SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Project Charter

The project charter is a document that authorizes the manager to apply organizational resources to project activities and to proceed with finalizing the project scope and developing the project plan.

Program:	CA07 - Capital Improvement
Project SAP PS ID	100304
Project ID (other)	N/A
Project Title:	C23 Bank Stabilization at S48 and S97
Project Manager:	To Be Assigned by ERCP
Project Sponsor(s):	Larry Carter
Mandate(s):	SFWMD Strategic Plan 2009-2019

Level of Empowerment:

This Project Charter is a document that authorizes the project manager to apply organizational resources to project activities and to proceed with executing and controlling the project plan.

Approvals:

Larry Carter, Project Sponsor	Date 12/4/09
Jeff Kivett, Engineering Department Director	Date
Ulrich Cordon, Construction Department Director	Date
Doug Bergstrom, Program Manager	Date 12/7/09

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Revision Sheet

Release No.	***Date***	***Revision Description***
Rev. 0	12/03/2009	Initial
Rev. 1		
Rev. 2		
Rev. 3		

TABLE OF CONTENTS

PROJECT TEAM

The project team is the list of team members directly supporting the project and may be responsible for developing the strategies to deliver the project such as developing the plan elements, including WBS, schedule, resource requirements, and skills. Identify the team below. The form may be modified to meet additional needs.

Name	Role	Responsibility
Lucine Dadrian	O&M Canals	O&M Canal Program Lead
To be assigned by ERCP	Project Manager	ERCP
To be assigned by ERCP	Project Design	ERCP
To be assigned by ERCP	Construction Manager	ERCP

