SOUTH FLORIDA WATER MANAGEMENT DISTRICT



Infrastructure Project Plan

This Project Management Plan is used for initiation from O&M with limited information provided the Project Management Plan will then be updated and completed by the Project Manager for final approval. Upon final approval, this document authorizes the project manager to apply organizational resources to project activities and to proceed with executing and controlling the project plan.

Program:	Ca04 – Capital Improvement	
Project Number:	100667	
Project Title:	Relocation of S169, Planning and Desigr	
Project System Role	es: Responsible Person: Gary Dunmyer Project Manager: TBD	
Project Sponsor(s):	Larry Carter	
Mandate(s):	None	

	eni:
This partial Project Management Plan identified th	he What When Why Where & Who to be moved into project
execution where the project manager shall finalize	the plan. This document authorizes the project manager to apply
organizational resources to plan for the execution	of the project.
Annrovals	
Therefor ton	3/17/10
Larry Coners Project Sponsor	Date
1.MA as -	alialia
magn	3/17/10
Doug Bergstrom, Program Manager	Date
	3/17/10
	JUL
Gary R. Dunmyer, Responsible Person	Date
+ Kathy Lollins	
Project Management Plan Exe	ecution Level of Empowerment:
This Project Management Plan Exce This Project Management Plan is a document that to project activities and to proceed with executing	authorizes the project manager to apply organizational resources and controlling the project plan.
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Project Management Plan Exec This Project Management Plan is a document that to project activities and to proceed with executing Approvals: Jeff Kivett, Engineering Department Director Ulright Cordon, Construction Department Director Kathy Collins, Responsible Person Gary Demaye	Date Date Date

Revision Sheet

Release No.	Date	Revision Description
Rev. 0	3/8/10	Initiation
Rev. 1		PMP Execution
Rev. 2		
Rev. 3		

2

Initiation Level of Empowerment:

This partial Project Management Plan identified the What, When, Why, Where & Who to be moved into project execution where the project manager shall finalize the plan. This document authorizes the project manager to apply organizational resources to plan for the execution of the project. *Approvals:*

Alex Damian, Project Sponsor	Date	
Karen Estock, Program Manager	Date	
Gary R. Dunmyer/Kathy Collins, Responsible Person	Date	

Project Management Plan Execution Level of Empowerment:

This Project Management Plan 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:

Jeff Kivett, Engineering Department Director	Date	
Ulrich Cordon, Construction Department Director	Date	
Gary R. Dunmyer/Kathy Collins, Responsible Person	Date	
Applicant	Date	

Revision Sheet

Release No.	Date	Revision Description
<i>Rev.</i> 0	3/8/10	Initiation
Rev. 1	04/13/10	Revised Charter based on comments from ERCP and Planning
<i>Rev.</i> 2	9-23-10	Minor revisions – scope essentially the same.
<i>Rev.</i> 3		

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OPERATION AND MAINTENANCE RESOURCE AREA TO COMPLETE THIS SECTION PRIOR TO EXECUTIVE OFFICE APPROVAL

INITIATION LEVEL

PROJECT LOCATION AND DESCRIPTION

S169 is located adjacent to the Herbert Hoover Dike in the C21 canal right-of-way, on the southwest side of Lake Okeechobee, north of E Sugerland Hwy (aka - US Hwy 27, SR 80, SR25), 1,100 If southeast of the C2 culvert and 1,750 If northwest of Structure S310, in Clewiston, Hendry County, Florida. S169 is in Section 10, Township 43, Range 34 (see aerial photograph 1 for location).



AERIAL PHOTOGRAPH 1 – LOCATION OF S169

To access the structure, from E. Sugerland Highway, head north on N. Francisco Street (aka SR 832), turn left on the first road past Okeechobee Street on to the unlabeled Public Access Road or the Hoover Dike Road. The coordinates are +26° 45' 43.95", -80° 55' 23.55". See aerial photograph 2 for additional details.



AERIAL PHOTOGRAPH 2 – LOCATION OF S169

PROJECT SCOPE

Existing Structure Information

The S169 is a three-barreled, corrugated metal pipe culvert. Control is affected by automatically operated sluice gates mounted on a reinforced concrete head structure at the southeast ends of the culverts.

This structure enables the discharge of the Industrial Canal into Lake Okeechobee via C21 canal and S4 Pump Station when gravity discharge to the Lake is impossible.

(Please see the Structure Information Sheet for further information.)

