



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

NOV 03 2007

Special Projects and Enforcement Branch
SAJ-2005-6166 (IP-TKW)

Ms. Carol A. Wehle
Executive Director
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406

Dear Ms. Wehle:

The U.S. Army Corps of Engineers (Corps) is pleased to enclose the Department of the Army permit, which should be available at the construction site. Work may begin immediately but the Corps must be notified of:

- a. The date of commencement of the work,
- b. The dates of work suspensions and resumptions of work, if suspended over a week, and
- c. The date of final completion.

This information should be mailed to the Enforcement Section of the Regulatory Division of the Jacksonville District at Post Office Box 4970, Jacksonville, Florida 32232-0019. The Enforcement Section is also responsible for inspections to determine whether Permittees have strictly adhered to permit conditions.

IT IS NOT LAWFUL TO DEVIATE FROM
THE APPROVED PLANS ENCLOSED.

Sincerely,

Paul L. Grosskruger
Colonel, U.S. Army
District Commander

Enclosures

DEPARTMENT OF THE ARMY PERMIT

Permitted: SOUTH FLORIDA WATER MANAGEMENT DISTRICT
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

Permit No: SAJ-2005-6166(IP-TKW)

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

NOTE: The term "you" and its derivatives, as used in this permit, means the Permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the 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: The project includes construction and operation of the C-44 Reservoir and Stormwater Treatment Area Project (C-44 RSTA) resulting in up to 615.7 acres of fill in waters of the United States associated with clearing and grubbing and construction of embankments, pump stations, water control structures, and recreational features. Additional works include construction of a spillway in the C-44 Canal, a navigable water of the United States. The project features are described in Attachment 1. The work described above is to be completed in accordance with the following: (1) C-44 Reservoir/Stormwater Treatment Area Project Pre-Final Design Submittal 90 Percent Plans for Permitting Purposes Only April 27, 2007 Project I.D. No. P507-8305 in Volumes I through VII prepared by HDR Engineering, Inc. which are incorporated herein by reference except for drawing numbers C1024 and C1033 of Volume II which are replaced by Drawings C1024 and C1033, Revised for Permitting Purposes Only October 1, 2007 (Attachment 2); (2) Drawings M3009, M3011, and M3016 of the Bid Set Drawings, Volume Reservoir Pump Station Plan Set (Attachment 3); (3) the State Water Quality Certification (Attachment 4); and (4) eight additional attachments affixed at the end of this permit instrument.

Project Location: The proposed project site is located in portions of Section 36, Township 38S, Range 39E; Sections 1-5,

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8-18, 21-29, 34-36, Township 39S, Range 39E; Sections 2-4, Township 40S, Range 39E; and Sections 6, 7, 18, 19, 30, 31, Township 39S, Range 40E, Martin County, Florida. The project site is located just north of the St. Lucie Canal (C-44) about half way between Lake Okeechobee and the Atlantic Ocean.

Latitude: 27.08135114540
Longitude: -80.42313883420

Permit Conditions

General Conditions:

1. The time limit for completing the work authorized ends on **September 24, 2012**. 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 the 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.

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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: The terms used in these permits will have the same definition as those terms in 33 CFR Part 385.3, unless otherwise defined.

1. All submittals and reports required under this permit and all subsequent modifications shall be provided in a single Consolidated Annual Report, i.e., the South Florida Environmental Report on March 1, and must be provided to the following addresses:

U.S. Army Corps of Engineers (USACE)
South Florida Restoration Program Office
1400 Centrepark, Suite 750
West Palm Beach, Florida 33401
Re: Project No: SAJ-2005-6166(IP-TKW)

U.S. Army Corps of Engineers
Enforcement Section (CESAJ-RD-PE)
P.O. Box 4970
Jacksonville, Florida 32232-0019
Re: Project No: SAJ-2005-6166(IP-TKW)

2. The Permittee shall conduct a pre-construction meeting a minimum of 5 days prior to commencement of construction in order to notify contractors of the requirements of the permit. The Permittee shall provide a minimum of 48 hours advance notification of the pre-construction meeting to the USACE, South Florida Restoration Program Office.

3. The Permittee shall notify the USACE, South Florida Restoration Program Office, in writing at least 48 hours prior to commencement of the work authorized by this permit.

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4. Since a portion of the proposed work is located within the Federal right-of-way for the Okeechobee Waterway, **a Department of the Army Consent to Easement is also required prior to commencement of construction.** This permit acknowledges that the Consent to Easement has been issued by the USACE Real Estate Division and is attached to the permit as Attachment 5.
5. The Permittee must provide to the Corps as-built drawings of the authorized work and an As-Built Certification Form (Attachment 6). The drawings and Certification Form must be submitted to the Corps within 60 days of completion of the authorized work, or at the expiration of the construction window of this permit, whichever occurs first. The drawings must be signed and sealed by a registered professional engineer and include the following:
 - a. A plan view drawing of the location of the authorized work footprint (as shown on the permit drawings) with an overlay of the work as constructed in the same scale as the attached permit drawings (8½-inch by 11-inch). The drawing should show all "earth disturbance," including wetland impacts, water management structures, and any on-site mitigation areas.
 - b. List any deviations between the work authorized by this permit and the work as constructed. In the event that the completed work deviates, in any manner, from the authorized work, the Permittee shall describe, on the As-Built Certification Form, the deviations between the work authorized by this permit and the work as constructed. Clearly indicate on the as-built drawings any deviations that have been listed. *Please note that the depiction and/or description of any deviations on the drawings and/or As-Built Certification Form does not constitute approval of any deviations by the U.S. Army Corps of Engineers.*
 - c. The Department of the Army Permit number.
 - d. Include pre- and post-construction aerial photographs of the project site, if available.
6. Conditions for projects the Permittee plans to construct in furtherance of the Comprehensive Everglades Restoration Plan

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(CERP), but which are being constructed in advance of final authorization/approval of the associated CERP Project Implementation Report (PIR) and/or execution of a Project Cooperation Agreement (PCA):

- a. The USACE' analysis of this permit application pursuant to applicable regulations and the National Environmental Policy Act (NEPA) may need to be supplemented as new information becomes available and/or to meet requirements for modifications of the permit.
- b. The USACE' decision that this project has independent utility is made solely for the purpose of permitting and does not mean that it is or is not a separable project under CERP.
- c. Issuing this permit does not constitute approval of any engineering or design for any future consideration of the project under CERP.
- d. Future action on related portions of this project or other projects being implemented under CERP may require additional NEPA compliance analysis and documentation or other related analyses under the USACE' Civil Works Planning Process.
- e. The issuance of this permit does not constitute a recommendation by the Chief of Engineers for congressional authorization of this project for construction or implementation as a feature or component of an authorized CERP project.
- f. The issuance of this permit does not constitute approval of this project as being necessary, integral, and cost effective for consideration of cost sharing for the planning, design, engineering, construction or implementation of a feature of CERP.
- g. Any work under an authorized federal project cannot be considered for any mitigation that may be required by issuance of this permit
- h. The Permittee is required to design, construct, and operate the project consistent with the Central and Southern Florida Project as modified.

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i. The permit specific conditions will be reevaluated if a PCA is executed on an authorized CERP project, which includes the Acceler8 project feature, in order to relieve the Permittee of specific conditions that are no longer applicable.

7. Environmental Commitments:

a. The Permittee shall employ best management practices with regard to erosion and turbidity control and shall monitor water quality in accordance with the requirements of the Florida Department of Environmental Protection Permit Modification, No. 0254895-003-EM dated July 24, 2007 (Attachment 4).

b. Following completion of construction, the Permittee shall implement a Project Level Monitoring Plan (PLMP). This plan shall be reviewed and approved by the USACE prior to operation of the project. A copy of the Draft PLMP plan is included in the permit as Attachment 7. The Permittee shall ensure the project remains in compliance with State Water Quality Certification for the life of the project. Results of the project water quality monitoring will be provided annually in the South Florida Environmental Report.

c. The contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will require that the contractor adopt safe and sanitary measures for the disposal of solid wastes in accordance with federal, state, and local requirements. The Permittee shall develop an environmental protection plan to address concerns regarding monitoring of equipment, maintenance and security of fuels, lubricants, and spill prevention.

d. Demolition debris and concrete or paving materials will be disposed of in accordance with federal, state, and local requirements.

e. The Permittee shall, to the maximum extent practicable, maintain a minimum static water level of 0.5 feet above the average ground elevation in the STA cells to avoid dryout of the cells, subject to available water. The Permittee shall ensure, to the maximum extent practicable, that maximum water depths of 4.5 feet above the average ground elevation of the treatment

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cells will not be exceeded in order to avoid long-term damage to the treatment vegetation and provide protection of project levees.

f. This permit acknowledges that the Permittee has established wells throughout the perimeter of the project site and has been collecting groundwater data for approximately 2 years (baseline data). The Permittee shall continue to monitor these wells during construction and initial operations to ensure flood protection is being maintained and to ensure no adverse impacts as a result of seepage. Results of the monitoring shall be reported in the Consolidated Report identified in Special Condition number 1.

8. Wildlife/Listed Species Conditions:

a. This Department of the Army permit does not authorize you to take a(n) threatened or endangered species. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA section 10 permit, or a Biological Opinion (BO) under ESA section 7, with "incidental take" provisions with which you must comply). The September 14, 2006 and July 30, 2007, United States Fish and Wildlife Service (USFWS) BOs for the C-44 RSTA incorporated herein by reference contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the BOs. Your authorization under this permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take or the attached BOs, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BOs, where a take of the listed species occurs, would constitute an unauthorized take, would constitute non-compliance with your USACE permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its BOs, and with the ESA. For further clarification on this point, you should contact the USFWS, South Florida Ecological Services, Vero Beach Office, 1339 20th Street, Vero Beach, Florida 32961.

b. If bald eagle nests are encountered on the project footprint, the USFWS' *Habitat Management Guidelines for the Bald*

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Eagle in the Southeast Region shall be implemented during construction of the C-44 RSTA project. Both the FFWCC and USFWS will be consulted in the event that colonial or solitary wading bird nests are observed within the construction footprint. The USFWS will be notified upon locating a dead, injured, or sick wood stork or bald eagle before, during, and after construction of the reservoir.

c. Prior to construction, the Permittee shall inform contractor personnel of the potential presence of threatened and endangered species in the project area, the need for precautionary measures, and the ESA prohibition on taking listed species. All Construction contractors will be trained and briefed on how to identify and avoid harm and harassment to federally listed wildlife species as well as conditions under which the USFWS should be notified. The USFWS shall be notified upon observation of nesting activity of any listed federal species.

d. The following special measures will be incorporated during project construction to minimize effects to any listed species that may be present: a) *Standard Protection Measures for the Eastern Indigo Snake* (Attachment 8); b) *Management Guidelines for the Bald Eagle in the Southeast Region and Bald Eagle Standard Local Operating Procedures for Endangered Species*; and c) *Habitat Guidelines for the Wood Stork in the Southeast Region*. Copies of the documents required for items b and c are available on the internet at <http://www.fws.gov/verobeach/Programs/Permits/Section7.html>. These documents are incorporated into the permit by reference.

e. In order to reduce potential impacts to migratory birds associated with the communication tower, the Permittee shall set flashing strobe lights as dim and brief as legally possible and set flash time intervals as long as legally possible.

f. If new overhead electrical lines are constructed near open water to service new pumps, the publication *Suggested Practices for Raptor Protection on Powerlines: The State of the Art in 1996* published by the Avian Powerline Interaction Committee shall be consulted for recommended measures to protect bald eagles from electrocution.

g. Within one year of the date of this permit and prior to completion of construction activities that result in impoundment of water within the reservoir, the Permittee shall remediate all

soils within the reservoir footprint exceeding the 85 mg/kg initial screening value for copper. This includes the sixteen 50-acre grids identified by the following "Risk Evaluations": *Risk Evaluation for Exposure to the Everglades Snail Kite to Copper in Soils in the Planned C-44 Reservoir Project Area*, dated November 13, 2006, by NewFields and *Additional Risk Evaluation for Copper in Soils in the Planned C-44 Reservoir Project Area*, dated February 2007, by NewFields which are incorporated herein by reference.

h. The Permittee shall implement the following protocols during construction for protection of the West Indian manatee:

(1) *Standard Manatee Conditions for In-Water Work, 2005* (Attachment 9)

(2) U.S. Fish and Wildlife Service *Guidelines for Culverts Located in Manatee-Accessible CERP Projects* for all in-water work (Attachment 10)

(3) Installation of a "No Entry" sign (this sign is not intended for vessels engaged in in-water construction activities authorized under this permit) at the confluence of the C-44 RSTA intake canal and C-44 Canal

(4) Installation of a trash screen in front of the pump inlet at the C-44 reservoir pump station (S-401) to be constructed in accordance with Bid Set Drawings, Volume Reservoir Pump Station Plan Set, sheets M3009, M3011, and M3016 (Attachment 3)

(5) Installation of a manatee barrier at the Troup Indiantown Water Control District (TIWCD) pump station to be constructed in accordance with Reference Drawings Volume VI TIWCD Irrigation Canal/Pump Station Set, drawings C5010, S5001, S5002, S5003, and S5004

i. The initial manual flooding of the reservoir will be at a rate of one-half inch per day until a depth of six inches is attained in order to minimize negative impacts to the eastern indigo snake.

j. This permit acknowledges that the Permittee will implement all reasonable measures during operation of the reservoir in order to minimize adverse effects to fish and wildlife species provided those measures do not conflict with the overall project purpose which includes attenuating C-44 Basin runoff releases to the St. Lucie Estuary. Additionally, it is recognized that this condition does not apply to recreational activities such as hunting and fishing.

9. Historic Properties:

a. No work is authorized by this permit on properties listed or eligible for listing in the National Register of Historic Places.

b. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permitted project should cease all activities involving the subsurface disturbance in the immediate vicinity of such discoveries. The Permittee, or other designee, should contact the Florida Department of State, Division of Historical Resources, Review and Compliance Section at 850-245-6333 or 800-847-7278. Project activities should not resume without verbal and/or written authorization from the permitting agency.

c. In the event that unmarked human remains are encountered during permitted activities, all work shall stop immediately and the proper authorities notified in accordance within Section 872.05, Florida Statutes.

The following conditions shall apply until a PCA for a CERP project that includes all or a portion of this Acceler8 project is executed and the USACE determines that these mitigation and monitoring conditions are superseded by PCA execution, in whole or in part. For the purposes of this permit, the system-wide operations plan is defined as the operation plan that is implemented when all of the Acceler8 projects are brought on line. (This is currently estimated by the Permittee to be 2011.)

10. Initial and Phased Operations:

a. The Permittee shall request approval of an initial operations plan at least six months prior to the projected operation of the project. The initial operation plan will be reviewed and approved by the USACE in accordance with current USACE Engineering Regulations and the requirements of the Central & Southern Florida (C&SF) Project as modified.

b. The project will be operated in order to achieve the goals and objectives of the C-44 RSTA as described in the *C&SF Project Indian River Lagoon South Final Integrated Project Implementation Report and Environmental Impact Statement* dated March 2004, *SFWMD's C-44 RSTA Final Basis of Design Report* dated April 2006, and the USACE's C-44 RSTA Environmental Assessment dated June 2007, which are incorporated herein by reference.

11. System-wide Benefits and Operations: The decision on this permit included consideration of system-wide environmental benefits expected to result from the interrelationships of the design, construction, and operation of the work authorized herein and other works to be constructed under Acceler8. These system-wide environmental benefits are projected to offset the adverse effects of such works, as identified in the mitigation ledger attached to this permit.

The Permittee has demonstrated that it is the goal of the Acceler8 projects to improve the environment of the south Florida ecosystem while providing for other water related needs of the region. The Permittee agrees that in order to achieve system-wide environmental benefits, the Acceler8 projects will be designed, constructed, and operated individually and as a whole consistent with the goals of the C&SF Project as modified. The Permittee's commitments along with the mitigation and monitoring conditions as set out below are the basis for determining that the system-wide operation of the Acceler8 projects will provide system-wide environmental benefits which serve to offset the individual Acceler8 project impacts.

a. This permit acknowledges that the project results in a loss of 185.5 functional units based on the Unified Mitigation Assessment Method. This loss is anticipated to be offset by benefits realized through construction of the project and other

Acceler8 projects. As shown on the Mitigation ledger attached to this permit, Attachment 11, the Acceler8 projects are anticipated to provide enough functional units by the year 2020 sufficient to offset the adverse effects of this project. If it is determined that the functional units anticipated to be lost as a result of this project are not fully offset through implementation of the identified Acceler8 projects by March 1, 2020, the USACE will re-evaluate the project's adverse effects in light of all of the circumstances prevailing at that time, to determine if an alternate and/or supplemental compensatory mitigation plan is needed. Although the full environmental benefits as projected on the ledger are not expected until 2020, the USACE will require annual monitoring to ensure the Acceler8 projects are trending toward success, achievement of the restoration targets, and the functional lift projected in the mitigation ledger. See Special Condition number 12.e below.

b. As a condition of this permit, the Permittee agrees to fully satisfy, implement, and pay for any alternative and/or supplemental mitigation requirements that the USACE may determine to be necessary to address the loss of functional units cited above. As a contingency for addressing this situation if it should occur, based on best available information the Permittee has identified up-front potential alternative mitigation actions for this project.

c. In order to provide the system-wide benefits of this project, the Permittee shall operate the project in accordance with a final operation plan developed consistent with current USACE Engineering Regulations and the requirements of the C&SF Project as modified. The final operation plan will be consistent with the operational guidelines identified in the NEPA evaluation for the project. The final operational plan will be reviewed and approved by the USACE prior to operation of the project.

d. The final operations plan shall include but will not be limited to a water budget that estimates the appropriate volume and distribution of water necessary to achieve the anticipated system-wide environmental benefits as required to offset the project impacts and necessary to meet the goals of the project. This water will be protected under Special Condition number 12.h below. Any modification to the final operating plan will require Department of the Army approval prior to modification.

e. This permit acknowledges that the mitigation ledger is based on operational assumptions and is therefore, a dynamic evaluation which will continue to be updated by the USACE in coordination with the resource agencies as individual Acceler8 projects come on line, updates of predictive models are made, and a final operations plan is developed.

f. The Permittee shall conduct monitoring as identified in the Acceler8 System-wide Mitigation Monitoring Plan updated June 2007, Attachment 12.

g. It is the responsibility of the Permittee to achieve the system-wide benefits to which this project contributes. If annual monitoring identifies areas where Acceler8 system-wide environmental benefits are not trending toward success at a reasonable rate of progress, the Permittee and the USACE will review the operating plan to determine if adjustments can be made to achieve such benefits. The Permittee shall be required to implement corrective actions necessary to achieve the required environmental lift. If it is determined prior to the permit expiration date that such system-wide environmental benefits can not be achieved through such actions, the Permittee will be responsible for undertaking alternative compensatory mitigation as determined by the USACE to offset project impacts.

h. The Permittee shall not allocate for consumptive use any water made available by the project until it is demonstrated that the project can be operated consistent with the approved operations plan to achieve the project's anticipated environmental benefits as identified in the NEPA documentation for this permit and mitigation ledger. At such time, the water made available for consumptive use will be identified and allocated consistent with the requirements of the NEPA evaluation. The USACE will consider the State's allocation decisions in determining compliance with the mitigation plan and projected system-wide benefits.

i. The Permittee shall provide sufficient financial assurances, determined to be necessary by the USACE, for the performance of all obligations, covenants, terms, conditions, and agreements required under this permit.

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j. This permit acknowledges that the mitigation will be conducted consistent with the CERP Adaptive Management Plan which is incorporated herein by reference.

12. None of the authorizations or conditions in this permit are intended to diminish or alter the governmental authority and powers of the Miccosukee Tribe of Indians and the Seminole Tribe of Florida (Tribes), or diminish or alter the rights of those tribes, including rights under any tribal agreement with the permittee or any agency of the U.S. Government. The permittee shall advise this office and the Tribes when the permittee becomes aware of issues implicating the powers or rights of the Tribes or other issues that may make necessary a modification to the permit.

13. The Permittee shall submit to this office any revisions and/or modifications to the underlying design documents and drawings for the enclosed project plans. The Permittee is advised that failure to provide complete requests for permit modifications or complete monitoring reports as required by any of the conditions above, may prevent this office from issuing future modifications to this permit and authorizations for further construction, even if the particular incomplete submittal is for a different portion of the project.

Further Information:

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

(X) 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, or local authorizations required by law.

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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.

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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 USACE will normally give favorable consideration to a request for an extension of this time limit.

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



(EXECUTIVE DIRECTOR)
Carol A. Wehle
South Florida Water Management District

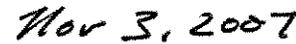


(DATE)

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



(DISTRICT ENGINEER)
Paul L. Grosskruger
Colonel, U.S. Army
District Commander



(DATE)

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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.

(TRANSFEREE-SIGNATURE)

(DATE)

(NAME-PRINTED)

(ADDRESS)

(CITY, STATE, AND ZIP CODE)

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***Attachments to Department of the Army
Permit Number SAJ-2005-6166(IP-TKW)***

1. PROJECT DESCRIPTION: 5 pages, dated June 2007
2. DRAWINGS C1024 AND C1033, REVISED FOR PERMITTING PURPOSES ONLY: 2 sheets dated October 1, 2007
3. DRAWINGS M3009, M3011, AND M3016 OF THE BID SET DRAWINGS, VOLUME RESERVOIR PUMP STATION PLAN SET: 3 sheets, dated June 2007
4. WATER QUALITY CERTIFICATION: Specific Conditions of the water quality permit/certification in accordance with General Condition number 5 on page 2 of this DA permit; 23 pages dated July 24, 2006 (without attachments).
5. USACE CONSENT-TO-EASEMENT: 27 pages, dated June 12, 2007
6. AS-BUILT CERTIFICATION FORM: 1 page
7. DRAFT WATER QUALITY MONITORING PLAN: 27 pages, dated January 3, 2007
8. STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE: 1 page.
9. STANDARD MANATEE CONSTRUCTION CONDITIONS: 2 pages, dated June 2001
10. U.S. FISH AND WILDLIFE SERVICE GUIDELINES FOR CULVERTS LOCATED IN MANATEE-ACCESSIBLE CERP PROJECT: 1 page
11. BID SET DRAWINGS VOLUME RESERVOIR PUMP STATION PLAN SET, DRAWINGS M3009, M3011, AND M3016.
12. ACCELER8 SYSTEM-WIDE MITIGATION LEDGER: 1 page, dated June 2007
11. ACCELER8 SYSTEM-WIDE MITIGATION MONITORING PLAN: 7 pages, dated June 2007

Attachment 1
C-44 RSTA Project Description
June 2007

Reservoir/Reservoir Embankment - The 3,400 acre reservoir has a normal full storage level of 15 feet (EL 41 feet NAVD88), provides approximately 50,600 acre-feet of storage capacity, and contains approximately 50,000 linear feet of embankment.

Stormwater Treatment Area (STA)/ STA Embankments - The project includes six (6) individual cells [Cell 1 (995 acres); Cell 2 (1275 acres); Cell 3 (465 acres); Cell 4 (1280 acres); Cell 5(1280 acres); Cell 6 (995 acres)] encompassing approximately 6,300 acres with 170,000 linear feet of embankments and maintaining a targeted average depth of 1.5 feet.

Intake Canal - The intake canal is approximately 20,000 linear feet in length with a 60 foot bottom width for a majority of its extent (11 foot bottom width from Citrus Boulevard to the C-44 Canal) at an elevation of 3 feet NAVD88. Design conveyance capacity for the Intake Canal is approximately 1,300 cubic feet per second (cfs). Canal side slopes under the Citrus Boulevard Bridge will be comprised of a vertical sheet pile wall system. This sheet pile wall system will extend along the west side of the canal to the C-44 Canal.

Inflow Pump Station - An 1,100 cfs pump station to provide water from the C-44 Canal to the C-44 Reservoir via the Intake Canal will be comprised of four (4) electric 275 cfs pumps.

Reservoir Discharge Structure - The discharge structure is comprised of three (3) six foot by six foot (6' x 6') slide gates to convey a maximum of 1,100 cfs (600 cfs under normal operations) through two (2) seven foot by seven foot (7' x 7') box culverts (with operable slide gates) to the Northern Distribution Canal. The structure also includes a service spillway capable of conveying 810 cfs for emergency discharges associated with probable maximum precipitation (PMP) events.

Western Reservoir Perimeter Canal (WRPC) - This section of the perimeter canal is 35,000 linear feet paralleling most of the northern, western, and southern extent of the reservoir embankment. The WRPC maintains a bottom width of 5 feet for a majority of the canal with a transition from 5 feet to 25 feet along the south side of the reservoir. The canal bottom is constant at EL 12.0 feet NAVD88 for the majority of the canal. The WRPC will be used to transmit surface runoff, seepage flow, and anticipated future flows from the C-23 Canal.

Western Reservoir Perimeter Canal Spillway - This structure is a fifty (50) foot wide spillway which discharges to the C-44 Intake Canal (C-400) with a crest elevation of 18 feet NAVD88 and an 1,100 cfs capacity.

Western Reservoir Perimeter Canal Low Level Outlet Structure - This structure allows for low level drawdown of the WRPC to the C-44 Intake Canal through a five foot by five foot (5' x 5') gated box culvert.

Eastern Reservoir Perimeter Canal (ERPC) - The ERPC is approximately 15,000 linear feet and runs parallel to the eastern embankment of the reservoir. The

canal maintains a bottom width of 5 feet at an elevation of 12 feet NAVD88. The ERPC is designed to convey runoff and seepage.

Northern Distribution Canal - This canal conveys flows from the reservoir to STA Cells 1, 2, 3 and the Southern Distribution Canal. The canal maintains a bottom width of 10 feet, a bottom elevation of 18.5 feet NAVD88, and a normal operating elevation of 28-29 feet NAVD88 with a design conveyance capacity of 1,100 cfs.

Northern Distribution Canal Service Spillway - This structure is located at the terminus of the Northern Distribution Canal and is designed to convey 1,100 cfs to the Eastern Collection/Discharge Canal during emergencies or PMP events.

Southern Distribution Canal - This canal joins the Northern Distribution Canal at the confluence of STA Cells 1-4 (east of the FP&L power lines) and conveys flows from the reservoir to STA Cells 4, 5 and 6. The canal maintains a bottom width of 10 feet, a bottom elevation of 18.5 feet NAVD88, and a normal operating level of 28-29 feet NAVD88 with design conveyance capacity of 1,100 cfs.

Interior Works - Structures located within the C-44 RSTA Project will serve to convey water internally between the reservoir, STA Cells, and the multiple canal systems:

STA Cell Inflow Structures - The STA includes 20 gated inlet structures at the upstream end of each STA Cell consisting of 60" diameter reinforced concrete pipes with operable slide gates. These structures serve to convey water into the STA Cells from both the Northern and Southern Distribution Canals.

STA Cell Outflow Structures - The STA includes twenty (20) forty foot (40') wide manually adjustable weirs (consisting of two (2) twenty foot (20') weir plates with a nominal crest elevation of 26.75 feet NAVD88 at the downstream end of each STA cell. The crest elevation is adjustable by installing or removing weir plates. Flows from these structures are discharged to the Eastern and Western STA Collection Canals through a 60" diameter reinforced corrugated pipe (RCP). Outlet structures are designed for a combined discharge rate of 600 cfs under normal operational conditions and a combined maximum total discharge rate of 1,100 cfs.

Low Level Gated Outflow Structures - Located at the downstream end of each STA Cell, these 60" diameter reinforced concrete pipes with manually-operated slide gates exist to evacuate water from the STA Cells below the level of the weir plates and are not intended for normal operations.

Eastern Collection Canal - This canal conveys discharges from STA Cells 1, 3, 4, 5, and 6 to the project outlet. Canal bottom widths range between of 8 feet to 40 feet with bottom elevations ranging between 12 feet and 14 feet NAVD88.

Western Collection Canal - This canal conveys discharges from STA Cell 2 to the project outlet. Canal bottom widths range between of 5 feet to 40 feet with bottom elevations ranging between 12 feet and 16 feet NAVD88.

Discharge Canal Spillway - This spillway is located at the terminus of the Collection Canals and consists of a 120 foot wide broad-crested weir with a crest elevation of 19 feet NAVD88. The spillway is designed for a normal operational flow of 600 cfs as well as peak flow of 1,880 cfs generated during PMP events.

Discharge Canal Low Level Outlet Structure - This structure consists of a manually-operated six foot by six foot (6' x 6') gated structure that can allow for the drawdown of the entire canal system within the C-44 RSTA Project.

Main Access Road - This 24 foot wide paved road is approximately 4 miles long and will be constructed from Citrus Boulevard to the reservoir. Swales, ditches, dry detention areas, and associated culverts/structures are included for water quality treatment and conveyance.

Northern Interior Drainage Canal - This conveyance canal is located along the west side of STA Cell 3 to provide drainage for the Florida Power & Light (FPL) easement area. Culverts will be constructed in locations where the canal crosses access roads. Discharge from this canal is into the Southern Interior Drainage Canal.

Southern Interior Drainage Canal - This conveyance canal is located along the west side of STA Cells 4, 5 and 6 to provide drainage for the FPL easement area. Culverts will be constructed in locations where the canal crosses access roads. This canal connects to the ditches/dry detention areas located in the vicinity of the Main Access Road which discharge to the intake canal.

Eastern Drainage Canal - Improvements will be made to the east/west C-133A Canal immediately north of Cell 4, the C-132 Canal north of the Bar B Ranch property, and the C-133 Canal along the east side of the Bar B Ranch property in order to maintain drainage service for the Bar-B Ranch property and properties to the north. The C-133 canal improvements will extend to the C-44 Canal and will include relocation of the access road for Bar-B-Ranch.

Eastern Drainage Canal Spillways - Two spillways will be located within Easement 1 within the Eastern Drainage Canal, south of the Citrus Boulevard Box Culvert and prior to the C-44 Canal. The upper spillway is a 34 foot wide broad-crested weir with a crest elevation at 17.0 feet NAVD88. The spillway is designed for a normal operational flow of approximately 500 cfs. The lower spillway is a 34 foot wide broad-crested weir with a crest elevation at 12.0 feet NAVD88. These spillways are the discharge point for the off-site areas located north of the C-44 RSTA Project.

Citrus Boulevard Bridge and Roadway Improvements - Improvement include a new bridge spanning the Intake Canal (40' wide and 80' in length), roadway bridge approaches, turn lanes for main access road, treatment areas, stabilized shoulders, paving and striping upgrades. Upon completion, this bridge and roadway improvements will be owned and maintained by Martin County. Construction of temporary roadways and drainage facilities on the north side of Citrus Boulevard will occur to maintain vehicular use during construction of the bridge.

Citrus Boulevard Box Culvert - Two 10'x 6' box culverts will be constructed under Citrus Boulevard at the East Drainage Canal within Easement 1.

Construction of temporary roadways and drainage facilities on the north side of Citrus Boulevard will occur to maintain vehicular use during construction of the box culverts.

Communications Tower - A 300-foot tall microwave communications tower with 20-foot antenna for C-44 RSTA Project communications with SFWMD District headquarters in West Palm Beach will be constructed.

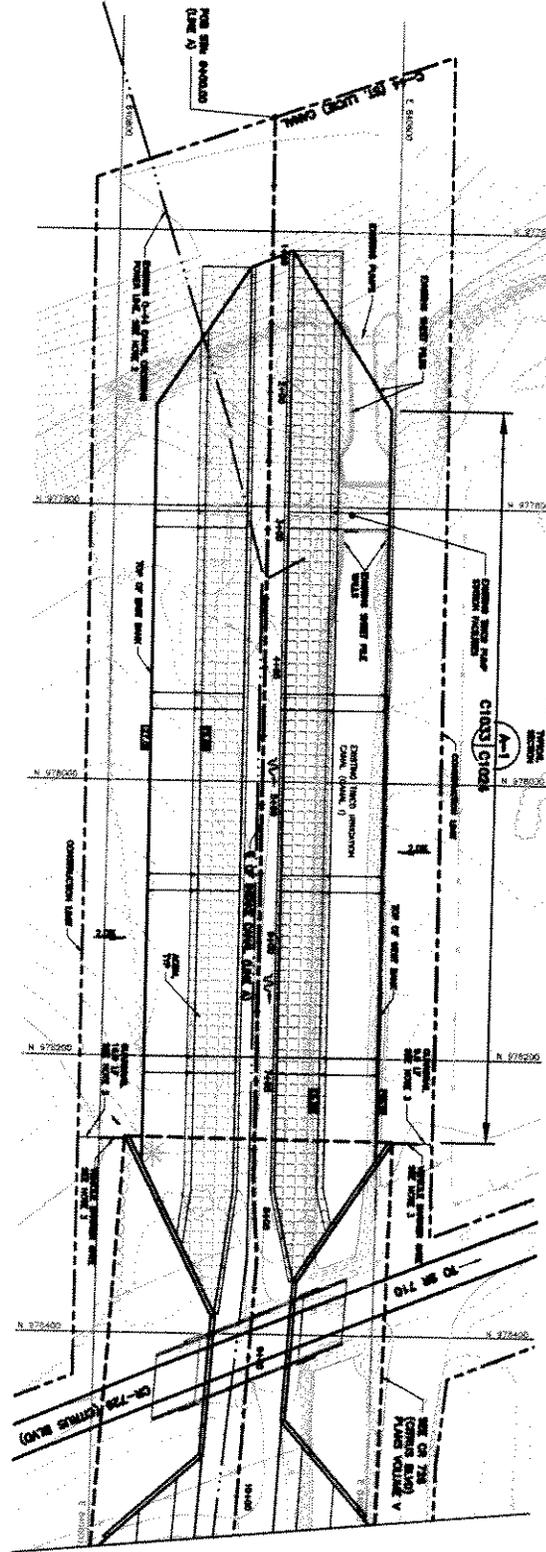
Recreation Components - Recreational activities are generally passive except for some motor boating, fishing and hunting. The project includes construction and maintenance of a parking facility and boat ramp located at the south east corner of the reservoir. Other recreational features include dry vault toilet(s), information kiosks/shade shelter and kayak launches, and boarding pier(s). Reservoir and STA embankments will provide pedestrian and biking access. Additionally, shade shelter, benches, and other minimalist features may be constructed along STA embankments.

