OPERATION, MAINTENANCE, AND REHABILITATION PLAN FOR THE LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION TE-26

August 8, 2002

OPERATION, MAINTENANCE, AND REHABILITATION PLAN FOR LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION
TE-26

August 8, 2002

Prepared by:
Louisiana Department of Natural Resources
Coastal Restoration Division
Baton Rouge, Louisiana

and

Pyburn & Odom, Inc.
8178 GSRI Avenue
Baton Rouge, Louisiana 70820

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History of Revisions

01/31/2005	Addition of Appendix IX - Warning Buoy Replacement Project - Project Completion Report
01/31/2005	Addition of Appendix X - Warning Buoy Replacement Project - As-Built Drawings

OPERATION, MAINTENANCE AND REHABILITATION PLAN

FOR THE

LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION PROJECT (TE-26)

The Louisiana Department of Natural Resources (LDNR) and the United States Department of Commerce National Oceanic and Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS) agree to carry out the terms of this plan for the Operation, Maintenance, Repair and Rehabilitation Plan (hereinafter referred to as the "Plan") of the accepted completed project features in accordance with the U.S. Department of Commerce NOAA Cooperative Agreement No. NA57FZ0177 with LDNR awarded March 1, 1995 with amendments effective January 1, 1998; December 1, 1997 (back dated to reflect period of revised cost share ratio); and September 1, 1999 (see Attachment I). A Memorandum of Agreement between LDNR, NOAA and the U.S. Army Corps of Engineers fully executed February 10, 1999 specifies the arrangement between the parties to execute and fund long-term project activities, i.e. operations and maintenance, and monitoring (see Attachment II).

Construction of Lake Chapeau Marsh Creation was authorized by Section 303(a) of Title III Public Law 101-46, the Coastal Wetlands Planning Protection and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended. The Lake Chapeau Project was approved on the third (3rd) Priority Project List.

The project features covered by this plan are inclusive of and are identified as the Lake Chapeau Marsh Creation and Hydrologic Restoration Project (TE-26). The intention of the provisions of this Plan is to maintain this project in a condition that will generally provide the anticipated benefits that the project was based on. There is no requirement that this project function to any standard beyond the economic life; except that it is not left as a hazard to navigation or a detriment to the environment.

The property associated with the Lake Chapeau Project is owned by the Terrebonne Parish School Board, Point Au Fer L.L.C.,and the Roman Catholic Church of the Arch Diocese of New Orleans.

1. PROJECT DESCRIPTION, PURPOSE, AND LOCATION

The Lake Chapeau Marsh Creation and Hydrologic Restoration Project encompasses 13,024 acres of intermediate and brackish marsh and open water on Point Au Fer Island, in the vicinity of Lake Chapeau located 30 miles south of Morgan City, Louisiana, in Terrebonne Parish. It is bounded by Four League Bay to the north, Atchafalaya Bay to the west, Locust Bayou and a network of canals to the south, and Wildcat Bayou and an oil field canal to the east. The project map showing project area and location of project features are shown in Attachment III.

This Lake Chapeau Marsh Creation Project involves restoring marshes west of Lake Chapeau and re-establishing a land bridge between Locust Bayou and Alligator Bayou with sediment dredged from the Atchafalaya Bay. This project was constructed in three (3) separate construction units. The first component of the Lake Chapeau Project consisted of dredging 721,931 cubic yards (cy) of materials from Atchafalaya Bay, approximately 1,700 feet offshore from the west central shoreline to Point Au Fer Island. The material was hydraulically placed over a 1,800-acre area at an elevation of +2 ft. NGVD. Later, 35,000 - 4" smooth cord grass

plugs were planted over the newly created marsh. The second project component consisted of the construction of seven (7) rock plug structures across existing oil field canal. These rock plugs were constructed across man-made channels around the fringes of Lake Chapeau project area and will restore the natural circulation and drainage patterns within the central portion of Point Au Fer Island. The third project component involved dredging 59,218 cy of Locust Bayou to a depth of -6.0 ft. NGVD.

Two hundred sixty (260) acres of open water will be converted to intermediate marsh. Additionally, 1,640 acres of marsh will be enhanced and 2,500 acres of marsh will be protected from wind wave erosion and scour, and 900 acres of submerged aquatic vegetation will be created by the project in the open-water areas. By reducing tidal energies in the project area, the marsh will reduce tidal scour, encourage growth of emergent and submergent vegetation, and promote sediment accretion. Over the 20-year project life, natural wetlands loss is expected to abate and broken marsh areas will start to accrete as natural hydrology is restored and water fluctuations are reduced.

The Project has a 20-year economic life which began in May 1999.

The principal project features include:

Construction Unit No.1

- Hydraulic Fill - 721,931 cy of sediment.
- Planting of 35,000 smooth cord grass plugs.

Construction Unit No.2

- Site 1 - Rock Plug 150 linear feet (LF)
- Site 3 - Rock Plug 229 LF
- Site 4 - Rock Plug 174 LF
- Site 5 - Rock Plug 70 LF
- Site 6 - Rock Plug 145 LF
- Site 7 - Rock Plug 157 LF
- Site 9 - Rock Plug 240 LF

Construction Unit No.3

- Dredging 6,400 LF Locust Bayou t -6.0; NGVD.

2. CONSTRUCTION COMPLETION

Project completion reports and as-built drawings for the Lake Chapeau Marsh Creation and Hydrological Restoration Project were never completed. However, upon completion of construction, LDNR had prepared a Final Report for the project which describes the purpose of the project, project objectives and work performed, benefitted acres, project management and design, construction activities and change orders and other significant milestone dates and comments (see Attachment IV). Construction drawings of the Lake Chapeau project are shown in Attachment V.

3. PROJECT PERMITS

Project permit applications were completed and submitted to appropriate agencies and permits were received prior to construction. These permits and permit amendments are included in Attachment VI.

4. ITEMS REQUIRING MAINTENANCE AND REHABILITATION

The following completed structural components project features jointly accepted by LDNR and NMFS will require maintenance, repair, and/or rehabilitation throughout the twenty (20) year life of the project.

A. **Site/Structure #1** - 147.5 LF rock riprap plug (approximately 2,140 tons of shell and rock riprap) across an oil field access canal on the east side of Locust Bayou north of Site #9. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.

B. **Site/Structure #3** - 229.1 LF rock riprap plug (approximately 7,380 tons of shell and rock riprap) across an oil field access canal northeast of Lake Chapeau and north of Site #4. The top of the rock plug is set at -4.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.

C. **Site/Structure #4**- 173.8 LF rock riprap plug (approximately 5,740 tons of shell and rock riprap) across an oil field access canal northeast of Lake Chapeau and south of Site #3. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.

D. **Site/Structure #5**- 70 LF rock riprap plug (approximately 400 tons of shell and rock riprap)across an oil field access canal west of Mosquito Bayou northeast of Site #6. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.

E. **Site/Structure #6**- 145.1 LF rock riprap plug (approximately 780 tons of shell and

rock riprap) across an oil field access canal east of Bourges Bayou and southwest of Site #5. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.

F. **Site/Structure #7**- 157.1 LF rock riprap plug (approximately 1,490 tons of shell and rock riprap) across an oil field access canal east of Locust Bayou south of Site #9. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.

G. **Site/Structure #9**-240.4 LF rock riprap plug (approximately 4,070 tons of shell and rock riprap) across an oil field access canal east of Locust Bayou north of Site #7. The top of the rock plug is set at 0.0 ft. NGVD which corresponds to the elevation on armored earthen embankment on either side of the canal. Aluminum plated warning signs supported by galvanized or painted gusset plates and 4" Schedule 40 pipe are set on both sides of the plug, and orange floating warning capsule buoys connected by steel cables form a visual barrier system.

H. **Navigational Aids** - Where applicable, project navigation aids and warning signs shall be inspected and maintained for the twenty year (20) project life.

5. OPERATION AND MAINTENANCE BUDGET

The cost associated with Operations, Maintenance, and Rehabilitation of the features outlined in Section 4 for the twenty (20) year project life is included and summarized in Attachment VII..

6. RESPONSIBILITIES-MAINTENANCE AND REHABILITATION

A. LDNR will:

1. In accordance with the Cooperative Agreement No. NA57FZ0177 (Cost Sharing Agreement), assume all responsibilities for maintenance and Rehabilitation of the accepted completed project features identified in Section 4.

2. Conduct joint site inspections with NMFS of the project site at least annually and after major events if determined to be necessary by LDNR and/or NMFS.

LDNR will submit to NMFS, a report detailing the Condition of the project features and recommendations for any corrective action. If LDNR recommends that corrective actions are needed, the report will include the entire estimated cost for engineering and design, supervision and inspection, construction, contingencies, and the urgency of such action.

3. Perform or have performed any corrective actions needed, if such corrective actions have been approved by LDNR or NMFS. NMFS will participate with LDNR, or its appointed representative, in the engineering and design phases of the corrective actions for the project. Oversight of engineering and construction of the corrective actions for the project will be the responsibility of LDNR or its appointed representative. At least thirty (30) calendar days prior to the date of formal request for construction bids, LDNR or its appointed representative shall provide NMFS with final copies of all project corrective action designs and specifications for review and concurrence by NMFS. LDNR or its appointed representative shall approve the final designs and specifications prior to proceeding with bid solicitations on all project corrective action construction contracts in coordination with NMFS. Any plan and/or specification changes both before and after award of construction contracts, shall be approved by LDNR in coordination with NMFS.

4. The representatives LDNR and NMFS shall meet as necessary during the period of construction to address corrective actions needed and shall make such recommendations as they deem necessary.

5. Facilitate the State contribution towards operation and maintenance activities as specified in the Memorandum of Agreement between LDNR, NMFS and the U.S. Army Corps of Engineers.

B. NMFS will:

1. Conduct joint site inspections with LDNR of the project site at least annually and after major storm events if determined to be necessary by LDNR or NMFS.

2. Review final copies of any maintenance and rehabilitation project designs and specifications and provide concurrence prior to formal request for construction bids or any corrective actions for the project.

3. Facilitate the Federal contribution towards operation and maintenance activities as specified in the Memorandum of Agreement between LDNR, NMFS and U.S. Army Corps of Engineers.

4. Upon the request of the LDNR and to the extent its resources allow, provide consultative assistance for the maintenance and rehabilitation of the project.

The undersigned parties, acting on behalf of their respective agencies, agree to operate, maintain, and rehabilitate the Lake Chapeau Marsh Creation and Hydrologic Restoration Project (TE-26)

according to this document, referenced Cooperative Agreement, plans, and all applicable permits and laws.

UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

BY: Erik C. Jobst DATE: 2/13/03

TITLE: PROGRAM MANAGER

LOUISIANA DEPARTMENT OF NATURAL RESOURCES

BY: [signature] DATE: 2/28/03

TITLE: Deputy Assistant Secretary

ATTACHMENT I

LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION

COOPERATIVE AGREEMENT

(REV. 10-98)
DAO 203-26

AMENDMENT TO FINANCIAL ASSISTANCE AWARD

ACCOUNTING CODE: N/A

AWARD NUMBER: NA57FZ0177

RECIPIENT NAME: Louisiana Department of Natural Resources

AMENDMENT NUMBER: 3

STREET ADDRESS: P.O. Box 94396

EFFECTIVE DATE: SEPTEMBER 1, 1999

CITY, STATE, ZIP CODE: BATON ROUGE, LOUISIANA 70804

EXTEND WORK COMPLETION TO: AUGUST 31, 2000

DEPARTMENT OF COMMERCE OPERATING UNIT: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

COSTS ARE REVISED AS FOLLOWS:	PREVIOUS ESTIMATED COST	ADD	DEDUCT	TOTAL ESTIMATED COST
FEDERAL SHARE OF COST	$ 3,498,052	$ -0-	$ -0-	$ 3,498,052
RECIPIENT SHARE OF COST	$ 699,117	$ -0-	$ -0-	$ 699,117
TOTAL ESTIMATED COST	$ 4,197,169	$ -0-	$ -0-	$ 4,197,169

REASON(S) FOR AMENDMENT

1. To extend the award completion date twelve months through August 31, 2000, for the project entitled, 'Lake Chapeau Sediment Input and Hydrologic Restoration (PTE-23/26A)', as requested in the Recipient's letters dated November 16, 1999, which is incorporated into this award by reference.

2. To revise NOAA Administrative Special Award Conditions.

3. To incorporate U.S. DoC Financial Assistance Standard Terms and Conditions dated October 1998.

This Amendment approved by the Grants Officer is issued in triplicate and constitutes an obligation of Federal funding. By signing the three documents, the Recipient agrees to comply with the Amendment provisions checked below and attached, as well as previous provisions incorporated into the Award. Upon acceptance by the Recipient, two signed Amendment documents shall be returned to the Grants Officer and the third document shall be retained by the Recipient. If not signed and returned by the Recipient within 15 days of receipt, the Grants Officer may declare this Amendment null and void.

☐ Special Award Conditions (ATTACHMENT B [ ] ADMINISTRATIVE [ ] PROGRAMMATIC)

☐ Line Item Budget (ATTACHMENT A)

☐ Other(s): _____

rec'd 11/18/2
cs. def

SIGNATURE OF DEPARTMENT OF COMMERCE GRANTS OFFICER	TITLE	DATE
for	NOAA GRANTS OFFICER	
D NAME AND SIGNATURE OF AUTHORIZED RECIPIENT OFFICIAL	TITLE	DATE
	DNR Secretary	1/6/2000

ATTACHMENT B
AWARD NO. NA57FZ0177
AMENDMENT NO. 3

NOAA ADMINISTRATIVE SPECIAL AWARD CONDITIONS

(Revise) 2. The Project Period for this award is 03/01/95 through 08/31/00.

(Revise) 3. The Budget Period for this amendment is 09/01/99 through 08/31/00.

(REV. 10-[illegible])
DAO 203-26

☐ GRANT ☒ COOPERATIVE AGREEMENT

AMENDMENT TO FINANCIAL ASSISTANCE AWARD

ACCOUNTING CODE: MULTI ACC CODES (see att B)

AWARD NUMBER: NA57FZ0177

RECIPIENT NAME: Louisiana Department of Natural Resources

AMENDMENT NUMBER: 2

STREET ADDRESS: P.O. Box 94396

EFFECTIVE DATE: DECEMBER 1, 1997

CITY, STATE, ZIP CODE: BATON ROUGE, LOUISIANA 70804

EXTEND WORK COMPLETION TO: AUGUST 31, 1999

DEPARTMENT OF COMMERCE OPERATING UNIT: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

COSTS ARE REVISED AS FOLLOWS:	PREVIOUS ESTIMATED COST	ADD	DEDUCT	TOTAL ESTIMATED COST
FEDERAL SHARE OF COST	$ 3,630,368	$ 405,402	$ 537,718	$ 3,498,052
RECIPIENT SHARE OF COST	$ 1,296,560	$ -0-	$ 597,443	$ 699,117
TOTAL ESTIMATED COST	$ 4,926,928	$ 405,402	$ 1,135,161	$ 4,197,169

REASON(S) FOR AMENDMENT

To de-obligate federal funds in the amount of $(537,718), and non-federal funds in the amount of $(597,443), obligate $405,402 and reallocate the federal/state cost share ratio from 75/25% to 85/15%, for the project entitled, 'Lake Chapeau Sediment Input & Hydrologic Restoration (PTE-23/26a)'.

2. To revise the statement of work by excluding long term monitoring and reprogram those funds to E&D and Construction, as requested in the Recipient's application dated September 24, 1998, and letters dated

(CONTINUED ON NEXT PAGE FOR ADDITIONAL REASONS FOR AMENDMENT)

This Amendment approved by the Grants Officer is issued in triplicate and constitutes an obligation of Federal funding. By signing the three documents, the Recipient agrees to comply with the Amendment provisions checked below and attached, as well as previous provisions incorporated into the Award. Upon acceptance by the Recipient, two signed Amendment documents shall be returned to the Grants Officer and the third document shall be retained by the Recipient. If not signed and returned by the Recipient within 15 days of receipt, the Grants Officer may declare this Amendment null and void.

☒ Special Award Conditions (ATTACHMENT B [X] ADMINISTRATIVE [ ] PROGRAMMATIC)

☒ Line Item Budget (ATTACHMENT A)

☐ Other(s): _____

rec'd 9/30/99 for later sig

SIGNATURE OF DEPARTMENT OF COMMERCE GRANTS OFFICER	TITLE	DATE
[signature]	NOAA GRANTS OFFICER	MAY 17 1999
TYPED NAME AND SIGNATURE OF AUTHORIZED RECIPIENT OFFICIAL	TITLE	DATE
[signature]	Secretary	6/3/99

REASONS FOR AMENDMENT:

December 18, 1998, April 1, April 13, and April 20, 1999, which are incorporated into this award by reference.

3. To extend the period of performance for six months through August 31, 1999, for the above mentioned project, as requested in the Recipient's letter dated April 13, 1999, which is incorporated into this award by reference.

4. To revise and add NOAA Administrative Special Award Conditions.

Phase I - Engineering & Design

BUDGET INFORMATION- Non Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non - Federal (d)	Federal (e)	Non - Federal (f)	Total (g)
1. Lake Chopenu		$	$	$8,859	($8,859)	$0
2.						
3.						
4.						
5. TOTALS		$	$	$8,859	($8,859)	$0

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1) Federal	(2) Non-Federal	(3)	(4)	
a. Personnel	$	$	$	$	$
b. Fringe Benefits					
c. Travel					
d. Equipment					
e. Supplies					
f. Contractual - E&D, Landrights and Oyster Leases	$8,859	($8,859)			$0.00
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a - 6h)	$8,859	($8,859)			$0.00
j. Indirect Charges					
k. TOTALS (sum of 6i and 6j)	$8,859	($8,859)			$0.00
7. Program Income	$	$	$	$	$

Authorized for Local Reproduction

Standard Form 424A (4-88)

Budget revisions to exclude long term monitoring and reprogram funds due to change in the cost share ratio from 75/25% to 85/15% to E & D and Construction categories.

ATTACHMENT A Award# NA57F 77

OMB Approved No. 0341-0041

Amendment No. 2

BUDGET INFORMATION— Construction Programs

NOTE: Certain Federal Assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case you will be notified.

COST CLASSIFICATION	a. (Federal)	b. (State)	c. Total Allowable Costs
1. Administrative and legal expenses	$0.00	$0.00	$0.00
2. Land, structures, right-of-ways, appraisals, etc.	$0.00	$0.00	$0.00
3. Relocation expenses and payments	$0.00	$0.00	$0.00
4. Architectural and engineering fees	$0.00	$0.00	$0.00
5. Other architectural and engineering fees	$0.00	$0.00	$0.00
6. Project inspection fees	$0.00	$0.00	$0.00
7. Site work	$0.00	$0.00	$0.00
8. Demolition and removal	$0.00	$0.00	$0.00
9. Construction	$396,543.00	($396,543.00)	$0.00
10. Equipment	$0.00	$0.00	$0.00
11. Miscellaneous (Monitoring)	($537,718)	($192,041.00)	($729,759)
12. SUBTOTAL	($141,175)	($588,584.00)	($729,759)
13. Contingencies (sum of lines 1 - 11)	$0.00	$0.00	$0.00
14. SUBTOTAL	$0.00	$0.00	$0.00
15. Project (program) income	$0.00	$0.00	$0.00
16. TOTAL PROJECT COSTS (subtract #15 from #14)	$141,175	($588,584.00)	$729,759

FEDERAL FUNDING

17. Federal assistance requested, calculate as follows: Enter eligible costs = $4,197,168 Multiply X 83.3431 %

(Consult Federal agency for Federal percentage share). Enter the resulting Federal share.

	FEDERAL		STATE
E&D=	$8,859	E&D=	($8,859)
CONSTRUCTION=	$396,543	CONSTRUCTION=	($396,543)
MONITORING	($537,718)	MONITORING	($192,041)
* NET	($132,316)	NET	($597,443)

STATE @ (16.6568%) $699,117.00

FEDERAL @ (83.3431%) $3,498,051.00

TOTAL = $4,197,168.00

Standard Form 424C

*To reflect the de-obligation of federal funds in the amount of $(537,718), and obligate federal funds in the amount of $405,402. The total net federal funds will reflect the amount of $(132,316). The non-federal share is showing a decrease in the amount of $(597,443), which

AUG-07-2002 09:17 P.05/08

ATTACHMENT B
AWARD NO. NA57FZ0177
AMENDMENT NO. 2

NOAA ADMINISTRATIVE SPECIAL AWARD CONDITIONS

(Revise) 1. *** Multiple Accounting Codes:**

9FKH300/RL1A6P00/4119 -	$ 396,543
9FKH300/RL1A8C00/4119 -	$ 8,859
8FKH300/RL1A6P00/4119 -	$ (537,718)
Total -	$(132,316)

(Revise) 2. The Project Period for this award is 03/01/95 through 08/31/99.

(Revise) 3. The Budget Period for this amendment is 12/1/97 through 08/31/99.

(Revise) 4. Since this award requires the Recipient to provide $699,117 (16.66%) in project-related matching costs from non-Federal sources, the Recipient must maintain in its official accounting records an accounting for $4,197,169.

(Revise) 7, Recipient point of contact information:

Karen Lewis
Contracts and Grants Administrator
225-342-4513

(Revise) 9. Grants Office contact information:

Janet A. Johnson
U.S. Department of Commerce, NOAA
Grants Management Division
1325 East-West Highway
SSMC2 - OFA52 - Room 9356
Silver Spring, Maryland 20910-3283
301-713-0922
fax number: 301-713-0947

(Add) 29. Escrow funds will not be treated as a federal cost to the cooperative agreement when preparing financial reports.

State of Louisiana

M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

January 20, 1998

Jean B. West, Grants Officer
U.S. Department of Commerce, NOAA
Grants Operations Branch, ATTN: OA321
1325 East West Highway, Room 5416 SSMC2
Silver Spring, MD 20910-3283

RE: NOAA Award No. NA57FZ0177
Lake Chapeau Sediment Input and Hydrologic Restoration (PTE-23/26A)
Amendment No. 1

Dear Ms. West:

Enclosed are two signed originals of Form CD-451 for the above referenced NOAA award amendment.

Thank you for your assistance in this matter.

Sincerely,

Cheryl Y. Bennett
Contracts and Grants Administrator

CYB/VS

Enclosures

c: Verlie Wims, Fiscal Officer
Katherine Vaughan, Assistant Secretary, Office of Coastal Restoration and Management

OA321/RTL/RTL

FORM CD-451
(REV. 10-93)
DAO 203-26

U.S. DEPARTMENT OF COMMERCE

☐ GRANT ☒ COOPERATIVE AGREEMENT

AMENDMENT TO FINANCIAL ASSISTANCE AWARD

ACCOUNTING CODE: MULTI ACC CODES (see att B)

AWARD NUMBER: NA57FZ0177

RECIPIENT NAME: Louisiana Department of Natural Resources

AMENDMENT NUMBER: 1

STREET ADDRESS: P.O. Box 94396

EFFECTIVE DATE: JANUARY 1, 1998

CITY, STATE, ZIP CODE: BATON ROUGE, LOUISIANA 70804

EXTEND WORK COMPLETION TO: FEBRUARY 28, 1999

DEPARTMENT OF COMMERCE OPERATING UNIT: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

COSTS ARE REVISED AS FOLLOWS:	PREVIOUS ESTIMATED COST	ADD	DEDUCT	TOTAL ESTIMATED COST
FEDERAL SHARE OF COST	$ 2,904,300	$ 726,068	$ -0-	$ 3,630,368
RECIPIENT SHARE OF COST	$ 1,037,250	$ 259,310	$ -0-	$ 1,296,560
TOTAL ESTIMATED COST	$ 3,941,550	$ 985,378	$ -0-	$ 4,926,928

EASON(S) FOR AMENDMENT

. To provide additional funding in the amount of $726,068, as requested in the Recipient's application dated October 7, 1997, incorporated by reference.

2. To revise and add NOAA Administrative Special Award Conditions.

This Amendment approved by the Grants Officer is issued in triplicate and constitutes an obligation of Federal funding. By signing the three documents, the Recipient agrees to comply with the Amendment provisions checked below and attached, as well as previous provisions incorporated into the Award. Upon acceptance by the Recipient, two signed Amendment documents shall be returned to the Grants Officer and the third document shall be retained by the Recipient. If not signed and returned by the Recipient within 15 days of receipt, the Grants Officer may declare this Amendment null and void.

☒ Special Award Conditions (ATTACHMENT B [X] ADMINISTRATIVE [ ] PROGRAMMATIC)

☒ Line Item Budget (ATTACHMENT A)

☒ Other(s): OMB Circular A-133, 62 Fed.Reg. 35278(June 30, 1997)

TURE OF DEPARTMENT OF COMMERCE GRANTS OFFICER	TITLE	DATE
Jean B. West	NOAA GRANTS OFFICER	JAN 13 1998
TYPED NAME AND SIGNATURE OF AUTHORIZED RECIPIENT OFFICIAL	TITLE	DATE
[signature]	DNR Secretary	Jan 15 1998

Grant Amendment

OMB Approval No. 0348-0044

BUDGET INFORMATION - Non-Construction Programs

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Lake Chapeau (PTE-23/26a)		$	$	$ 762,068	$ 259,310	$ 985,378
2.						
3.						
4.						
5. Totals		$	$	$ 762,068	$ 259,310	$ 985,378

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY				Total (5)
	(1) Federal	(2) Non-Federal	(3)	(4)	
a. Personnel	$	$	$	$	$
b. Fringe Benefits					
c. Travel					
d. Equipment					
e. Supplies					
f. Contractual	14,396	5,142			19,538
g. Construction	711,672	254,168			965,840
h. Other					
i. Total Direct Charges (sum of 6a-6h)					
j. Indirect Charges					
k. TOTALS (sum of 6i and 6j)	$ 726,068	$ 259,310	$	$	$ 985,378
7. Program Income	$	$	$	$	$

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Attachment A
NOAA Award NA57FZ0177, Amd 1
Page 1 of 2

OMB Approved No. 0348-0041

BUDGET INFORMATION — Construction Programs

NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case you will be notified.

COST CLASSIFICATION	Grant Amendment a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Column a-b)
1. Administrative and legal expenses	$ .00	$ .00	$ .00
2. Land, structures, rights-of-way, appraisals, etc.	$ .00	$ .00	$ .00
3. Relocation expenses and payments	$ .00	$ .00	$ .00
4. Architectural and engineering fees	$ .00	$ .00	$ .00
5. Other architectural and engineering fees	$ .00	$ .00	$ .00
6. Project inspection fees	$ .00	$ .00	$ .00
7. Site work	$ .00	$ .00	$ .00
8. Demolition and removal	$ .00	$ .00	$ .00
9. Construction Phase II	$ 965,840 .00	$ .00	$ 965,840 .00
10. Equipment	$ .00	$ .00	$ .00
11. Miscellaneous	$ .00	$ .00	$ .00
12. SUBTOTAL	$ .00	$ .00	$ .00
13. Contingencies (sum of lines 1-11)	$ .00	$ .00	$ .00
14. SUBTOTAL	$ .00	$ .00	$ .00
15. Project (program) income	$ .00	$ .00	$ .00
16. TOTAL PROJECT COSTS (subtract #15 from # 14)	$ 965,840 .00	$ .00	$ 965,840 .00
FEDERAL FUNDING			
17. Federal assistance requested, calculate as follows: (Consult Federal agency for Federal percentage share). Enter the resulting Federal share.	Enter eligible costs from line 16c Multiply x 73.6842 % Lake Chapeau Phase I = $ 19,538 Phase II = $965,840 Phase III= $ -0- $985,378		$ 711,672 .00

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State of Louisiana

M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

September 3, 1997

MEMORANDUM

TO: Chet Fruge', NRP Supervisor
Mary White, NRP Supervisor

THROUGH: Bill Good, Administrator
Gerry Duszynski, Assistant Administrator
George Boddie, Engineer Manager

FROM: David Burkholder, Engineer Supervisor DMB

RE: Amendment to Cooperative Agreement
Grant No. NA57FZ0177 "Lake Chapeau Sediment Input and Hydrologic Restoration (PTE-23/26a)", State Project TE-26

An amendment to the referenced cooperative agreement is requested for the purpose of providing an additional $985,378 to the project and increasing the cooperative agreement's duration by one year. DNR is to contribute $259,310 (26.3158%) and the federal government $726,068 (73.6842%) of the amendment costs. The ending date of the amended agreement will be February 28, 1999.

The additional funds requested by this amendment are due to revisions in the project scope recommended upon completion of geotechnical, survey and other preliminary design work. The revisions include: (1) increased dredging quantities due to a greater than anticipated depth of fill required in the project's marsh creation areas; and (2) the addition of a project component consisting of dredging a silted section of Locust Bayou to its original navigable depth.

Please initiate the necessary processing to submit this request for approval. A completed standard Form 424 and an amended scope of services are attached for your use. These documents have been reviewed by and are acceptable to the project's federal sponsor, the National Marine Fisheries Service. If additional information is required from NMFS, Dr. Erik Zobrist may be contacted at (301) 713-0174.

DB/lb

Enc.

c: Project File TE-26

COASTAL RESTORATION DIVISION
P.O. Box 94396 · Baton Rouge, Louisiana 70804-9396 · Telephone (504) 342-7308 · Fax (504) 342-9417

OMB Approval No. 0348-0043

APPLICATION FOR FEDERAL ASSISTANCE

2. DATE SUBMITTED	Applicant Identifier
3. DATE RECEIVED BY STATE	State Application Identifier
4. DATE RECEIVED BY FEDERAL AGENCY	Federal Identifier

1. TYPE OF SUBMISSION:

Application	Preapplication
[X] Construction	[ ] Construction
[ ] Non-Construction	[ ] Non-Construction

5. APPLICANT INFORMATION

Legal Name: Louisiana Department of Natural Resources

Organizational Unit: Coastal Restoration Division

Address (give city, county, state, and zip code):
P. O. Box 94396
East Baton Rouge Parish
Baton Rouge, LA 70804

Name and telephone number of the person to be contacted on matters involving this application (give area code)
Cheryl Bennett
(504) 342-4539
David Burkholder
(504) 342-6814

6. EMPLOYER IDENTIFICATION NUMBER (EIN): 7 2 — 0 8 0 5 4 5 9

7. TYPE OF APPLICANT: (enter appropriate letter in box) [A]
A. State
B. County
C. Municipal
D. Township
E. Interstate
F. Intermunicipal
G. Special District
H. Independent School Dist.
I. State Controlled Institution of Higher Learning
J. Private University
K. Indian Tribe
L. Individual
M. Profit Organization
N. Other (Specify): _____

8. TYPE OF APPLICATION:
[ ] New [ ] Continuation [X] Revision
If Revision, enter appropriate letter(s) in box(es): [A] [C]
A. Increase Award B. Decrease Award C. Increase Duration
D. Decrease Duration Other (specify):

9. NAME OF FEDERAL AGENCY:
Department of Commerce
NOAA, National Marine Fisheries Service

10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 1 1 . 4 6 3
TITLE: Coastal Wetlands Planning, Protection and Restoration Act (PL 101-646)

11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:
Coastal Wetlands Planning, Protection, & Restoration Act (PL 101-646)
Lake Chapeau Sediment Input & Hydrologic Restoration (PTE-23/26a)
[Note: This project is composed of 3 phases. Phase I is a non-construction phase]

12. AREAS AFFECTED BY PROJECT (cities, counties, states, etc.):

13. PROPOSED PROJECT:

Start Date	Ending Date
01/01/98	2/28/99

14. CONGRESSIONAL DISTRICTS OF:

a. Applicant	b. Project
Fourth District	Third District

15. ESTIMATED FUNDING:

a. Federal	$ 726,068 .00
b. Applicant	$ .00
c. State	$ 259,310 .00
d. Local	$ .00
e. Other	$ .00
f. Program Income	$ .00
g. TOTAL	$ 985,378 .00

16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?
a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON:
DATE _____
b. NO. [ ] PROGRAM IS NOT COVERED BY E.O. 12372
[X] OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW

17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT?
[ ] Yes. If "Yes," attach an explanation. [ ] No

18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT, THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED

a. Typed Name of Authorized Representative	b. Title	c. Telephone number
Jack C. Caldwell	Secretary	(504) 342-2710

d. Signature of Authorized Representative

e. Date Signed

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Grant Amendment
Phase Engineering & Design

BUDGET INFORMATION — Non-Construction Programs

SECTION A – BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Lake Chapeau (PTE-23/26a)		$	$	$ 14,396	$ 5,142	$ 19,538
2.						
3.						
4.						
5. TOTALS		$	$	$ 14,396	$ 5,142	$ 19,538

SECTION B – BUDGET CATEGORIES

6 Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1)	(2)	(3)	(4)	Total (5)
a. Personnel	$	$	$	$	$
b. Fringe Benefits					
c. Travel					
d. Equipment					
e. Supplies					
f. Contractual	19,538				19,538
g. Construction					
h. Other					
i. Total Direct Charges (sum of 6a - 6h)					
j. Indirect Charges					
k. TOTALS (sum of 6i and 6j)	$ 19,538	$	$	$	$ 19,538
7. Program Income	$	$	$	$	$

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Prescr y OMB Circular A-10

OMB Approved No. 0348-0041

BUDGET INFORMATION — Construction Programs

NOTE: Certain Federal assistance programs require additional computations to arrive at the Federal share of project costs eligible for participation. If such is the case you will be notified.

COST CLASSIFICATION	Grant Amendment a. Total Cost	b. Costs Not Allowable for Participation	c. Total Allowable Costs (Column a-b)
1. Administrative and legal expenses	$ .00	$ .00	$ .00
2. Land, structures, rights-of-way, appraisals, etc.	$ .00	$ .00	$ .00
3. Relocation expenses and payments	$ .00	$ .00	$ .00
4. Architectural and engineering fees	$ .00	$ .00	$ .00
5. Other architectural and engineering fees	$ .00	$ .00	$ .00
6. Project inspection fees	$ .00	$ .00	$ .00
7. Site work	$ .00	$ .00	$ .00
8. Demolition and removal	$ .00	$ .00	$ .00
9. Construction Phase II	$ 965,840 .00	$ .00	$ 965,840 .00
10. Equipment	$ .00	$ .00	$ .00
11. Miscellaneous	$ .00	$ .00	$ .00
12. SUBTOTAL	$ .00	$ .00	$ .00
13. Contingencies (sum of lines 1-11)	$ .00	$ .00	$ .00
14. SUBTOTAL	$ .00	$ .00	$ .00
15. Project (program) income	$ .00	$ .00	$ .00
16. TOTAL PROJECT COSTS (subtract #15 from # 14)	$ 965,840 .00	$ .00	$ 965,840 .00
FEDERAL FUNDING			
17. Federal assistance requested, calculate as follows: Enter eligible costs from line 16c Multiply X 73.6842 % Lake Chapeau (Consult Federal agency for Federal percentage share). Enter the resulting Federal share.	Phase I = $ 19,538 Phase II = $965,840 Phase III= $ -0- $985,378		$ 711,672 .00

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SCOPE OF SERVICES

FOR THE

DESIGN, CONSTRUCTION AND MONITORING

OF THE

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION
(PTE-23/26A)

AMENDMENT NO. 1 TO THE

COOPERATIVE AGREEMENT

BETWEEN

U.S. DEPARTMENT OF COMMERCE

NOAA NATIONAL MARINE FISHERIES SERVICE

1335 East West Highway, Restoration Center, Room 7120

Silver Spring, MD 20910

AND THE

STATE OF LOUISIANA

DEPARTMENT OF NATURAL RESOURCES

P. O. Box 94396

Baton Rouge, Louisiana 70804-9396

September 3, 1997

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Lake Chapeau Sediment Input and Hydrologic Restoration (PTE-23/26A)

PROJECT DESCRIPTION

This amended Scope of Services provides additional funds for the Lake Chapeau Sediment Input and Hydrologic Restoration (PTE-23/26a) project. The project is located on Point au Fer Island in the vicinity of Lake Chapeau. As approved by the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) Task Force, the original project scope includes two components with an estimated total project cost of $4,149,000. The first project component involves restoring marshes west of Lake Chapeau and reestablishing a land bridge between two existing bayous. It was estimated that 500,000 cubic yards of material would be hydraulically dredged from Atchafalaya Bay and spread to a thickness of approximately one foot to create a minimum of 260 acres of marsh. The second project component consists of eight plugs to be installed in man-made channels around the perimeter of the Lake Chapeau project area, combined with gapping existing spoil banks in one channel. The plugs and gapping will help restore the natural circulation and drainage patterns within the central portion of Point au Fer Island.

The existing cooperative agreement (NA57FZ0177) between the National Marine Fisheries Service (NMFS) and the Louisiana Department of Natural Resources (DNR) for the Lake Chapeau project includes a total budget of $3,941,550. Expenditures through June 30, 1997 on Phase I activities total $255,919. The present amendment would provide an additional $985,378 for Phase I engineering and design ($19,538) and Phase II construction ($965,840) bringing the cooperative agreement cost to $4,926,928. The estimated total project cost will increase to $5,186,240.

The additional funds requested by the present amendment are due to revisions in the project scope recommended upon completion of geotechnical, survey and other preliminary design work. This amended Scope of Services will describe these scope revisions and present their required budgets. The associated tasks, timeliness, and deliverables for the revised project are also outlined in this scope.

Location

The project is located between the Atchafalaya and Four League bays in southwest Terrebonne Parish on Point au Fer Island. It is centered at latitude 29° 15' 00", and longitude 91° 15' 00" and is bounded by Four League Bay to the north, Atchafalaya Bay to the west, Locust Bayou to the south and Wildcat Bayou and an old oil field canal to the east. The project area consists of approximately 4,543 acres of open water and 9,006 acres of brackish marsh.

Project Features

The first draft of the project's preliminary design report was submitted by DNR's engineering consultant, Burk-Kleinpeter, Inc. (BKI), in July 1996. Based on the survey information obtained by BKI it was apparent that the placement of a one foot thickness of dredged material would not be sufficient to achieve the marsh creation anticipated in the original scope of the project's first component. BKI was requested to revise the preliminary design report to include a discussion of the extent of dredging required to achieve the project's sediment input objectives and an examination of possible options/priorities for dredged fill placement. The revised preliminary design report submitted by BKI in September 1996 presented two possible scenarios for achieving the project's's sediment

input objectives, and included estimates of their construction cost. These estimates are based on an average required dredged fill depth of two feet after consolidation, settlement and shrinkage. Option 1 (Baseline Bid) will require 812,500 cubic yards of dredged material to create 168 acres of marsh at an estimated construction cost of $3,043,987. Option 2 (Alternate Bid) will require 1,258,400 cubic yards of dredged material to create 260 acres of marsh at an estimated construction cost of $4,176,168. Both options also include implementation of the project's hydrologic restoration component in accordance with the originally approved scope. They also include the addition of a third project component consisting of dredging a silted section of Locust Bayou to its original navigable depth. This will accommodate the increased flows resulting from the re-establishment of the island's natural drainage patterns. While budget considerations may limit Phase II construction to Option 1, the final bid package will allow DNR to increase the marsh creation acreage to the original 260 acres if the lowest bid falls within the amended cooperative agreement budget.

Project Justification

Existing canal networks which extend into the center of the island have considerably altered island hydrology. The affects of Atchafalaya River stages and tidal influences are more intense due to direct routes from the bays to the marshes. Reducing tidal energies in the project area would reduce tidal scour, encourage growth of emergent and submergent vegetation, and promote sediment accretion.

Objectives

The project objectives are to re-establish hydrological control points which will reduce tidal energies and the resulting scouring of the interior marsh. The project will reduce extreme tidal fluctuations in the project area and promote conditions which will sustain viable communities of aquatic vegetation.

Project Benefits

Between one hundred sixty-eight (168) and two hundred sixty (260) acres of open water will be converted to intermediate marsh. Additionally, 1,640 acres of marsh will be enhanced and 2,500 acres of marsh will be protected from wind wave erosion and scour, and 900 acres of submerged aquatic vegetation will be created by the project in the open-water areas. Over the 20-yr project life, natural wetland loss will terminate and broken marsh areas will start to accrete as natural hydrology is restored and water fluctuations are reduced.

TASKS

The following tasks, deliverables, and timelines apply to the Lake Chapeau Sediment Input and Hydrologic Restoration project. The project tasks are separated into three phases. Phase I is a non-construction phase and includes land rights procedures and coordination with landowners; preliminary planning and permitting; development of a monitoring plan; baseline monitoring; and preliminary and final engineering and design. Phase II includes construction; project engineering supervision and inspection; and baseline monitoring. Phase III includes long term monitoring. Phases I and II are to be implemented within nine (9) months with Phase III being employed through year twenty (20).

Phase I

Planning, Permitting, and Design

Task 1. Engineering and Design

The preliminary phase of engineering design has been completed prior to initiation of the present amendment. As previously noted, the original conceptual design has undergone scope revisions as additional information on the project site and other relevant design parameters have been obtained.

DNR and its engineering consultant, BKI, will provide the necessary final engineering and designs needed to support the construction phase of the project. The final design phase work will include continuing geotechnical consultation (as needed) and any other specific engineering services associated with the project. Specific engineering services to be provided by DNR and its consultant will include additional design surveys (if required), plan preparation, post-construction surveys, etc. All such services will be approved by and subject to the guidance of the NMFS Program Officer.

Task 2. Permitting

Permit applications prepared by DNR's engineering consultant were submitted by the NMFS to the appropriate agencies in June 1997. DNR and/or its consultant will assist the NMFS by preparing any permit revisions that may be required by regulatory agencies and by coordinating any interagency meetings.

Task 3. Land Rights Coordination

A letter of agreement authorizing DNR to dredge from a borrow site in the Atchafalaya Delta Wildlife Management Area has been accepted and approved by the Louisiana Department of Wildlife and Fisheries. DNR has also acquired a servitude agreement from the Terrebonne Parish School Board for the project features to be located in Section 16, T20S-R12E. Negotiations with Point au Fer LLC and the Roman Catholic Church of the Archdiocese of New Orleans are presently in progress to obtain the remaining easements, servitudes and right-of-ways required for the project.

A. Procedures

1. DNR or its agent shall follow the Sec. 303e land rights procedure and shall perform preliminary work toward the acquisition of land rights by (1) identifying the affected landowners, (2) coordinating with these landowners during preliminary project design, and (3) presenting the preliminary plan to area landowners to determine landowner acceptance of the plan in order to proceed toward Phase II.

B. Certification of Acquisition

1. DNR or its agent shall acquire all land rights, easements, servitudes, rights-of-way and dredged material disposal areas determined to be necessary for construction, operation, maintenance, and monitoring of the project and as mutually agreed by the NMFS Program Officer. Prior to the advertisement of any construction contract, DNR or its agent shall provide certification to NMFS that all land rights, easements, servitudes, rights-of-way, and dredged material disposal areas required have been acquired as part

of this agreement and shall furnish to NMFS evidence supporting DNR or its agent's actual rights-of-way acquired for project construction, operation, monitoring, and maintenance.

2. No title to the property or minerals affected herein are transferred with any easements, servitudes, rights-of-way, and dredged material disposal areas proved by DNR pursuant to this agreement. No public rights of ownership shall be transferred and vested in private parties as a result of the project. Further, any easements, servitudes, rights-of-way, and dredged material disposal areas shall provide for reasonable access for mineral exploration and development.

C. Compliance with Regulations

1. DNR or its agent shall comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by Title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way for construction and subsequent operation and maintenance of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

D. Land Rights Value

1. The value of the land rights, easements, servitudes, and rights-of-way to be included

in total project costs and credited toward DNR's share of total project costs will be determined in accordance with the following procedures:

a. The costs associated with securing all land rights, easements, servitudes, and rights-of-way to be acquired by DNR or its agent shall be the actual costs, including but not limited to expenses associated with securing legal land rights instruments from all sources (legal reviews, recording fees, etc.) Associated with project activities.

b. Any costs incurred for relocation of existing development structures will be included in total project costs and will be accomplished as part of the project construction phase through the agreed cost-share arrangments.

Task 4. Monitoring Plan

DNR and the NMFS will jointly revise the monitoring plan, if revisions are necessary, developed and approved during Phase I activities. The revised plan shall meet the overall guidelines of the CWPPRA Task Force approved Monitoring Program for hydrologic restoration projects.

Task 5. Baseline Monitoring

DNR or its agent and the NMFS shall implement baseline monitoring of the project area prior to construction in accordance with the project's Monitoring Plan.

Prior to commencement of any construction activities, NMFS or the Office of Coastal Restoration and Management of DNR, at the option of DNR and concurrence of NMFS, shall (1) cause to be conducted a survey to determine the highest tide during the winter season or such other time that will indicate the extent of state ownership existing prior to commencement of any restoration activities, and/or (2) obtain aerial photographs or satellite images of the project area taken within one year prior to commencement of restoration activities, and/or (3) place shoreline markers prior to commencement of restoration activities, and/or (4) acquire such other information as is acceptable to DNR.

Phase II

Construction

Task 1. Project Construction

1a. DNR or its agent shall be responsible for all phases of project construction under the supervision and guidance of the NMFS Program Officer.

1b. DNR or its agent will be responsible for project supervision and inspection under the supervision and guidance of the NMFS Program Officer.

Phase III

Long-Term Monitoring

Task 1. Long-Term Monitoring

DNR or its agent and NMFS will jointly develop, approve, and implement the project monitoring plan, and will be responsible for all monitoring parameters required for shoreline stabilization and hydrologic restoration projects as established by the CWPPRA Task Force and Monitoring Work Group.

Task 2. Maintenance

DNR or its agent will be responsible for overseeing project maintenance under the supervision and guidance of the NMFS Program Officer.

Cost Limits

The estimated total cost for the Lake Chapeau cooperative agreement is $4,926,928. To provide this, the existing cooperative agreement amount of $3,941,550 will be increased $985,378 by the present amendment which includes $19,538 for Phase I and $965,840 for Phase II. DNR is to contribute $259,310 (26.3158%) and the federal government $726,068 (73.6842%) of the present amendment costs. The total cost for the Lake Chapeau project is $5,186,240. The $259,312 difference (an increase of $51,862 over the existing cooperative agreement amount) between the cooperative agreement cost

and the total project cost represents funds the National Marine Fisheries Service will hold in reserve for staff salaries and other contingencies.

This agreement reflects a Federal/State match of 75/25%. Section 532 of the Water Resources Development Act (WRDA) of 1996 added Section 303(f)(5) of the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA), 16 U.S.C. §1651 (f)(5), which provides that, upon approval of the conservation plan addressed in Section 304 and upon a determination by the Secretary of the Army that a reduction in the non-Federal share is warranted, the Federal share to carry out coastal wetlands restoration projects in 1996 and 1997 shall be ninety (90) percent of the total project costs.

This project was added to the CWPPRA priority project list by annual update in calendar year 1994 pursuant to Section 303(a) of the Act (Third Priority List). As such, this project is subject to a modification of the Federal/State cost share from 75%/25% to 90%/10% as stated in Section 303 (f)(5) of the Act. Upon approval of the State's conservation plan made under Section 304 of the Act, and upon a determination by the Secretary of the Army that a reduction in the non-Federal share is warranted, the Federal share shall be ninety (90) percent of the cost of the project. After the happening of these two events, NMFS and the State shall execute an amendment to this Agreement that confirms the implementation of the revised cost share. All references to the 75%/25% cost share in the body of this agreement are therefore subject to modification upon the happening of certain events described above.

Should DNR or NMFS, upon development of final engineering and design documents, and final project cost estimates, and prior to Task Force review and approval of the project's construction, determine that total project costs will exceed total project estimated costs (with any amendments) by 25%, or at any time should total project costs exceed the project's total estimated cost (with any amendments) by 25%, then DNR or NMFS may suspend all work on the project, including the award of contracts, pending an agreement by both parties to continue, with review and approval of the Task Force (if necessary). In the event the parties do not reach an agreement to continue and/or the Task Force does not approve, then the agreement may be terminated, and NMFS and DNR should proceed with final accounting.

Phase I

Deliverables

1. All required permit applications have been filed prior to initiation of the present amendment. Should revised permit applications need to be filed, DNR and/or its engineering consultant will provide NMFS with revised application forms.

2. DNR will provide NMFS an Engineering and Design Report with geotechnical and engineering data and diagrams sufficient for project construction. Completion of the Engineering and Design Report is anticipated prior to approval of the present amendment to the Cooperative Agreement.

3. DNR or its agent will provide NMFS with certification and furnish evidence that all affected landowners in the project area have been contacted concerning the location and nature of the project.

4. DNR or its agent will provide NMFS with certification and furnish evidence that all land rights, easements, servitudes, and rights-of-way sufficient to construct, maintain, operate, and monitor the project have been acquired. Submittal of rights-of-way documents is anticipated prior to approval of the present amendment to the Cooperative Agreement.

5. DNR will provide the NMFS with a revised Project Monitoring Plan, if such a revision to the plan

becomes necessary, subject to the approval of NMFS and the overall Coastal Wetlands Planning, Protection, and Restoration Act Task Force guidelines for monitoring hydrologic restoration projects.

6. DNR or its agent will provide NMFS with a Baseline Monitoring Report which is due prior to project construction or within two (2) months after approval of the present amendment to the agreement.

Phase II

Deliverables

1. DNR or its agent will oversee the project construction according to NMFS-approved designs provided by DNR. DNR or its agent will supervise the public bid process to select the contractor and will supervise and inspect during and after construction. DNR will provide NMFS with a certified engineer approval of the final project inspection upon project completion. The Construction Bid Document (CBD) should be completed prior to approval of the present amendment to the Cooperative Agreement, the construction contact awarded within one (1) month after amendment approval, and construction should begin within two (2) months after amendment approval.

Phase III

Deliverables

1. DNR or its agent will implement the project Monitoring Plan and provide Monitoring Reports to NMFS every three years, which will include those monitoring parameters for which DNR is responsible.

2. DNR or its agent will oversee maintenance of the project. DNR or its agent will supervise the public bid process to select the maintenance contractor and will provide NMFS the awarded contracts as maintenance is needed during the life of the project.

Reports Applicable to all Phases

1. DNR will submit quarterly project status reports to NMFS up to Phase II (Construction) completion. After completion of construction, the reporting will consist of project Status Reports submitted annually and Monitoring Reports submitted every three years.

*TIME LINE FOR DELIVERABLES

Deliverable	Months (m) after Approval of Amendment No.1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 m 20 yrs
Permitting	To be completed
Engineering and Design	To be completed
Rights-of-way Documents (Landowner Approvals)	To be completed
Monitoring Plan	Completed
Baseline Monitoring	*
Baseline Monitoring Report	* *
Construction Bid Document	*
Construction Contract Award	* *
Construction	* * * *
Quarterly Status Reports	* * * * * *

Deliverable	Years after Approval of Amendment No. 1 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
Monitoring Reports	* * * * * * * * * * * * * * * * * * * *

AMENDMENT BUDGET

Phase I Engineering and Design

Contracted

Task	Description	State	Federal	Subtotal
1	Engineering and Design	$5,142	$14,396	$19,538
Subtotal Phase I Contracted				$19,538

Phase II Construction and Inspection

Contracted

Task	Description	State	Federal	Subtotal
1a	Project Construction	$254,168	$711,672	$965,840
Subtotal Phase II Contracted				$965,840

Phase III Long Term Monitoring and Administration

No additional funds for Phase III activities are required from the present amendment.