Project Scope

The project scope is to conduct a planning study that examines the hydraulic needs in the Nine-Mile Canal (S4) Basin where the C2 culvert, S310 and S169 structures are located and provide evaluation of options resulting in a recommended plan. The scope of the study shall include determining the:

- Limits and extend of the modifications being made to the Herbert Hoover Dike by the US Army Corp.
- Hydraulic impact to the Nine Mile Canal Basin (aka S-4 Basin) when S169 (shown in Photo 1) is relocated west of the C2 culverts. This item includes sizing the S169 structure and the C2 culverts (Shown in Aerial Photograph 2), to meet the USACE design criteria of the basin:
 - o The basin was designed to have excess run-off discharged to Lake Okeechobee.
 - The runoff consists of:
 - seepage through the Herber Hoover Dike,
 - runoff at the rate of ¾" per day from the tributary drainage area and
 - the rate of 2.5 inchers/day from the urban drainage area.
- Most economically beneficial location of S169,
- Extent of the demolition of the existing S169 (ie to access the Herbert Hoover Dike (HHD) can the existing culverts remain or would a bridge replace the culvert crossing, etc),
- Secondary impacts (i.e. regrading the bench between the C21 canal and the HHD, etc),
- Permitting needs (i.e. US Army Corps(USACE), Dept of Environmental Protection, Clewiston Drainage District, etc.),
- Efforts necessary to coordinate with the USACE regarding C2. Efforts might include adding culvert capacity or additional gates,
- Cost of the resulting recommendations, and the
- Availability of contributing federal funds for relocating S169.



Photo 1 – Photograph of the east face of \$169

This planning project shall be completed in FY11 and will be followed by design and construction¹ in subsequent years. It is anticipated that the project will be designed in FY12 and constructed in FY13 if recommended.

In Scope: Structure replacement and supporting work efforts.

Out of Scope: Work not required supporting structure replacement efforts.

PROJECT GOALS/OBJECTIVES

During the planning phase, the objective of this project is to conduct a study that examines the feasibility of relocating S169 to a location that is northwest of the C2 culvert and provide a report that identifies several options and provides a recommendation for the option that best addresses the concerns identified in the project scope.

¹ Once the District's Planning Department has provided design recommendations, the "Responsible Person (see cover page)" will revise the charter to incorporate the design and construction components of this project.

PROJECT JUSTIFICATION

In addition to the S-310 Lock providing boat passage, the District occasionally uses the Lock to provide water supply. The US Army Corp did not design the S-310 Lock as a water control structure. The relocation of the S-169 will allow the C-2 culverts to provide the water the basin needs for irrigation, thus allowing S310 to be used solely at a Lock.

When Lake Okeechobee (Lake) is below 15.5, S-310 Lock is opened. The Industrial Canal discharges both into and out of the Lake through the open S-310 Lock. When the Lake is higher than 15.5, the S-310 Lock operates to provide flood control. The Industrial Canal has to discharge through S-169 and then into the Lake through pump station S-4. The total pumping capacity in the Industrial Canal basin is 1246 cfs. The S-169 design capacity is 625 cfs. A larger structure at S-169 can provide higher flood control service for the Industrial Canal basin (includes the Clewiston Drainage District). Additionally, when lock S-310 is in operation, it is difficult to make water supply releases from the Lake into the Industrial Canal. US Army Corps of Engineer's Lake Culvert 2 can release water from the Lake downstream of S-169 at present.

The proposed plan is to relocate S-169 with a larger structure. At the new location, Culvert 2 can release water from Lake Okeechobee into the Industrial Canal directly for water supply. Therefore, the project will improve both flood control and water supply operation in the Industrial Canal basin. However, under the new Lake Okeechobee Operation schedule, the duration of the Lake above 15.5 will be short. Since the relocation and increase of discharge capacity of S-169 has benefit only when Lake Okeechobee is above 15.5, the benefit of the propose project may be reduced.

BUSINESS AREA INVOLVED

- 1. Everglades Restoration Staff Everglades Restoration will execute the project. This includes providing project management, engineering design, technical review, permitting and construction serves for project implementation.
- 2. O&M Staff The Infrastructure, Maintenance, Operations and Field Station staff will be part of the project team.

FUNDING/COSTS/RESOURCES

Select one: This project is budgeted.