FPL Power Line Relocation, Abandonment, Temporary, and Permanent Power Installation - As a result of the project, relocation, removal, installation, and abandonment of several FPL lines and poles as well as installation of buried conduits and related facilities for permanent power to the C-44 RSTA Project site are necessary.

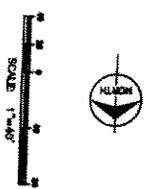
Attachment 2
Drawing C1024 and C1033 of Volume II
Revised for Permitting Purposes Only
October 1, 2007

APPLICABLE
8
 (SEE DRAWING FOR DETAILS)

PLAN VIEW
 SCALE 1" = 40'



- NOTES:**
1. CONSTRUCTION SHALL BE PERFORMED FOR THE ENTIRE LENGTH OF THE CANAL. THE CANAL SHALL BE CONSTRUCTED WITH A GRAVEL FILL CHANNEL WALL AND GRAVEL FILL CHANNEL WALL. THE CANAL SHALL BE CONSTRUCTED WITH A GRAVEL FILL CHANNEL WALL AND GRAVEL FILL CHANNEL WALL.
 2. CONSTRUCTION SHALL BE PERFORMED FOR THE ENTIRE LENGTH OF THE CANAL. THE CANAL SHALL BE CONSTRUCTED WITH A GRAVEL FILL CHANNEL WALL AND GRAVEL FILL CHANNEL WALL.
 3. THE CANAL SHALL BE CONSTRUCTED WITH A GRAVEL FILL CHANNEL WALL AND GRAVEL FILL CHANNEL WALL.

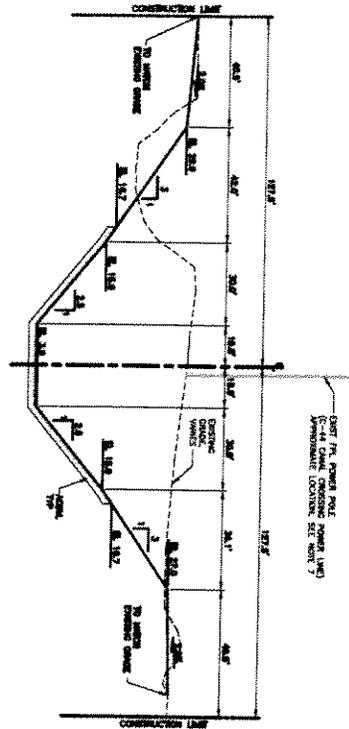


FOR PERMITTING PURPOSES ONLY

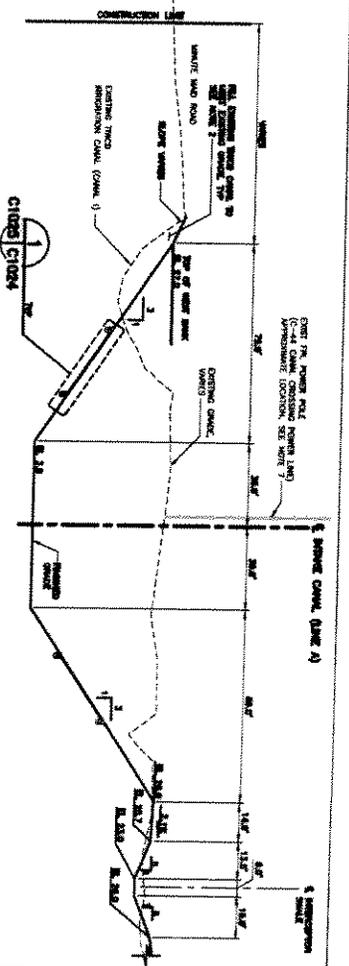


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|--|--|---|--|
| C-44 RESERVOIR/STA PROJECT INTAKE CANAL AND PROJECT ACCESS ROAD C-44 INTAKE CANAL SITE LAYOUT AND GRADING | SOUTH FLORIDA WATER MANAGEMENT DISTRICT ACCELERATORS PROGRAM PHONE: 561-486-8800 3301 SUN CLUE ROAD WEST PALM BEACH, FLORIDA 33408 | DRAWN: A. HERR CHECKED: S. HERR DATE: 10/01/07 SCALE: AS SHOWN | PERMITTING PURPOSES ONLY REVISION DESCRIPTION |
| | | DATE: 10/01/07 SCALE: AS SHOWN | REVISION DESCRIPTION |

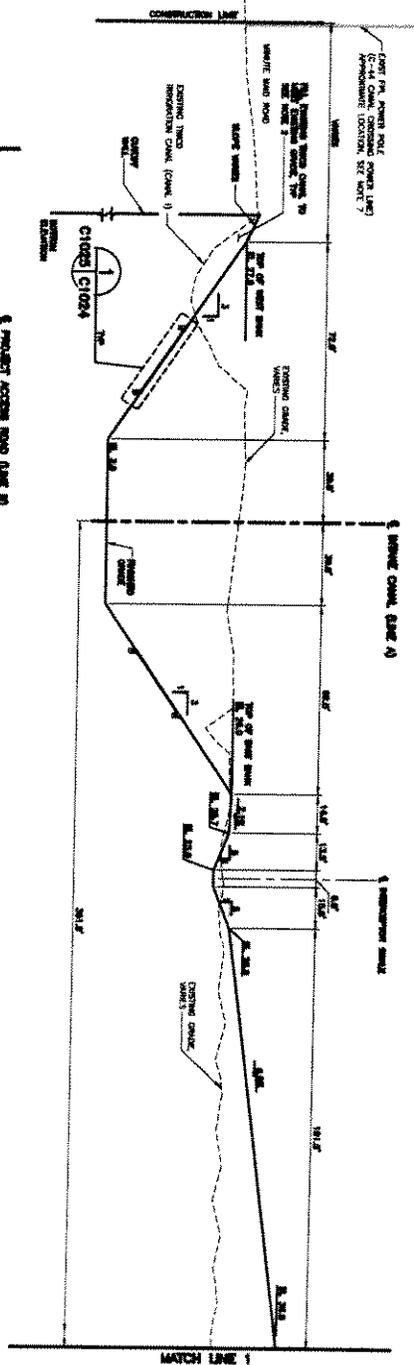
26 - 277



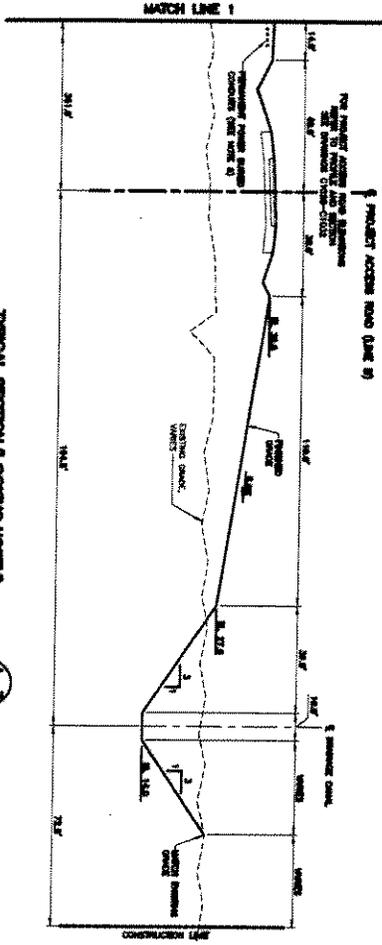
TYPICAL SECTION A-1: LOOKING NORTH
 VERT SCALE 1"=10'
 C1018 C1024



TYPICAL SECTION A-2: LOOKING NORTH
 VERT SCALE 1"=10'
 C1018 C1024



TYPICAL SECTION A-3: LOOKING NORTH
 VERT SCALE 1"=10'
 C1018 C1024



TYPICAL SECTION A-4: LOOKING NORTH
 VERT SCALE 1"=10'
 C1018 C1024



- NOTES:**
1. VERTICAL SCALE OF CONSTRUCTION LINE IS 1"=10' FOR ALL VERTICAL DIMENSIONS UNLESS OTHERWISE NOTED.
 2. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 3. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 4. USE THE CENTERLINE OF THE SHEDDING CANAL AS THE CENTERLINE OF THE IMPROVEMENT CANAL.
 5. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 6. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 7. CONSTRUCTION IS TO ACCORDANCE WITH THE DISTRICT'S STANDARD SPECIFICATIONS FOR CONSTRUCTION OF CANALS AND ACCESS ROADS.
 8. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 9. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.
 10. ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE NOTED.

FOR PERMITTING PURPOSES ONLY

HDR

C-44 FIBERGLASS/WTA PROJECT
 INTAKE CANAL AND PROJECT ACCESS ROAD
 SECTIONS
 (LINE 1 OF 2)



SOUTH FLORIDA WATER MANAGEMENT DISTRICT
 ACCELER8 PROGRAM
 PHONE: 561-486-8800
 3301 GUN CLUB ROAD
 WEST PALM BEACH, FLORIDA 33408

| DATE | BY | REV. | REVISION DESCRIPTION |
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30 of 277

Attachment 3
Drawings M3009, M3011, and M3016
Bid Set Drawings - Volume Reservoir Pump Station Plan Set

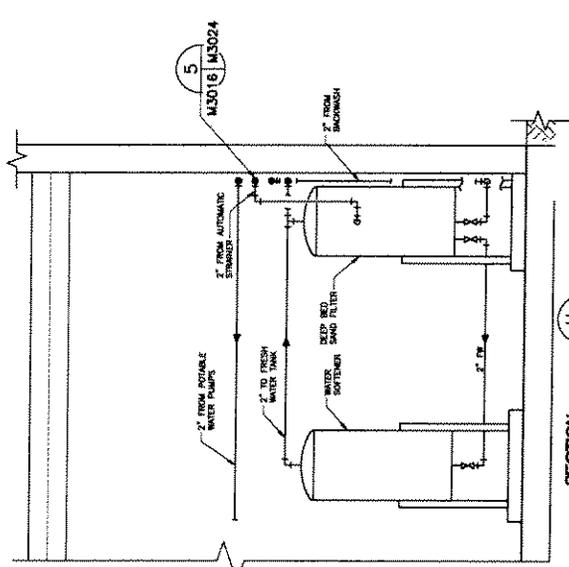
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SOUTH FLORIDA WATER MANAGEMENT DISTRICT
 ACCELER8 PROGRAM
 PHONE: 561-866-8800
 3301 GUN CLUB ROAD
 WEST PALM BEACH, FLORIDA 33408

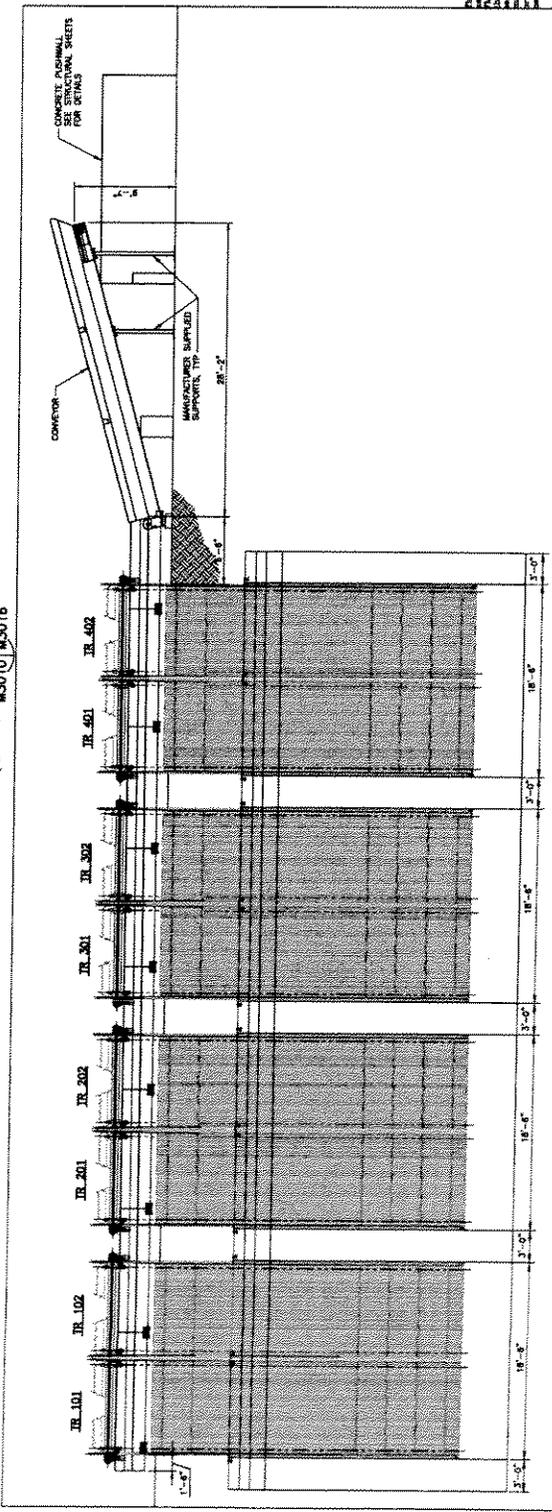
C-44 RESEVOR/BTA PROJECT
PUMP STATION
PUMP STATION SECTION
 CONTRACT NO. P007-8305
 DATE OF ISSUE: 11/15/11
 SHEET NO. 87 OF 98

HDR
 HOK COMPANY
 10000 WEST BOULEVARD
 SUITE 200
 WEST PALM BEACH, FLORIDA 33411

The consultant, contractor or other parties associated with this project shall comply with the provisions of the Florida Building Code, and the provisions of the Florida Building Code shall be maintained in a substantial manner. Any work performed by a contractor/contractor shall be performed in accordance with the project specifications.

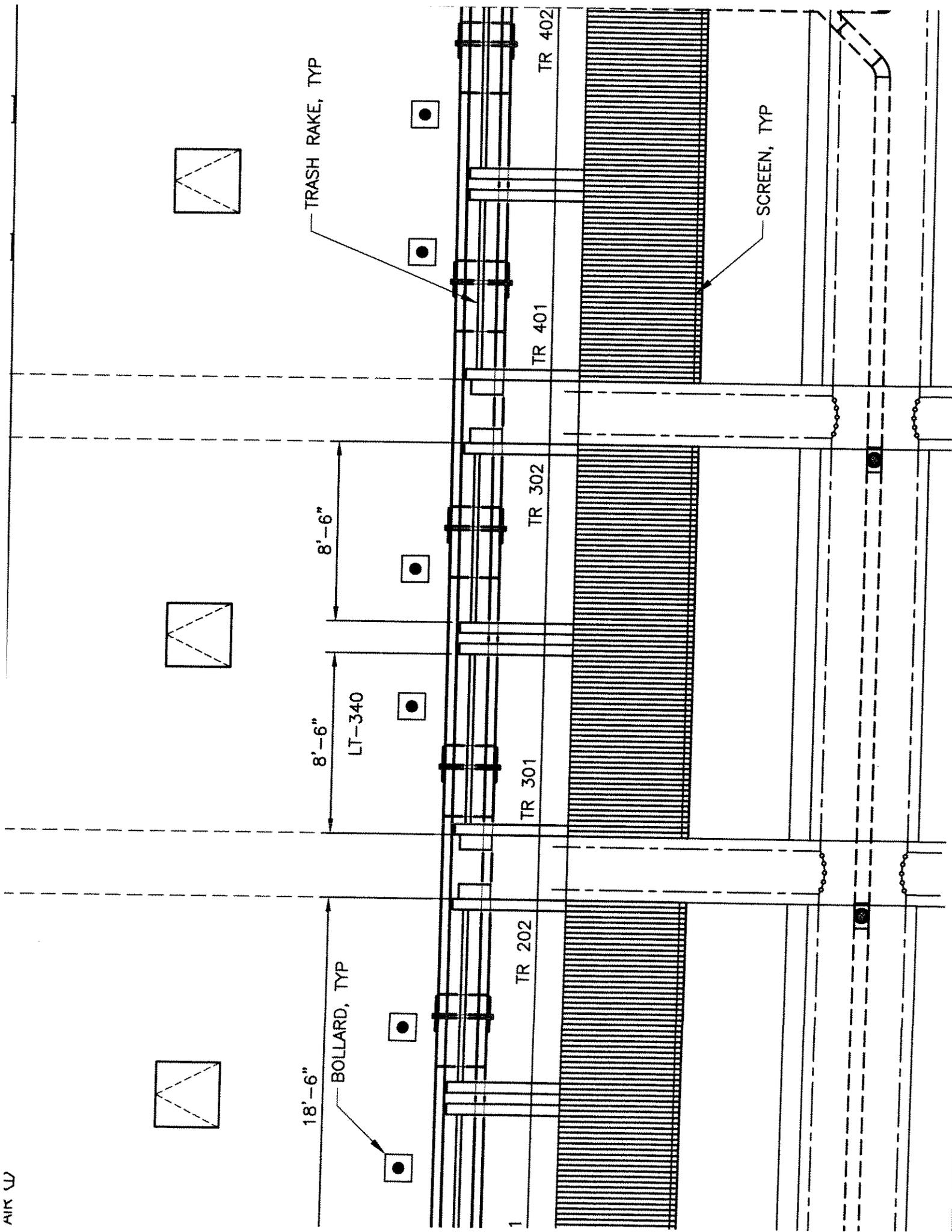


SECTION H
 SCALE: 1/2\"/>



SECTION J
 SCALE: 3/16\"/>

ACCELER8
EXPLAINS NOW



Attachment 4
State Water Quality Certification



Florida Department of Environmental Protection

Bob Martinez Center
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

COMPREHENSIVE EVERGLADES RESTORATION PLAN REGULATION ACT (CERPRA) PERMIT -CONSTRUCTION AND OPERATION AUTHORIZATION

PERMITTEE:

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406

ATTENTION:

Ms. Carol Ann Wehle
Executive Director

Permit Number: 0254895-003-EM

Project: C-44 Reservoir/Constructed Wetland Buffer Project:

County: Martin

Date of Issue: July 24, 2007

Expiration Date: July 24, 2012

This modification is issued under the authority of the Comprehensive Everglades Restoration Plan Regulation Act (CERPRA), Chapter 373.1502, Florida Statutes (F.S.); Title 62, Florida Administrative Code (F.A.C.); and pursuant to the Department of Environmental Protection (Department) authority under Chapter 373 and 403, F.S. The activity is not exempt from the requirement to obtain a CERPRA Permit.

The above named permittee is hereby authorized to initiate the activities described on the application, associated drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof. The activities authorized by this permit must be conducted in conformance with all the provisions of this permit. Failure to comply with all permit conditions and documents referenced herein shall constitute grounds for revocation of the permit and appropriate enforcement action.

This modification constitutes a finding of consistency with Florida's Coastal Zone Management Program, as required by Section 307 of the Coastal Management Act, 14 U.S.C. § 1456; constitutes certification of compliance with water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. § 1341; and constitutes consumptive use (general water use) authorization pursuant to Chapter 373, F.S. and Rule 40E-20, F.A.C. Activities described in the related documents are not authorized until the project is determined to be in conformance with all applicable rules and with the general and specific conditions of this permit/certification/modification/authorization, as specifically described below.

PROJECT DESCRIPTION:

The C-44 Reservoir/Constructed Wetland Buffer (C-44 Project) is part of the Indian River Lagoon (IRL) Restoration Project, which is a "project component" as defined in Section 373.1501(1), F.S., of the Comprehensive Everglades Restoration Plan (CERP). In addition, the C-44 Project was identified as an Acceler8 project which the State of Florida is accelerating the funding, design, and construction of in order to realize immediate environmental benefits. The C-44 Project will include a reservoir and constructed wetland buffer (CWB). The reservoir, approximately a 3,400 acre above-ground water storage area, will have an approximate storage volume of 50,600 acre-feet at a normal full storage level (NFSL) of 15 feet. The CWBs will consist initially of emergent vegetation and have a combined total wet surface area of approximately 6,300 acres with a targeted average depth of 1.5 feet. The overall function of the C-44 Project is to capture and store runoff from the C-44 Basin and return it to the C-44 Canal when there is a need. The components of the C-44 Project are designed to attenuate flows and reduce nutrient loading to the St. Lucie Estuary. The Reservoir and CWBs shall be constructed on approximately a 12,000 acre site located in southern Martin County.

Permittee: South Florida Water Management District
Project: C-44 Reservoir/ Constructed Wetland Buffer Project
Permit No.: 0254895-003-EM
Page 2 of 23

Prior to construction activities associated with the C-44 Project taking place, construction and operational testing of the Troup Indiantown Water Control District (TIWCD) Temporary Reconfiguration Project was conducted. Initial authorization for the construction and operational testing of the TIWCD Temporary Reconfiguration Project was issued through Department Permit No.: 0254895-002-GL. Construction and operational testing of the TIWCD Temporary Reconfiguration Project provided the South Florida Water Management District (District) with the information necessary to determine whether the TIWCD Final Reconfiguration Project would provide the drainage and irrigation capabilities necessary for the TIWCD to fulfill its obligations under Chapter 298, F.S. Results from the construction and operational testing periods also yielded additional information which would enhance the temporary reconfiguration. These modifications, in addition to the construction of the TIWCD Final Configuration, and the construction and operation of the C-44 Project are authorized in this permit.

If any provision of this modification conflicts with the conditions in Comprehensive Everglades Restoration Plan (CERP) Permit No. 0254895-002-GL, then the provisions included within this modification shall prevail.

Troup Indiantown Water Control District Temporary Reconfiguration Project

The temporary components of the TIWCD Project, which are being installed prior to the construction of the C-44 Project, may be removed, altered, replaced, or remain as part of the final configuration outlined below. See Figure 1 for additional information concerning site location.

The TIWCD Temporary Reconfiguration Project consists of the following individual components:

- Site 1: Installation of temporary lift pumps (Temporary Pump Station No. 1) which consists of three 18,000 gallons per minute (gpm) hydraulic pumps. These pumps will transfer water from the C-44 Canal to the TIWCD Canal D.
- Site 2: Installation of additional back pumps (Temporary Pump Station No. 2) which will consist of two 18,000 gpm hydraulic pumps. These pumps will transfer water from TIWCD Canal D to TIWCD Canal I and then Running W ditch. Reconstruct/regrade a portion of the bank of Canal I just west of the Temporary Pump Station No. 2 location.
- Site 3: Running W ditch will be extended east-west from Canal D to Canal I to create a 50-60 foot wide irrigation canal. Two 66" (siphon) culverts will be constructed under Canal D to connect the Running W ditch with the new extension canal. The existing bridge on Minute Maid Road at Canal D will be replaced with three 48" culverts for drainage purposes. Culverts will be constructed at existing access points along the extension of the Running W ditch.
- Site 4: Installation of temporary earthen plugs to isolate the Running W ditch from the internal citrus grove drainage system and the TIWCD irrigation system.
- Site 5: Installation of temporary lift pumps (Temporary Pump Station No. 3) which will consist of two (2) 18,000 gpm pumps. The Star Farms ditch along the west side of the TIWCD main entrance road will be improved from Minute Maid Road south to the TIWCD boundary. Replacement or extension of existing irrigation/drainage structures, culverts and piping will be included for the extent of the north-south ditch improvements.

Troup Indiantown Water Control District Final Configuration Project

The following water control structures/features are being constructed as part of the TIWCD Final Configuration. Once construction is finalized for the permanent facilities, any construction or operation associated with the temporary reconfiguration shall be prohibited. See Figure 2 for additional information concerning site location.

- TIWCD Pump Station: The permanent TIWCD Pump Station will consist of five (5) 18,000 gpm pumps with a total capacity of 90,000 gpm, and one (1) 10,000 gallon fuel storage tank. The new pump station shall withdraw water from the C-44 Project Intake Canal and have the ability to reroute all flow south to the improved Star Farms Ditch, all flow to the Running W Ditch, or any combination of the two.

- Site 3: Reconstruct/grade the banks of the existing east-west section of Running W ditch connected to the siphon under Canal D. This east-west segment of Running W ditch will become a permanent TIWCD facility. Plug/remove drainage culverts installed at previous Minute Maid Road bridge location.
- Remove existing TIWCD Pump Station and temporary facilities.

C-44 Reservoir /Constructed Wetland Buffer Construction and Operations

The following water control structures/features are being constructed as part of the C-44 Project. See Figure 3 for additional information concerning structure/feature location. Structure/feature numbers may change prior to initiation of their construction. The District shall incorporate the final nomenclature in the Conformed Plan Set and submit them to the Department as a condition of this permit.

The C-44 Reservoir and Constructed Wetland Buffer consist of the following individual components (See Figure3):

- **Reservoir/ Reservoir Embankment (D-400)**- comprised of approximately 50,000 linear feet of embankment, the approximately 3,400 acre reservoir has a normal full storage level of 15 ft (El. 41 ft. NAVD88) and provides approximately 50,600 acre-feet of storage capacity.
- **Constructed Wetland Buffer (CWB)/ CWB Embankments (L-400 1-6)**- comprised of approximately 170,000 linear feet of embankments, the six individual cells [Cell 1 (995 acres); Cell 2 (1275 acres); Cell 3 (465 acres); Cell 4 (1280 acres); Cell 5(1280 acres); Cell 6 (995 acres)] encompass approximately 6,300 acres and a maintain a targeted average depth of 1.5 feet.
- **Intake Canal (C-400)**- the canal is approximately 20,000 linear feet in length with a 60 foot bottom width for a majority of its extent (111 foot bottom width from Citrus Boulevard to the C-44 Canal) at an elevation of 3 feet (NAVD88). Design conveyance capacity for the Intake Canal is approximately 1,300 cubic feet per second (cfs). Canal side slopes under the Citrus Boulevard Bridge will be comprised of a vertical sheet pile wall system. This sheet pile wall system will extend along the west side of the canal to the C-44 Canal.
- **Inflow Pump Station (S-401)**- An 1,100 cfs pump station to provide water from the C-44 Canal to the C-44 Reservoir via the Intake Canal. The pump station is comprised of four (4) electric 275 cfs pumps. The S-401 Inflow Pump Station is the inflow compliance monitoring point for the C-44 Project.
- **Reservoir Discharge Structure (S-402)**- The tower structure is comprised of three (3) six foot by six foot (6' x 6') slide gates to convey a maximum of 1,100 cfs (600 cfs under normal operations) through two (2) seven foot by seven foot (7' x 7') box culverts (with operable slide gates) to the Northern Distribution Canal (C-401N). The structure also includes a service spillway capable of conveying 810 cfs for emergency discharges associated with probable maximum precipitation (PMP) events.
- **Western Reservoir Perimeter Canal [WRPC (C-400W)]**- a 35,000 linear foot canal paralleling most of the northern, western, and southern extent of the Reservoir embankment. The WRPC maintains a bottom width of 5 feet for a majority of the canal with a transition from 5 ft to 25 ft along the south side of the reservoir. The canal bottom is constant at El. 12.0 ft (NAVD88) for the majority of the canal, with a transition from 5 ft to 25 ft wide along the south side of the Reservoir. The WRPC will be used to transmit surface runoff, seepage flow, and anticipated future flows from the C-23 Canal. The C-23 connection and introduction of flows are not authorized in this permit.
- **Western Reservoir Perimeter Canal Spillway (S-403A)**- a fifty (50) foot wide spillway which discharges to the C-44 Intake Canal (C-400) with a crest elevation of 18 feet (NAVD88) and an 1,100 cfs capacity.
- **Western Reservoir Perimeter Canal Low Level Outlet Structure (S-403B)**- allows for low level drawdown of the WRPC to the C-44 Intake Canal through a five foot by five foot (5' x 5') gated box culvert.
- **Eastern Reservoir Perimeter Canal [ERPC (C-400E)]**- the ERPC is approximately 15,000 linear feet and runs parallel to the eastern embankment of the Reservoir. The canal maintains a bottom width of 5 feet at an elevation of 12 feet (NAVD88). The ERPC is designed to convey runoff and seepage.

- **Northern Distribution Canal (C-401N)**- this canal conveys flows from the Reservoir to CWB Cells 1, 2, 3 and the Southern Distribution Canal. The Canal maintains a bottom width of 10 feet, a bottom elevation of 18.5 feet (NAVD88) and a normal operating elevation of 28-29 feet (NAVD88) with a design conveyance capacity of 1,100 cfs.
- **Northern Distribution Canal Service Spillway (S-405)**- is located at the terminus of the Northern Distribution Canal (C-401N) and is designed to convey 1,100 cfs to the Eastern Collection/Discharge Canal (C-402W) during emergencies or PMP events.
- **Southern Distribution Canal (C-401S)**- this canal joins the C-401N at the confluence of CWB Cells 1-4 (east of the FP&L power lines) and conveys flows from the Reservoir to CWB Cells 4, 5 and 6. The Canal maintains a bottom width of 10 feet, a bottom elevation of 18.5 feet (NAVD88) and a normal operating level of 28-29 feet (NAVD88) with design conveyance capacity of 1,100 cfs.
- **Interior Works**- these are structures located within the C-44 Project and serve to convey water internally between the Reservoir, CWB Cells, and the multiple canal systems:
 - CWB Cell Inflow Structures** [Cell 1 (S-482A-C); Cell 2 (S-487A-C); Cell 3 (S-489A and B); Cell 4 (S-491A-D); Cell 5 (S-471A-D); Cell 6 (S-472A-D)]- located at the upstream end of each CWB Cell, the C-44 CWBs include 20 gated inlet structures consisting of 60" diameter reinforced concrete pipes with operable slide gates. These structures serve to convey water into the CWB Cells from both the Northern and Southern Distribution Canals.
 - CWB Cell Outflow Structures** [Cell 1 (S-486A-C); Cell 2 (S-488A-C); Cell 3 (S-490A and B); Cell 4 (S-497A-D); Cell 5 (S-498A-D); Cell 6 (S-473A-D)]- located at the downstream end of each CWB Cell, the C-44 CWBs include twenty (20) forty foot (40') wide manually adjustable weirs (consisting of two (2) twenty foot (20') weir plates with a nominal crest elevation of 26.75 feet (NAVD88). The crest elevation is adjustable by installing or removing weir plates. Flows from these structures are discharged to the Eastern and Western CWB Collection Canals through a 60" diameter reinforced corrugated pipe (RCP). Outlet structures are designed for a combined discharge rate of 600 cfs under normal operational conditions and a combined maximum total discharge rate of 1,100 cfs.
 - Low Level Gated Outflow Structures** [Cell 1 (S-486E); Cell 2 (S-488E); Cell 3 (S-490E); Cell 4 (S-497E); Cell 5 (S-498E); Cell 6 (S-473E)]- located at the downstream end of each CWB Cell, these 60" diameter reinforced concrete pipes with manually-operated slide gates exist to evacuate water from the CWB Cells below the level of the weir plates and are not intended for normal operations.
- **Eastern CWB Collection Canal (C-402E)**- this canal conveys discharges from CWB Cells 1, 3, 4, 5, and 6 to the project outlet (S-404A/B). Canal bottom widths range between of 8-40 feet with bottom elevations ranging between 12 and 14 feet (NAVD88).
- **Western CWB Collection Canal (C-402W)**- this canal conveys discharges from CWB Cell 2 to the project outlet (S-404A/B). Canal bottom widths range between of 5-40 feet with bottom elevations ranging between 12 and 16 feet (NAVD88).
- **Discharge Canal Spillway (S-404A)**- this spillway is located at the terminus of the Collection Canals and consists of a 120 foot wide broad-crested weir with a crest elevation of 19 feet (NAVD88). The spillway is designed for a normal operational flow of 600 cfs as well as peak flow of 1,880 cfs generated during PMP events. This structure, in combination with the S-404B structure, is the discharge compliance monitoring point for the C-44 Project.
- **Discharge Canal Low Level Outlet Structure (S-404B)**- this structure consists of a manually-operated six foot by six foot (6' x 6') gated structure that can allow for the drawdown of the entire canal system within the C-44 Project.
- **Main Access Road**- this 24 foot wide paved road is approximately 4 miles long and will be constructed from Citrus Boulevard to the Reservoir. Swales, ditches, dry detention areas, and associated culverts/structures are included for water quality treatment and conveyance.