Subtotal: All Phases (Amendment Total)	$259,310	$726,068	$985,378
NMFS Administration			$51,862
Total: Phases I, II, III & NMFS Administration			$1,037,240

Summary Budget Breakdown for Phases I, II, and III of Amendment to Cooperative Agreement

Phase	State Contracted	State Non-Contracted	Federal Contracted	Federal Non-Contracted	Total
Phase I	$5,142	$0	$14,396	$0	$19,538
Phase II	$254,168	$0	$711,672	$0	$965,840
Phase III	$0	$0	$0	$0	$0
Subtotal	$259,310	$0	$726,068	$0	$985,378

NMFS Administrative	$51,862
Project Total (including NMFS administration)	$1,037,240
Total Cooperative Agreement Amendment	**$985,378**

Budget Notes

1. The NMFS wishes to hold in reserve an additional $51,862 for staff salaries and other contingencies for this project. This amount is not requested by DNR under this amendment to the Cooperative Agreement; however, it is part of the overall project budget.

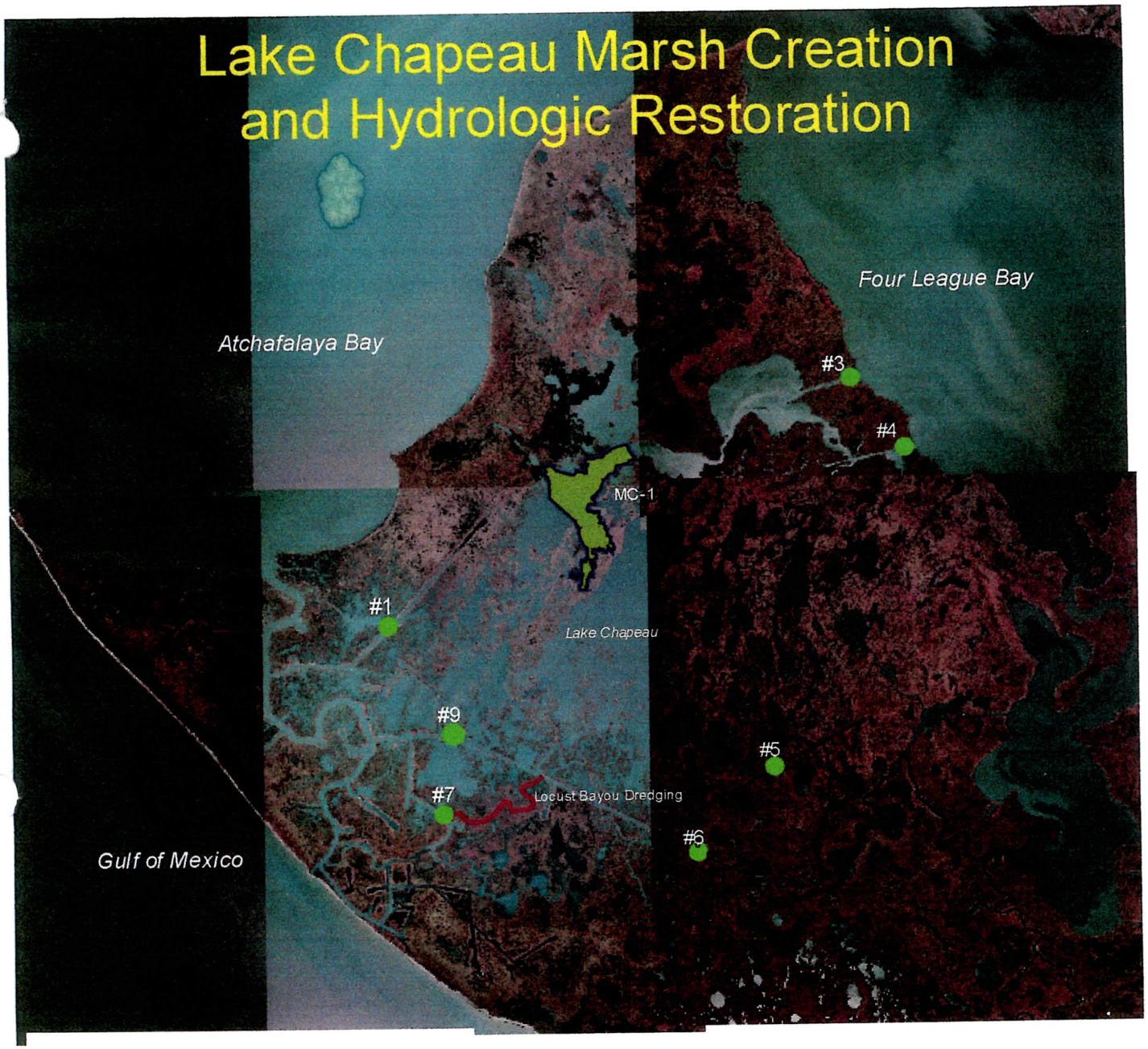
2. The State/Federal percentages for this amendment to the Cooperative Agreement are 26.3158% ($259,310) and 73.6842% ($726,068), respectively, and the total amendment is for $985,378. State/Federal percentages for the total increase to the overall project budget are 25% ($259,310) and 75% ($777,930), respectively

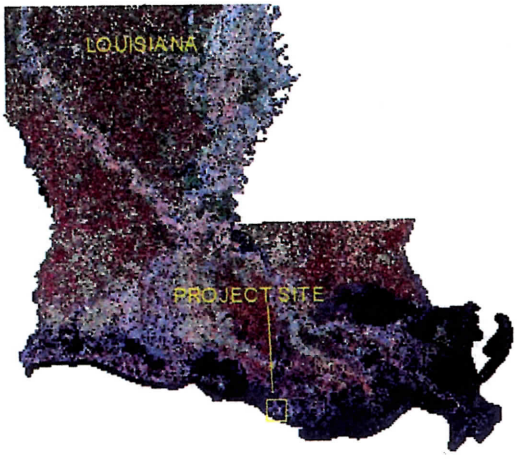
ATTACHMENT III

LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION

PROJECT FEATURES

Lake Chapeau Marsh Creation and Hydrologic Restoration





0 1 2 Miles

2 0 2 Kilometers

Data Source:

LA Dept. of Natural Resources
Coastal Restoration Division
Engineering Section
Thibodaux Field Office

1998 DOQQ's

Date: October 1, 2001

MAP ID: 2001-TFO-036

N

Marsh Creation

Dredged Channel

Rock Plug

ATTACHMENT IV

LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION

FINAL REPORT

FINAL REPORT

LAKE CHAPEAU SEDIMENT INPUT/HYDROLOGIC RESTORATION PROJECT AND POINT AU FER ISLAND/HYDROLOGIC RESTORATION PROJECT

DNR CONTRACT NUMBER: 2503-00-32

JUNE 2000

Prepared by:
Picciola & Associates, Inc.
103 Picciola Parkway
Cut Off, LA 70345

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1. Introduction

The Lake Chapeau Sediment Input and Hydrologic Restoration Project, Breach Site No. 3 Repairs (TE-26) and Point Au Fer Island Hydrologic Restoration Project, Phase III – Mobile Canal Extension (TE-22) Projects are located in Terrebonne Parish, Louisiana. The Federal sponsor for this Project is the National Marine Fisheries Service (NMFS) and the State sponsor is the Louisiana Department of Natural Resources (DNR). The DNR contracted Picciola & Associates, Inc. to oversee the construction of the project with on site inspection. This Final Summary Report will provide an overview, verification of project completion, total quantity of materials installed, conformance to plans and specifications, and project deviations.

2. Overview

The base bid consisted of constructing a weir to repair a breached spoil bank in the Lake Chapeau area (TE-26) and the continuation of a breakwater Phase III – Mobile Canal Extension (TE-22) – Area No. 4. Both projects would comprise of the placement of 250-pound class stone underlain by geotextile woven fabric.

Alternate No. 1 consisted of the construction of a breakwater structure Phase III – Mobile Canal Extension (TE-22) – Area No. 5. This project would also comprise of the placement of 250-pound class stone underlain by geotextile woven fabric.

Alternate No. 2, Phase I – (TE-22) Shell Plug #4, consisted of reconstructing a shell plug and armoring the plug with prefabricated, articulated, concrete mats.

The contract was awarded to Johnny F. Smith Truck & Dragline Service, Inc., which subcontracted the whole project to Bertucci Constructing Co., Inc.; hereinafter referred to as the "Contractor" for $895,100.00 with a Notice To Proceed issued on March 6, 2000. The award consisted of the Base Bid and both Alternates (See Table 1). The Contractor started mobilizing equipment on April 17, 2000.

TABLE 1

BASE BID

Item	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL PRICE
1	Mob/Demob	Lump	1	$30,000.00	$30,000.00
2	Lake Chapeau (TE-26) Installation of Woven Geotextile Fabric	SY	1,000	$5.00	$ 5,000.00
3	Lake Chapeau (TE-26) Installation of Stone	Ton	1,500	$47.50	$ 71,250.00
4	Phase III – Mobile Canal Extension (TE-22) – Area No. 4 Installation of Woven Geotextile Fabric	SY	8,350	$5.00	$ 41,750.00
5	Phase III – Mobile Canal Extension (TE-22) – Area No. 4 Installation of Stone	Ton	11,200	$47.50	$532,000.00
				TOTAL	**$680,000.00**

ALTERNATE NO. 1

Item	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL PRICE
6	Phase III – Mobile Canal Extension (TE-22) – Area No. 5 Installation of Woven Geotextile Fabric	SY	1,400	$5.00	$ 7,000.00
7	Phase III – Mobile Canal Extension (TE-22) – Area No. 5 Installation of Stone	Ton	2,000	$47.50	$ 95,000.00
				TOTAL	**$102,000.00**

ALTERNATE NO. 2

Item	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL PRICE
1	Phase I – TE-22 Maint. – Shell Plug #4	LUMP SUM	1	$5,000.00	$ 5,000.00
2	Phase I – Installation of Articulated, Closed Cell Concrete Mats	EA	94	$1,150.00	$ 108,100.00
				TOTAL	**$113,100.00**

3. Verification of Project Completion

Alternate #2 - Phase I (TE-22)
Shell Plug #4

The original design of this project consisted of rebuilding the damaged shell plug with dredged material then placing the concrete mats on the gulf side of the plug to armor it from over wash. Prior to the start of the project it was determined that Williams Field Services owned four pipelines located beneath the plug. Subsequently, Williams Field Services requested that tracking heavy equipment on the plug be prohibited. A change was made in the design of the plug to eliminate placing the mats over the pipelines. The plug would still be reconstructed with dredged material from the canal. Mats would be utilized on the beach to the East and West of the plug. The contractor claimed that the terrain on either side of the plug would not support the weight of the crane he planned to use. Therefore, he requested and received a change order for the increase cost of a crane mounted on a marsh buggy. A separate change order was initiated prior to construction to increase the quantity of concrete mats from 94 to 125.

The contractor started the concrete mat installation for alternate number two of Phase I (TE-22) for the shell plug No. 4 on April 19, 2000. The contractor installed 125 concrete mats with the crane mounted marsh buggy. A total of 67 mats were placed on the West Side of the plug and 58 mats were placed on the East Side. The reconstruction of the plug was completed and all the mats installed on 5/24/00. The clamping and anchoring operation of the concrete mats was not completed until the very end of the entire project.

Base Bid – Phase III (TE-22)
Mobile Canal Extension – Area No. 4

The original design of this project consisted of constructing a breakwater using 32-inch armament stone underlain by woven geotextile fabric. The design called for the breakwater to be constructed 3000 feet long by 25 feet wide containing approximately 11,200 tons of 250-pound class stone and 8,350 square yards of geotextile woven fabric. Prior to construction a change order was issued to increase the rock quantity by 1,200 tons to repair a breech located between Area No. 4 and Area No. 5.

The contractor started light loading barges on 5/8/00 in order to float them to the site. This process continued until 5/28/00 at which time all the rock was delivered to the two breakwater sites (Areas No. 4 & No. 5) and the Lake Chapeau Weir.

On 5/11/00 the contractor moved equipment to the breakwater site. The contractor started the breach repair on 5/11/00 and completed the repair on 5/12/00 with a total length of 388 feet.

Area No. 4 construction started on 5/13/00 and was complete on 6/1/00. The as-built breakwater contained 11,130 tons of stone and 9,285 square yards of fabric. The actual length completed was approximately 3037 feet.

Alternate #1 – Phase III (TE-22)
Mobile Canal Extension – Area No. 5

The original design of this project consisted of constructing a breakwater using 32-inch armament stone underlain by woven geotextile fabric. The design called for the breakwater to be constructed 600 feet long by 25 feet wide containing approximately 2,000 tons of 250-pound class stone and 1,400 square yards of fabric.

Area No. 5 construction started on 6/1/00 and was complete on 6/4/00. The as-built breakwater contained 2,448 tons of stone and 1,946 square yards of fabric. The actual length completed was approximately 625 feet.

Base Bid – Lake Chapeau (TE-26)
Weir

The original design of this project consisted of repairing a breached spoil bank by constructing a weir approximately 500 feet long. The weir was to be constructed using 1,500 tons of 250-pound class stone and 1,000 square yards of geotextile woven fabric. A change order added a line item prior to the start of construction to include flotation dredging to access the project. It consisted of 6-12 hour days of flotation dredging at $365.00 per hour totaling $26,280.00.

The dredging work started on 6/5/00 and only took 12 hours at a total cost of $4,380.00. The weir construction started on 6/6/00 and was complete on 6/7/00. The as-built weir consumed 1,703 tons of stone and 1284 square yards of fabric. The actual length completed was approximately 700 feet. Upon completion of the weir, DNR requested some additional dredging be done by the contractor to the West Side of the weir in the pipeline canal. It took approximately 4 hours of dredging to complete this task, at a cost of $1,460.00.

4. Total Quantities of Materials Installed

With the exception of the Lake Chapeau (TE-26) project, all projects experienced slight overruns. A balancing change order was issued to encompass these overruns. The total quantity of materials installed is reflected in Table 2.

TABLE 2

BASE BID (Lake Chapeau) – (Weir) Actual

Item	DESCRIPTION	UNIT	BID QTY	ACTUAL QTY
1	Mob/Demob	Lump	1	1
2	Installation of Woven Geotextile Fabric	SY	1,000	1,284
3	Installation of Stone	Ton	1,500	1,703

BASE BID (Point Au Fer) – (Mobile Canal Area No. 4) Actual

Item	DESCRIPTION	UNIT	BID QTY	ACTUAL QTY
1	Installation of Woven Geotextile Fabric	SY	8,350	9,285
2	Installation of Stone	Ton	11,200	11,130

ALTERNATE NO. 1 – (Phase III Area No. 5) Actual

Item	DESCRIPTION	UNIT	BID QTY	ACTUAL QTY
1	Mob/Demob	Lump	1	1
2	Installation of Woven Geotextile Fabric	SY	1,400	1,946
3	Installation of Stone	Ton	2,000	2,448

ALTERNATE NO. 2 – (Shell Plug #4) Actual

Item	DESCRIPTION	UNIT	BID QTY	ACTUAL QTY
1	Phase I – (TE-22) Maintenance	LUMP	1	1
2	Phase I – Install Concrete Mats	EA	94	94

125

5. Conformance to Plans and Specifications

The original design of Lake Chapeau (TE-26) project was to repair a breached spoil bank by constructing a weir approximately 500 feet long. The as-built weir is approximately 700 feet long. The stone and fabric experienced slight overruns but the dredging quantity came in low. Overall, this project experienced a savings of over $9,000.00. This project was constructed as per the contract plans and specifications and to the satisfaction of DNR.

The original design of the Phase III Mobile Canal Extension (TE-22) – Area No. 4 was to construct a breakwater using 32-inch armament stone underlain by woven geotextile fabric. The design called for the breakwater to be constructed 3000 feet long by 25 feet wide. The actual length constructed is approximately 3037 feet. Prior to construction, a change order increased the rock by 1,200 tons to repair a breech located between Area No. 4 and Area No. 5. The breach repair was approximately 388 feet. Overall, this project experienced an overrun. This project was constructed as per the contract plans and specifications and to the satisfaction of DNR.

The original design of Phase III Mobile Canal Extension (TE-22) – Area No. 5 project was to construct a breakwater using 32-inch armament stone underlain by woven geotextile fabric. The design called for the breakwater to be constructed 600 feet long by 25 feet wide containing approximately 2,000 tons of 250-pound class stone and 1,400 square yards of fabric. The as-built breakwater contained 2,448 tons of stone and 1,946 square yards of fabric. The actual length constructed was approximately 625 feet. Overall this project experienced an overrun. This project was constructed as per the contract plans and specifications and to the satisfaction of DNR.

The original design of the Phase I Shell Plug No. 4 (TE-22) project consisted of rebuilding the damaged shell plug with dredged material then placing the concrete mats on the gulf side of the plug to armor it from over wash. Prior to the start of the project it was determined that Williams Field Services owned four pipelines located beneath the plug. Subsequently, Williams Field Services requested that tracking heavy equipment on the plug be prohibited. A change was made in the design of the plug to eliminate placing the mats over the pipelines. The plug would still be reconstructed with dredged material from the canal. Mats would be utilized on the beach to the East and West of the plug. The contractor claimed that the terrain on either side of the plug would not support the weight of the crane he planned to use. Therefore, he requested and received a change order for the increase cost of a crane mounted on a marsh buggy. A separate change order was initiated prior to construction to increase the quantity of concrete mats from 94 to 125. The contractor anchored the mats as per the manufacturer's

recommendations. A total of 67 mats were placed on the West Side of the project and 58 mats were placed on the East Side. This project was constructed as per the revised contract plans and specifications and to the satisfaction of DNR.

The contractor was allowed 120 days to complete the Base Bid and Alternates 1 & 2. The contractor used 97 days to complete the entire project including all change orders. The contractor demobilized all of his equipment on 6/8/00. The anchoring of the mats took three additional days and the project was 100% complete on 6/10/00.

6. Project Deviations

With exception to the changes on the Shell Plug No. 4 project, the Lake Chapeau and Point Au Fer projects experienced only minor deviations. The cost overruns will be adjusted by one balancing change order. The original Base Bid, including alternates 1 & 2, was $895,100.00. The final price for the project totaled $1,078,546.04 (see Tables 3 & 4).

TABLE 3

Project Change Orders

Item	DESCRIPTION	UNIT	BID QTY	UNIT PRICE	TOTAL PRICE
1	Change Order #1	EA	1	$ 92,650.00	$ 92,650.00
2	Change Order #2-Dredging	EA	1	$ 26,280.00	$ 26,280.00
3	Change Order #3 – Marsh Buggy Mounted Crane	EA	1	$ 36,326.04	$ 36,326.04
4	Change Order #4 – (Balancing)	EA	1	$ 37,567.50	$ 37,567.50
5	Base Bid	EA	1	$680.000.00	$ 680.000.00
6	Alternate #1	EA	1	$102,000.00	$ 102,000.00
7	Alternate #2	EA	1	$113,100.00	$ 113,100.00
				TOTAL	**$1,087,923.54**

TABLE 4

BASE BID (Lake Chapeau) - (Weir) Actual

Item	DESCRIPTION	UNIT	BID QTY	UNIT PRICE	TOTAL PRICE
1	Mobe/Demobe	Lump	1	$15,000.00	$15,000.00
2	Installation of Woven Geotextile Fabric	SY	1,284	$5.00	$ 6,420.00
3	Installation of Stone	Ton	1,703	$47.50	$ 80,892.50
4	Change Order #2-Dredging	HR	16	$365.00	$ 5840.00
				TOTAL	**$108,152.50**

BASE BID (Point Au Fer) – (Phase III Area No. 4) Actual

Item	DESCRIPTION	UNIT	BID QTY	UNIT PRICE	TOTAL PRICE
1	Installation of Woven Geotextile Fabric	SY	8,350	$5.00	$ 41,750.00
2	Installation of Stone	Ton	11,200	$47.50	$532,000.00
	CHANGE ORDER #4 (Balancing)				
	Installation of Woven Geotextile Fabric	SY	935	$5.00	$ 4,675.00
	Installation of Stone	Ton	(70)	$47.50	($ 3,325.00)
				TOTAL	**$575,100.00**

ALTERNATE NO. 1 - (Phase III Area No. 5) Actual

Item	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL PRICE
1	Mob/Demob	Lump	1	$15,000.00	$ 15,000.00
2	Installation of Woven Geotextile Fabric	SY	1,400	$5.00	$ 7,000.00
3	Installation of Stone	Ton	2,000	$47.50	$ 95,000.00
4	CHANGE ORDER #4 (Balancing)				
	Installation of Woven Geotextile Fabric	SY	546	$5.00	$ 2,730.00
	Installation of Stone	Ton	448	$47.50	$ 21,280.00
	Breach - Additional Stone	Ton	257	$47.50	$ 12,207.50
5	Change Order #1 Install Stone – Breach Repair	Ton	1,200	$47.50	$ 57,000.00
				TOTAL	**$210,217.50**

ALTERNATE NO. 2 - (Shell Plug #4) Actual

Item	DESCRIPTION	UNIT	QTY	UNIT PRICE	TOTAL PRICE
1	Maintenance	LUMP	1	$5,000.00	$ 5,000.00
2	Install Concrete Mats	EA	94	$1,150.00	$ 108,100.00
	Change Order #1 - Mats	EA	31	$1,150.00	$ 35,650.00
	Change Order #3 – Marsh Buggy mounted crane	EA	1	$39,613.24	$ 39,613.24
	Change Order #3 - Mat Credit	EA	1	($3,287.20)	($3,287.20)
	Change Order #4 Quarters	EA	1	$0.00	$ 0.00
				TOTAL	**$185,076.04**

7. Conclusion

The Point Au Fer – Lake Chapeau Restoration projects is another example of the NMFS and DNR's ongoing dedication and efforts to the restoration of the Louisiana coastline and marshlands. A tremendous amount of valuable information is learned from each and every project that can and will be used on future restoration projects. Picciola & Associates was pleased to be a part of this project. The knowledge and experience gained were immeasurable. The coastal restoration effort is much stronger due to this project's successes. We look forward to working with the NMFS and DNR on Restoration Projects in the near future.