This project is not budgeted. \boxtimes

Costs Estimate:

The cost estimate is conceptual estimate based relocation as identified in the U. S. Army Corps of Engineer's GRR. Depending on the evaluation of the Planning Study, the design may vary which would affect the cost of the project. The project costs shall be updated throughout the project's development, which include planning study and design phase. (See Attachment 1)

(1) Planning, Alternate Evaluations with Conceptual Design:	Estm.\$ 250,000
(2) Survey & Design(15% of const):	Estm.\$ 1,462,000
(3) Construction	Estm \$ 7,310,000
(4) Additional 20% of Construction	Estm \$ 1,462,000
(5) EDC	Estm \$ 731,000
Total ² :	\$11,215,000

FAreaFundB/L#G/LFunding:FY11:Will be provided upon budget approval (Planning Services #1)FYTBD:TBD

Resource Requirements:

- Planning Study staff & resources to support their efforts.
- Planning Study Project Manager & resources to support their efforts.
- Design staff & resources to support their effort. This may include but not limited to field investigations.
- Technical review resources
- Hydraulic analysis & design efforts to support overall design and construction of the replacement structure
- Construction staff and resources required to support construction
- · Project management & resources to support their efforts
- Permitting staff & resources to support their efforts
- Service Center staff to support Project Manager's communications local agencies, area residents, general communication support.
- In general, all resources required to implement this project.

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. Construction costs are preliminary and conservative.
- 4. The project will be fully funded through its duration.

CONSTRAINTS

- 1. Permit conditions must be met or modified.
- 2. Consultation with local stakeholders, which should be coordinated through the Ft. Myers Service Center.
- 3. Coordination with USACE on hydraulic condition and potential changes will be needed.
- 4. FDEP and Corps ERP permit may be required

² Items 2 through 5 will be updated upon approval of Conceptual Design. Note that land acquisition costs have not been considered.

RELATED PROJECTS

Background

The S169 (Structure 169), Central and Southern Florida, Draft General Reevaluation Report and Environmental Assessment, Hendry County, Florida, September 2005, prepared by US Army Corps of Engineers (USACE), Jacksonville District, South Atlantic Division, the USACE, hereafter referred to as the General Reevaluation Report (GRR), recommended a plan that consists of building a new water control structure west of C-2, demolishing the existing S169, constructing a access bridge to the Herbert Hoover Dike, modifying the existing Culvert 2, and installing telemetry control.

The GRR reevaluated the S169 project area, because S170 and S47, as authorized in the Central and Southern Florida (C&SF) Project, Part 1, Supplement 39, were not constructed. The C21 canal and S169 structure are addressed in C&SF Part I, Supplements 39, 44, and 45 and Part IV, Supplements 14 and 32. Authorized construction also called for the S169 structure and the C21 canal to be built in different locations.

The goals of the S-169 GRR included the following:

- 1. Provide a supply of water to the Industrial Canal to meet agricultural demands;
- 2. Operate the S310 lock as it is authorized to be used;
- 3. Maintain the existing level of flood protection;
- 4. Minimize fish kills and damage to watercraft and marinas; and
- 5. Limit the erosion downstream of S310

Since the recommendations resulting from the GRR were based on benefits related to water supply and not flood protection, USACE deemed that the South Florida Water Management District shall be responsible for the costs.

REFERENCES

- A 2005 draft General Evaluation Report for Structure 169, by the United States Army Corps of Engineers (USACE).
- Hydraulic Model: Thomas J Crafton, Corps of Engineers Jacksonville District, e-mail: <u>Thomas.j.crafton@saj02.usace.army.mil</u> and phone: 904-232-1596, provided a digital copy of the hydraulic model. The model is stored on Documentum (see link under References, below).
- Modifications to a USACE project must follow an establish procedure. The procedure is outlined in the documents contained in Documentum. The Documentum link is: <u>https://webtop.cerpzone.org/webtop/drl/objectld/0b009f5782f5b013</u>

EVERGLADES RESTORATION AND CAPITAL PROJECTS RESOURCE AREA SHALL COMPLETE THIS SECTION PRIOR TO EXECUTIVE OFFICE APPROVAL

PROJECT MANAGEMENT EXECUTION

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.