- **North Interior Drainage Canal (NIDC)**- this conveyance canal is located along the west side of CWB Cell 3 to provide drainage for the FPL easement area. Culverts will be constructed in locations where the canal crosses access roads. Discharge from this canal is into the South Interior Drainage Canal.
- **South Interior Drainage Canal (SIDC)**- this conveyance canal is located along the west side of CWB Cells 4, 5 and 6 to provide drainage for the FPL easement area. Culverts will be constructed in locations where the canal crosses access roads. This canal connects to the ditches/dry detention areas located in the vicinity of the Main Access Road which discharge to the intake canal.
- **Eastern Drainage Canal (EDC/C133/C133A)**- improvements to the east/west C-133A Canal immediately north of Cell 4 and the C-133 Canal along the east side of the Project to maintain drainage service for the Bar-B Ranch property. The C-133 canal improvements will extend from the northeast corner of the project area south to the C-44 Canal and will include relocation of the access road for Bar-B-Ranch.
- **East Drainage Canal Spillways (EDCS 474A/474B)** – two spillways will be located within Easement 1 within the EDC, south of the Citrus Boulevard Box Culvert and prior to the C-44 Canal. The spillway is a 34 foot wide broad-crested weir with a crest elevation at 17.0 ft (NAVD88). The spillway is designed for a normal operational flow of approximately 500 cfs. This spillway is the discharge point for the off-site areas located north of the C-44 Project.
- **Citrus Boulevard Bridge and Roadway Improvements**- includes a new bridge spanning the Intake Canal (40' wide and 80' in length), roadway bridge approaches, turn lanes for main access road, treatment areas, stabilized shoulders, paving and striping upgrades. Upon completion, this bridge and roadway improvements will be owned and maintained by Martin County. Construction of temporary roadways and drainage facilities on the north side of Citrus will occur to maintain vehicular use during construction of the bridge and box culvert.
- **Citrus Boulevard Box Culvert**- two 10'x 6' box culverts will be constructed under Citrus Boulevard at the East Drainage Canal within Easement 1.
- **Communications Tower**- 300 foot tall microwave communications tower with 20 foot antenna for C-44 Project communications with District headquarters in West Palm Beach.
- **Recreation Components**- construction and maintenance of a parking facility and boat ramp located at the south east corner of the Reservoir for recreational activities in keeping with District Governing Board policies.
- **FPL Power Line Relocation, Abandonment, Temporary, and Permanent Power Installation**-relocation, removal, installation, and abandonment of several FPL lines and poles as well as installation of buried conduits and related facilities for permanent power to the C-44 Project site

The District is responsible for the construction, operation, maintenance, repair, replacement, and rehabilitation of the C-44 Project. In addition, the District is also responsible for the construction and operational testing of the TIWCD Temporary Reconfiguration Project components during the construction phase of the C-44 Project and the construction of the TIWCD Final Configuration. District operation of the TIWCD Temporary Reconfiguration Project subsequent to successful operational testing is not authorized by this permit. District operation of the TIWCD Final Reconfiguration Project is not authorized by this permit. TIWCD maintains a Consumptive Use Permit from the District which authorizes the operation of the TIWCD Temporary Reconfiguration Project and the TIWCD Final Reconfiguration Project.

PROJECT LOCATION:

The TIWCD Temporary Reconfiguration, TIWCD Final Configuration, and the C-44 Project are located in southern Martin County, Florida. It is located directly north of the C-44 Canal and midway between Lake Okeechobee and the Atlantic Ocean in Sections 2-5, 8-11, 13-18, 21-29, 33-36 Township 39 South, Range 39 East; and Sections 2-4 Township 40 South, Range 39 East.

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DECLARATION OF REASONABLE ASSURANCES:

In issuing this permit, the Department finds that the District has given reasonable assurances sufficient to satisfy the requirements of the Comprehensive Everglades Restoration Plan Regulation Act, Section 373.1502, F.S. The Department bases this finding on the following documents, listed by Department document number:

- 1) South Florida Water Management District, C-44 Reservoir/Stormwater Treatment Area: Troup Indiantown Water Control District Reconfiguration Permit Application and associated materials (May 2006 & June 2006);
- 2) South Florida Water Management District, C-44 Reservoir/Stormwater Treatment Area Project Construction and Operations Permit Application and associated materials (August 11, 2006);
- 3) South Florida Water Management District, C-44 Reservoir/Stormwater Treatment Area Project Request for Additional Information Response Package and subsequent submittals (February 5, 2007)
- 4) United States Army Corps of Engineers, Jacksonville District, Southern and Central Florida Project Indian River Lagoon South Final Integrated Project Implementation Report Environmental Impact Statement (March 2004);
- 5) South Florida Water Management District, C-44 Reservoir/Stormwater Treatment Area Project Final Basis of Design Report (April 2006); and,
- 6) South Florida Water Management District, C-44 Reservoir/Stormwater Treatment Area Project: Final TIWCD Temporary Reconfiguration Plans and Specifications (April 6, 2007).
- 7) South Florida Water Management District, C-44 Reservoir/Stormwater Treatment Area Project: Intermediate Design Report Package, February 23, 2007.
- 8) South Florida Water Management District, C-44 Reservoir/Stormwater Treatment Area Project: Pre-Final Plans and Specifications, April 27, 2007

Specifically, there are reasonable assurances, pursuant to Section 373.1502, F.S., that:

- "The project component will achieve the design objectives set forth in the detailed design documents submitted as part of the application." This finding is based on document 1, 2, 3, 6, 7, and 8 in their entirety; document 4 with emphasis on Sections 5.5, 5.6, 6, 7.1.1, and Appendices A, B, J, L; document 5 with emphasis on Sections 2, 4, 9, 10, 11, 13, 15, 16, 17, 18, 20, 25, 27, 30, and Appendices 4, 9, 11, 13, 15, 16, 18, and 26;.
- "State water quality standards, including water quality criteria and moderating provisions, will be met. Under no circumstances shall the project component cause or contribute to violation of state water quality standards." This finding is based on document 1, 2, and 3 in their entirety; document 4 with emphasis on Sections 3.9, 4.3, 5.3, 8.8, and Appendices K, E, and J; document 5 with emphasis on Sections 7, 8, 24, 27, 30, and Appendices 7 and 8.
- "Discharges from the project component will not pose a serious danger to public health, safety or welfare." This finding is based on document 1, 2, and 3 in their entirety; document 4 with emphasis on Sections 3.10, 3.11, 4.3, 9, and Appendix J; and, document 5 with emphasis on Sections 11, 13, 14, 15, 17.4, 24, 27, and Appendix 26.
- "Any impacts to wetlands or threatened or endangered species resulting from implementation of the project component will be avoided, minimized, and mitigated as appropriate." This finding is based on document 1 with emphasis on the July 2005 *C-44 Reservoir/STA Project Threatened and Endangered Survey and General Fish and Wildlife Final Inventory Report*, the June 16, 2006 *Technical Memorandum C-44 Reservoir/ Stormwater Treatment Area (STA) Project Spring 2006 Wildlife Survey Results*, and the May 2,

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2007 C-44 Reservoir/Stormwater treatment Area (STA) Project Spring 2007 Wildlife Survey Results; document 2 with specific emphasis on Part 2: *Environmental Considerations*; document 3 with emphasis on Attachment 6: USFWS Biological Opinion September 2006; document 4 with emphasis on Sections 3.6, 8.6, 8.7, and Appendices E and J; document 5 with emphasis on Section 5, 6, and Appendix 6.

The District agrees to construct the project in accordance with the provisions of this permit, permit application, and the associated documentation on file with the Department.

GENERAL CONDITIONS:

In accordance with Subsection 373.1502(3)(e)(2) of the CERPRA, this permit may include any standard conditions provided by Department rule, which are appropriate and consistent with the CERPRA.

1. **Enforcement.** The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Chapters 373.129, 403.141, 403.727, 403.859 through 403.861 F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. **Scope of permit.** This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. **Limitation of rights.** The issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit. However, this permit is in lieu of other permits under Chapter 373 or Chapter 403, F.S., except for permits issued under s. 403.0885, if applicable.
4. **Limitations upon title.** This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. **Liability.** This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department. The permittee shall hold and save the Department harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any system authorized by the permit.
6. **Operation and Maintenance Responsibilities.** The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

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7. **Access Rights.** The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

- A. Have access to and copy any records that must be kept under conditions of the permit;
- B. Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
- C. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. **Noncompliance.** If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

- A. A description of and cause of noncompliance; and
- B. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

9. **Records as evidence.** In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data, and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111, F.S. and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. **Changes in Law.** The permittee agrees to comply with changes in applicable Department rules and applicable Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida law.

11. **Transferability.** This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-343.130, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. **Permit at work site.** This permit or a copy thereof shall be kept at the work site of the permitted activity. For the purposes of this permit the work site shall be defined as the South Florida Water Management District Headquarters located at 3301 Gun Club Road in West Palm Beach, Florida.

13. **Records retention.** The permittee shall comply with the following:

- A. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department;
- B. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least five years from the date of the sample, measurement, report, and application unless otherwise specified by Department rule; and
- C. Records of monitoring information shall include:

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1. the date, exact place, and time of sampling or measurements;
2. the person responsible for performing the sampling or measurements;
3. the dates analyses were performed or the appropriate code as required by Chapter 62-160, F.A.C.;
4. the person responsible for performing the analyses;
5. the analytical techniques or methods used, including but not limited to MDL; and
6. the results of such analyses, including identification of potential outlier values.

14. Requests for information. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

15. External Agency Requirements. Should any other regulatory agency require changes to the permitted system, the permittee shall notify the Department in writing of the changes prior to implementation so that a determination can be made whether a permit modification is required.

16. Sovereign Lands. The permittee is hereby advised that Florida law states: No person shall commence any excavation, construction, or other activity involving the use of sovereign or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund or the Department of Environmental Protection under Chapter 253, until such person has received from the Board of Trustees of the Internal Improvement Trust Fund the required lease, license, easement, or other form of consent authorizing the proposed use. Therefore, the permittee is responsible for obtaining any necessary authorizations from the Board of Trustees prior to commencing activity on sovereignty lands or other state-owned lands.

17. Artifacts. If historic or archaeological artifacts such as, but not limited to, Indian canoes, arrow heads, pottery or physical remains, are discovered at any time on the project site, the permittee shall immediately stop all activities which disturb the soil and notify the Department and the State Historic Preservation Officer.

SPECIFIC CONDITIONS:

1. Instructions to Contractors. The District shall ensure that the conditions contained within this permit are explained to all construction personnel working on the project and shall provide a copy of this permit to each contractor and subcontractor before the authorized work begins. Prior to construction, the District shall schedule a pre-construction meeting for attendance by the contractor(s), and representatives from the District, the Department, and other environmental regulatory agencies. The Department shall receive at least two weeks notice of the meeting. Within 30 days from the Notice-to-Proceed to the Contractor or upon District approval of a proposed construction schedule, whichever occurs first, the District shall provide the proposed construction schedule to the Department at the address identified in Specific Condition 2.

2. Addresses. Reports, schedules, and notices submitted to the Department in accordance with this permit shall be submitted to the Department's Division of Water Resource Management, Water Quality Standards and Special Projects Program, 2600 Blair Stone Road, MS 3560, Tallahassee, Florida, 32399-2400, telephone no. (850) 245-8416.

3. Endangered Species. The District shall avoid any actions that are likely to result in a take of any species listed by Fish and Wildlife Conservation Commission (FWC) in Chapter 68A-27, F.A.C or U.S. Fish and Wildlife Service, Department of the Interior (USFWS) in 50 CFR 17.11 or 50 CFR 17.12. In the event that either the Department or the District determines that the proposed activities will result in a take of a listed species, the District shall cease operations affecting the populations and closely coordinate with the FWC and the USFWS to obtain any

necessary incidental take permits; Operations may continue if take authorization was granted for the affected species and all conditions accompanying that take are satisfied. If the District makes the above determination, it shall notify the Department at the address and telephone number in Specific Condition 2 within 24 hours of the date of such determination.

Construction

4. **Authorized Construction.** The District shall construct the TIWCD Temporary Reconfiguration Project, the TIWCD Final Configuration Project, and the C-44 Project in accordance with the plans and documentation submitted by the District as part of the permit application and any subsequent submittals that have been approved and are on file with the Department. Any substantial modifications to the construction plan, such as, but not limited to, hydrologic modifications or the addition/removal/modification of water control structures or changes to their location must be submitted for review and approval by the Department prior to construction and operation of such modifications. Substantial modifications shall be determined on a case-by-case basis by the Department in consultation with the District.

5. **Future Phases.** This permit does not authorize any construction activities or operations associated with future portions of the C-44 Project. Future phases will require separate review and approval by the Department.

6. **Construction Best Management Practices (BMPs).** At all times during construction, the District shall use best management techniques for erosion and sedimentation control. All graded areas shall be stabilized and vegetated immediately after construction to prevent erosion. Prior to commencement of construction activities, the District shall submit a BMP plan which details the use of sediment controls to minimize the suspension and transport of soils, levee materials, and roadway materials into waters adjacent to or downstream of the construction site to the Department for review and approval. Once installation of the erosion controls identified through the BMP plan have been completed, the District shall contact the Department at the address listed in Specific Condition No. 2 to determine whether inspections of the installed controls are necessary.

7. **Adjacent Wetlands.** Wetlands adjacent to construction activities shall be staked and fenced off with construction fencing or other effective physical barriers to prevent encroachment into these wetlands prior to the commencement of construction. All areas of exposed soils shall be isolated from wetlands and surface waters to prevent erosion and deposition of sediments into these wetlands during permitted construction activities. All excavated or dredged material shall be placed strategically to prevent the transport of any material into wetlands and surface waters both during and after completion of the construction. Upon completion of the barrier installation, the District shall contact the Department at the address listed in Specific Condition No. 2 to determine whether inspections of the installed controls are necessary. The barriers shall remain in place until all adjacent construction activities are complete.

8. **Water Quantity and Flooding Impacts.** The District shall be responsible for ensuring that the project is constructed and operated so as to not adversely affect adjacent lands with regards to water quantity, water quality, and/or flooding. The District shall hold and save the Department harmless from any and all damages, claims or liabilities, which may arise from water quantity, water quality, and/or flooding impacts resulting from construction and operation of this project.

9. **NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities.** The issuance of this permit does not constitute coverage under the National Pollutant Discharge Elimination System (NPDES) Generic Permit for Stormwater Discharges from Large and Small Construction Activities (CGP) pursuant to Rule 62-621.300(4)(a), F.A.C. Prior to the commencement of any construction, the District is advised to contact the Department's NPDES Stormwater Program at (850) 245-7522 or toll free at (866) 336-6312 or to download application information from the Department's website at <http://www.dep.state.fl.us/water/stormwater/npdes/construction3.htm#permit>

10. Dewatering For any proposed discharge to occur as a result of construction dewatering activities, the District shall submit site-specific dewatering information to the Department for review and approval at least 30 days prior to commencement of dewatering activities. The plan shall include at a minimum: a site plan of the project component with the location of the proposed discharge point(s) and their associated water quality monitoring locations; the location and type of turbidity control devices and methods necessary to ensure state water quality standards will be met; calculations estimating the area of influence of dewatering, pumpage rates, duration and volumes; and any proposed methods of construction.

If it is anticipated that dewatering will not be retained onsite, the District must also include documentation that the dewatering activities will meet the criteria contained in the "Basis of Review for Water Use Permit Applications within the South Florida Water Management District-April 23, 2007" with emphasis on Section 2.5.2(4).

11. NPDES Generic Permit for the Discharge of Produced Groundwater from any Non-Contaminated Site Activity. The issuance of this permit does not constitute coverage under the NPDES Generic Permit for the Discharge of Produced Groundwater from any Non-Contaminated Site Activity pursuant to 62-621.300(2), F.A.C. If any offsite discharges will occur due to construction dewatering activities, then coverage under the aforementioned General Permit may be required and the District is advised to review Rule 62-621.300(2), F.A.C. Before discharge of produced groundwater can occur, analytical tests on samples of the proposed discharge water shall be performed to determine if contamination exists. If the analytical results comply with applicable criteria for use of the General Permit, then a short summary of the proposed activity and copy of the analytical tests shall be sent to the Department at the address identified in Specific Condition No. 2 within one week after discharge begins, and the District may proceed with the project component while abiding by all conditions of the Generic Permit.

12. Site Inspections/Construction Meetings. Throughout the construction phase of the C-44 Project, the Department may conduct periodic site inspections to ensure permit compliance and to monitor progress. The Department will coordinate with the Construction Manager or other District representative prior to performing any on-site inspections. Representatives of the Department may be accompanied by a third-party inspector and/or consultant at any time. Upon, or prior to, receipt of the written statement of completion and certification, the Department shall conduct substantial and final inspections of the Project, as defined in Section 01700 of the Specifications. It is anticipated that this activity may be completed in conjunction with other regulatory agencies and may be accomplished in stages as the project progresses.

13. Quality Control Inspections. For quality control purposes, a Professional Engineer registered in the State of Florida, or a personal representative under his or her direct supervision, shall conduct quality control inspections during all phases of reservoir embankment construction including, but not limited to (as applicable):

- A. Excavation, placement, and backfill for inlet/outlet pipes within the reservoir embankment;
- B. Installation of water control structure foundations and spillways;
- C. Removal of unsuitable foundation materials and replacement with approved fill;
- D. Blanket/toe drain installation including review of off-site material sources;
- E. Construction and testing of embankment foundation materials;
- F. Construction and testing of soil-cement interior protection layer; and,
- G. Installation and quality control of any other appurtenances or structures.

14. Conformed Plans, As-Built Certification, and Record Drawings. Within 30 days of receiving a conformed set of plans for the C-44 Reservoir/CWB and TIWCD Final Configuration Project, the District shall provide the Department the final naming convention for all structures/features authorized through this permit. Within 90 days after the completion of construction for the C-44 Project and the TIWCD Final Configuration Project, the District

shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law. The statement of completion and certification shall be based on on-site observation of construction or review of as-built drawings for the purpose of determining whether or not the work was completed in compliance with permitted plans and specifications. Additionally, if deviation from the approved drawings is discovered during the certification process, the certification must be accompanied by a copy of the approved permit drawings with deviations noted. Both the original and revised specifications must be clearly shown. Plans submitted to the Department must be clearly labeled as "as-built" or "record" drawings with electronic copies provided in pdf format. A registered surveyor shall certify all surveyed dimensions and elevations.

Operations

15. Operation of TIWCD Temporary Reconfiguration Components. The TIWCD Temporary Reconfiguration shall be operated for operational testing only in accordance with Section 01010 and Section 01730 of Contracts P507-8303 and P507-8307 and any restrictions set forth in Water Use Permit No. 43-00095-W, including any subsequent modifications. Any modification to the temporary operations set forth in Sections 01010 and 01730 of Contracts P507-8303 and P507-8307 except for the reduction of operating time must be submitted to the Department for review and approval prior to these modifications taking place.

16. Reservoir and CWB Operations Plan and Modifications. Within 180 days of the completion of the C-44 Project the District shall submit to the Department, at the address listed in Specific Condition No. 2, the most current version of the C-44 Reservoir /CWB Operations Plan. If at any time changes to the C-44 Reservoir and CWB Operations Plan are warranted for adaptive management of facility operations, the Operation Plan may be modified upon verification of data to be supplied by the District justifying the need for such modification and as mutually agreed upon by the Department and the District. The Operations Plan shall also include the information described in A-E, below.

Under emergency conditions that threaten the safety of life, property, or the C-44 Project, the District may modify the operations of the C-44 Project and immediately employ any remedial means to protect life and property in accordance with the emergency provisions of Chapter 373, F.S. The District shall notify the Department within 48 hours of such occurrence and shall provide data justifying the need to employ the emergency modifications to operations of the project.

A. Minimum Water Level Targets to Avoid Dryout. In accordance with the relevant design documents, the District shall, to the maximum extent practicable, maintain a minimum static water level of 0.5 feet above the average ground elevation of the CWB cells to avoid dryout of the cells, subject to available water.

B. Responding to Dryout Conditions. The District shall evaluate and correct potential adverse dryout effects on the water quality performance of the CWBs. If the compliance requirements in this permit are not met due to dryout conditions, then the District shall propose modifications to the Operation Plan as appropriate and submit the revised plan to the Department for review and approval.

C. Establishment of Marsh Vegetation. The District shall manage water depths in the CWB to facilitate the recruitment of marsh vegetation.

D. Maximum Water Level Targets. The District shall ensure, to the maximum extent practicable, that maximum water depths of 4.5 feet above the average ground elevation of the treatment cells will not be exceeded in order to avoid long-term damage to the treatment vegetation and provide protection of project levees.

E. Phosphorus Uptake Optimization. Operations shall be conducted to distribute the flows and water levels within CWBs to meet the phosphorus reduction performance design goals and operations shall be updated as necessary.

F. Initial Filling Plan. The Initial Filling Plan shall include provisions for inflow rates and the limitation of sediment transport associated with filling activities. The plan shall also include provisions which recognize and provide for protected species which may exist within the project footprint at the time of initial filling.

17. Emergency Action Plan. The District shall submit the latest version of the Emergency Action Plan (EAP), which has been prepared in accordance with the District's Dam Safety Program, to the Department for review and approval at least 180 days prior to the scheduled initial operations of the reservoir. Subsequent revisions/updates to the EAP shall also be provided to the Department at the address contained in Specific Condition No. 2.

18. Initial Operations/ Start-Up Phase. During the C-44 Initial Start-Up Phase, the District shall monitor the Project in accordance with Table 1, the Water Quality Monitoring Plan submitted and approved as a requirement of Specific Condition No. 22, and A and B below.

A. Start-Up Monitoring. The District shall monitor in accordance with Table 1, and the approved water quality monitoring plan, at the upstream side of the S-401 Inflow Pump Station and the S-404A/B Structure upon initiation of flow into the facility.

B. Phosphorus Start-Up Test. The start-up test consists of samples that demonstrate, over a four-week period, a net reduction in total phosphorus. This net reduction shall be deemed to occur when the 4-week geometric mean for total phosphorus water column concentrations from samples collected at the applicable outflow structures (S-404A/B) is less than the 4-week geometric mean total phosphorus water column concentrations collected at the inflow structure (S-401).

As part of initial operations, the District shall adhere to the Dam Safety Program guidelines for initial filling and first year reservoir operations including inspections, evaluations, and report preparation. During the first year of operations, the Department shall be notified of the inspections at least 48 hours prior to the scheduled site visit. Any evaluations or reports generated as a result of such inspections shall be submitted to the Department at the address listed in Specific Condition No. 2 within 30 days of their generation.

19. Discharge Operations. Discharge operations shall commence once the Project achieves the Start-Up test described in Specific Condition No. 18B above and all Start-Up Phase documentation and all supporting data and analyses have been reviewed and approved by the Department. If the facility has not achieved the Start-Up Test within six months of initiating flows through the S-401, the District shall submit status updates regarding progress toward and identifying strategies to achieve this test.

20. Stabilization and Post-Stabilization Operations (Routine Operations). Following completion of the Start-Up Phase, the C-44 Project shall begin a period of stabilization. The stabilization period is where performance is improving toward the treatment performance goals and is generally anticipated to last one to two years after the Start-Up phase ends. During the stabilization operations phase, flow-through activities may commence. Following completion of the Stabilization Phase, the project shall begin post-stabilization operations (Routine Operations Phase). During flow-through operations, water quality monitoring shall be conducted in accordance with Table 1 and the approved water quality monitoring plan. Compliance shall be evaluated as set forth below.

A. Stabilization. The stabilization test for the Project shall be met when the 12 month flow-weighted average total phosphorus concentrations at the outflow stations (S-404A/B) are less than the flow-weighted total phosphorus concentrations recorded at the inflow station (S-401). Starting 12 months after commencing

discharge from the project, the District shall provide rolling 12 month flow-weighted average total phosphorus concentrations as part of the annual reporting requirements in Specific Condition No. 29. If, after two years of full flow-through operation, the project has not met this stabilization test, the District shall submit a report which shall evaluate reasons for not meeting the stabilization test. The report shall identify schedules and strategies for implementing an adaptive management plan to achieve the stabilization test.

B. Post-Stabilization. Once the C-44 Project has achieved stabilization as defined above, it will be operated in such a manner as to achieve the phosphorus reduction design objectives. The District shall take all reasonable steps to achieve CWB performance consistent with operations plan and design objectives. If, after the first three years of operation, the CWB is not performing in a manner consistent with its design objectives, the District shall confer with the Department and develop an adaptive management plan designed to meet the design objectives. The adaptive management plan shall not include enlargement of the CWBs unless agreed to by the permittee.

C. Other Water Quality Parameters. For all water quality parameters listed in Table 1, other than total phosphorus and mercury, compliance with Section 373.1502(3)(b)(2), F.S., will be determined based on a comparison of concentrations at the outflow, S-404A/B, with the applicable surface water quality criteria identified in Rule 62-302, F.A.C.

D. Public Health, Safety, or Welfare. Pursuant to Subsection (3)(b)(3) of the CERPRA, discharges from the C-44 Project shall not pose a serious danger to the public health, safety, or welfare.

21. Pump Station Testing and Maintenance. In order to ensure operational readiness, initial testing and maintenance operations may be required by the construction contractor and/or permittee for the pump stations authorized by this permit. Temporary operation of the pump stations per the technical specifications for verification, compliance, and commissioning testing of the pumps and maintenance purposes per the manufacturer's requirements is allowed and is not subject to the discharge criteria of the specific conditions of this permit. However, the permittee shall include all such discharge flows, if any, and loads as a part of the monitoring requirements of this permit.

Monitoring Requirements

22. Water Quality Monitoring Program. Within 180 days prior to commencing inflows through the S-401, the District shall submit a Water Quality Monitoring Plan to the Department for review and approval. Any modifications to the District's Water Quality Monitoring Plan shall be submitted to the Department for review and approval. The District shall conduct monitoring in accordance with the approved Water Quality Monitoring Plan, Table 1, and Specific Conditions No. 23 and 24. The District shall report monitoring results to the Department, in accordance with the annual reporting requirements specified in Specific Condition No. 29. Pursuant to Subsection 373.1502(3)(b)(2), F.S., under no circumstances shall the project component cause or contribute to violations of state water quality standards set forth in Rule 62-302, F.A.C.

A. Quality Assurance and Quality Control. Sampling and monitoring data shall be collected, analyzed, reported and retained in accordance with Chapter 62-160, F.A.C. Any laboratory test required by this permit shall be performed by a laboratory that has been certified by the Department of Health (DOH) under Chapter 64E-1, F.A.C., where such certification is required by Rule 62-160.300, F.A.C. The laboratory must be certified for all specific method/analyte combinations that are used to comply with this permit. The analytical method used shall be appropriate so as to determine if the sample complies with Class I and Class III surface water quality standards as specified in Chapter 62-302, F.A.C., and groundwater standards as specified in Chapter 62-520, F.A.C., whichever is more stringent. All field activities including on-site tests and sample collection, whether performed by a laboratory or another organization, must follow all applicable procedures described in DEP-SOP-001/01 (February 1, 2004). Alternate field procedures and laboratory methods may be used if they have been approved according to the requirements of Rules 62-160.220, and 62-160.330, F.A.C.

B. Method Detection Limits (MDLs). The sample collection, analytical test methods and method detection limits (MDLs) applicable to this permit shall be performed and reported in accordance with Rule 62-4.246, F.A.C. a list of Department established analytical methods, and corresponding MDLs (method detection limits) and PQLs (practical quantification limits), which is titled "Florida Department of Environmental Protection Table as Required By Rule 62-4.246(4) Testing Methods for Discharges to Surface Water" dated April 25, 2006, is available from the Department on request. The MDLs and PQLs as described in this list shall constitute the minimum acceptable MDL/PQL values and the Department shall not accept results for which the laboratory's MDLs or PQLs are greater than those described above unless alternate MDLs and/or PQLs have been specifically approved by the Department for this permit. More stringent MDLs and PQLs may be necessary for specific parameters. If required, these will be identified in the permit monitoring table.

23. Turbidity Monitoring. Effective means of turbidity control, such as, but not limited to, turbidity curtains, shall be employed during all construction, maintenance, or operation activities that may create turbidity so that it shall not exceed 29 NTU's above background in the C-44 Canal. Turbidity controls shall be placed and maintained around the work area. All turbidity control devices shall remain in place until all turbidity has subsided and meets state standards.

Turbidity monitoring equipment and personnel trained to use it shall be available on site at all times during construction, maintenance, or operation activities that could result in project-generated turbidity levels beyond the work areas. For monitoring purposes, the work area is that area defined by the turbidity curtained "cell(s)". The District shall monitor turbidity levels at least once every four hours during all activities that may create turbidity (unless monitoring data shows this to be excessive) as follows.

- A. Monitoring samples shall be taken at the surface at the following locations:
 1. Background Sample(s): One background sample station, at least 1000 feet upstream of the work area, in the C-44 Canal, outside any visible plume generated by the construction; and
 2. Compliance Sample(s): Monitoring station located in the C-44 Canal adjacent to the work area, no more than 225 feet down current from the work area within the densest portion of any visible plume.
- B. Turbidity monitoring results shall be compiled daily and summarized quarterly (every three calendar months). Beginning with the first calendar month in which activities occur that could generate turbidity in waters adjacent to the project sites, a report containing the summarized turbidity monitoring results for each project shall be submitted quarterly to the Department at the address listed in Specific Condition No. 2. Monitoring data with supporting documents shall be submitted to the Department quarterly during the period of construction, operation, or maintenance activities that warrant turbidity control measures. The report shall contain the following information:
 1. Permit number;
 2. Dates and time of sampling and analysis;
 3. A statement describing the methods used in collection, handling, storage and analysis of the samples;
 4. A clear description of project activities taking place at the time of sampling;
 5. A map indicating the sampling locations; and
 6. A statement by the individual responsible for implementation of the sampling program concerning the authenticity, precision, limits of detection and accuracy of the data.
- C. Monitoring reports shall also include the following information for each sample that is taken:
 1. Water depth
 2. Depth of sample

3. Weather conditions
4. Water level stage and direction of flow.

In the event that project-generated turbidity levels beyond the work areas exceed the standard (29 NTU's above background), project activities contributing to elevated turbidity levels shall immediately cease, and the Department shall be notified immediately. Work shall not resume until the work can be conducted in compliance with the aforementioned turbidity standard.

24. Mercury and Other Toxicants. The District shall submit a Mercury and Other Toxicants Monitoring Plan as part of the Water Quality Monitoring Plan requirement in Specific Condition 22 for Department review and approval. Prior to initiating operations of the C-44 Project, the District shall perform the remediation measures identified and agreed upon with the USFWS for contaminated sites identified within the project footprint. The District shall consult with the USFWS during and subsequent to such activities in order to identify whether additional monitoring activities are warranted.

25. Removal of Parameters. Upon demonstration that a specific parameter(s) is not present or is found consistently in compliance with Class III Water Quality Standards, the District may request a modification to the monitoring program as appropriate. A minimum of one year's worth of data, for those parameters being sampled quarterly or more frequently, will be required prior to the Department approving any modification to the monitoring program. Parameters sampled semi-annually or annually will be examined on a case-by-case basis. The Department may approve a reduction of the monitoring frequency or waive the monitoring requirement for parameters that consistently are reported as in compliance with state water quality standards.

26. Addition of Parameters. If the Department has reason to believe that additional parameters exist that may cause or contribute to water quality violations in the project area, those parameters shall be added to the monitoring section of this permit as a permit modification.

Reports and Notices

27. Inspection Plan and Reports. Within 180 days prior to the Initial Start-up Phase required under Special Condition 18, the District shall submit to the Department, for review and approval, a C-44 Reservoir /CWB Inspection Plan to evaluate the integrity and functionality of all above ground dams and levees, including structures within those dams and levees. Upon Department approval of the submitted plan, which shall be prepared in accordance to the guidelines established in the District's Dam Safety Program, the District shall submit semi-annual Inspection Reports. These reports shall be submitted to the Department in June and December each year and shall be prepared under the guidance of a professional engineer. The Inspection Report should include a summary of site conditions and the work that was completed in response to inadequacies that may have been found during regular inspections. Every five years, at a minimum, the permitted facilities shall be inspected by a Florida registered professional engineer and the subsequent Inspection Report shall be signed and sealed.

28. Construction Status Reports. Construction Status Reports or Construction Meeting Minutes for the project shall be available to the Department throughout the duration of construction activities and shall continue to be submitted until all disturbed areas are successfully stabilized. These Reports may be requested through the Project Manager, Construction Manager, or obtained at the construction meetings.