PHASE I

TE-22

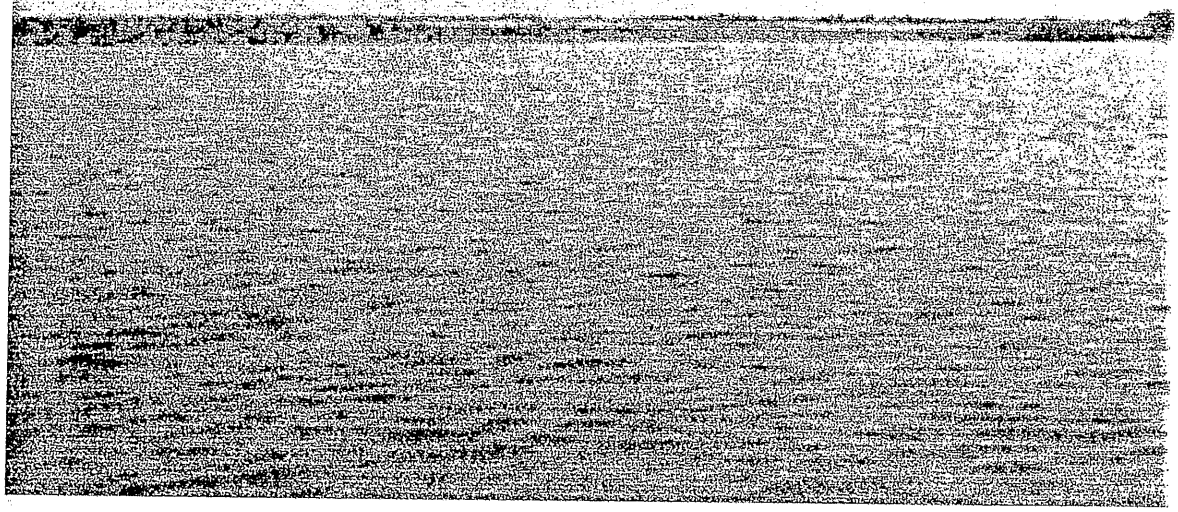
SHELL PLUG NO. 4

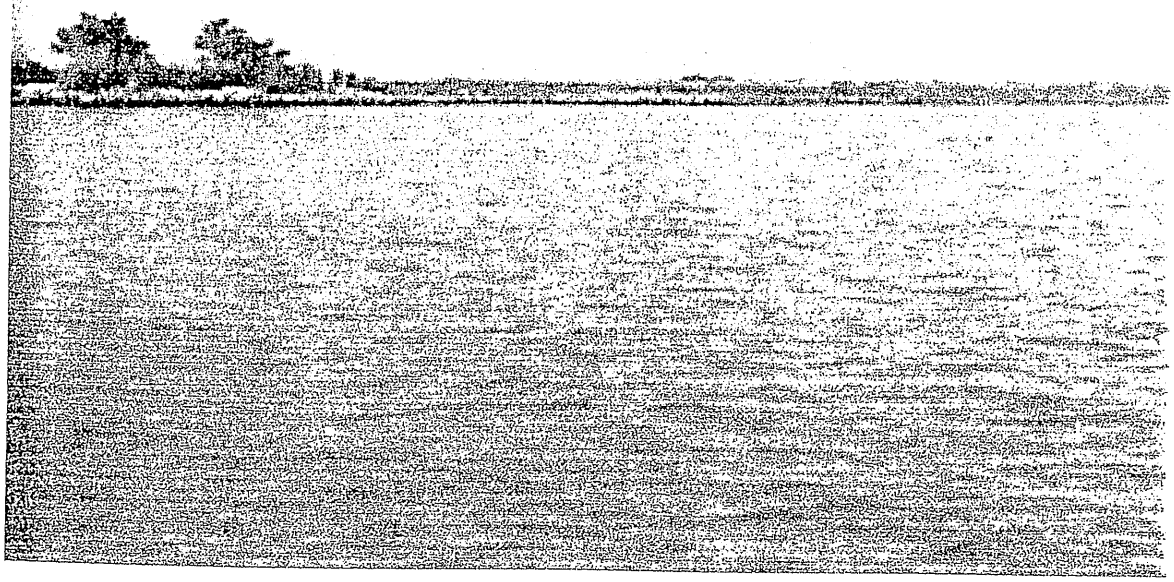
LAKE CHAPEAU

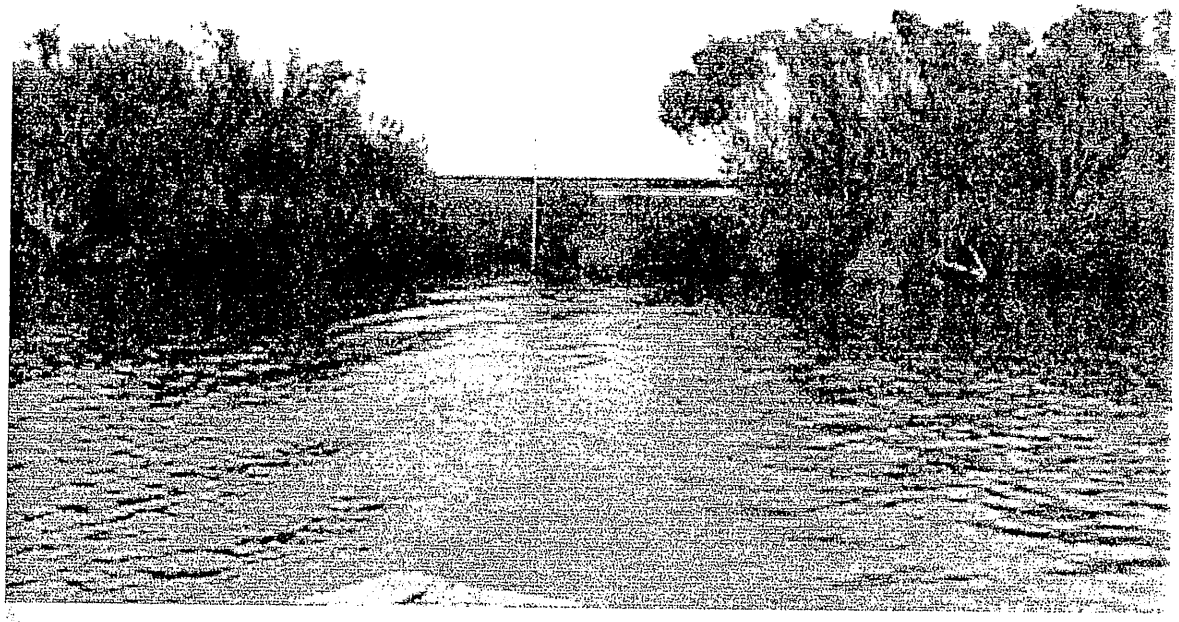
TE-26

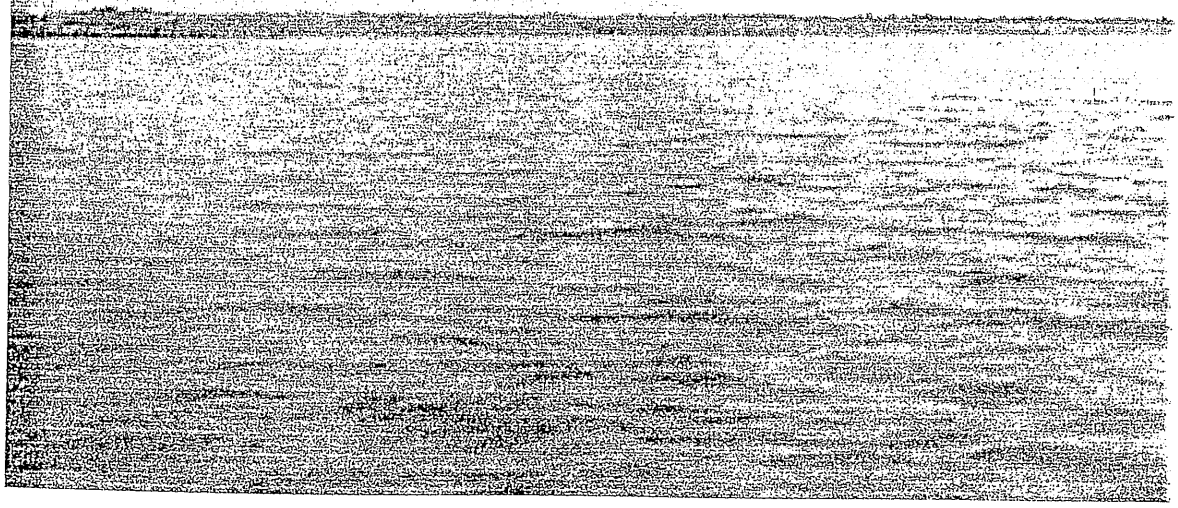
WEIR

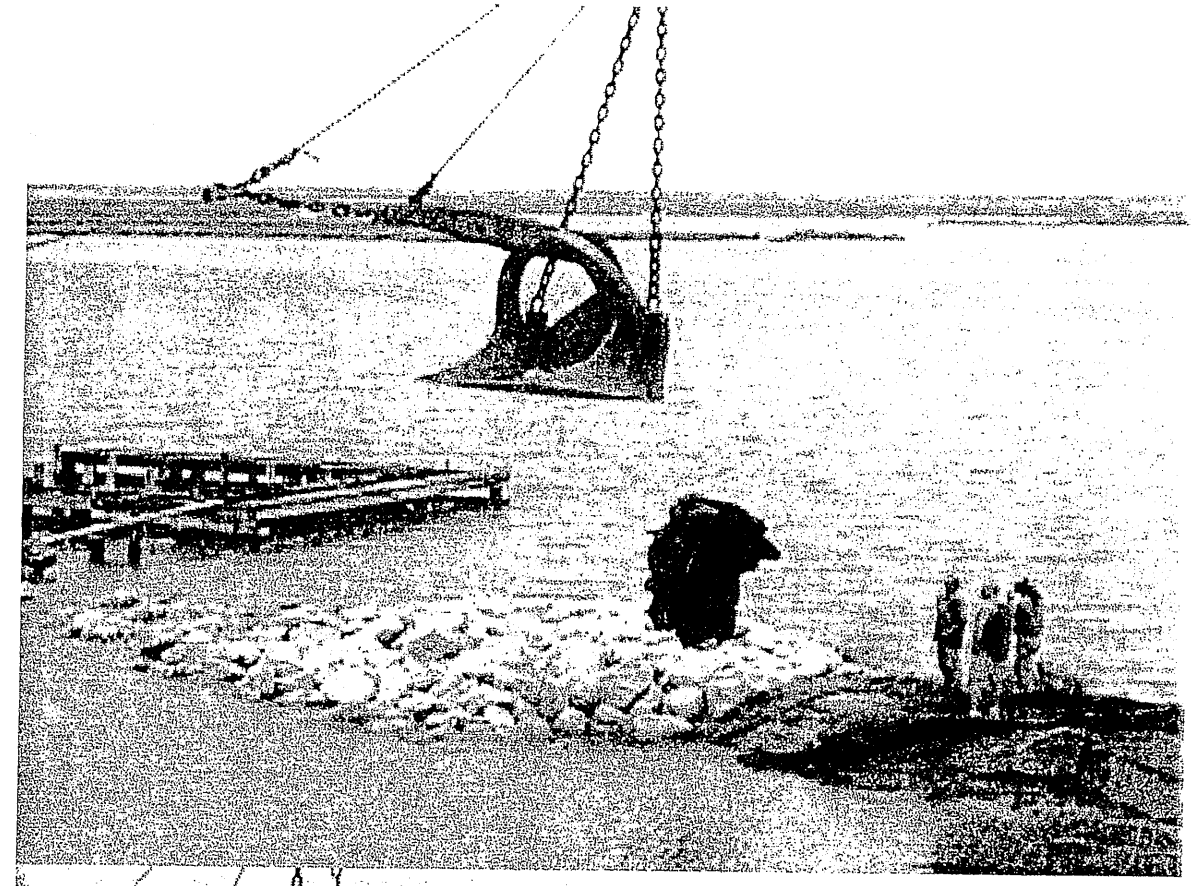
BREACH SITE 3

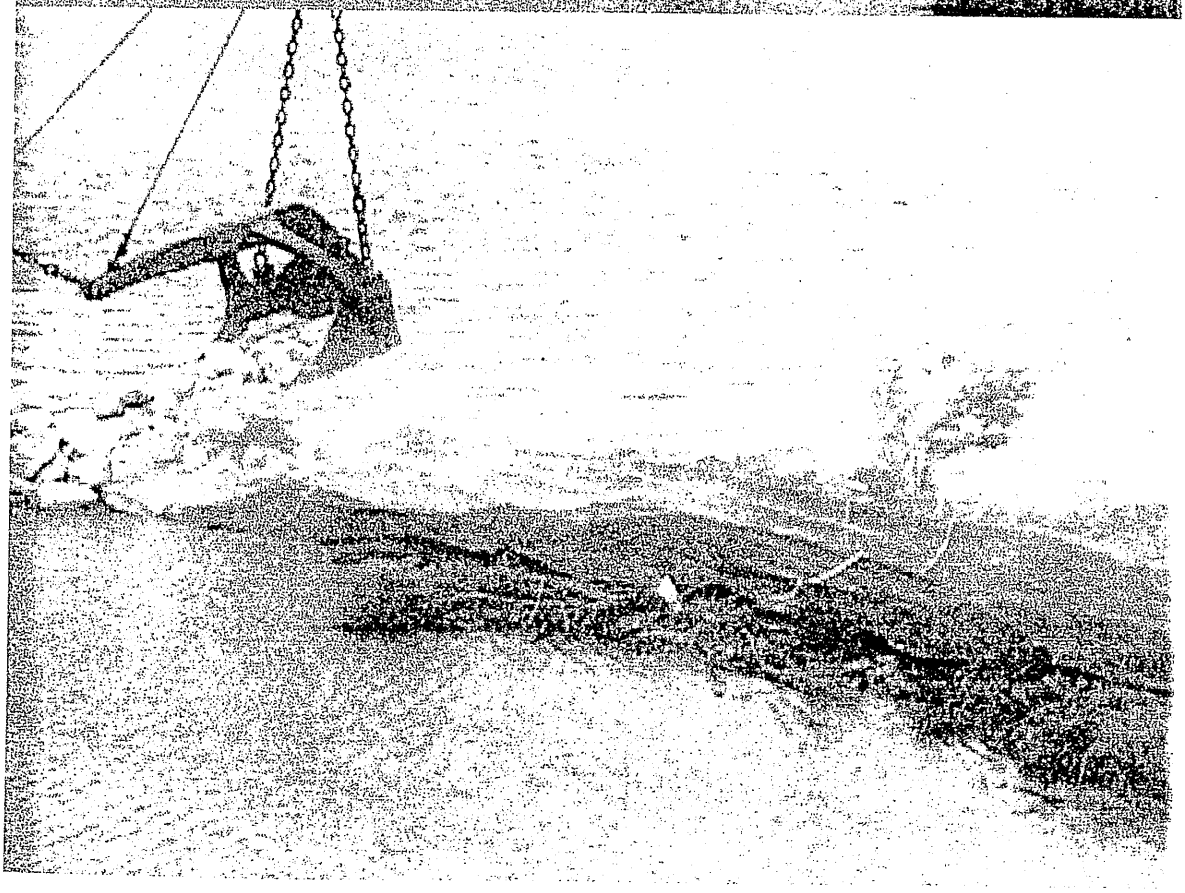


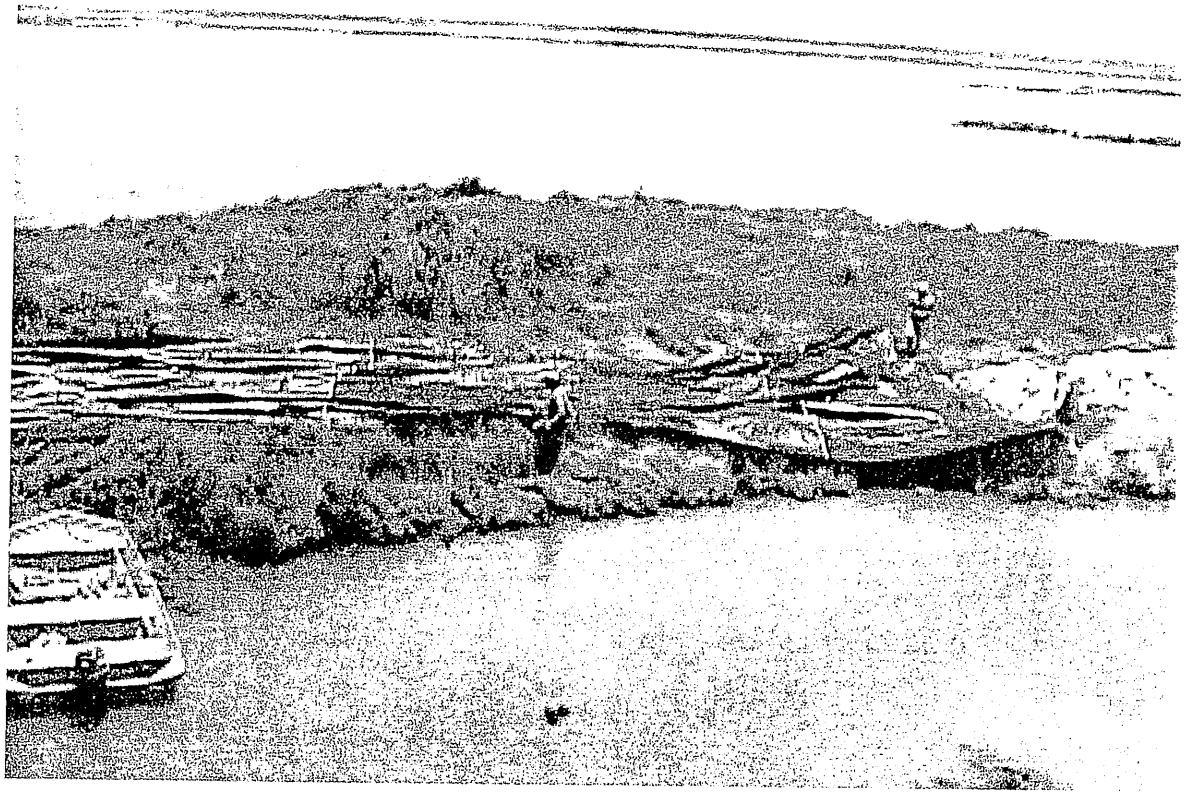


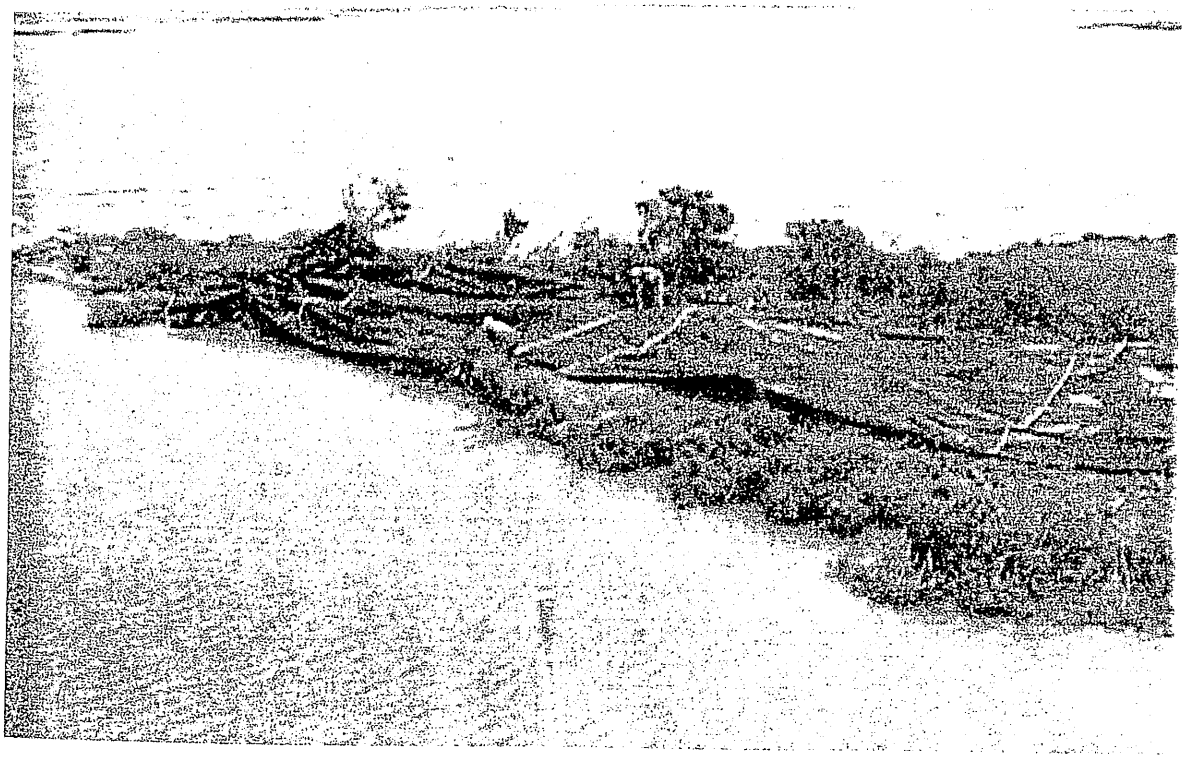


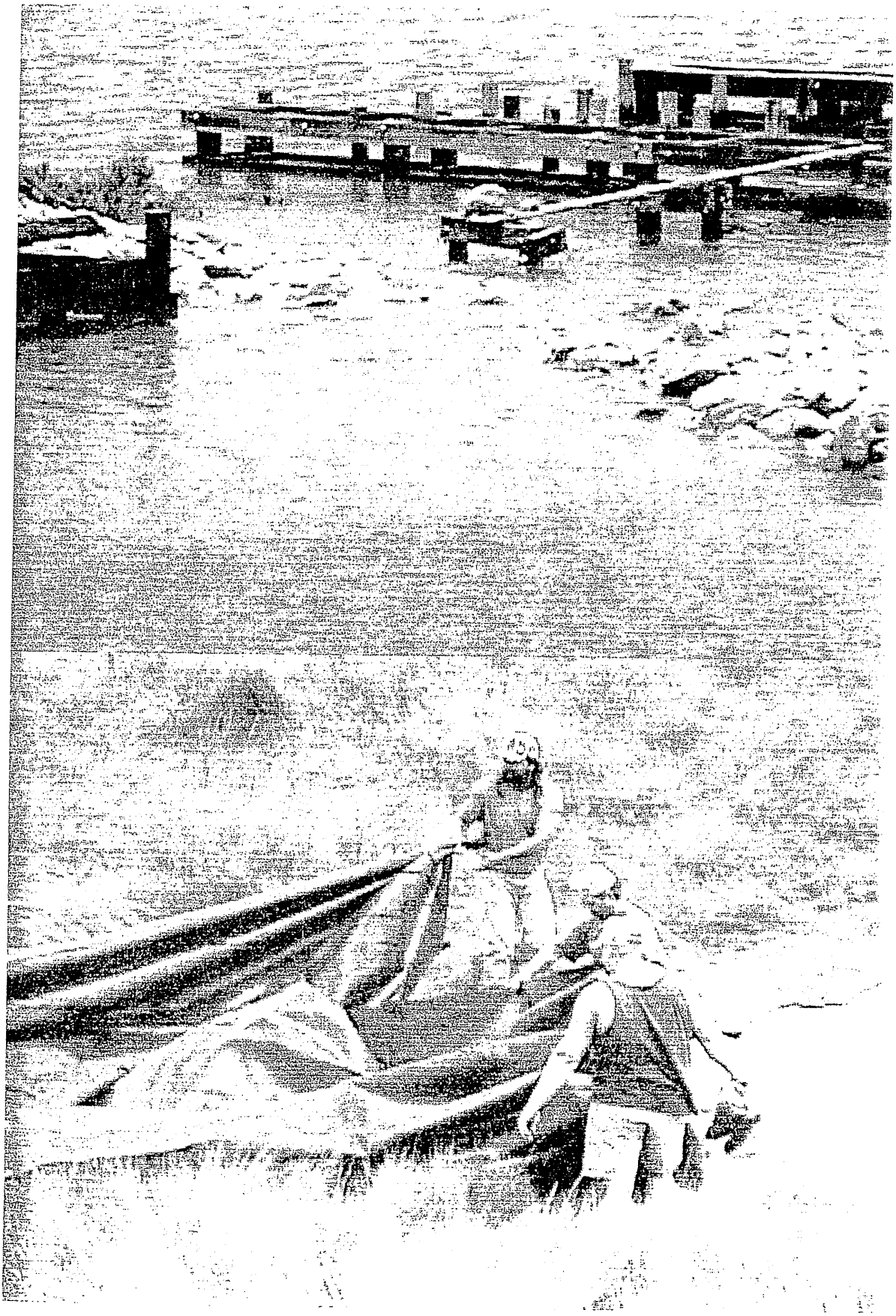


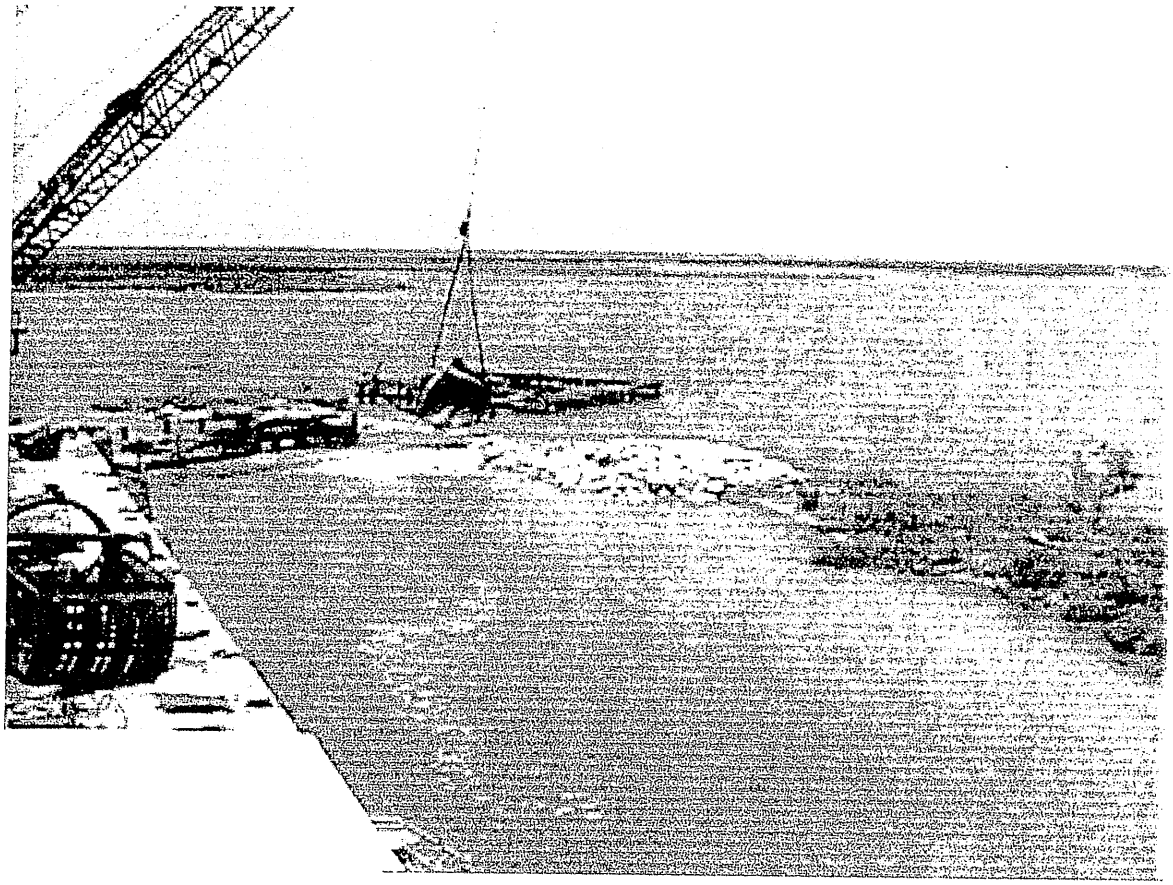


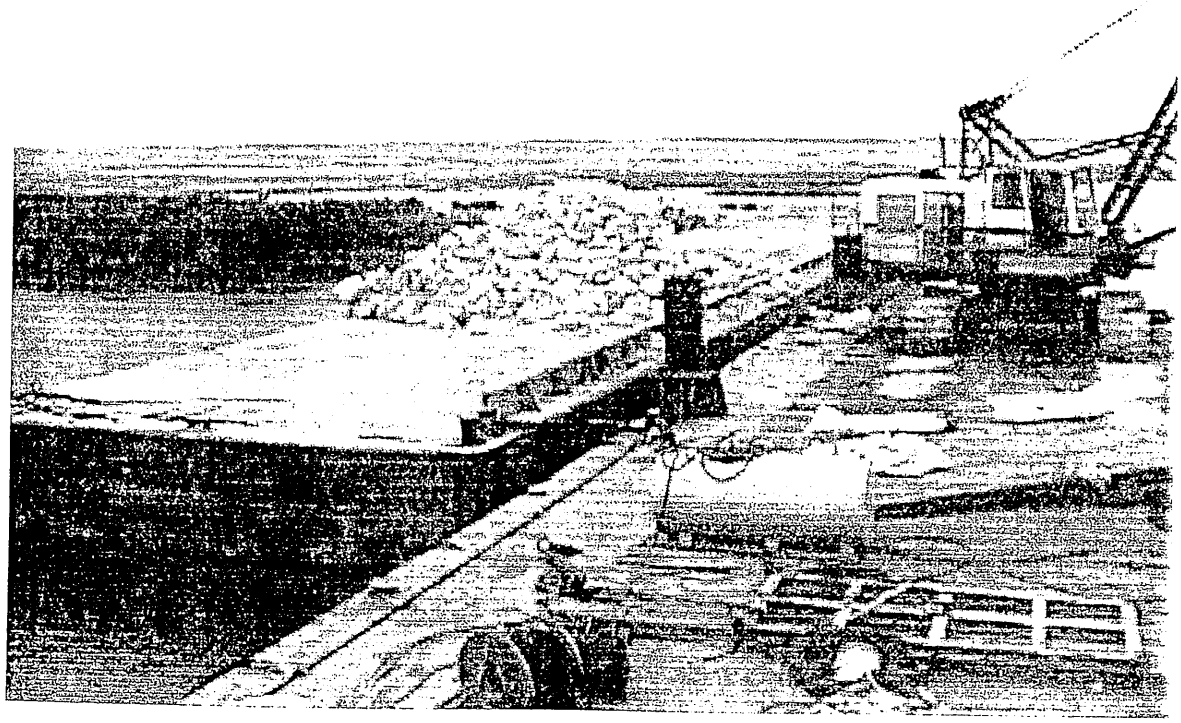


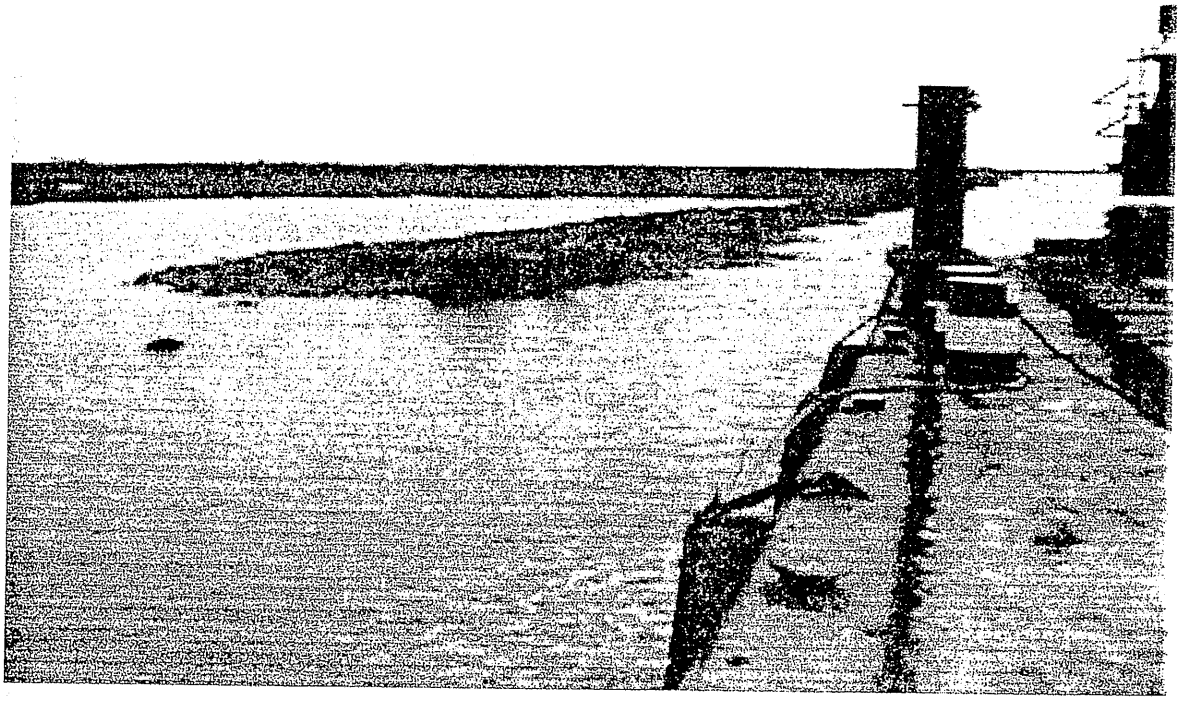


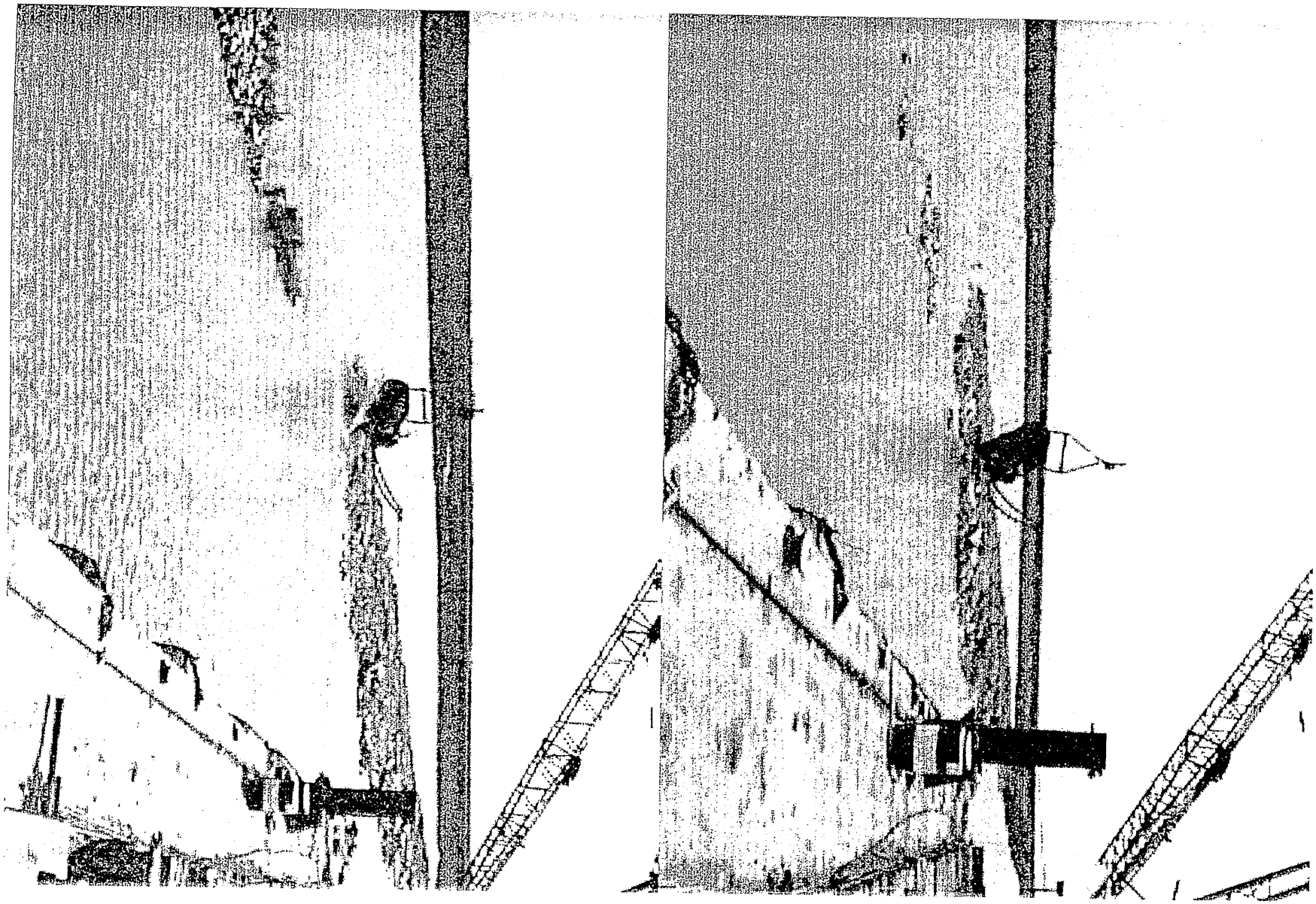


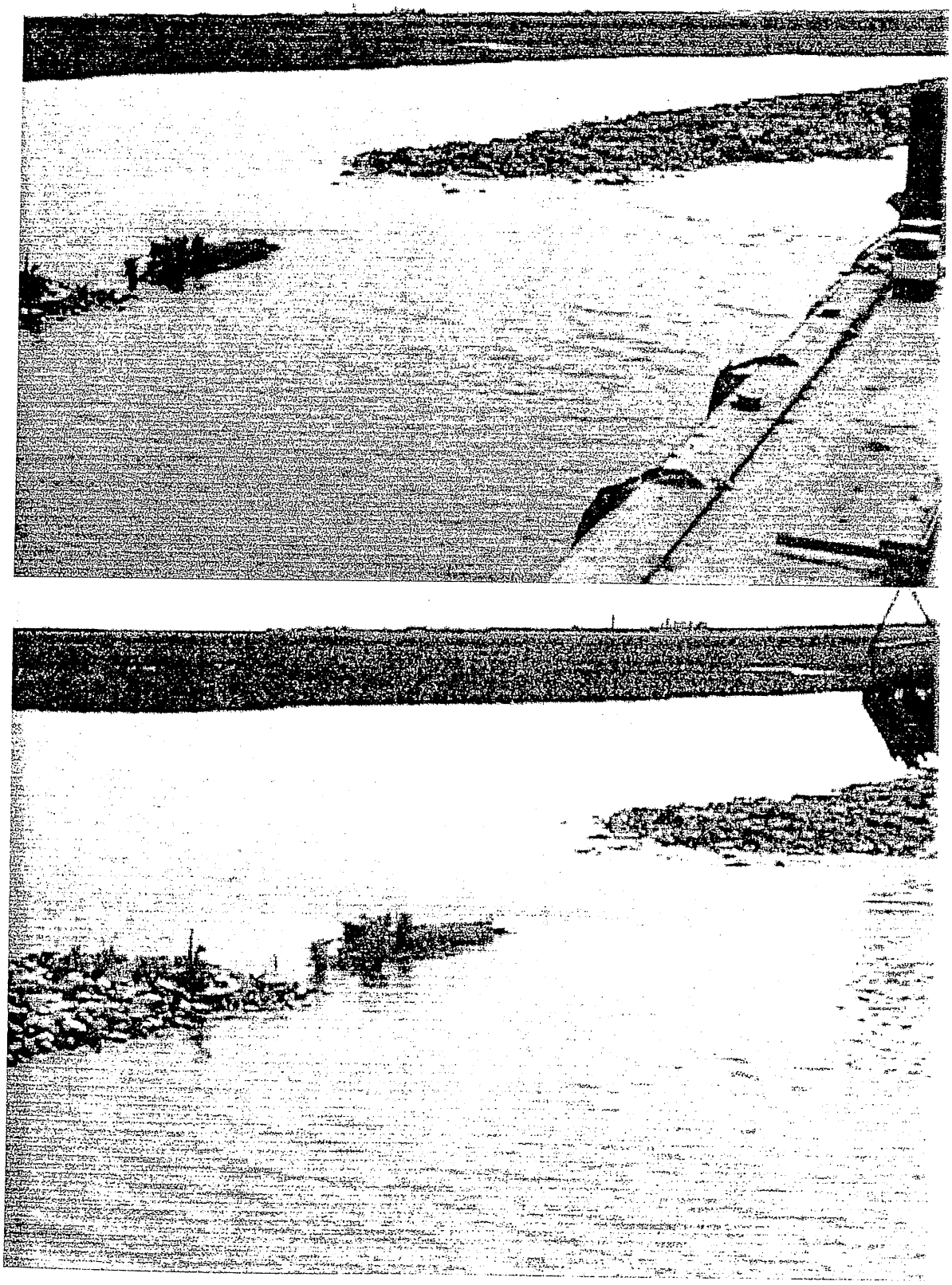


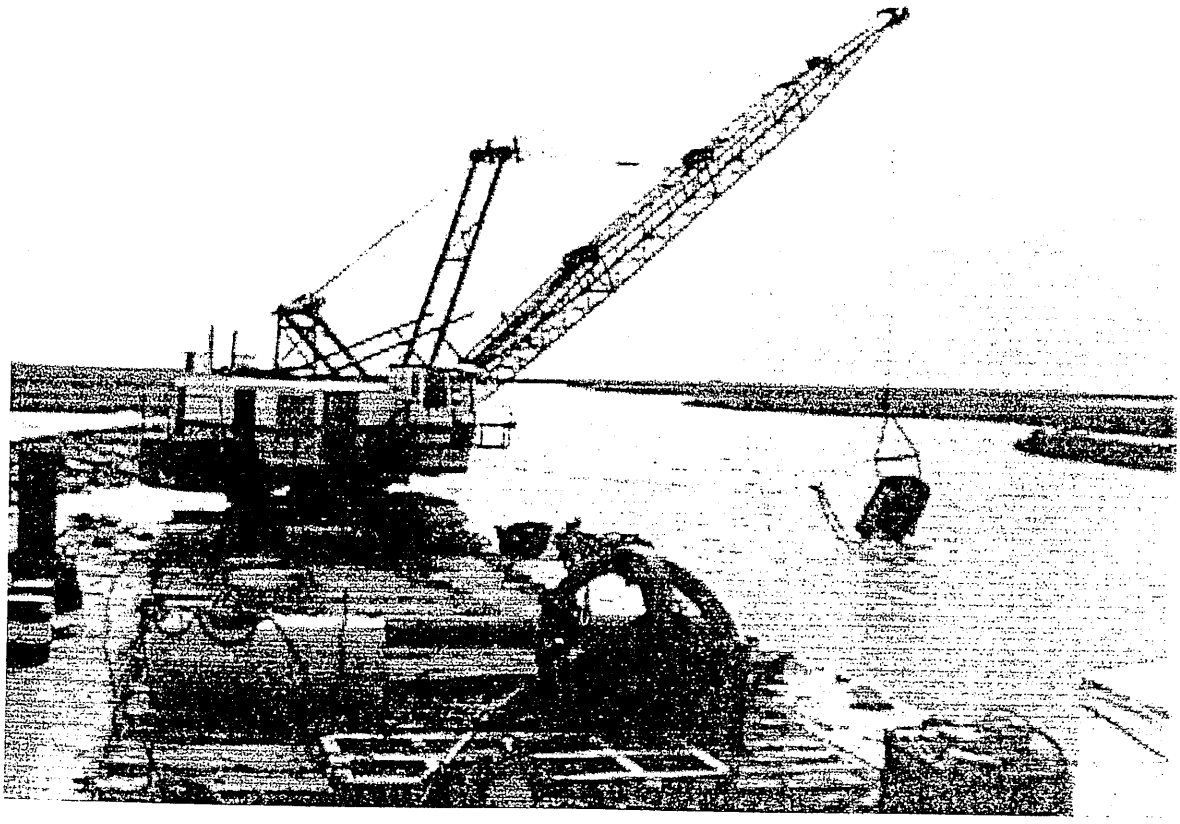


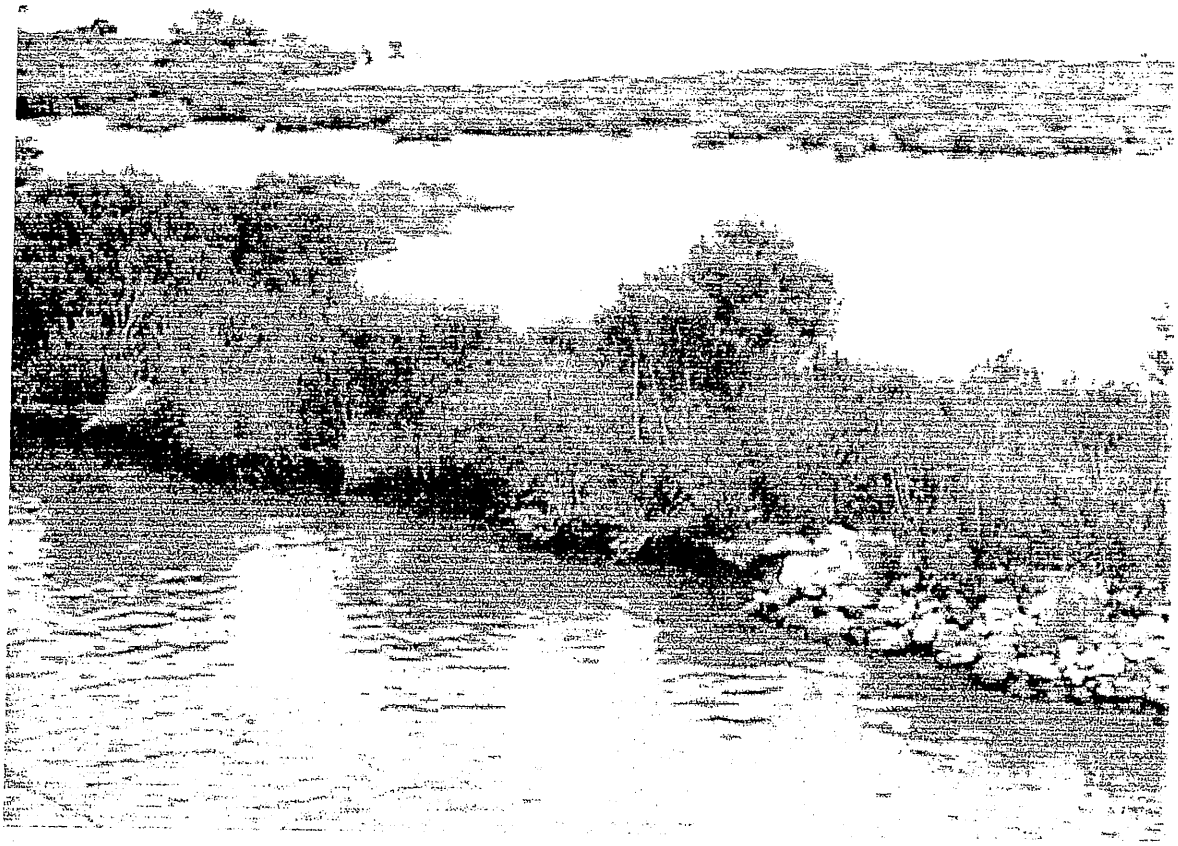


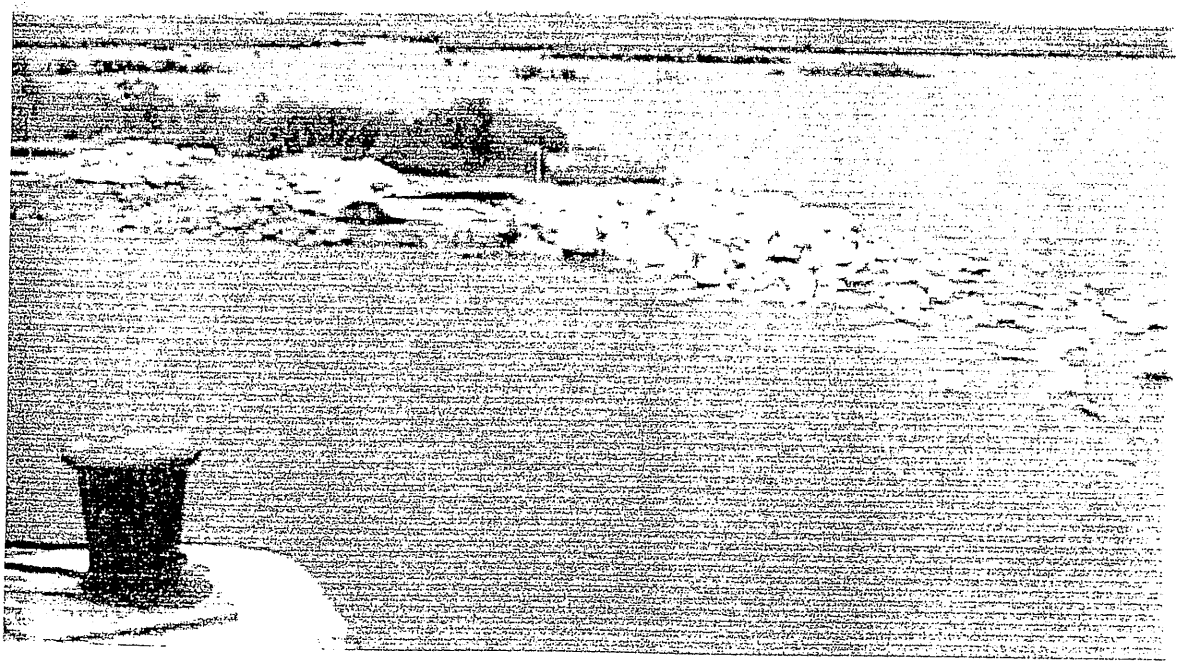


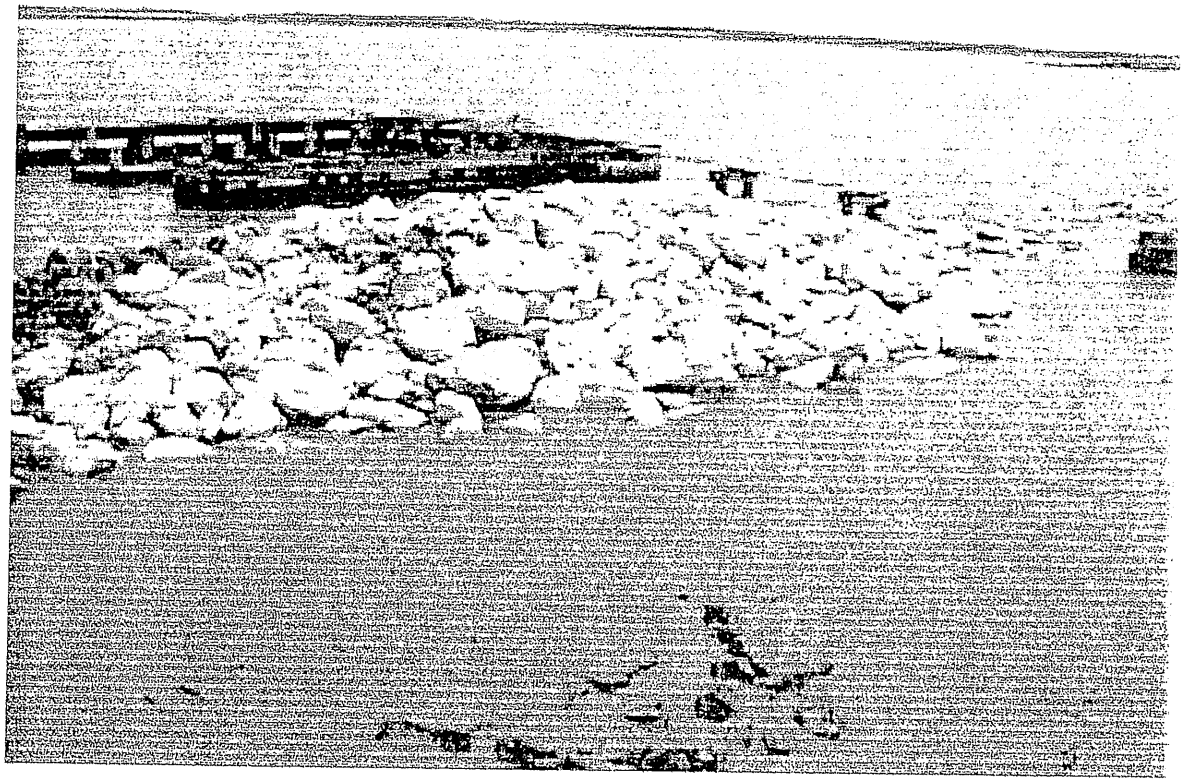


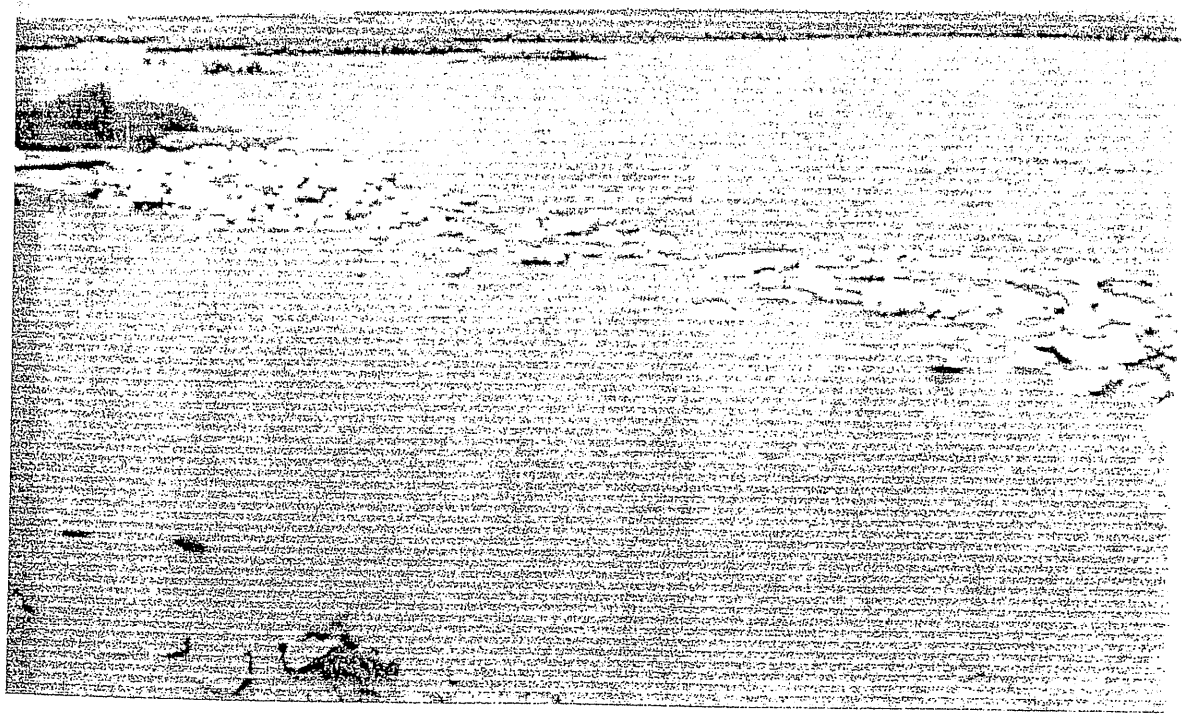


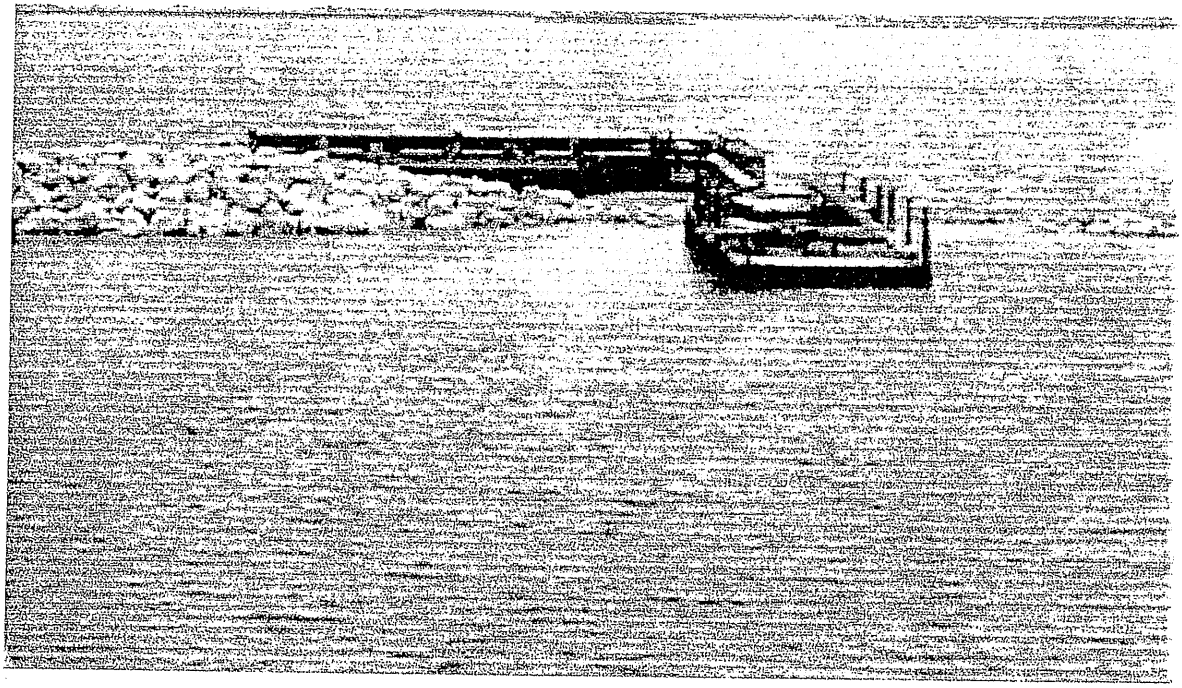


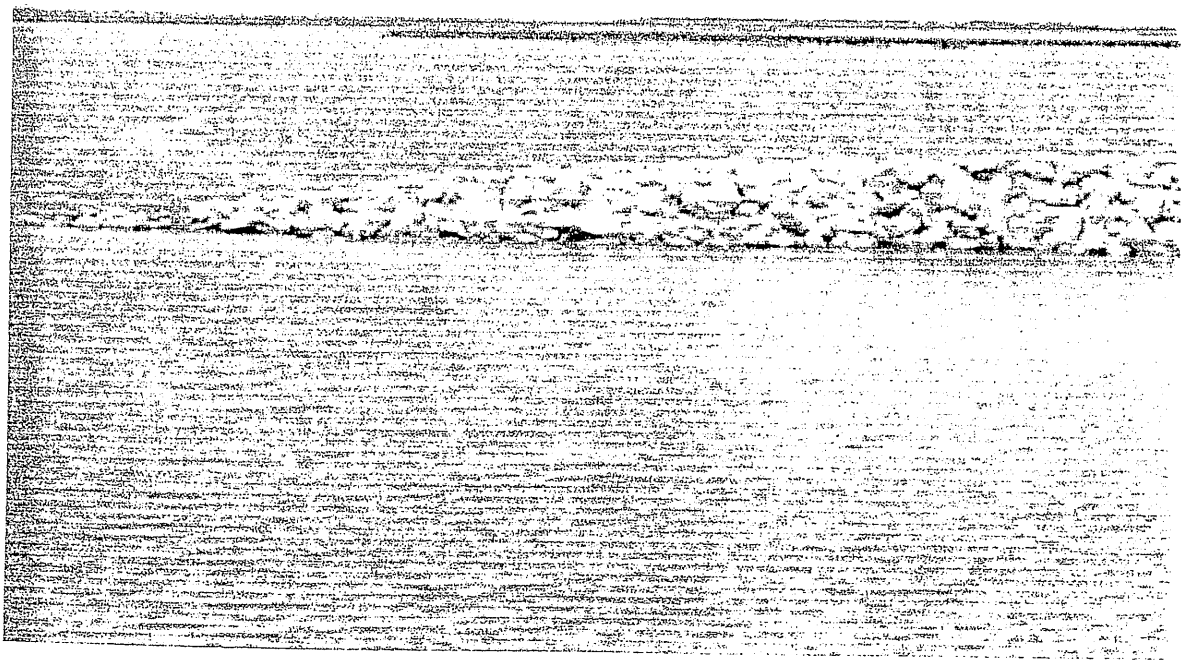


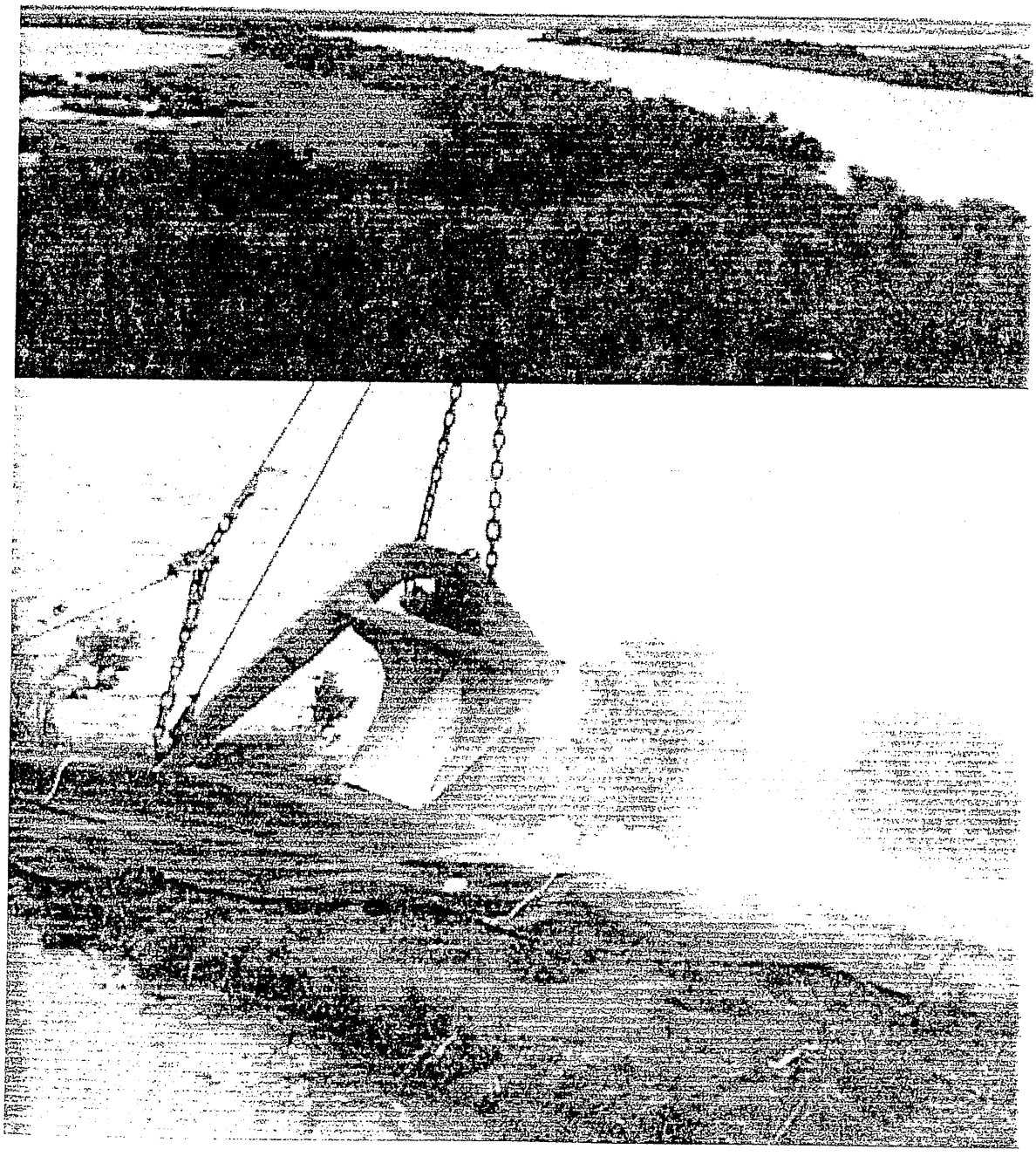


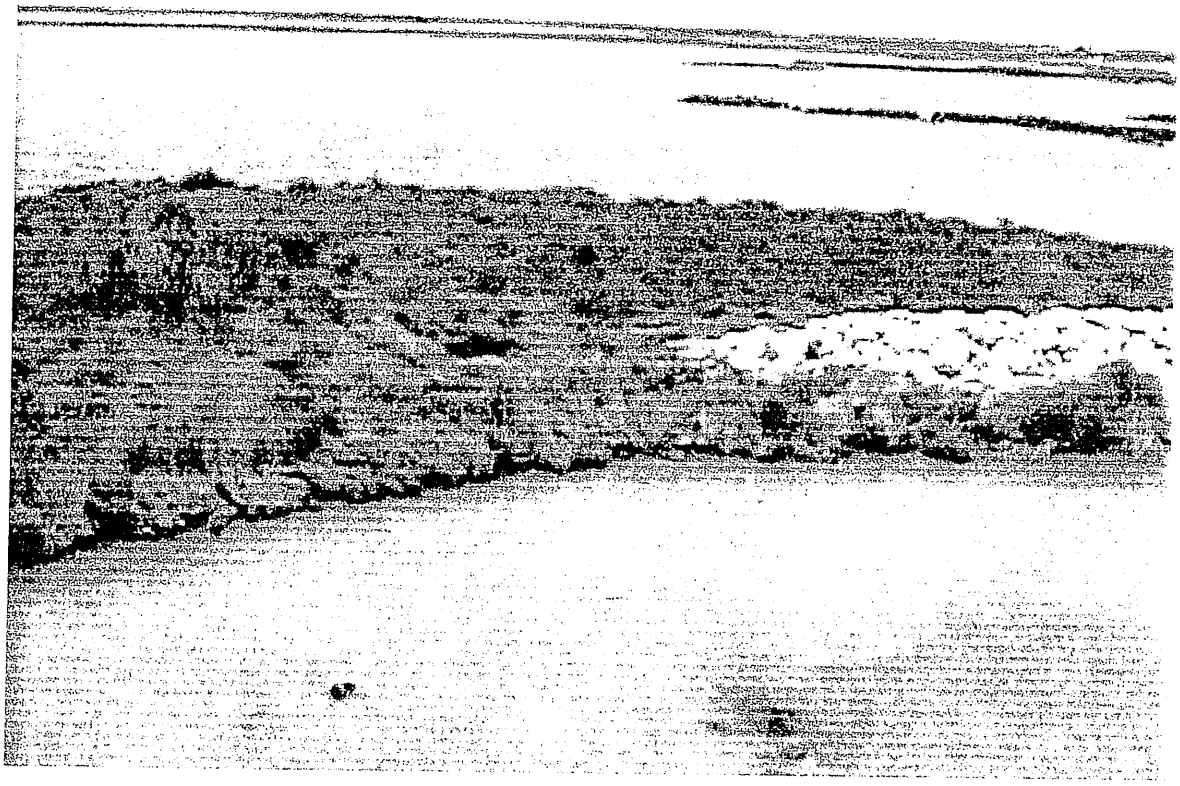


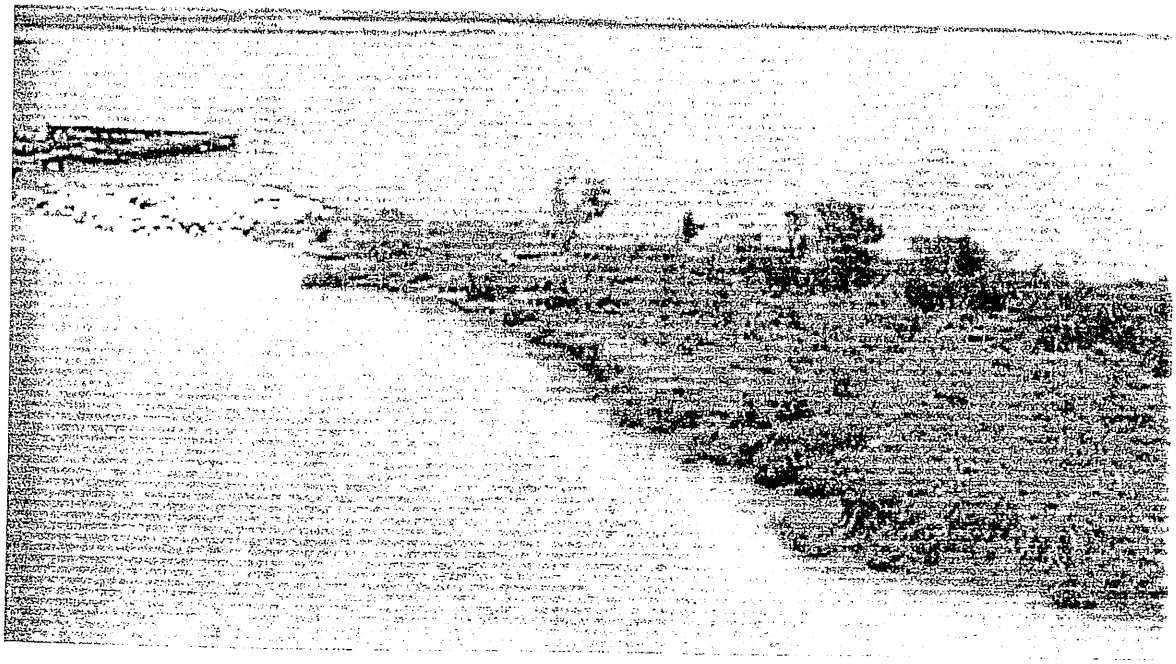








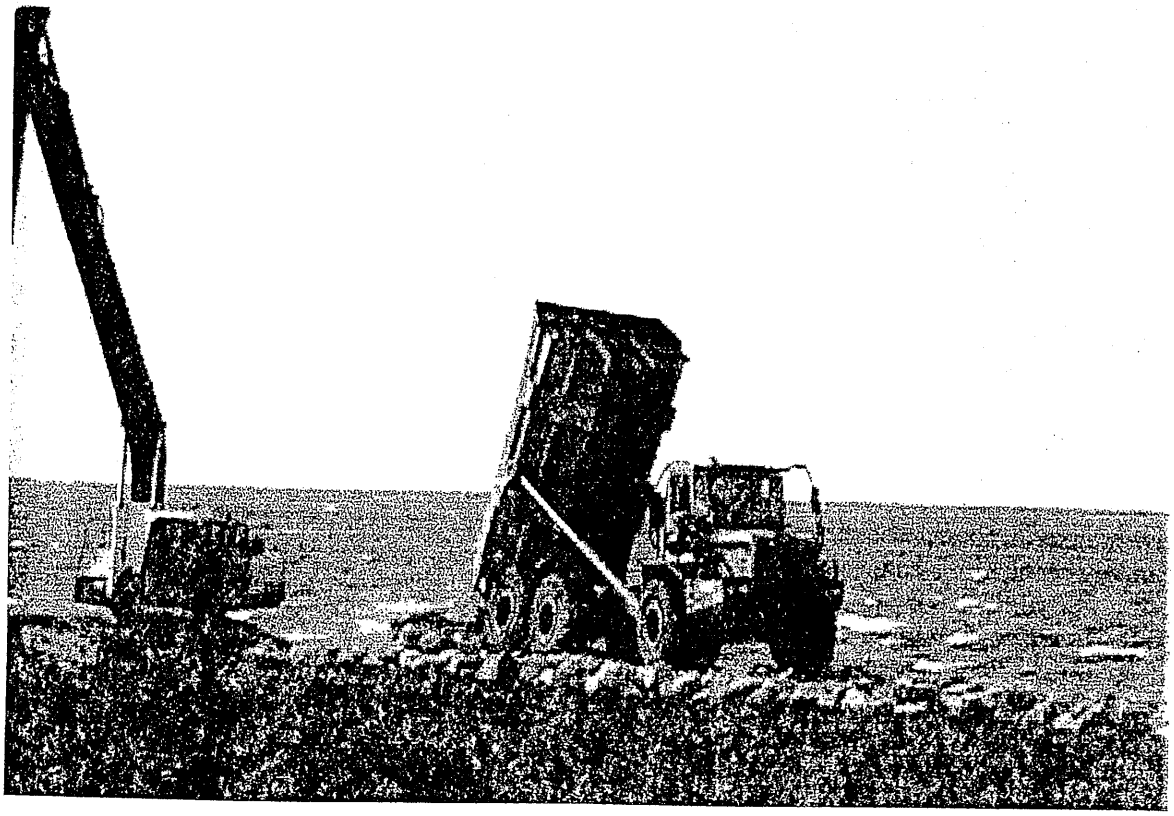


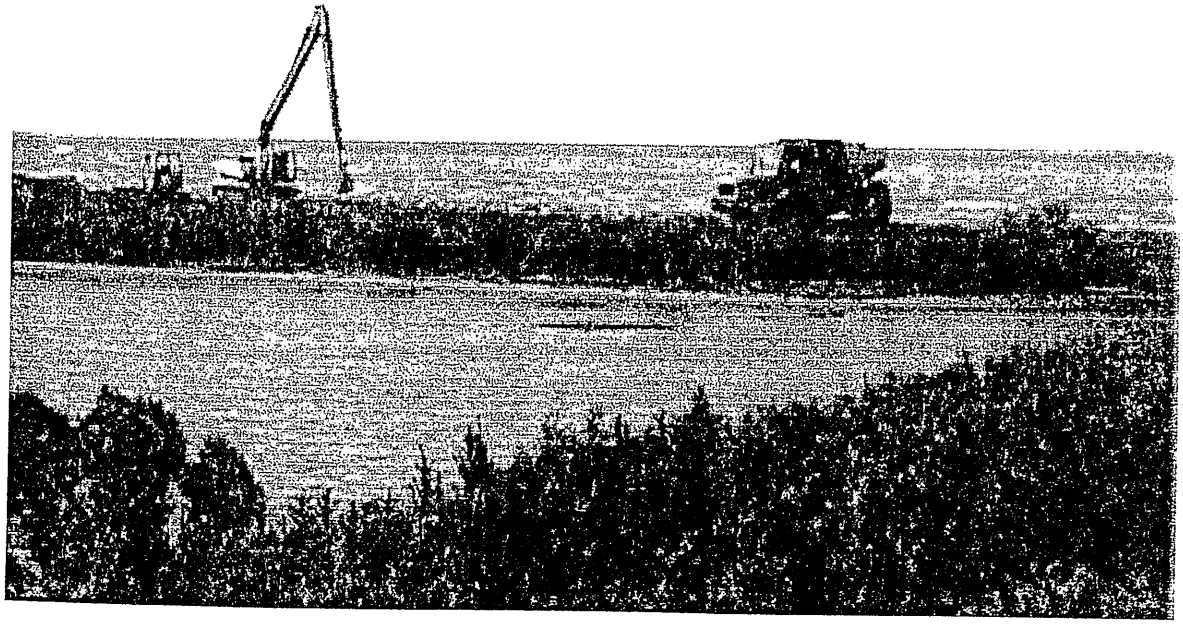


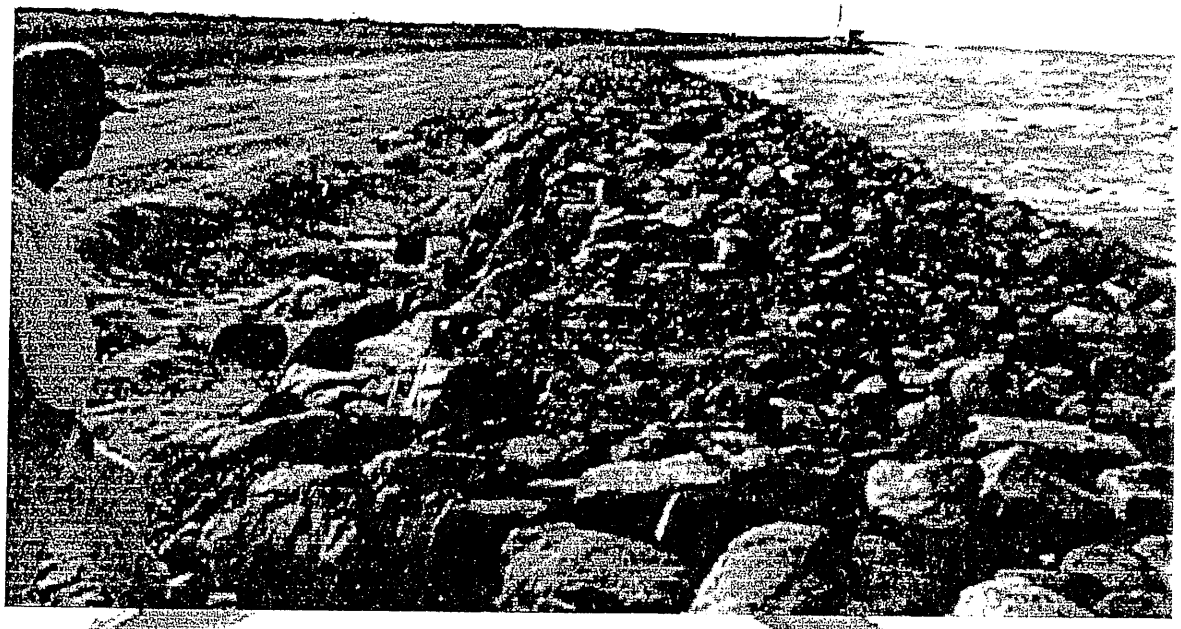
PHASE III MOBILE CANAL EXTENSION

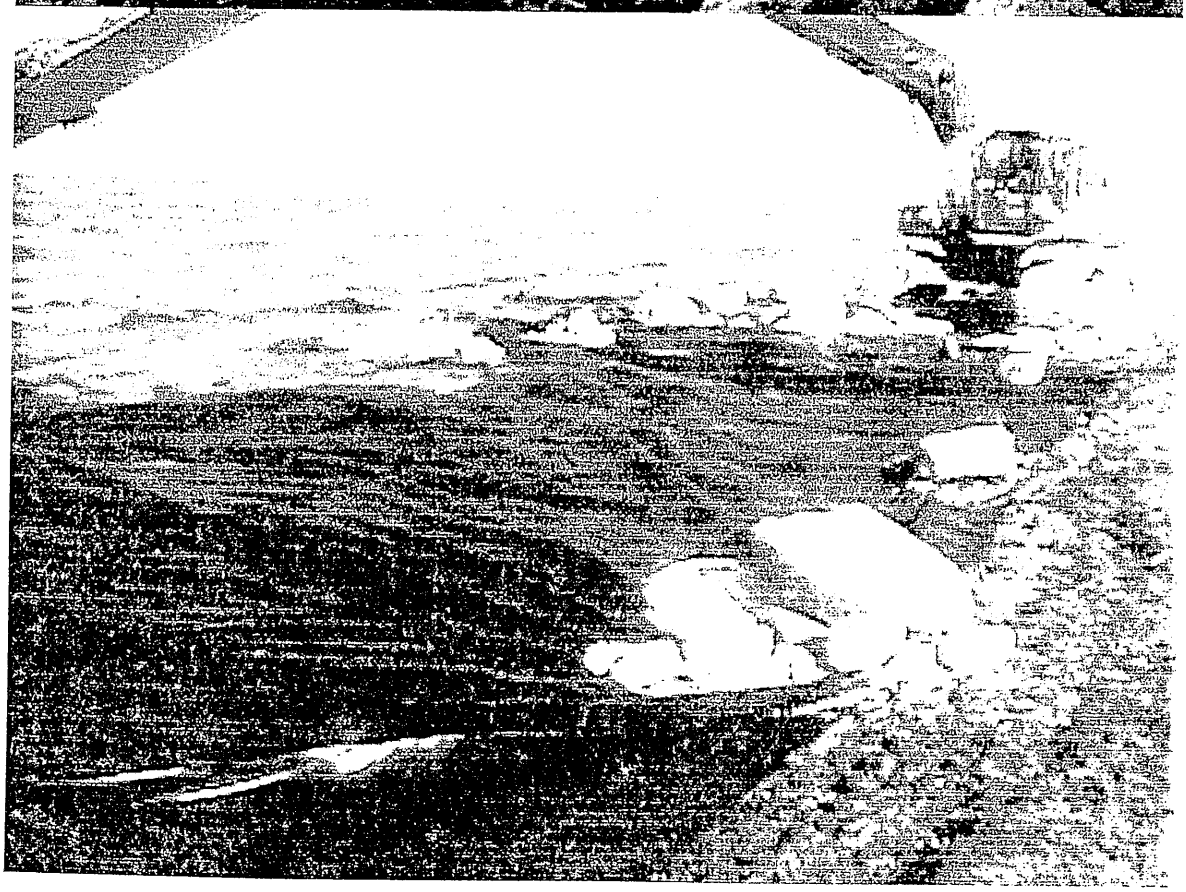
TE-22

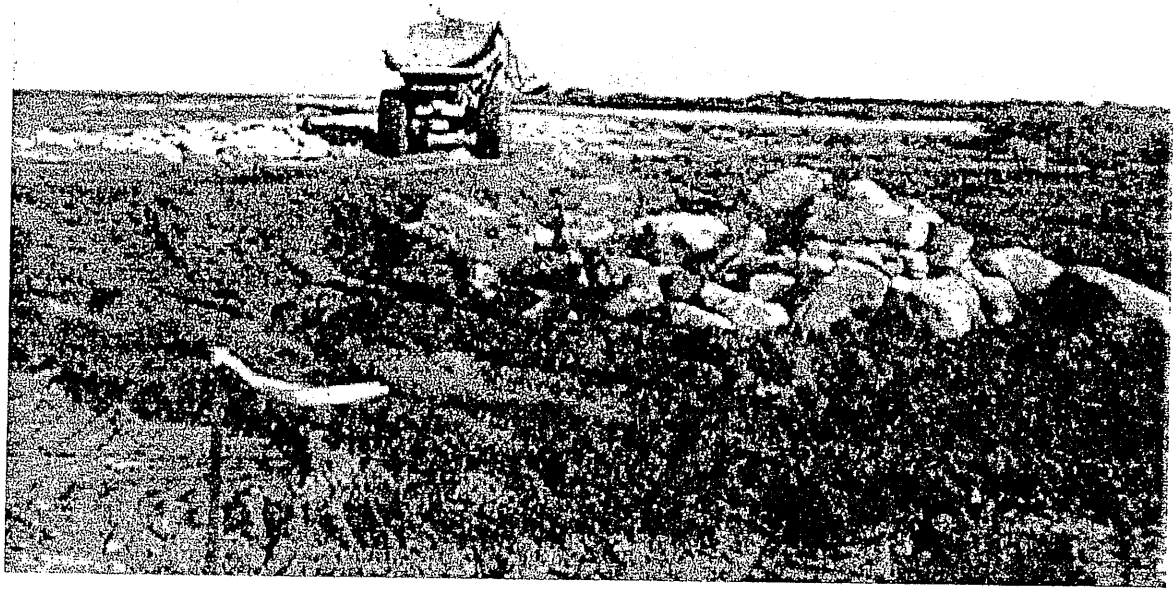
AREA 4 & 5

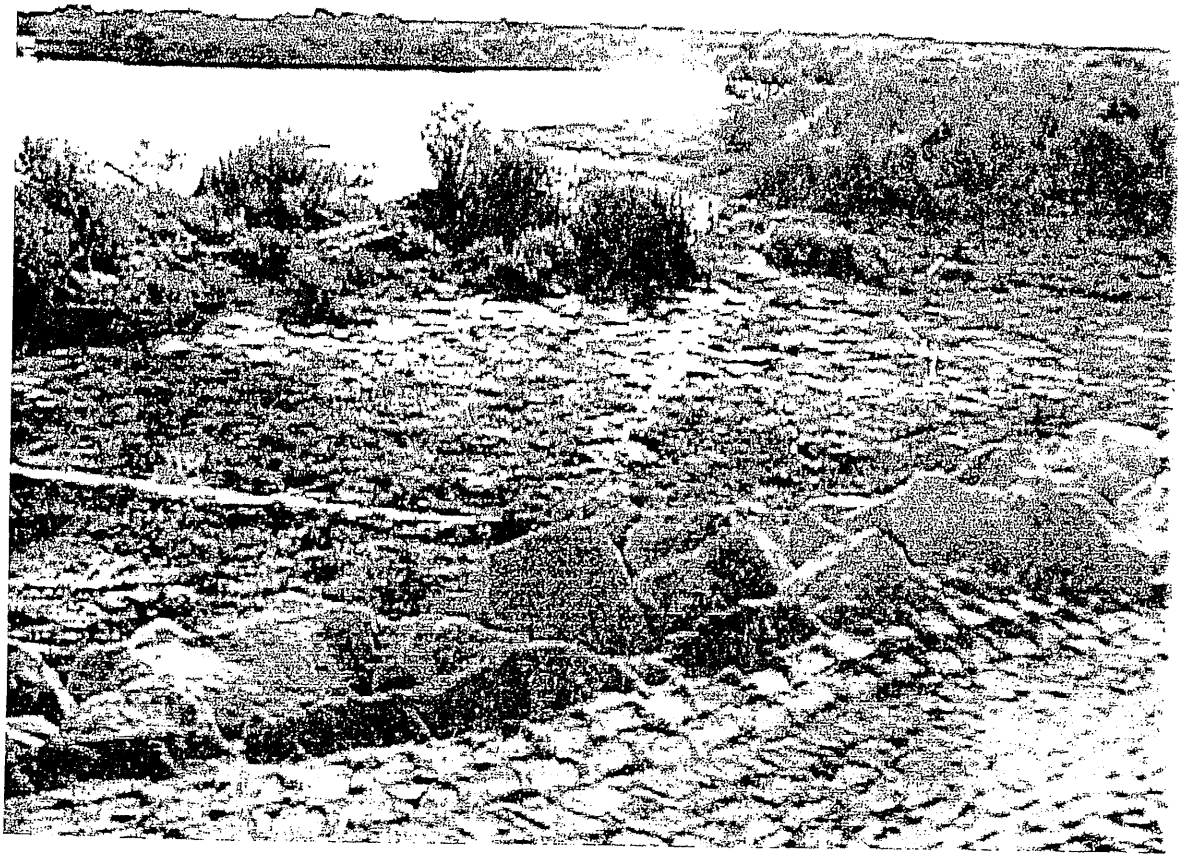












FINAL REPORT

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26a)

Grant No. NA57FZ0177

I. Executive Summary

Significant areas of Louisiana's coastal marshes have been converted to open water by the dredging of oil and gas access canals altering wetland hydrology and contributing to wetland loss. The marsh loss which has occurred on Point au Fer Island in the vicinity of Lake Chapeau since the 1930's is typical of these problems. The sediment input and hydrologic restoration features constructed by this project have been successful in converting open water areas to marsh and returning natural drainage patterns to Point au Fer Island.