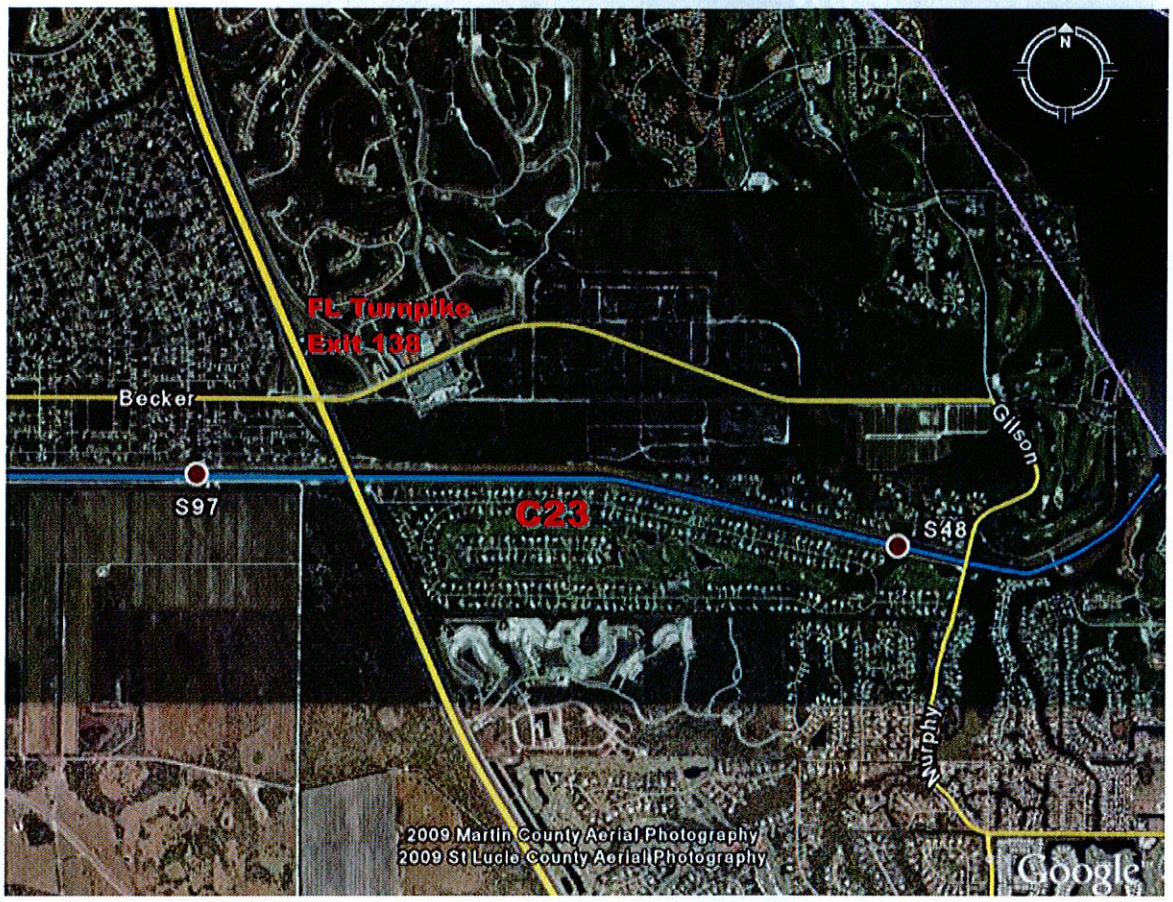
PROJECT MANAGEMENT OVERSIGHT TEAM

The oversight team provides guidance to the project manager. This team is responsible for approving policies, plans, standards, and procedures including quality assurance, risk management, and performance measurement plans. The oversight team approves changes, monitors performance and assists the project manager in resolving issues escalated by the project manager. If applicable, identify the name(s), role(s), and responsibilities of the Project Oversight Team. The form may be modified to meet additional needs.

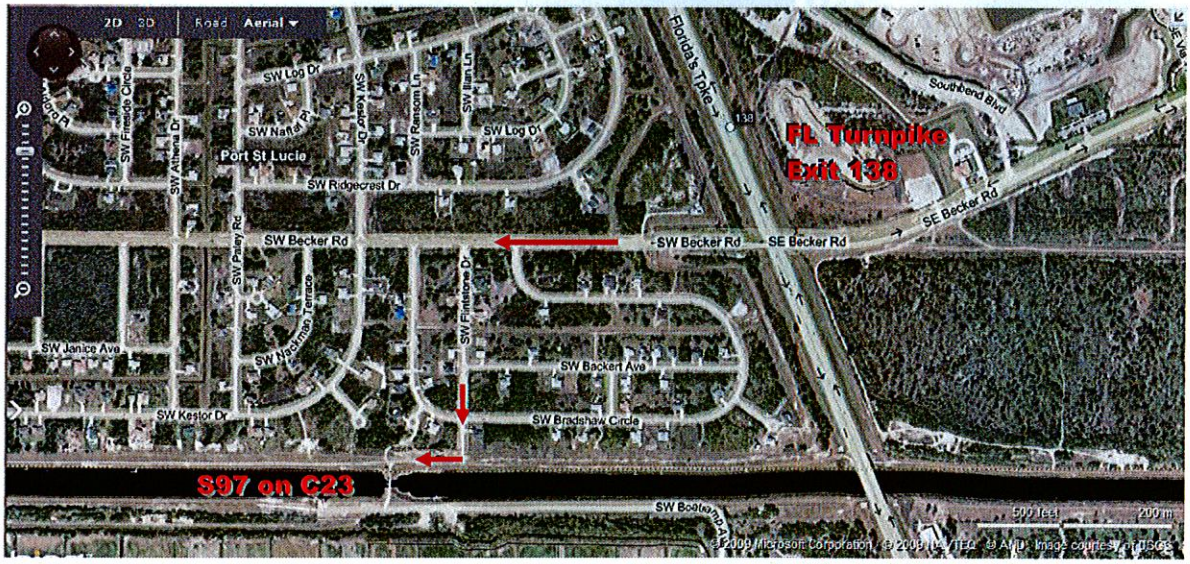
Name	Role	Responsibility
Ralph Hayden	O&M Infrastructure Systems	Oversight of Project for O&M
John Mitnik	ERCP Engineering Project Management	Oversight of Project Manager
Greg Cantelo	ERCP Engineering & Technical Services	Oversight of Project Design
Michael Hiscock	ERCP Construction	Oversight of Project Construction

PROJECT LOCATION

The structures S48 and S97 are located on the C23 canal on the borderline of St Lucie and Martin County. S48 is located near the mouth of C23, about two miles east of the Sunshine State Parkway Bridge over the canal. S97 is located 3300 feet west of the Sunshine State parkway, and about 2½ miles west of S48.



To access the S48 structure, take the FL turnpike north to Becker Road exit 138, take Becker Road east to NW Gilson Road, which turns into SW Murphy Road, go right (south) to the canal, and access gates are on both north and south sides of the canal.



To access the S97 structure, take the FL turnpike north to Becker Road exit 138, go west on Becker Road to SW Flintstone Drive, go left (south) to District ROW, and west to structure.

PROJECT SCOPE, ESTIMATE, & BACKGROUND

Project Scope:

The project scope is to stabilize the canal banks of the C23 Canal inside the boat barriers upstream and downstream of structures S48 and S97. This scope includes:

Design Work: (2011)

1. S48 Design Work
   - Topographic survey
   - Bank stabilization design
     - Stabilize upstream to boat barrier
     - Stabilize downstream along corner of structure
     - Avoid contact with mangroves
2. S97 Design Work
   - Topographic survey
   - Bank stabilization design
     - Stabilize upstream to boat barrier
     - Stabilize downstream along corner of structure, along upper half of slope of existing riprap, and from existing riprap to boat barrier
3. Permitting - FDEP, USACE as required

Construction Work: (2012)

Design Assumptions:

For the canal bank stabilization, place geotextile fabric, bedding stone, riprap, sod, and berm drains in a similar approach as sections below (Figures 2–4). Top of rubble riprap shall extend to the top of bank per the Okeechobee Field Station for ease of maintenance. The bottom of the rubble riprap will extend to the bottom of the slope. Size rubble riprap for canal bank area, type C is a minimum preference for site conditions around structures.