29. Annual Reports. The District shall submit an Annual Report to the Department detailing the construction activities/ operations of the C-44 Reservoir/CWB and TIWCD Projects during the annual reporting period. In addition to the permit number and name of the permit administrator, the Annual Reports shall contain, at a minimum, the following information: the project name, permit number, a summary of monitoring results from the activities conducted under Specific Condition Nos. 18, 20, 21, 22, 23, 24, 27, and 28, an evaluation of the success of the project in achieving its objectives, problems encountered during the period covered, and actions taken to address problems encountered. The annual reporting requirements under this permit shall be incorporated into the South Florida Environmental Report (SFER) and/or as part of other reporting mechanisms which have been deemed

acceptable by the Department. These reports shall be submitted to the Department no later than March 1st of each year. If additional reporting modifications are required, the District may request a modification of the Annual Report submission date, and upon approval by the Department, the District may modify the annual report submission date to coincide with other reporting requirements and time periods needed for data acquisition and analysis.

A. Construction/Operation Summary. A construction and or operation summary shall include, at a minimum:

1. Construction/Inspections/Maintenance progress report;
2. Summary of the operational record, including deviations from normal operation;
3. Revised Emergency Action Plan, as applicable;
4. Annual Water Quality Monitoring Summary Report;
5. Annual Summary Reservoir Embankment Performance and Monitoring Report summarizing information from embankment and groundwater instrumentation; and,
6. Annual Inspection Report.

B. Surface/Groundwater Water Quality Data. Records of monitoring information, where applicable, shall include:

1. Date, location, and time of sampling or measurements;
2. Person responsible for performing the sampling or measurements;
3. Dates analyses were performed or the appropriate code as required by Chapter 62-160, F.A.C.;
4. Person responsible for performing the analyses;
5. Analytical techniques or methods used, including MDL;
6. Results of such analyses, including appropriate data qualifiers;
7. Depth of samples;
8. Flow conditions and weather conditions at time of sampling; and,
9. Monthly flow volumes.

C. Hydraulic Retention Time. Calculations for reporting which require averaging of measurements shall be weighted by flow value. Comparison of the moving annual average inflow and outflow levels shall be calculated by comparing outflow data to inflow data adjusted appropriately for the estimated hydraulic retention time within the Project.

D. Performance Evaluation.

1. The operations status of the Project, stating whether the Project is in start-up, stabilization, or routine operations;
2. A comparison of inflow water quality data with outflow water quality data using the student's t-test with a 95% confidence interval;
3. During flow-through operations, a statistical evaluation of whether the project is performing in a manner consistent with its design objectives/water quality performance estimates. In the event that the project is not performing in this manner, the Department may impose additional evaluation and reporting requirements;

4. Beginning with the second Annual Report, a comparison of performance of current reporting year with performance in previous years.
- E. **Herbicide and Pesticide Tracking.** The District shall provide in each annual report information regarding the application of herbicides and pesticides used to exclude/eliminate undesirable vegetation and pests in the wetted area of the Project. Such reporting shall include the names, concentrations, locations, and quantities of all herbicides and pesticides used.
- F. **Implementation Schedules.** When appropriate, the District shall include information on:
 1. Comprehensive Everglades Restoration Plan Project implementation;
 2. Project adaptive management;
 3. Project design modifications; and,
 4. Implementation of remedial measures in the event of noncompliance with permit conditions.

Factors Impacting Compliance

30. **Vegetation Conditions.** The District shall report to the Department any instances in which vegetation conditions in the C-44 Project have contributed to non-compliance and shall develop and employ a remediation plan including monitoring and assessment, hydrologic operation controls, and vegetation management practices, as appropriate, in an effort to bring the project into compliance. The District shall contact the Department regarding the details of the remediation plan in a timely fashion and shall provide the Department with a detailed discussion of the measures implemented and the results of such measures as part of the annual monitoring report identified in Specific Condition 29.

31. **Factors Outside the Permittee's Control.** In the event that non-compliance or failure to perform as designed occurs for any reason other than those listed below, the District shall take appropriate remedial measures.

- A. **Natural Background.** Deviations from water quality standards may occur as a result of natural background conditions, in accordance with Section 403.021(11), F.S.
- B. **Random Variation.** The District shall report any statistical uncertainty in the methodology using acceptable scientific methods.
- C. **Other Factors.** Unavoidable legal barriers or restraints, including those arising from actions or regulations not under the control of the District.

32. **Emergency Suspension of Sampling.** Under hurricane, tropical storm warnings, or other extreme weather conditions, the District's normal sampling schedule may be suspended if necessary. The District shall notify the Department's Water Quality Standards and Special Projects Program at the address and telephone number listed in Specific Condition No. 2, of any suspension of sampling associated with hurricanes, tropical storms, or other extreme weather events that may require deviation from the normal sampling schedule. Within 14 days following the cessation of emergency conditions, the District shall notify the Department of when normal sampling is expected to resume.

Renewals and Modifications --

33. **Permit Modifications.** The District shall submit proposed permit modifications to the Department, prior to implementation of the modification, for review and approval.

34. Permit Renewal. The District shall apply for renewal of this permit at least 60 days prior to the expiration date. Renewal may be for a period of up to 5 years in accordance with Subsection 373.1502(3)(g) F.S..

35. Department Review and Approval. Where conditions in this permit require Department review of remedial actions or plan modifications to be implemented pursuant to this permit, the Department will consult with the District to ascertain whether a mutual agreement can be reached. If mutual agreement on the remedial actions or plan modifications cannot be reached, the action of the Department will be deemed final agency action and will be subject to judicial or administrative review, as appropriate.

CONSUMPTIVE USE LIMITING CONDITIONS:

1. Applications:
 - Application # 061220-3; Permit # 43-01979-W; permanent well for industrial water supply during and after completion of construction
 - Application # 061220-3; Permit # 43-01979-W; permanent well for industrial water supply during and after completion of construction
 - Application # 061220-3; Permit # 43-01979-W; temporary well for public water supply during construction
 - Application # 061220-4; Permit # 43-01981-W; temporary wells for industrial water supply during construction
2. Water Use Classification:
 - Permit # 43-01979-W – industrial
 - Permit # 43-01979-W – public water supply
 - Permit # 43-01981-W – industrial
3. Source Classification:
 - Permit # 43-01979-W - groundwater from surficial aquifer system
 - Permit # 43-01981-W - groundwater from surficial aquifer system
4. Annual Allocation/Maximum Monthly Allocation
 - Permit # 43-01979-W - Annual allocation shall not exceed 21.02 MG. Maximum monthly allocation shall not exceed 1.751 MG.
 - Permit # 43-01981-W - Annual allocation shall not exceed 146 MG. Maximum monthly allocation shall not exceed 12.16 MG.
5. Pursuant to Rule 40E-1.6105, F.A.C., Notification of Transfer of Interest in Real Property, within 30 days of any transfer of interest or control of the real property at which any permitted facility, system, consumptive use, or activity is located, the District must notify the Department, in writing, of the transfer giving the name and address of the new owner or person in control and providing a copy of the instrument effectuating the transfer, as set forth in Rule 40E-1.6107, F.A.C.
6. Pursuant to Rule 40E-1.6107 (4), until transfer is approved by the Department, the District shall be liable for compliance with the permit. The District transferring the permit shall remain liable for all actions that are required as well as all violations of the permit which occurred prior to the transfer of the permit.
Failure to comply with this or any other condition of this permit constitutes a violation and pursuant to Rule 40E-1.609, Suspension, Revocation and Modification of Permits, the Department may suspend or revoke the permit.
7. Withdrawal Facilities:
 - Permit # 43-01979-W - Ground Water – Proposed:

2-4" X 65' X 10 GPM Wells Cased to 45 feet (Permanent)

Permit # 43-01979-W - Ground Water – Proposed:

1-4" X 65' X 20 GPM Well Cased to 45 feet (Temporary)

Permit # 43-01981-W - Ground Water – Proposed:

16-6" X 65' X 100 GPM Well Cased to 10 feet (Temporary)

8. The District shall mitigate interference with existing legal uses that were caused in whole or in part by the District's withdrawals, consistent with the approved mitigation plan. As necessary to offset the interference, mitigation will include pumpage reduction, replacement of the impacted individual's equipment, relocation of wells, change in withdrawal source, or other means.

Interference to an existing legal use is defined as an impact that occurs under hydrologic conditions equal to or less severe than a 1 in 10 year drought event that results in the:

- A. Inability to withdraw water consistent with provisions of the permit, such as when remedial structural or operational actions not materially authorized by existing permits must be taken to address the interference; or
- B. Change in the quality of water pursuant to primary State Drinking Water Standards to the extent that the water can no longer be used for its authorized purpose, or such change is imminent.

9. The District shall mitigate harm to existing off-site land uses caused by the District's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the Department will require the District to modify withdrawal rates or mitigate the harm. Harm as determined through reference to the conditions for permit issuance, includes:

- A. Significant reduction in water levels on the property to the extent that the designed function of the water body and related surface water management improvements are damaged, not including aesthetic values. The designed function of a water body is identified in the original permit or other governmental authorization issued for the construction of the water body. In case where a permit was not required, the designed function shall be determined based on the purpose for the original construction of the water body (e.g. fill for construction, mining, drainage canal, etc.)
- B. Damage to agriculture, including damage resulting from reduction in soil moisture resulting from consumptive uses; or
- C. Land collapse or subsidence caused by reduction in water levels associated with consumptive use.

10. The District shall mitigate harm to the natural resources caused by the District's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the Department will require the District to modify withdrawal rates or mitigate the harm. Harm, as determined through reference to the conditions for permit issuance includes:

- A. Reduction in ground or surface water levels that results in the harmful lateral movement of the fresh water/salt water interface;
- B. Reduction in water levels that harm the hydroperiod of wetlands;
- C. Significant reduction in water levels or hydroperiod in a naturally occurring water body such as a lake or pond;
- D. Harmful movement of contaminants in violation of state water quality standards; or
- E. Harm to the natural system including damage to habitat for rare and endangered species.

11. The District is advised that this permit does not relieve any person from the requirement to obtain all necessary federal, state, local and special district authorizations.

Permittee: South Florida Water Management District
Project: C-44 Reservoir/ Constructed Wetland Buffer Project
Permit No.: 0254895-003-EM
Page 22 of 23

FILING AND ACKNOWLEDGMENT

FILED, on this date, with the designated Department Clerk, receipt of which is hereby acknowledged.

Clerk

Date

ELECTRONIC COPIES FURNISHED TO:

Ken Ammon, SFWMD West Palm
Susan Ray, SFWMD West Palm Beach
John Mitnik, SFWMD West Palm Beach
Nirmala Jeyakumar, SFWMD West Palm Beach
Greg Knecht, FDEP Tallahassee
John Outland, FDEP Tallahassee
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Ernie Marks, FDEP Tallahassee
Sara Cleveland, FDEP Tallahassee
Dianne Hughes, FDEP West Palm Beach
Tracy Robb, FDEP Tallahassee/Acceler8
Tori White, U.S. Army Corps of Engineers
Steve Schubert, U.S. Fish and Wildlife Service
Mary Ann Poole, Florida Fish and Wildlife Conservation Commission
Terri Stoutamire, Dept. of Community Affairs
Linda McCarthy, Dept. of Agriculture and Consumer Services
Lee Weberman, Martin County Commissioner

Table Key

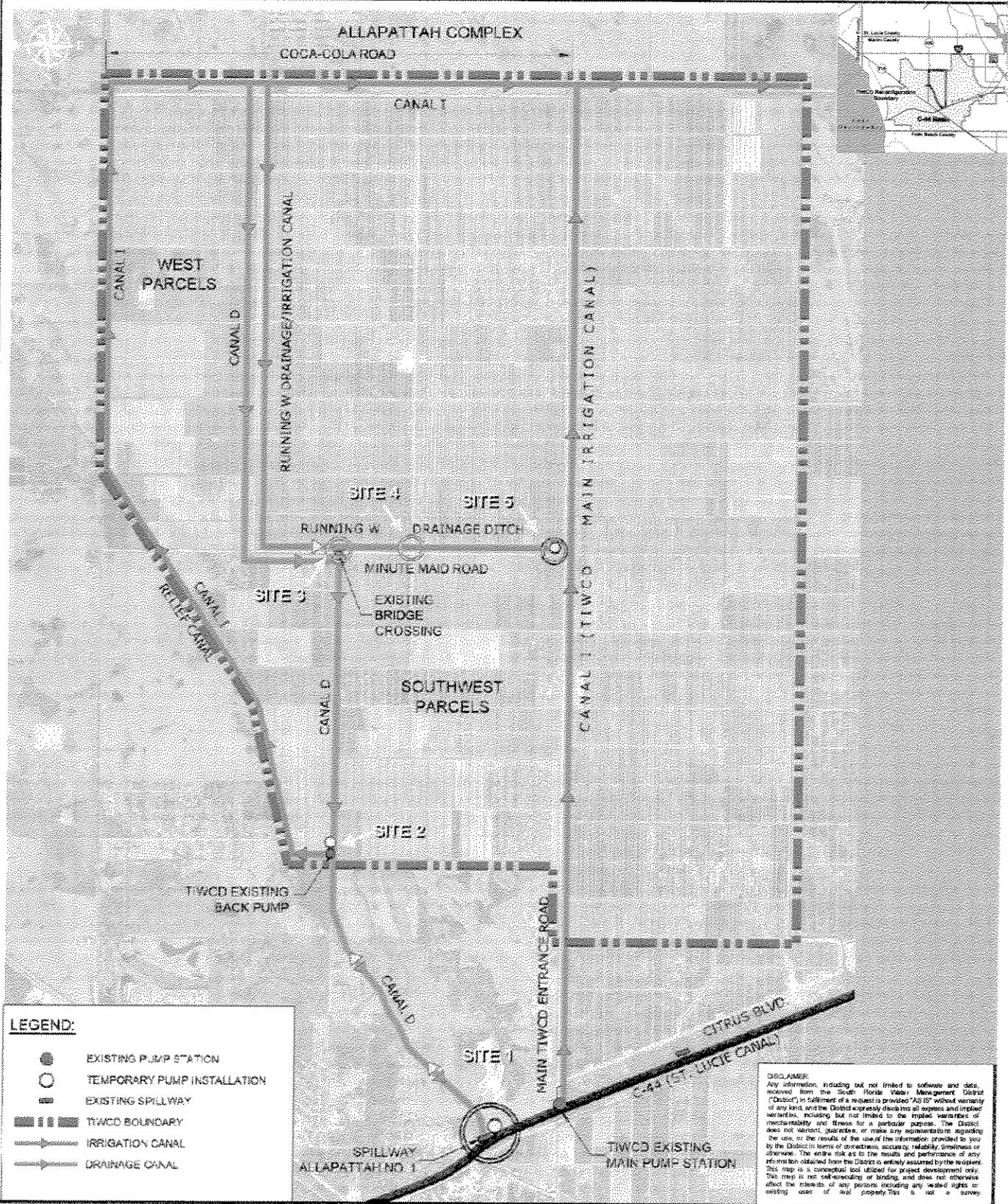
Sample Type: G = Grab sample
 INSITU = In Situ field sample
 PR = Pump record
 CAL = Calculated parameter
 RG = Rain Gauge
 ACF = Automatic Composite Flow Proportional

Sample Locations: Inflow = S-401 Pump Station
 Outflow = S-404A/B Structure

Sample Frequency: BI-W = BI-Weekly
 DAC = Daily accumulation of continuous sampling
 DAV = Daily averages of continuous sampling
 Q = Quarterly
 W = Weekly

TABLE 1 - ROUTINE MONITORING PROGRAM

| PARAMETER | UNITS | SAMPLE TYPE | SAMPLING FREQUENCY | SAMPLING LOCATION |
|-------------------------|-----------------------------|-------------|--------------------|---------------------------|
| Ammonia | mg/l | G | BI-W | S-401, S404A/B |
| Alkalinity | mg/l | G | BI-W | S-401, S404A/B |
| Calcium | mg/l | G | Q | S-401, S404A/B |
| Copper | µg/l | G | Q | S-401, S404A/B |
| Dissolved Oxygen | mg/l | G | INSITU | S-401, S404A/B |
| Mercury and Pesticides | (See Specific Condition 24) | | | |
| Magnesium | mg/l | G | Q | S-401, S404A/B |
| pH | SU | INSITU | BI-W | S-401, S404A/B |
| Specific Conductance | Umhos/cm | INSITU | BI-W | S-401, S404A/B |
| Sulfate | mg/l | G | Q | S-401, S404A/B |
| Temperature | Deg C | INSITU | BI-W | S-401, S404A/B |
| Total Kjiedahl Nitrogen | mg/l | ACF/G | W | S-401, S404A/B |
| Total Nitrogen | mg/l | CALC | W | S-401, S404A/B |
| Total Phosphorus | mg/l | ACF/G | W | S-401, S404A/B |
| Turbidity | NTU | G | BI-W | S-401, S404A/B |
| Nitrate + Nitrite | mg/l | ACF/G | W | S-401, S404A/B |
| Ortho-Phosphate | mg/L | ACF/G | W | S-401, S404A/B |
| Flow | CFS | PR | DAV | S-401, S404A/B |
| Flow | CFS | CAL | DAV | S-401, S404A/B |
| Rainfall Amount | Inches | RG | DAC | Rainfall Sampling Station |



LEGEND:

- EXISTING PUMP STATION
- TEMPORARY PUMP INSTALLATION
- EXISTING SPILLWAY
- TIWCD BOUNDARY
- IRRIGATION CANAL
- DRAINAGE CANAL

DISCLAIMER:
 Any information, including but not limited to software and data, received from the South Florida Water Management District ("District") in fulfillment of a request is provided "AS IS" without warranty of any kind, and the District expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The District does not warrant, guarantee, or make any representations regarding the use, or the results of the use of the information provided to you by the District in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the District is entirely assumed by the recipient. This map is a conceptual tool utilized for project development only. This map is not self-executing or binding, and does not otherwise affect the interests of any persons including any vested rights or existing uses of said property. This is not a survey.

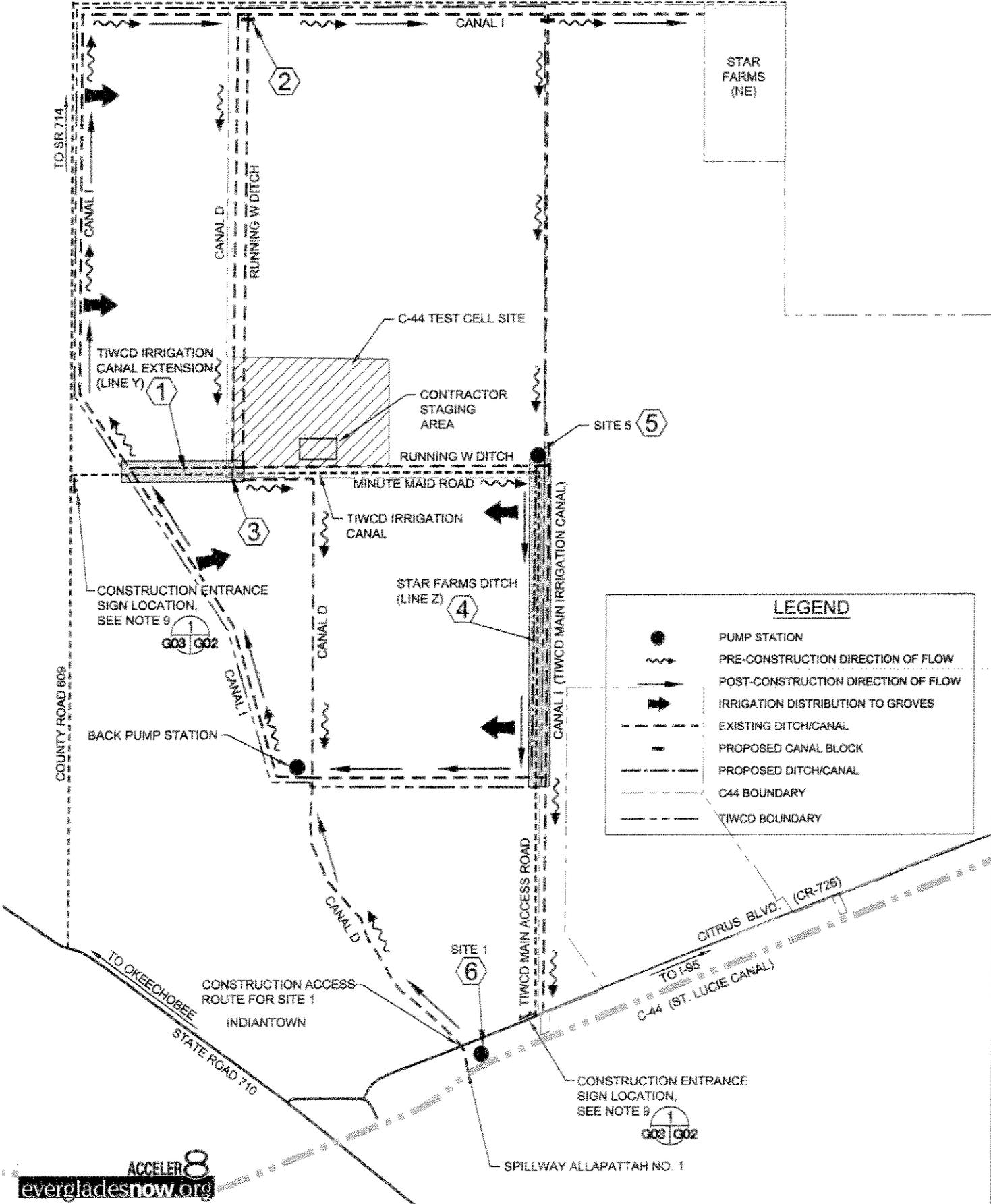
| RECONFIGURATION SITES: | | |
|---|--|--|
| <p>SITE 1: Install temporary lift pump, Temporary Pump No. 1 (two hydraulic pumps 16,000 gpm each) at C-44 Canal (at Spillway Allapattah No. 1 downstream concrete sill); water will be pumped from C-44 Canal to TIWCD Canal D.</p> | <p>SITE 2: Install additional back pump, Pump No. 2 (two hydraulic pumps 16,000 gpm each) at canal D; water will be pumped from Canal D to Canal I.</p> <p>SITE 3: Convert Running W drainage ditch to temporary TIWCD irrigation canal. Install temporary water control structure (stop logs) at the existing bridge on Minute Maid Road and Canal D to prevent irrigation water in Running W ditch to flow into Canal D.</p> | <p>SITE 4: Install temporary earthen dam to isolate Running W ditch from the perpendicular internal grove drainage ditch.</p> <p>SITE 5: Install temporary lift pump, temporary Pump No. 3 (one 12,000 gpm hydraulic pump) at converted Running W drainage ditch; water will be pumped from Running W drainage ditch to TIWCD Main Irrigation Canal (Canal I).</p> |

| | | | |
|--|--|--|--|
| | <p>Acceler8 South Florida Water Management District 2301 Center Park West Drive, Suite # 150 West Palm Beach, FL 33409 Tel # (561) 242-5520</p> | <p>FIGURE 1 C-44 TIWCD Temporary Reconfiguration During Construction of Main Project</p> <p>Contract # CN040918-WO013</p> | |
|--|--|--|--|

Figure 2

FINAL TIWCD TEMPORARY RECONFIGURATION

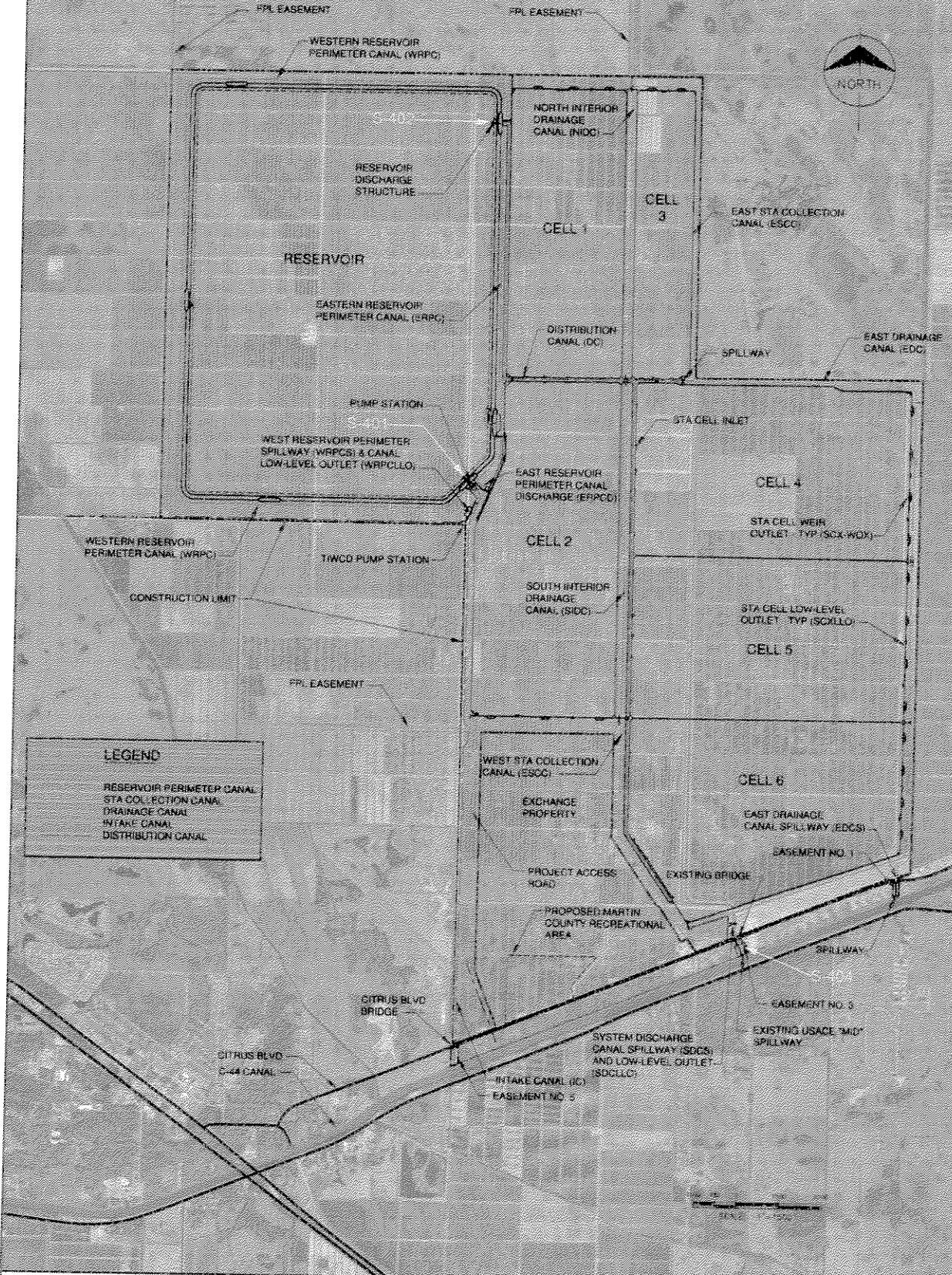
COCA-COLA ROAD



LEGEND

- PUMP STATION
- PRE-CONSTRUCTION DIRECTION OF FLOW
- POST-CONSTRUCTION DIRECTION OF FLOW
- IRRIGATION DISTRIBUTION TO GROVES
- EXISTING DITCH/CANAL
- PROPOSED CANAL BLOCK
- PROPOSED DITCH/CANAL
- C44 BOUNDARY
- TIWCD BOUNDARY

Figure 3



LEGEND
 RESERVOIR PERIMETER CANAL
 STA COLLECTION CANAL
 DRAINAGE CANAL
 INTAKE CANAL
 DISTRIBUTION CANAL



ACCELER8
 evergladesnow.org

HDR
 HDR Engineering, Inc.
 1400 Old Spanish Blvd.
 Suite 1000
 West Palm Beach, FL 33411
 (561) 835-1000

C-44 RESERVOIR/STA PROJECT
PROJECT CONFIGURATION

| | |
|--------|----------|
| DATE | 01/22/07 |
| FIGURE | - |

Attachment 5
USACE Real Estate Consent to Easement



DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

COPY

REPLY TO
ATTENTION OF

June 12, 2007

Real Estate Division
Management and Disposal Branch

Ms. Wanda Simpson
Land Resources Support
South Florida Water Management District
P.O. Box 24680
West Palm Beach, Florida 33416-4680

Dear Ms. Simpson:

Enclosed for your records please find a fully signed copy of Department of the Army Consent to Easement No. DACW17-9-07-0014, designed to allow use of portions of the Government's right-of-way easement located along the Lucie Canal, Okeechobee Waterway in connection with the C-44 Reservoir/STA Project.

Should you have any questions, please telephone Mr. Larry Wright of this office at 904-232-2537.

Sincerely,

Bart J. Mivell
Chief, Real Estate Division

Enclosure

DEPARTMENT OF THE ARMY
CONSENT TO EASEMENT
TO USE CORPS OF ENGINEERS RIGHT-OF-WAY

Consent No. DACW17-9-07-0014
Project: Intracoastal Waterway-
Tributary Channel, Okeechobee
Waterway, Martin County, Florida
Tract Nos. 823, 832, 833 and 837

THIS CONSENT TO EASEMENT AGREEMENT, made by and between the UNITED STATES OF AMERICA, DEPARTMENT OF THE ARMY, hereinafter referred to as the "Government", acting by and through the Chief, Real Estate Division, U.S. Army Corps of Engineers, Jacksonville District, hereinafter referred to as "said officer," and South Florida Water Management District, hereinafter referred to as the "Grantee":

WHEREAS, the Government has acquired a right-of-way easement over the above-numbered tract of land, which easement, by its terms, reserves to the Government, in perpetuity, the right to use said easements for the construction and maintenance of the Intracoastal Waterway-Tributary Channel, Okeechobee Waterway, Martin County, Florida; and

WHEREAS, the Grantee has requested permission to install, use, maintain, repair and remove an intake canal, and two discharge canals in, on, across, over, and under a portion of the lands identified as Tract Nos. 823, 832 and 837, Section 3, Township 40 South, Range 39 East and Sections 35 and 36, Township 39 South, Range 39 East, Martin County, Florida. The area comprising 3.20 acres, more or less, is shown in red on Exhibit "A" attached hereto and made a part hereof.

NOW THEREFORE, this consent is granted and accepted under the following conditions:

1. That it is understood that this consent is effective only insofar as the property rights of the Government in the land to be occupied are concerned, and that it does not relieve the Grantee from the necessity of obtaining grants from the owners of the fee and/or other interests, therein, nor does it obviate the requirement that the Grantee obtain State or local assent required by law for the activity authorized herein.
2. That any proposed improvements or use authorized herein shall not be commenced until appropriate rights shall have been obtained by the Grantee from the record owners and encumbrancers of the fee title to

the lands involved, or until the Grantee has obtained all Federal, State, or local permits required by law.

3. That the proposed improvements or use authorized herein shall be consistent with the terms and conditions of this consent; and that any improvements or use not specifically identified and authorized shall constitute a violation of the terms and conditions of this consent which may result in a revocation of this consent and in the institution of such legal proceedings as the Government may consider appropriate, whether or not this consent has been revoked or modified.

4. That the exercise of the privileges hereby consented to shall be without cost or expense to the Government and under the supervision of and subject to the approval of the said officer having immediate jurisdiction over the property and subject to such regulations as he may from time to time prescribe, including, but not limited to, the specific conditions, requirements, and specifications set forth in paragraph 14 below.

5. That the Grantee shall supervise and maintain the said improvements and cause it to be inspected at reasonable intervals, and shall immediately repair any damage found therein as a result of such inspection, or when requested by said officer to repair any defects. Upon completion of the installation of said improvements or the making of any repairs thereto, the premises shall be restored immediately by the Grantee, at the Grantee's own expense, to the same condition as that in which they existed prior to the commencement of such work, to the satisfaction of said officer.

6. That any property of the Government damaged or destroyed by the Grantee incident to the exercise of the privileges herein granted shall be promptly repaired or replaced by the Grantee to the reasonable satisfaction of the said officer, or in lieu of such repair or replacement, the Grantee shall, if so required by said officer and at his option, pay to the Government an amount sufficient to compensate for the loss sustained by the Government by reason of damage to or destruction of Government property, subject to the limitations of liability set forth herein below.

7. That the Government shall not be responsible for damages to (i) the property or injuries to persons which may arise from or be incident to the exercise of the privileges herein granted, (ii) the property of the Grantee which may arise from or be incident to the exercise of the privileges herein granted, or (iii) the property or injuries to the person of the Grantee, or the persons of Grantee's officers, agents, servants, or employees, or others who may be on said premises at the invitation of the Grantee or the invitation of one of them, arising from Grantee activities on or in the vicinity of the said premises. Provided, however, that the Grantee shall be liable for damage to property and injury to persons resulting from its

exercise of the rights granted by this instrument only to the extent provided and allowed under Section 768.28, Florida Statutes. Nothing

contained herein shall constitute a waiver of sovereign immunity beyond the limits set forth in Section 768.28, Florida Statutes.