II. Introduction

This project is located on Point au Fer Island between the Atchafalaya and Four League Bays in Terrebonne Parish, Louisiana. The conceptual design of the project called for dredging 500,000 cubic yards of sediment from Atchafalaya Bay and spreading the dredged material over the marshes west of Lake Chapeau with an additional eight plugs to be installed in manmade canals on the island. It was approved for funding under the Coastal Wetlands Planning, Protection and Restoration Act (PL 101-646) as part of Priority Project List 3.

III. Purpose

A. Problem Description : Existing canal networks which extend into the center of Point au Fer Island have considerably altered island hydrology. Interior marsh on the island is being lost as a result of erosion caused by excessive tidal water exchange.

B. Project Objectives : The objectives of the project were to:

1. Convert approximately 260 acres of open water to intermediate marsh.

2. Re-establish hydrologic control points, reducing tidal fluctuations in the project area and the resulting scouring of the interior marsh. The reduced tidal extremes will also promote conditions which will sustain communities of aquatic vegetation.

IV. Approach

A. Description of Work Performed : The final design of the project consisted of three components, with additional project features added to address problems encountered during and after construction:

1. The first component of the project (sediment input) consisted of restoring marshes west of Lake Chapeau and reestablishing a land bridge between two existing bayous. An total of 721,931 cubic yards of material were hydraulically dredged from Atchafalaya Bay and spread to an average thickness of two feet to create approximately 168 acres of marsh.

2. The second component of the project (hydrologic restoration) consisted of seven plugs installed in manmade canals around the perimeter of the Lake Chapeau project area, and gapping existing spoil banks in one channel. The plugs and gapping helped to restore the natural circulation and drainage patterns within the central portion of Point au Fer Island. The materials used in plug construction included a total of 19,230 tons of lightweight aggregate, 9,711 tons of rip rap and 19,230 square yards of geotextile fabric.

3. The third component of the project consisted of dredging a 6,700 foot long silted section of Locust Bayou to its original navigable depth. This was done to accommodate the increased flows resulting from the re-establishment of the island's natural drainage patterns. A total of 59,218 cubic yards of material was bucket dredged and placed in 1.5 foot high by 80 foot wide spoil banks on both sides of the bayou. The spoil banks were gapped periodically so not to impede the flow of natural waterways and drainage.

B. Project Management : The overall project management responsibility for the work performed under this grant was assigned to the Louisiana Department of Natural Resources, Coastal Restoration Division (DNR/CRD) Engineering Section. Participants in specific activities included:

1. Engineering design and construction inspection was performed by Burk-Kleinpeter, Inc. (BKI) of New Orleans, LA under contract to the Department of Natural Resources. BKI utilized two subcontractors during the design phase. T. Baker Smith and Son, Inc. of Houma, LA performed field surveys of the project area. Eustis Engineering Company, Inc. of Metairie, LA performed a geotechnical investigation of the plug sites.

2. Sediment coring and geotechnical analysis of the borrow areas in Atchafalaya Bay were preformed by C-K Associates, Inc. of Baton Rouge, LA. This work was completed under subcontract to GOTECH, Inc. through their indefinite delivery

contract with the National Marine Fisheries Service.

3. The landrights necessary for project design and construction were acquired by the DNR/CRD Real Estate Section. Servitude agreements with three different landowners were required: Point au Fer LLC/Archdiocese of New Orleans; Terrebonne Parish School Board; and the Louisiana Department of Wildlife and Fisheries. A letter of no objection to the dredging and use of spoil material on state lands was also required from the Louisiana State Land Office.

4. Construction of the project's three components was competed by River Road Construction, Inc. (River Road) of Mandeville, LA under contract to the Department of Natural Resources. This contract was advertised and awarded to the lowest responsible bidder in accordance with Louisiana's Public Bid Law.

V. Findings

A. Accomplishments and Findings :

1. Engineering design activities began in September 1995 and the preliminary design phase deliverables (report, permit application, plans/specifications and surveying/geotechnical reports) were submitted by BKI in July 1996. A revised preliminary design report incorporating comments, changes and corrections recommended by DNR, NMFS and landowner's representatives was submitted in September 1996.

2. Final design activities began in June 1997 and were completed by BKI in October 1997.

3. All landrights necessary to proceed to construction contract award were completed in April 1998.

4. The Advertisement for Bids began in June 1998 and bids were opened in July 1998.

5. A Notice to Proceed was issued to River Road in September 1998 and a final inspection was held in May 1999. Additional change order work was completed by River Road in August 1999 and a Notice of Acceptance was issued by DNR in October 1999.

B. Problems Encountered : Several problems were encountered during the design and construction phases which required remedial action and resulted in delays to project

implementation.

1. DNR requested that BKI cease all engineering design work in October 1996 after submittal of the revised preliminary design report. Reviews of the report by DNR engineering staff and management indicated that there were still numerous and significant items that needed to be addressed in order to ensure the completion of a final design that would achieve the project's objectives. These items included: understanding of island hydrology; suitability of proposed borrow material; containment methods for dredged material; and methods of analysis for proposed plug designs. These concerns were outlined in a letter to BKI and a written response was requested detailing how each of these concerns would be addressed during the final design phase. A satisfactory resolution of this issue was not obtained until March 1997.

2. Landrights acquisition was hampered by a title dispute that developed after completion of the preliminary design phase. Portions of the dredged fill area west of Lake Chapeau were claimed both by the Louisiana State Land Office and Point au Fer LLC/Archdiocese of New Orleans. After extensive negotiations during the period November 1996 through April 1998, DNR was successful in executing a servitude agreement with the landowner and obtaining a letter of no objection from the State Land Office. Both of these instruments included reservation of rights language which allowed the project to go forward without prejudice to any party should they decide to assert their claims at some future time.

3. When installation of the project's seven plugs was completed in November 1998 a wetlands consultant employed by the landowners of Point au Fer Island contacted DNR and NMFS regarding the deterioration of spoil banks in one of the canals located southwest of Lake Chapeau. Concerns were raised that breaches in the spoil bank might reduce the effectiveness of the plugs. Initial attempts made to close the major breach with material from the canal were unsuccessful. At DNR's request BKI developed a scope of work which included a rock plug repair for the major breach with dredged material closure of minor breaches. This breach repair work was completed by River Road in January 1999 under a change order to their construction contract. This change order also included the installation of a supplemental safety buoy system at six of the plug locations to provide additional warning to boaters during low water conditions.

BREACH SITES 1A, 1B, 1C EARTHEN DREDGE MATERIAL AND BREACH SITE 2 (ROCK)

4. Observations during the project's final inspection in May 1999 raised several concerns. First, the dredge discharge pipeline corridor was found to be in unsatisfactory condition and in need of repair. Marsh buggy transit had damaged the existing vegetation and formed a tidal channel connecting the interior of the

island with the bay. The shell ridge previously present on the shoreline had eroded at the month of this new channel. Second, very little new vegetative growth was present in the dredge fill area. Lastly, an additional spoil bank breach was found to have occurred near the previous repairs. This erosion had first been reported by a landowner's representative about six weeks after the previous spoil bank repairs were completed by River Road.

ATCH. BAY SHORELINE BREACH

While there was disagreement between DNR and BKI regarding who was responsible for the repairs needed to the dredge discharge pipeline corridor, it was felt that immediate action was needed to prevent tidal flows from eroding the newly placed fill which was still very soft. At DNR's request BKI developed a scope of work for a rip rap plug at the shoreline end of the pipeline corridor. This repair work was completed by River Road in August 1999 under a second change order to their construction contract.

At the request of NMFS plans and specifications for vegetative plantings in the dredge fill area were prepared by the DNR/CRD Engineering Section and advertised for public bidding. Bids were opened in September 1999 and a contract was awarded to Coastal Environments, Inc. (CEI) of Baton Rouge, LA Planting began in April 2000 and a final inspection was held in May 2000. A total of 39,396 smooth cordgrass plugs were installed. Construction oversight for the planting contractor was provided by Morris P. Hebert, Inc. of Houma, LA under contract to the Department of Natural Resources. A Notice of Acceptance was issued by DNR to CEI in June 2000.

BREACH SITE 3 (ROCK) AND BREACH SITES 4, 5, 6, 7, & EARTHEN DREDGE MATERIAL

Plans and specifications to repair the additional spoil bank erosion were also prepared by the DNR/CRD Engineering Section. This work was included with the Point au Fer Phase III (TE-22) bid package and advertised for public bidding. Bids were opened in November 1999 and a contract was awarded to Johnny F. Smith Truck & Dragline Service, Inc. of Slidell, LA. Construction of a stone weir and additional bucket dredging to repair five separate spoil bank areas in the same canal was completed by Johnny Smith Dragline and a final inspection was held in June 2000. Construction oversight for this work was provided by Picciola and Associates, Inc. of Cut Off, La. under contract to the Department of a Natural Resources. A Notice of Acceptance was issued by DNR to Johnny Smith Dragline in September 2000.

VI. Evaluation and Conclusion

The sediment input component of this project resulted in the creation of approximately 168 acres of emergent marsh in the open water and broken marsh areas west of Lake Chapeau. This acreage

was lower than originally planned due to the increased depth of fill required. While the project's conceptual design was based on the placement of a one foot thickness of dredged material, data collected during the project's preliminary design disclosed the average required depth of fill to be two feet. Bidding documents were prepared with alternates that would have allowed DNR to increase marsh creation to the original 260 acres if the lowest bid had fallen within the construction budget. The low bidder's total price for the base bid plus the increased marsh creation alternate was about 8% over the approved construction budget; consequently, the base bid with a reduced marsh creation scope was awarded. Initial post-construction monitoring data indicates that the dredged fill areas are slightly lower than adjacent marsh. Although the dredged material did not seed naturally the vegetative plantings have done well. The only area where the plantings were not successful was in the dredge discharge pipeline corridor.

Only a preliminary evaluation of the hydrologic component of this project is possible at this time. The plugs have been observed several times since construction was completed under different flow conditions and they appear to be functioning exactly as the weirs they were intended to be. Apparently the structures are stable for the crests all appear to be uniform in elevation. The time span of post-construction monitoring data collection (water levels and salinities) is presently too short to permit any conclusions to be drawn from its analysis. The first comprehensive monitoring report is scheduled for submittal three years after the completion of construction (August 2002).

The experience gained through the accomplishments of this project leads to several conclusions about its sediment input and hydrologic restoration concepts and allows some recommendations to be made for future work. First, the use of cohesive material such as the soft, gray clays mined on this project appears to be viable for marsh creation. The major problem encountered in the placement of cohesive material was the construction of the earthen dikes needed to contain the pumped slurry and dewater it. In the deeper water areas it was difficult to build and maintain the dikes using marsh buggy backhoes. Some of the dikes failed during dredging operations necessitating an additional, parallel line of dikes to be built. Other dikes failed after dredging resulting in the lower elevations on the northern end of the project area. Existing marsh worked very well for containment but did limit the elevation to which the material could be placed. Of special concern for future projects of similar configuration is the potential for damage to the dredge discharge pipeline corridor. Specifications need to be written such that the contractor is clearly responsible to repair any damage to existing marsh that occurs due to his operations, including the placement of fill and planting of vegetation if needed for restoration. It may be advisable to prohibit the passage of equipment over any vegetated areas and instead require the contractor to use a continuous length of plastic pipe that could be pushed on sled type supports over the marsh into the fill area by tenders located offshore. DNR has observed such an arrangement used by a contractor on one of its small dredge projects.

Second, it is essential to develop an adequate hydraulic model for future hydrologic restoration project areas in order that the affects of plugging canals may be better assessed and more precise

design criteria established. It appears that the spoil bank erosion problems encountered on this project during and after plug construction were at least in part due to the rerouting of water flows within the project area. It may be that the flow capacity as weirs of the plugs installed was insufficient under some operational conditions. Surveys of the watersheds tributary to a project area and collection of water level data prior to design should enable the development a model capable of predicting these post-construction flow patterns.

Overall, it is felt that this project was successful in addressing the existing problems for which Federal assistance was provided. The only further work that may be necessary is placement of additional fill in the dredge discharge pipeline corridor to ensure the long term integrity of the project. DNR is presently preparing a scope of work and cost estimate so that additional Operation and Maintenance funding may be requested.

Prepared by: _____

David Burkholder, P.E. Date
Project Manager

Approved by: _____

George Boddie, P.E. Date
Engineer Manager

ATTACHMENT V

LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION

CONSTRUCTION DRAWINGS

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

and

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES, COASTAL RESTORATION DIVISION

Plans of Proposed

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION PROJECT
(PTE-23/26A)

TERREBONNE PARISH, LOUISIANA

DNR CONTRACT NO. 25085-95-23
BKI PROJECT NO. 9541

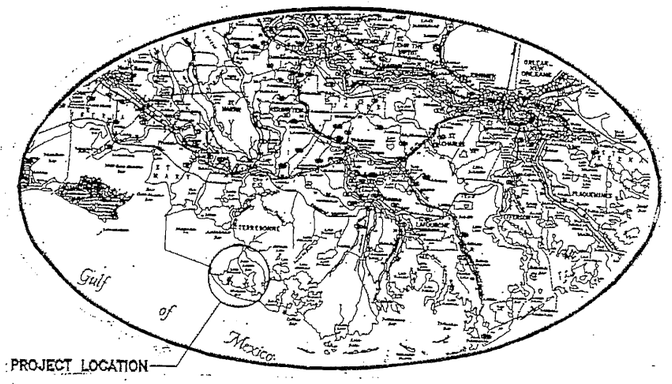
FEBRUARY 1998

INDEX TO DRAWINGS

1	TITLE SHEET AND AREA MAPS
2	GENERAL NOTES AND ESTIMATED QUANTITIES
3	PROJECT SITE PLAN
4	ATCHAFALAYA BAY DREDGE SITE PLAN
5	CONTAINMENT AREA SITE PLAN
6	LOCUST BAYOU DREDGE SITE PLAN
7	SPOIL BANK GAPPING SITE PLAN
8	TYPICAL SECTION – SHELL PLUG
9	WARNING SIGN DETAILS
10	PLUG SITE SOIL BORINGS
11	ATCHAFALAYA BAY BORROW BORINGS
12	ATCHAFALAYA BAY CROSS-SECTIONS
13	LOCUST BAYOU CROSS-SECTIONS
14–16	PLUG SITE CROSS-SECTIONS
17	LANDRIGHTS MAP

TYPE OF CONSTRUCTION

CLASSIFICATION III (HEAVY CONSTRUCTION)



VICINITY MAP

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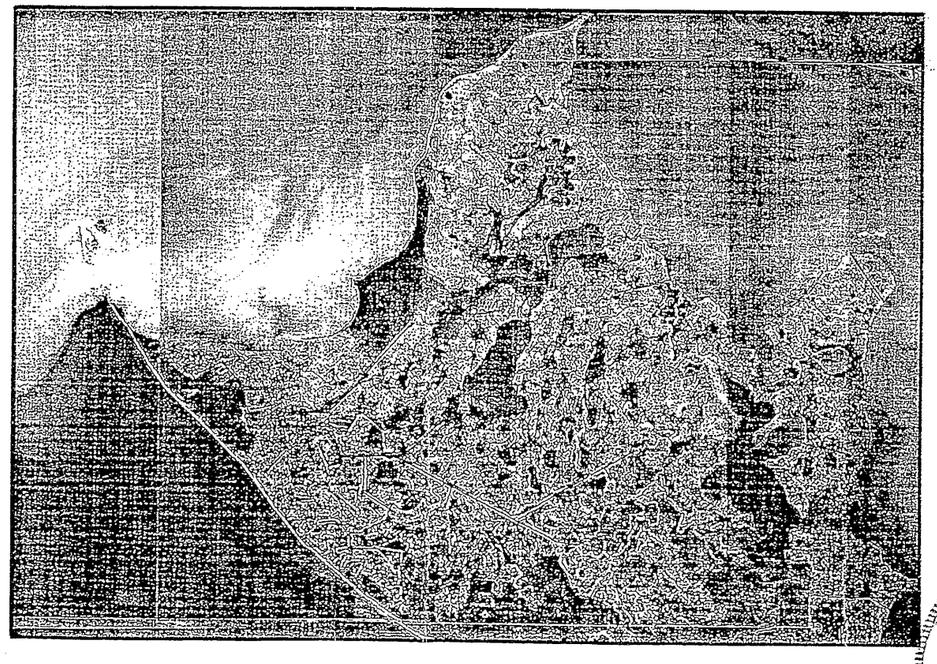


LOCATION MAP

NOT TO SCALE

RECOMMENDED FOR APPROVAL:

DNR/CRD ENGINEER MANAGER — DATE 4/28/98

DNR/CRD PROJECT MANAGER — DATE 4-28-98

PREPARED BY:

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

MICHAEL G. JACKSON, SENIOR V.P. — DATE MAR 3, 1998

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 15148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. No. 15148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

SHEET NO.
1 OF 17

SUMMARY OF ESTIMATED QUANTITIES

BASE BID

ITEM No.	DESCRIPTION	UNIT	QUANTITY
1	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	LUMP SUM
2	HYDRAULIC FILL (NET SECTION)	CU. YDS.	812,500
3	LOCUST BAYOU DREDGING	CU. YDS.	55,100
4	SPOIL BANK GAPPING	CU. YDS.	1,350
5	GEOTEXTILE FABRIC FOR ROCK STABILIZATION	SQ. YDS.	13,500
OPTION 1 – 6A	PLUG CORE MATERIAL – REEF SHELL	TONS	11,200
OPTION 2 – 6B	PLUG CORE MATERIAL – LIGHTWEIGHT	TONS	15,200
	CRUSHED LIMESTONE AGGREGATE		
7	RIPRAP	TONS	10,800
ADD ALT. BID			
8	HYDRAULIC FILL (NET SECTION)	CU. YDS.	445,900

GENERAL NOTES:

1. BASIC HORIZONTAL AND VERTICAL CONTROL POINTS HAVE BEEN ESTABLISHED OR DESIGNATED BY THE ENGINEER AND ARE SHOWN ON THE PLANS. CONTRACTOR SHALL MAINTAIN AND PROTECT FROM DAMAGE OR DISLOCATION THESE CONTROLS, AND SHALL PERFORM ALL ADDITIONAL SURVEY, LAYOUT, AND MEASUREMENT WORK USING THESE CONTROLS.

2. CONTRACTOR SHALL VERIFY EXISTING GRADES, ELEVATIONS, AND LOCATIONS IN THE FIELD PRIOR TO CONSTRUCTION.

3. THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, RULES, AND REGULATIONS OF THE LOUISIANA STATE POLICE, THE TERREBONNE AND ST. MARY PARISH SHERIFFS' OFFICES, DNR, USCG, FEDERAL AUTHORITIES, STATE AND PARISH HEALTH DEPARTMENTS, AND OTHER STATE OR PARISH AUTHORITIES HAVING REGULATIONS AND JURISDICTIONAL RIGHTS APPLICABLE TO THE WORK OR JOBSITES.

4. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND PARISH LAWS CONCERNING POLLUTION OF WATERWAYS, AND PROTECTION OF SHELLFISH, FISH, WATERFOWL, WILDLIFE, AND DOMESTIC ANIMALS.

5. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO CAUSE THE LEAST POSSIBLE INTERFERENCE WITH BOTH THROUGH AND LOCAL MARINE TRAFFIC. REFER TO SECTION 1V–46 OF THE SPECIFICATIONS.

6. CONTRACTOR SHALL EMPLOY EFFECTIVE MEASURES TO CONTROL EROSION OF NATURAL AND CONSTRUCTED SURFACES.

7. THE SAFETY HAZARDS PROMULGATED BY, AND THE PRECAUTIONS DEFINED WITHIN SAME, OF THE OSHA, THE USCG, AND ALL OTHER REGULATING AUTHORITY HAVING JURISDICTION AND THAT ARE APPLICABLE TO THE WORK SHALL BE ADHERED TO AND ENFORCED BY THE CONTRACTOR.

8. TEMPORARY UTILITIES AND SANITARY FACILITIES FOR OPERATION OF THE CONTRACTOR'S PLANT OR EQUIPMENT SHALL BE PROVIDED AND MAINTAINED AT THE EXPENSE OF THE CONTRACTOR. REFER TO SECTION IV–35 OF THE SPECIFICATIONS.

9. ALL NECESSARY PERMITS WILL BE PROVIDED BY OWNER.

10. CONSTRUCTION SERVITUDES FOR ALL WORK AND RIGHT–OF–ENTRY ONTO THE SITE WILL BE PROVIDED BY OWNER.

11. ALIGNMENTS AND/OR ELEVATIONS MAY BE ADJUSTED IN THE FIELD BY THE PROJECT ENGINEER TO MEET CHANGING FIELD CONDITIONS OR TO BETTER ASSURE ACCOMPISHMENT OF PROJECT OBJECTIVES. ANY ADDITIONAL QUANTITIES WILL BE PAID FOR AT THE UNIT PRICE BID FOR THE SPECIFIC ITEM.

12. CONTRACTOR SHALL NOT BE ALLOWED TO IMPEDE DRAINAGE DURING RAINSTORMS OR WHEN A RAINSTORM IS IMMINENT. REFER TO SECTION IV–47 OF THE SPECIFICATIONS.

13. DUE TO CHANGING FIELD CONDITIONS, SHORELINES SHALL NOT BE USED AS CONSTRUCTION REFERENCE POINTS.

14. THE CONSTRUCTION SEQUENCE MUST BE SUCH THAT ALL PLUG STRUCTURES ARE TO BE CONSTRUCTED PRIOR TO THE COMMENCEMENT OF ATCHAFALAYA BAY HYDRAULIC DREDGE AND FILL OPERATIONS.

15. X AND Y COORDINATES ARE BASED ON NAD 27; LATITUDES AND LONGITUDES ARE BASED ON NAD 83; ELEVATIONS ARE BASED ON NGVD 29; SOUNDINGS REFERENCE WATER LEVEL SHOWN.

TECHNICAL NOTES:

1. ALL PLUGS TO BE CONSTRUCTED USING A REEF SHELL (PREFERRED) OR LIMESTONE CORE WITH RIPRAP ARMOR AND HAVE A 10'–WIDE CROWN WITH 3(H):1(V) SIDE SLOPES. SEE SHEET 8 FOR DETAILS.

2. THE CONTRACTOR SHALL OBSERVE CURRENTS AND CONDUCT HIS WORK IN SUCH A MANNER AS TO COMPENSATE FOR DRIFT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY MATERIAL LOST DUE TO CURRENT ACTION.

3. GEOTEXTILE FABRIC SHALL BE INSTALLED ON THE CANAL BOTTOM PRIOR TO PLACEMENT OF THE CORE FILL AS PER THE SPECIFICATIONS. SHELL, STONE, AND RIPRAP SHALL BE PLACED WITH A MAXIMUM DROP OF 2 FEET TO AVOID DAMAGING THE GEOTEXTILE FABRIC.

4. WARNING SIGNS WILL BE PROVIDED ON THE UPSTREAM AND DOWNSTREAM SIDES OF EACH PLUG AS SHOWN ON THE DRAWINGS. SIGNS SHALL CONFORM TO COAST GUARD STANDARD 33 CFR 330.4 (a) (1). EACH WARNING SIGN SHALL HAVE A 2" ORANGE BORDER OF RETROFLECTIVE MATERIAL. LETTERING WILL BE BLACK ON A FIELD OF WHITE RETROFLECTIVE MATERIAL.

5. NEOPRENE WASHERS SHALL BE PLACED BETWEEN THE WARNING SIGN AND STEEL PIPE AT ALL POINTS OF CONTACT.

6. THE CONTRACTOR IS NOTIFIED THAT THE DREDGE SITE IS LOCATED WITHIN THE ATCHAFALAYA DELTA WILDLIFE MANAGEMENT AREA UNDER THE JURISDICTION OF THE LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES. ALL PERSONNEL SHALL ABIDE BY THE MANAGEMENT AREA RULES AND REGULATIONS. REFER TO SECTION V–I OF THE SPECIFICATIONS.

7. ALTHOUGH NOT PART OF THE CONTRACT PLANS AND SPECIFICATIONS, GEOTECHNICAL REPORTS OF SOIL BORINGS TAKEN IN THE ATCHAFALAYA BAY AND INTERIOR POINT AU FER ISLAND ARE AVAILABLE FOR REVIEW AT THE ENGINEERING OFFICE OF BURK–KLEINPETER, 4176 CANAL STREET, NEW ORLEANS, LOUISIANA, 70119. THE CONTRACTOR SHALL MAKE HIS OWN INTERPRETATION OF THE CHARACTER AND CONDITION OF THE MATERIALS WHICH WILL BE ENCOUNTERED BETWEEN THE SOIL SAMPLING LOCATIONS. THE CONTRACTOR MAY, AT HIS OWN EXPENSE, MAKE ADDITIONAL SURVEYS AND INVESTIGATIONS, SUBJECT TO OBTAINING ADDITIONAL PERMITS, AS HE DEEMS NECESSARY TO DETERMINE CONDITIONS WHICH WILL AFFECT THE PERFORMANCE OF THE WORK.

8. BASED ON THE INFORMATION PROVIDED IN THE GEOTECHNICAL REPORTS AND IN THESE DRAWINGS, THE CONTRACTOR SHALL DEVELOP A DREDGING AND HYDRAULIC FILL PLAN TO BE APPROVED BY THE ENGINEER. THIS PLAN SHALL OUTLINE THE PROPOSED SEQUENCE OF FILLING WHICH WILL ENSURE A UNIFORM DISTRIBUTION OF ALL MATERIALS AND MINIMIZE MUD WAVES. THE PLAN SHALL ALSO INCLUDE WEIR DESIGN AND PLACEMENT.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NAVIGATING WITHIN THE LIMITS OF THE DREDGE AREA.

10. THE CONTRACTOR IS NOTIFIED THAT THE PROJECT SITE IS TOTALLY ON OR ADJACENT TO PRIVATE OR STATE PROPERTY. EXTREME CAUTION SHALL BE EXERCISED IN PROTECTION OF PROPERTY, HABITAT, AND WILDLIFE FROM DAMAGE OR HARM.

11. THE CONTRACTOR IS NOTIFIED THAT HE WILL BE CONDUCTING HIS OPERATIONS IN THE VICINITY OF UTILITIES, PIPELINES, FLOWLINES, OIL AND GAS STRUCTURES, AND OTHER MINERAL OPERATIONS. THE CONTRACTOR SHALL LOCATE ALL SUCH STRUCTURES IN THE FIELD PRIOR TO CONSTRUCTION. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. REFER TO SECTIONS IV–34, IV–41, AND IV–43 OF THE SPECIFICATIONS.

12. A LISTING OF ALL COMPANIES KNOWN TO BE CONDUCTING MINERAL OPERATIONS AND HAVE ACTIVE WELLS AND/OR PIPELINES IN THE VICINITY IS PROVIDED ON SHEET 17. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING WHETHER THERE ARE OTHERS.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING PIPELINE OPERATORS 48 HOURS IN ADVANCE OF THE WORK. ALL PIPELINES SHALL BE MARKED WITH BUOYS BY THE CONTRACTOR USING THE COORDINATES GIVEN. THE CONTRACTOR SHALL MAINTAIN BUOYS DURING CONSTRUCTION OR HAVE ADEQUATE NAVIGATIONAL EQUIPMENT ON THE DREDGE TO AVOID DREDGING IN RESTRICTED AREAS.

14. THE CONTRACTOR SHALL NOT DREDGE WITHIN 100 FEET OF A PIPELINE.

15. THE CONTRACTOR SHALL NOT DREDGE WITHIN 1 MILE OF EXISTING OYSTER LEASE AREAS.

16. VOLUMES GIVEN IN THE SPECIFICATIONS ARE FOR BIDDING PURPOSES ONLY AND WERE CALCULATED ACCORDING TO CONDITIONS SURVEYED IN JUNE, 1996. BEFORE AND AFTER DREDGE, CROSS–SECTIONS WILL BE SURVEYED BY THE CONTRACTOR AND CHECKED BY THE ENGINEER FOR MEASUREMENT AND PAYMENT PURPOSES.

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 15145
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

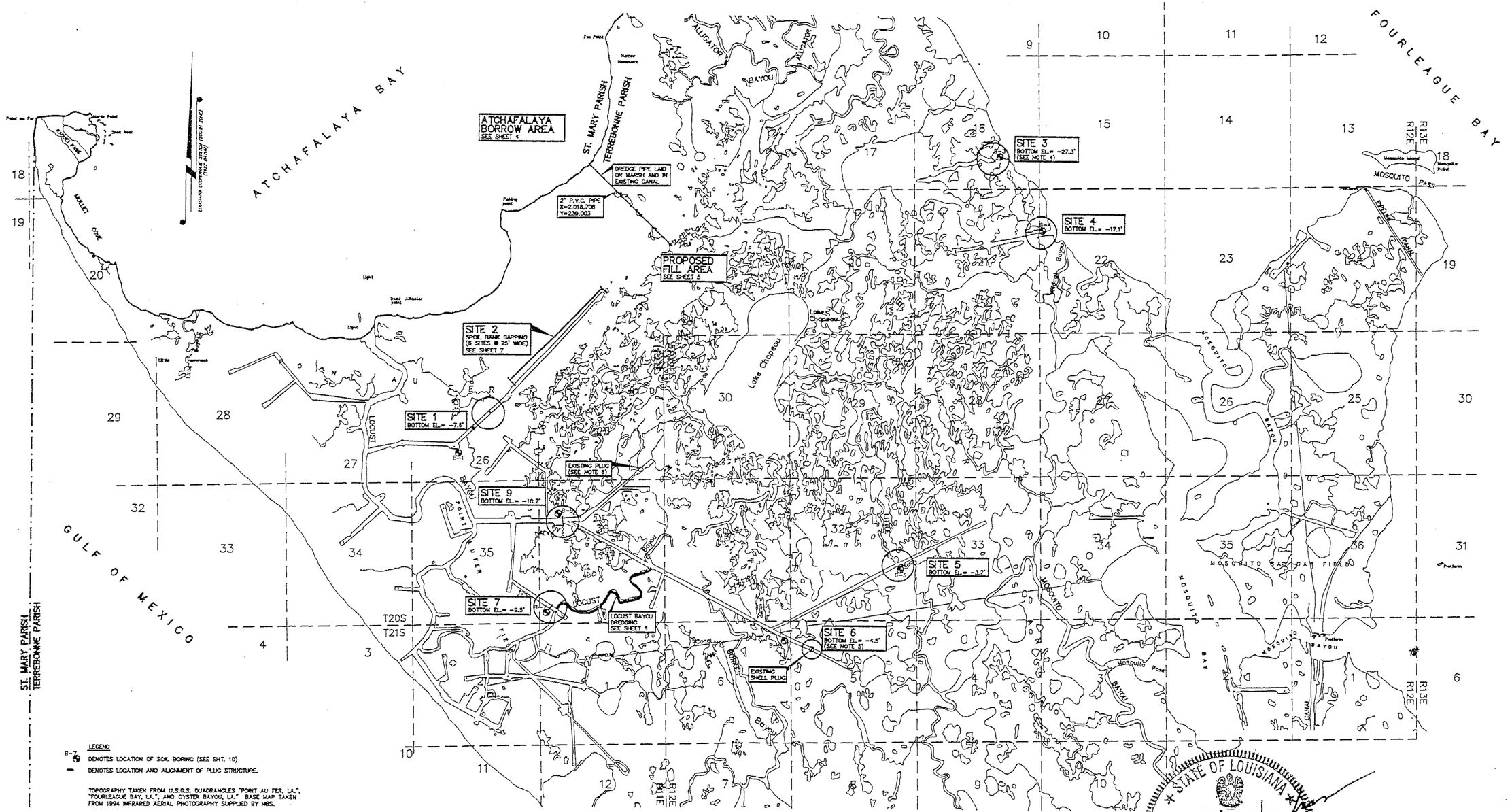
STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION

GEN. NOTES AND EST. QUANTITIES

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119–5994
(504) 486–5901 FAX (504) 488–1714

VOC PRICS	JOB NO. 9541	DESIGNED PSL	SCALE NONE	SHEET NO. 2 OF 17
REVENOR		DETAILED PSL	DATE SEPT, 1997	
PLAN N HAND		CHECKED PSL	FILE NO. 95410102	



LEGEND

B-7 DENOTES LOCATION OF SOIL BORING (SEE SHT. 10)

DENOTES LOCATION AND ALIGNMENT OF PLUG STRUCTURE.

TOPOGRAPHY TAKEN FROM U.S.G.S. QUADRANGLES "POINT AU FER, LA.", "FOURLEAGUE BAY, LA.", AND OYSTER BAYOU, LA." BASE MAP TAKEN FROM 1994 INFRARED AERIAL PHOTOGRAPHY SUPPLIED BY NRS.

GEOGRAPHIC LOCATION OF STRUCTURE MARKERS

NOTES: STRUCTURE MARKERS ARE 2" PVC PIPES DRIVEN APPROXIMATELY 30' ON EITHER SIDE OF NORMAL HIGH BANK LOCATIONS.

SITE NOS. 1 AND 6 ARE NOT STAKED IN THE FIELD.

COORDINATES REFER TO THE LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27).

SITE No.	NORTH OR WEST SIDE OF CANAL		SOUTH OR EAST SIDE OF CANAL		BEARING	LENGTH
	X-COORD.	Y-COORD.	X-COORD.	Y-COORD.		
1	NOT MARKED		NOT MARKED		N44°46'20"W	200'±
2	N/A	N/A	N/A	N/A		
3	2,034,998.58	240,662.40	2,035,207.95	240,462.60	N48°18'06"W	289.20'
4	2,037,194.47	237,420.17	2,037,179.92	237,176.80	N03°25'07"E	243.97'
5	2,031,316.28	222,791.19	2,031,443.83	222,803.00	N84°41'59"E	127.90'
6	NOT MARKED		NOT MARKED		N29°03'06"W	205'±
7	2,016,077.57	220,961.58	2,015,951.13	220,781.30	S35°02'42"E	220.20'
9	2,018,465.46	224,830.74	2,016,517.89	224,423.68	N07°20'22"E	410.42'

SCALE IN FEET

3000' 1000' 0 3000' 4000' 5000'

NOTES

1. FOR SHELL PLUG DETAILS SEE SHEET 8.
2. FOR CROSS-SECTIONS OF PLUG SITES SEE SHTS. 14-16.
3. ALL ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD).
4. THE CREST OF PLUG 3 IS REQUIRED TO BE SET AT ELEVATION -4.0' NGVD. ALL OTHER STRUCTURES HAVE CREST ELEVATIONS OF 0.0 NGVD.
5. THE EXISTING PLUG AT SITE 5 IS A DILAPIDATED SHELL STRUCTURE. THE NEW SHELL PLUG 5 WILL BE CONSTRUCTED OVER THIS EXISTING PLUG USING THE IN-PLACE MATERIAL AS A CORE.
6. THE EXISTING PLUG NEAR SITE 9 IS A BURNED TIMBER STRUCTURE WITH SHELL ARMOR PLATING. IT MAY BE REMOVED AT THE CONTRACTOR'S DISCRETION AND RESPONSIBILITY IF NECESSARY FOR ACCESS INTO LOCUST BAYOU. ALTERNATE ROUTES ARE POSSIBLE.

GEOGRAPHIC LOCATION OF SURVEY CONTROL POINTS

NOTES: CONTROL POINTS ARE 3/4" O.I.P. ON EITHER BANK OF PROPOSED STRUCTURE, AND ARE ALONG PROPOSED ALIGNMENT OF STRUCTURE EXCEPT AT SITE NOS. 1 AND 6.

COORDINATES REFER TO THE LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27).

SITE No.	NORTH OR WEST SIDE OF CANAL			SOUTH OR EAST SIDE OF CANAL		
	X-COORD.	Y-COORD.	ELEV.	X-COORD.	Y-COORD.	ELEV.
1	2,011,917.79	228,195.06	0.829'	2,012,038.84	228,075.04	0.966'
2	2,018,250.63	234,452.14	1.170'	2,017,877.40	234,108.93	0.588'
3	2,035,015.27	240,651.99	0.887'	2,035,191.91	240,484.42	0.977'
4	2,037,194.54	237,384.07	1.394'	2,037,184.78	237,199.80	1.431'
5	2,031,327.31	222,792.42	0.982'	2,031,421.72	222,801.00	0.753'
6	2,026,450.19	219,615.04	0.970'	2,026,373.40	219,476.88	0.980'
7	2,016,064.41	220,942.41	0.836'	2,015,965.06	220,801.93	0.789'
9	2,016,468.65	224,811.35	2.728'	2,016,514.39	224,447.11	0.970'

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. No. 25248
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

NO.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

PROJECT SITE PLAN

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

VICE PRES.	JOB NO.	DESIGNED	PSL	SCALE	1"=2000'	SHEET NO.
REVIEWER	9541	DETAILED	TBS	DATE	SEPT., 1997	3 of 17
PLAN IN HAND		CHECKED	PSL	FILE No.	95410103	

SEPT. 17, 1997 PLUGSITE J.P.G.

DREDGE AREA LOCATIONS

POINT No.	X-COORD.	Y-COORD.	DIST. FROM POINT AU FER SHORELINE	DIST. FROM PVC MARKER AT CHANNEL
1	2,016,801.2680	240,870.8585	900'	2700'
2	2,017,429.1118	242,581.3299	900'	3800'
3A	2,016,020.9942	241,690.0058	2100'	3800'
3B	2,015,447.6641	241,962.9105	2700'	4400'
4	2,014,949.2458	239,561.3611	900'	3800'

PERMITTED DREDGE SITE

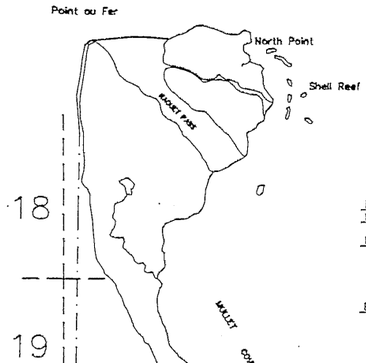
POINT No.	X-COORD.	Y-COORD.	DIST. FROM POINT AU FER SHORELINE	DIST. FROM PVC MARKER AT CHANNEL
1	2,016,801.2680	240,870.8585	900'	2700'
5	2,017,244.5694	245,611.6505	900'	6800'
6	2,010,467.0182	245,929.0951	7000'	10,800'
7	2,010,467.0182	238,036.0104	3300'	8300'

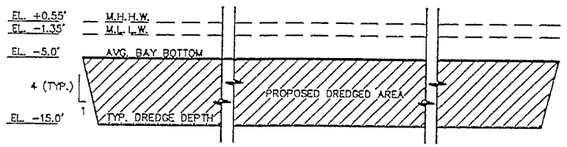
CORING LOCATIONS

CORING No.	X-COORD.	Y-COORD.
1	2,017,646.65	240,965.21
2	2,017,433.45	241,902.99
3	2,015,535.92	241,838.14
4	2,014,977.32	239,480.26
5	2,016,028.76	240,951.57
6	2,008,967.98	242,151.41

NOTES:

1. THE PROJECT BASELINE DREDGE AREA SHOWN CORRESPONDS TO A BAY BOTTOM SURFACE AREA OF OVER 50 ACRES.
2. ASSUMING AN AVERAGE DREDGING DEPTH OF 10 FEET, THE BASELINE DREDGE AREA WILL PRODUCE APPROXIMATELY 812,500 CUBIC YARDS OF MATERIAL.
3. ASSUMING AN AVERAGE FILL DEPTH OF 3 FEET IN THE CONTAINMENT AREA, AND TAKING INTO ACCOUNT SETTLEMENT AND SHRINKAGE OF THE FILL, THE BASELINE DREDGE AREA WILL PRODUCE APPROXIMATELY 168 ACRES OF LAND FILL (SEE SHT. 5).
4. THE ALTERNATE DREDGE AREA SHOWN CORRESPONDS TO A SURFACE AREA OF APPROXIMATELY 78 ACRES.
5. ASSUMING AN AVERAGE DREDGING DEPTH OF 10 FEET, THE ALTERNATE DREDGE AREA WILL PRODUCE APPROXIMATELY 1,258,400 CUBIC YARDS OF MATERIAL.
6. ASSUMING AN AVERAGE FILL DEPTH OF 3 FEET IN THE CONTAINMENT AREA, AND TAKING INTO ACCOUNT SETTLEMENT AND SHRINKAGE OF THE FILL, THE ALTERNATE DREDGE AREA WILL PRODUCE APPROXIMATELY 260 ACRES OF LAND FILL (SEE SHT. 5).
7. AVERAGE DEPTH IN BASELINE AND ALTERNATE DREDGE AREAS IS 5 FEET. ADDITIONAL PERMITTED DREDGE AREA IS PROVIDED IF GREATER DRAFT IS REQUIRED FOR DREDGE VESSEL.
8. WATER DEPTHS IN ATCHAFALAYA BAY FROM RIVER TO PERMITTED DREDGE AREA ARE ADEQUATE FOR EQUIPMENT ACCESS.
9. DREDGE MUST MAINTAIN A MINIMUM DISTANCE OF 900' OFF THE WESTERN POINT AU FER SHORELINE FOR ALL DREDGING OPERATIONS.
10. IN NO CASE SHALL THE CONTRACTOR DREDGE BELOW 12 FEET BELOW THE EXISTING BAY BOTTOM.
11. DREDGING SEQUENCE SHALL BEGIN AT THE EXTREME SOUTHEASTERN POINT (POINT 1) AND PROCEED IN A NORTHWESTERLY DIRECTION.





TYPICAL SECTION THROUGH DREDGE AREA

SCALE IN FEET

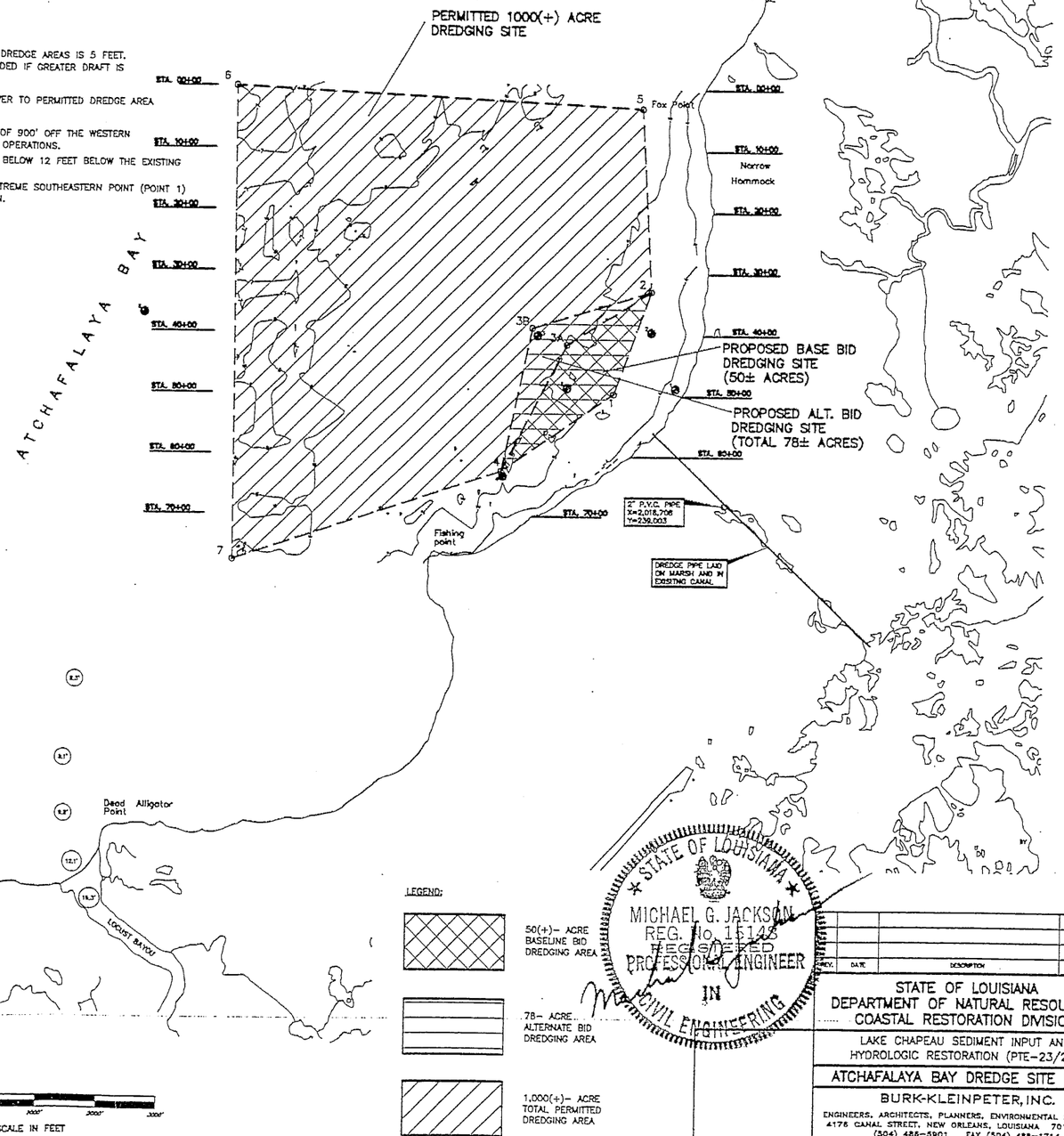
NOTES:

LOCUST BAYOU CHANNEL MARKED AT BAY ENTRANCE BY DAY BEACON AND PVC PIPES.

● DENOTES LOCATION OF GEOTECHNICAL CORING (SEE SHT. 11)

(8.2') DENOTES SOUNDINGS WITH RESPECT TO 0.0' NGVD.

STATIONS FOR DREDGE AREA REFER TO SHEET 12.



