ATTACHMENT III

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

PROJECT COMPLETION REPORT

PROJECT COMPLETION REPORT¹

	PROJEC CWPPRA	I NAME /STATE PROJECT	NO.	Brady Canal TE 28 / PTE 26B		-
Report Date: May 16	. 2001	BY:	USD	A - NRCS		-
. Project Managers/Cont	racting Offic	er:				
DNR Project Manager		Clark Allen		Telephone	(225) 342-6738	
DNR Construction Proj	ect Manager	Clark Allen		Telephone	(225) 342- 6738	
DNR Monitoring Manag	ger	Todd Folse		Telephone	(504) 447-0996	
Federal Agency Project	Manager	Faye Talbot		Telephone	(318) 473-7817	
Federal Agency Contracting Officer		Charles Phillips		Telephone	(318) 473-7796	

2. Location and description of projects as approved for construction by Task Force.

The Brady Canal hydrologic restoration project is located within the Bayou Penchant - Lake Penchant watershed. The 7,653 acre project area contains fresh, brackish and intermediate marshes and is bounded by Bayou Penchant, Brady Canal and Little Carencro Bayou to the north, Bayou de Cade and Turtle Bayou to the south, Superior Canal to the east and Little Carencro Bayou and Voss Canal to the west. The Mauvais Bois Ridge bisects the area and provides for a hydrologic differentiation between e northern and southern sections of the project area. The approximate center of the project area is atitude 29^e 52' 30" North and Longitude 91^e 29' 30" West.

The project features consist of the replacement of four structures with steel sheet pile weirs with variable crest bays on three of the structures, the construction of one composite steel sheet pile with a rock riprap armored barge bay, one rock riprap plug and two rock riprap armored channel cross-sections. It also includes the construction of 12,130 L.F. of earthen embankment and 4670 L.F. of rock riprap embankment.

3. Final, as-built features, boundaries and resulting acreage (use attachments if necessary).

Four steel sheet pile weirs with variable crest bays, one composite steel sheet pile and rock riprap weir with a barge bay, one rock plug, two rock armored channel sections, 8,531 feet of earthen embankment, 4,405 feet of rock riprap armored earthen embankment, and 3,660 feet of rock riprap embankment were constructed in this project. These measurers are completely identified in the "As Built" plans which were previously submitted.

Actual Benefited Acres 297

1.

¹To be filled out at construction completion by either the DNR Construction Project Manager or the Federal Agency Contracting Officer depending on which organization had lead role for construction of project. (Except for some items under # 13).

4. Kry project cost elements

	CWPPRA Project Cost Estimates**	Cost Incurred as of Construction Completion
Construction (includes S&I)	\$ 2,921,300	\$ 2,632,525
E & D	\$ 272,600	\$ 210,428
Landrights	\$ 39,900	\$ 11,400
Monitoring	\$ 1,084,338	\$ 198,769
0 & M	\$ 1,344,038	\$ 18
Total	\$5,662,176.00	\$3,053,140.00

** Most recent estimate from CWPPRA Project estimates Report produced by USACOE.

5. Items of work	Final	Unit	Final	Estimate	% Over	
	Qty.	Price	Amount	Amount	or Under	
SEE ATTACHED SPREAD SHEET						

6. Construction and construction oversight

Prime construction contractor	All South General Contractors			
Subcontractor	Dolphin Services			
Subcontractor				
Original construction contract	\$2,318,801.00			
Change orders	\$ 228,991.00			
Over/(Under) Runs	\$ - 26,466.10			
Final construction contract	\$2,521,325.90			
	-			
Const. oversight contractor	Const. amt.	\$		
Cons. O.S./Admin. agency	Est. amt.	\$		

7. Major equipment used.

Spud barge with American 999 crane

- 2. Spud barge with American 5300 crane
- 3. Spud barge with American 9260 crane
- 4. Spud barge with American 99C crane
- 5. Marshbuggy with Cat. 320 excavator
- 6 Spud barge with Cat 322 excavator Spud barge with Daewoo 280 LC excavator
- 8. Deck barges (3)
- 9 Bobcat front-end loader (2)

8. Discuse construction sequences and activities, problems encountered, solutions to problems, etc.

1. The first item the contractor began work on was the placement of the earthen embankments. This consisted of making an initial placement of earth and allowing time for consolidation. Then making a second lift and in some areas a third lift to get enough material to form the embankment.