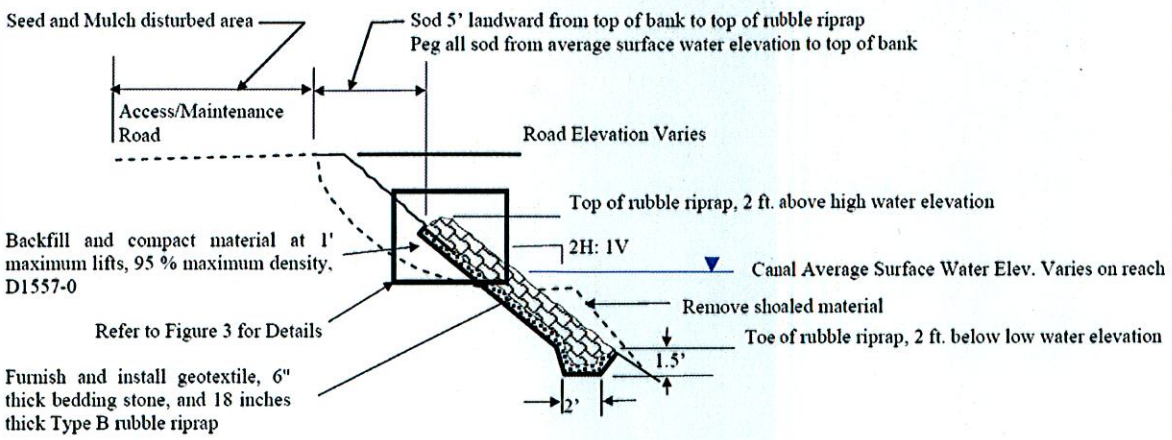


Figure 2. Typical Canal Bank Repair with Rubble Riprap

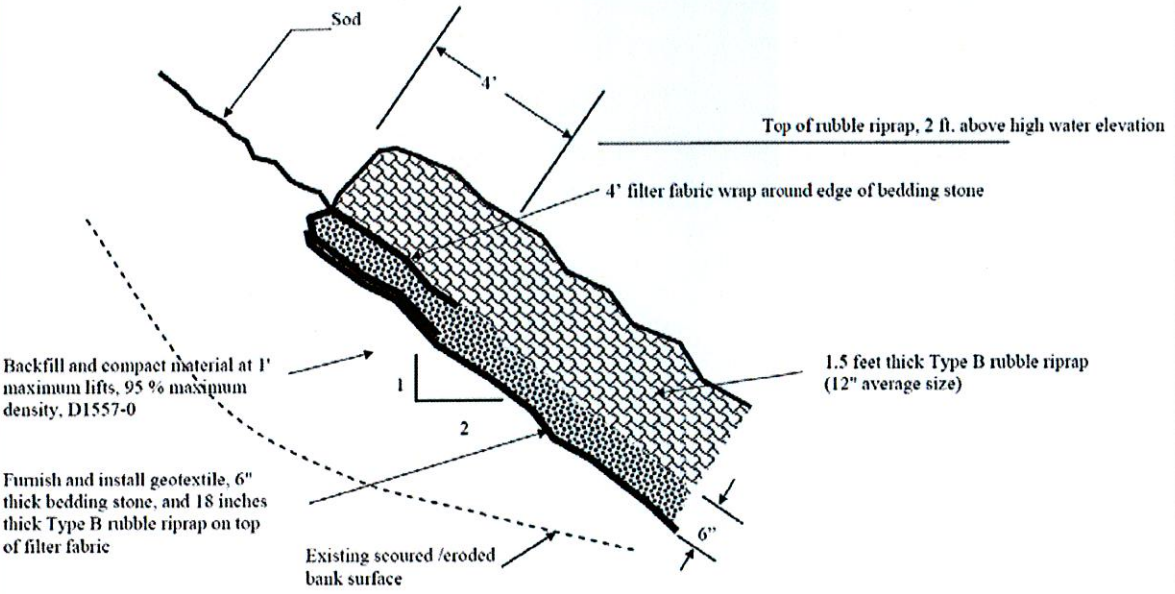


Figure 3. Rubble Riprap Detail.