SCALE IN FEET

LEGEND:

- 50(+)– ACRE BASELINE BID DREDGING AREA
- 78– ACRE.. ALTERNATE BID DREDGING AREA
- 1,000(+)– ACRE TOTAL PERMITTED DREDGING AREA

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. No. 15148
REGISTERED PROFESSIONAL ENGINEER
IN CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

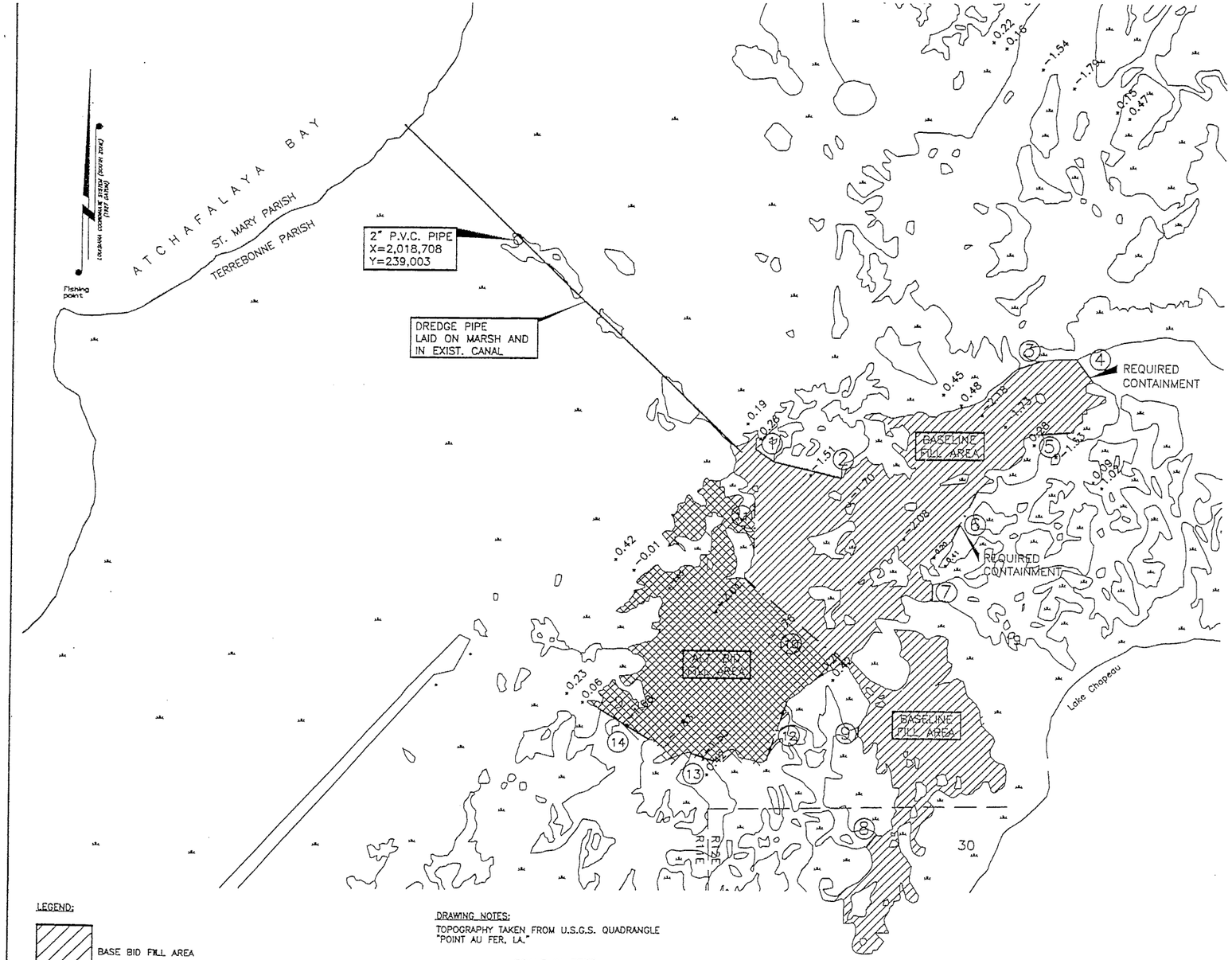
LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

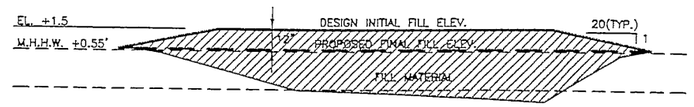
ATCHAFALAYA BAY DREDGE SITE PLAN

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

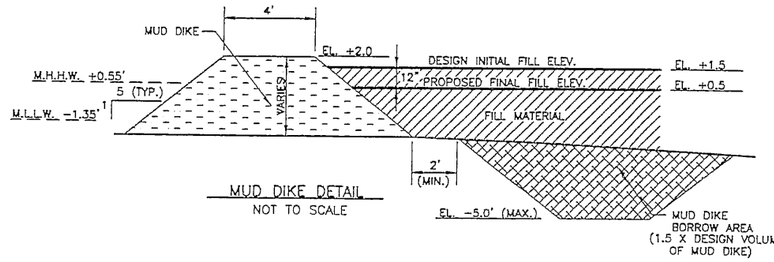
VAC PREC.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE SEPT., 1997	4 OF 17
PLAN IN HAND		CHECKED PSL	FILE NO. 95410104	

SEPT. 10,1997 DREDGAREA J.P.C.





TYPICAL CONTAINMENT AREA SECTION
NOT TO SCALE



MUD DIKE DETAIL
NOT TO SCALE

CONTAINMENT NOTES:

FILL TO BE CONTAINED BY NATURAL EMERGENT MARSH EXCEPT WHERE CONTAINMENT IS SPECIFIED. CONTAINMENT SYSTEM SHALL BE AN EARTH DIKE CONSTRUCTED OF MATERIALS EXCAVATED FROM WITHIN CONTAINMENT AREA.

4,950 LINEAR FEET OF CONTAINMENT REQ'D. (BASE BID).

4,500 LINEAR FEET OF CONTAINMENT REQ'D. (ALT. BID).

17,700 C.Y. OF EARTH EXCAVATION REQ'D. FOR CONTAINMENT DIKE (BASE BID – NO DIRECT PAY)

16,000 C.Y. OF EARTH EXCAVATION REQ'D. FOR CONTAINMENT DIKE (ALT. BID – NO DIRECT PAY)

THE SECTIONS OF CONTAINMENT LABELED "10" AND "11" ARE ONLY TO BE CONSTRUCTED FOR THE BASELINE BID CASE.

THE SECTIONS OF CONTAINMENT LABELED "12," "13," AND "14" ARE ONLY TO BE CONSTRUCTED FOR THE ALTERNATE BID CASE.

CONTRACTOR SHALL CONTROL EROSION OF NATURAL MARSH FORMATIONS DURING FILLING BY CAREFUL PLACEMENT OF THE DREDGE DISCHARGE AND MAINTENANCE OF DISCHARGE VELOCITIES.

DURING THE PLACEMENT OF HYDRAULIC FILL, THE CONTRACTOR SHALL PROVIDE DRAINAGE CONTROL MEASURES SUCH AS WEIRS OR STANDPIPES TO FACILITATE CONSTRUCTION OPERATIONS. THE NUMBER, SIZE, AND LOCATION OF THESE DRAINAGE CONTROL MEASURES SHALL BE DETERMINED BY THE CONTRACTOR BASED ON SIZE AND POSITION OF THE DREDGE DISCHARGE, THE DREDGE DISCHARGE RATE AND FLOW VELOCITY, AND THE CHARACTERISTICS OF THE DREDGED MATERIAL. (NO DIRECT PAY)

THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF WEIRS IN SUCH A MANNER TO AVOID BOTH SHORT-CIRCUITING OF HYDRAULIC FILL AND DEAD ZONES WITHIN THE CONTAINMENT AREA. THE INDIVIDUAL LENGTHS OF MULTIPLE WEIRS SHALL EQUAL OR EXCEED THE DESIGN EFFECTIVE WEIR LENGTH REQUIRED BY THE CONTRACTOR'S PARTICULAR DREDGING PLAN.

LEGEND:

BASE BID FILL AREA

ALTERNATE BID FILL AREA

CONTAINMENT

DRAWING NOTES:

TOPOGRAPHY TAKEN FROM U.S.G.S. QUADRANGLE "POINT AU FER, LA."

SCALE IN FEET

600' 300' 0 600' 1200' 1800'

GENERAL NOTES:

1. AVERAGE ELEVATION OF OPEN WATER CONTAINMENT AREA IS -1.5' NGVD.
2. AVERAGE ELEVATION OF MARSH IN VICINITY OF CONTAINMENT AREA IS +0.5' NGVD.
3. ASSUMED INITIAL FILL ELEVATION IN CONTAINMENT AREA TO ACHIEVE FINAL MARSH ELEVATION OF +0.5' NGVD AFTER CONSOLIDATION IS +1.5' NGVD.
4. THE BASELINE FILL AREA SHOWN WILL YIELD A SURFACE AREA OF ABOUT 168 ACRES.
5. WITH AN AVERAGE FILL DEPTH OF 3 FEET IN THE BASELINE FILL AREA, THE TOTAL REQUIRED VOLUME OF FILL MATERIAL IS APPROXIMATELY 812,500 CUBIC YARDS.
6. THE ALTERNATE BID FILL AREA SHOWN WILL YIELD AN ADDITIONAL SURFACE AREA OF ABOUT 92 ACRES, CORRESPONDING TO A TOTAL FILL AREA OF 260 ACRES.
7. WITH AN AVERAGE FILL DEPTH OF 3 FEET IN THE ALTERNATE BID FILL AREA, THE TOTAL REQUIRED VOLUME OF FILL MATERIAL IS APPROXIMATELY 1,258,400 CUBIC YARDS.

APPROXIMATE CONTAINMENT LOCATIONS

SITE No.	BEARING	LENGTH
1	S55°20'55"E	248'
2	S76°31'39"E	764'
3	N70°08'19"E	241'
4	S36°54'32"E	305'
5	S85°50'01"W	303'
6	S26°08'32"W	606'
7	DUE S	180'
8	N39°35'35"E	173'
9	N01°07'24"E	102'
10	N49°48'12"W	1,444'
11	N00°28'56"E	594'
12	S18°57'49"W	675'
13	N72°05'52"W	265'
14	N58°04'49"W	641'

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. No. 15148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

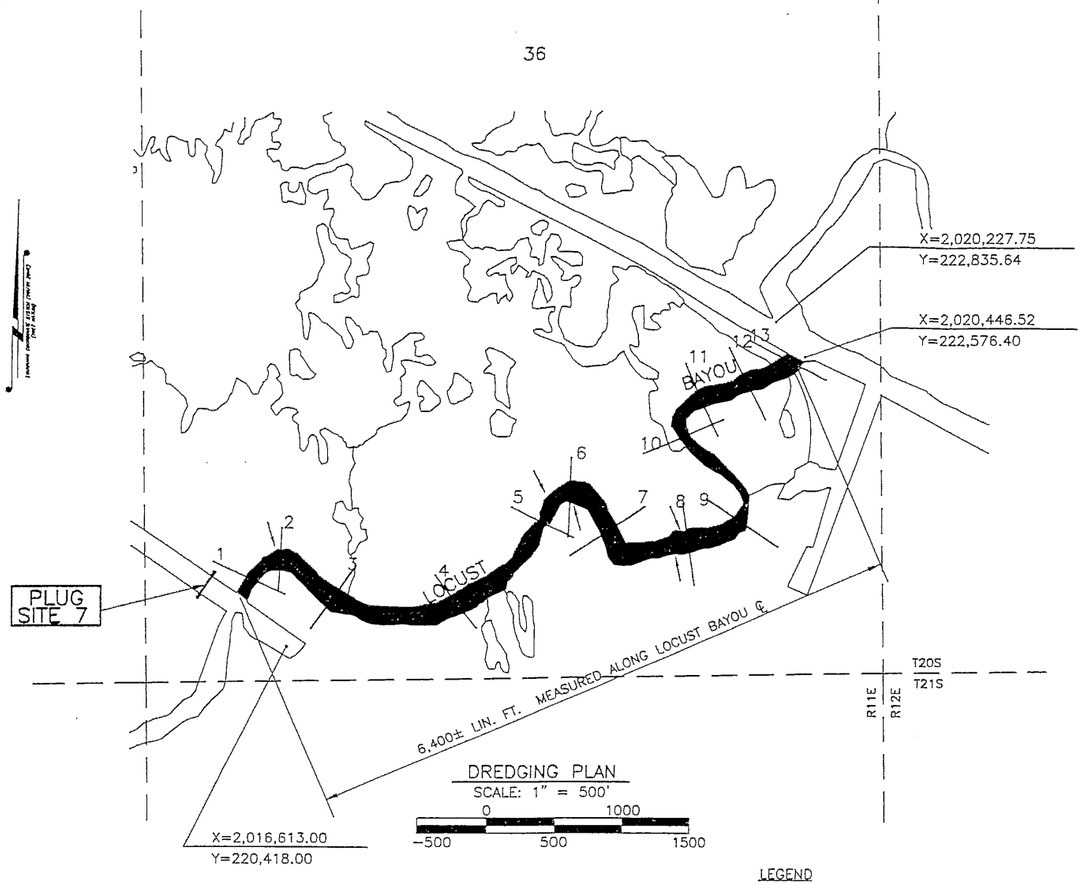
LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

CONTAINMENT AREA SITE PLAN

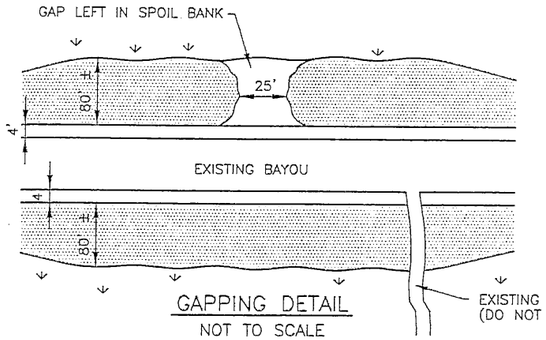
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

VICE PRES.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
MGR/MGR	9541	DETAILED J.P.C.	DATE SEPT., 1997	5 OF 17
PLAN IN HAND		CHECKED PSL	FILE NO. 95410105	

J.P.C. 9/02/97 P-CONT.DWG



PROFILE NO.	EXIST. CHANNEL DEPTH (ELEV. NGVD)	EXIST. CHANNEL WIDTH BETWEEN BANKS (FT.)
1	-4.0	120
2	-5.0	115
3	-4.5	115
4	-4.5	100
5	-4.0	110
6	-2.5	120
7	-3.5	125
8	-3.5	115
9	-3.5	110
10	-2.5	145
11	-2.5	125
12	-3.0	120
13	-3.0	140



GAPPING DETAIL
NOT TO SCALE

DRAWING NOTES:

TOPOGRAPHY TAKEN FROM U.S.G.S. QUADRANGLE "POINT AU FER, LA.", "FOURLEAGUE BAY, LA., AND OYSTER BAYOU, LA. BASE MAP TAKEN FROM 1994 INFARED AERIAL PHOTOGRAPHY SUPPLIED BY NBS.

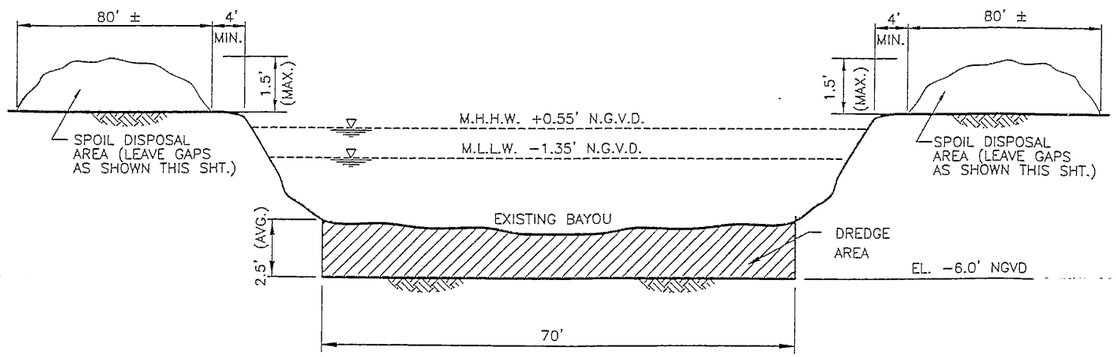
ALL ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM, (NGVD 29) ALL "X" AND "Y" COORDINATES REFER TO THE LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27).

LEGEND

X — PROFILE LOCATION (SEE SHT. 13)

DREDGING LOCATION (70' WIDE)

APPROXIMATE LOCATION OF GAP IN SPOIL BANK (SEE DETAIL, THIS SHT.)



DREDGING SECTION
NOT TO SCALE

NOTES:

CONTRACTOR SHALL CONTACT "LOUISIANA ONE CALL" (1-800-272-3020) AT LEAST 48 HRS. PRIOR TO THE START OF DREDGING ACTIVITY.

SPOIL SHALL BE STOCKPILED NO CLOSER THAN 4' FROM THE BANKS OF LOCUST BAYOU.

DO NOT IMPEDE FLOW OF NATURAL WATERWAYS; NO SPOIL SHALL BE STOCKPILED WHERE NATURAL WATERWAYS INTERSECT LOCUST BAYOU.

SPOIL BANK WIDTH SHOWN IS BASED ON MAXIMUM SPOIL BANK HEIGHT. CONTRACTOR SHALL PROCEED DEPOSITING SPOIL HORIZONTALLY TO A MAXIMUM DISTANCE ALLOWED BY HIS EQUIPMENT (NOT TO EXCEED 210 FEET), AND THEN BEGIN STACKING VERTICALLY TO A MAXIMUM HEIGHT OF 1.5 FEET.

REFER TO SECTIONS V-3 AND V-5 OF THE SPECIFICATIONS.

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. No. 19148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

NO.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

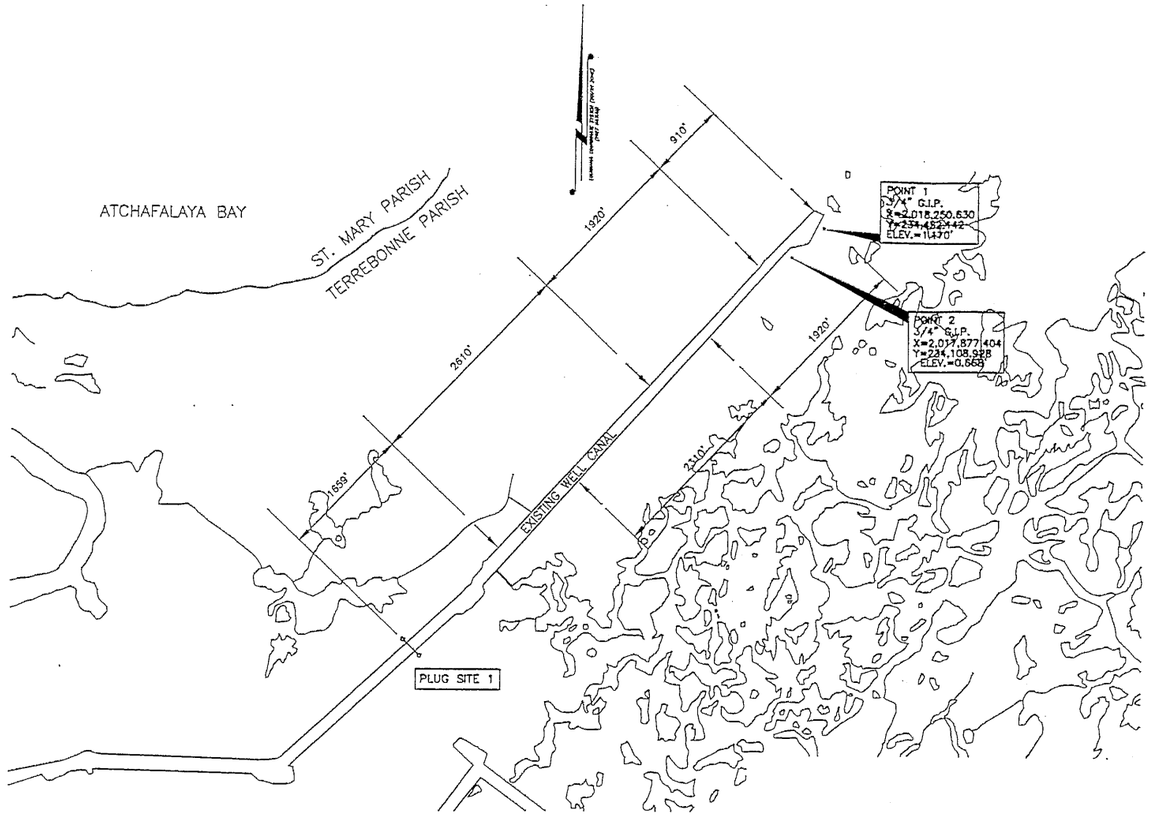
LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

LOCUST BAYOU DREDGE PLAN

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

VICE PRES.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE SEPT., 1997	8 OF 17
PLAN IN HAND		CHECKED PSL	FILE NO. 95410106	

J.P.C. SEPT.3,1997 DSEPDSEA



LEGEND

- APPROXIMATE GAPPING LOCATION
- PROPOSED SHELL-AND-RIPRAP PLUG

GAPPING LOCATION PLAN

SCALE: 1" = 800'

800 0 800 1600 2400

SCALE IN FEET

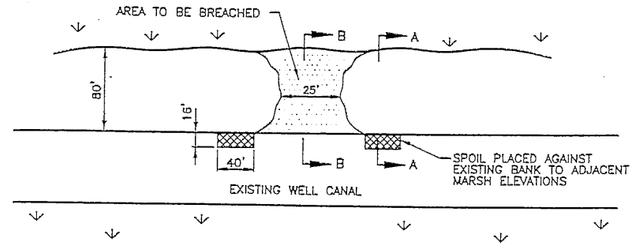
NOTES:

GAPPING LOCATIONS HAVE BEEN SELECTED TO COINCIDE WITH EXISTING BREAKS IN SPOIL BANKS. THE LOCATIONS AND DISTANCES SHOWN HERE ARE APPROXIMATE BASED ON 1994 INFRARED AERIAL PHOTOGRAPHY SUPPLIED BY NBS.

HEIGHTS OF EXISTING SPOIL BANKS VARY OVER THE LENGTH OF THE CANAL. DIMENSIONS AND QUANTITIES ARE ESTIMATED AND GIVEN FOR BIDDING PURPOSES ONLY. BEFORE AND AFTER CROSS-SECTIONS WILL BE SURVEYED BY THE CONTRACTOR AND CHECKED BY THE ENGINEER FOR MEASUREMENT AND PAYMENT PURPOSES.

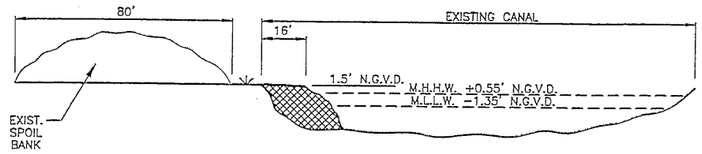
REFER TO SECTION V-5 OF THE SPECIFICATIONS.

APPROXIMATE BOTTOM OF EXISTING WELL CANAL IS AT ELEVATION (-)8.0' NGVD.



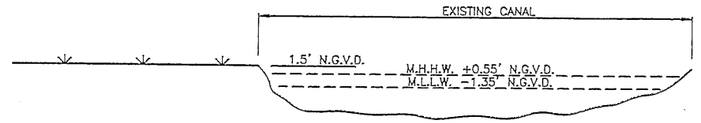
GAPPING DETAIL

NOT TO SCALE



TYPICAL CROSS SECTION - A

NOT TO SCALE



TYPICAL CROSS SECTION - B

NOT TO SCALE

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 19148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

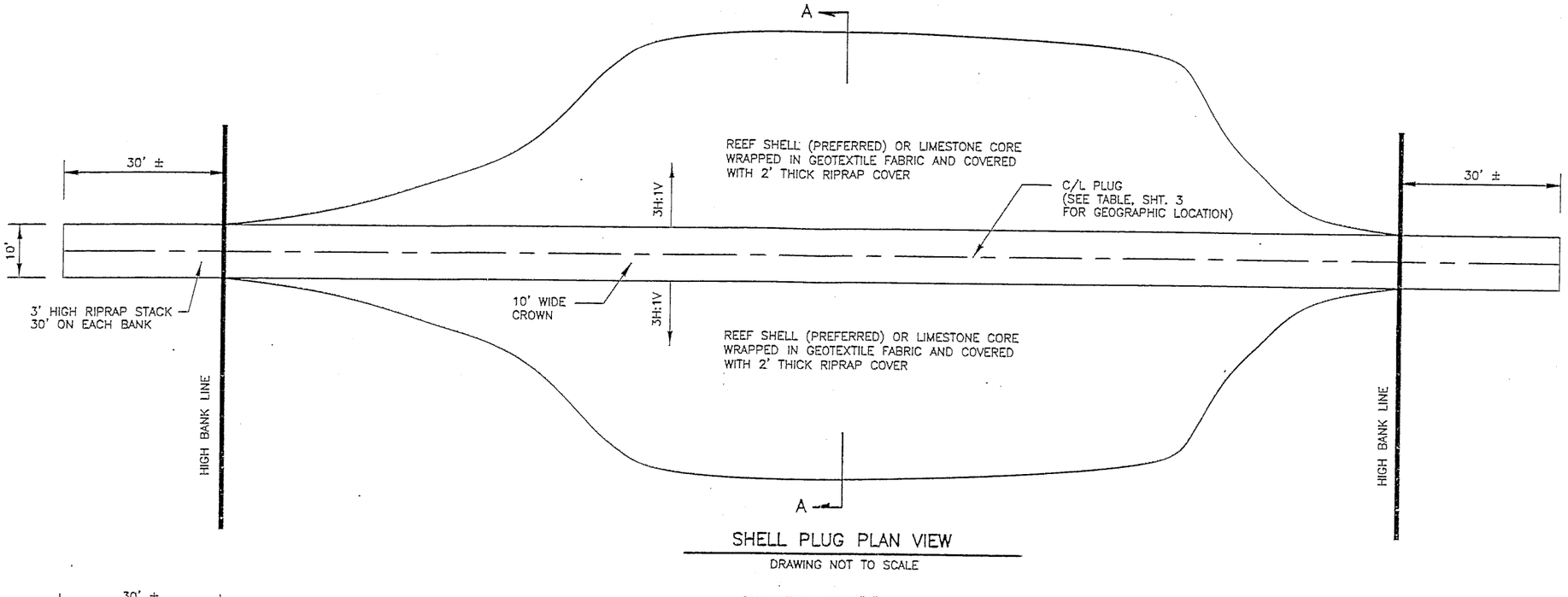
STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

SPOIL BANK GAPPING SITE PLAN

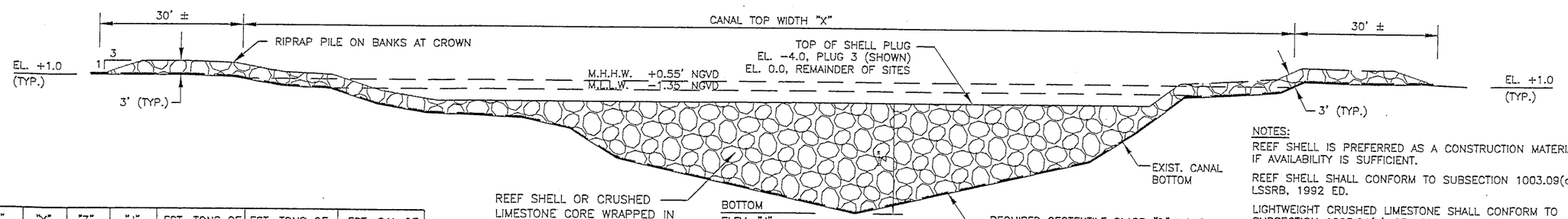
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

VAC PROC.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE SEPT., 1997	-
PLAN IN HAND		CHECKED PSL	FILE NO. 95410107	7 OF 17



SHELL PLUG PLAN VIEW

DRAWING NOT TO SCALE



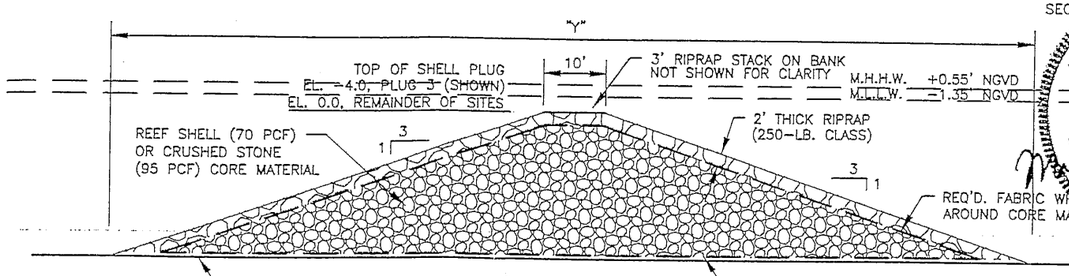
SHELL PLUG ELEVATION

DRAWING NOT TO SCALE

PLUG SITE	"X"	"Y"	"Z"	"J"	EST. TONS OF SHELL CORE	EST. TONS OF RIP RAP	EST. S.Y. OF GEOTEXTILE
1	147.5'	56'	7.6'	-7.6	810	1330	1680
3	229.1'	150'	23.3'	-27.3	4820	2560	3390
4	173.8'	113'	17.1'	-17.1	3340	2400	3170
5	70.0'	32'	3.7'	-3.7	10	390	380
6	145.1'	37'	4.5'	-4.5	70	710	550
7	157.1'	67'	9.5'	-9.5	530	960	1270
9	240.4'	74'	10.7'	-10.7	1620	2450	3060

STONE SIZE (LBS.)	% OF STONE SMALLER THAN
1250	100
500	45-100
250	15-50
80	0-15

RIPRAP GRADATION
250-LB. CLASS



SECTION A-A

DRAWING NOT TO SCALE

NOTES:

REEF SHELL IS PREFERRED AS A CONSTRUCTION MATERIAL, IF AVAILABILITY IS SUFFICIENT.

REEF SHELL SHALL CONFORM TO SUBSECTION 1003.09(a)(2) OF LSSRB, 1992 ED.

LIGHTWEIGHT CRUSHED LIMESTONE SHALL CONFORM TO SUBSECTION 1003.04(a) OF LSSRB, 1992 ED.

CORE MATERIAL PLACEMENT SHOULD BEGIN AT THE CENTER OF THE PLUG AND CONTINUE OUTWARD TOWARD THE TOE. MATERIAL SHALL BE PLACED IN LIFTS OF 3' LOOSE MEASURE. ADDITIONAL COMPACTION IS NOT REQUIRED.

GRADED CRUSHED LIMESTONE RIPRAP SHALL CONFORM TO SECTION [illegible] OF LSSRB, 1992 ED.

STATE OF LOUISIANA * MICHAEL G. JACKSON REG. NO. 15142 REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

NO.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

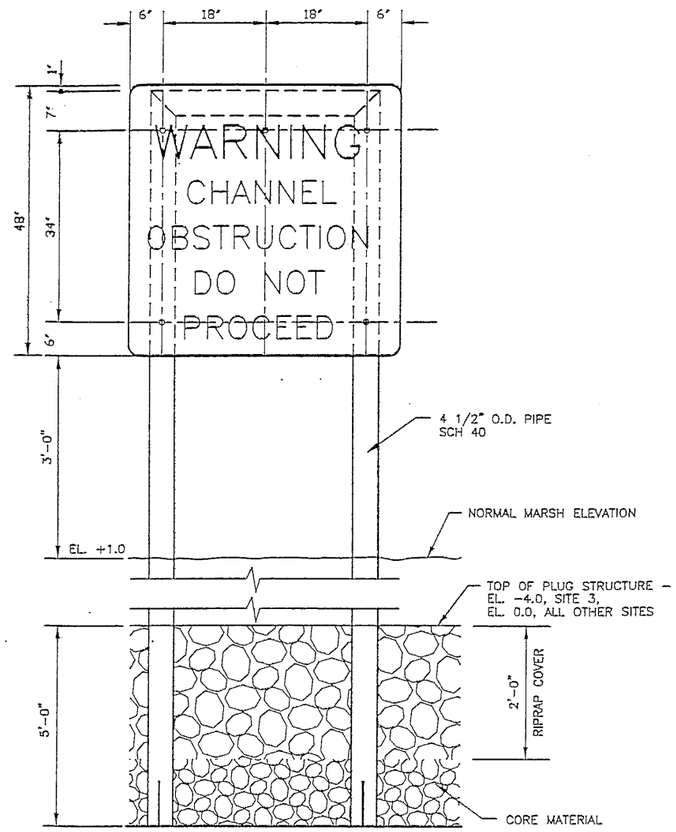
LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

TYPICAL SECTION - SHELL PLUG

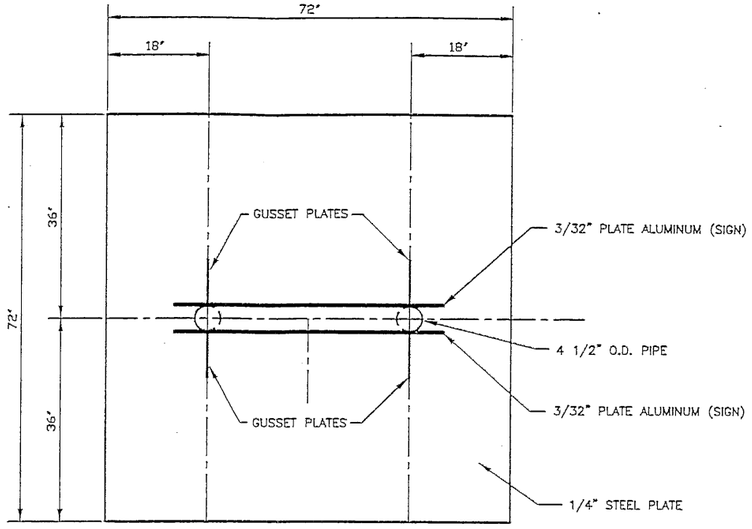
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 486-1714

VICE PRES.	JOB NO.	DESIGNED PSL	SCALE NONE	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE SEPT., 1997	8 OF 17
PLAN IN HAND		CHECKED PSL	FILE NO. 95410108	

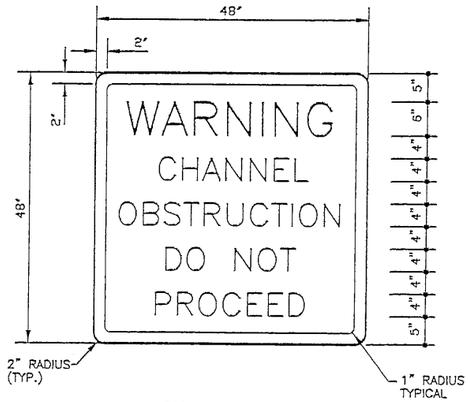
SEPT. 17, 1997 SHELPLUG J.P.C.



WARNING SIGN SUPPORT DETAIL
SCALE: 1" = 1'-0"



WARNING SIGN PLAN
SCALE: 1" = 1'-0"



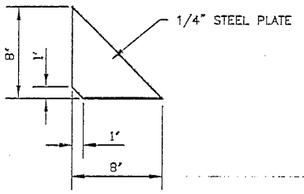
SIGN DETAIL
SCALE: 1" = 1'-0"

WARNING SIGN LOCATIONS

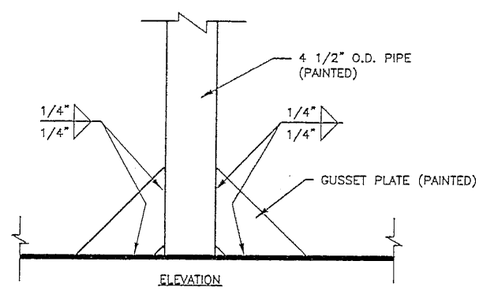
PLUG No.	DIST. FROM PVC PIPE	PIPE LENGTH TO TOP OF SIGN	ELEVATION OF BOTTOM PLATE
1	N/A	13'	-5.0
3	85'	17'	-9.0
4	75'	13'	-5.0
5	45'	13'	-5.0
6	N/A	13'	-5.0
7	70'	13'	-5.0
9	90'	13'	-5.0

NOTES:

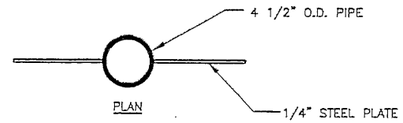
1. TWO WARNING SIGNS ARE REQUIRED FOR EACH PLUG STRUCTURE, ONE ON THE UPSTREAM AND ONE ON THE DOWNSTREAM SIDE, PLACED AT THE DISTANCES SHOWN FROM THE 2" PVC PIPE MONUMENTS STAKED IN THE FIELD.
2. WARNING SIGNS TO BE PLACED WITH A MINIMUM 5' EMBEDMENT INTO THE PLUG STRUCTURE AS SHOWN. CONTRACTOR SHALL COORDINATE PLACEMENT OF MATERIAL WITH INSTALLATION OF WARNING SIGNS.
3. THE 2" BORDER ON THE WARNING SIGN WILL BE A RETROREFLECTIVE MATERIAL OF ORANGE COLOR. THE LETTERING FIELD WILL BE A RETRO-REFLECTIVE MATERIAL OF WHITE COLOR. THE LETTERING FOR THE WARNING SIGN WILL BE BLOCK. ALL SIGNS MUST MEET U.S. COAST GUARD STANDARDS, IN ACCORDANCE WITH 33 CFR 330.4 (A) (1).
4. NEOPRENE WASHERS SHALL BE PLACED BETWEEN THE SIGN AND STEEL PIPE, AT ALL POINTS OF CONTACT.
5. A TOTAL OF FOURTEEN (14) WARNING SIGNS, INCLUDING ALL FRAMEWORK, PLATES, BUOYS, ANCHORS, AND ALL INCIDENTAL CONSTRUCTION, WILL BE FURNISHED BY THE CONTRACTOR AT NO DIRECT PAY.



TYPICAL GUSSET PLATE
SCALE: 2" = 1'-0"

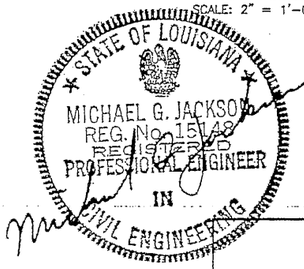


ELEVATION



PLAN

GUSSET PLATE DETAIL
SCALE: 2" = 1'-0"



REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

WARNING SIGN DETAILS

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

VICE PRES.	JOB NO.	DESIGNED PSL	SCALE SHOWN	SHEET NO.
REVIEWER	9541	DETAILED JPC	DATE SEPT., 1997	9 of 17
PLAN IN HAND		CHECKED PSL	FILE NO. 95410109	

PLUG SITE 1

ELEV. NGVD	PP	SPT	USCS	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0					Water												
					Extremely soft gray organic clay w/organic matter & roots	OH	1	2-3	198	31	90	UC	–	70			
					Extremely soft black gray clay w/seasonal layers	OH	2	5-6	179	27	74	CU	–	75	224	80	184
–10					Extremely soft gray clay w/organic matter	CH	3	8-9	114	40	86	UC	–	50	112	26	98
							4	11-12									
	0.25				Very soft gray clay w/silt lenses	CH	5	14-15	98	46	90	UC	–	86			
–20							6	18-19									
	0.25						7	23-24	101	44	88	UC	–	108			
	0.30				w/few shell fragments		8	28-29									
–30																	
	0.30				w/few silty sand lenses		9	33-34	77	54	95	UC	–	175			
					Extremely soft gray clay w/clayey silt lenses	CH	10	38-39	83	51	89	UC	–	88			
–40																	
	0.30				Very soft gray clay w/silty sand lenses	CH	11	43-44	82	52	98	UC	–	195			
					Soft gray clay w/silt lenses	CH											
–50	0.30						12	48-49	54	37	103	UC	–	280			

PLUG SITE 3

ELEV. NGVD	PP	SPT	USCS	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0					Water												
					Very loose black lenses w/roots	PT	1	2.5-3	428	13	67	CU	–	30			
					w/roots		2	5-6	588	10	82	CU	–	90	634	170	464
–10					Extremely soft gray clay w/organic matter	CH	3	8-9	123	33	96	UC	–	36			
							4	11-12	185	32	90	UC	–	86			
					Very soft gray clay w/organic matter	CH	5	14-15	128	36	82	UC	–	146			
					w/silt lenses & organic matter		6	18-19	104	43	88						
	0.25				w/few sand lenses & shell fragments		7	23-24	74	58	96	UC	–	125	87	28	72
–30																	
	0.30				w/scarce silt pockets		8	28-29									
	0.20				w/scarce lenses & shell fragments		9	33-34	98	57	96	UC	–	130			
–40					Soft gray clay w/scarce lenses		10	38-39									
	0.30																
	0.30						11	43-44	87	59	96	CU	–	275			
–50					Medium dense gray fine sand w/silty sand layers		12	48-50									

PLUG SITE 4

ELEV. NGVD	PP	SPT	USCS	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0					Water												
					Very loose black lenses w/roots	PT	1	2-3	336	18	97						
							2	5-6	279	19	86	CU	–	80			
–10					Extremely soft gray clay w/organic matter	CH	3	8-9	102	44	98	UC	–	40	110	27	83
					Very soft gray clay w/ease	CH	4	11-12	97								
	0.25				w/silt lenses & organic matter		5	14-15	140	34	82	CU	–	140			
–20					w/few sand lenses		6	18-19									
	0.25				w/silt lenses & shells		7	23-24	96	48	90						
	0.25				w/few shell fragments		8	28-29									
–30																	
	0.25				w/few parsely silt lenses		9	33-34	78	54	94	UC	–	145	83	24	59
					Very loose gray clayey sand	SC	10	38-39									
–40					Soft gray clay w/silt lenses	CH											
	0.30						11	43-44	98	60	98	UC	–	295			
–50					Medium dense gray silty sand	SM	12	48-49	53	97	103	UC	–	275			

PLUG SITE 5

ELEV. NGVD	PP	SPT	USCS	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0					Water												
					Very soft gray clay w/grass	CH	1	2-2.5									
					Extremely soft black organic clay w/roots	OH	2	3-4									
							3	5-6	232	22	74	CU	–	55	219	51	186
–10	0.25				Extremely soft gray clay	CH	4	8-9									
	0.25						5	11-12	148	33	82	UC	–	86			
	0.25				w/clayey silt lenses		6	14-15									
–20							7	18-19	106	43	89	UC	–	95			
	0.25						8	23-24									
					Very soft gray clay w/trace of decayed wood	CH	9	28-29	81	52	100						
–30																	
	0.25				w/clayey silt lenses		10	33-34									
	0.25						11	38-39	78	52	93	UC	–	200	108	28	78
–40																	
	0.30						12	43-44									
–50	0.30						13	48-49	46	72	105	UC	–	230			

PLUG SITE 6

ELEV. NGVD	PP	SPT	USCS	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0					Water												
					Extremely soft black organic clay w/roots	OH	1	1-2									
							2	2-3	174	28	77	CU	–	55	183	44	139
							3	5-6	218	24	78						
–10					Extremely soft gray clay w/organic matter	CH	4	8-9	110	42	89	UC	–	80			
							5	11-12	188	32	81	UC	–	80			
	0.25						6	14-15	138	34	90	UC	–	90			
–20					w/silt lenses		7	18-19									
	0.25						8	23-24	81	51	93	UC	–	100			
	0.25						9	28-29									
–30					Very soft gray clay	CH	10	33-34	58	96	102	UC	–	190			
	0.30						11	38-39									
					Medium dense gray fine sand	SP	12	39-40									
–40	0.30				Soft gray clay	CH	13	43-44	87	86	102	UC	–	335	78	22	56
–50	0.30				Very soft gray silty clay	CL	14	48-49	37	81	111	UC	–	200			

PLUG SITE 7

ELEV. NGVD	PP	SPT	USCS	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0					Water												
					Extremely soft gray organic clay w/many roots	OH	1	2-3	221	23	76						
					Very soft brown organic clay w/wood	OH	2	5-6	183	27	77	CU	–	55	224	48	176
–10					Extremely soft gray clay w/organic matter	CH	3	8-9	121	38	84	UC	–	45			
							4	11-12	117	41	89	UC	–	25			
							5	14-15									
							6	18-19	129	37	85	UC	–	55	132	30	102
–20					w/few clayey silt lenses		7	23-24									
					w/sand pockets & shell fragments		8	28-29	44								
	0.25				Very soft gray clay w/sand pockets & few shells	CH	9	33-34	48	72	106	UC	–	190			
–30	0.30				w/sand lenses		10	38-39	58	84	102	UC	–	170			
					Loose gray clayey sand	SC	11	43-44									
–40					Loose gray silty sand	SM	12	44-45									
	0.30				Very soft gray clay w/sand lenses	CH	13	48-49	39	80	111	UC	–	240			

PLUG SITE 9

ELEV. NGVD	PP	SPT	USCS	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0					Water												
					Extremely soft dark gray organic clay w/roots	OH	1	1.5-2									
							2	5-6	231	22	73	CU	–	90	180	44	106
							3	8-9	302	17	89	CU	–	95			
–10					Extremely soft dark gray humous w/organic clay layers	CH	4	11-12									
							5	14-15	111	41	96	UC	–	70			
							6	18-19	114	40	86						
–20					w/trace of organic matter & shell fragments		7	23-24	118	39	86						
							8	28-29									
	0.30				Very soft, gray clay w/sand pockets	CH											
–30	0.30						9	33-34	81	70	105						
	0.30						10	38-39	52	96	106	UC	–	210			
–40	0.30				Soft gray sandy clay	CL	11	43-44	34	84	113	UC	–	280	36	17	19
–50	0.30				Soft gray clay w/silty sand lenses & pockets	CH	12	48-49	49	70	104						

NOTES:

1. LOCATIONS OF SOIL BORINGS ARE SHOWN ON SHEET 3.
2. THE CONTRACTOR SHALL MAKE HIS OWN INTERPRETATION OF THE CHARACTER AND CONDITION OF THE MATERIALS WHICH WILL BE ENCOUNTERED BETWEEN THE BORING LOCATIONS, THE CONTRACTOR, AT HIS OWN EXPENSE, MAY MAKE ADDITIONAL SURVEYS AND INVESTIGATIONS, SUBJECT TO OBTAINING ADDITIONAL PERMITS, AS HE DEEMS NECESSARY TO DETERMINE CONDITIONS WHICH WILL AFFECT THE PERFORMANCE OF THE WORK. ALTHOUGH NOT PART OF THE CONTRACT PLANS AND SPECIFICATIONS, A COMPLETE SOILS REPORT IS AVAILABLE FOR REVIEW AT BURK–KLEINPETER, INC. CONSULTING ENGINEERS, 4176 CANAL STREET, NEW ORLEANS, LOUISIANA, 70119
3. BORING LOGS WERE SUPPLIED BY EUSTIS ENGINEERING COMPANY, INC. AND WERE TAKEN MAY 28 AND 29, 1996.
4. ALL ELEVATIONS SHOWN ARE IN NATIONAL GEODETIC VERTICAL DATUM (NGVD 29)

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. No. 15278
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

NO.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

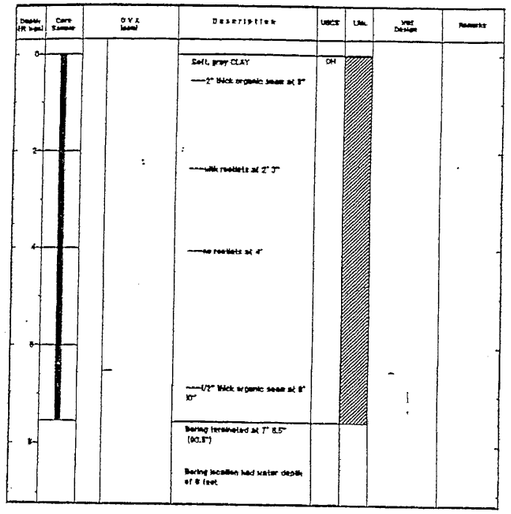
PLUG SITE SOIL BORINGS

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 488-5901 FAX (504) 488-1714

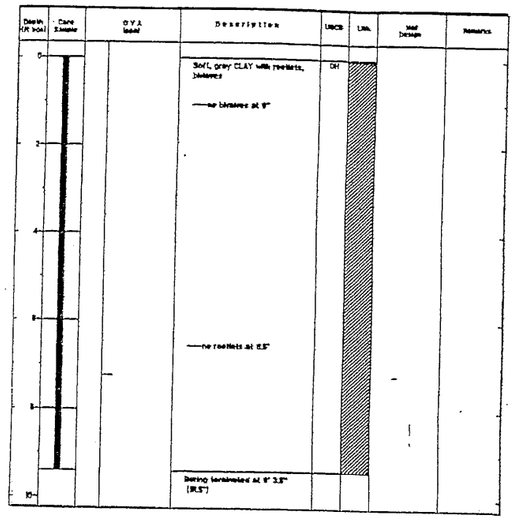
JOB NO. 9541	DESIGNED PSL	SCALE NOTED	SHEET NO. 10 OF 17
	DETAILED J.P.C.	DATE SEPT., 1997	
	CHECKED PSL	FILE NO. 95410110	

C:\95410\DWG\TASK3_23\SHEET05.DGN Wed Jul 10 16:00:03 1996 S.L.

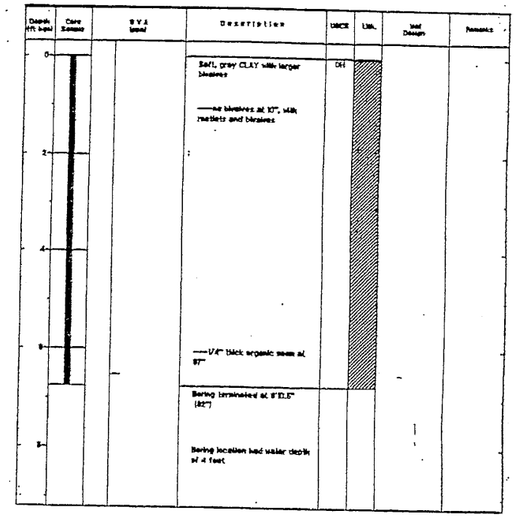
SOIL BORING LOG: CORE 1



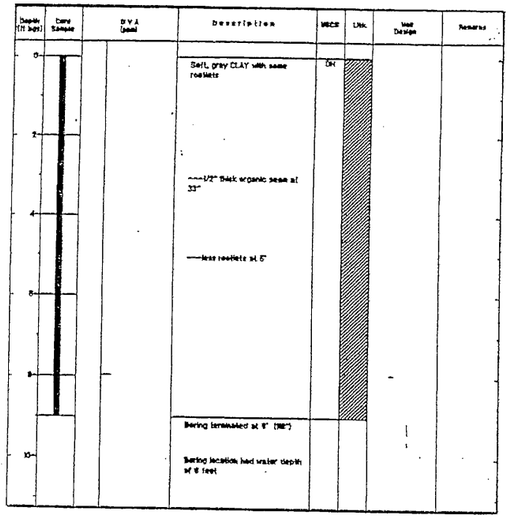
SOIL BORING LOG: CORE 2



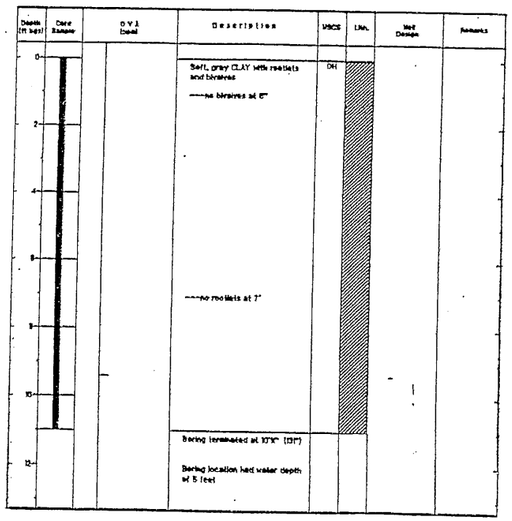
SOIL BORING LOG: CORE 3



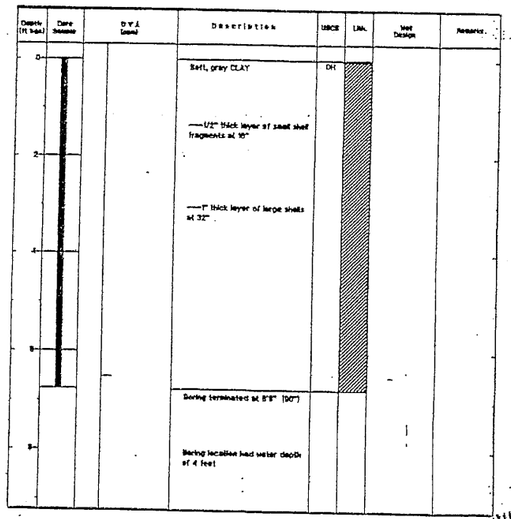
SOIL BORING LOG: CORE 4



SOIL BORING LOG: CORE 5



SOIL BORING LOG: CORE 6



NOTES:

1. LOCATIONS OF SOIL BORINGS ARE SHOWN ON SHEET 4.
2. THE CONTRACTOR SHALL MAKE HIS OWN INTERPRETATION OF THE CHARACTER AND CONDITION OF THE MATERIALS WHICH WILL BE ENCOUNTERED BETWEEN THE BORING LOCATIONS. THE CONTRACTOR, AT HIS OWN EXPENSE, MAY MAKE ADDITIONAL SURVEYS AND INVESTIGATIONS, SUBJECT TO OBTAINING ADDITIONAL PERMITS, AS HE DEEMS NECESSARY TO DETERMINE CONDITIONS WHICH WILL AFFECT THE PERFORMANCE OF THE WORK. ALTHOUGH NOT PART OF THE CONTRACT PLANS AND SPECIFICATIONS, A COMPLETE SOILS REPORT IS AVAILABLE FOR REVIEW AT BURK-KLEINPETER, INC. CONSULTING ENGINEERS, 4176 CANAL STREET, NEW ORLEANS, LOUISIANA, 70119
3. BORING LOGS WERE SUPPLIED BY C-K ASSOCIATES, INC. AND WERE TAKEN SEPTEMBER 9, 1997
4. ALL DEPTHS SHOWN ARE REFERENCED TO THE BOTTOM OF ATCHAFALAYA BAY.