The contractor then began driving sheet pile for the weirs concurrent with the earthen embankment work.

- . Concurrent with the above two items the contractor began excavation for floatation for the rock dike.
- 4. After completing driving all sheet piles, contractor drove pole piles and placed cap for weirs.
- 5. Began placement of the rock dike after completion of the excavation for floatation.
- 6. Completed final shaping of earthen embankment and seeded the embankment.
- 7. Completed final shaping of the rock dike and rock plugs.
- 8. Completed the construction of the sheet pile weirs and installed the stoplogs.

9. Construction change orders and field changes.

Modification #1 changed location of warning signs and background colors; no cost or time change.

- 2. Modification #2 changed a short segment of earthen embankment to rock dike from station 47+90 to 50+30. This reduced bid item 18, Embankment Construction from 14,000 L.F. to 13,940 L.F. and added items 19A Geotextile Embankment Sta. 49+70 50+30 for 233 S.Y. @ \$5.00 per S.Y. and 20A Rock Riprap, Embankment Sta. 49+70 50+30 for 372 tons @ \$30.50 per ton.. This increased the contract by \$11,791.
- 3. Modification #3 changed specification 81 to clarify what items were to be painted; no cost or time change.
- 4. Modification #4 changed the requirement of cable used to wrap the pile clusters and increased to number of wraps of the cable around the cluster. This modification also increased the performance time of the contract by 7 days for Christmas and Thanksgiving holidays. No change in contract cost.
- 5. Modification #5 changed a large amount of earthen embankment to rock armored earthen embankment. This was due to the significant under run of rock quantities used in the construction of the rock dike portions of the contract. It was decided to utilize the quantity of rock originally in the contract and armor as much of the earthen embankment as possible. Below are the changes to the bid items.
 - B.I. 18 Embankment Construction is reduced from 13,940 L.F. to 13, 210 L. F. for 730 L.F. reduction
 @ \$12.00 per L.F. for a net reduction of \$87.60.
 - B.I. 20 Rock Riprap Embankment is reduced from 24,820 tons to 620 tons for a 24,200 ton reduction @ \$30.50 per ton for a net reduction of \$738,100.
 - B.I. 28 Rock Riprap, Rock Dike, Mod #5 is added for 11,400 tons @ \$35.00 per ton for an increase of #399,000.
 - B.I. 29 Rock Riprap, Earth Embankment Armor, Mod #5 is added for 12,800 tons @ 37.50 for an increase of \$480,000.
 - B.I. 30 Geotextile, Rock Dike, Mod #5 is added for 1,217 S.Y. @ \$4.50 per S.Y. for an increase of \$5,476.50.
 - B.I. 31 Geotextile, Earth Embankment Armor, Mod #5 is added for 20,363 S.Y. @ \$4.50 per S.Y. for an increase of \$91,633.50.

This modification also reduced the mobilization for compensation of allowing the contractor to work additional hours. Appropriate drawings and specifications were changed. The total dollar of the contract was changed from \$2,330,592 to 2,547,792 for a net increase of \$217,000. Also the contract performance time was increased by 30 calendar days.

6. Modification #6 included specification changes to define the placement of the rock riprap. This was a no time or cost change modification.

16. Fipeline and other utility crossings.

Structure	Owner	Rep. To Contact
Pipeline	Union Oil Company of California	Mr. Andy Eltiste (318) 295-6852
Pipeline	Equilon Pipeline Company	Mr. Kevin Ledet (504) 575-2551
ipeline	Williams Field Services	
.'ipeline	Castex Energy, Inc.	(281) 447-8601
Pipeline	Tennessee Gas Pipeline Company	Mr. L.R. Slowick (504) 879-3516
Power lines	SLECA	(504) 876-6880

11. Safety and Accidents.

There were no reported accidents during construction of the project. Overall the work was carried out in a safe manner, and the contractor was safety conscious.

12. Additional comments pertaining to construction, completed project, etc.

One item is the coordination with sponsors or who ever will be performing the operation of the project. Currently no one has been identified to receive the keys for the stop log locking devices, lifting hooks, chain hoists, etc. These items are currently in the possession of NRCS and need to be provided to the operator of the project in order that any permit requirements regarding operation can be met.