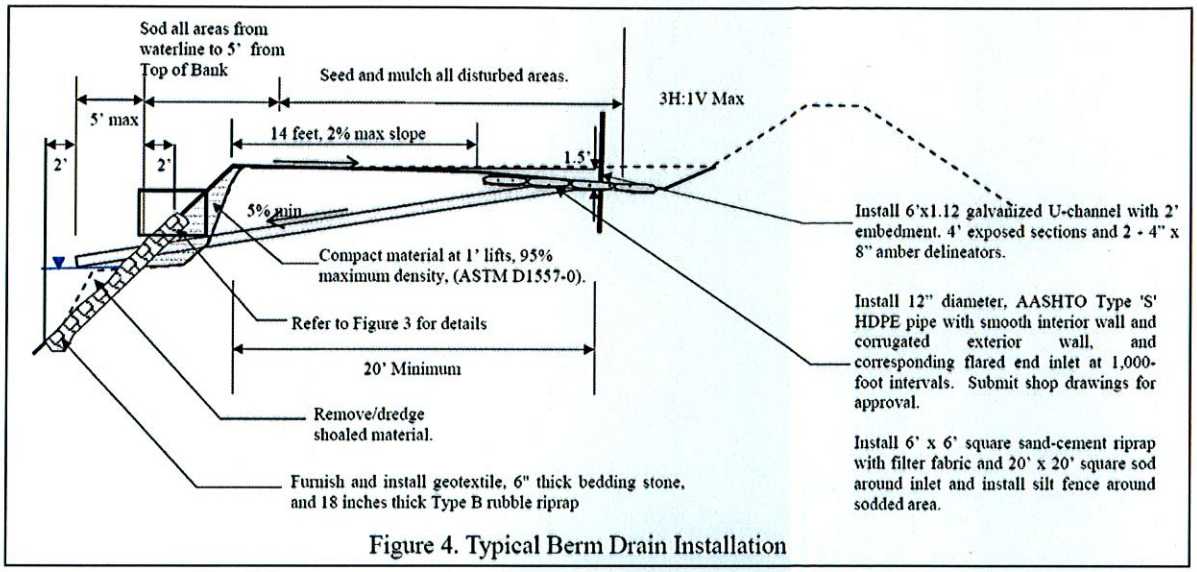
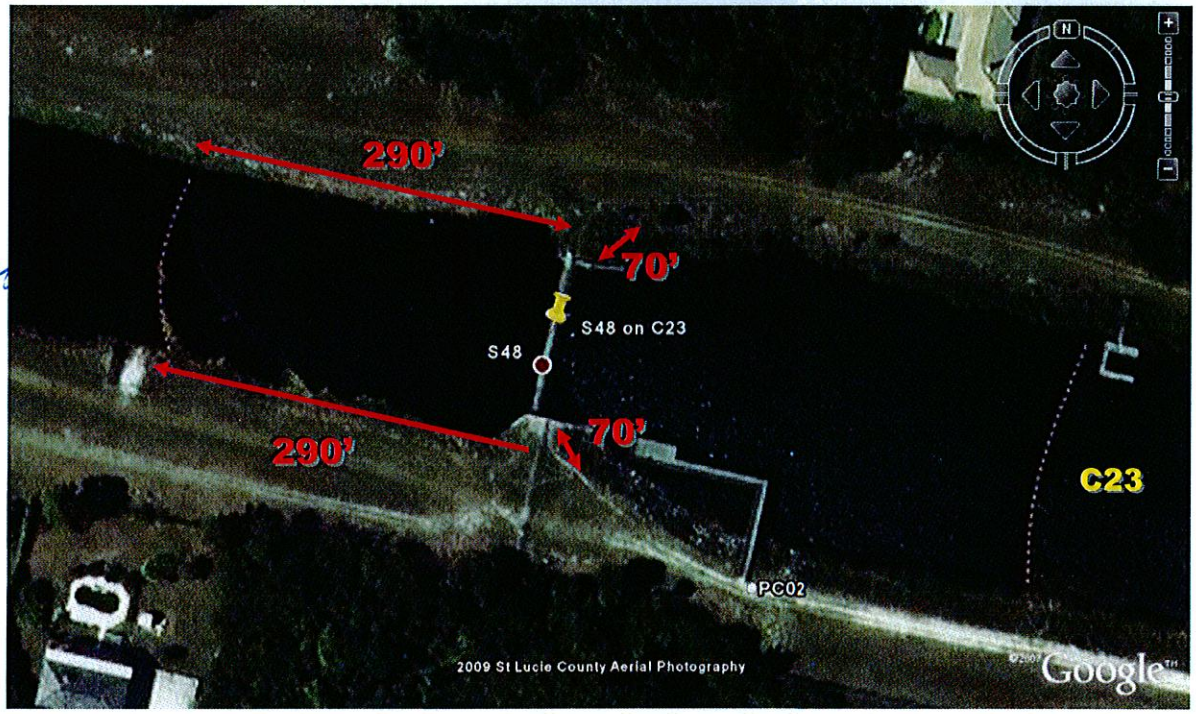