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 25118
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

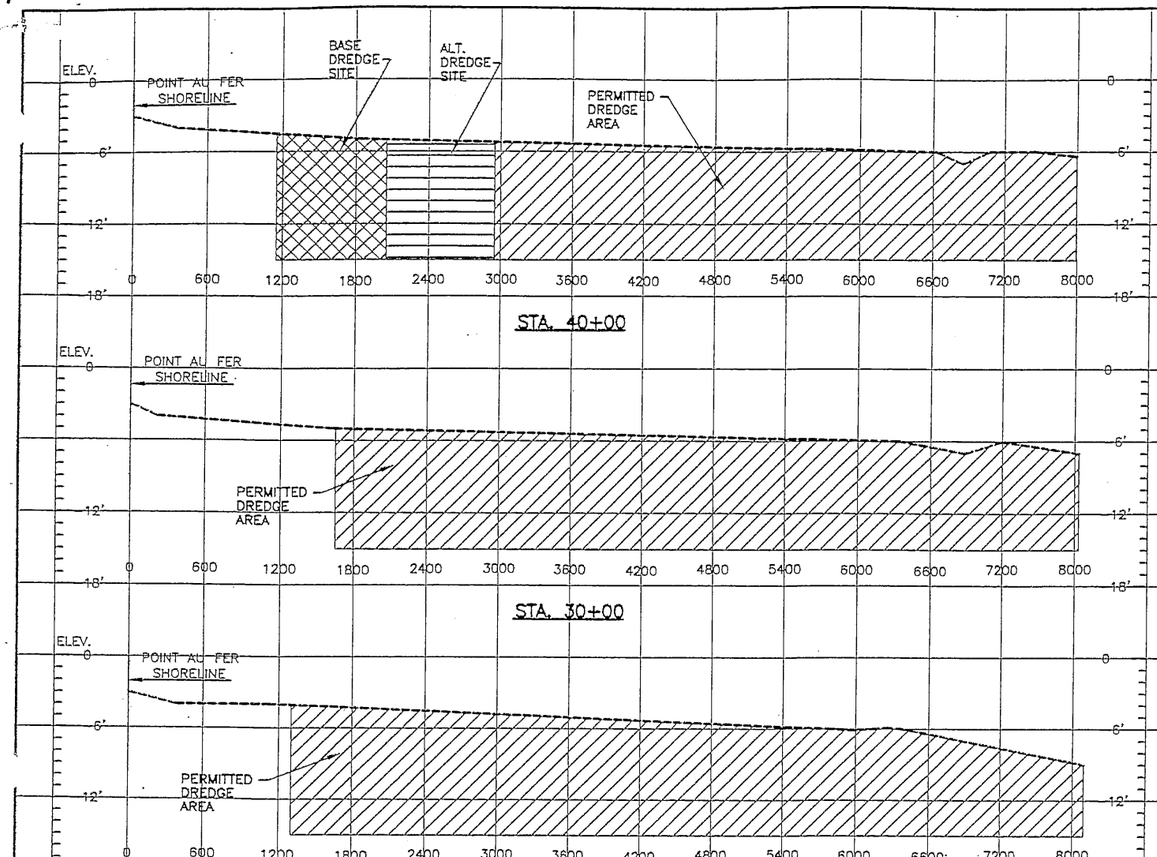
ATCHAFALAYA BAY SOIL BORINGS

BURK-KLEINPETER, INC.

ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

JOB NO. 9541	DESIGNED PSL	SCALE NOTED	SHEET NO. 11 OF 17
	DETAILED J.P.C.	DATE SEPT., 1997	
	CHECKED PSL	FILE NO. 95410111	

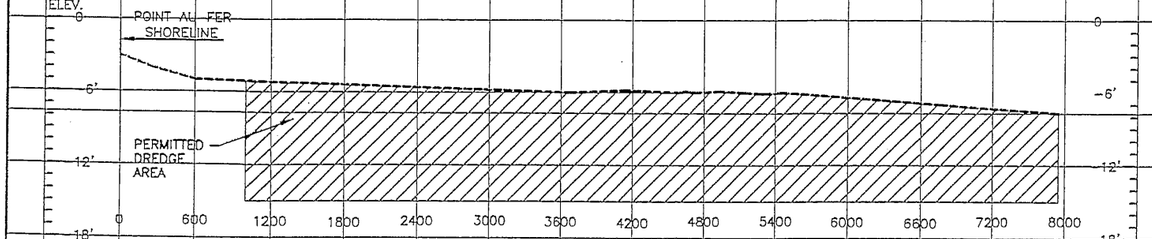
VOID PRTS.
REMOVED
PLAN IN HAND



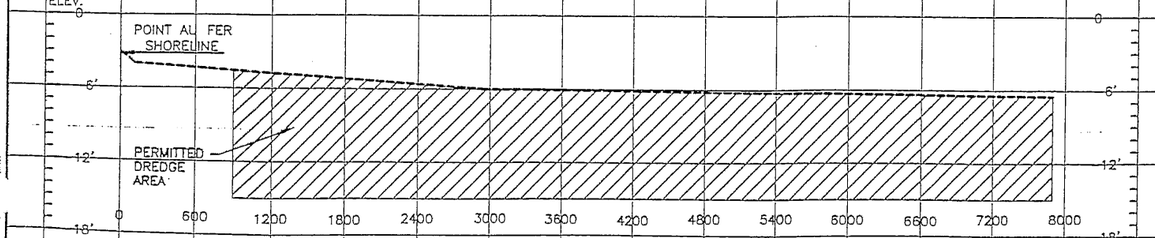
STA. 40+00

STA. 30+00

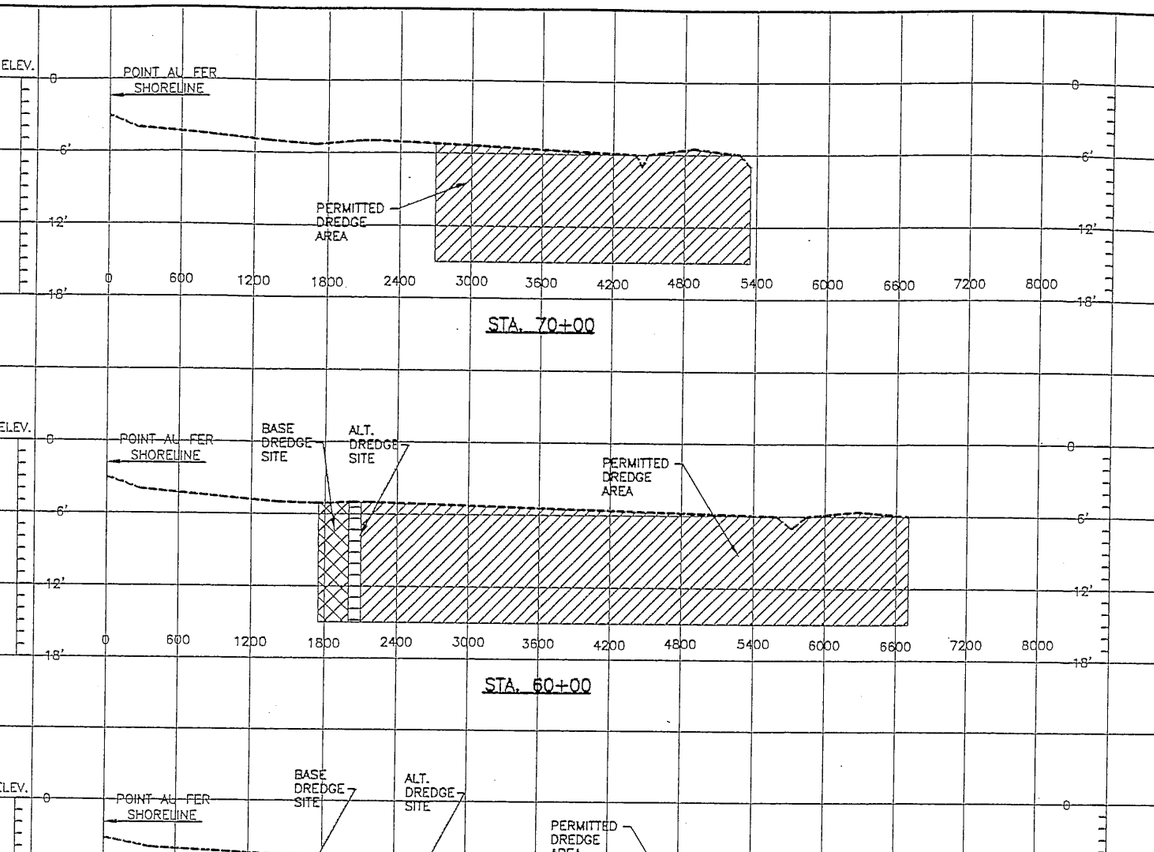
STA. 20+00



STA. 10+00

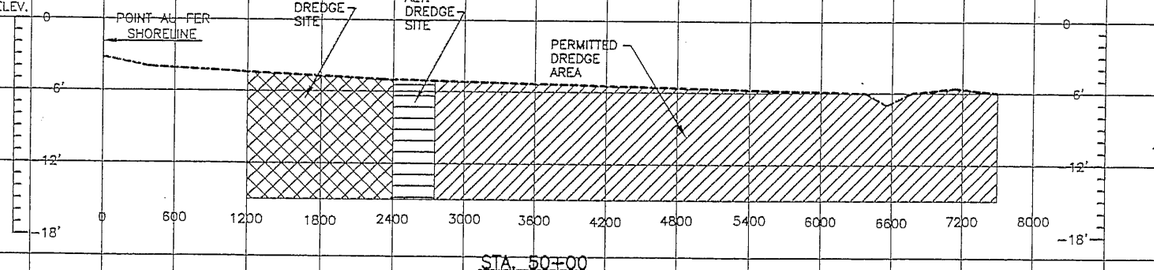


STA. 00+00



STA. 70+00

STA. 60+00



STA. 50+00

NOTES:

ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD 29)

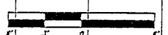
STATIONS REFER TO SHT. 4

"POINT AU FER SHORELINE" REFERS TO LOCATION SHOWN ON 1994 INFARED AERIAL PHOTOGRAPHY SUPPLIED BY NBS.

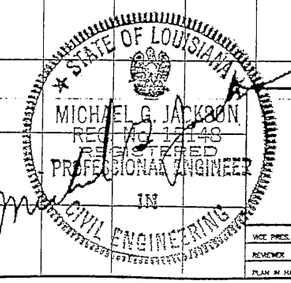
SHORELINE NOT TO BE USED AS A REFERENCE POINT IN FIELD – USE COORDINATES SHOWN ON SHT. 4

SCALE

1"=600' HORIZONTAL



1"=6' VERTICAL



NO.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

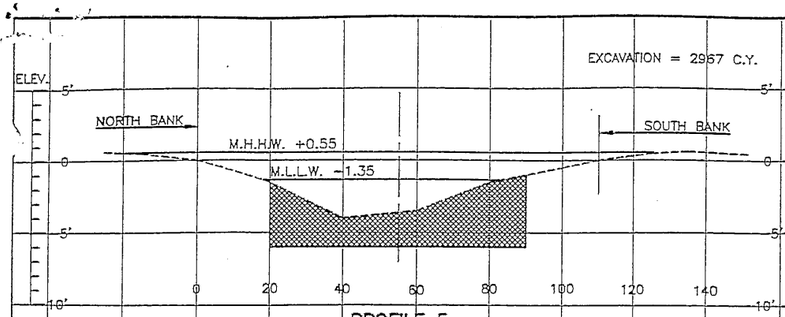
LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

ATCHAFALAYA BAY CROSS-SECTIONS

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

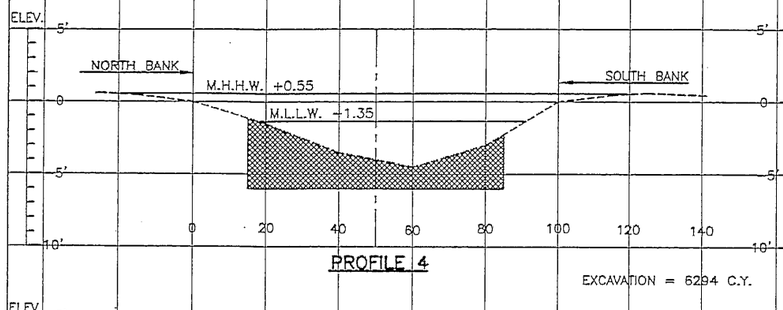
VICE PRES.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE SEPT., 1997	12 OF 17
PLAN IN HAND		CHECKED PSL	FILE NO. 95410112	

J.P.C.
SEPT. 17, 1997



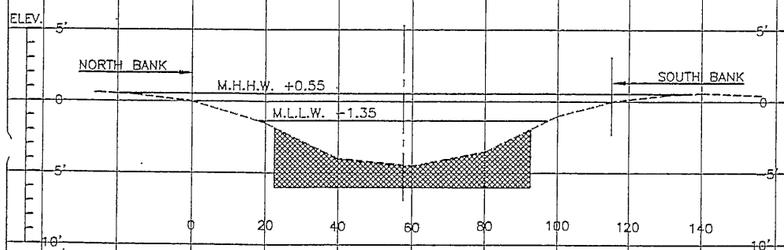
PROFILE 5

EXCAVATION = 2957 C.Y.



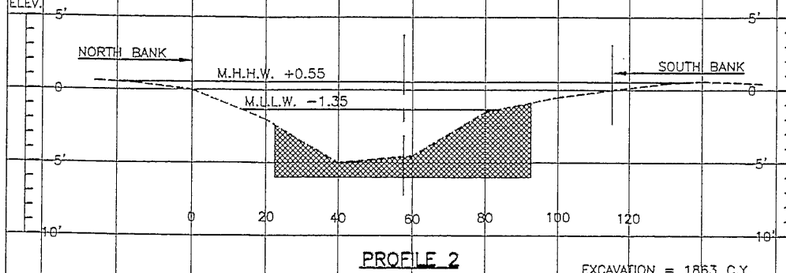
PROFILE 4

EXCAVATION = 7125 C.Y.



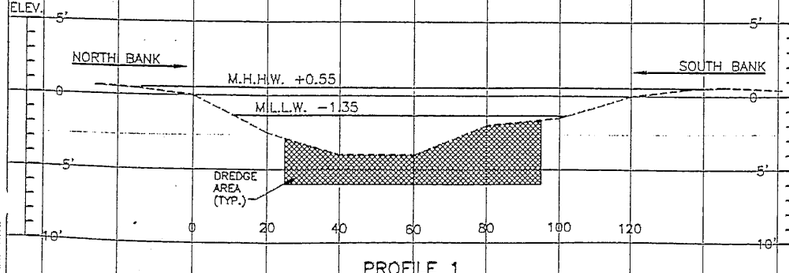
PROFILE 3

EXCAVATION = 6294 C.Y.



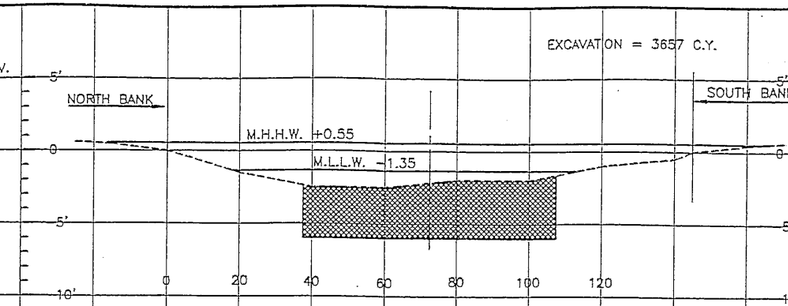
PROFILE 2

EXCAVATION = 3426 C.Y.



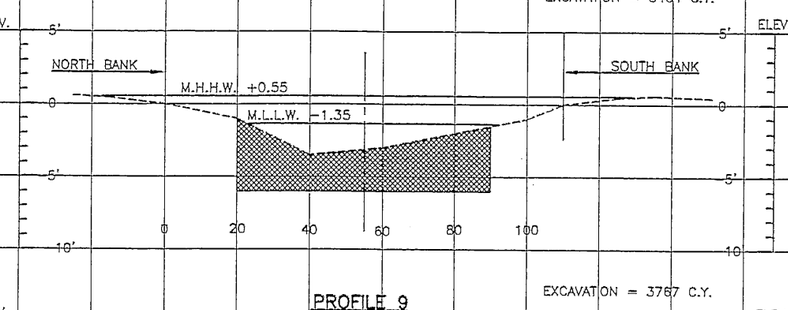
PROFILE 1

EXCAVATION = 1863 C.Y.



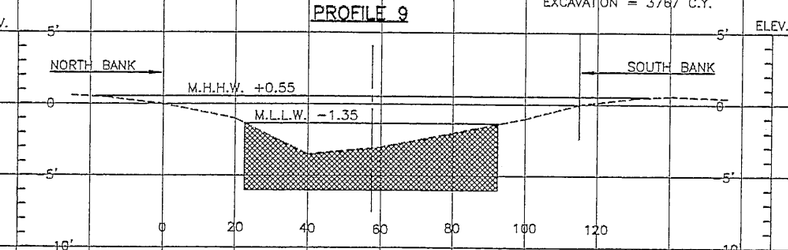
PROFILE 10

EXCAVATION = 3657 C.Y.



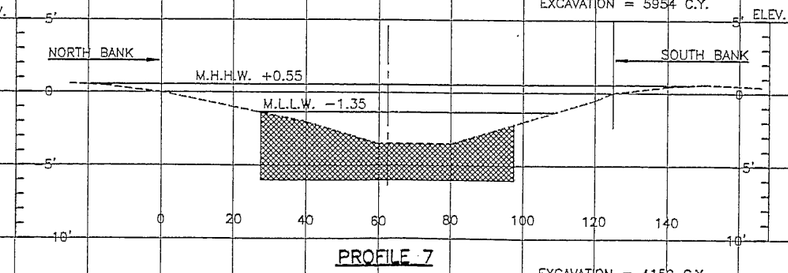
PROFILE 9

EXCAVATION = 8464 C.Y.



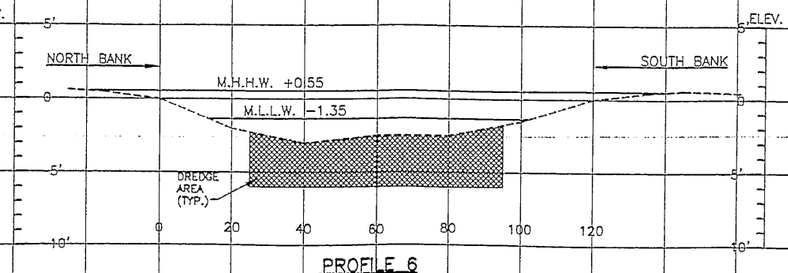
PROFILE 8

EXCAVATION = 3767 C.Y.



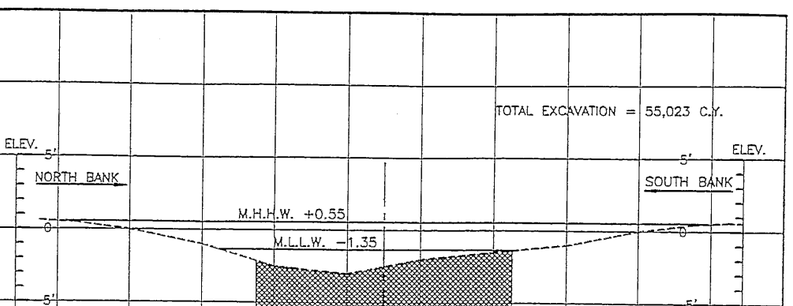
PROFILE 7

EXCAVATION = 5954 C.Y.



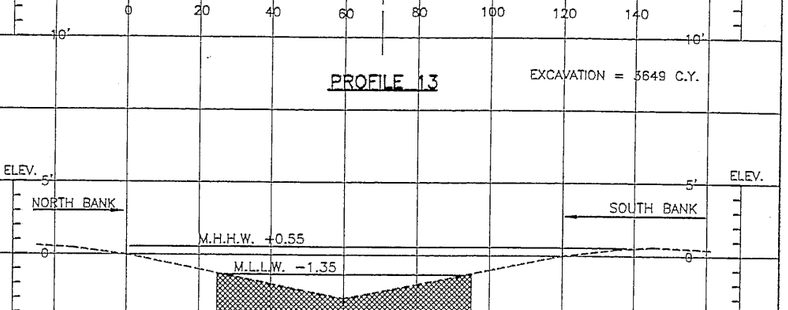
PROFILE 6

EXCAVATION = 4159 C.Y.



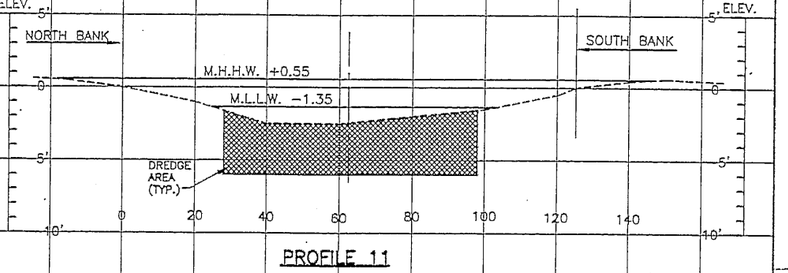
PROFILE 13

TOTAL EXCAVATION = 55,023 C.Y.



PROFILE 12

EXCAVATION = 3649 C.Y.



PROFILE 11

EXCAVATION = 3698 C.Y.

NOTE: CROSS-SECTIONS SURVEYED BY T. BAKER SMITH & SON, INC., ON JULY 28-29, 1997.
ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD 29)
TIDE ON 7/28/97 WAS +0.10' NGVD., MEASURED AT TIDE GAUGE AT LOCUST BAYOU AND HOUMA NAVIGATIONAL CANAL.
PROFILES REFER TO LOCATION SHOWN ON SHEET 12.

SCALE
1"=20' HORIZONTAL
1"=5' VERTICAL

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 25118
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

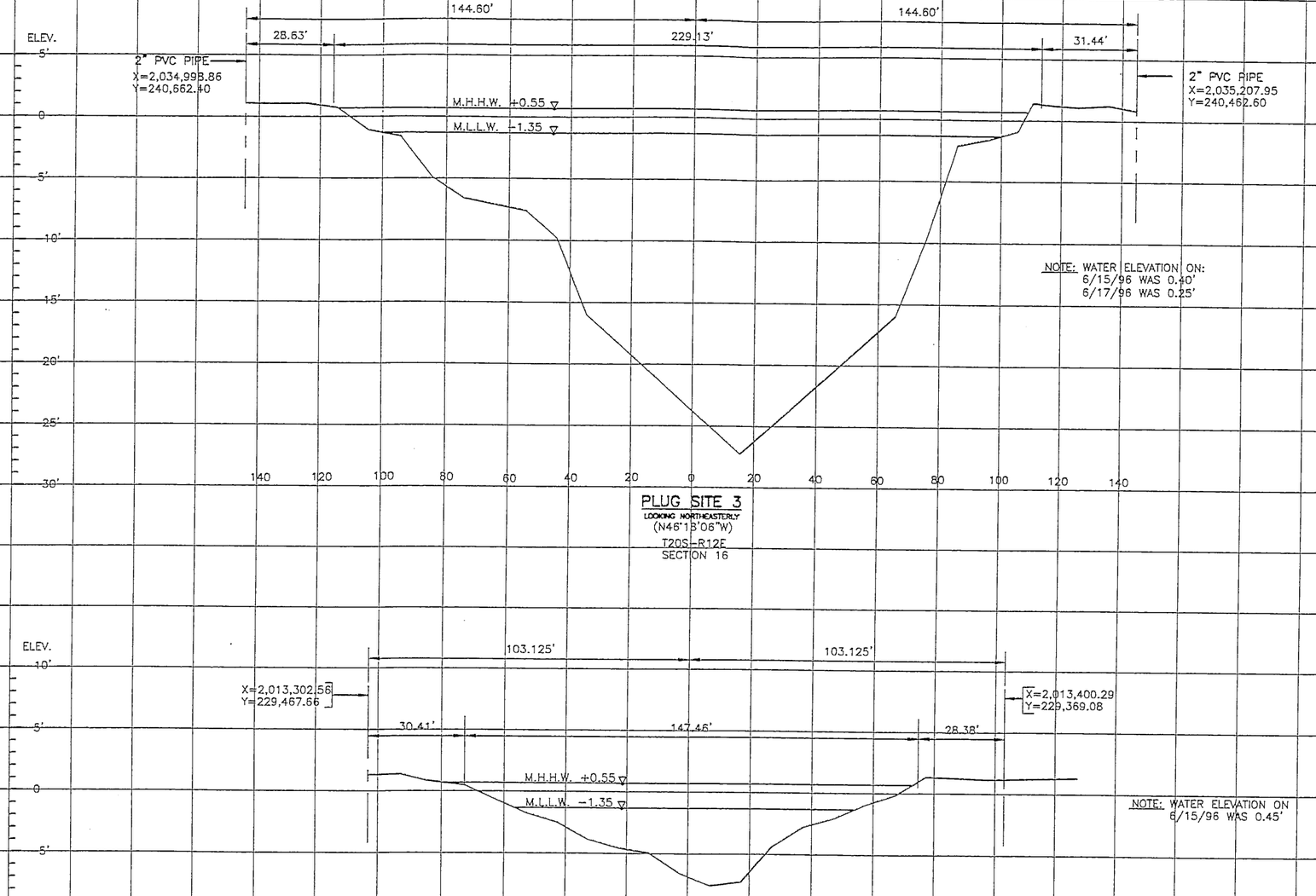
STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION (PTE-23/26A)

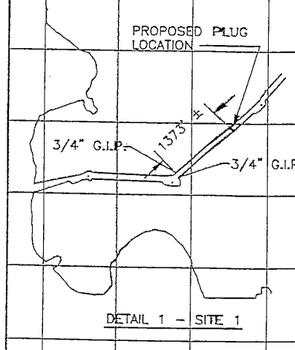
LOCUST BAYOU CROSS-SECTIONS

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 486-1714

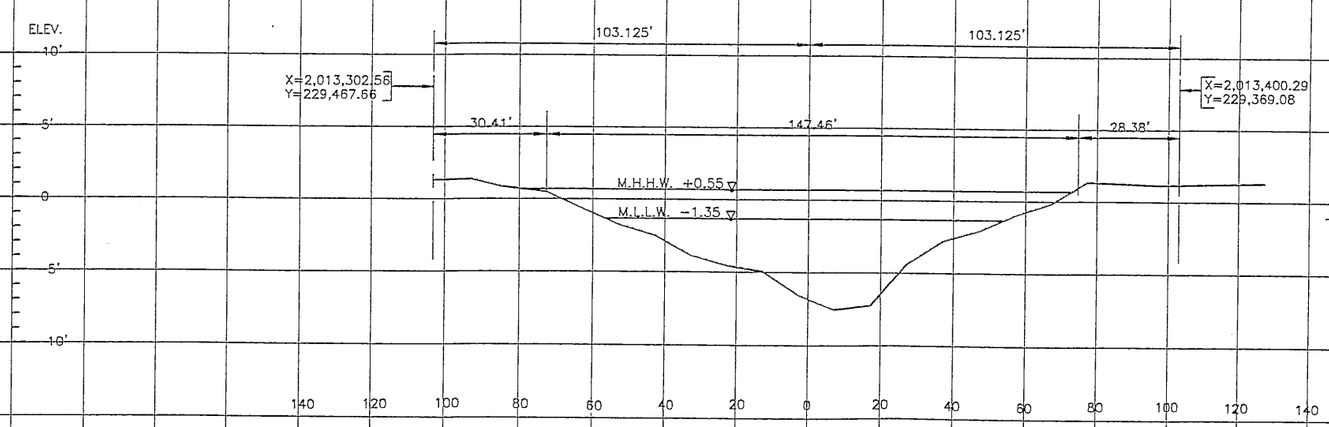
VICE PRES.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE SEPT.,1997	13 of 17
PLAN IN HAND		CHECKED PSL	FILE NO. 95410113	



PLUG SITE 3
LOOKING NORTHEASTERLY
(N46°13'06"W)
T20S-R12E
SECTION 16



DETAIL 1 – SITE 1



PLUG SITE 1
LOOKING NORTHEASTERLY
(N44°45'20"W)
(NOT STAKED IN FIELD- SEE DETAIL)
T20S-R11E
SECTION 26

NOTES:

CROSS-SECTIONS SURVEYED BY T. BAKER SMITH & SON, INC., FROM JUNE 7, 1996 TO JUNE 17, 1996

ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD 29)

COORDINATES REFER TO LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27)

SCALE

1"=20' HORIZONTAL

1"=5' VERTICAL

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. No. 11148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION

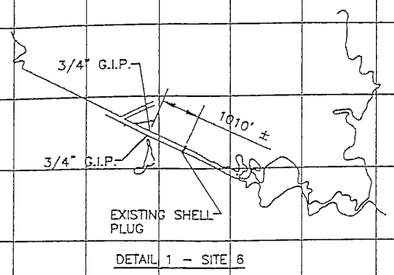
PLUG SITE CROSS-SECTIONS

BURK-KLEINPETER, INC.

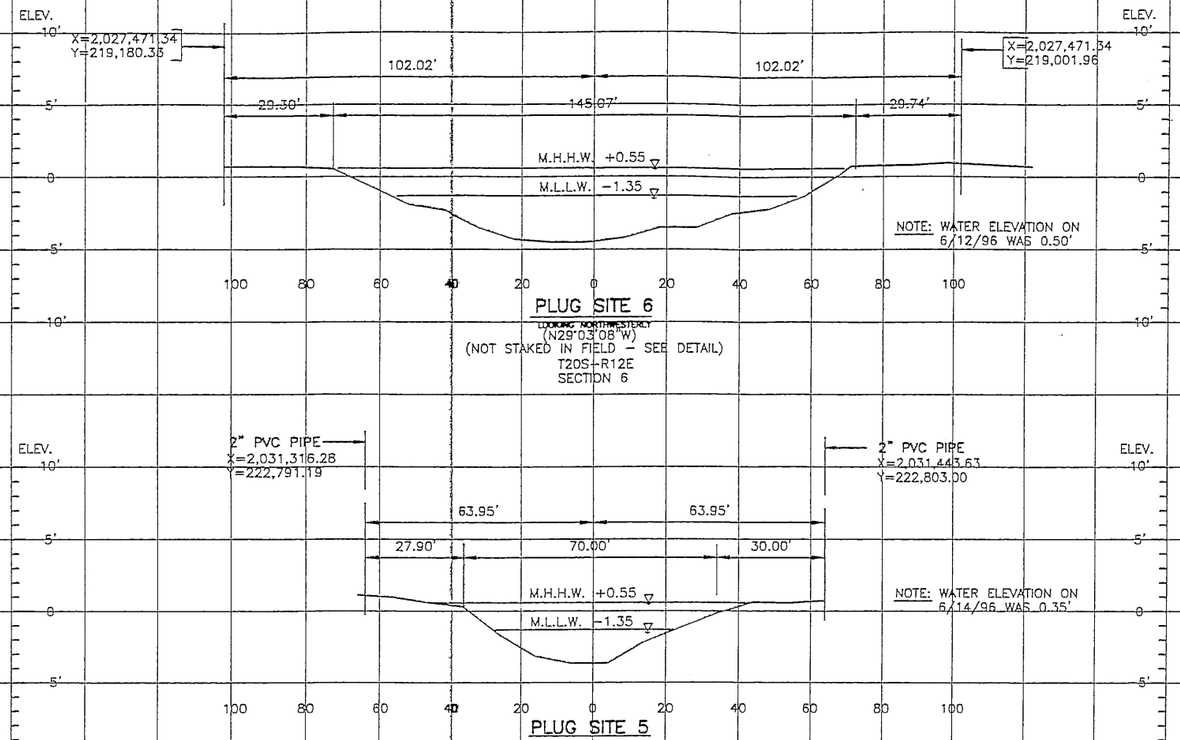
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4175 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

VICE PRES.			
REVIEWER			
PLAN IN HAND			

JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
9541	DETAILED J.P.C.	DATE SEPT., 1997	14 OF 17
	CHECKED PSL	FILE NO. 95410114	

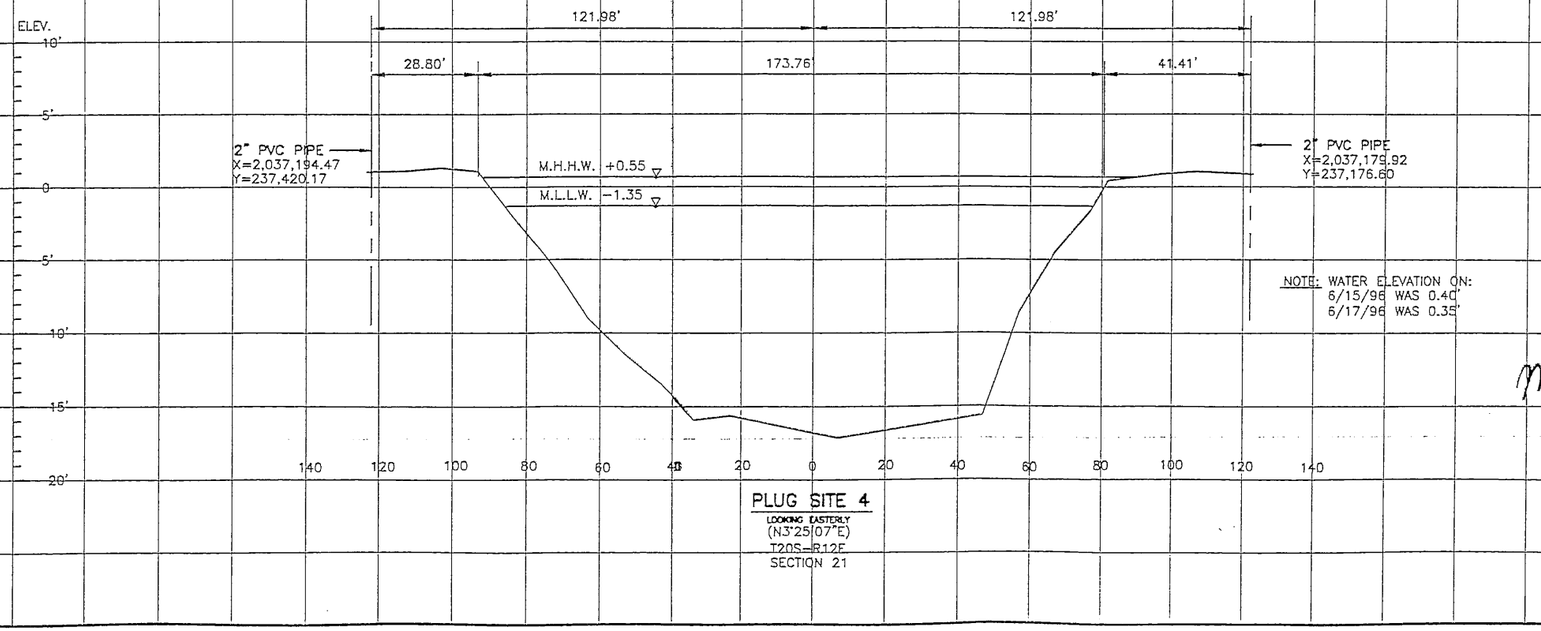


DETAIL 1 – SITE 6



PLUG SITE 6
LOOKING NORTHWESTERLY
(N29°03'08"W)
(NOT STAKED IN FIELD – SEE DETAIL)
T20S–R12E
SECTION 6

PLUG SITE 5
LOOKING NORTHERLY
(N84°41'59"E)
T20S–R12E
SECTION 32



PLUG SITE 4
LOOKING EASTERLY
(N3°25'07"E)
T20S–R12E
SECTION 21

NOTES:

CROSS–SECTIONS SURVEYED BY T. BAKER SMITH & SON, INC., FROM JUNE 7, 1996 TO JUNE 17, 1996

ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD 29)

COORDINATES REFER TO LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27)

SCALE

1"=20' HORIZONTAL

1"=5' VERTICAL

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 20148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

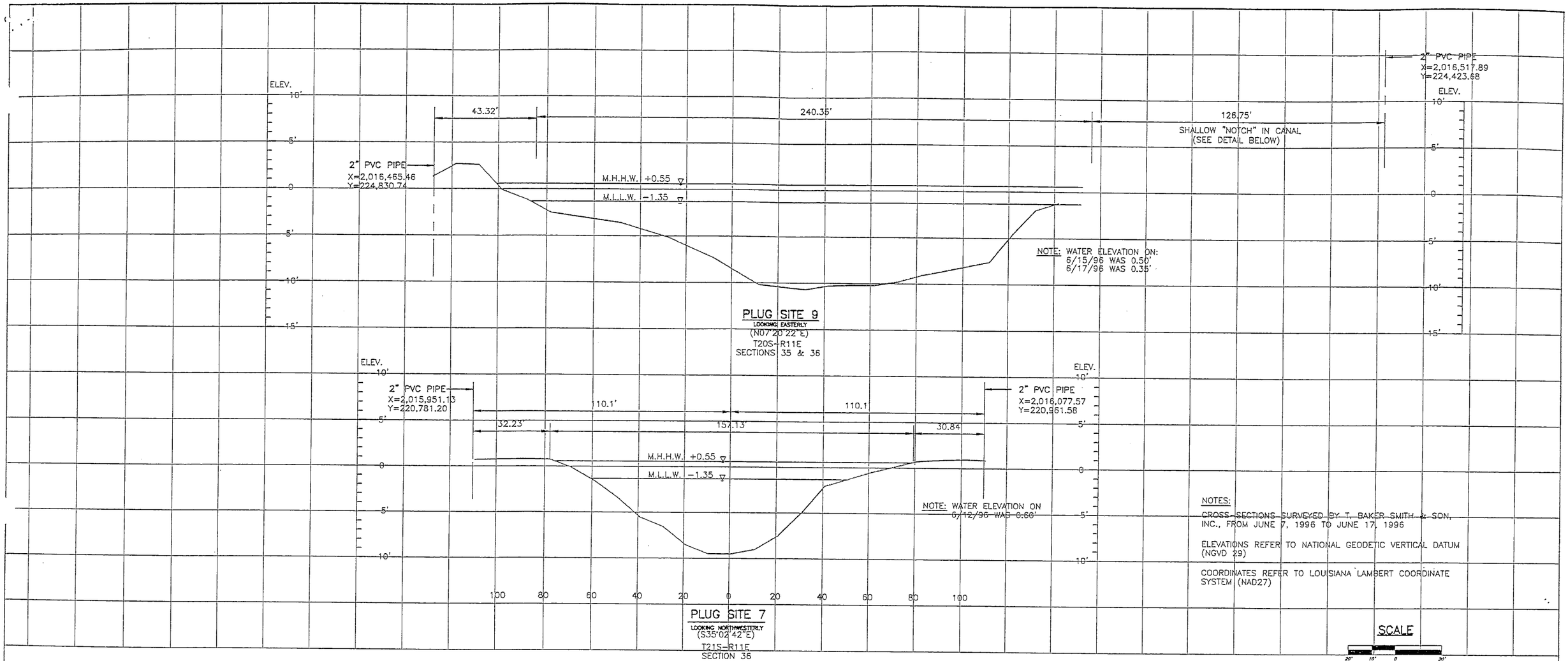
STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

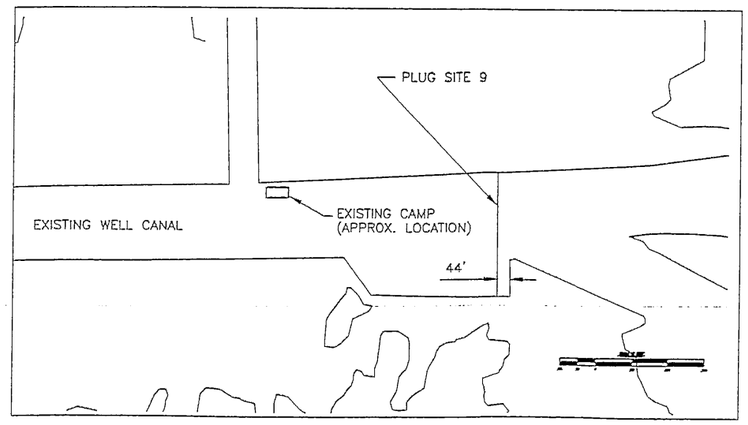
LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION

PLUG SITE CROSS–SECTIONS

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119–5994
(504) 486–5901 FAX (504) 488–1714

VICE PRES.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE SEPT., 1997	15 of 17
PLAN IN HAND		CHECKED PSL	FILE NO. 95410115	





DETAIL 1 – PLUG SITE 9

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 15123
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

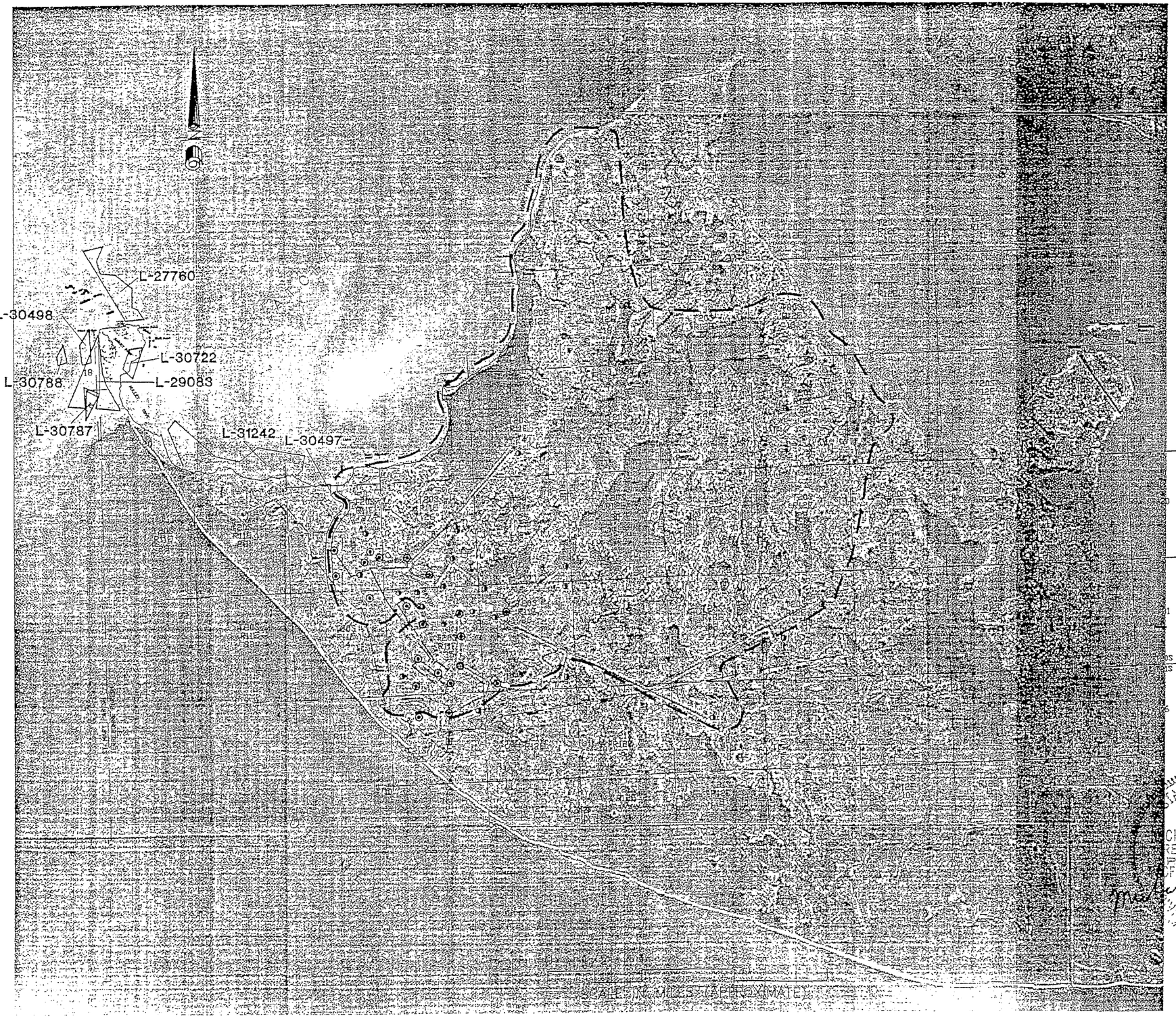
STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION

PLUG SITE CROSS-SECTIONS

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

VICE PRES.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE SEPT., 1997	16 OF 17
PLAN IN HAND		CHECKED PSL	FILE NO. 95410116	


L-27760
L-30498
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L-30788
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L-31242
L-30497
CALCASIEU
CAMERON
VERMILION
IBERIA
ST. MARY
ST. MARTIN
LAFAYETTE
ACADIA
JEFFERSON DAVIS
CALCASIEU LAKE
CALCASIEU RIVER
CAMERON
CREOLE
GRAND LAKE
SWEET LAKE
LAKE ARTHUR
LAKE PRESTON
LAKE MISTAKEN
LAKE CHAPEAU
LAKE QUITMAN
LAKE BOUDREAUX
LAKE FELICIE
LAKE DE CADE
LAKE SALLY ROBERTS
LAKE SAND BEACH
LAKE PECAN
LAKE CHAPEAU
LAKE LONG

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

and

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES, COASTAL RESTORATION DIVISION

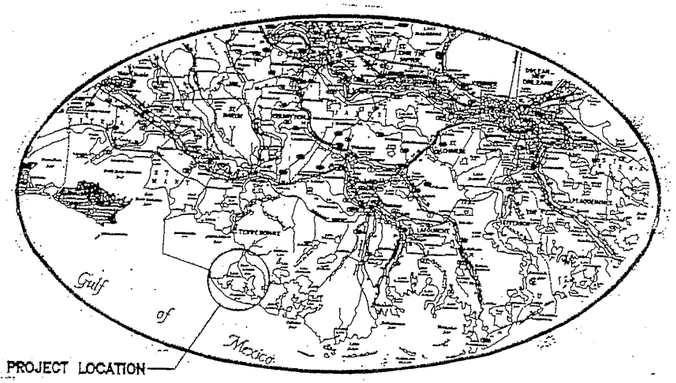
Plans of Proposed

LAKE CHAPEAU HYDROLOGIC RESTORATION PROJECT
(PTE-23/26A - PHASE I)

TERREBONNE PARISH, LOUISIANA

DNR CONTRACT NO. 25085-95-23
BKI PROJECT NO. 9541

FEBRUARY 1998



PROJECT LOCATION

VICINITY MAP

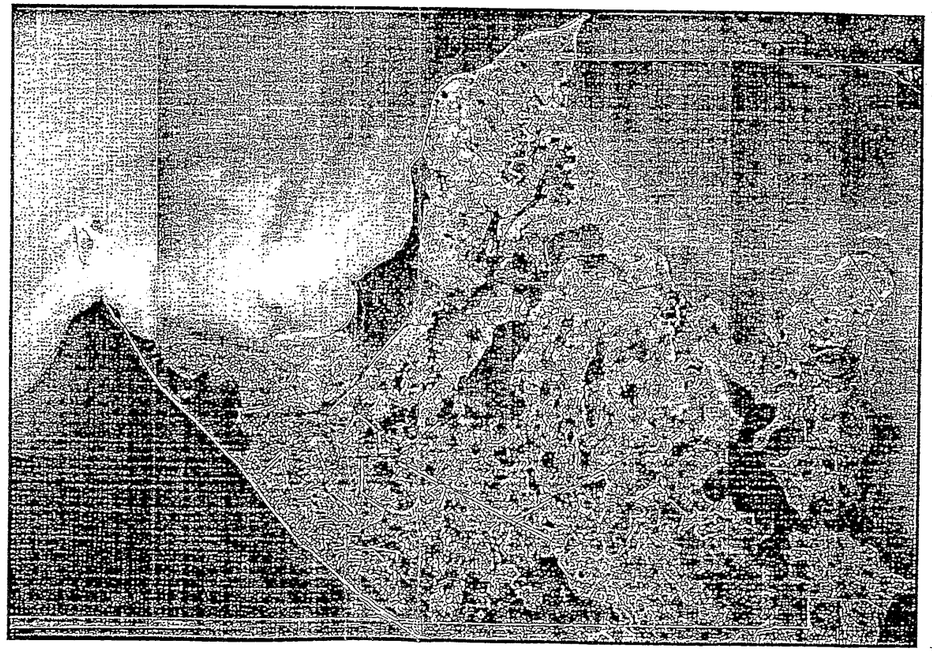
NOT TO SCALE

INDEX TO DRAWINGS

1	TITLE SHEET AND AREA MAPS
2	GENERAL NOTES AND ESTIMATED QUANTITIES
3	PROJECT SITE PLAN
4	LOCUST BAYOU DREDGE SITE PLAN
5	SPOIL BANK GAPPING SITE PLAN
6	TYPICAL SECTION – SHELL PLUG
7	WARNING SIGN DETAILS
8	PLUG SITE SOIL BORINGS
9	LOCUST BAYOU CROSS-SECTIONS
10-12	PLUG SITE CROSS-SECTIONS
13	LANDRIGHTS MAP

TYPE OF CONSTRUCTION

CLASSIFICATION III (HEAVY CONSTRUCTION)



LOCATION MAP

NOT TO SCALE

RECOMMENDED FOR APPROVAL

DNR/CRD ENGINEER MANAGER — DATE

DNR/CRD PROJECT MANAGER — DATE

PREPARED BY:

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 25148
REGISTERED
PROFESSIONAL ENGINEER

MICHAEL G. JACKSON, SENIOR V.P. — DATE Mar. 2, 1998

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 25148
REGISTERED
PROFESSIONAL ENGINEER

FEB. 11, 1998

SUMMARY OF ESTIMATED QUANTITIES

BASE BID

ITEM No.	DESCRIPTION	UNIT	QUANTITY
1	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	LUMP SUM
2	LOCUST BAYOU DREDGING	CU. YDS.	55,100
3	SPOIL BANK GAPPING	CU. YDS.	1,350
4	GEOTEXTILE FABRIC FOR ROCK STABILIZATION	SQ. YDS.	13,500
OPTION 1 – 5A	PLUG CORE MATERIAL – REEF SHELL	TONS	11,200
OPTION 2 – 5B	PLUG CORE MATERIAL – LIGHTWEIGHT	TONS	15,200
	CRUSHED LIMESTONE AGGREGATE		
6	RIPRAP	TONS	10,800

GENERAL NOTES:

1. BASIC HORIZONTAL AND VERTICAL CONTROL POINTS HAVE BEEN ESTABLISHED OR DESIGNATED BY THE ENGINEER AND ARE SHOWN ON THE PLANS. CONTRACTOR SHALL MAINTAIN AND PROTECT FROM DAMAGE OR DISLOCATION THESE CONTROLS, AND SHALL PERFORM ALL ADDITIONAL SURVEY, LAYOUT, AND MEASUREMENT WORK USING THESE CONTROLS.