8. Except for damages due to the fault or negligence of the Government or its contractors, the Government shall in no case be liable for any damage, either hidden or known, to any improvements herein authorized which may be caused by any action of the Government, under the rights obtained in its easements, or that may result from the future operations undertaken by the Government, and no claim or right to compensation shall accrue from such damage, and if further operations of the Government require the alteration or removal of any improvements herein authorized, the Grantee shall, upon due notice, from said officer, alter or remove said improvements without expense to the Government and subject to the supervision and approval of the said officer and no claim for damages shall be made against the Government on account of such alterations or removal, except for any such damage due to the fault or negligence of the Government or its contractors.

9. That construction and/or operation, maintenance, and use of any improvements incident to the exercise of the privileges herein granted shall be in such a manner as not to conflict with the rights of the Government, nor to interfere with the operations by the Government under such rights nor to endanger lives and safety of the public.

10. That this consent may be terminated by the Government or said officer upon reasonable notice to the Grantee if the Government or said officer shall determine that any improvements or use to which consent is herein granted interferes with the use of said land or any part thereof by the Government, and this consent may be annulled and forfeited by the declaration of the Government or said officer for failure to comply with any or all of the provisions and conditions of this consent, or for nonuse for a period of two (2) years, or for abandonment.

11. That upon relinquishment, termination, revocation, forfeiture, or annulment of this consent, the Grantee shall vacate the premises, remove all property of the Grantee therefrom, and restore the premises to a condition satisfactory to the said officer. If the Grantee shall fail or neglect to remove the said property and so restore the premises, then at the option of the Government or said officer, the said property shall either become the property of the Government without compensation therefor, or the Government or said officer, may cause it to be removed, and the premises to be so restored at the expense of the Grantee, and no claim for damages against the Government, or its officer or agents, shall be created by or made on account of such removal and restoration.

12. That the Grantee within the limits of its respective legal powers shall comply with all Federal, interstate, State, and/or local governmental regulations, conditions, or instructions for the protection of

the environment and all other matters as they relate to real property interests granted herein.

13. That the Grantee shall not remove or disturb, or cause or permit to be removed or disturbed, any historical, archeological, architectural, or other cultural artifacts, relics, vestiges, remains, or objects of antiquity. In the event such items are discovered on the premises, the Grantee shall immediately notify the District Engineer, Jacksonville District, Post Office Box 4970, Jacksonville, Florida 32232-0019, and the site and the material shall be protected by the Grantee from further disturbance until a professional examination of them can be made or until a clearance to proceed is authorized by the District Engineer.

14. That construction shall be in accordance with the drawings attached hereto and made a part hereof as Exhibit "B" and with Department of the Army permit no. 2005-6166 (IP-TKW), incorporated herein by reference. That no additional structures shall be constructed on the Government's right-of-way easement and that any structures currently within the right-of-way must be removed by the Grantee, at Grantee's expense, if future needs of the Government so require. That any U.S. Army Corps of Engineers right-of-way survey monuments impacted, must be removed, preserved and relocated by a registered State of Florida land surveyor at Grantee's expense and two copies of the new survey provided to the U.S. Army Corps of Engineers, South Florida Operations Office, 525 Ridgelawn Drive, Clewiston, Florida 33440. Any survey monument damaged and unusable shall be replaced in kind with a 4" x 4" concrete monument with brass cap and the remains of the old monument returned to the U.S. Army Corps of Engineers, South Florida Operations Office. Any modifications or work on the Spillway "Mid" must be coordinated with the South Florida Operations Office prior to commencement of construction.

15. That this consent may not be transferred to a third party without the prior written notice to the Chief, Real Estate Division, U.S. Army Corps of Engineers, Jacksonville District, Post Office Box 4970, Jacksonville, Florida 32232-0019, and by the transferee's written agreement to comply with and be bound by all the terms and conditions of this consent. In addition, if the Grantee transfers the improvements authorized herein by conveyance of realty, the deed shall reference this consent and the terms and conditions herein and the consent shall be recorded along with the deed in the Registrar of Deeds or with other appropriate official.

This consent is not subject to Title 10, United States Code, Section 2662.

IN WITNESS WHEREOF, I have hereunto set my hand, by authority of the Secretary of the Army, this 12th day of June 2007.

UNITED STATES OF AMERICA

BY: Cindy B. Turner

Cindy B. Turner
Acting Chief, Real Estate Division
U.S. Army Engineer District
Jacksonville, Florida

AGREED TO AND ACCEPTED

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

BY: R. V. Vento

Candy Barnett
Witness
Mada Lopez
Witness

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4 3

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TOWNSHIP 40 S.

SPILLWAY "A"

LAND CO. OF FL
PARCEL No 8
3.66 A.

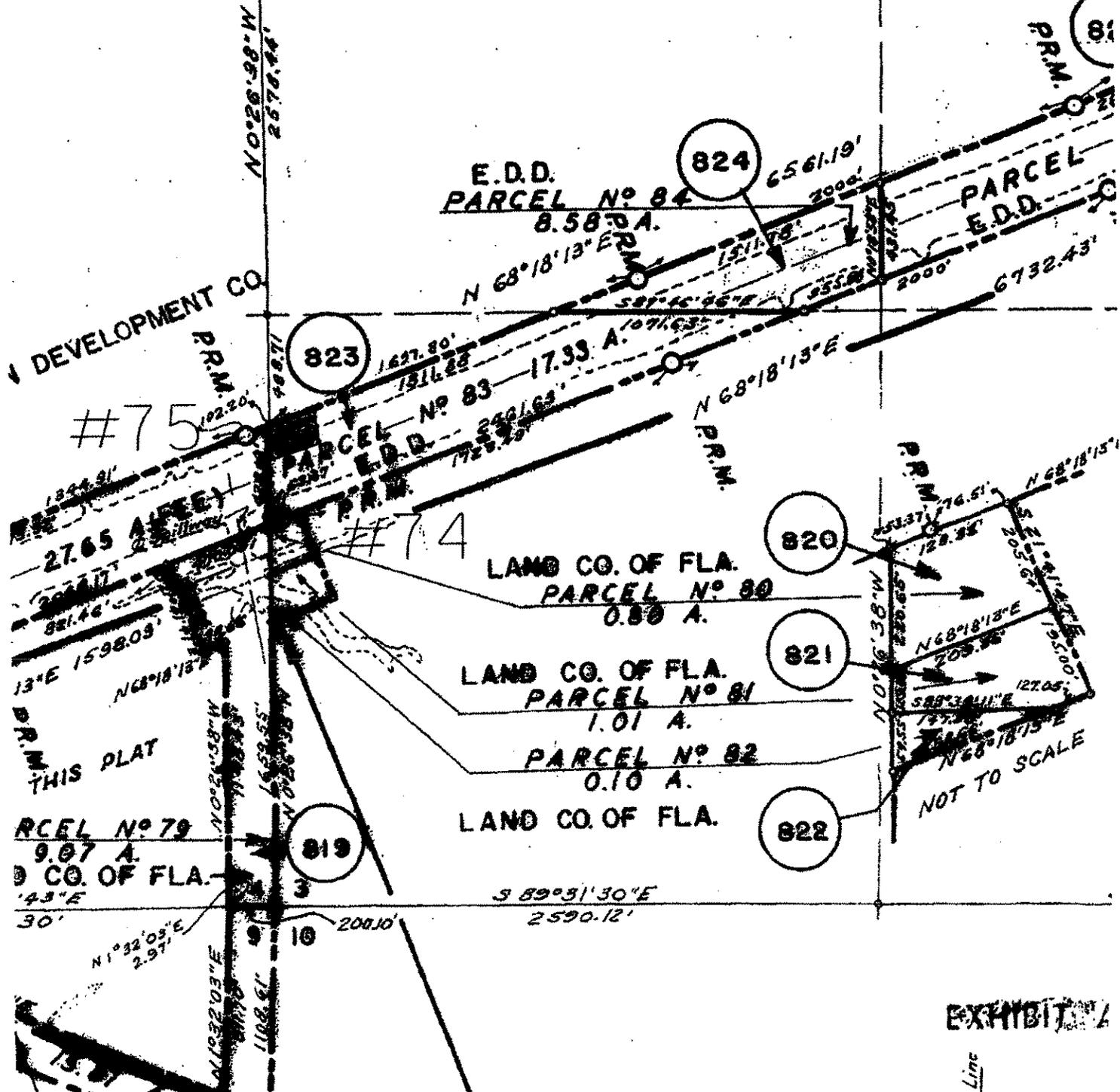
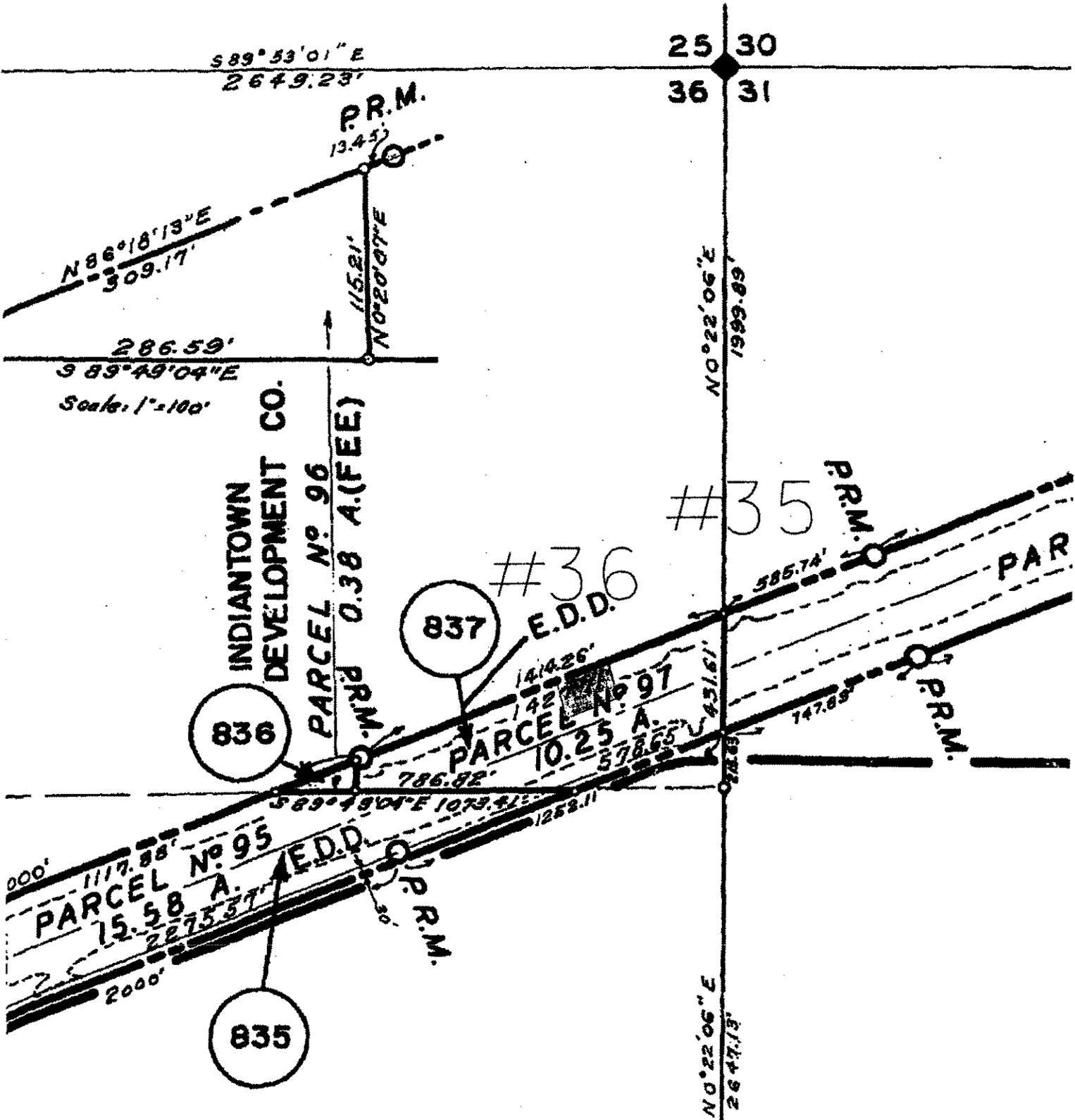


EXHIBIT 2

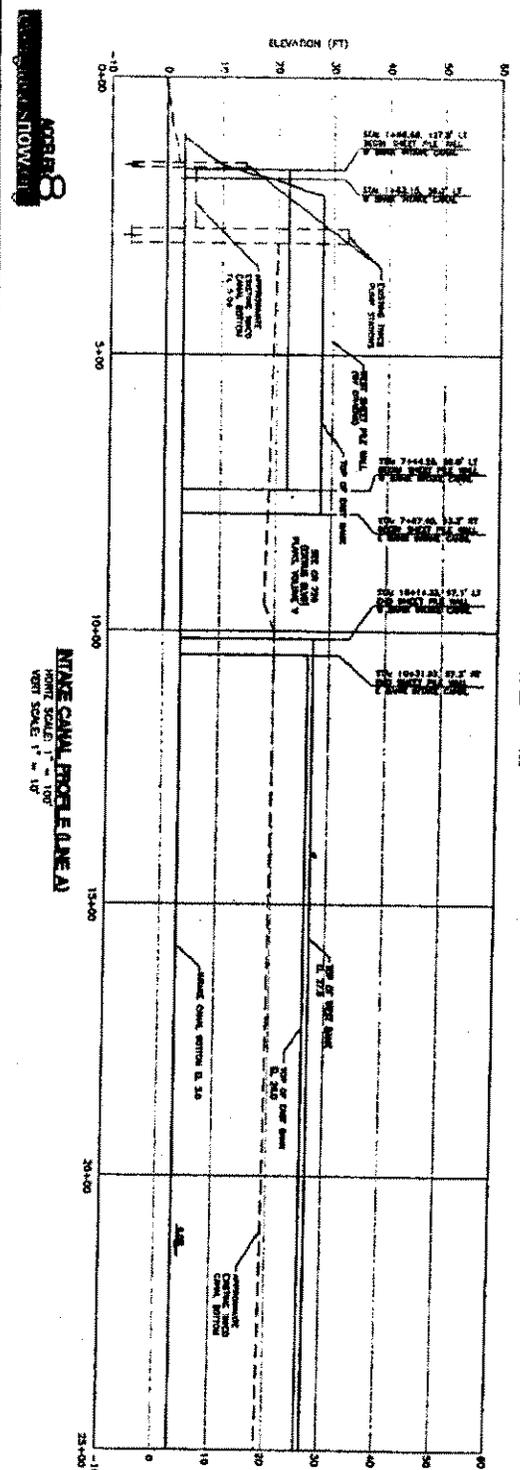
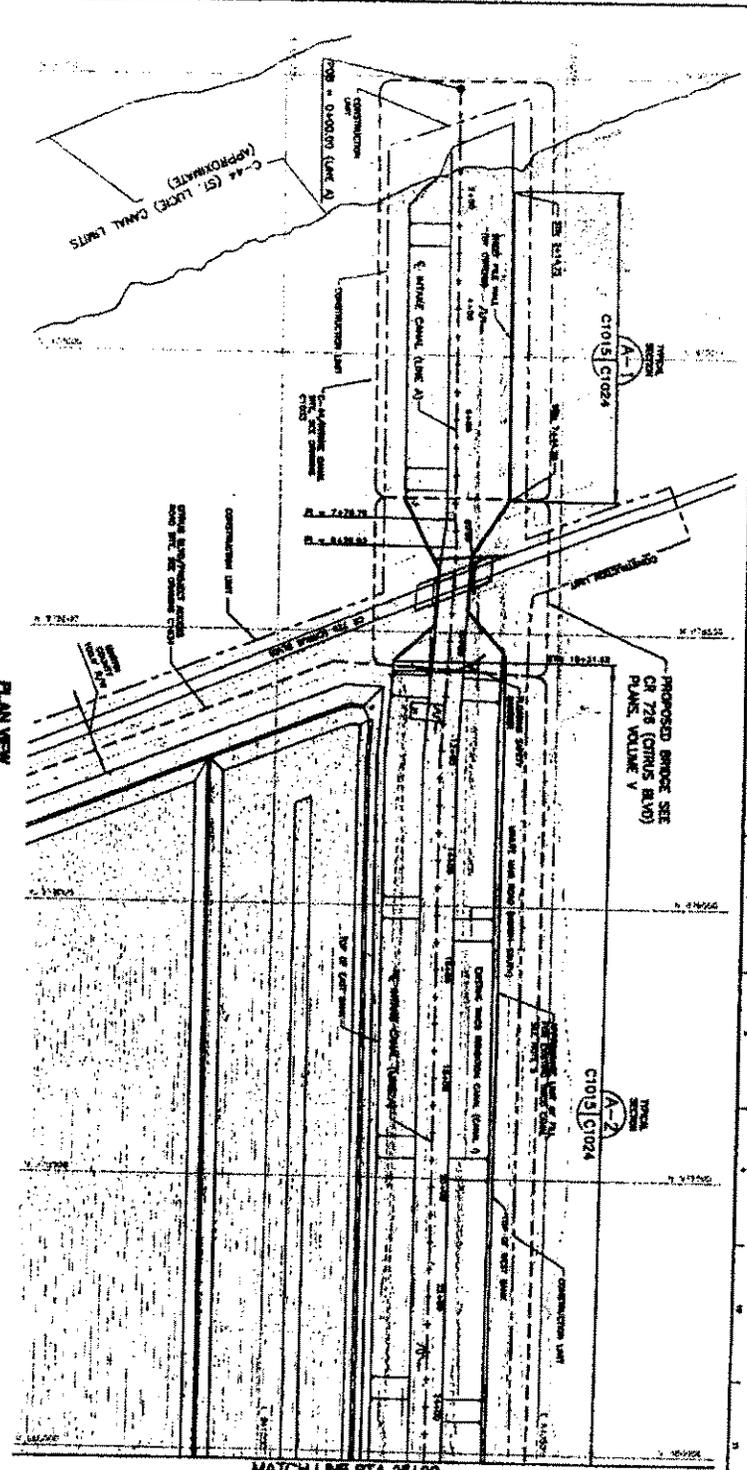
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EXHIBIT A
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ACCELERATOR

PREPARED BY: **HDR**

PROJECT: **PRELIMINARY DESIGN STUDY**

DATE: **04/27/07**

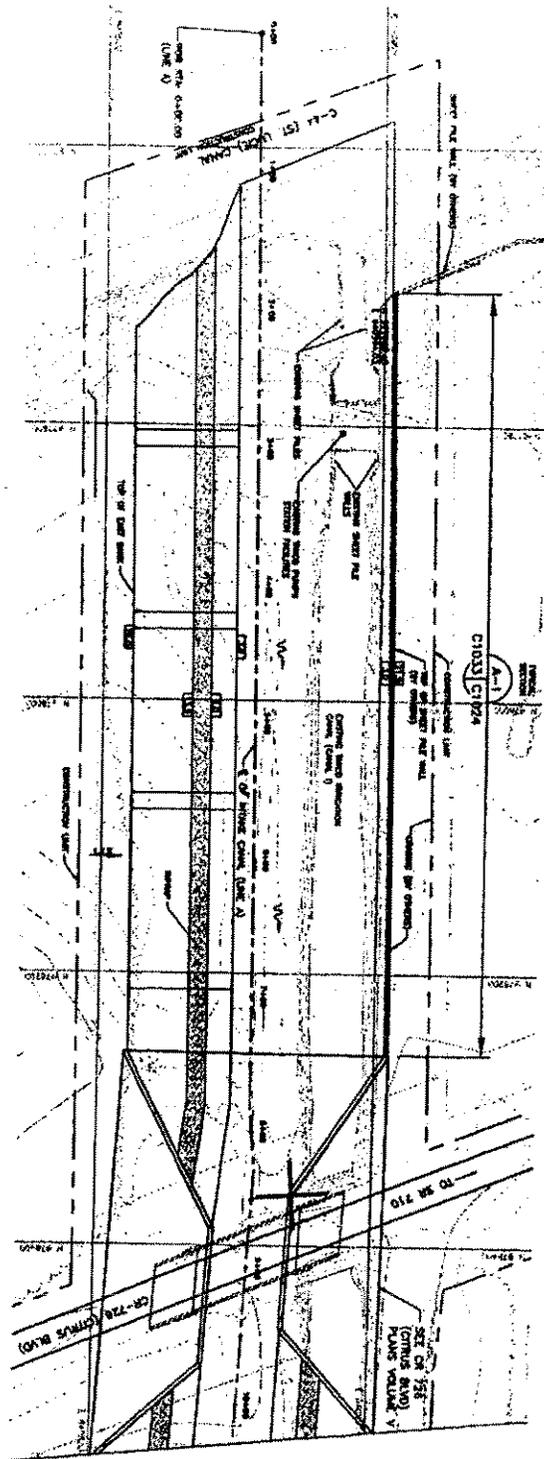
SCALE: **1" = 10'**

NOTES:

- SEE VOLUME 1 FOR GENERAL NOTES AND SPECIFICATIONS.
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2005 EDITION, PART 1, AND THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION, 2005 EDITION, PART 1.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2005 EDITION, PART 1, AND THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION, 2005 EDITION, PART 1.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, 2005 EDITION, PART 1, AND THE STANDARD SPECIFICATIONS FOR BRIDGE CONSTRUCTION, 2005 EDITION, PART 1.

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|---|---|--|--|------------------------------|--|--|
| C-44 RESERVOIR/STA PROJECT INTAKE CANAL AND PROJECT ACCESS ROAD PLAN AND PROFILE STA 0+00 - STA 28+00 (LINE A) | | | SOUTH FLORIDA WATER MANAGEMENT DISTRICT ACCELERATOR PROGRAM PHONE: 361-436-8800 3309 OUN OUN ROAD WEST PALM BEACH, FLORIDA 33406 | | CHECKER: H. BARR DATE: 04/27/07 | PREPARED BY: HDR DATE: 04/27/07 |
| DRAWN BY: HDR DATE: 04/27/07 | CHECKED BY: HDR DATE: 04/27/07 | | APPROVED BY: HDR DATE: 04/27/07 | PROJECT NO.: 04-27-07 | | |

ACCELR8
NOV 11 1988



PLAN VIEW
SCALE 1" = 40'

HDR
Hydrologic Design Resources, Inc.
1301 DAN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406
PHONE: 561-833-1800

FREE FINAL
DESIGN
SUBMITTAL
04/27/87

The information contained on this plan is based on the information provided by the client and is not to be used for any other purpose without the written consent of HDR. HDR assumes no responsibility for the accuracy or completeness of the information provided by the client.

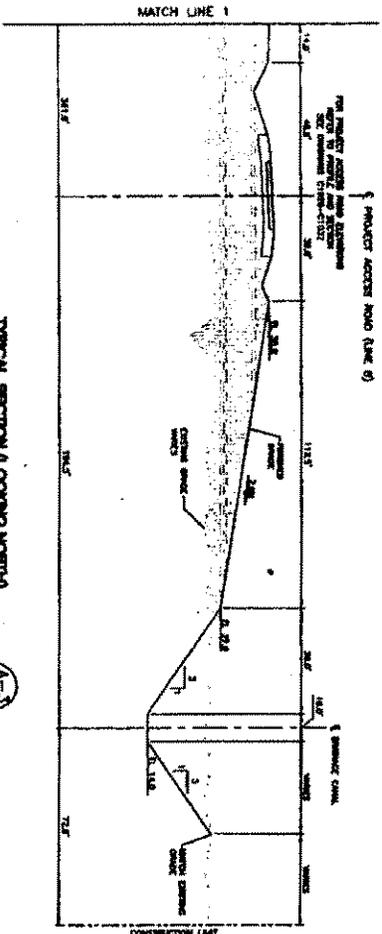
NOTES:
1. CONSULTING SHALL REVIEW ALL CHANGES TO THIS PLAN TO BE MADE BY THE CLIENT. CONSULTING WILL NOT BE RESPONSIBLE FOR ANY CHANGES MADE BY THE CLIENT.



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|-----------------------|--|--|-----------------------|-----------------------|----------------------|
| <p>35 of 277</p> | <p>C-44 RESERVOIR/STA PROJECT RESERVOIR INTAKE CANAL AND PROJECT ACCESS ROAD C-44/INTAKE CANAL SITE LAYOUT AND GRADING</p> | <p>SOUTH FLORIDA WATER MANAGEMENT DISTRICT ACCELR8 PROGRAM PHONE: 381-888-1800 1301 DAN CLUB ROAD WEST PALM BEACH, FLORIDA 33406</p> | <p>JAMES H. WYER</p> | <p>ALVIN E. BROWN</p> | <p>W. PAUL BROWN</p> |
| | | | <p>DAVID H. BROWN</p> | <p>ALVIN E. BROWN</p> | <p>W. PAUL BROWN</p> |
| <p>DAVID H. BROWN</p> | <p>ALVIN E. BROWN</p> | <p>W. PAUL BROWN</p> | <p>ALVIN E. BROWN</p> | <p>W. PAUL BROWN</p> | <p>W. PAUL BROWN</p> |

EXHIBIT "B"

TYPICAL SECTION A-3 LOOKING NORTH
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04/27/00

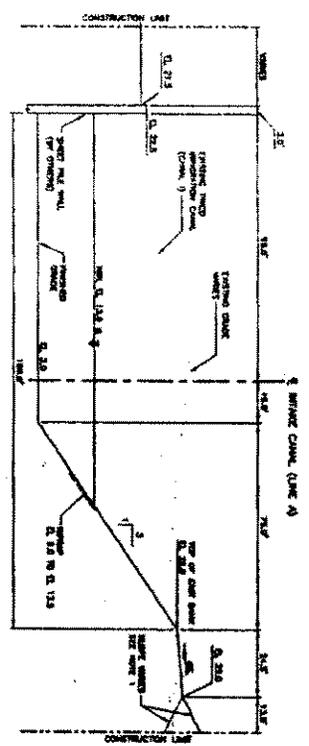
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RESERVOIR
INTAKE CANAL AND PROJECT ACCESS ROAD
SECTIONS
(LINE A I OF 2)**



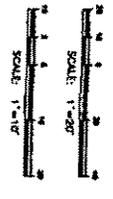
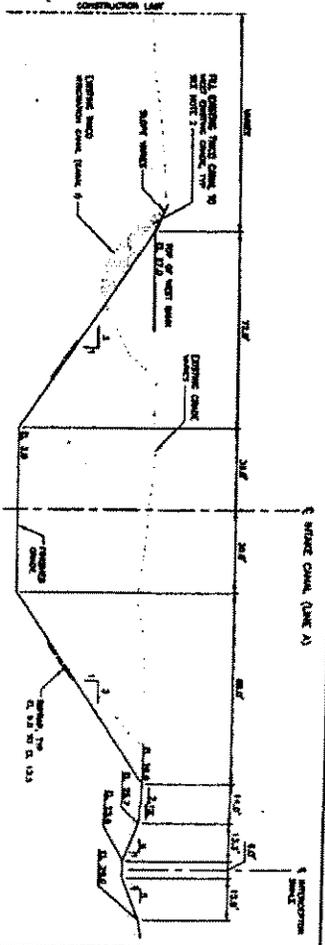
**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ACCELER8 PROGRAM**
PHONE: 561-444-8400
2300 GULF COAST ROAD
WEST PALM BEACH, FLORIDA 33406

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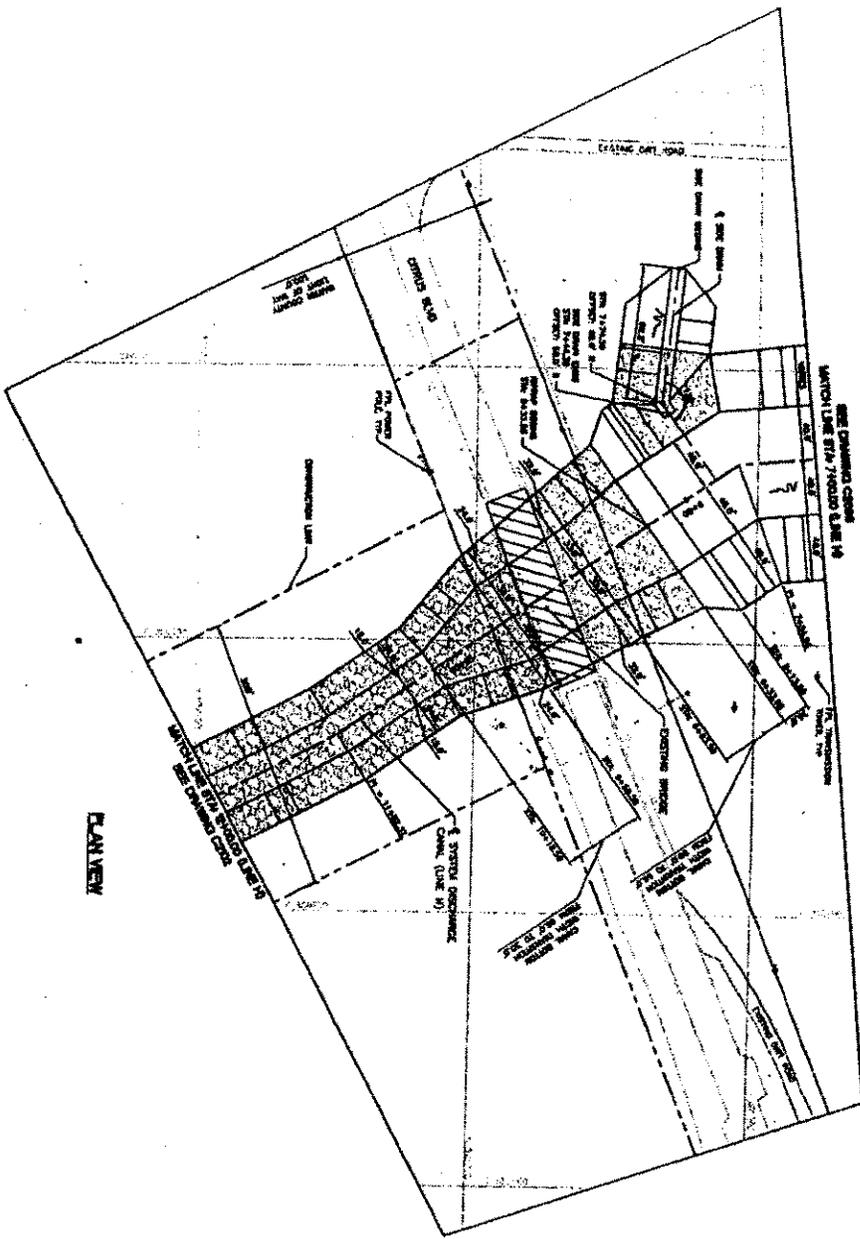
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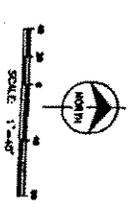
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C10105 | C1024



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 2. ALL TO BE DONE IN ACCORD WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, LATEST EDITION, AS APPLIED TO THIS PROJECT.
 3. SEE CONTRACT DOCUMENTS FOR ALL DIMENSIONS AND NOTES.
 4. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
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PLAN VIEW



- NOTES
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 2. NOTES TO DRAWING CORRECT FOR SYSTEM ADDRESSING SYSTEM (LINE NO.) INFORMATION.
 3. SYSTEM DISCHARGE CANAL IS EXISTING STRUCTURE.

The drawings, specifications or other project documents shall be read in conjunction with the project contract documents. The project contract documents shall govern in the event of any conflict between the drawings, specifications or other project documents and the project contract documents.