Name	Role	Responsibility

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 oversight team for the Capital Improvement Program will consist of the following individuals:

George Horne, Deputy Executive Director OMRA Larry Carter, Assistant Deputy Executive Director OMRA Douglas Bergstrom, Business Services Director OMRA

Kenneth G. Ammon, Deputy Executive Director ERCP Tommy B. Strowd, Assistant Deputy Executive Director ERCP John Dunnuck, Business Services Director ERCP

PROJECT DELIVERABLES

Identify any measurable, tangible, verifiable outcome(s), result(s), or item(s) that must be produced to complete a project or part of a project, including any deliverable(s) subject to approval by the project sponsor or customer.

WORK BREAKDOWN STRUCTURE (WBS)

The WBS is a deliverable-oriented grouping of project elements that organizes and defines the total scope of the project. The WBS identifies the work products that will be required to implement the total project and the hierarchical arrangement of all activities associated with completing each of the required sub-products. Identify the standard WBS structure template that will be utilized for this project.

ORGANIZATIONAL BREAKDOWN STRUCTURE (OBS)

The OBS will specify the person responsible for performing each WBS element in the Project Management Plan. If more than one person is responsible for the WBS elements of the project, provide a breakdown of responsibilities. *The project may utilize the template below or a modified version that supports the needs of the project. This information may be inserted from a report produced by the project management system.*

WBS Element	Person Responsible

COMMUNICATIONS PLAN

The Communications Plan provides a communication framework for informing and involving all stakeholders. Determine the information and communications needs of the stakeholders: who needs what information, when they need it, and how it will be provided to them.

Provide a short description of the communication plan

PROJECT SCHEDULE DEVELOPMENT AND RESOURCE REQUIREMENTS

For final approval of the Mini PMP, provide the following lists from the project management system.

- Activity list a list of project activities that will be performed with a description of each activity and the initial duration estimate. This list of activities will be the result of the analysis performed during the WBS development.
- **Resource requirements** Determine what physical resources (people, equipment, materials), what quantities of each should be used to perform project activities, and when they are needed.
- Activity duration estimates Duration estimates for each activity will be calculated based on estimates of time required to successfully complete each activity. During the estimating process, the team should consider project constraints and assumptions (see project charter), resource requirements and capabilities, and available historical information. All assumptions made during the estimating process will be documented.
- Activity dependencies Determine which activities have relationships to other activities or projects where one activity can affect the deliverable, outcome, or schedule of another activity.
- **Project schedule** A project schedule will be developed for the project using activity dependencies, duration estimates, constraints, assumptions, along with available resource information (time, money, labor). Project schedule should be presented in Gantt Chart and Network Diagram format.

RISK MANAGEMENT PLAN

All projects have risk. Define the approaches, tools, and information sources that may be used to identify, analyze, and resolve risk. Potential risk areas include risks associated with the organization, project staff, project scope, and operating/working environment. Define when the risk management process will be performed and the thresholds under which the risk management process would be initiated. A template is provided below to identify risks associated with the project scope and quantify them. The project may utilize the template below or a modified version that supports the needs of the project. If additional procedures are required, list them.

WBS / Activity	Description	Risk Description	Probability	Impact	Risk Dollars	Risk Hours	Risk Timeframe
WBS 1	Description						
Activity A	Description						
Activity B	Description						
Activity C	Description						
WBS 2	Description						
Activity A	Description						
Activity B	Description						
Activity C	Description						
Activity D	Description						
WBS 3	Description						
Activity A	Description						

MONITORING AND CONTROL PLAN

Monitor the project's status relative to the established baseline project management plan. Provide and understanding of the project's status relative to established baseline plan. For deviations determine the issue and then determine if the issue may be resolved within the current plan. If the issue cannot be resolved within the current plan follow the Districts standard change control procedures. If additional procedures are required list them.

CHANGE CONTROL PROCEDURES

A project management plan is a living document that will be updated or revised as necessary throughout the life of the project. The project will utilize the Districts standard change control process. If additional procedures are required list them.

QUALITY MANAGEMENT PLAN

Quality review procedures include identifying the quality review team members and their areas of expertise relating to this project and a schedule of quality reviews tied to milestones and significant project activities. The quality management plan also identifies the required sign offs for each quality check. If applicable define the quality plan for the project. The project may utilize the template below or a modified version that supports the needs of the project. If additional procedures are required list them.

