 With Project	
Wildlife Utilization	2.5	Shallow marsh species including amphibians and wading birds
Overstory/Shrub Canopy	2.0	Some stratification of plant species
Vegetative Ground Cover	2.5	Scripus, Eleocharis, Sagittaria
Adjacent Upland/Wetland Buffer	2.5	Surrounded by lake and wetlands
Wetland Hydrology	2.5	Hydrologic Regime Adequate to Maintain Wetland System
Water Quality Inputs and Treatment	2.75	$LU(1.0 \times 3.0) + PT(1.0 \times 2.5)/2$ LU=open space/nat. undevel. Areas=3 PT=berms which prevent runoff from entering wetland=2.5
TOTAL	14.75	Total = Total applicable points
TOTAL POTENTIAL	18	# of applicable categories x 3
FCI	0.819	FCI=Total/total potential
DELTA	0.536	Delta=with project FCI - without project FCI (see P6) =0.819-0.283
ACRES	1.251	Acreage of wetland polygon
CREDIT	0.671	Debit =Delta x acreage

Littoral Zone		Description
W.R.A.P. Category:	X3 With Project	
Wildlife Utilization	2.5	Shallow marsh species including amphibians and wading birds
Overstory/Shrub Canopy	N/A	
Vegetative Ground Cover	2.5	Scripus, Eleocharis, Sagittaria, Sawgrass
Adjacent Upland/Wetland Buffer	2.5	Surrounded by lake and wetlands
Wetland Hydrology	2.5	Hydrologic Regime Adequate to Maintain Wetland System
Water Quality Inputs and Treatment	2.75	$LU(1.0 \times 3.0) + PT(1.0 \times 2.5)/2$ LU=open space/nat. undevel. Areas=3 PT=berms which prevent runoff from entering wetland=2.5
TOTAL	12.75	Total = Total applicable points
TOTAL POTENTIAL	15	# of applicable categories x 3
FCI	0.850	FCI=Total/total potential
DELTA	0.567	Delta=with project FCI - without project FCI (See P6) = 0.850-0.283
ACRES	2.409	Acreage of wetland polygon
CREDIT	1.366	Debit =Delta x acreage