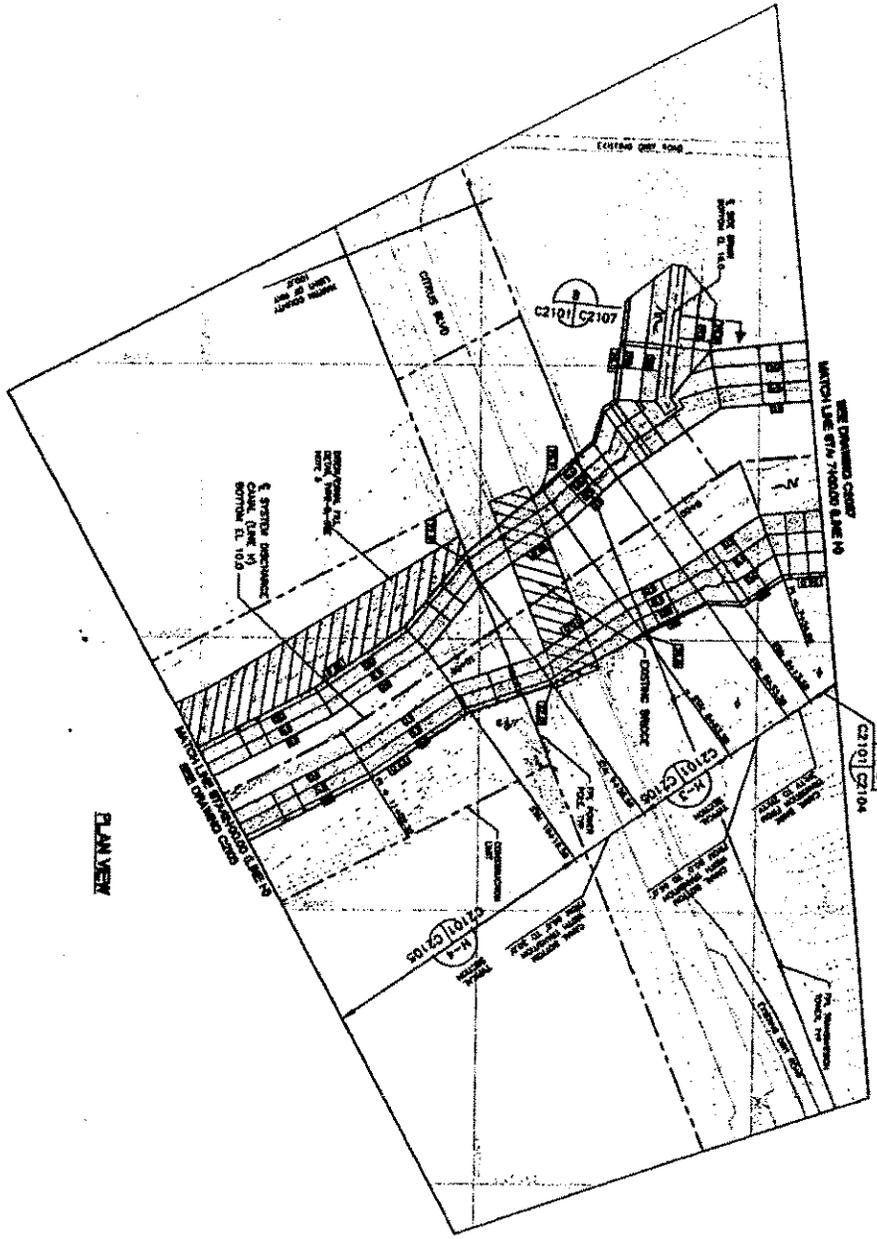
PRE-FINAL
DESIGN
SUBMITTAL
04/27/07

**C-44 RESERVOIR/STA PROJECT
STORMWATER TREATMENT AREA (STA)
SYSTEM DISCHARGE CANAL
SITE SDG3
LAYOUT**



**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ACCELER8 PROGRAM**
PHONE: 561-488-8800
1301 OLN OLIVE ROAD
WEST PALM BEACH, FLORIDA 33408

| DATE | BY | DESCRIPTION |
|----------|-----|-------------|
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| ... | ... | ... |
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PLAN VIEW



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NOTES

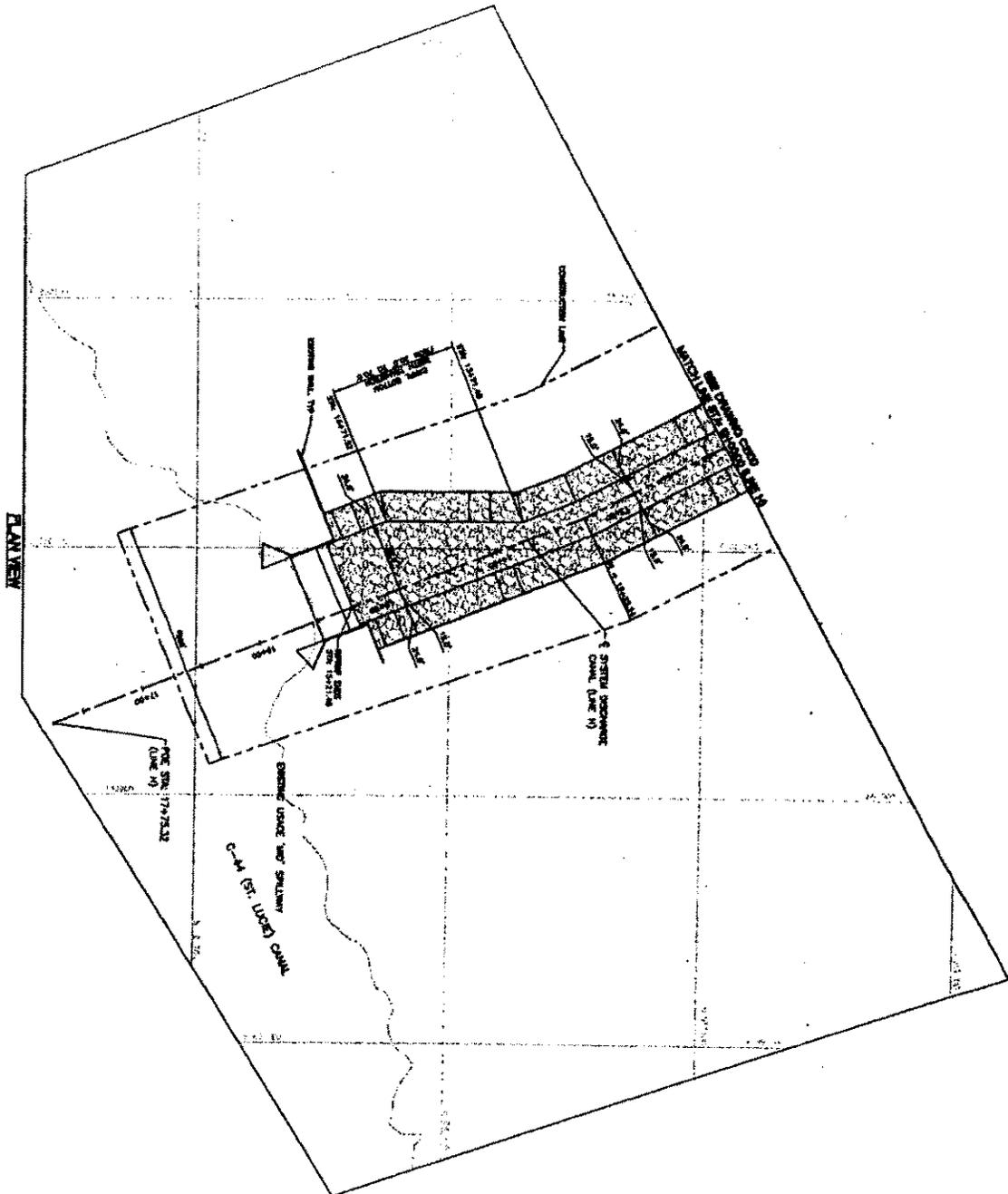
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2. REFER TO DRAWING SHEET FOR STRUCTURE AND MANHOLE DATA. SEE (S) FOR DETAILS.
3. VERIFY ALL DIMENSIONS AND LOCATIONS.
4. SEE GENERAL CONDITIONS FOR THE PROJECT.
5. SEE ALL NOTES, PART 2 TO THE SPECIFICATIONS AND THE CONTRACT DOCUMENTS.

SCALE: 1"=40'

C-44 RESERVOIR/STA PROJECT
 STORMWATER TREATMENT AREA (STA)
 SYSTEM DISCHARGE CANAL
 SITE SDC3
 GRADING

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
 ACCELER8 PROGRAM
 PHONE: 561-688-8000
 3301 OUN CLUB ROAD
 WEST PALM BEACH, FLORIDA 33409

| REVISION | DATE | BY | CHKD | APP'D |
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PLAN VIEW

HDR

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04 of 225

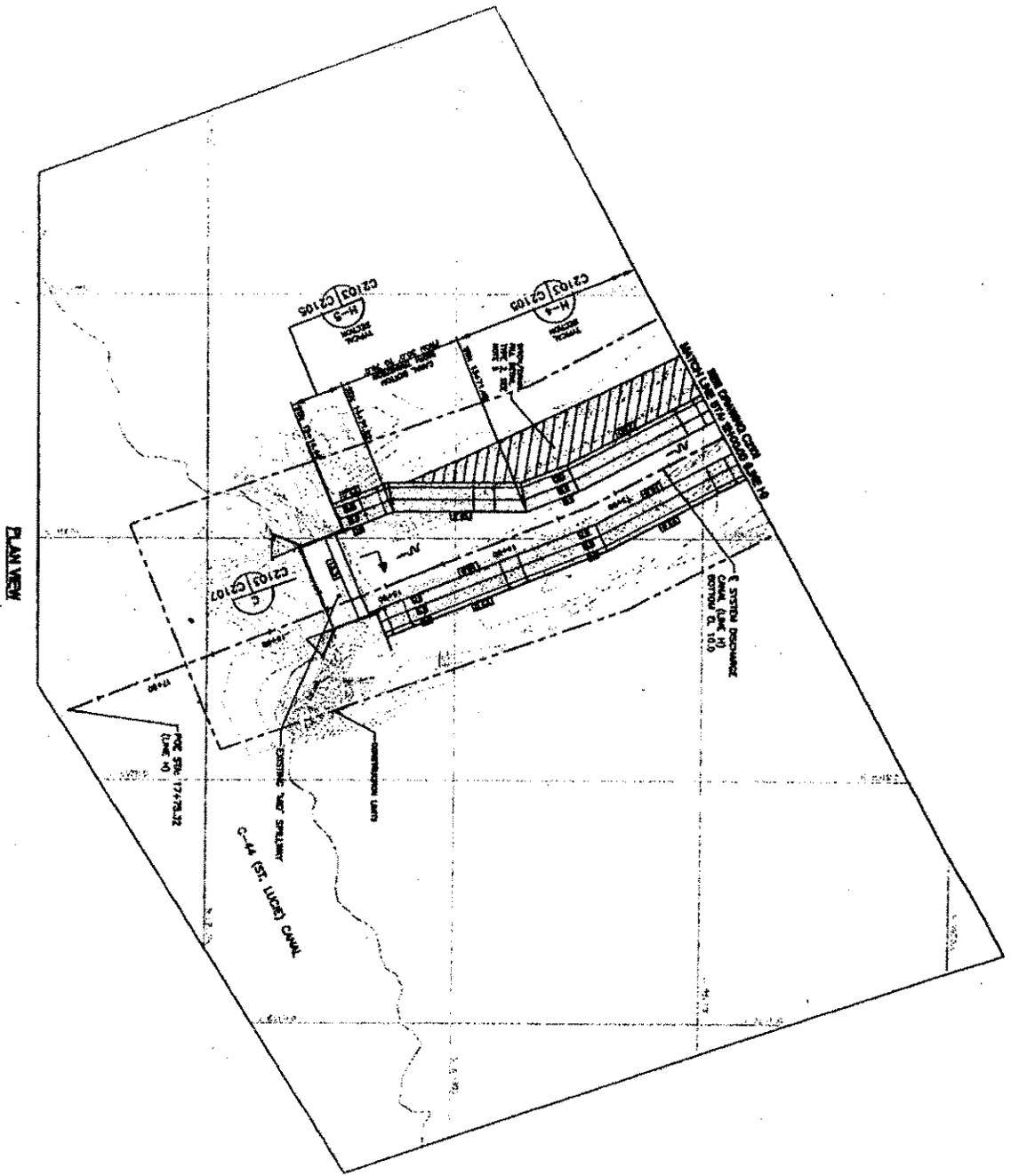
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STORMWATER TREATMENT AREA (STA)
SYSTEM DISCHARGE CANAL
SITE SDC4
LAYOUT**



**SOUTH FLORIDA WATER MANAGEMENT DISTRICT
ACCELER8 PROGRAM**

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1301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33406

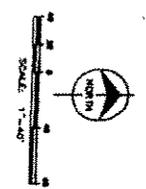
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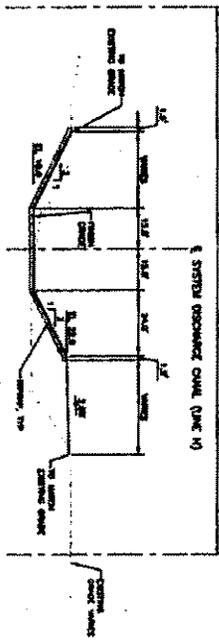
PREPARED BY:
 T. J. DUNN
 SANITARY
 04/27/97

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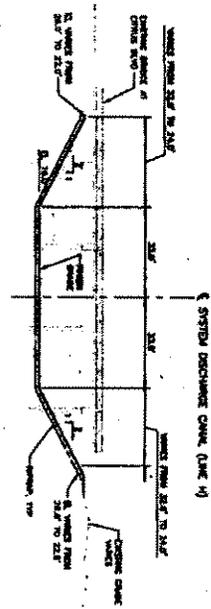
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| | | DRAWN BY: _____ DATE: _____ | APPROVED BY: _____ DATE: _____ |



TYPICAL SECTION (LOOKING SOUTH)
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 SCALE 1" = 20'
 C2101 C2105
 C2102



TYPICAL SECTION (LOOKING SOUTH)
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 SCALE 1" = 20'
 C2101 C2105
 C2102



HDR
 HERRINGTON DESIGN & CONSTRUCTION, INC.
 1000 N. W. 10th St., Suite 100
 Ft. Lauderdale, FL 33304
 Phone: (305) 555-1100
 Fax: (305) 555-1101

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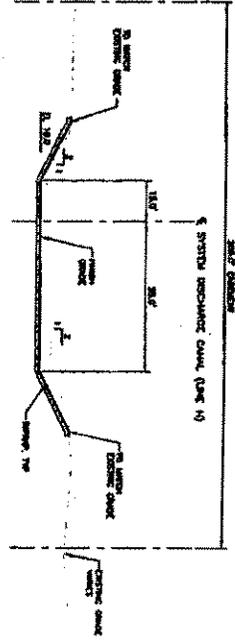
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C-44 RESERVOIR/BTA PROJECT
 STORMWATER TREATMENT AREA (BTA)
 SYSTEM DISCHARGE CANAL
 SECTION (2 OF 4)



SOUTH FLORIDA WATER MANAGEMENT DISTRICT
 ACCELER8 PROGRAM
 PHONE: 561-884-8900
 1301 OAK CLUB ROAD
 WEST PALM BEACH, FLORIDA 33408

| OWNER & USER | DATE | DESCRIPTION |
|--------------------------------------|----------|------------------------------|
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| FLORIDA DEPARTMENT OF TRANSPORTATION | 04/27/07 | PRELIMINARY DESIGN SUBMITTAL |
| FLORIDA DEPARTMENT OF TRANSPORTATION | 04/27/07 | PRELIMINARY DESIGN SUBMITTAL |
| FLORIDA DEPARTMENT OF TRANSPORTATION | 04/27/07 | PRELIMINARY DESIGN SUBMITTAL |



TYPICAL SECTION (LOOKING SOUTH)
 SCALE: 1"=20'



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100 of 200

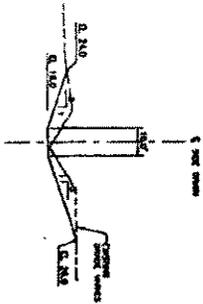
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 STORMWATER TREATMENT AREA (STA)
 SYSTEM DISCHARGE CANAL
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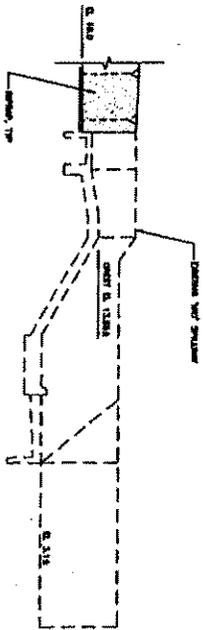
SOUTH FLORIDA WATER MANAGEMENT DISTRICT
 ACCELER8 PROGRAM
 PHONE: 561-886-6000
 3301 GUN CLUB ROAD
 WEST PALM BEACH, FLORIDA 33406

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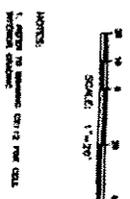
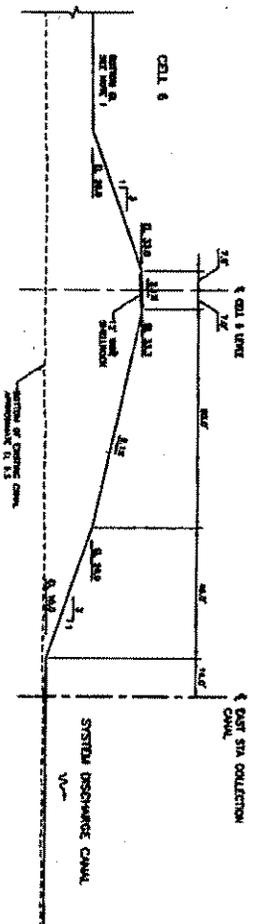
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SECTION C
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C2102 C2107



SECTION A
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C2102 C2107



H.R.
HYDROLOGICAL RESOURCES
INCORPORATED
1301 GOLF CLUB ROAD
WEST PALM BEACH, FLORIDA 33408
PHONE: 561-833-8800
FAX: 561-833-8801

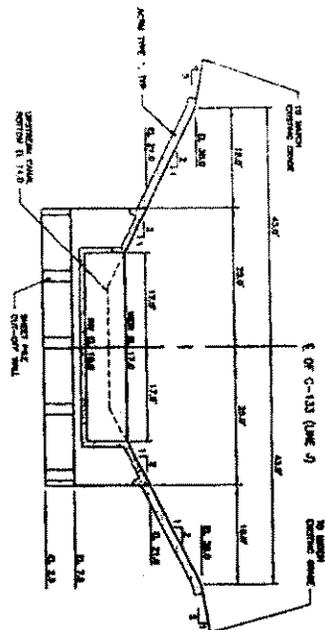
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STORMWATER TREATMENT AREA (STA)
SYSTEM DISCHARGE CANAL
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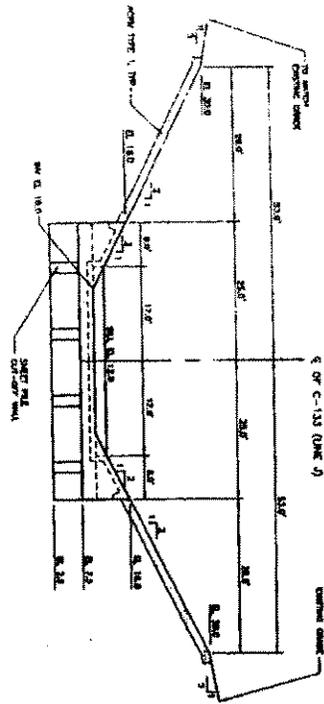


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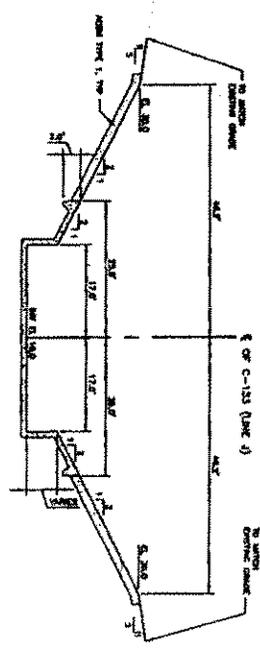
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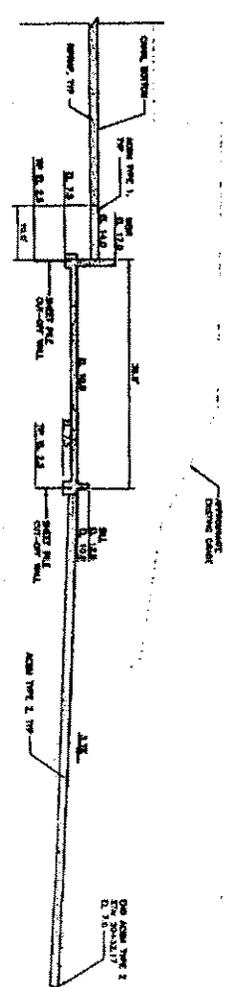
FACE OF WEIR SECTION
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A



FACE OF SILL SECTION
SCALE 1"=10'
C



MODULE STRUCTURE SECTION
SCALE 1"=10'
B



SECTION
SCALE 1"=10'
D



HRR

PROFESSIONAL ENGINEER
STATE OF FLORIDA
NO. 12345

PROJECT: C-44 RESERVOIR/STA PROJECT
STATION: 04+27.157

The undersigned, responsible for other projects, hereby certifies that the drawings, specifications and reports herein were prepared by him or under his direct supervision and that he is a duly licensed Professional Engineer in the State of Florida.

| | | | | | | | |
|--|--|--|--|---|--|--|--|
| C-44 RESERVOIR/STA PROJECT STORMWATER TREATMENT AREA (STA) C-133 CANAL BELLYWAY DETAIL SECTIONS | | SOUTH FLORIDA WATER MANAGEMENT DISTRICT ACCELER8 PROGRAM PHONE: 561-484-8800 3301 OAK CANYON ROAD WEST PALM BEACH, FLORIDA 33408 | | CHECKED BY: [] DRAWN BY: [] DATE: 06/25/08 SCALE: AS SHOWN | | PREPARED BY: [] APPROVED BY: [] PRELIMINARY DESIGN | |
|--|--|--|--|---|--|--|--|

Attachment 6
AS-BUILT CERTIFICATION BY PROFESSIONAL ENGINEER

Submit this form and one set of as-built engineering drawings to the U.S. Army Corps of Engineers, Enforcement Section, Post Office Box 4970, Jacksonville, Florida 32232-0019. If you have questions regarding this requirement, please contact the Enforcement Section at 904-232-2907.

1. Department of the Army Permit Number: _____

2. Permittee Information:

Name _____

Address _____

3. Project Site Identification:

Physical location/address _____

4. As-Built Certification:

I hereby certify that the authorized work, including any mitigation required by Special Conditions to the permit, has been accomplished in accordance with the Department of the Army permit with any deviations noted below. This determination is based upon on-site observation, scheduled and conducted by me or by a project representative under my direct supervision. I have enclosed one set of as-built engineering drawings.

Signature of Engineer

Name (Please type)

(FL, PR or VI) Reg. Number

Company Name

Address

City

State

ZIP

(Affix Seal)

Date

Telephone Number

Attach additional pages as necessary to identify deviations from the approved permit drawings and special conditions.

Attachment 7
Water Quality Monitoring Plan

Water Quality Monitoring Plan

For

C44 Reservoir/Stormwater Treatment Area (STA) Project

January 3, 2007

W. Patrick Davis
South Florida Water Management District

1.0

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FIGURES

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| A2 | Sediment Monitoring for Hg and Other Toxicants | 24 | 1/07 |
| A3 | Water Quality Monitoring | 24 | 1/07 |
| A4 | List of Other Toxicants for C44 Project | 25 | 1/07 |

ATTACHMENTS

| # | Description | Page # | Revision Date |
|---|---|--------|---------------|
| 1 | Attachment 1: Monitoring for Mercury and Other Toxicants | 19 | 1/07 |

2.0

Glossary

| | |
|---------|--|
| ACF | Autosampler Composite Flow |
| CERP | Comprehensive Everglades Restoration Plan |
| CGM | CERP Guidance Memorandum |
| DBHYDRO | Water Quality Database (SFWMD) |
| DGPS | Differential Global Positioning System |
| DOH | Department of Health |
| DQO | Data Quality Objectives |
| EB | Equipment Blank |
| EPA | U.S. Environmental Protection Agency |
| ESA | Environmental Site Assessment |
| FAC | Florida Administrative Code |
| FCEB | Field Clean Equipment Blank |
| FDEP | Florida Department of Environmental Protection |
| FOC | Field Operations Center |
| FS | Florida Statute |
| FSQM | Field Sampling Quality Manual |
| GPS | Global Positioning System |
| Hg | Mercury |
| HW | Head Water |
| IRL | Indian River Lagoon |
| LIMS | Laboratory Information Management System |
| MDL | Minimum Detection Limit |
| NOX | Nitrate + Nitrite |
| QA | Quality Assurance |
| QASR | Quality Assurance System Requirements |
| QC | Quality Control |
| RAI | Request for Additional Information |
| RPD | Relative Percent Difference |
| RS | Replicate Sample |
| SFWMD | South Florida Water Management District |
| SLE | St. Lucie Estuary |
| SM | Standard Methods |
| SOP | Standard Operation Procedure |
| SQAG | Sediment Quality Assessment Guidelines |
| SRB | Sulfate Reducing Bacteria |
| SS | Split Sample |
| STA | Storm Water Treatment Area |
| TKN | Total Kjeldahl Nitrogen |
| TP | Total Phosphorus (TPO4) |
| TN | Total Nitrogen (TKN + NOX) |
| TW | Tail Water |
| USACE | US Army Corps of Engineers |
| WQM | Water Quality Monitoring Division |
| WQS | Water Quality Standard |

3.0 Project Description

3.1 Introduction and Background

This document serves as a reference for surface water quality monitoring for the C44 Reservoir/Storm Water Treatment Area (STA). The guidance contained in this document will assist in maintaining consistency in sampling locations, parameter lists and frequencies as well as providing documentation of the project scope and an ongoing historical perspective.

The C-44 Reservoir/STA Project (C-44 Project) is a component of the Indian River Lagoon-South (IRL-South) Project. The C-44 Project is located in southern Martin County directly north of the C-44 Canal approximately half-way between Lake Okeechobee and the Atlantic Ocean. The C-44 Project was formulated to support specific performance measures of the IRL-S Project. Similarly, the IRL-S Project was formulated to support the performance measures of the Comprehensive Everglades Restoration Plan (CERP).

The C-44 Reservoir/STA Project is comprised of one 3,400-acre, 15-ft deep reservoir and approximately 6,300 acres of STA divided into six cells. The major C-44 Project components are shown on Figure 4.2. The Reservoir is an impoundment with earthen embankments. The STA cells are designed to maintain a minimum depth of 1.5 ft of water to support emergent vegetation. The STA cells are expected to help remove phosphorus, and nitrogen from the receiving waters.

3.2 Active Mandates and Permits

The permits and/or agreements that will govern the sampling requirements of this Project are being developed through the permitting process. Permitting for the C-44 Project began with the application submittal of the CERPRA 1502 permit to the Florida Department of Environmental Protection (FDEP) and the Department of the Army 404 permit to the USACE, and subsequent responses to RAIs from the FDEP.

3.3 Purpose and Scope

The monitoring sites described in this document have been established to satisfy the anticipated requirements of FDEP Permitting for Start Up and Operational Phase monitoring. This monitoring is being undertaken to evaluate the performance of the C-44 Project in the reduction of total phosphorus (TP) and total nitrogen (TN) loading and to verify that discharge from the C-44 Project does not violate Class III water quality standards. The proposed reservoir and stormwater treatment facilities in this project are intended to regulate the timing of water delivered to the Indian River Lagoon and reduce nutrient inputs to sensitive receiving ecosystems such as the St. Lucie Estuary (SLE). Land conversions from agricultural uses to Reservoir/STA land uses are also expected to contribute to a net reduction in nutrient loads.

3.4 Duration

3.4.1 Initiation Conditions

The monitoring in this section will be initiated by the South Florida Water Management District (SFWMD) when construction of the C-44 Reservoir/STA Project is completed.

Water Quality Monitoring

The following sections describe the locations, frequencies and parameters for water quality monitoring activities as they will occur during the start up and operational phase of the C-44 Project's life span. The monitoring requirements for Mercury and Other Toxicants are described separately in **Attachment 1** of this document.

Water quality samples will be collected at a minimum of 3 locations.

- 1) At the Reservoir Pump Station (S-401). **This is a permit compliance site.**
- 2) At the Reservoir Discharge Structure to the Distribution Canal (S-402)
- 3) Discharge from the C44 Project Outlet Canal (S-404) to the C44 Canal. **This is a permit compliance site.**

Samples will be collected via automatic sampler and grab samples. The automatic sampler will be programmed to collect samples on a composited flow proportional basis.

Optional grab samples can be taken at individual STA cells to monitor cell performance and near the confluence of the C-44 Canal and the Project Intake Canal at Citrus Blvd. bridge. Sampling at the individual STA sites will be determined on an as needed basis. Sampling at the Citrus Blvd. bridge will be on a short term basis for comparison to the permit compliance site at S-401.

Water quality monitoring at the C-44 Project will involve two separate phases, Start Up and Operational. Parameters and frequency of collection for the start-up and operational phase monitoring requirements are given in Table 3.5.

Start Up Monitoring

Before any discharges occur, start-up monitoring will be conducted to collect data to determine a reduction of total phosphorus (TP) and total nitrogen (TN) loading and to verify that discharge from the STA does not violate Class III water quality standards. This initial testing and monitoring period should be less than a year and no longer than the period of time needed to collect representative data necessary for these determinations.

Monitoring of the startup phase of the C-44 Project is important to provide timely feedback for operational considerations such as inflow rates, residence time, and knowing when the C-44 Project is stable enough to begin making releases without causing or contributing to the degradation of water quality. In-situ instrumentation and grab sampling techniques will collect water quality data. The in-situ instrumentation will collect physical parameters and automatic samplers will collect flow proportional samples for total phosphorus and total nitrogen. The trigger volumes for the automatic samplers will be determined after design and operational details are completed. Grab samples will be collected weekly.

Operational Phase Monitoring

When the C-44 Project meets with criteria for Mercury and Pesticides during the Pre-Discharge activities and then meets with criteria for Phosphorus, Dissolved Oxygen and other Water Quality Parameters during Flow-Through (Discharge) activities, the facility is ready for the Operational Phase Monitoring. The monitoring includes: Dissolved Oxygen, pH, Specific Conductance, Temperature, Alkalinity (ALKA), Ammonia (NH₄),

Calcium (CA), Copper (TOTCU), Magnesium (MG) Nitrate + Nitrite (NOX), Total Kjeldahl Nitrogen (TKN), Total Phosphorus (TPO4), Turbidity (TURB) and Sulfate (SO4). (Table 3.5).

Monitoring during the operational phase will be used to track the compliance of the C-44 Project in meeting long term nutrient reduction goals, to assess the general performance of the C-44 Project and to ensure the C-44 Project is meeting all water quality standards outlined for this project.

3.4.2 Modification or Termination Conditions

Parameter Frequency Reduction and/or Removal and Additional Parameters of Concern

If a specific parameter is consistently not present above the detection limit, or a criterion is found consistently in compliance with Class III Water Quality Standards (where available), the permittee may request a modification to reduce the frequency or remove that parameter. A minimum of one year of data will be required for approval by FDEP before a parameter can be removed. If FDEP or SFWMD have reason to believe that additional parameters exist that may cause water quality violations, those parameters shall be added as a permit modification.

Dissolved Oxygen Permit Compliance

The C-44 Project discharge structure (S-404) is a permit compliance point. It features a fixed spillway which flows downstream to another existing spillway before emptying into the C-44 Canal. If Dissolved Oxygen levels are below 5 mg/L upstream of the discharge structure (S-404), DO readings can be taken downstream of S-404. This will provide aeration from the S-404 spillway before the C-44 Project discharge reaches the C-44 Canal

3.4.3 Emergency Suspension of Sampling

Under hurricane, tropical storm warnings, or other extreme weather condition, sampling may be suspended if necessary. FDEP shall be notified of suspension and subsequent resumption sampling.