QUALITY CONTROL PLAN

QC Signoff Codes: E= Execution Team	2 = QC by Execution Team, SFWMD, & Customer
N/A = Qc not Required	3-=QC by SFWMD & Customer
1 = Execution Team, & SFWMD	Note: Shaded cells require signature

WBS	WBS Description (Defined the work the quality test is associated with)	QC Code	Execution Signoff	SFWMD Signoff	Customer Signoff	Test for Quality	Acceptance Criteria	Test Scheduled Date
WBS A	Description	1						
Activity A	Description	1						
Activity B	Description	3						
Activity C	Description	2						
WBS B	Description	N/A						
Activity A	Description	N/A						
Activity B	Description	N/A						
Activity C	Description	2						
WBS c	Description	N/A						
Activity A	Description	N/A						
Activity B	Description	N/A						

PROJECT ACCEPTANCE CRITERIA

The essential characteristics and/or performance requirements for the deliverables that have to be present for the project deliverables to be considered acceptable. These are based on objective and not subjective criterion. The project may utilize the template below or a modified version that supports the needs of the project. If additional procedures are required, list them.

Deliverable	Criteria

PROJECT CLOSEOUT PROCEDURES

Final project closeout activities include closeout of any contracts associated with this project, final audits, financial accounts balancing, and notice of project completion, documentation of lessons learned, security closeout. The project may utilize the template below or a modified version that supports the needs of the project. If additional procedures are required, list them.

PROJECT CLOSEOUT CHECKLIST

Program Name:	Project ID:	
Project Name:		
AREA	COMPLETED	RESPONSIBLE
Scope:		
Were project objectives met? (see project charter for scope and objectives)		Person Responsible
If no, explain:	·	
Field Station Deliverable:		
Are deliverables acceptable to Responsible Person? Have all assets been turned over to the appropriate Field Station such as manuals, warranties, spare parts, etc? Has all required training occurred?		Applicant
If no, explain:	•	
Site Registration:		
Has site registration been completed? Has proof of calibration been submitted and signed off for operating systems and gauges?		Applicant
If no, explain:		
Documentum Files:		
Are all project files loaded in Documentum (such as project charters, designs, calculations, correspondence, surveys, geotechnical, permits, land and R/W documentation, as-built/record drawings, manuals and warranties)?		Applicant
If no, explain:		
Map Room Files:		
Has the as-built/record drawings been delivered to the map file room in both electronic and paper formats?		Applicant
If no, explain:		
Lessons Learned:		
Have the lessons learned been completed? Incorporate lessons learned from project coordination, project management, design, safety issues, and construction as applicable.		Applicant
If no, explain:	·	
Change Orders:		
Have all change order requests been finalized? (see change control log)		Applicant
If no, explain:		
Procurement / Financial:		
For all contracts, have the following closeout paperwork been submitted: Final Payment Request (set to fully invoiced at activity level after receiving in SAP), Closeout/ Disencumbrance Form, District Transportation and Equipment Release Form, Final Performance Evaluation, etc.?		Applicant
If no, explain:		
SAP-PS		
Are the project management system elements technically confirmed & TECO'd and has the PM supervisor been notified?		Applicant

If no, explain:	
Project Data:	
Has the project data been provided to the Field Station Director for plant maintenance? (floor area, serial and model numbers, operating conditions, pump H.P., HW/TW) (insert form name here)	Applicant
If no, explain:	
Construction Costs:	
Provide final construction costs including final quantities, unit prices, and change orders to cost estimator.	Applicant
If no, explain:	
Project Transfer:	
Conduct a project transfer meeting that includes the client, field station staff and project team. Briefing should include special permit conditions, special maintenance and operating system requirements, proof of completed training, and possible future issues due to design and construction. Provide final reports from SAP PS, such as Y_RD1_07000001, CN41, and FMEDDW to show all monies disencumbered or removed from the project.	Applicant
If no, explain:	
Project Closeout:	
Have all the above been accomplished and the project management system been closed out at the highest level?	Person Responsible
If no, explain:	

Construction Manager (Applicant)	Signature	Date
Project Manager (Applicant)	Signature	Date
Person Responsible	Signature	Date
Field Operations Department Director	Signature	Date
Project Sponsor	Signature	Date

OTHER ROLES AND RESPONSIBILITIES

Modify the following roles and responsibilities based on the scope, assumptions, and constraints of this project. Under the project team section, include a statement spelling out the skills needed for the team.