2. CONTRACTOR SHALL VERIFY EXISTING GRADES, ELEVATIONS, AND LOCATIONS IN THE FIELD PRIOR TO CONSTRUCTION.

3. THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, RULES, AND REGULATIONS OF THE LOUISIANA STATE POLICE, THE TERREBONNE AND ST. MARY PARISH SHERIFFS' OFFICES, DNR, USCG, FEDERAL AUTHORITIES, STATE AND PARISH HEALTH DEPARTMENTS, AND OTHER STATE OR PARISH AUTHORITIES HAVING REGULATIONS AND JURISDICTIONAL RIGHTS APPLICABLE TO THE WORK OR JOBSITES.

4. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND PARISH LAWS CONCERNING POLLUTION OF WATERWAYS, AND PROTECTION OF SHELLFISH, FISH, WATERFOWL, WILDLIFE, AND DOMESTIC ANIMALS.

5. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO CAUSE THE LEAST POSSIBLE INTERFERENCE WITH BOTH THROUGH AND LOCAL MARINE TRAFFIC. REFER TO SECTION 1V–46 OF THE SPECIFICATIONS.

6. CONTRACTOR SHALL EMPLOY EFFECTIVE MEASURES TO CONTROL EROSION OF NATURAL AND CONSTRUCTED SURFACES.

7. THE SAFETY HAZARDS PROMULGATED BY, AND THE PRECAUTIONS DEFINED WITHIN SAME, OF THE OSHA, THE USCG, AND ALL OTHER REGULATING AUTHORITY HAVING JURISDICTION AND THAT ARE APPLICABLE TO THE WORK SHALL BE ADHERED TO AND ENFORCED BY THE CONTRACTOR.

8. TEMPORARY UTILITIES AND SANITARY FACILITIES FOR OPERATION OF THE CONTRACTOR'S PLANT OR EQUIPMENT SHALL BE PROVIDED AND MAINTAINED AT THE EXPENSE OF THE CONTRACTOR. REFER TO SECTION IV–35 OF THE SPECIFICATIONS.

9. ALL NECESSARY PERMITS WILL BE PROVIDED BY OWNER.

10. CONSTRUCTION SERVITUDES FOR ALL WORK AND RIGHT–OF–ENTRY ONTO THE SITE WILL BE PROVIDED BY OWNER.

11. ALIGNMENTS AND/OR ELEVATIONS MAY BE ADJUSTED IN THE FIELD BY THE PROJECT ENGINEER TO MEET CHANGING FIELD CONDITIONS OR TO BETTER ASSURE ACCOMPISHMENT OF PROJECT OBJECTIVES. ANY ADDITIONAL QUANTITIES WILL BE PAID FOR AT THE UNIT PRICE BID FOR THE SPECIFIC ITEM.

12. CONTRACTOR SHALL NOT BE ALLOWED TO IMPEDE DRAINAGE DURING RAINSTORMS OR WHEN A RAINSTORM IS IMMINENT. REFER TO SECTION IV–47 OF THE SPECIFICATIONS.

13. DUE TO CHANGING FIELD CONDITIONS, SHORELINES SHALL NOT BE USED AS CONSTRUCTION REFERENCE POINTS.

14. X AND Y COORDINATES ARE BASED ON NAD 27; LATITUDES AND LONGITUDES ARE BASED ON NAD 83; ELEVATIONS ARE BASED ON NGVD 29; SOUNDINGS REFERENCE WATER LEVEL SHOWN.

TECHNICAL NOTES:

1. ALL PLUGS TO BE CONSTRUCTED USING A REEF SHELL (PREFERRED) OR LIMESTONE CORE WITH RIPRAP ARMOR AND HAVE A 10'–WIDE CROWN WITH 3(H):1(V) SIDE SLOPES. SEE SHEET 8 FOR DETAILS.

2. THE CONTRACTOR SHALL OBSERVE CURRENTS AND CONDUCT HIS WORK IN SUCH A MANNER AS TO COMPENSATE FOR DRIFT. THE CONTRACTOR WILL BE RESPONSIBLE FOR ANY MATERIAL LOST DUE TO CURRENT ACTION.

3. GEOTEXTILE FABRIC SHALL BE INSTALLED ON THE CANAL BOTTOM PRIOR TO PLACEMENT OF THE CORE FILL AS PER THE SPECIFICATIONS. SHELL, STONE, AND RIPRAP SHALL BE PLACED WITH A MAXIMUM DROP OF 2 FEET TO AVOID DAMAGING THE GEOTEXTILE FABRIC.

4. WARNING SIGNS WILL BE PROVIDED ON THE UPSTREAM AND DOWNSTREAM SIDES OF EACH PLUG AS SHOWN ON THE DRAWINGS. SIGNS SHALL CONFORM TO COAST GUARD STANDARD 33 CFR 330.4 (a) (1). EACH WARNING SIGN SHALL HAVE A 2" ORANGE BORDER OF RETROFLECTIVE MATERIAL. LETTERING WILL BE BLACK ON A FIELD OF WHITE RETROFLECTIVE MATERIAL.

5. NEOPRENE WASHERS SHALL BE PLACED BETWEEN THE WARNING SIGN AND STEEL PIPE AT ALL POINTS OF CONTACT.

6. THE CONTRACTOR IS NOTIFIED THAT THE WORK SITE IS ACCESSED THROUGH THE ATCHAFALAYA DELTA WILDLIFE MANAGEMENT AREA UNDER THE JURISDICTION OF THE LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES. ALL PERSONNEL SHALL ABIDE BY THE MANAGEMENT AREA RULES AND REGULATIONS. REFER TO SECTION V–1 OF THE SPECIFICATIONS.

7. ALTHOUGH NOT PART OF THE CONTRACT PLANS AND SPECIFICATIONS, GEOTECHNICAL REPORTS OF SOIL BORINGS TAKEN IN THE ATCHAFALAYA BAY AND INTERIOR POINT AU FER ISLAND ARE AVAILABLE FOR REVIEW AT THE ENGINEERING OFFICE OF BURK–KLEINPETER, 4176 CANAL STREET, NEW ORLEANS, LOUISIANA, 70119. THE CONTRACTOR SHALL MAKE HIS OWN INTERPRETATION OF THE CHARACTER AND CONDITION OF THE MATERIALS WHICH WILL BE ENCOUNTERED BETWEEN THE SOIL SAMPLING LOCATIONS. THE CONTRACTOR MAY, AT HIS OWN EXPENSE, MAKE ADDITIONAL SURVEYS AND INVESTIGATIONS, SUBJECT TO OBTAINING ADDITIONAL PERMITS, AS HE DEEMS NECESSARY TO DETERMINE CONDITIONS WHICH WILL AFFECT THE PERFORMANCE OF THE WORK.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NAVIGATING WITHIN THE LIMITS OF THE PROJECT AREA.

9. THE CONTRACTOR IS NOTIFIED THAT THE PROJECT SITE IS TOTALLY ON OR ADJACENT TO PRIVATE OR STATE PROPERTY. EXTREME CAUTION SHALL BE EXERCISED IN PROTECTION OF PROPERTY, HABITAT, AND WILDLIFE FROM DAMAGE OR HARM.

10. THE CONTRACTOR IS NOTIFIED THAT HE WILL BE CONDUCTING HIS OPERATIONS IN THE VICINITY OF UTILITIES, PIPELINES, FLOWLINES, OIL AND GAS STRUCTURES, AND OTHER MINERAL OPERATIONS. THE CONTRACTOR SHALL LOCATE ALL SUCH STRUCTURES IN THE FIELD PRIOR TO CONSTRUCTION. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. REFER TO SECTIONS IV–34, IV–41, AND IV–43 OF THE SPECIFICATIONS.

11. A LISTING OF ALL COMPANIES KNOWN TO BE CONDUCTING MINERAL OPERATIONS AND HAVE ACTIVE WELLS AND/OR PIPELINES IN THE VICINITY IS PROVIDED ON SHEET 13. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING WHETHER THERE ARE OTHERS.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING PIPELINE OPERATORS 48 HOURS IN ADVANCE OF THE WORK. ALL PIPELINES SHALL BE MARKED WITH BUOYS BY THE CONTRACTOR USING THE COORDINATES GIVEN. THE CONTRACTOR SHALL MAINTAIN BUOYS DURING CONSTRUCTION OR HAVE ADEQUATE NAVIGATIONAL EQUIPMENT ON THE DREDGE TO AVOID DREDGING IN RESTRICTED AREAS.

13. THE CONTRACTOR SHALL NOT DREDGE WITHIN 100 FEET OF A PIPELINE.

14. THE CONTRACTOR SHALL NOT DREDGE WITHIN 1 MILE OF EXISTING OYSTER LEASE AREAS, WITHOUT PRIOR PERMISSION FROM THE OWNER.

15. VOLUMES GIVEN IN THE SPECIFICATIONS ARE FOR BIDDING PURPOSES ONLY AND WERE CALCULATED ACCORDING TO CONDITIONS SURVEYED IN JUNE, 1996. BEFORE AND AFTER DREDGE, CROSS–SECTIONS WILL BE SURVEYED BY THE CONTRACTOR AND CHECKED BY THE ENGINEER FOR MEASUREMENT AND PAYMENT PURPOSES.

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 21148
REGISTERED
PROFESSIONAL ENGINEER
IN

REV.	DATE	DESCRIPTION	BY

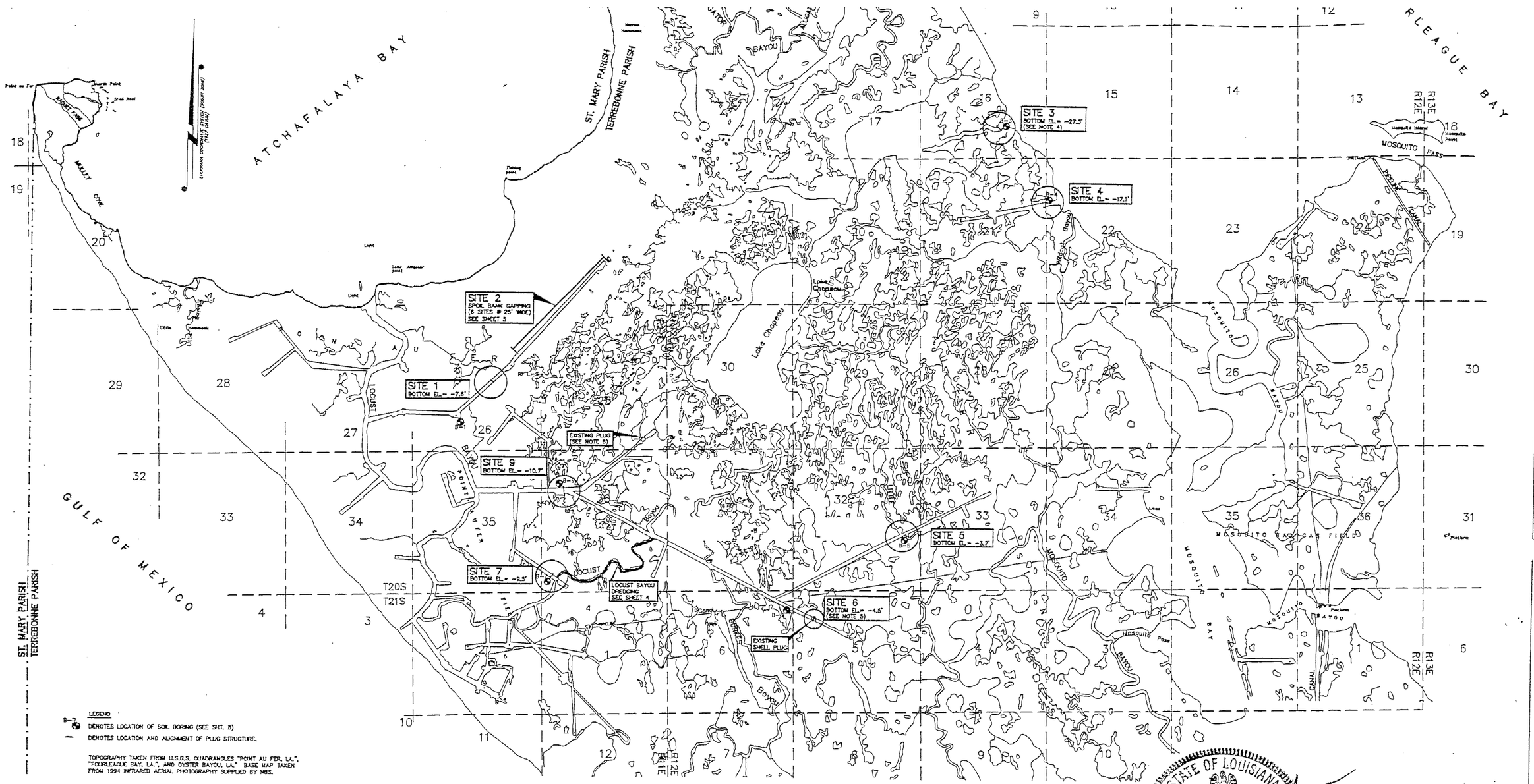
STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE–23/26A)

GEN. NOTES AND EST. QUANTITIES

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119–5994

PLOTTED: FEB 11, 1998



LEGEND

B-7 DENOTES LOCATION OF SOIL BORING (SEE SHT. 8)

DENOTES LOCATION AND ALIGNMENT OF PLUG STRUCTURE.

TOPOGRAPHY TAKEN FROM U.S.G.S. QUADRANGLES "POINT AU FER, LA.", "FOURLEAGUE BAY, LA.", AND OYSTER BAYOU, LA." BASE MAP TAKEN FROM 1994 INFRARED AERIAL PHOTOGRAPHY SUPPLIED BY NRS.

GEOGRAPHIC LOCATION OF STRUCTURE MARKERS

NOTES: STRUCTURE MARKERS ARE 2" PVC PIPES DRIVEN APPROXIMATELY 30' ON EITHER SIDE OF NORMAL HIGH BANK LOCATIONS.

SITE NOS. 1 AND 6 ARE NOT STAKED IN THE FIELD.

COORDINATES REFER TO THE LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27).

	NORTH OR WEST SIDE OF CANAL		SOUTH OR EAST SIDE OF CANAL			
SITE No.	X-COORD.	Y-COORD.	X-COORD.	Y-COORD.	BEARING	LENGTH
1	NOT MARKED		NOT MARKED		N44°46'20"W	200'±
2	N/A	N/A	N/A	N/A		
3	2,034,998.88	240,662.40	2,035,207.95	240,462.50	N46°18'06"W	289.20'
4	2,037,194.47	237,420.17	2,037,179.92	237,176.50	N03°25'07"E	243.97'
5	2,031,316.28	222,791.19	2,031,443.63	222,803.00	N84°41'59"E	127.90'
6	NOT MARKED		NOT MARKED		N29°03'06"W	205'±
7	2,016,077.57	220,961.58	2,015,951.13	220,781.30	S35°02'42"E	220.20'
9	2,016,465.46	224,830.74	2,016,517.89	224,423.66	N07°20'22"E	410.42'

SCALE IN FEET

3000' 1000' 0 2000' 4000' 6000'

NOTES

1. FOR SHELL PLUG DETAILS SEE SHEET 6.
2. FOR CROSS-SECTIONS OF PLUG SITES SEE SHTS. 10-12.
3. ALL ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD).
4. THE CREST OF PLUG 3 IS REQUIRED TO BE SET AT ELEVATION -4.0' NGVD. ALL OTHER STRUCTURES HAVE CREST ELEVATIONS OF 0.0 NGVD.
5. THE EXISTING PLUG AT SITE 6 IS A DILAPIDATED SHELL STRUCTURE. THE NEW SHELL PLUG 6 WILL BE CONSTRUCTED OVER THIS EXISTING PLUG USING THE IN-PLACE MATERIAL AS A CORE.
6. THE EXISTING PLUG NEAR SITE 9 IS A BURNED TIMBER STRUCTURE WITH SHELL ARMOR PLATING. IT MAY BE REMOVED AT THE CONTRACTOR'S DISCRETION AND RESPONSIBILITY IF NECESSARY FOR ACCESS INTO LOCUST BAYOU. ALTERNATE ROUTES ARE POSSIBLE.

GEOGRAPHIC LOCATION OF SURVEY CONTROL POINTS

NOTES: CONTROL POINTS ARE 3/4" O.I.P. ON EITHER BANK OF PROPOSED STRUCTURE, AND ARE ALONG PROPOSED ALIGNMENT OF STRUCTURE EXCEPT AT SITE NOS. 1 AND 6.

COORDINATES REFER TO THE LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27).

	NORTH OR WEST SIDE OF CANAL			SOUTH OR EAST SIDE OF CANAL		
SITE No.	X-COORD.	Y-COORD.	ELEV.	X-COORD.	Y-COORD.	ELEV.
1	2,011,917.29	228,195.06	0.629'	2,012,038.84	228,075.04	0.965'
2	2,018,250.83	234,452.14	1.170'	2,017,877.40	234,108.93	0.688'
3	2,035,015.27	240,651.99	0.887'	2,035,191.91	240,484.42	0.977'
4	2,037,194.54	237,384.07	1.394'	2,037,184.78	237,199.80	1.431'
5	2,031,327.31	222,792.42	0.982'	2,031,421.72	222,801.00	0.753'
6	2,026,450.19	219,515.04	0.970'	2,026,373.40	219,476.88	0.960'
7	2,016,064.41	220,942.41	0.836'	2,015,965.06	220,801.93	0.789'
9	2,016,465.65	224,811.36	2.728'	2,016,514.39	224,447.11	0.970'

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. No. 25748
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

NO.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

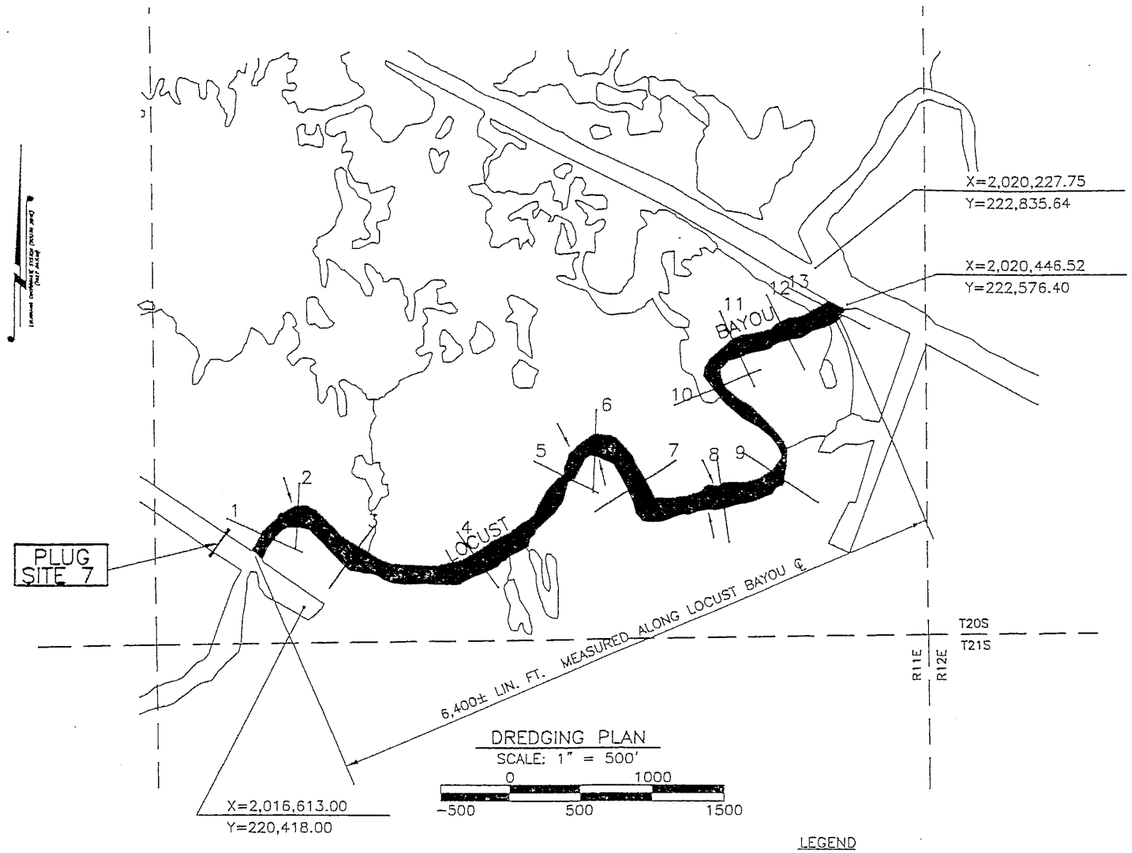
LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE-23/26A)

PROJECT SITE PLAN

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5F
(504) 486-5901 FAX (504) 488-1714

W.C.E. PRES.	JOB NO.	DESIGNED PSL	SCALE 1"=2000'	SHEET NO.
REVIEWER	9541	DETAILED TBS	DATE FEB., 1998	3 OF 13
PLAN IN HAND		CHECKED PSL	FILE NO. 95410103	

J.P.C. PSPPHLDWG FEB.11,1998



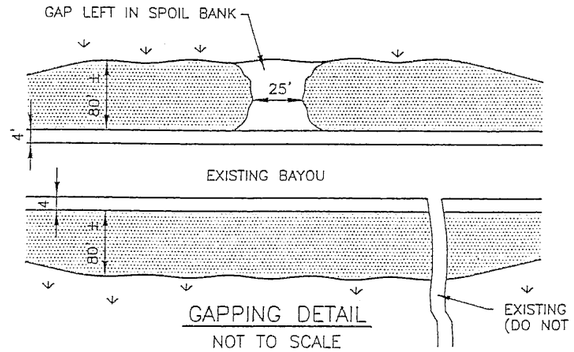
DREDGING PLAN

SCALE: 1" = 500'

0 1000

-500 500 1500

PROFILE NO.	EXIST. CHANNEL DEPTH (ELEV. NGVD)	EXIST. CHANNEL WIDTH BETWEEN BANKS (FT.)
1	-4.0	120
2	-5.0	115
3	-4.5	115
4	-4.5	100
5	-4.0	110
6	-2.5	120
7	-3.5	125
8	-3.5	115
9	-3.5	110
10	-2.5	145
11	-2.5	125
12	-3.0	120
13	-3.0	140



GAPPING DETAIL

NOT TO SCALE

LEGEND

X — PROFILE LOCATION (SEE SHT. 9)

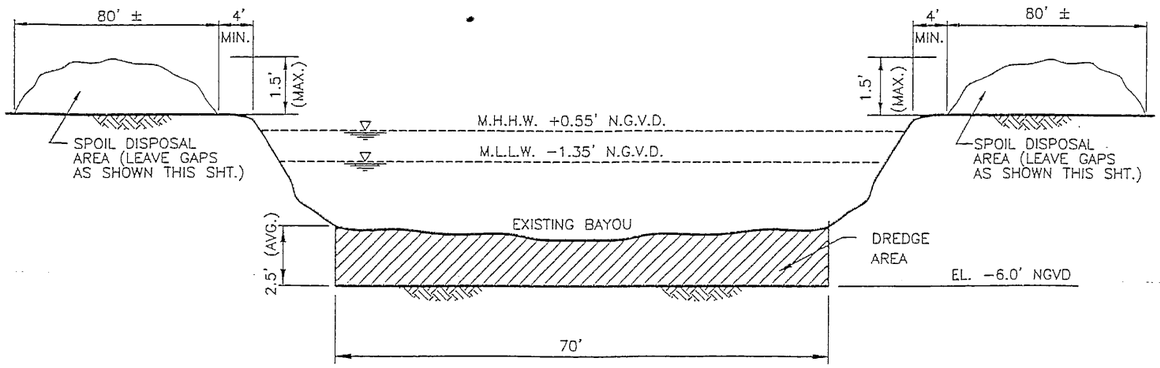
DREDGING LOCATION (70' WIDE)

APPROXIMATE LOCATION OF GAP IN SPOIL BANK (SEE DETAIL, THIS SHT.)

DRAWING NOTES:

TOPOGRAPHY TAKEN FRON U.S.G.S. QUADRANGLE "POINT AU FER, LA.", "FOURLEAGUE BAY, LA., AND OYSTER BAYOU, LA. BASE MAP TAKEN FROM 1994 INFARED AERIAL PHOTOGRAPHY SUPPLIED BY NBS.

ALL ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM, (NGVD 29) ALL "X" AND "Y" COORDINATES REFER TO THE LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27).



DREDGING SECTION

NOT TO SCALE

NOTES:

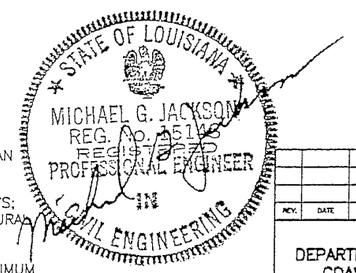
CONTRACTOR SHALL CONTACT "LOUISIANA ONE CALL" (1-800-272-3020) AT LEAST 48 HRS. PRIOR TO THE START OF DREDGING ACTIVITY.

SPOIL SHALL BE STOCKPILED NO CLOSER THAN 4' FROM THE BANKS OF LOCUST BAYOU.

DO NOT IMPEDE FLOW OF NATURAL WATERWAYS; NO SPOIL SHALL BE STOCKPILED WHERE NATURAL WATERWAYS INTERSECT LOCUST BAYOU.

SPOIL BANK WIDTH SHOWN IS BASED ON MAXIMUM SPOIL BANK HEIGHT. CONTRACTOR SHALL PROCEED DEPOSITING SPOIL HORIZONTALLY TO A MAXIMUM DISTANCE ALLOWED BY HIS EQUIPMENT (NOT TO EXCEED 210 FEET), AND THEN BEGIN STACKING VERTICALLY TO A MAXIMUM HEIGHT OF 1.5 FEET.

REFER TO SECTIONS V-3 AND V-5 OF THE SPECIFICATIONS.



REV.	DATE	DESCRIPTION	BY

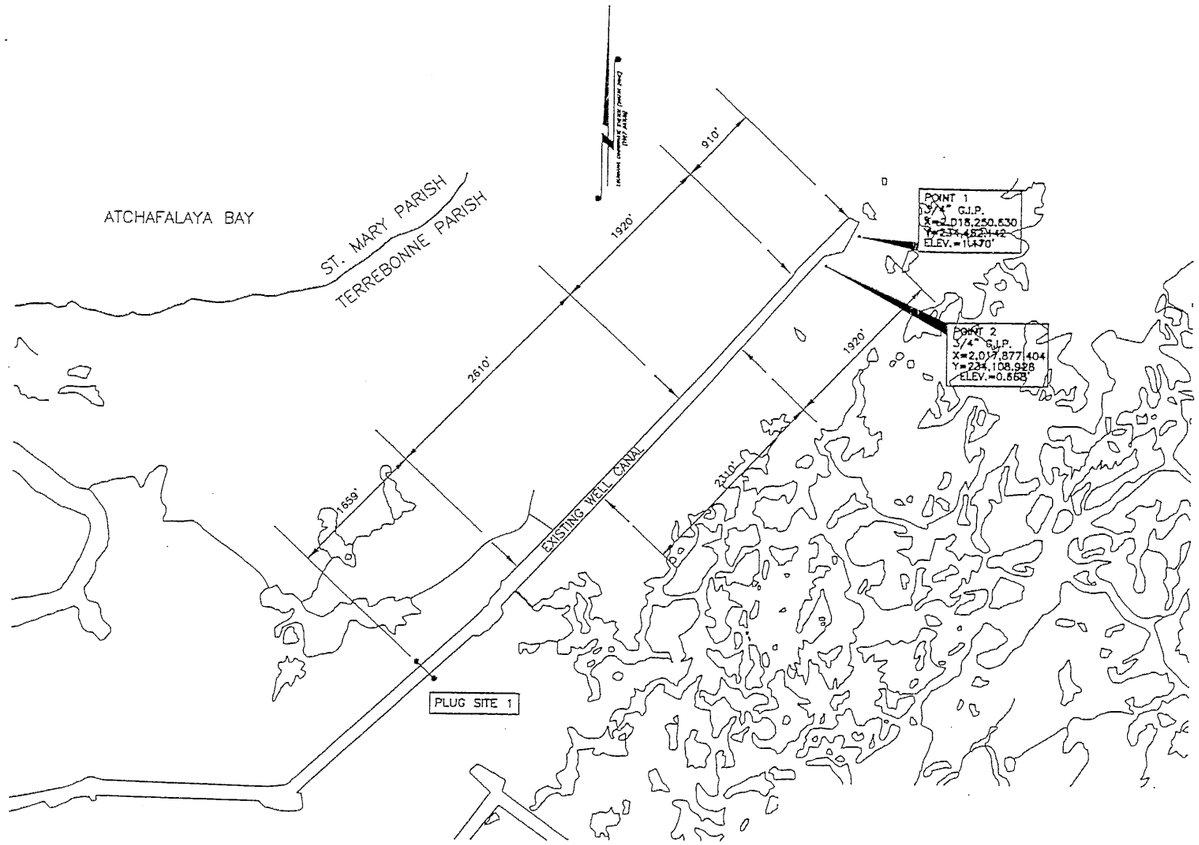
STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE-23/26A)

LOCUST BAYOU DREDGE PLAN

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119
(504) 486-5901 FAX (504) 488-1714

VAC. PROC.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
REVISION	9541	DETAILED J.P.C.	DATE FEB.,1998	4 OF 13
PLAN IN HAND		CHECKED PSL	FILE NO. 95410106	



LEGEND

—— APPROXIMATE GAPPING LOCATION

⟷ PROPOSED SHELL-AND-RIPRAP PLUG

GAPPING LOCATION PLAN

SCALE: 1" = 800'

800 0 800 1600 2400

SCALE IN FEET

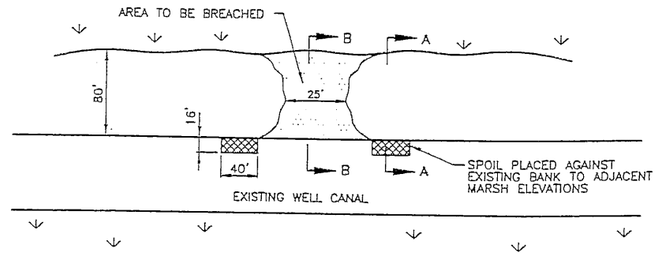
NOTES:

GAPPING LOCATIONS HAVE BEEN SELECTED TO COINCIDE WITH EXISTING BREAKS IN SPOIL BANKS. THE LOCATIONS AND DISTANCES SHOWN HERE ARE APPROXIMATE BASED ON 1994 INFRARED AERIAL PHOTOGRAPHY SUPPLIED BY NBS.

HEIGHTS OF EXISTING SPOIL BANKS VARY OVER THE LENGTH OF THE CANAL. DIMENSIONS AND QUANTITIES ARE ESTIMATED AND GIVEN FOR BIDDING PURPOSES ONLY. BEFORE AND AFTER CROSS-SECTIONS WILL BE SURVEYED BY THE CONTRACTOR AND CHECKED BY THE ENGINEER FOR MEASUREMENT AND PAYMENT PURPOSES.

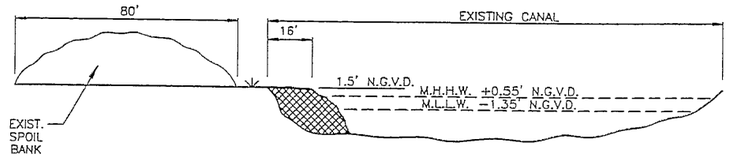
REFER TO SECTION V-5 OF THE SPECIFICATIONS.

APPROXIMATE BOTTOM OF EXISTING WELL CANAL IS AT ELEVATION (-)8.0' NGVD.



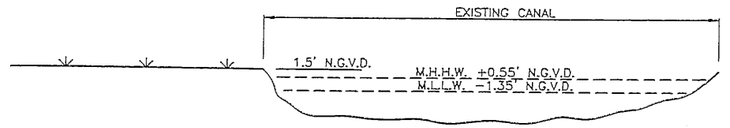
GAPPING DETAIL

NOT TO SCALE



TYPICAL CROSS SECTION - A

NOT TO SCALE



TYPICAL CROSS SECTION - B

NOT TO SCALE

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 15743
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

NO.	DATE	DESCRIPTION	BY

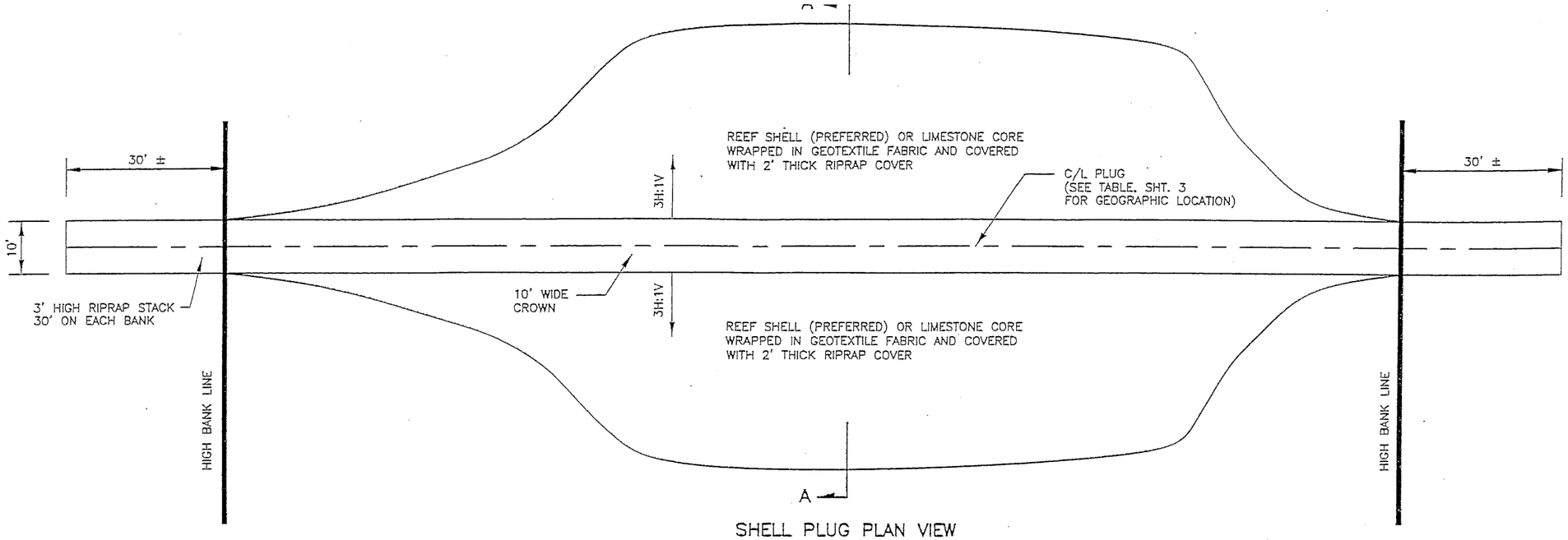
STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE-23/26A)

SPOIL BANK GAPPING SITE PLAN

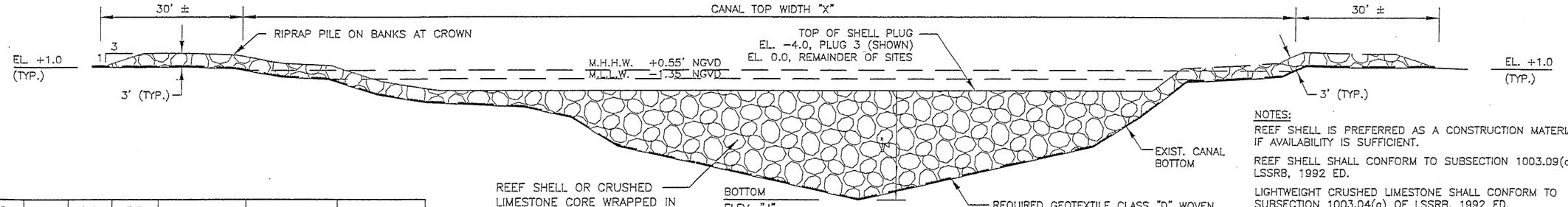
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTI
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5
(504) 486-5901 FAX (504) 488-1714

VICE PRES.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE FEB.,1998	5 OF 13
PLAN IN HAND		CHECKED PSL	FILE NO. 95410107	



SHELL PLUG PLAN VIEW

DRAWING NOT TO SCALE



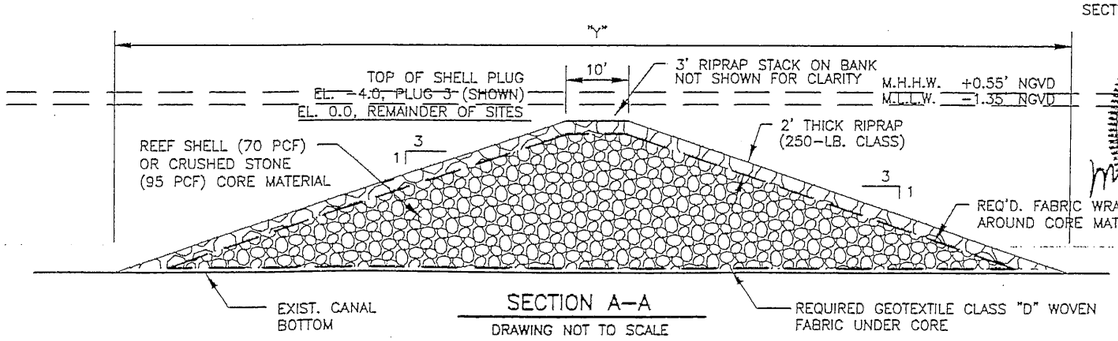
SHELL PLUG ELEVATION

DRAWING NOT TO SCALE

PLUG SITE	"X"	"Y"	"Z"	"J"	EST. TONS OF SHELL CORE	EST. TONS OF RIP RAP	EST. S.Y. OF GEOTEXTILE
1	147.5'	56'	7.6'	−7.6	810	1330	1680
3	229.1'	150'	23.3'	−27.3	4820	2560	3390
4	173.8'	113'	17.1'	−17.1	3340	2400	3170
5	70.0'	32'	3.7'	−3.7	10	390	380
6	145.1'	37'	4.5'	−4.5	70	710	550
7	157.1'	67'	9.5'	−9.5	530	960	1270
9	240.4'	74'	10.7'	−10.7	1620	2450	3060

STONE SIZE (LBS.)	% OF STONE SMALLER THAN
1250	100
500	45−100
250	15−50
80	0−15

RIPRAP GRADATION
250−LB. CLASS



SECTION A−A

DRAWING NOT TO SCALE

NOTES:

REEF SHELL IS PREFERRED AS A CONSTRUCTION MATERIAL, IF AVAILABILITY IS SUFFICIENT.

REEF SHELL SHALL CONFORM TO SUBSECTION 1003.09(a)(2) OF LSSRB, 1992 ED.

LIGHTWEIGHT CRUSHED LIMESTONE SHALL CONFORM TO SUBSECTION 1003.04(a) OF LSSRB, 1992 ED.

CORE MATERIAL PLACEMENT SHOULD BEGIN AT THE CENTER OF THE PLUG AND CONTINUE OUTWARD TOWARD THE TOE. MATERIAL SHALL BE PLACED IN LIFTS OF 3' LOOSE MEASURE. ADDITIONAL COMPACTION IS NOT REQUIRED.

GRADED CRUSHED LIMESTONE RIPRAP SHALL CONFORM TO SECTION 711 OF LSSRB, 1992 ED.

STATE OF LOUISIANA
MICHAEL J. JACKSON
REG. NO. 26148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

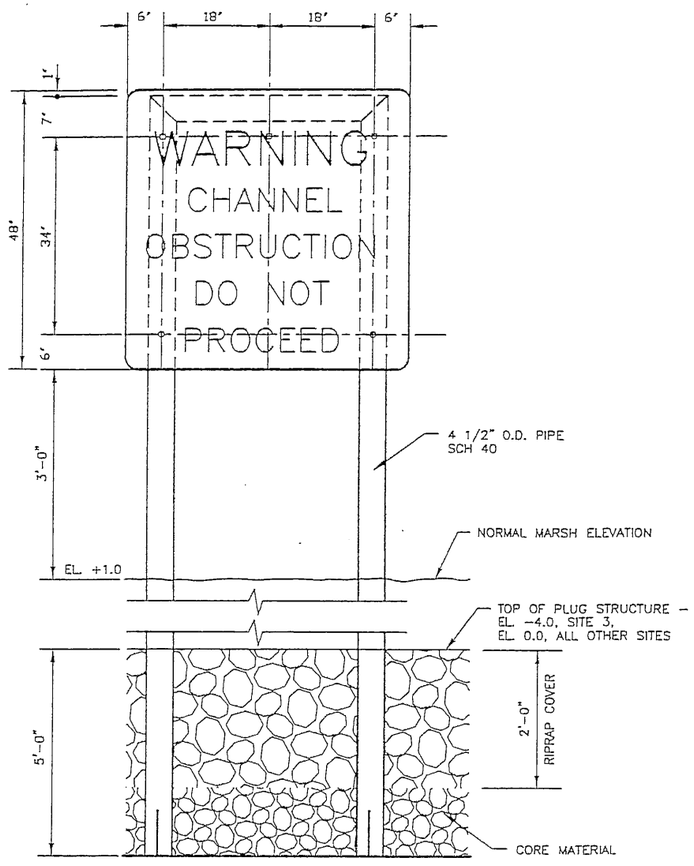
LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE−23/26A)

TYPICAL SECTION − SHELL PLUG

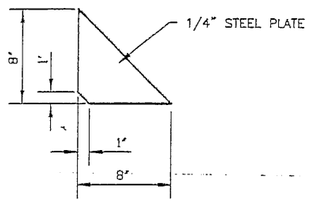
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119−597
(504) 486−5901 FAX (504) 488−1714

VICE PRES.	JOB NO.	DESIGNED PSL	SCALE NONE	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE FEB.,1998	6 OF 13
PLAN IN HAND		CHECKED PSL	FILE NO. 95410108	

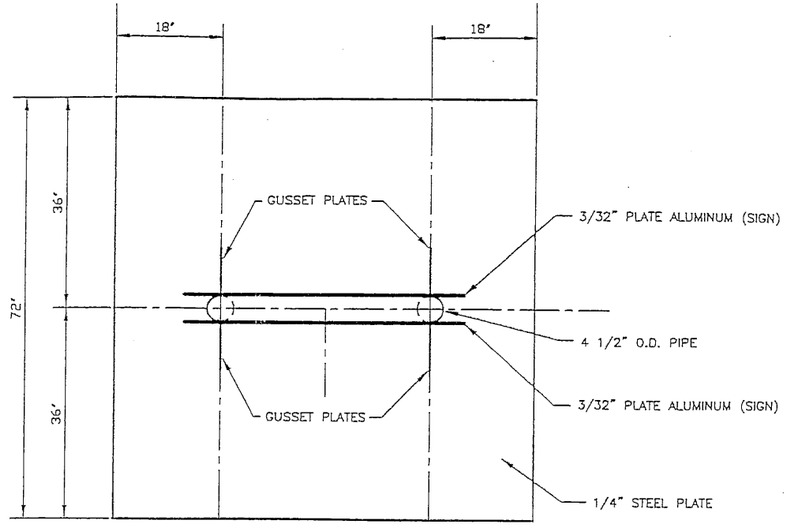
FEB 13, 1998 SHSHPHLDWG J.P.C.



WARNING SIGN SUPPORT DETAIL
SCALE: 1" = 1'-0"



TYPICAL GUSSET PLATE
SCALE: 2" = 1'-0"



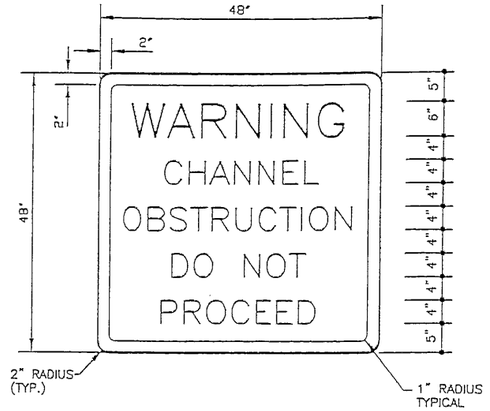
WARNING SIGN PLAN
SCALE: 1" = 1'-0"

WARNING SIGN LOCATIONS

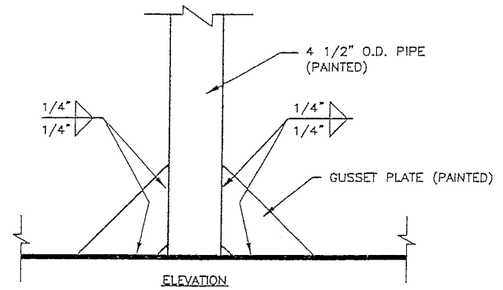
PLUG No.	DIST. FROM PVC PIPE	PIPE LENGTH TO TOP OF SIGN	ELEVATION OF BOTTOM PLATE
1	N/A	13'	-5.0
3	85'	17'	-9.0
4	75'	13'	-5.0
5	45'	13'	-5.0
6	N/A	13'	-5.0
7	70'	13'	-5.0
9	90'	13'	-5.0

NOTES:

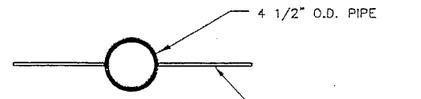
1. TWO WARNING SIGNS ARE REQUIRED FOR EACH PLUG STRUCTURE, ONE ON THE UPSTREAM AND ONE ON THE DOWNSTREAM SIDE, PLACED AT THE DISTANCES SHOWN FROM THE 2" PVC PIPE MONUMENTS STAKED IN THE FIELD.
2. WARNING SIGNS TO BE PLACED WITH A MINIMUM 5' EMBEDMENT INTO THE PLUG STRUCTURE AS SHOWN. CONTRACTOR SHALL COORDINATE PLACEMENT OF MATERIAL WITH INSTALLATION OF WARNING SIGNS.
3. THE 2" BORDER ON THE WARNING SIGN WILL BE A RETROREFLECTIVE MATERIAL OF ORANGE COLOR. THE LETTERING FIELD WILL BE A RETRO-REFLECTIVE MATERIAL OF WHITE COLOR. THE LETTERING FOR THE WARNING SIGN WILL BE BLOCK. ALL SIGNS MUST MEET U.S. COAST GUARD STANDARDS, IN ACCORDANCE WITH 33 CFR 330.4 (A) (1).
4. NEOPRENE WASHERS SHALL BE PLACED BETWEEN THE SIGN AND STEEL PIPE, AT ALL POINTS OF CONTACT.
5. A TOTAL OF FOURTEEN (14) WARNING SIGNS, INCLUDING ALL FRAMEWORK, PLATES, BUOYS, ANCHORS, AND ALL INCIDENTAL CONSTRUCTION, WILL BE FURNISHED BY THE CONTRACTOR AT NO DIRECT PAY.