Figure 4. Typical Berm Drain Installation

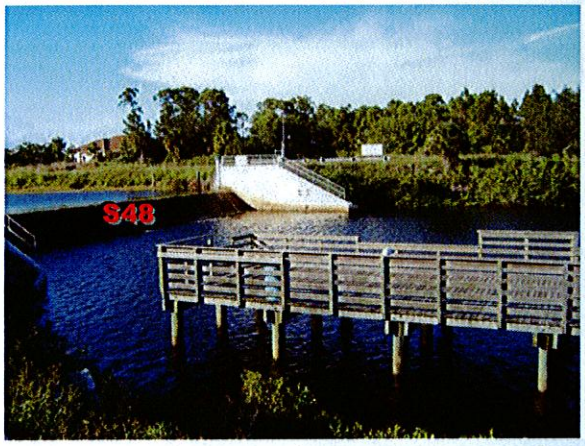
S48 Plan View



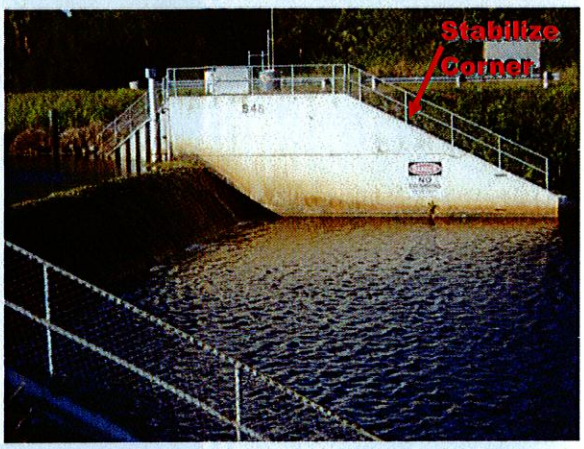
Bank Stabilization Lengths: (lengths and heights are for cost estimates: survey to verify)

Structure	Bank Stab Length Upstream (ft)	Height from Waterline to TOB Upstream (ft)	Bank Stab Length Downstream (ft)	Height from Waterline to TOB Downstream (ft)
S48 N	290	14	70	25
S48 S	290	14	70	25