Other comments can be found on the Continuation sheets.

13. <u>Significant Construction Dates</u>: To be filled out by DNR Construction Project Manager or Contracting Officer for construction for Agency responsible for construction.

	Date	Bid I.D.
Bid I.D. (Construction, Vegetation, etc.)		50-7217-9-06
Bid Opening	4/15/99	
Instruction Contract Award	5/4/99	
Preconstruction Conference	6/24/99	
Notice to Proceed	7/6/99	
Mobilization	7/27/99	
Construction Start	7/29/99	
Construction Completion	7/10/00	
Final Acceptance	7/10/00	

If different bids are taken, repeat this table to individually reflect each bid and attach tables.

Other significant Project Dates

<u>Date</u>

Project Implementation closeout**

Start of Preconstruction Monitoring**

Preconstruction Aerial Photography Acquisition***

Monitoring Plan Completion***

nal implementation closeout is made by either the DNR Project Manager or the Federal Agency. Contracting Officer depending on which organization had lead role for construction of project.

*** To be completed by DNR Project Manager.

SĊHE	DULE OF ITEMS								_				
Item		Est.		Ī _		1	Estimated	Final					% Over
No.	Work	Quantity	Unit	E	st. Unit Price		Amount	Quan.	Bie	d Unit Pricel	P	inal Amount	or Under
	Mobilization and Demobilization		Job	S	100.000.00	\$	00.000.00	1	3	57,950.00	S	37,950.00	0%
2	Pollution Control	1	Job	\$	10,000.00	5	10,000.00	1	\$	10,000.00	\$	10,000.00	0%
3	Construction Surveys	1	Job	5	5,000.00	\$	5,000.00	1	\$	15,000.00	5	15,000.00	0%
4	Permanent Vegetation Seeding	<u>2</u> 3	Acre	5	300.00	5	6,900.00	23	\$	800.00	\$	18,400.00	0%
<u> </u>	reruization		Acre	15	200.00	5	4,600.00	23	\$	300.00	\$	6,900.00	0%
,	Structure Demously City of Cal		Acre	15	300.00	13	1,200.00		\$	800.00	5	3,200.00	0%
7	& 24	1	Job	\$	42,000.00	\$	42,000.00	1	\$	35,000.00	\$	35,000.00	0%
	Steel Sheetpiling, Sites 6, 14, 21,			1									
8	23 & 24	13,824	S.F.	\$	22.00		304,128.00	13,953		24.00			1%
	Round Timber Piling, Sites 6, 14, 21												
9A	& 23	26	Ea.	\$	700.00	\$	18,200.00	26	\$	650.00	\$	16,900.00	0%
98	Round Timber Piling, Warning Signs	52	Ea.	\$	700.00	\$	36,400.00	52	\$	750.00	\$	39,000.00	0%
10	Rock Riprap, Sites 6, 7, 10 & 20	9,680	Tons	\$	37.00	Ŝ	358,160.00	9,121	\$	39.00	\$	355,719.00	-6%
11	Geotextile, Sites 6, 7, 10 & 20	6,780	S.Y.	\$	4.25	\$	28,815.00	6,637	\$	4.50	\$	29,865.15	-2%
	Metal Fabrication & Installation,												
12	Variable Crest Weir, Site 14	1	Job	\$	40,000.00	\$	40,000.00	1	\$	10.000.00	\$	10,000.00	0%
	Metal Fabrication & Installation,												•
13	Variable Crest Weir, Site 21		Job	\$	50,000.00	\$	50,000.00	1	\$	28,000.00	\$	28,000.00	0%
	Metal Fabrication & Installation,												
14	Variable Crest Weir, Site 23	1	Job	\$	60,000.00	\$	60,000.00	1	\$	19,000.00	\$	19,000.00	0%
	Metal Fabrication & Installation,												
15	Warning Signs & Railing	1	Job	\$	49,000.00	. \$	49,000.00	1	\$	58.000.00	\$	58.000.00	0%
	Timber Fabrication & Installation,			İ.									
16	Cross Members & Stop Logs		Job	s	4.000.00		4,000,00		S	17.000.00	_	17.000.00	0%
	Timber Fabrication & Installation.			1		Ť			-		Ť		
17	Staff Gage Posts, Sites 21 & 23	4	Ea.	s	50.00	\$	200.00	4	S	250.00	s	1.000.00	0%
18	Embankment Construction	14,000	L.F.	\$	7.00	\$	98.000.00	12.676	\$	12.00	\$	152,112.00	-9%
19	Geotextile, Embankment	38,400	S.Y.	\$	2,75	\$	105.600.00	38,908	5	4.00	\$	155.632.80	1%
20	Rock Riprap, Embankment	24.820	Tons	S	37.00	\$	918.340.00	215	Ŝ	30.50	S	6.557.50	-99%
21	Rockfill	160	ions	S	37.00	S	5,920.00	163	S	32.00	S	5.216.00	2%
									-				
22	Rock Pierre Embeckment	1 420	Topo		27.00	e	52 540 00	057	¢	20.50	e	20 199 50	.229/
22	Rock Riprap, Embankment	1,420	10/15	1.0	57.00	3	52,540.00	907	3	30.30	9	29,100.30	-3376
23	Geotextile, Embankment	780	S.Y.	3	2.75	3	2,145.00	894	\$	5.00	3	4,472.00	15%
ADDIT	IVE B								_				
24	Rock Riprap, Embankment	1,360	Tons	\$	37.00	\$	50,320.00	878	\$	30.50	\$	26,779.00	-35%
25	Geotextile, Embankment	810	S.Y.	\$	2.75	\$	2,227.50	856	\$	5.00	\$	4,277.50	6%
ADDIT													
26	Rock Ripran, Embankment	750	Tons	e	37.00	¢	27 750 00	308	¢	30.50	e	9 394 00	-50%
	Contantila Embandant	100	- 1003	, w	0.75	-	21,730.00	000	*	50.50	-	3,054.00	4.20/
21	Geotextile, Embankment	450	5.1.	3	2.75	3	1,237.50	391	3	5.00	3	1,956.00	-13%
	Original	Estimated	d Amount	\$			2,38 2,683.00						
Modifi	cations												
	Geotextile, Embankment Sta 49+70												
19A*	50+50	233	S.Y.	\$	5.00	\$	1,165.00	210	\$	5.00	\$	1,0 50.00	-10%
	Rock Riprap, Embankment Sta												
20A*	49+70 - 50+50	372	Tons	\$	30.50	\$	11,346.00	106	\$	30.50	\$	3, 233.00	-72%
28**	Rock Riprap, Rock Dike	11,400	Tons	\$	35.00	\$	399,000.00	15,711	\$	35.00	\$	549,885.00	38%