The project sponsor is responsible for;

- Communicating District objectives
- Overseeing cross-organizational participation
- 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 manager oversight
- Escalating to the management oversight team issues that cannot be resolved at the project level
- Developing and maintaining the project plan

The Functional Manager is responsible for:

- 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 **Business Services Director** 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
- Assisting in the development of Project Managers
- Reporting on, and communicating, Program and project status to Sr. Managers

Attachment 1 Cost Estimate

S-169 Project Budget Estimate

AND NEW	BRIDGE	WORK
	DIVIDOL	

1. DEMOLITION AND NEW BRIDGE WORK					
ITEM	QUANTITY	UNITS	UNIT PRICE	TOTAL	
Drive Temporary Sheet Pile					
Cofferdam Including Dewatering	180	TON	\$920	\$165,600	
Demolition And Remove S-169			•	•	
Culvert	1	LS	\$80,000	\$80,000	
Temporary Bypass Road					
(Approximately 6400 CY of Fill),	5400	01/	C O 4	¢400.400	
including nauling	5100	CΥ	\$24	\$122,400	\$
				Subtotal:	\$368,000
2. A NEW S-169 RELOCATED 2	MILES WEST	OF EXIS	STING STRUCT	TURE	
Drive Temporary Sheet Pile					
Cofferdam Including Dewatering	210	TON	\$920	\$193,200	
Excavation for a New Box Culvert			·	. ,	
Location	2400	CY	\$18	\$43,200	
Cast-In-Place Two (2) 10' x 8' Box					
Culverts, including Apron and wing					
well works	520	CY	\$1,200	\$624,000	
Box Culvert Slide Gates	2	Ea.	\$48,000	\$96,000	
Install Telemetry Control	1	LS	\$82,000	\$82,000	
Rip-Rap Works	610	CY	\$120	\$73,200	
Precast Control Building (24' x 12')	1	Ea.	\$120,000	\$120,000	
35 kW Generator	1	Ea.	\$60,000	\$60,000	
				Subtotal:	\$1,291,600
Dila Supported Foundation Class II	NEF LAGE 5-	109 COL			
Plie Supported Foundation Class II	620	CV	¢620	¢204 400	
Poinforcing Stool (Superstructure)	020		Φ020 ¢1 900	\$304,400 \$42,200	
	24		Φ1,000	\$43,200 \$96,400	
	600		\$144	\$86,400	
	120		\$180	\$21,600	
AASHTO Beam, Type V	3024	FI	\$92	\$278,208	
Neoprene Bearing Pads	32	CY	\$655	\$20,960	
Class II Concrete (Substructure)	340	CY	\$920.00	\$312,800	
Reinforcing Steel (Substructure)	22	TON	\$1,820.00	\$40,040	
Backfill Area To Meet Existing	04000	0)/	.	* ~ 7 ~~~~	
Elevation	21000	CY	\$18.00	\$378,000	
Asphalt Road on both sides of the	24.20	<u>cv</u>	¢c4.00	¢400.000	
New Bridge	3120	51	\$64.00	\$199,680	
Asphalt Road on Both Sides of The					
new bluge				Subtotal	000 VCV CD
				Subiolal.	ψ 3,424,000
4. CONVERTING FIVE FLAP GATE	S + ONE SLIE	DE GATE	TO NEW SLIDE	E GATES	
Unive Temporary Sheet Pile	100	TON	¢000	¢110 400	
including Dewatering	120	ION	\$9Z0	φ110,400	

Remove Existing Flap Gates and					
one slide gate	6	Ea.	\$12,000.00	\$72,000	
Install new Slide Gates	6	Ea.	\$38,000.00	\$228,000	
Install Telemetry Control	1	LS	\$140,000	\$140,000	
Rip-Rap Works	960	CY	\$120	\$115,200	
Precast Control Building (24' x 12')	1	Ea.	\$120,000	\$120,000	
35 kW Generator	1	Ea.	\$60,000	\$60,000	
				Subtotal:	\$845,600
5. BUILDING BENCH 1,000' X 60' X	2' BENCH BE	TWEEN F	HERBERT HOO	VER DIKE	
	AND C21				
Hauling Select Materials to Site Up to 20 Miles Round Trip					
(1000'x60'x2')+25%	5600	CY	\$18	\$100,800	
Backfill Bench Area including					
Compaction	5600	CY	\$6	\$33,600	
Sod ding	6670	SY	\$4	\$26,680	
				Subtotal:	\$161,080
				Total:	\$6,091,168
		Mobiliz	ation/Demob.	5%	\$304.558
			Markup:	15%	\$913,675
			•	Total	
				Cost:	\$7,309,402