See Typical Conditions for S48



Upstream – N Bank - S48

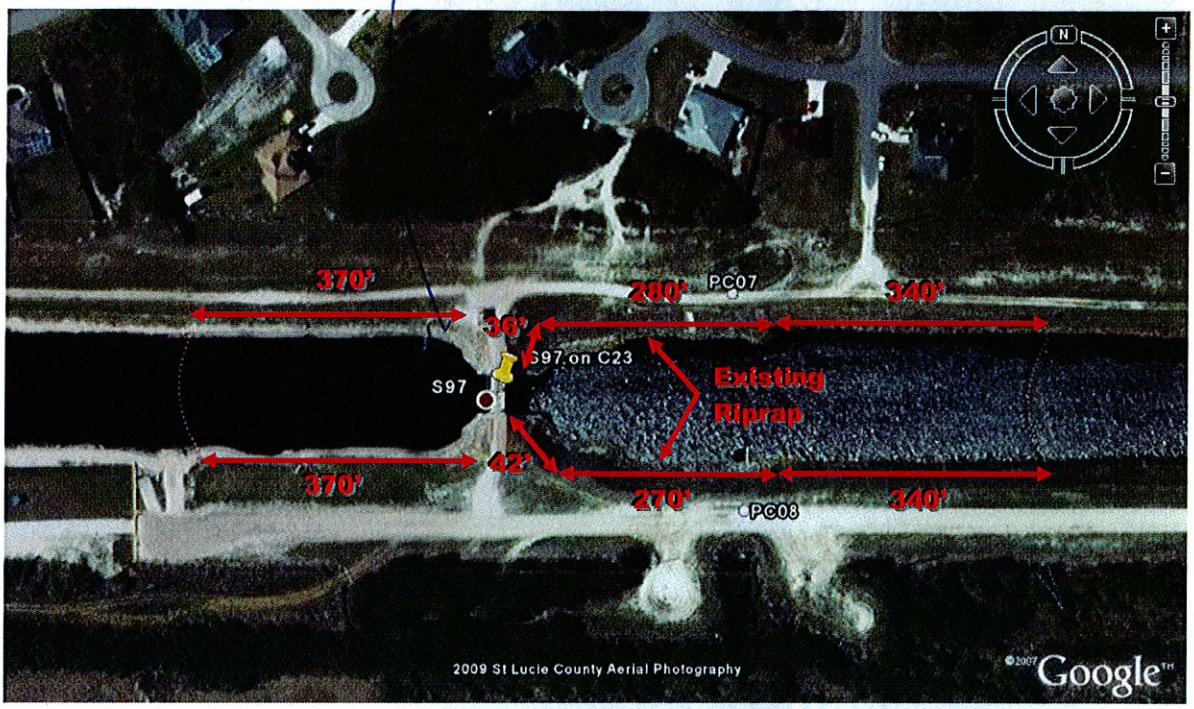


Downstream - N Bank – Stabilize Corner

Downstream - S Bank – Stabilize Corner

Downstream - S Bank

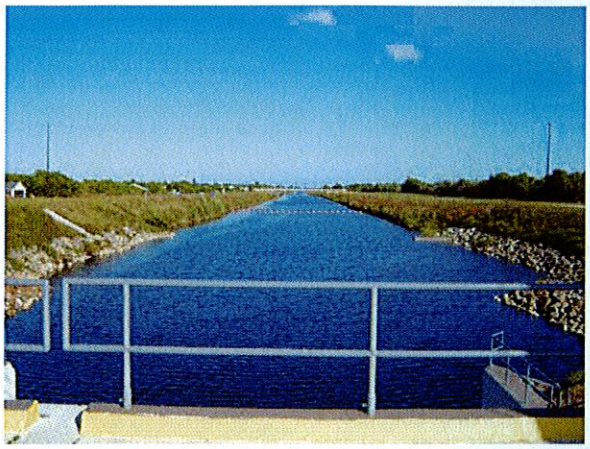
S97 Plan View



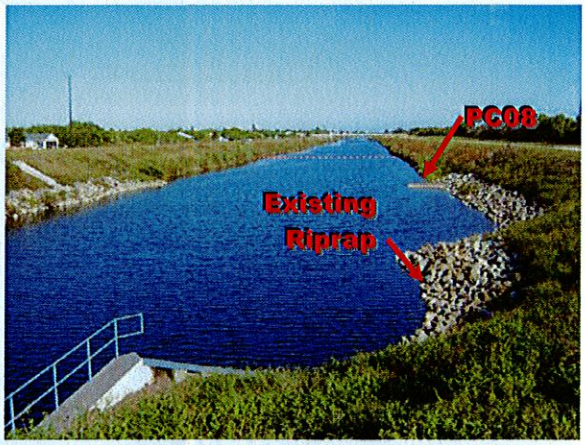
Bank Stabilization Lengths: (lengths and heights are for cost estimates: survey to verify)

Structure	Bank Stab Length Upstream (ft)	Height from Waterline to TOB Upstream (ft)	Bank Stab Length Downstream (ft)	Height from Waterline to TOB Downstream (ft)
S97 N	370	6	36	60
S97 N			280	30/2 = 15
S97 N			340	30
S97 S	370	6	40	60
S97 S			270	30/2 = 15
S97 S			340	30

See Typical Conditions for S97



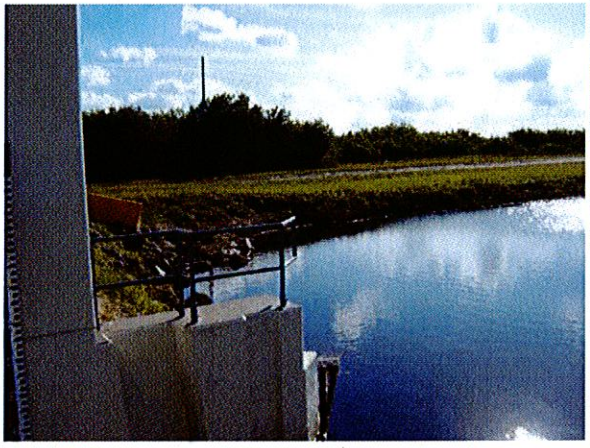
Downstream – Both Banks



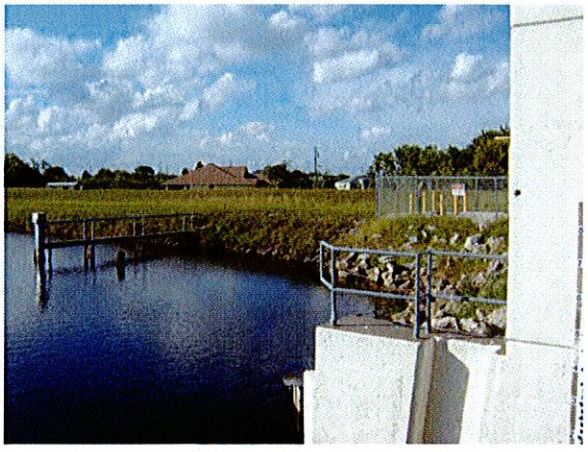
Downstream – S Bank

Downstream – N Bank

Downstream – S Bank Next to Structure



Upstream – S Bank



Upstream – N Bank

Right of Way:

The District has multiple right of way uses (fee simple and permanent easement) along the entire canal. Right of way is sufficient to complete bank stabilization upstream and downstream of both structures. Light green denotes fee simple and dark green denotes permanent easement. See Google maps below.