* Modification #2

29** Rock Riprap, Embankment Armor

31** Geotextile, Embankment Armor

30** Geotextile, Rock Dike

12,800

1,217

20,363

' Tons

S.Y.

S.Y.

\$

\$

\$

37.50 \$

4.50 \$

4.50 \$

480,000.00 11,307 \$

Final Contract Amount \$

771

12,951

\$

\$

5,476.50

91,633.50

** Modification #5

BRADY CANAL Completion Report

37.50 \$ 424,012.50

3,469.50

58,277.25

2,521,325.90

4.50 \$

4.50 \$

-12%

-37%

-36%

NRCS SUPPLEMENT TO COMPLETION REPORT

CONTRACT ADMINISTRATION

List any significant problems encountered in the administration of the construction contract and recommended solution for future contract of like nature.

DESCRIPTION OF PROBLEM	RECOMMENDATIONS FOR FUTURE
ENCOUNTERED	CONTRACTS
1. Problems were encountered with de-energizing	Require the contract within the specifications to be
power lines within the work limits. NRCS had	responsible for ALL notifications and coordination
the responsibility of notifying the affected	regarding de-energizing power lines in conjunction
landowners of the times power would be off.	with his construction activities.
2. There were some problems in tracking submittals, shop drawings, and material certifications.	In future contracts a submittal sheet currently being developed will be utilized. The contractor will be required to submit ALL submittals (shop drawings, material certifications, etc.) with a submittal sheet as the cover.
3 There were some problems in verifying materials supplied on the job site were within compliance with the specifications. This was due partially to the variety of material certifications that were submitted by the contractor.	In future contracts, all material certifications will be required to be submitted to the contracting officer with a standard material certification sheet that identifies the supplier/manufacturer, project, specification requirements, and testing requirements. This sheet is currently being developed and will be submitted for review as soon as completed.