Table 3.5. Water Quality Parameters: Start Up and Operational Phase

| Parameter | Units | Sample Type | Sampling Frequency | Sampling Location |
|-------------------------------|----------|-------------|--------------------|-------------------|
| DO | mg/l | insitu | BI-W | S401, S402, S404 |
| pH | SU | insitu | BI-W | S401, S402, S404 |
| Specific Conductance | Umhos/cm | insitu | BI-W | S401, S402, S404 |
| Temperature | Deg C | insitu | BI-W | S401, S402, S404 |
| Total Phosphorus (TPO4) | mg/l | ACF/G | Weekly | S401, S402, S404 |
| Total Kjeldahl Nitrogen (TKN) | mg/l | ACF/G | Weekly | S401, S402, S404 |
| Nitrate + Nitrite (NOX) | mg/l | ACF/G | Weekly | S401, S402, S404 |
| Ammonia (NH4) | mg/L | G | BI-W | S401, S402, S404 |
| Alkalinity (ALKA) | mg/l | G | BI-W | S401, S402, S404 |
| Turbidity (TURB) | NTU | G | BI-W | S401, S402, S404 |
| Calcium (CA) | mg/L | G | Q | S401, S402, S404 |
| Copper (TOTCU) | ug/L | G | Q | S401, S402, S404 |
| Magnesium (MG) | mg/L | G | Q | S401, S402, S404 |
| Sulfate (SO4) | mg/l | G | Q | S401, S402, S404 |

Sample Type

G Grab Sample
 ACF Autosampler Composite Flow Proportional
 INSITU In Situ Field Sample

Frequency

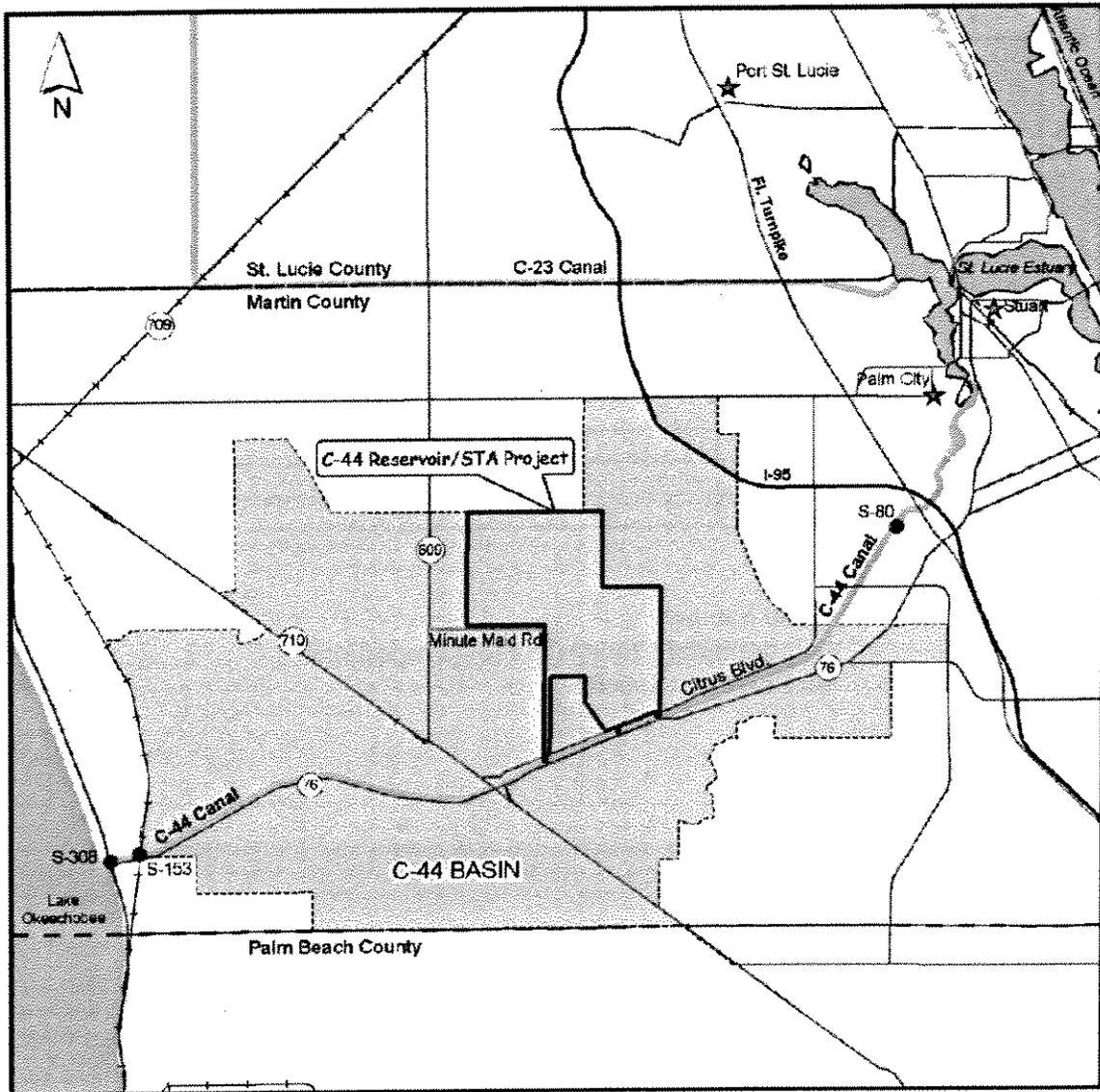
BI-W Biweekly
 W Weekly
 Q Quarterly

4.0 Geographic Location

4.1 Regional Area

The monitoring specified in this plan will occur at the C44 Reservoir/STA Project. The C-44 Project is located in southern Martin County directly north of the C-44 Canal approximately half-way between Lake Okeechobee and the Atlantic Ocean. The project site is located on land that consisted of citrus groves.

Figure 4.1 C44 Reservoir/STA Project Location



4.2 Sampling Locations

There are a total of 3 monitoring locations that will be used to supply nutrient and standard parameter data, relative to this plan (Table 4.2). Additional sites will be identified for the collection of water, fish tissue and sediment samples to be analyzed for Hg and other toxicants (see Attachment 1). All sampling stations will be registered in the SFWMD Laboratory Information Management System (LIMS). Table 4.2 provides the GPS coordinates for each monitoring location. Each site has certain access and authority protocols for entry.

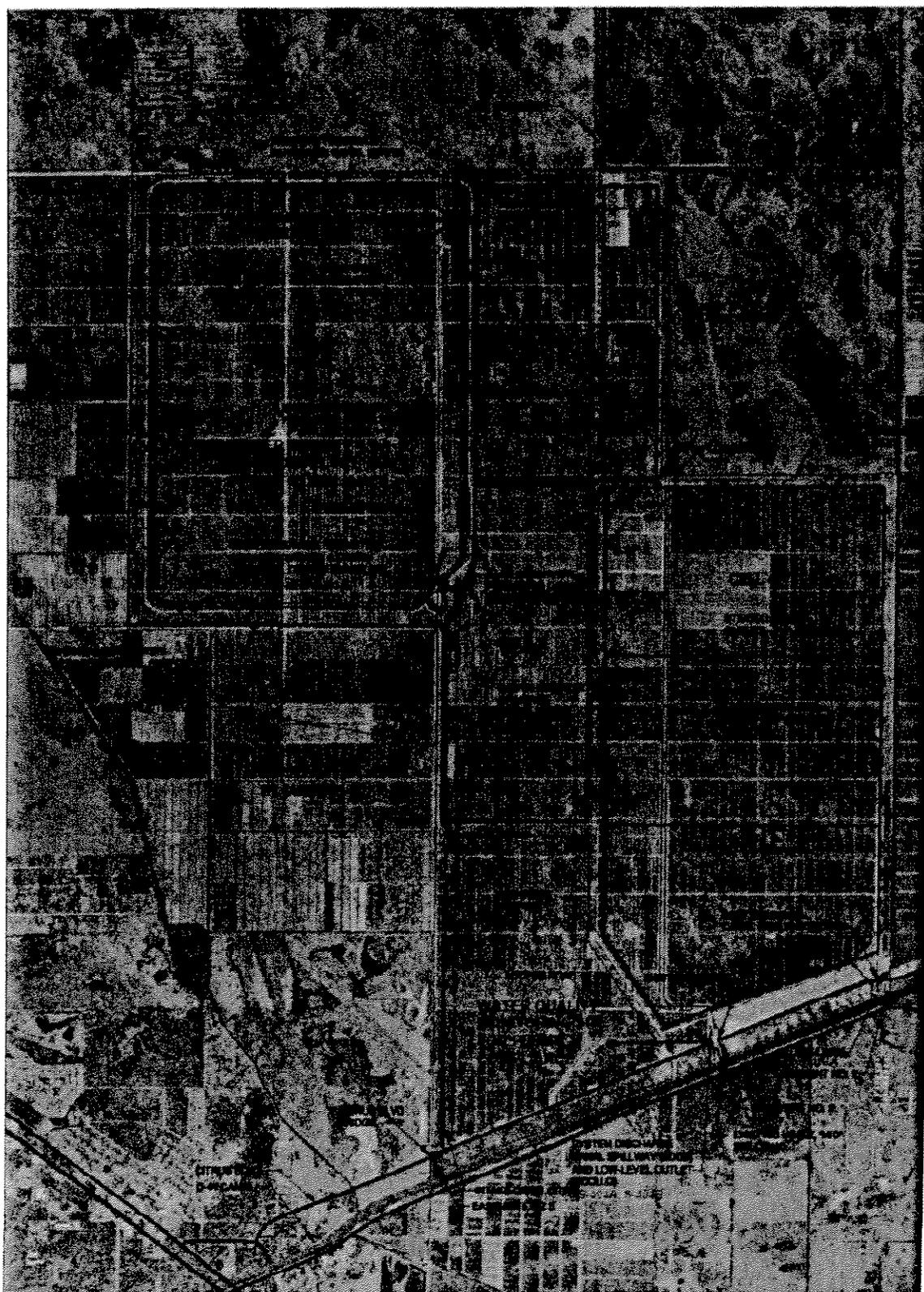


Figure 4.2 C44 Project Overview and Sampling Locations

Table 4.2 Surface Water Quality Monitoring Sites and GPS Coordinates

| Site Name | GPS Latitude** | GPS Longitude** |
|--|----------------|-----------------|
| C44 Project Intake Canal at Citrus Blvd. Bridge (Short term grab samples only) | TBD | TBD |
| Reservoir Pump Station, S-401 (Permit Compliance Point) | TBD | TBD |
| Reservoir Discharge Structure , S-402 | TBD | TBD |
| C44 Project Discharge Structure at C44 Canal, S-404 (Permit Compliance Point) | TBD | TBD |

** The standard positional goal for site coordinates is ± 1 meter. This standard can be obtained with a professional grade DGPS system. The coordinates are relative to NAD83 HARN horizontal datum.

4.3 Access and Authority

The C-44 Reservoir and STA can be accessed from Citrus Boulevard and proposed site access road. Monitoring sites within the project area will be accessed along the system of levees that surround the impoundments. Walkways and platforms will be constructed at various sites to gain access to autosamplers and to collect grab samples. An access ramp will be installed in the Reservoir as well as on STA cell levees so that each STA cell can be accessed by airboat. Details for access to sampling sites will be determined once the sampling locations are finalized. SFWMD keys will be required for access to the C-44 Project sample sites.

5.0 Data Quality Objectives

5.1 Data Uses, Resolutions, and Conclusions

The primary use of water quality data from the C-44 Reservoir/STA Project is to assess the phosphorus and nitrogen load reduction and quality of water delivered to C-44 Canal via Gated Outflow Structure (S-404) after treatment in the STA.

5.2 Data Quality

Data quality refers to the level of uncertainty associated with a particular data point or value. This is assessed by examining the quality of collection and analysis, determining compliance to method and regulatory requirements, determining precision and accuracy of analysis, and any other background information affecting the data. Data not meeting the quality objectives must be qualified using standard FDEP qualifier codes (Ch 62-160, F.A.C.). (See Table 5-2 for Descriptions of Measures of Data Quality and Frequencies).

Table 5.2 Descriptions of Measures of Data Quality and Frequencies

| QC Measure | Description | Frequency |
|---|---|---|
| Instrument Calibration | The process of comparing or adjusting the response of an instrument to a standard level, using calibration solutions or other calibrated instrument. Applies to both laboratory and field instrumentation. | Beginning of each field testing event or lab preparation or analytical batch |
| Initial Calibration Verification (ICV) | The instrument or meter is verified directly following initial calibration by measuring a check standard of known value, as if it were a sample and comparing the measured result to the calibration acceptance criteria. Applies to both laboratory and field instrumentation. | Immediately after each calibration |
| Continuing Calibration Verification (CCV) | The instrument or meter calibration is verified after a period of usage or after testing a batch of samples. This is done by measuring a check standard of known value as if it were a sample and comparing the measured result to the calibration acceptance criteria. Applies to both laboratory and field instrumentation. | minimum of one every 20 samples , or as required by the method |
| Equipment Blank (EB) | Used to assess the effectiveness of equipment decontamination. Analyte-free water prepared on-site during sampling; processed through the entire sampling train and is specific to sampling type and matrix. EBs are preserved and handled in a similar way as routine samples. | Quarterly, one station per quarter |
| Field Cleaned EB (FCEB) | Similar to EB, except a FCEB is used to assess effectiveness of field decontamination. | Minimum of one Each event per sampling type when sampling device is used in multiple sites. |
| Field replicates (RS) | Used to assess field precision (variability). Samples that have been collected at the same event from the same source. Matrix and sampling method-specific. | Quarterly, one station per quarter |

5.3 Parameter and Frequency Rational

The parameter and frequency requirements for the C-44 Reservoir/STA Project are based on the most current accepted level of monitoring needed to determine C-44 Project performance and to track and assess any ecological changes to the system as a result of C-44 Project operations. Monitoring during the operational phase will be used to track the compliance of the C-44 Project in meeting long term nutrient reduction goals, to assess the general performance of the C-44 Project and to ensure the C-44 Project is not

violating any water quality standards outlined for this project. Special considerations were given for the following parameters:

Total Phosphorus

Total phosphorus must be monitored weekly to demonstrate a net reduction in concentration. This reduction occurs when the geometric mean of phosphorus concentrations collected at the outflow structures is less than the mean collected at the inflow structures. Total phosphorus will be collected via grab and automatic sampling methods.

Total Nitrogen

Nitrogen is a limiting nutrient in estuarine and salt water environments and is related to algal growth. Total nitrogen is equal to TKN (Total Kjeldahl Nitrogen) + NOX (Nitrate+Nitrite). Total nitrogen will be calculated from collected data and monitored to demonstrate a net reduction in concentration. This reduction occurs when the geometric mean of nitrogen concentrations collected at the outflow structures is less than the mean collected at the inflow structures. TKN and NOX will be collected via grab and automatic sampling methods.

Because Ammonia (NH₄) is another nitrogen compound that can affect estuarine and salt water environments and is related to algal growth, it will be collected via grab sampling methods.

Mercury, Pesticides and Other Toxicants

Refer to Attachment 1 of this document for details concerning mercury and other toxicants.

5.4 Expected Levels and Concern Triggers

Flow is the trigger for Autosampler Composite Flow Proportional collections. Violations of Class III Water Quality Standards are reported to FDEP. Dissolved Oxygen levels, Phosphorus and Nitrogen levels cited in FDEP Permit are threshold limits which require adaptive modifications if violated.

6.0 Instrumentation

Sample sites will have instrumentation to measure flow and pump activity for autosampler triggers.

6.1 Platforms

Platforms are needed for access to the sampling locations and equipment identified in this plan. Platforms will be built to SFWMD specifications or to meet project specific requirements.

6.2 Autosamplers

ACF (Autosampler Composite Flow Proportional). Autosamplers will be required at the three locations identified in this plan. Autosampler triggers will be set for flow at gated structures and pump operations at the pump station.

6.3 Stage

All sample locations will have stage measurements. Staff gages and stilling wells will be installed at samples sites.

6.4 Flow

All sample locations will have flow measurements.

6.5 Communications

All sample locations will have remote monitoring capability for recorders.

6.6 Weather

Weather will be referenced as ancillary data at the time of grab sample collection. Rainfall will be recorded at a rain gage closest to the project area.

7.0 Monitoring Parameters, Detection Limits, and Completeness Targets

This project and associated monitoring parameters and stations will be registered in LIMS. This process aids in the creation of header sheet templates, quality assurance and determining completeness. Completeness targets, meaning the number of samples successfully collected and analyzed, are set at 95% annually for this project.

Water Quality Monitoring efforts connected with the C-44 Reservoir/STA Project will be conducted under the Quality Assurance System Requirements (QASR) for the Comprehensive Everglades Restoration Plan (CERP). QASR lays out the protocols for data gathering activities for the implementation of CERP. Details of the QASR can be found on the SFWMD web page at:

www.evergladesplan.org/pm/recover/wqt_qasr.cfm

Samples are more specifically collected in accordance with the FDEP Quality Assurance Rule, Chapter 62-160, F.A.C. and the SFWMD Field Sampling Quality Manual. Applicable sections of the manual include surface water grab and autosampler collection methods, decontamination, field test methods and quality control procedures. Refer to SFWMD Field Sampling Quality Manual (FSQM) for specific procedures and methods.

7.1 Surface Water

The primary focus of the monitoring of the C-44 Reservoir/STA Project surface water is to assess the reduction in phosphorus and nitrogen loads and the water quality of the C-44 Reservoir/STA Project discharge. Samples should be representative of the site as a whole, requiring the collector to make some use of professional judgment. For the purposes of sampling, the collection site should be contiguous with the rest of the water body. In general, a water depth of less than 10 cm is not considered to be sufficient to sample. Collection from alligator holes, ruts, or other isolated depression is not suggested.

7.1.1 Grab Samples

Grab samples are collected to provide point measurements of parameters of interest. Samples should be collected using standard techniques, processing, preservation and transport. These procedures may vary slightly depending on the analytical laboratories being used. Consequently, the sample requirements for each lab should be consulted before samples are collected.

7.1.1.1 Parameters

Project parameters, matrices, target methods, reporting limits, precisions, and accuracies are listed in Table 7.1, 7.2 and 7.3.

7.1.1.2 Project Specific Guidelines

Project specific guidelines are being developed and will be added to the monitoring plan when completed.

| Parameter filtered (f) unfiltered (u) | Target Method | Target Detection Limit | Target Precision (% RPD) | Target Accuracy (% Recovery) |
|--|--------------------------|-------------------------------|---------------------------------|-------------------------------------|
| Alkalinity (u) ALKA | SM3120B | 0.2 mg/L | 0-10 | 90-110 |
| Ammonia (f) NH4 | SM4500NH3H | 0.009 mg/L | 0-10 | 90-110 |
| Calcium (f) CA | SM3120B | 0.2 mg/L | 0-10 | 90-110 |
| Copper (f) TOTCU | SM3120B | 1.2 ug/L | 0-10 | 90-110 |
| Magnesium (f) MG | SM3120B | 0.1 mg/L | 0-10 | 90-110 |
| Nitrite + Nitrate-N (f) NOX | SM4500-NO ₃ F | 0.004 mg/L | <10 | 90-110 |
| Sulfate (f) SO4 | EPA 300.0 | 0.1 mg/L | 0-10 | 90-110 |
| Total Kjeldahl Nitrogen (u) TKN | EPA 351.2 ATP | 0.05 mg/L | 0-10 | 90-110 |
| Total Phosphorus (u) TP | SM4500-P F | 0.002 mg/L | <10 | 90-110 |
| Turbidity (u) TURB | SM2130B | 0.1 NTU | 0-5 | 90-110 |

*Matrix is water for all parameters: RPD = Relative Percent Difference: * Digestion Method – SW-3015

7.1.2 In situ measurements

Simultaneous to the collection of water quality grab samples, in-situ physical parameters are measured with a multi-parameter measurement instrument following methods documented in the FSQM. All field measurement data are directly read from the instruments or stored and uploaded directly into a Laboratory Information Management System (LIMS). These measurements typically include pH, specific conductance, dissolved oxygen, temperature, and depth. The data are automatically temperature-compensated for pH, specific conductance, and dissolved oxygen. The cell constant for specific conductance is determined by the manufacturer. The field technician does not perform any calculations on field data. Table 7.2 lists the project parameter/matrix, target methods, detection limits, precisions, and accuracies for in-situ parameters.

| Parameter | Target Method | Units | Target Precision (% RPD) | Target Accuracy |
|-----------------------------|------------------------|--------------|---------------------------------|-------------------------------------|
| Total Depth | meter stick | meters | 0.01m | 0.01m |
| Temperature/Water | SM2550B | °C | <20 | ± 0.5 °C * |
| pH/Water | SM4500H ⁺ B | pH units | <20 | ± 0.2 pH units |
| Dissolved Oxygen/Water | SM4500-O G | mg/L | <20 | ± 0.2 mg/L |
| Specific Conductivity/Water | SM2510B | umhos | <20 | ± 5 % of true value of KCL standard |

* Value is from the FSQM and deviates from the FDEP SOP target accuracy ± 0.2 °C

7.1.3 Autosamplers

For this project, composite water quality samples are collected weekly from flow-proportional autosamples when sufficient flow has been recorded during the week prior. Trigger volumes and flow will be determined for each site. Autosampler discrete bottles are pre-acidified with 1 ml of 50% H₂SO₄ as preservative. The automatic samplers are connected to a DCP or MOSCAD unit that will trigger sample collection when the gates are opened and a headwater/tailwater differential has been met or when flow is detected. The autosamplers are triggered by real time gate and pump readings. Autosampler intakes for this project will be mounted on floating booms to maintain a constant .5 meter intake depth regardless of stage level.

7.1.3.1 Autosampler Parameters

Table 7.3 lists the project parameters, matrices, target methods, detection limits, precisions, and accuracies for the autosampler samples.

| Parameter | Target Method | Target Detection Limit | Target Precision and Accuracy |
|---|--------------------------|------------------------|--|
| Nitrite + Nitrate-N (f) NOX | SM4500-NO ₃ F | 0.004 mg/L | <10 , 90-110 |
| Total Kjeldahl Nitrogen (u) TKN | EPA 351.2 ATP | 0.05 mg/L | 0-10, 90-110 |
| Total Phosphorus (u) TPO4 | SM4500-PF | 0.002 mg/L | <10% RPD (precision); 90-110% (accuracy) |

7.2 Groundwater

No groundwater samples will be collected as part of this Water Quality Monitoring Project.

7.3 Fish

Requirements for the collection of fish tissue are detailed in Attachment 1 of this document.

7.4 Algal Communities

No algal samples will be collected for this project.

7.4.1 Phytoplankton

No Phytoplankton samples will be collected for this project.

7.4.2 Periphyton

No Periphyton samples will be collected for this project.

7.5 Vegetation

No vegetation samples will be collected for this project.

7.6 Macroinvertebrates

No Macroinvertebrates will be collected for this project.

7.7 Porewater

No Porewater samples will be collected for this project.

7.8 Upper Trophic Level Biota

No upper trophic level biota including amphibians, reptiles, birds, and mammals will be collected for this project

8.0 Monitoring Frequencies by Site and Parameter

The sampling schedules for the referenced monitoring sites and parameters are depicted in Table 8.0.

See Attachment 1 for monitoring details concerning mercury and other toxicants.

| Table 8.0. Monitoring parameters and frequencies. | | | | |
|---|---------------|--------------------------|------------------|---------------------------------|
| Site | Matrix | Collection Method | Frequency | Parameters |
| 1) S-401 2) S-402 3) S-404 4) C44 Intake Canal (Short Term Only) | Surface Water | In situ | Weekly | DO, PH, TEMP, SCOND |
| 1) S-401 2) S-402 3) S-404 4) C44 Intake Canal (Short Term Only) | Surface Water | Grab | Bi-Weekly | ALKA, NH4, NOX, TKN, TPO4, TURB |
| | | Grab | Quarterly | CA, MG, TOTCU, SO4 |
| S-401 S-402 S-404 | Surface Water | ACF/Grab | Weekly | TPO4, NOX, TKN |

9.0 Quality Control and Custody

9.1 Ethics and Data Integrity

Every person performing field sampling must commit to following project specific requirements, South SFWMD field Standard Operating Procedures (SOPs), the requirements in the FSQM, and other instructions as issued, to ensure that samples collected are of acceptable quality and legally defensible. For further information see the District's FSQM Ethics Policy.

9.2 Quality Control Samples

Appropriate Quality Control (QC) samples will be collected during each sample event adhering to the SFWMD FSQM. Quality control samples should comply with section 5.8 of the QASR manual, FDEP requirements and those developed in DQO process.

9.3 Documentation

Field documentation shall be sufficient and clear to allow history tracking for any sample collected or any measurement performed. Accuracy, consistency and legibility are key factors that will enhance the utilization of the field data. For all documents the following standards should apply:

- Print text, do not use cursive
- Dates must be recorded as MM/DD/YYYY
- Time must be recorded in 24 hour format using local time
- Logs and notes must be recorded on site and at the time of collection
- Entries are to be made electronically or in waterproof ink.
- Samplers must be registered in the appropriate database.

For more details see the District FSQM and FDEP SOP FD 1000.

9.3.1 Header Sheet

The District header sheet (also known as prelogin report or chemistry field data log or contract laboratory chain of custody form) shall be used to document sample receipt and shall accompany all samples submitted to the District or external laboratories. It may be in hard copy (paper) or electronic format. This sheet shall be legible, accurate and complete. The header sheet is the primary source for tracking data required to uniquely identify samples for the analytical laboratory and database. This document shall be printed out and signed by the collector before it is relinquished to the laboratory.

9.3.2 Field Notes

Relevant field observations, as required by FDEP SOPs, can be in hard copy (waterproof paper) or electronic format. Field notes shall be stored in a bound notebook that is project specific. Please refer to the SFWMD FSQM for more detail. Field service contractors shall provide copies of all field notes to the District within one week of sample collection.

9.3.3 Calibration Sheet

Field multiparameter probe calibrations shall be recorded as required on a supplemental page of the header sheet in hard copy or electronic format. Please refer to the SFWMD FSQM for more detail.

9.3.4 Field Data Validation and Responsibilities

All staff associated with the project are responsible for ensuring the accuracy and completeness of data.

9.3.4.1 Sampling Team

The sample team shall review and validate the sampling data collected during the course of the sampling event. This includes header sheets, field notes, and calibration sheets. Signature by the samplers indicate the data have been reviewed and validated.

9.3.4.2 Laboratory

In the process of entering field data into the database, the laboratory shall review analytical data for completeness and accuracy and provide a certification statement.

Incomplete or inaccurate data may result in the inability to enter data and require the flagging of affected data.

9.3.4.3 Field Project Manager

The field project manager shall be responsible for reviewing header sheets, field notes, and calibration sheets as well as the entry of these items into the database. In addition, field project managers are responsible for ensuring that field notes are available electronically for end users.

9.3.4.4 Quality Assurance

Quality Assurance staff shall be responsible for performing annual laboratory and field audits. Audit reports will be prepared, distributed, and retained by the division conducting the audit. Audits will be performed to evaluate adherence to regulatory requirements for field and laboratory activities.

9.3.5 Corrections

If sample collectors, the laboratory, or the project manager discover errors in any of the field notes, header sheets, or calibration sheets, corrections may be required. Changes are made by striking through the error, writing the correction, initialing and dating the change. Corrective actions shall include a detailed explanation of the error and may include data flagging, system audits, or reworking or recollection of samples.

9.3.5.1 Laboratory Data Verification and Validation

Laboratory staff and supervisors are responsible for laboratory data verification. The laboratory's quality control officer or other designated personnel validates completed data sets following a standardized procedure. This process looks at sample records, handling, sample preparation, and analytical quality control results. Any data not meeting criteria are qualified in accordance with Ch 62-160, F.A.C.

9.4 Sample Submission

Samples shall be transported on wet ice at 4° Celsius to the laboratory for analysis within required holding times. Samples shall be submitted as described in the FDEP SOPs. Laboratory staff shall "time stamp" the sample header (Chain of Custody) sheet and verify that all samples arrive with the required preservation (e.g. cooling and acidification) and signatures.

9.5 Field Audits

Audits are an essential part of the quality assurance program and are conducted to measure compliance with the requirements included in this monitoring plan and the FSQM.

9.5.1 Frequency of Audits

At a minimum field audits will be performed annually by the designated auditor for the project. Field audits may be done with or without notice, or on a more frequent basis, depending on perceived need. In addition, audits will be performed by the designated project laboratory auditor to evaluate adherence to project and procedural requirements for laboratory activities.

9.5.2 Audit Reports, Corrective Actions and Responses

Findings of an audit and corresponding corrective actions shall be summarized in a formal audit report and sent to the field project manager, staff supervisor, and/or external contractors. The District QA Administrator is responsible for evaluating the accuracy of the audit findings, and the field project manager and staff supervisor are responsible for responding to the audit, and discussing deficiencies and corrective actions with specific staff. A written response shall be submitted within one month of the audit report. Data gathered during a period when significant deficiencies were noted may be flagged accordingly.

10.0 Data and Records Management

After the data validation process, all data are archived in DBHYDRO and maintained so that end users can retrieve and review all information relative to a sampling event. Field notes are maintained on an internal server either by scanning actual field note pages (PDF) or by uploading narratives from field computers (CSV or comma-delineated). All analytical data and field conditions are sent to a database designated by the sponsors for long-term storage and retrieval. The sampling agency or contractor maintains records of field notes and copies of all records relative to the chain of custody and analytical data. It is the responsibility of each agency or contractor to maintain both current and historical method and operating procedures so that at any given time the conditions that were applied to a sampling event can be evaluated. For any contracted work, original documents are to be provided to the District by the project completion date. Original laboratory reports are to be retained by the laboratory and original field records by the District's FOC for a minimum of five years past the ending date of the project.

11.0 Project Reporting

Water quality data collected for the C44 Reservoir/STA will be included in appropriate sections of the comprehensive South Florida Environmental Report, developed by the District and submitted to the legislature and the FDEP on an annual basis, due March 1st.

12.0 Project Contacts and Responsibilities

12.1 C44 Reservoir/STA Project Manager

Susan Ray
sray@sfwmd.gov
(561) 242-5520 x4019
Lead Project Manager
South Florida Water Management District
Acceler8 Office
2301 Centerpark West Drive
West Palm Beach, FL 33406

12.2 Field Project Manager

The field project manager for this project is W. Patrick Davis. The field project manager is responsible for maintaining this document and making sure that any changes are well documented and communicated to the field staff and other parties as necessary.

W. Patrick Davis
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Okeechobee Water Quality Field Section
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12.3 Field Lead

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12.4 Analytical Lead/Contract Manager

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12.5 Quality Assurance Lead

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12.6 Reporting Lead

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West Palm Beach, FL 33406

Water Quality Monitoring Plan

For

C-44 Reservoir/STA Project

W. Patrick Davis, Field Project Manager **Date**

Susan Ray, Lead Project Manager **Date**

Linda Crean, Water Quality Monitoring Division Director **Date**

Dave Struve Water Quality Analysis Division Director **Date**

Rob Startzman, Hydrology and Hydraulics Division Director **Date**

Julianne LaRock, Resource Assessment Division Director **Date**

**Linda Lindstrom, Environmental Monitoring & Assessment
Department Director** **Date**

ATTACHMENT 1: Monitoring Plan for Mercury and Other Toxicants

1.0 Initial Start-up Monitoring Prior to Discharge

The C-44 Reservoir/STA Project will be permitted under the Florida Department of Environmental Protection (FDEP) Comprehensive Everglades Restoration Plan Regulation Act (CERPRA) 1502 permit. The District shall initiate start-up monitoring prior to discharge as follows:

1.1 Mosquitofish

When construction of the C-44 Reservoir/STA is complete, the District shall notify the Department and after issuance of the permit, within one month of filling the STA, collect 200-500 mosquitofish from multiple locations within each of the following sites and physically composite them into one (spatially-averaged) sample per site (note, a single aliquot should be analyzed per composite) (Table A1).

Reservoir, 3400 acres- Within each 1000 acres of the reservoir (3 sites total)

STA Cells - From each independently operated treatment cell of the STA (6 sites total).

Downstream-A single site located in the receiving water (C-44 Canal) downstream from the project. This downstream site is located in a canal with flow velocities that should allow for a resident population. The data for the downstream site will serve as a baseline for any future evaluations of potential impacts to the receiving waters. (1 site)

A total of 10 mosquitofish composite samples in the C-44 Reservoir/STA Project (see Table A1) will be analyzed for THg and other toxicants listed on Table A4.

The District shall provide the Department with the results of the first collection of mosquitofish as well as the appropriate action levels for comparison (90% upper confidence level of the basin-wide average or the 75th percentile concentration for the period of record for all basins). If tissue-concentrations from each 1000 acres of the reservoir (3 sites total) and within each independently operated treatment cell of the STA and the are below the 90% upper confidence level of the basin-wide average or below the 75th percentile concentration for the period of record for all basins (if basin-specific data are lacking), and after concurrence from the Department, the District may then initiate flow-through operation and routine monitoring for the STA cells (for details on routine monitoring, see below).

However, if Hg concentration in any of the mosquitofish composites from each 1000 acres of the reservoir (3 sites total) or from within the STA exceeds one of the above referenced action levels, the District shall, within 14 days of receiving quality assured data from the laboratory, collect a sample(s) to confirm the exceedance(s). In addition, the District shall consult with the Department to determine the most appropriate course of action and obtain authorization to initiate flow-through operation. At a minimum, the course of action will include implementation of Tier 2 Expanded Monitoring and Risk Assessment by the District during initial flow-through operations (e.g. collection of monthly mosquitofish from each 1000 acres of the reservoir (3 sites

total), collection within the STA and collection at one station downstream of the STA at a minimum), additional details on expanded monitoring are provided below and in CGM 042.00 and subsequent revisions (hereafter referred to in this document as the "CGM"). The recommended course of action may also include additional measures as determined to be appropriate. When results of expanded monitoring demonstrate concentrations from each 1000 acres of the reservoir (3 sites total) and in each STA cell has decreased to acceptable levels (below action levels referenced above) and the concentrations at the downstream site are not significantly elevated above baseline levels, the District shall notify the Department and request that the monitoring revert back to Tier 1 routine monitoring.

1.2 Sediment

Prior to discharge, sediment cores will be collected from each 1000 acres of the reservoir (3 sites total) and from five representative locations within each STA cell (Table A2). In addition, sediment cores will be collected at one downstream site in the receiving water (C-44 Canal). Efforts will be made to co-locate sediment sites with mosquitofish collection sites.

At each location or site, a minimum of three cores (number of cores in excess of three will be determined by amount of sediment required for analysis) from the 0-to-4 cm horizon are to be collected and composited as a single sediment sample.

To serve as baseline for future comparison, if future conditions warrant follow-up sampling of sediments (i.e., if Tier 2 were triggered), sediment samples will be analyzed for THg, MeHg, TOTCU, moisture content, total organic carbon (TOC), total sulfur (TS), and total iron (TFe). To allow for possible future analysis, remaining material from each sediment sample will be archived separately for the maximum hold time allowable for the specified parameter list.