Estimated Quantities & Costs per Final Design:
The tables below include costs for construction only. The quantities are an estimate and a design should be completed to determine actual quantities and cost. The estimated costs assume all work to be completed from land.

Construction Costs:

S48 Bank Stabilization				
Narrative	**Unit**	**Quantity**	**Unit Price**	**Cost**
Slope Vegetation Removal includes removal from site (Low Density)	SY	2,091	0.48	$1,004
Regrade Slope (1V:2H)	SY	2,091	0.82	$1,715
Geotextile	SY	2,091	3.15	$6,587
Bedding Stone 6" & Riprap 2' (Type C Min)	CY	1,743	62	$108,041
Sodding (Repair Construction Zone)	SY	1,200	3.12	$3,744
Total Direct Construction Cost:				**$121,090**

S97 Bank Stabilization				
Narrative	**Unit**	**Quantity**	**Unit Price**	**Cost**
Slope Vegetation Removal includes removal from site (Low Density)	SY	6,457	0.48	$3,099
Regrade Slope (1V:2H)	SY	6,457	0.82	$5,294
Geotextile	SY	6,457	3.15	$20,339
Bedding Stone 6" & Riprap 2' (Type C Min)	CY	5,381	62	$333,594
Sodding (Repair Construction Zone)	SY	3,410	3.12	$10,639
Total Direct Construction Cost:				**$372,966**

Background:

S48 structure is a reinforced concrete, uncontrolled, fixed crest weir. This structure discharges the flood runoff from the tributary basin, prevents overdrainage by maintaining optimum water levels above the structure, and prevents saltwater intrusion. Operation of this structure is uncontrolled. Discharge begins when the upstream water surface elevation exceeds 8.0 feet; design discharge of 5035 cfs occurs when the head on the weir reaches 5.0 feet, or elevation 13.0 feet. Control of the drainage basin is affected by S97, located on C23 about 2-½ miles upstream.

This structure is a reinforced concrete, gated spillway with discharge controlled by two cable operated, vertical lift gates. Operation of the gates is automatically controlled so that the gate operating system opens or closes the gates in accordance with the seasonal operational criteria. The structure is located on Canal 23, 3300 feet west of the Sunshine State parkway, and about 2½ miles west of S-48.

S97 structure maintains optimum upstream water control stages in Canal 23; it passes the design flood (30% of the Standard Project Flood) without exceeding the upstream flood design stage, and restricts downstream flood stages and channel velocities to non-

damaging levels. This structure is operated under either high or low ranges depending on basin conditions; control is automatic in each mode but transfer from one mode to the other is manual.

Low Range is when the headwater elevation rises to 22.2 feet, the gates begin to open; when the headwater elevation rises or falls to elevation 21.0, the gates become stationary; and when the headwater elevation falls to 20.5, the gates begin to close.

High Range is when the headwater elevation rises to 23.2 feet, the gates begin to open; when the headwater elevation rises or falls to 22.8 feet, the gates become stationary; and when the headwater elevation falls to 22.2 feet, the gates begin to close.

A summary of the hydraulic design data for both structures is shown in table 1 below from the Detail Design Memorandum, Part III - Suppl. 5.

TABLE 1

Canal 23

Summary of canal design

Station to station	Location	Design water surface elevation (ft., m.s.l.)	Bottom elevation (ft., m.s.l.)	Bottom width (ft.)
360+00E to 350+00	East limit of work = 360+00E		Transition	
350+00 to 323+50		1.0 to 1.2	-13.0	150
323+50 to 322+50	Farm access road. bridge = 323+00	1.2	-13.0	162
322+50 to 310+00		1.3	-13.0	150
310+00 to 287+50		1.5	-13.0	125
287+50 to 286+50	Control Structure 48 = 287+00			
286+50 to 237+00		13.0 to 13.4	-6.0	70
237+00 to 183+70		13.8	-6.0	70
183+70 to 182+70	Sunshine State Pkwy. Bridge = 183+23	13.8	-6.0	70
182+70 to 150+50	Temp. access bridge = 178+02	14.0	-6.0	65
150+50 to 149+50	Control Structure 97 150+00			
149+50 to 83+10		18.5 to 19.0	-3.0	50
83+10 to 14+90		19.5	1.0	85
14+90E to 0+00		19.6	4.0	105
0+00 to 50+00W		19.9	4.0	105
50+00 to 90+60	Bailey Bridge = 89+40	20.2	4.0	105
90+60 to 150+00		20.7	4.0	85
150+00 to 196+80		21.0	4.0	85
196+80 to 264+00		21.4	4.0	75
264+00 to 307+70		21.7	4.0	65

References:

- Right of Way Maps
- SFWMD – Structure Files
- C&SF Project for Flood Control and Other Purposes, Part III, Upper St. Johns River Basin and Related Areas, Supplement 5 - Detail Design Memorandum, Canal 23 and Control Structures 48 and 97, July 18, 1960.