CONSTRUCTION PLANS

List any items pertinent to the plans that caused problems, need clarification or changes for future contracts of this nature.

	DESCRIPTION OF ITEM IN PLANS	RECOMMENDATIONS FOR FUTURE CONTRACTS
	Greater detail on the warning signs, specifically the text size for the signs	The text height and the type and grade of the sheeting material used to make the lettering shall be shown on the drawings and in the specifications.
2	Several problems were encountered in the construction of the pile clusters. One was the use of A-882 cable, which was too stiff. Also the use of Dwidag rods presented a problem.	Use stainless steel cable for the wraps around the pile cluster. Use stainless steel all thread bolts on the cluster. Show the top of the batter piles with a notch to better fit against the vertical pile.
3.	A concern about the visibility of the structures and piles was raised.	Show the placement of conspicuity tape on all structures and sign support piles, etc.
4.	In attaching the warning signs to support piles, a conflict with the lag bolts was encountered.	Use 6" long lag bolts to attach the signs to the piles rather than 8" long bolts.
5.	Using aluminum angles to attach the signs to the pole piles causes the pile to have to be notched to accept the horizontal leg of the angle, which is difficult to accomplish.	Consider the use of aluminum "Z" section to attach the warning sign to the piles. This would make the attachment and replacement of the signs easier.
6.	No method of attaching the decking (grating) to the structures was shown.	Show the use of stainless saddle clips with self- tapping screws to attach grating to steel members.
7.	Not enough detail on the structure to earthen embankment tie in.	The actual alignment on tie in for each structure needs to be shown specifically for that structure, not as a typical drawing.
8.	Batter piles were shown with degrees of batter.	Recommend showing the batter as inches per foot.
9.	The timber piles on the variable crest weirs were shown with a notch in the center of the pile to accept the cross member to lift out the stop logs.	Cutting the notch in the center of the pile is extremely difficult. If conditions allow recommend notching the pile to accept cross member on one side.
10.	When the clip angles were placed attaching the pile cap to the sheet piles according to the drawings, it caused all of the bolts to be off center on one side of the pile cap.	Show the clip angles on alternating sides of the sheet piles in order to have a repeating pattern with the bolts across the centerline of the pile cap.

CONSTRUCTION SPECIFICATIONS

List any significant items in the construction specifications, which caused problems, need clarification or changes for future contracts of this nature.

DESCRIPTION OF ITEM IN SPECIFICATIONS	RECOMMENDATIONS FOR FUTURE
1. Sheet piles were coated as mated pairs. The specification did not preclude this.	Recommend stating in the specifications that each pile is to be coated independently.
2. Some concern about the materials, which were used in the manufacture of the batter enclosure for navigation lights.	Recommend specifying all aluminum parts for the battery enclosure if available, with a heavy-duty clasp. Also specify that the contractor shall supply all locks for battery enclosures, access hatch to light on navigation aid, as well as stop log locking devices, etc. Also the recommendation to look into the possibility of specifying LED's in place of bulbs for the lights should be pursued.
3. The specifications were unclear as to what paint system and or color was to be applied to certain portions of the sheet pile structures.	A painting schedule will be developed for future contracts, which identifies each component with the surface preparation, paint system and color to be applied.
4. A large number of birds are resting on the solar panels that charge the batteries for the navigation lights. The bird droppings are covering a large portion of the panels.	Specify bird exclusion devices for all of the solar panels in future contracts.
5. There were inconsistencies between the schedule of pipe and wall thickness shown on the drawings and in the specifications.	It is recommended that the wall thickness (schedule) and the I.D. of the pipe be specified.

GENERAL COMMENTS

List any significant items which worked well and should be repeated or which caused problems, need clarification or changes for future contracts of this nature.

DESCRIPTION OF ITEM	RECOMMENDATIONS FOR FUTURE CONTRACTS
1. The design of the work platform on the sheet pile weirs is somewhat cumbersome.	The project engineer has submitted proposals for the design of the platforms, which could be easier and cheaper to construct. For the next contract that utilizes this type of structure, analysis of the proposed platform should be completed and compared to the cost of the existing design.
2. There were some problems in constructing the pipe railings for the weirs and platforms.	For future contracts where pipe railings are specified, the railings should be designed using AMP-521 Pipe Railing System Manual where applicable.