1.3 Selection of Toxicants Other Than Mercury

The Phase I and II Environmental Site Assessments (ESA) were performed in December 2004. The Phase I/II ESA were reviewed for data regarding the C-44 Project. Based on this review, the need for monitoring toxicants other than mercury species was determined with input from District staff for organochlorine pesticides and trace metals (Table A4).

The District shall provide the Department with the results of these analyses as well as the appropriate action levels for comparison. If the following criteria are met for the reservoir and the flow way or cell, the District may initiate flow-through operation and routine monitoring for the flow way or cell (for details on routine monitoring, see below).

- If ambient mosquitofish do not demonstrate excessive bioaccumulation that exceeds a critical tissue benchmark used to establish SQAGs or in site-specific risk assessments;
- If concentrations in sediments do not exceed an effects-based, numerical sediment quality assessment guideline (SQAGs for sediment dwelling organisms, MacDonald Environmental Sciences Ltd. and USGS, 2003);
- If concentrations in sediments do not exceed an established bio-accumulative based SQAG, if available (MacDonald Environmental Sciences Ltd. and USGS, 2003), a action level reported in the ESA or a level that was determined to be critical in a site-specific risk assessment;
- If water-column concentrations do not exceeded a WQS in Chapter 62-302, F.A.C.

However, if one of the above referenced action levels is exceeded, the District shall, within 14 days of receiving quality assured data from the laboratory, collect a sample(s) to confirm the exceedance(s). In addition, the District shall consult with the Department to determine the most appropriate course of action and obtain authorization to initiate flow-through operation from that cell or flow way. At a minimum, the course of action will include implementation of Tier 2 Expanded Monitoring and Risk Assessment by the District during initial flow-through operations. The recommended course of action may also include additional measures as determined to be appropriate. When results of expanded monitoring demonstrate concentrations in each flow way has decreased to acceptable levels (below action levels referenced above), and the concentrations at the downstream site are not significantly elevated above baseline levels, the District shall notify the Department and request that the monitoring revert back to Tier 1 routine monitoring.

2.0 Monitoring During Stabilization Period

The District shall initiate monitoring after initial discharge and during the stabilization period as follows:

2.1 Tier 1: Routine Monitoring During Stabilization Period

2.1.1. Water

On a quarterly basis, an unfiltered surface water sample ($n = 1$) shall be collected in accordance with Chapter 62-160, F.A.C., at the inflow to the Reservoir, and the outflow from the STA cells at the System Discharge Structure (S-404) (Table A3). These samples will be analyzed for THg, MeHg, and sulfate (the latter not to be duplicative if listed as a parameter under routine monitoring described elsewhere in the general monitoring plan).

Based on the discussion above regarding toxicants other than mercury, a surface water sample will be collected quarterly at the inflows and the outflows and analyzed for the parameters specified in Table A4.

In addition, flow will be monitored at the inflow and outflow to allow for load estimation to and from the project (it should be recognized that quarterly sampling would allow for only rough estimation of loads).

This data set will be assessed to determine if outflow concentrations exceed WQS, and whether annual outflow loads of analytes are significantly greater than inflow loads, including atmospheric loading; load estimates will include confidence intervals that describe uncertainty in measures of flow and concentration (e.g., field and analytical precision) and resulting from interpolation (note: assessment protocol to be negotiated with permitting authority). Failure to satisfy these assessment measures would trigger Tier 2 Expanded Monitoring and Risk Assessment (see below).

Because of differences in the anticipated time frames under which sedimentary release are thought to occur (i.e., relative to MeHg that may have time lag associated with changes in biogeochemistry and microbial methylation driven by water quality, especially in sandy soils), monitoring for other toxicants would cease after one year if action levels are not exceeded within

that time.

2.1.2. Fish Tissues

Samples of fish from multiple trophic levels will be collected from three sites in the reservoir, each STA cell and from a single downstream site in the receiving water of the project (Table A1). Specifically, mosquitofish collections will be made in a similar fashion and continue on a quarterly basis from all sites that were sampled prior to discharge (see above; for rationale for the selection of this and other species listed below, see the CGM). On an annual basis, bluegill (n should be greater than or equal to 5) should be collected and individually analyzed as whole-fish. For the reasons discussed in the CGM, collections should target bluegill ranging in size from 102 to 178 mm (i.e., 4 to 7 inches); however, other leptomids (first priority being given to spotted sunfish) or sizes are to be collected if efforts fail to locate targeted fish. These samples will be analyzed for THg and other toxicants listed in Table 4.0 under tissues.

Assessment

To detect and minimize any adverse effects as early as possible (and to provide a basis for identifying adaptive management options, if deemed necessary), the results of this monitoring will be assessed based on the criteria and time table described under Phase 2- Tier 1 in the CGM. Monitoring results will be provided to the Department in accordance with the reporting requirements identified in Section 4.

2.2 Tier 2: Expanded Monitoring and Risk Assessment During Stabilization Period

In accordance with the CGM, if Tier 1 data exceed the action levels identified under Phase 2 – Tier 2 Expanded Monitoring and Risk Assessment, the District shall notify the Department and after obtaining the Department's concurrence, shall expand monitoring and undertake all necessary steps consistent with the CGM.

3.0 Operational Monitoring Following the Stabilization Period

The monitoring plan and associated data will be re-evaluated on a regular basis beginning after year-1 for other toxicants and after year-3 for mercury species to determine if criteria specified in the CGM are being satisfied. Based on that assessment, and with the concurrency of the Department, monitoring and assessment efforts may be reduced (as identified in Phase 3-Tier 1 Operational monitoring of the CGM) or eliminated all together at the project level to be subsumed by regional monitoring (as identified in Phase 3-Tier 3 Operational monitoring). However, if monitoring reveals anomalous conditions as described under Phase 3-Tier 2, the District shall expand monitoring and undertake all necessary steps under Phase 3 – Tier 2 Expanded Monitoring and Risk Assessment.

4.0 Reporting Requirements

The permittee shall notify the Department immediately if monitoring data indicate that any of the action levels are exceeded. In addition, the permittee shall submit to the Department, as part of the annual South Florida Environmental Report, the results of the monitoring as defined above,

including the following:

- Comparison of inflow and discharge concentrations with state water quality criteria;
- Comparison of inflow and outflow loads and concentrations for total mercury, methyl mercury, and other toxicants; and
- Comparison of data with appropriate action levels.

**Table A1
Start Up and Operational Fish Monitoring**

| Location | Period of Collection | Frequency | Quantity | Collection Method | Parameter |
|---|-----------------------------|---|--|--------------------------|---------------------------------------|
| One composite sample from multiple locations in each 1000 acres in reservoir (3), each STA Cell (6) and one downstream location. (10 samples total) | Start Up | Within One Month of Initial Flooding, Then Quarterly | 200-500 Mosquitofish for each composite sample | Net | THg, Organochlorine Pesticides, TOTCU |
| One composite sample from multiple locations in each 1000 acres in reservoir (3), each STA Cell (6) and one downstream location. (10 samples total) | Operational | Quarterly for one year if CGM criteria met | 200-500 Mosquitofish for each composite sample | Net | Organochlorine Pesticides, TOTCU |
| One composite sample from multiple locations in each 1000 acres in reservoir (3), each STA Cell (6) and one downstream location. (10 samples total) | Operational | Quarterly for three years if CGM criteria met | 200-500 Mosquitofish for each composite sample | Net | THg, |
| One composite sample from multiple locations in each 1000 acres in reservoir (3), each STA Cell (6) and one downstream location. (10 samples total) | Operational | Annual for three years if CGM criteria met | 5 Bluegill, or 5 Sunfish | Shocking | THg, Organochlorine Pesticides, TOTCU |
| One composite sample from a single STA Cell and one downstream location. (2 samples total) | Operational | Annual after one year if additional CGM criteria met (Phase 2-Tier 1) | 5 Bluegill, or 5 Sunfish | Shocking | THg, |

Table A2
Sediment Monitoring for Hg and Other Toxicants

| Location | Collection Method | Matrix | Frequency | Parameter |
|---|--------------------------|---------------|--|--|
| <p>From each 1000 acres of the reservoir (3 sites total)</p> <p>Five Interior Sites- (Three Cores Each) Within Each STA Cell, Composited to One Single Sample per Cell</p> <p>One Downstream Site (Three Cores)</p> | Core | Sediment | Once at Start Up (if CGM criteria met) | THg, MeHg, Moisture Content, Total Sulphur (TS), Total Iron, (TFe), Total Organic Carbon (TOC) Organochlorine Pesticide Compounds, TOTCU |

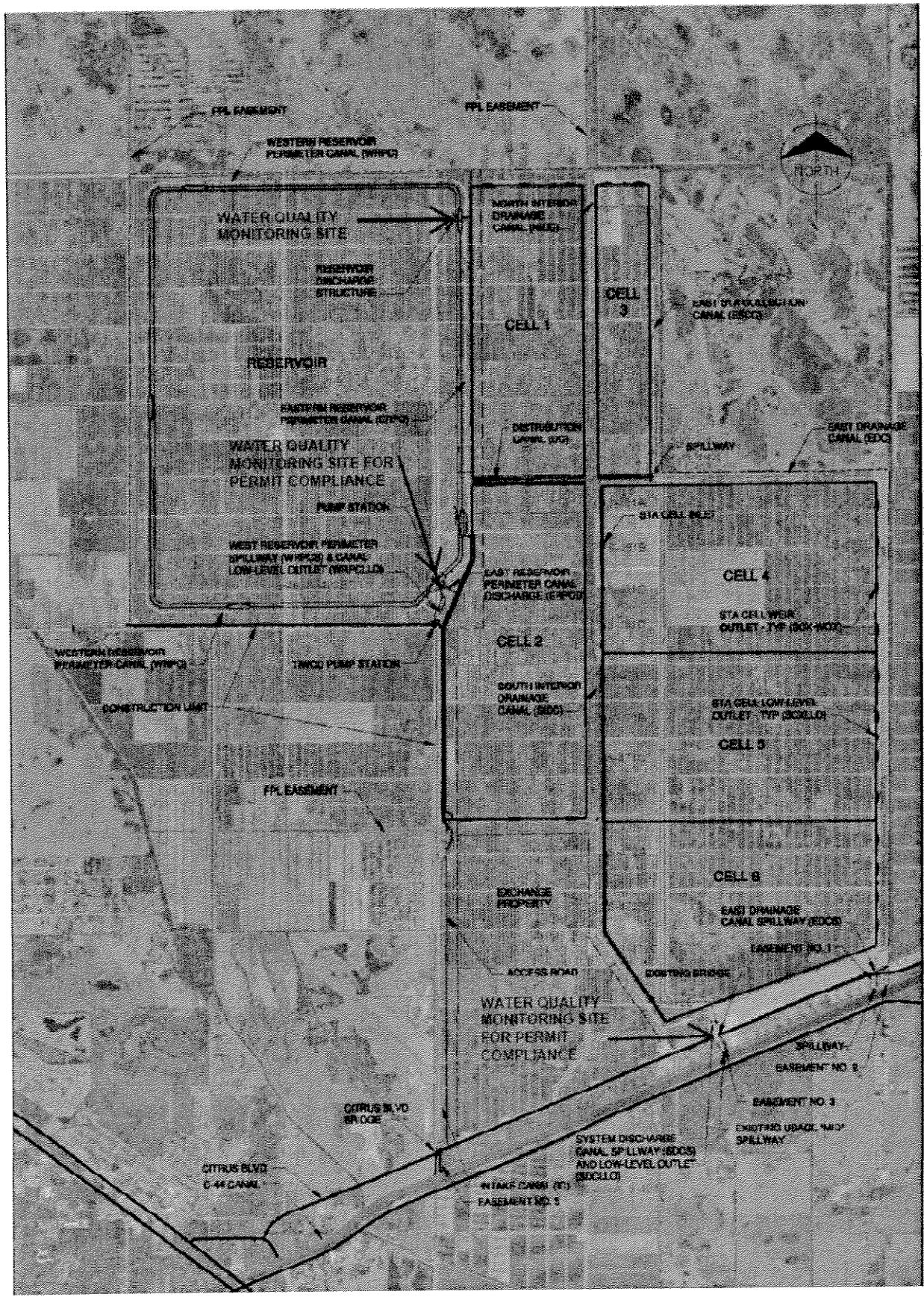
Table A3
Water Column Monitoring

| Location | Collection Method | Matrix | Frequency | Parameter |
|--|--------------------------|---------------|---|--|
| <p>1) C44 Project Inflow</p> <p>2) C44 Project Outflow</p> | Grab | Water | Quarterly for three years if CGM criteria met | THg, MeHg (Refer to CGM 0042.00 for detail on Hg monitoring) |
| <p>1) C44 Project Inflow</p> <p>2) C44 Project Outflow</p> | Grab | Water | Quarterly for one year if CGM criteria met | Organochlorine Pesticide Compounds, TOTCU |

Table A4
Pesticide and other toxicant parameters for water, sediment and fish

| Parameter | Surface Water | Sediment | Fish |
|--|---------------|----------|----------------|
| organochlorine pesticides | | | |
| <i>aldrin</i> | X | X | X |
| <i>alpha BHC</i> | X | X | X |
| <i>beta BHC</i> | X | X | X |
| <i>delta BHC</i> | X | X | X |
| <i>gamma BHC (lindane)</i> | X | X | X |
| <i>carbophenothion (trithion)</i> | X | X | - |
| <i>chlordan</i> | X | X | - |
| <i>cis-chlordane</i> | - | - | X |
| <i>trans-chlordane</i> | - | - | X |
| <i>chlorothalonil</i> | X | X | - |
| <i>cypermethrin</i> | X | - | - |
| <i>o,p'-DDD</i> | - | - | X |
| <i>p,p'-DDD</i> | X | X | X |
| <i>o,p'-DDE</i> | - | - | X |
| <i>p,p'-DDE</i> | X | X | X |
| <i>o,p'-DDT</i> | - | - | X |
| <i>p,p'-DDT</i> | X | X | X |
| <i>dicofol (kelthane)</i> | X | X | - |
| <i>dieldrin</i> | X | X | X |
| <i>alpha endosulfan</i> | X | X | X |
| <i>beta endosulfan</i> | X | X | X |
| <i>endosulfan sulfate</i> | X | X | X |
| <i>endrin</i> | X | X | X |
| <i>endrin aldehyde</i> | X | X | - |
| <i>heptachlor</i> | X | X | X |
| <i>heptachlor epoxide</i> | X | X | X |
| <i>methoxychlor</i> | X | X | X |
| <i>mirex</i> | X | X | X |
| <i>permethrin</i> | X | - | - |
| <i>toxaphene</i> | X | X | X |
| <i>PCB-1016</i> | X | X | - |
| <i>PCB-1221</i> | X | X | - |
| <i>PCB-1232</i> | X | X | - |
| <i>PCB-1242</i> | X | X | - |
| <i>PCB-1248</i> | X | X | - |
| <i>PCB-1254</i> | X | X | - |
| <i>PCB-1260</i> | X | X | - |
| <i>trifluralin</i> | X | X | - |
| <i>cis-nonachlor</i> | - | - | X |
| <i>trans-nonachlor</i> | - | - | X |
| metals | | | |
| <i>copper</i> | X | X | X |
| | | | - not analyzed |
| <i>Compounds in red italics have a Surface Water Quality Class I or III criterion (FAC 62-302)</i> | | | |

C44 Reservoir and STA Project Monitoring Plan
 December 20, 2006



Attachment 8

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

- (1) An eastern indigo snake protection/education plan will be developed by the applicant for all construction personnel to follow. The plan will be provided to the Service for review and approval at least 30 days prior to any clearing activities. The education materials for the plan may consist of a combination of posters, videos, pamphlets, and lectures (*e.g.*, an observer trained to identify eastern indigo snakes could use the protection/education plan to instruct construction personnel before and clearing activities occur). Informational signs should be posted throughout the construction site and contain the following:
 - a. a description of the eastern indigo snake, its habits, and protection under Federal law;
 - b. instructions not to injure, harm, harass or kill this species;
 - c. directions to cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site on its own before resuming activities; and
 - d. telephone numbers of pertinent agencies to be contacted if a dead eastern indigo snake is found. The dead specimen should be thoroughly soaked in water, then frozen.
- (2) Only an individual who has been authorized either by a section 10(a)(1)(A) permit issued by the Service, or authorized by the FWC for such activities, is permitted to come into contact with or relocate an eastern indigo snake;
- (3) If necessary, eastern indigo snakes will be held in captivity only long enough to transport them to the release site; at no time will 2 snakes be kept in the same container during transportation; and
- (4) An eastern indigo snake monitoring report must be submitted to the Service's South Florida Ecological Services Office, Vero Beach, Florida, within 60 days of clearing completion. The report should be submitted when any eastern indigo snakes are observed or relocated. The report should contain the following information:
 - a. results of the tortoise burrow and field surveys;
 - b. any sightings of eastern indigo snakes;
 - c. summaries of any relocation activities for the Project (*e.g.*, locations of where and when they were found and relocated); and
 - d. other obligations required by the FWC, as stipulated in their permit.

Attachment 9
STANDARD MANATEE CONSTRUCTION CONDITIONS
June 2001

The permittee shall comply with the following manatee protection construction conditions:

- a. The permittee shall instruct all personnel associated with the project of the potential presence of manatees and the need to avoid collisions with manatees. All construction personnel are responsible for observing water-related activities for the presence of manatee(s).
- b. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act of 1972, The Endangered Species Act of 1973, and the Florida Manatee Sanctuary Act.
- c. Siltation barriers shall be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exist from essential habitat.
- d. All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.
- e. If manatee(s) are seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure protection of the manatee. These precautions shall include the operation of all moving equipment no closer than 50 feet of a manatee. Operation of any equipment closer than 50 feet to a manatee shall necessitate immediate shutdown of that equipment. Activities will not resume until the manatee(s) has departed the project area of its own volition.
- f. Any collision with and/or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service in Jacksonville (1-904-232-2580) for north Florida or Vero Beach (1-561-562-3909) in south Florida.
- g. Temporary signs concerning manatees shall be posted prior to and during all construction/dredging activities. All signs are to be removed by the permittee upon completion of the project. A sign measuring at least 3 ft. by 4 ft. which reads *Caution: Manatee Area* will be posted in a location prominently visible to water related construction crews. A second sign should be posted if vessels are associated with the construction, and should be placed visible to the vessel operator. The second sign should be at least 8 1/2" by 11" which reads *Caution: Manatee Habitat. Idle speed is required if operating a vessel in the construction area. All equipment must be shutdown if a manatee comes within 50 feet of operation. Any collision with and/or injury to a manatee shall be reported immediately to the FWC Hotline at 1-888-404-FWCC. The U.S. Fish and Wildlife Service should also be contacted in Jacksonville (1-904-232-2580) for north Florida or in Vero Beach (1-561-562-3909) for south Florida.*

CAUTION

MANATEE HABITAT

IDLE SPEED is required if operating a vessel

in the construction area.

All Equipment must be SHUT DOWN if a manatee comes within 50 feet of operation.

Any collision with and/or injury to a manatee shall be reported immediately

to the **FWC** at:

1-888-404-FWCC

(1-888-404-3922)

Attachment 10

GUIDELINES FOR CULVERTS LOCATED IN MANATEE-ACCESSIBLE CERP PROJECTS

The following guidelines are developed to prevent manatee entrapment within culverts and to exclude manatees from unsuitable habitat. The guidance below applies only to free-flowing culverts. Structures with water control features (e.g., gates, flaps, etc.) and culverts that exceed the specifications below will require FWC and FWS review.

NEW AND EXISTING CULVERTS

1. Size requirements: All culverts 8 inches to 8 feet in diameter must be grated to prevent manatee entrapment. Grates must be spaced a maximum of 8 inches apart to effectively prevent manatee access. Diagonal, horizontal or vertical grates may be installed. Grates must be a permanent fixture and not part of a water control structure.

Culverts less than 8 inches in diameter are exempt from this requirement, whereas, culverts greater than 8 inches may be subject to a case-by-case review, if necessary.

2. Length requirements: Based on documented manatee movement by FWC, the maximum recommended culvert length is 200 feet. Proposed culverts greater than 200 feet in length require consultation with the FWS and the FWC.
3. Case-by-Case Review: In consultation with FWS and FWC, all culverts may be reviewed. The decision to exclude manatees will be based on culvert length, water level, available habitat and other risk factors. If a decision is made to exclude manatees from access to culverts, the culvert should be grated, as described above.

The benefit of access to important habitat (forage resources, calving sites, freshwater, travel corridors, warm-water refugia, refuge from watercraft or other forms of harassment) will be weighed against the potential risk of injury or death to manatees if the culvert were to remain accessible.

4. Additional Guidance:
 - Box culverts are preferred by FWS and FWC over round culverts. Bridges are the most preferred by FWS and FWC.

Manatees can become stranded in culverts during periods of low tide. Therefore, when planning for new culverts in tidal waters, a minimum 3-foot depth of water in the culvert at low tide stage is recommended.

Attachment 11
Acceler8 System-wide Mitigation Ledger

Attachment 12
Acceler8 System-wide Mitigation Monitoring Plan

ACCELER8 SYSTEM-WIDE MITIGATION MONITORING PLAN

Updated June 2007

As a result of construction and operation of the Acceler8 projects, adverse impacts to jurisdictional Waters of the United States will result in functional wetland losses based on the Uniform Mitigation Assessment Method (UMAM), Chapter 62-345 F.A.C. This section describes the system-wide Acceler8 projects mitigation monitoring plan which will compensate for the unavoidable impacts to Waters of the United States.

Mitigation monitoring for the SFWMD's Acceler8 projects includes system-level monitoring to assess the system-wide environmental benefits of the Acceler8 projects and project level monitoring where identified by the project teams. Although it is recognized that certain project features will provide some incidental ecological benefits, monitoring of these ecological features is not required since such benefits will not be used to offset compensatory mitigation requirements. The mitigation monitoring plan incorporates portions of the REStoration COordination VERification (RECOVER) programs Monitoring and Assessment Plan (MAP) performance measures and restoration targets. A review of the existing monitoring efforts proposed by the RECOVER team concludes the Acceler8 system-wide benefits can be assessed using existing monitoring programs as described in the RECOVER Monitoring and Assessment Plan (MAP), Part 1 (RECOVER, 2004).

As the Acceler8 program progresses, changes and updates to the RECOVER performance measures will be made as each project is authorized for implementation and construction and reflected in this system-wide plan. Included in this revision of the system-wide monitoring plan, is monitoring associated with the following permitted Acceler8 projects:

- Everglades Agricultural Area A-1 Reservoir authorized by a Department of the Army Permit SAJ-2005-53(IP-TKW) issued on 11 July 2006
- C-44 Reservoir and Stormwater Treatment Area authorized by DA Permit SAJ-2005-6166(IP-TKW) issued on September 24, 2007

1.1 ACCELER8 SYSTEM-WIDE ENVIRONMENTAL BENEFITS

The Acceler8 projects will provide system-wide benefits within the St. Lucie Estuary, the Caloosahatchee Estuary, Lake Okeechobee, and the Greater Everglades (Water Conservation Area's 1, 2 & 3). These system-wide benefits directly correspond to the performance measures developed by RECOVER for CERP evaluation. These performance measures, which will be used to determine the success of the Acceler8 projects, are described in this section and in Table 0. For information on the methodologies, sampling sites, etc, refer to the Comprehensive Everglades Restoration Plan System-wide Performance Measures March 2006, and the Monitoring and Assessment Plan, Part 1, 2004.

1.1.1 Lake Okeechobee

Reductions in extreme lake stages, progressing towards a desirable stage envelope, and improvements to water quality, will benefit the flora and fauna communities. As a result of these improvements, enhanced ecological conditions conducive to the restoration of littoral and near shore zone habitats will affect submerged plant communities, benthic macroinvertebrates and provide improvements to the taxonomic structure of zooplankton. Table 0 outlines a representative set of RECOVER performance measures designed to monitor the following components:

- Stage levels: Preferred stage envelope, extreme high and low stage events
- Submerged aquatic vegetation monitoring and mapping
- Benthic macroinvertebrates
- Fish condition and population structure
- Total phosphorus monitoring
- Total phosphorus load calculated using standard SFWMD nutrient load program from data at inflow structures
- TP:TN ratios based on water quality monitoring
- Chlorophyll a samples collected during water quality

1.1.2 Northern Estuaries

The Northern Estuaries are composed of the Caloosahatchee Estuary, located on the Gulf Coast, the St. Lucie and Loxahatchee Estuaries and the Indian River and Lake Worth Lagoons, located on the Atlantic Coast. All performance measures listed apply in part or in whole to each of these listed areas and are affected by CERP projects but may not necessarily be affected by Acceler8 projects.

Acceler8 projects are expected to improve conditions in the St. Lucie and Caloosahatchee estuaries. Improvements to salinity patterns by attenuating freshwater flows will reduce the frequency the estuaries experience high and low salinity extremes. Reductions in the occurrence of salinity extremes will enhance mesohaline and oligohaline conditions in near-shore estuarine environments. As a result of improved salinity regimes and water quality, conditions will improve that are conducive to enhanced productivity and decreased algal blooms. In addition, improvements are anticipated to the structural and spatial extent of submerged plant communities and the recruitment and survivorship of the eastern oyster.

Table 0 outlines a representative set of RECOVER performance measures designed to monitor the following components:

- Salinity monitoring network
 - Includes monitoring flows
- Water Quality monitoring
 - Nutrient
 - Sediment
- Eastern Oyster monitoring
- Benthic macroinvertebrate monitoring
- Submerged Aquatic vegetation
 - Improvements to spatial and structural characteristics
- Monitoring fish communities

1.1.3 Greater Everglades

Improvements to the timing and distribution of flows will improve hydro patterns throughout the Greater Everglades. The beneficial affects are applicable system-wide and will enhance ecological conditions that trend towards restoring and sustaining the microtopography, directionality and spatial extent of the ridge and slough landscape, including tree islands, and the native vegetation community structures. Improving ecological conditions of these habitats will positively influence spatio-temporal patterns of prey production and concentration, which has been correlated to wading bird nesting success. Additional anticipated benefits in water quality are expected as a result of low TP concentrations flowing into STA 3/4 from the EAA A-1 Reservoir, thereby lowering TP concentrations flowing out of STA 3/4 and into the Everglades Protection Area. Furthermore, STA's and reservoirs in combination or as single project components will improve water quality in the receiving waters that the Acceler8 projects are located. Table 0

outlines a representative set of RECOVER performance measures designed to monitor the following components:

- Inundation patterns in Greater Everglades wetlands
- Extreme high and low water levels in Greater Everglades wetlands
- Landscape Patterns:
 - Freshwater and estuarine vegetation mosaics
 - Ridge and slough/tree island community sustainability
 - Total phosphorus concentrations in soil
- Wading bird nesting patterns:
 - Wading bird foraging, distribution and abundance
 - Dry and wet season aquatic fauna concentrations
 - Wading bird nesting colony location, size and timing
 - Systematic reconnaissance flights for wading bird distribution surveys
 - Annual SFWMD wading bird report
- Water Quality:
 - Flow and nutrient concentrations at inflow and outflow structures
 - Regional distribution of soil nutrients
 - Periphyton studies

Table 0. System-wide Acceler8 Ecological Monitoring Plan Using CERP MAP Performance Measures

| Performance Measure Monitoring Component | MAP Section |
|---|--------------------|
| Lake Okeechobee | |
| Lake Okeechobee Stage | 3.5.3.1 |
| Lake Okeechobee Water Quality | 3.4.3.1 |
| Lake Okeechobee Macroinvertebrates | 3.4.3.5 |
| Lake Okeechobee Fish Population Density, Age, Structure and Condition | 3.4.3.6 |
| Lake Okeechobee Vegetation Mosaic | 3.4.3.2 |
| Northern Estuaries – St. Lucie and Caloosahatchee | |
| Northern Estuaries Salinity | 3.5.3.3 |
| Northern Estuaries Water Quality | 3.3.3.1, 3.5.3.3 |
| Northern Estuaries Oyster habitat | 3.3.3.6 |
| Northern Estuaries Benthic Macroinvertebrates | 3.3.3.8 |
| Northern Estuaries Submerged Aquatic Vegetation | 3.3.3.3 3.3.3.5 |
| Northern Estuaries Fish Communities | 3.3.3.7 |
| Greater Everglades | |
| Inundation Patterns in Greater Everglades Wetlands | 3.5.3.0 3.5.3.3 |
| Extreme High and Low Water Levels in Everglades Wetlands | 3.5.3.0 3.5.3.3 |
| Greater Everglades Wetlands Basinwide TP Loading and Flow Weighted Mean Concentrations in Inflows | 3.1.3.1 |
| Greater Everglades Wetlands Basinwide TN Loading and Flow Weighted Mean Concentrations in Inflows | 3.1.3.1 |
| Total Phosphorus Concentrations in Soil | 3.1.3.2 |
| Wetland Landscape Patterns – Freshwater and Estuarine Vegetation Mosaics | 3.1.3.4 |
| Wetland Landscape Patterns – Ridge and Slough Sustainability | 3.1.3.6 |

1.2 ACCELER8 MITIGATION WORK SCHEDULE

The schedule for the proposed mitigation is contingent on the date that the Acceler8 projects come on line and are operational. The Acceler8 projects are all scheduled to be in operation by 2011, pending receipt of all necessary

permits. Based on a 2011 date of operation, the environmental benefits should be realized by 2020.

1.3 MONITORING REQUIREMENTS

The performance measures identified for the Acceler8 Projects and the associated monitoring components are currently in existence. The USACE has determined that the SFMWD may use the results of other monitoring efforts such as RECOVER to fulfill its obligations. If RECOVER ceases to monitor any of the performance measures identified for the project, the SFWMD will be responsible for fulfilling the monitoring requirements. The scientific and technical information generated by the MAP, provides the process for RECOVER to evaluate system performance and responses. For this project, however, the SFWMD will be responsible for evaluating and presenting the system-wide monitoring information to the USACE annually on March 1 in the *South Florida Environmental Report*. Annual evaluation will enable the USACE to determine if the project is trending towards success and achievement of the restoration targets, and the projected functional lift outlined in the mitigation ledger. Although the full benefits are not expected until 2020, annual evaluation of the monitoring information will allow the USACE to determine early on if adaptive management strategies are required to achieve success on time.

In addition to evaluating the performance and responses as described above, the South Florida Consolidated Report shall also contain a UMAM, Chapter 62-345 F.A.C., scoring, discussion, and conclusion regarding trends toward, or achievement of, the projected UMAM scores for the Lake Okeechobee nearshore habitat, Caloosahatchee Estuary, St. Lucie Estuary, and the Greater Everglades including WCA 2A, WCA 2B, WCA 3A, and WCA 3B. The annual evaluation report should also include the summary report of the previous year's monitoring results including an evaluation of performance in terms of success, a representative photograph from each monitoring station, a narrative describing problems encountered during the year including climatic events, and a discussion of remedial measures or adaptive management, if applicable. Photographs shall include date taken, direction, and station number.

1.4 ADAPTIVE MANAGEMENT

The CERP MAP employs an Adaptive Management (AM) Program to maximize restoration success by anticipating future uncertainties and responding to system responses. These uncertainties include unpredicted (inherent natural variability) and undesired responses and events in the natural system, anthropogenic influences, or from non-CERP influences. Additionally, AM recognizes natural systems are remarkably complex and

difficult to predict and that the current generation of numerical models often lack the predictive power to accurately characterize ecological responses to management actions, especially at large spatial scales. A successful adaptive management program will identify early indications of undesired impacts associated with ecological and hydrological uncertainties and provide a process allowing decision makers to effectively integrate ecosystem science and management to adjust and make improvements to ensure desired restoration goals are met.

1.5 MAINTENANCE AND RESPONSIBLE PARTY

Monitoring data and the SFWMD and USACE's professional judgment will dictate the type and frequency of maintenance activities including AM necessary to ensure the mitigation areas are trending toward success. The SFWMD is the responsible party for long-term management of the mitigation areas and attainment of success.

1.6 FORCE MAJEURE CLAUSE

The requirements of this mitigation plan shall not be enforced against the SFWMD if precluded from performing and meeting the conditions of this mitigation monitoring plan due to unusually severe weather, acts of war, acts of God, rebellion, strikes, or natural disaster, including hurricane, flood, or fire. If the unusually severe weather, acts of war, acts of God, rebellion, strikes, or natural disaster, including hurricane, flood, or fire do not preclude the SFWMD from performing the work defined in the mitigation monitoring plan, the SFWMD shall not be relieved of its obligation under this document.

1.7 REFERENCES

RECOVER. 2004. CERP Monitoring and Assessment Plan: Part 1 Monitoring and Supporting Research. Restoration Coordination and Verification Program, c/o United States Army Corps of Engineers, Jacksonville District, Jacksonville, Florida, and South Florida Water Management District, West Palm Beach, Florida.