PROJECT GOALS/OBJECTIVES

The project objective is to stabilize the canal banks to prevent further erosion and siltation.

PROJECT JUSTIFICATION

To support the continued operation of the Central and South Florida Flood Control System, the C23 Canal – S48 and S97 Bank Stabilization project will help maintain the canal system and provide a means of prevention for future erosion.

PROJECT DELIVERABLES & SCHEDULE

Deliverable	Schedule
Survey, Geotechnical, and Design	Complete by: September 30, 2011
Permitting	Complete by: September 30, 2011
Notice to Proceed	Start by: January 30, 2012
Construction	Complete by: May 30, 2012

Scheduled dates are just an estimate of timeframes. Construction period should be during the dry season, if possible. Project manager should schedule the project and determine final deadlines.

PRELIMINARY METHODOLOGY

The Everglades Restoration Resource Area shall provide Project Management, Design, and Construction Services to implement the project. The Project Manager will use SAP Project System to set up the schedule for these efforts. The O&M Canals Program Lead, Lucine Dadrian will be included in all phases of the project.

BUSINESS AREA INVOLVED

1. ERCP Staff – ERCP will execute the project management, engineering, and construction services to implement the project.
2. O&M Staff - The program manager and project manager will be part of the project team and provide oversight and coordination with Operations and Field Stations Staff.

FUNDING/COSTS/RESOURCES

Select one: This project is budgeted. ☒ This project is not budgeted. ☐

FY11	
(1) Survey/Geotechnical/Permitting:	$ 24,703
(2) Design (Internal):	$ 59,287
FY12	
(3) Construction:	$ 494,056
(4) Construction Management/EDC:	$ 49,406
(5) Contingency Cost:	$ 49,406
TOTAL:	**$ 676,857**

		FArea	Fund	Cost center	B/L	Amount
Funding:	FY11:	CA07	402000	5613222000	-	$ 83,990
	FY12:	CA07	402000	5613222000	-	$592,867

ASSUMPTIONS

1. The scope, as identified in this document, will not be modified unless the modifications are approved by the Sponsors and Management Oversight Committee.
2. The resources identified above as project team members will be made available at the time they are needed to execute their tasks.
3. The project will be fully funded through its duration
4. Cost estimates are based on conceptual information. Designer to refine cost estimates through field investigations and design phases.
5. The construction will be performed from land using District right of way.

CONSTRAINTS

1. Operational needs of the canal for water supply and flood protection shall be taken into consideration during construction.
2. Construction shall be completed during the dry season during times of low flow due to turbidity issues. If changes to the constraints are required, coordinate with Operations staff and advise team of the changes.
3. Coordinate with SFWMD Operations for intended releases from structures.
4. Coordinate with the permitting group for regulatory permits. The permits should include the entire canal between the boat barriers as the work zone for turbidity.

OTHER ROLES AND RESPONSIBILITIES

The ***Project Sponsor*** is responsible for:

- Communicating District objectives

- Providing a focal point to resolve issues escalated from the management oversight and guidance to the project manager

The ***Project Manager*** is responsible for:

- The project's overall performance and success
- Approving policies, processes, and procedures developed by project team members
- Being the focal point for communication between the project oversight team
- Escalating to the management oversight team issues that cannot be resolved at the project level
- Developing and maintaining the project plan

The ***Functional Manager*** **(Division Director or Division Leader)** is responsible to:

- Provide the resources for the project
- Ensure the quality of the resources provided to support the project
- Contribute to the performance evaluation of the project manager

The ***Program Manager*** is responsible for:

- Developing Annual Work Plan and Strategic Plan input for the Program
- Monitoring project status during the fiscal year
- In conjunction with the Department Director, reviewing and signing the Project Charter and Project Management Plan
- Leading the Program's team of project managers and professionals to accomplish programmatic objectives
- Reporting on, and communicating, Program and project status to Sr. Managers

The ***O&M Program Leader*** is responsible for:

- Monitoring project status through construction
- Reporting on, and communicating, project status to Program Manager
- Working with Program Manager