SIGN DETAIL
SCALE: 1" = 1'-0"



ELEVATION



PLAN

GUSSET PLATE DETAIL
SCALE: 2" = 1'-0"

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 16248
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE-23/26A)

WARNING SIGN DETAILS

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

VAC PROJ.	JOB NO.	DESIGNED PSL	SCALE SHOWN	SHEET
REVIEWED	9541	DETAILED JPC	DATE FEB., 1998	7 OF 13
PLAN IN HAND		CHECKED PSL	FILE NO. 95410109	

J.P.C. 2/17/98 (TEXT) 1998

PLUG SITE 1

ELEV. NGVD	PP	SPT	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0				Water												
				Extremely soft gray organic clay w/organic matter & roots	OH	1	2-3	186	31	90	UC	–	70			
				Extremely soft, dark gray clay w/sand & leaves	OH	2	5-6	178	27	74	UC	–	75	234	80	154
				Extremely soft gray clay w/organic matter	CH	3	8-9	114	40	96	UC	–	98	112	28	84
						4	11-12									
						5	14-15	98	46	90	UC	–	86			
						6	18-18									
	0.25			Very soft gray clay w/silt lenses	CH	7	23-24	101	44	98	UC	–	106			
				w/few shell fragments												
	0.30			w/few silty sand lenses		8	28-29									
	0.30					9	33-34	77	54	96	UC	–	178			
				Extremely soft gray silty w/clayey silt lenses	CH	10	38-38	82	37	98	UC	–	96			
	0.30			Very soft gray clay w/silty sand lenses	CH	11	43-44	98	52	99	UC	–	186			
	0.30			Soft gray clay w/silt lenses	CH	12	48-48	84	57	103	UC	–	260			

PLUG SITE 3

ELEV. NGVD	PP	SPT	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0				Water												
				Very loose black humous sediments	PT	1	2.5-3	438	13	67	CU	–	30			
						2	5-6	566	19	83	CU	–	80	834	170	664
				Extremely soft gray clay w/organic matter	CH	3	8-9	123	39	98	UC	–	36			
						4	11-12	186	32	90	UC	–	86			
				Very soft gray clay w/organic matter	CH	5	14-15	126	38	82	UC	–	146			
				w/silt lenses & organic matter		6	18-19	104	43	98						
	0.25			w/few sand lenses & shell fragments		7	23-24	74	95	96	UC	–	125	97	25	72
	0.30			w/mostly silt pockets		8	28-29									
	0.30			w/sand lenses & shell fragments		9	33-34	88	57	96	UC	–	130			
				Soft gray clay w/sand lenses		10	38-38									
	0.30					11	43-44	67	59	96	CU	–	275			
				Medium dense gray fine sand w/silty sand layers		12	48-50									

PLUG SITE 4

ELEV. NGVD	PP	SPT	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0				Water												
				Very loose black humous sediments	PT	1	2-3	336	18	67						
						2	5-6	279	19	86	CU	–	80			
				Extremely soft gray clay w/organic matter	CH	3	8-8	102	44	84	UC	–	40	110	27	83
				Very soft gray clay w/humic	CH	4	11-12	87								
	0.25			w/silt lenses & organic matter		5	14-15	140	34	82	CU	–	140			
				w/few sand lenses		6	18-18									
				w/silt lenses & seams		7	23-24	96	48	80						
	0.25			w/few shell fragments		8	28-29									
	0.25			w/few sandy silt lenses		9	33-34	78	54	96	UC	–	148	83	34	58
				Very loose grey sloppy sand	SC	10	38-38									
	0.30			Soft gray clay w/silt lenses	CH	11	43-44	86	60	96	UC	–	286			
				Medium dense grey silty fine sand	SM	12	48-48	83	87	103	UC	–	278			

PLUG SITE 5

ELEV. NGVD	PP	SPT	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0				Water												
				Very soft gray clay w/grass	CH	1	2-2.5									
				Extremely soft black organic clay w/roots	OH	2	3-4									
						3	5-6	232	22	74	CU	–	85	219	81	138
				Extremely soft gray silty	CH	4	8-8									
	0.25					5	11-12	148	33	82	UC	–	96			
	0.25			w/clayey silt lenses		6	14-15									
	0.25					7	18-19	106	43	98	UC	–	96			
	0.25					8	23-24									
				Very soft gray clay w/trace of decayed wood	CH	9	28-28	81	52	100						
	0.25			w/clayey silt lenses		10	33-34									
	0.25					11	38-38	79	52	83	UC	–	300	104	28	79
	0.50					12	43-44									
	0.30					13	48-48	48	72	106	UC	–	230			

PLUG SITE 6

ELEV. NGVD	PP	SPT	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0				Water												
				Extremely soft black organic clay w/roots	OH	1	1-2									
						2	2-3	174	29	77	CU	–	55	183	44	139
						3	5-6	218	24	76						
				Extremely soft gray clay w/organic matter	CH	4	8-8	110	42	98	UC	–	80			
	0.25					5	11-12	186	32	81	UC	–	80			
	0.25					6	14-15	138	34	90	UC	–	90			
	0.25			w/silt lenses		7	18-19									
	0.25					8	23-24	81	51	93	UC	–	100			
						9	28-28									
				Very soft gray clay	CH	10	33-34	58	84	103	UC	–	180			
	0.30					11	38-38									
				Medium dense gray fine sand	SP	12	38-40									
	0.30			Soft gray silty	CH	13	43-44	97	86	102	UC	–	335	78	22	56
	0.30			Very soft gray silty clay	CL	14	48-48	37	91	111	UC	–	200			

PLUG SITE 7

ELEV. NGVD	PP	SPT	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0				Water												
				Extremely soft gray organic clay	OH	1	2-2	221	23	78						
				w/many roots												
				Very soft brown organic clay w/wood	OH	2	3-4	183	27	77	CU	–	55	224	48	178
				Extremely soft gray clay w/organic matter	CH	3	8-8	121	38	84	UC	–	65			
						4	11-12	117	41	89	UC	–	28			
						5	14-15									
						6	18-19	129	37	86	UC	–	55	152	30	102
				w/few clayey silt lenses		7	23-24									
				w/wood pockets & shell fragments		8	28-28	44								
	0.25			Very soft gray clay w/wood pockets & few shells	CH	9	33-34	48	72	108	UC	–	190			
	0.30			w/wood lenses		10	38-38	58	84	102	UC	–	170			
				Loose grey sloppy sand	SC	11	43-44									
				Loose grey silty sand	SM	12	44-45									
	0.30			Very soft grey clay w/wood lenses	CH	13	48-48	28	90	111	UC	–	260			

PLUG SITE 9

ELEV. NGVD	PP	SPT	Symbol	Visual Classification	USC	Sample Number	Depth in Feet	Water Content Percent	Density Dry	Density Wet	Shear Tests Type	Shear Tests φ	Shear Tests C	Atterberg Limits LL	Atterberg Limits PL	Atterberg Limits PI
0				Water												
				Extremely soft dark gray organic clay w/roots	OH	1	1.5-2									
						2	5-6	231	22	73	CU	–	80	190	44	106
						3	8-8	302	17	89	CU	–	85			
				Extremely soft dark gray humous w/organic clay layers	CH	4	11-12									
						5	14-15	111	41	86	UC	–	70			
						6	18-18	114	40	86						
				w/traces of organic matter & shell fragments		7	23-24	118	36	86						
	0.30			Very soft gray clay w/wood pockets	CH	8	28-28									
	0.30					9	33-34	81	70	106						
	0.30					10	38-38	52	88	108	UC	–	210			
	0.30			Soft gray sandy clay	CL	11	43-44	34	94	113	UC	–	290	35	17	18
	0.30			Soft gray clay w/silty sand lenses & pockets	CH	12	48-48	48	70	104						

NOTES:

1. LOCATIONS OF SOIL BORINGS ARE SHOWN ON SHEET 3.
2. THE CONTRACTOR SHALL MAKE HIS OWN INTERPRETATION OF THE CHARACTER AND CONDITION OF THE MATERIALS WHICH WILL BE ENCOUNTERED BETWEEN THE BORING LOCATIONS. THE CONTRACTOR, AT HIS OWN EXPENSE, MAY MAKE ADDITIONAL SURVEYS AND INVESTIGATIONS, SUBJECT TO OBTAINING ADDITIONAL PERMITS, AS HE DEEMS NECESSARY TO DETERMINE CONDITIONS WHICH WILL AFFECT THE PERFORMANCE OF THE WORK. ALTHOUGH NOT PART OF THE CONTRACT PLANS AND SPECIFICATIONS, A COMPLETE SOILS REPORT IS AVAILABLE FOR REVIEW AT BURK–KLEINPETER, INC. CONSULTING ENGINEERS, 4176 CANAL STREET, NEW ORLEANS, LOUISIANA, 70119
3. BORING LOGS WERE SUPPLIED BY EUSTIS ENGINEERING COMPANY, INC. AND WERE TAKEN MAY 28 AND 29, 1998.
4. ALL ELEVATIONS SHOWN ARE IN NATIONAL GEODETIC VERTICAL DATUM (NGVD 29)

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. No. 25148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

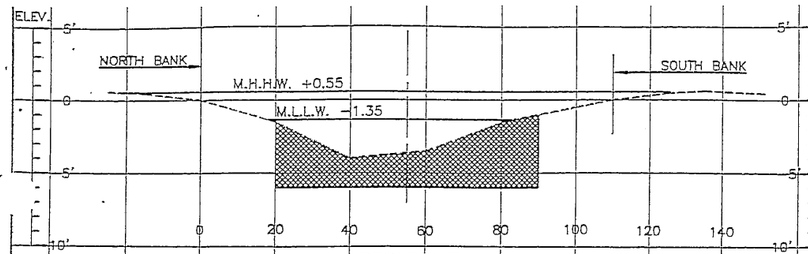
LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE-23/26A)

PLUG SITE SOIL BORINGS

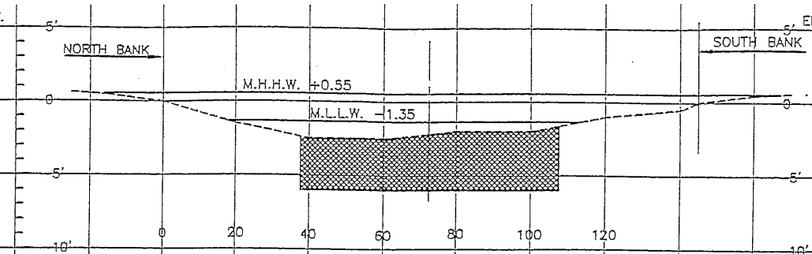
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SC
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 7011
(504) 486-5901 FAX (504) 488-1714

VICE PRES.	JOB NO.	DESIGNED PSL	SCALE NOTED	SHEET NO.
REVIEWER	9541	DETAILED J.P.C.	DATE FEB.,1998	8 OF 13
PLAN M. HAND		CHECKED PSL	FILE No. 95410106	

I:\9541\DWG\PLOTSETS\95410106.DWG Wed Jul 10 15:00:03 1996 S.



EXCAVATION = 7125 C.Y.



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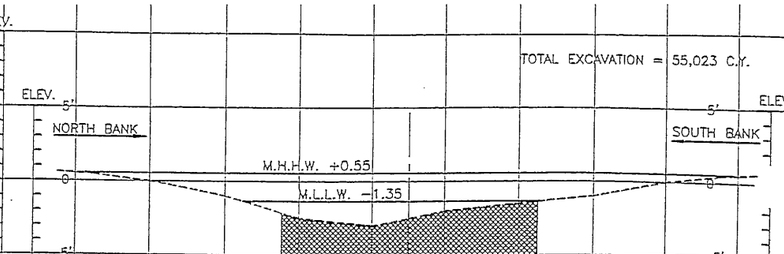
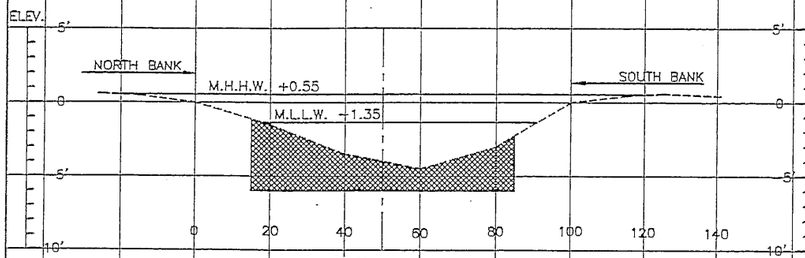
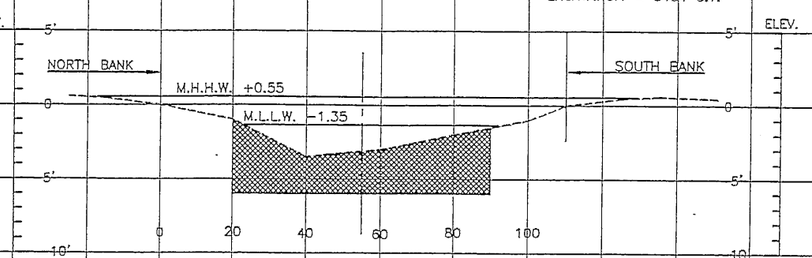


TOTAL EXCAVATION = 55,023 C.Y.

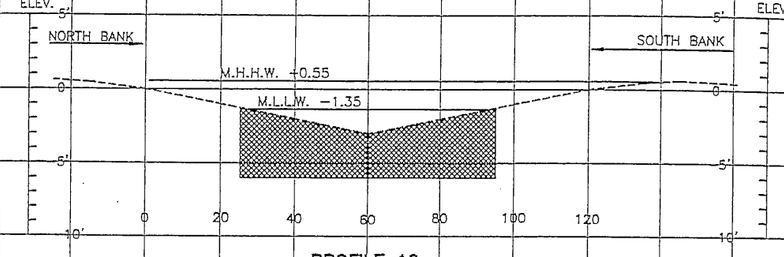
EXCAVATION = 3649 C.Y.



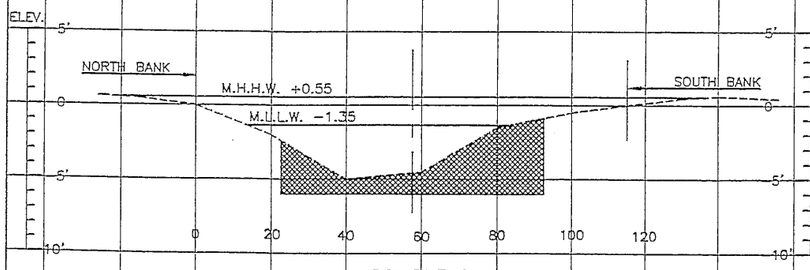
EXCAVATION = 6294 C.Y.



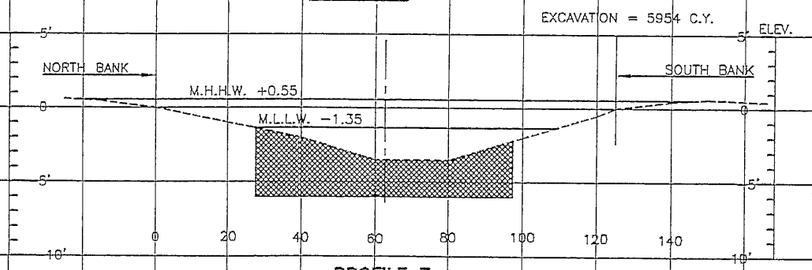
EXCAVATION = 3767 C.Y.



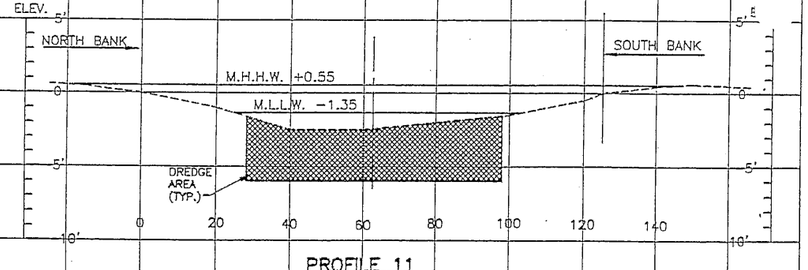
EXCAVATION = 3698 C.Y.

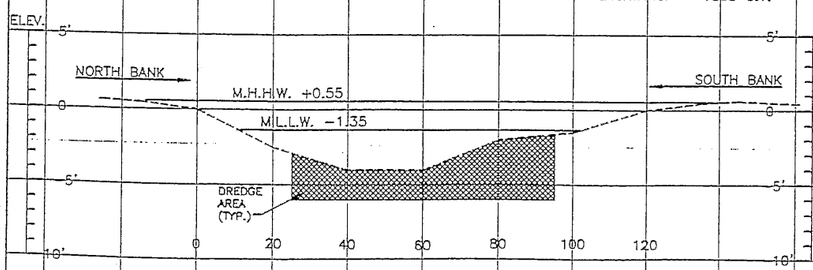


EXCAVATION = 3426 C.Y.

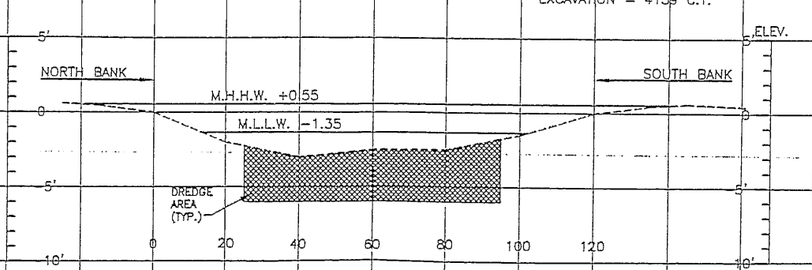


EXCAVATION = 5954 C.Y.





EXCAVATION = 1863 C.Y.



EXCAVATION = 4159 C.Y.

NOTE: CROSS-SECTIONS SURVEYED BY T. BAKER SMITH & SON, INC., ON JULY 28-29, 1997.
ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD 29)
TIDE ON 7/28/97 WAS +0.10' NGVD., MEASURED AT TIDE GAUGE AT LOCUST BAYOU AND OILFIELD CANAL.
PROFILES REFER TO LOCATIONS ON SHT. 4

SCALE
1"=20' HORIZONTAL
1"=5' VERTICAL

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. No. 25148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

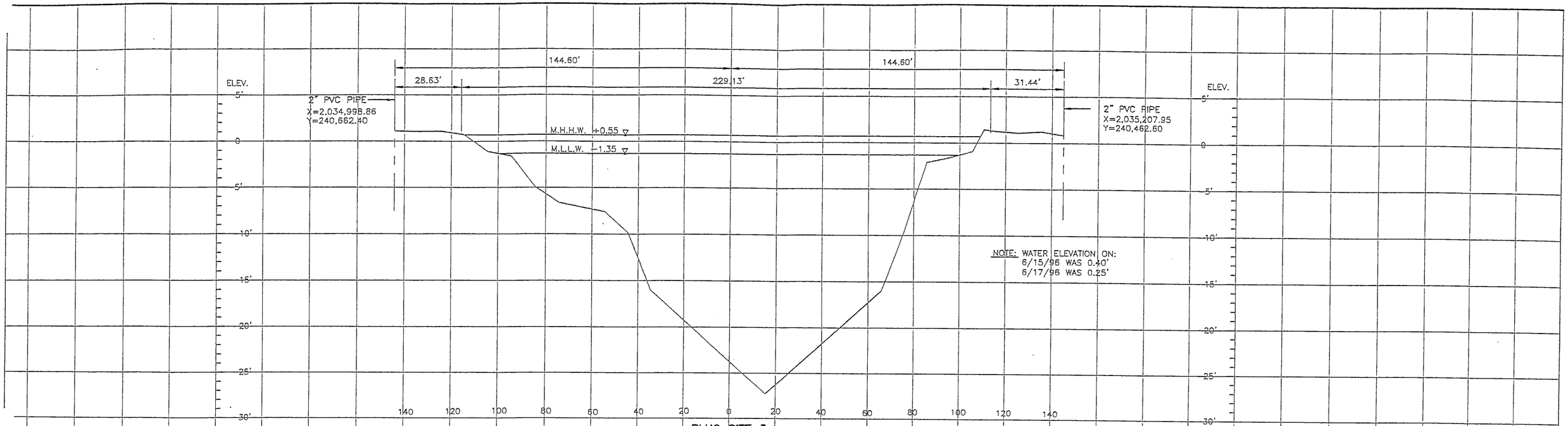
LAKE CHAPEAU, PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE-23/26A)

LOCUST BAYOU CROSS-SECTIONS

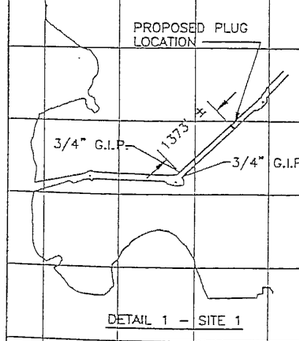
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 488-5901 FAX (504) 488-1714

JOB NO.	DESIGNED PSL	SCALE NOTED	SHT
9541	DETAILED J.P.C.	DATE FEB., 1998	9 OF 13
	CHECKED PSL	FILE NO. 95410113	

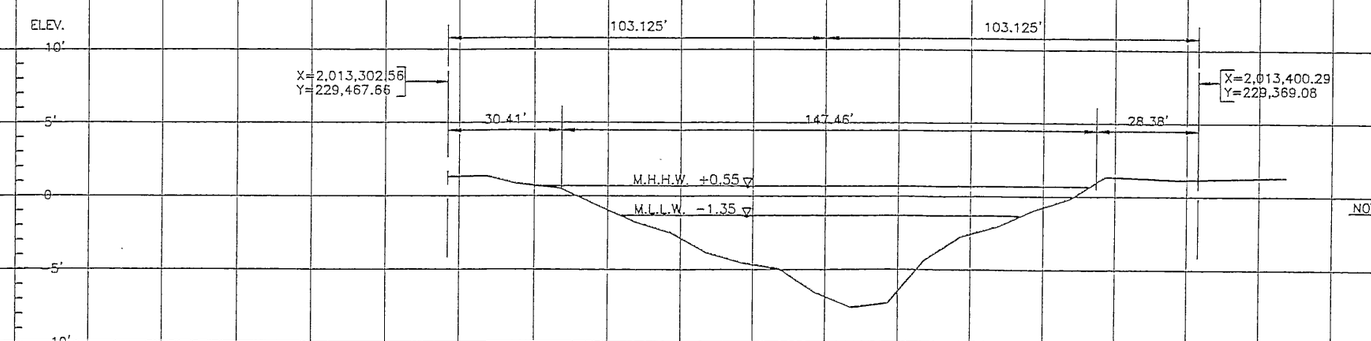
REVIEWED
PLAN IN HAND



PLUG SITE 3
LOOKING NORTHEASTERLY
(N46°18'06"W)
T20S-R12E
SECTION 16



DETAIL 1 - SITE 1



PLUG SITE 1
LOOKING NORTHEASTERLY
(N44°46'20"W)
(NOT STAKED IN FIELD- SEE DETAIL)
T20S-R11E
SECTION 26

NOTE: WATER ELEVATION ON
6/15/96 WAS 0.45'

NOTES:

CROSS-SECTIONS SURVEYED BY T. BAKER SMITH & SON, INC., FROM JUNE 7, 1996 TO JUNE 17, 1996

ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD 29)

COORDINATES REFER TO LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27)

SCALE

1"=20' HORIZONTAL

1"=5' VERTICAL

REV.	DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

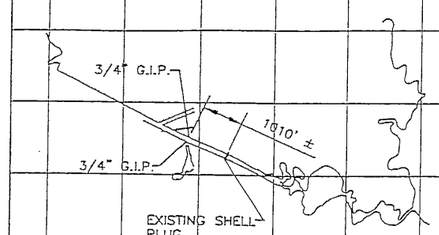
LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION ((PTE-23/26A)

PLUG SITE CROSS-SECTIONS

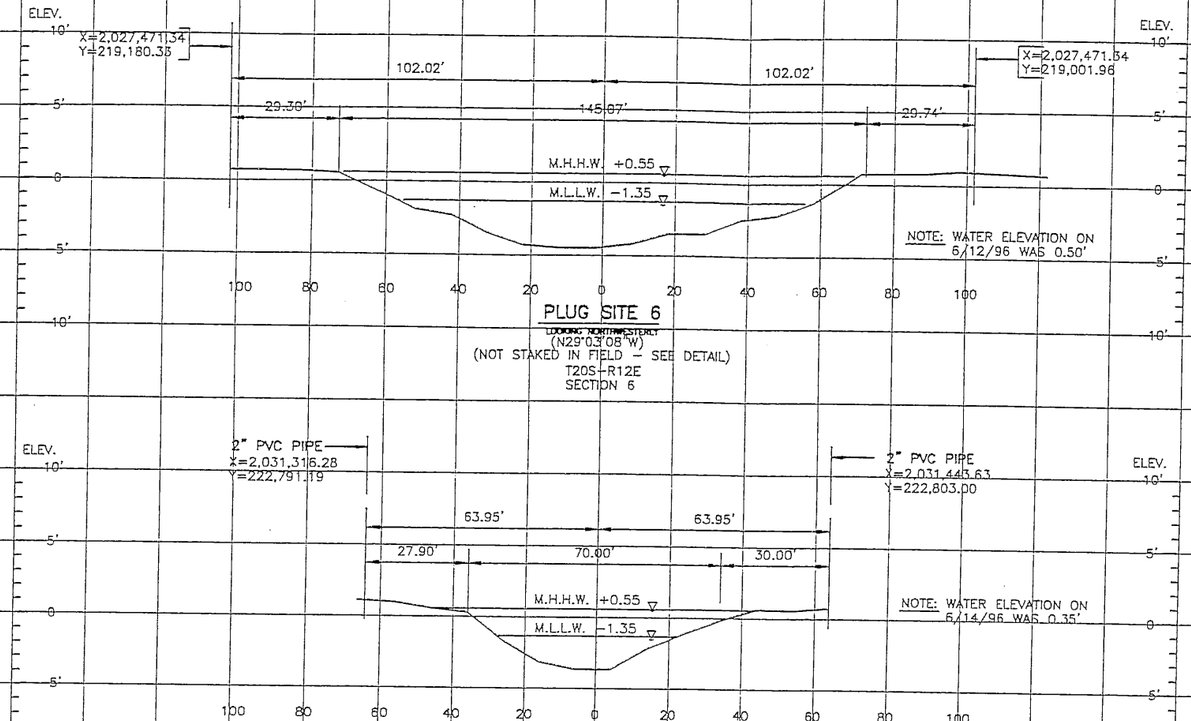
STATE OF LOUISIANA
MICHAEL G. MACKSON
REG. NO. 26148
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 486-1714

DISTRIBUTION: FEB 11, 1999



DETAIL 1 – SITE 6

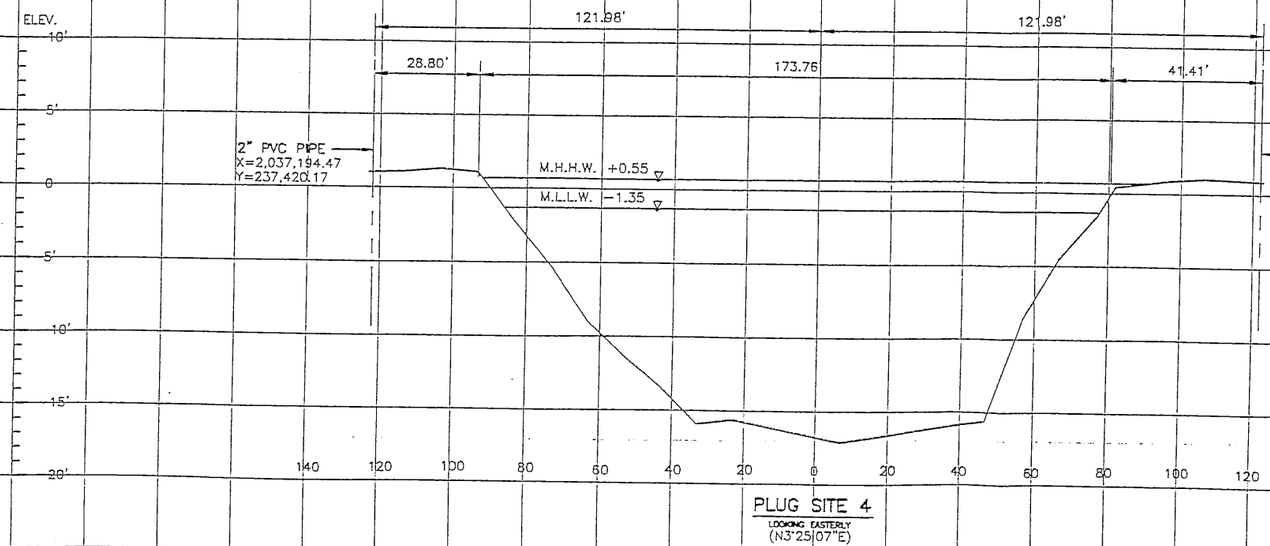


NOTE: WATER ELEVATION ON 6/12/96 WAS 0.50'

PLUG SITE 6
LOOKING NORTHWESTERLY
(N29°03'08"W)
(NOT STAKED IN FIELD – SEE DETAIL)
T20S–R12E
SECTION 6

NOTE: WATER ELEVATION ON 6/14/96 WAS 0.35'

PLUG SITE 5
LOOKING NORTHERLY
(N84°41'58"E)
T20S–R12E
SECTION 32



NOTE: WATER ELEVATION ON:
6/15/96 WAS 0.40'
6/17/96 WAS 0.35'

PLUG SITE 4
LOOKING EASTERLY
(N3°25'07"E)
T20S–R12E
SECTION 21

NOTES:

CROSS-SECTIONS SURVEYED BY T. BAKER SMITH & SON, INC., FROM JUNE 7, 1996 TO JUNE 17, 1996

ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD 29)

COORDINATES REFER TO LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27)

SCALE

1"=20' HORIZONTAL

1"=5' VERTICAL

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 23148
REGISTERED
PROFESSIONAL ENGINEER
IN

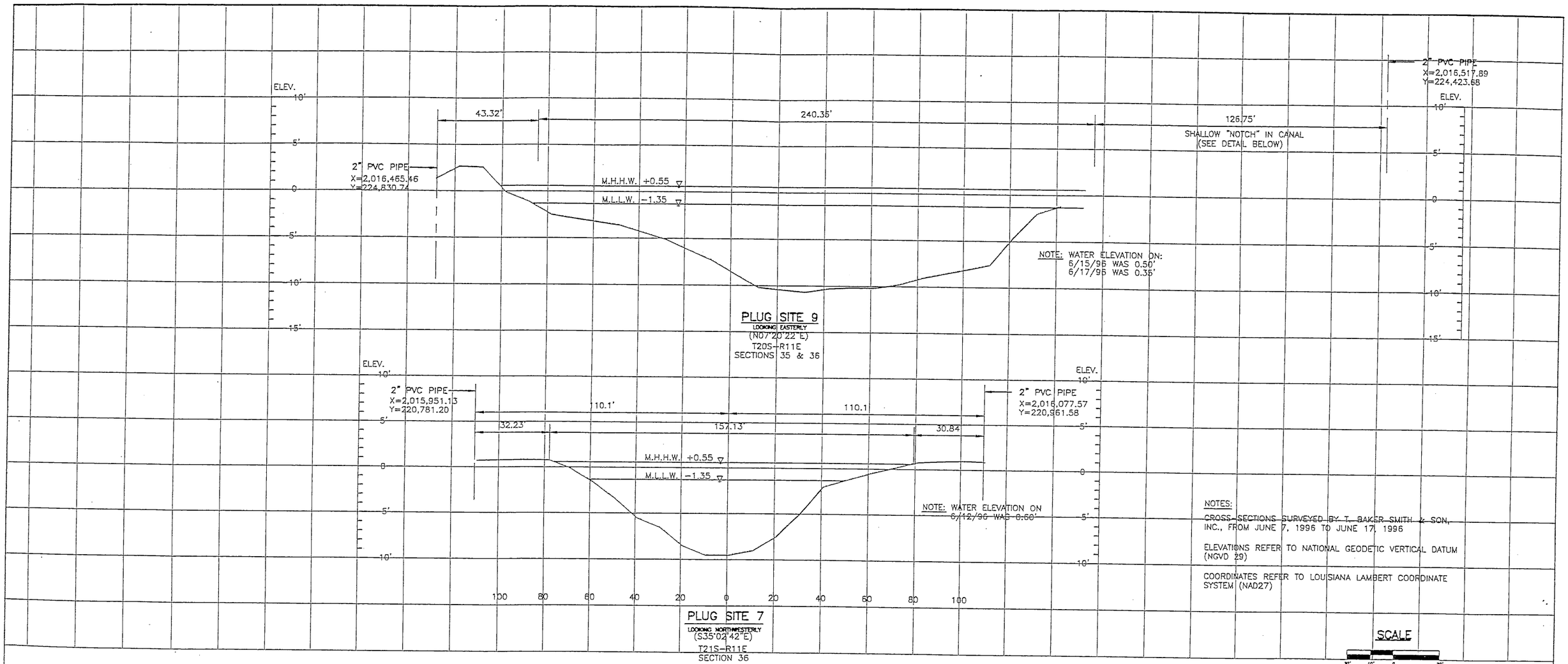
REV.	DATE	DESCRIPTION	BY

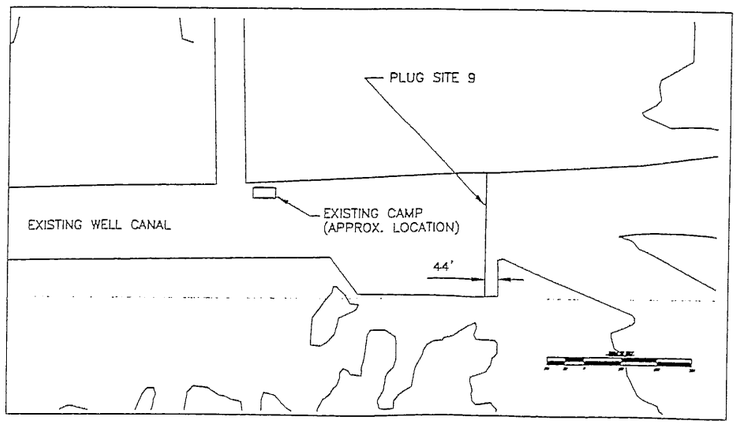
STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE-23/26A)

PLUG SITE CROSS-SECTIONS

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994





NOTES:

CROSS-SECTIONS SURVEYED BY T. BAKER SMITH & SON, INC., FROM JUNE 7, 1996 TO JUNE 17, 1996

ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD 29)

COORDINATES REFER TO LOUISIANA LAMBERT COORDINATE SYSTEM (NAD27)

SCALE

30' 15' 0 30'

1"=20' HORIZONTAL

3' 2.5' 0 5'

1"=5' VERTICAL

STATE OF LOUISIANA
MICHAEL G. JACKSON
REG. NO. 17178
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REV.	DATE	DESCRIPTION	BY

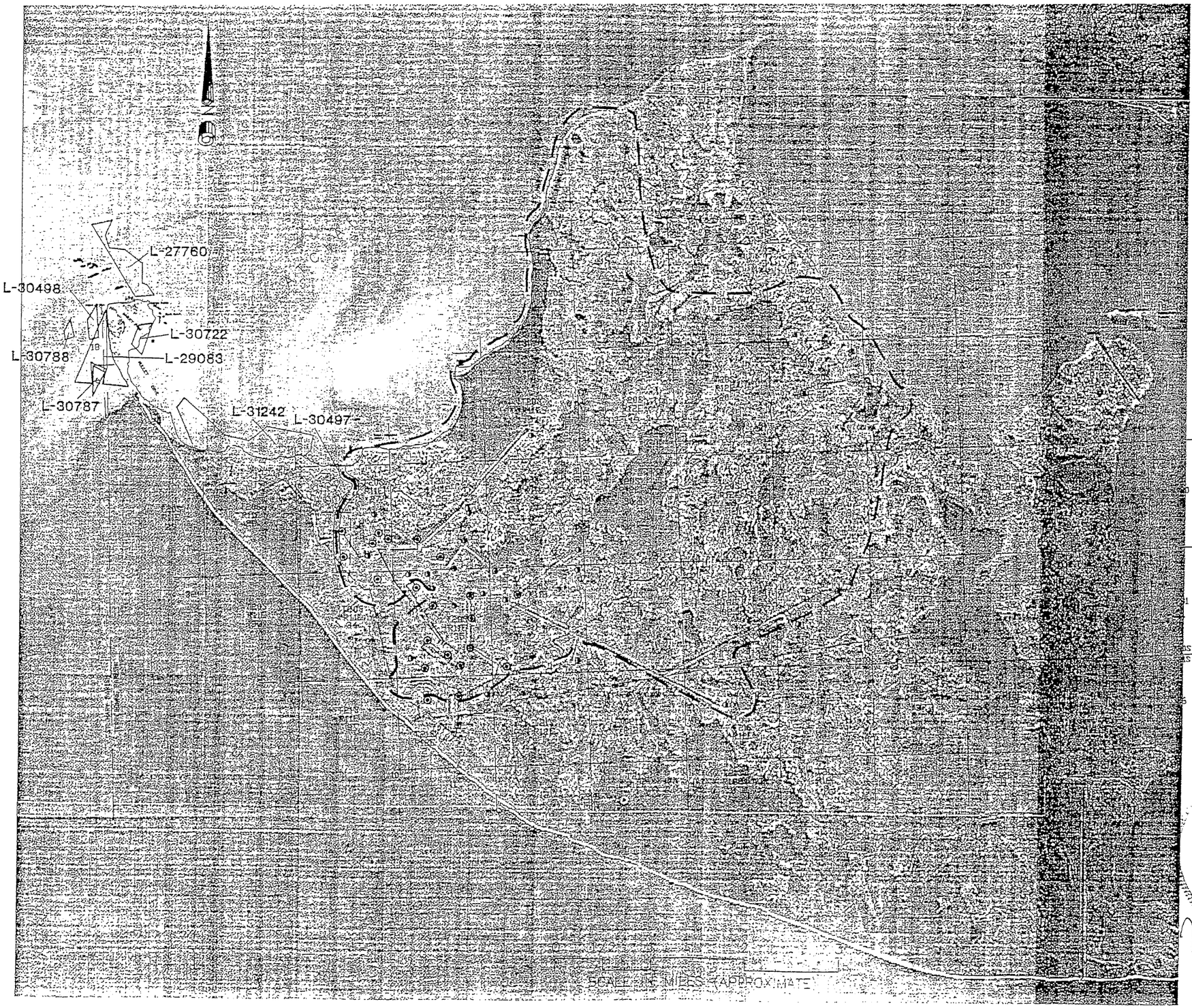
STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE-23/26A)

PLUG SITE CROSS-SECTIONS

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

CD SPECS FEB 11, 1999



Mobil Pipeline
Oryx Pipeline
Shell Pipeline
Transco Pipeline
Oryx Well Location
Shell Well Location
Mobil Well Location
Inactive Well
Salt Water Disposal Well
Locust Bayou Watershed (Project Area)
L-27760 Oyster Leases Number

NOTES:

1) PIPELINE AND WELL LOCATIONS SUPPLIED BY:

- Mobil Oil Corporation
  2509 Petroleum Drive
  Houma, LA 70363
  Contact is Ron King
  (504) 857-7307

- Oryx Energy Company
  Post Office Box 2880
  Dallas, TX 75221-2880
  Contact is David Harris
  (214) 715-4634

- Shell-Western E&P, Inc.
  Post Office Box 576, WCK5436
  Houston, TX 77001-0576
  Contact is Randy Verret
  (713) 544-4823

- Transco Pipeline
  c/o Williams Field Services
  Schriever District
  Post Office Box 485
  Schriever, LA 70395-0485
  Contact is Robbie Knight
  (504) 446-8841

- Department of Natural Resources
  Coastal Restoration Division and GIS Lab.
  Map I.D.: 96-4-213 Dated: October 8, 1996
  U. S. Department Of The Interior
  U S Geological Survey
  Baton Rouge Project Office

2) OYSTER LEASE LOCATIONS SUPPLIED BY DNR, REAL ESTATE DIVISION

MICHAEL G. JACKSON
REG. No. 19114
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

DATE	DESCRIPTION	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

LAKE CHAPEAU PROJECT PHASE I
HYDROLOGIC RESTORATION (PTE-23/26A)

LANDRIGHTS MAP

BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 486-1714

VICE PRES.	JOB NO.	DESIGNED PSL	SCALE SHOWN	NO.
REVIEWER	9541	DETAILED BDR	DATE FEB., 1998	13 of 13
PLAN IN HAND		CHECKED PSL	FILE NO. 95410117	

J.P.C. SHT13PH1.DWG FEB. 11, 1998

ATTACHMENT VI

LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION

PROJECT PERMITS
&
PERMIT AMENDMENTS

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:
Operations Division
Western Evaluation Section

APR 9 1998

C: PROJ. FILE TE-26

SUBJECT: WH-19-970-4707

National Marine Fisheries Service
C/O Louisiana State University
Baton Rouge, Louisiana 70803-7535

APR 22 9

Gentlemen:

Enclosed is a permit dated this date, subject as above, authorizing work under the Department of the Army permit program.

You are again reminded that any work not in accordance with the plans is subject to removal regardless of the expense and the inconvenience that such removal may involve and regardless of the date when the discrepancy is discovered.

Your attention is directed to all the terms and conditions of the approval, especially those conditions relative to supervision and approval of work by the District Engineer. In order to have the work finally approved and declared legal, all terms and conditions of the permit and plans shown on the drawings attached thereto must be rigidly adhered to.

It is necessary that you notify the District Engineer, Attention: Surveillance and Enforcement Section, in writing, prior to commencement of work and also upon its completion. The notification must include the permittee's name, as shown on the permit, and the permit number. Please note the expiration date on the permit. Should the project not be completed by that date, you may request a permit time extension. Such requests must be received before, but no sooner than 6 months before, the permit expiration date and must show the work completed and the reason the project was not finished within the time period granted by the permit.

The enclosed Notice of Authorization, ENG Form 4336, is to be conspicuously displayed at the site of work.

Sincerely,

Ronald J. Ventola

Ronald J. Ventola
Chief, Regulatory Functions Branch

Enclosure

DEPARTMENT OF THE ARMY PERMIT

Permittee National Marine Fisheries Service

Permit No. WH-19-970-4707

Issuing Office New Orleans District

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:

Dredge and deposit earthen and water bottom material and install and maintain seven rock weirs to implement the Lake Chapeau Sediment Input and Hydrologic Restoration Project (CWPPRA Project No. PTE-23/26a), in accordance with the drawings attached in nine sheets, dated June 1997.

Project Location:

In Atchafalaya Bay and on Point au Fer Island, at a location central to a point approximately 28 miles southwesterly from Morgan City, Louisiana, in St. Mary and Terrebonne Parishes.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on April 30, 2003. 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.

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 of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

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

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

Special Conditions:

Special conditions continued on page 4.

Further Information:

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

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

(XX) 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.

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 project.

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

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

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

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

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

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

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

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

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

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

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

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

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

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

Ricky N. Rubsamen /NMFS — 4-2-98

(PERMITTEE) (DATE)

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

Ronald J. Ventola — 9 Apr 98

~~DISTRICT ENGINEER~~ (DATE)

Ronald J. Ventola, Chief, Regulatory Functions Branch
for William L. Conner, District Engineer

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) (DATE)

SPECIAL CONDITIONS:
MH-19-970-4707

7. The permittee shall ensure that the barriers will be visible to the boating public both day and night so as to reduce the possibility of boat collision with the structures.

8. The permittee is hereby made aware that under 33 CFR 330.5(a)(1), signs may be placed as aids to navigation warning boaters of the upcoming barriers in the waterways provided they are approved and installed with the requirements of the U.S. Coast Guard.

9. The permittee must install and maintain, at his expense, any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on the authorized structures/facilities.

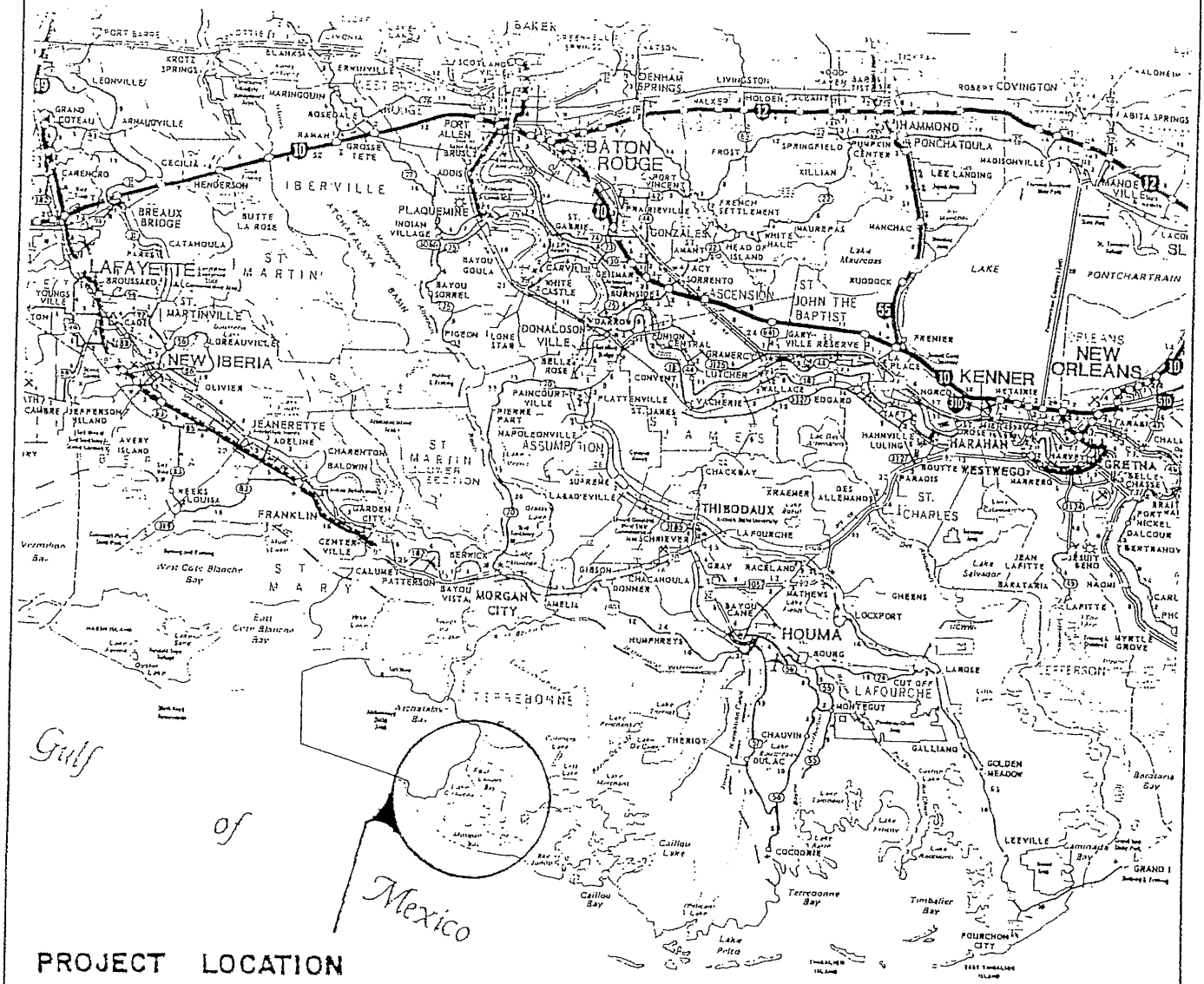
10. Structures and fill will not be placed on state-owned water bottoms without the approval of the Louisiana Division of Administration, State Land Office. The permittee will be responsible for contacting the State Land Office to ascertain if any structures or fill will be placed on state-owned water bottoms.

11. The permittee shall provide written notification of work completion to the New Orleans District, Regulatory Functions Branch (CEMVN-OD-SW) immediately following installation of the authorized project components.

12. The permittee shall monitor ecosystem response to project implementation in accordance with the final CWPPRA monitoring plan dated June 17, 1996. Monitoring reports shall be submitted to CEMVN-OD-SW upon availability.

13. Maintenance dredging, including dredging for material to maintain project features authorized herein, is approved for a period of ten (10) years from the date of permit issuance. Maintenance operations shall not exceed specifications shown in the permit drawings.

14. The permittee is made aware that any deviation from the permitted project design may require prior review and approval by the District Engineer.



PROJECT LOCATION

SCALE IN MILES

0 5 10 15 20

SHEET 1 OF 8
VICINITY MAP

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION

PARISHES OF ST. MARY AND TERREBONNE
STATE OF LOUISIANA

APPLICATION BY NATIONAL MARINE FISHERIES SERVICE
BATON ROUGE, LOUISIANA – JUNE 1997

PREPARED BY

BURK-KLEINPETER, INC.

ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5884
(504) 486-5601 FAX (504) 486-1714

SHEET 2 OF 8

PROJECT LOCATION MAP

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION

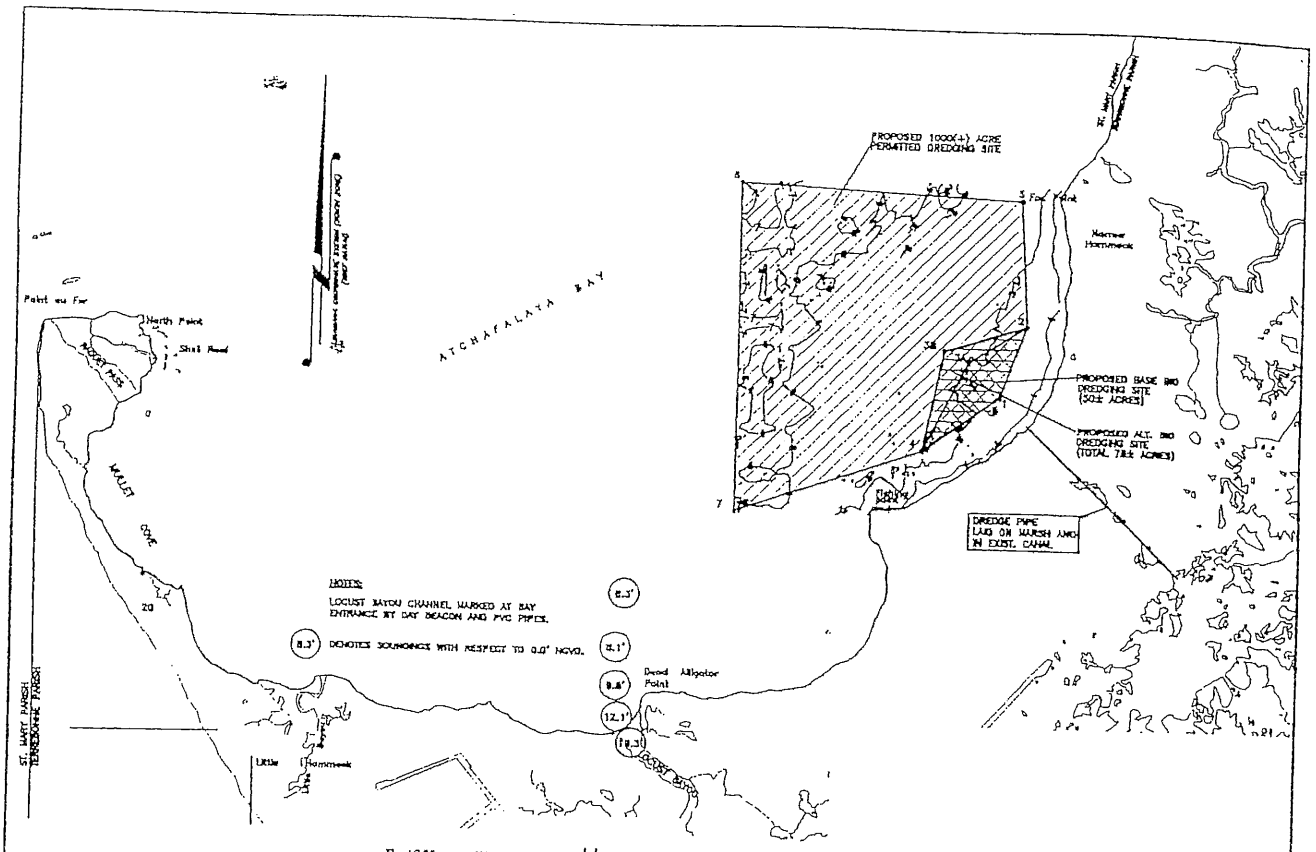
PARISHES OF ST. MARY AND TERREBONNE
STATE OF LOUISIANA

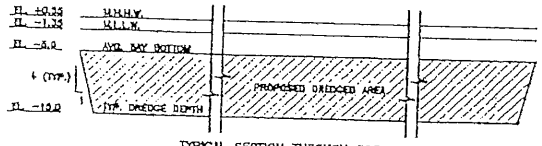
APPLICATION BY NATIONAL MARINE FISHERIES SERVICE
BATON ROUGE, LOUISIANA – JUNE 1997

PREPARED BY

BURK-KLEINPETER, INC.

ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 482-1744





TYPICAL SECTION THROUGH DREDGE AREA
N.T.S.

DREDGE AREA LOCATIONS

POINT No.	X-COORD.	Y-COORD.	DIST. FROM POINT AU FER SHORELINE	DIST. FROM PVC MARKER AT CHANNEL
1	2,018,801.2640	240,870.8585	900'	2700'
2	2,017,428.1118	242,581.3286	900'	3600'
3A	2,018,000.8642	241,890.0058	2100'	3800'
3B	2,015,147.8641	241,862.9105	2700'	4400'
4	2,014,848.2458	238,561.3611	900'	3600'

PERMITTED DREDGE SITE

POINT No.	X-COORD.	Y-COORD.	DIST. FROM POINT AU FER SHORELINE	DIST. FROM PVC MARKER AT CHANNEL
1	2,018,801.2640	240,870.8585	900'	2700'
5	2,017,244.5964	245,611.8408	900'	6800'
8	2,010,467.0182	245,928.0853	7000'	10,800'
7	2,010,467.0182	238,036.0104	3300'	8300'

NOTES:

1. THE PROJECT BASELINE DREDGE AREA SHOWN CORRESPONDS TO A BAY BOTTOM SURFACE AREA OF OVER 50 ACRES.
2. ASSUMING AN AVERAGE DREDGING DEPTH OF 10 FEET, THE BASELINE DREDGE AREA WILL PRODUCE APPROXIMATELY 812,500 CUBIC YARDS OF MATERIAL.
3. ASSUMING AN AVERAGE FILL DEPTH OF 3 FEET IN THE CONTAINMENT AREA, AND TAKING INTO ACCOUNT SETTLEMENT AND SHRINKAGE OF THE FILL, THE BASELINE DREDGE AREA WILL PRODUCE APPROXIMATELY 168 ACRES OF LAND FILL (SEE SHT. 4).
4. THE ALTERNATE DREDGE AREA SHOWN CORRESPONDS TO A SURFACE AREA OF APPROXIMATELY 78 ACRES.
5. ASSUMING AN AVERAGE DREDGING DEPTH OF 10 FEET, THE ALTERNATE DREDGE AREA WILL PRODUCE APPROXIMATELY 1,258,400 CUBIC YARDS OF MATERIAL.
6. ASSUMING AN AVERAGE FILL DEPTH OF 3 FEET IN THE CONTAINMENT AREA, AND TAKING INTO ACCOUNT SETTLEMENT AND SHRINKAGE OF THE FILL, THE ALTERNATE DREDGE AREA WILL PRODUCE APPROXIMATELY 250 ACRES OF LAND FILL (SEE SHT. 4).
7. AVERAGE DEPTH IN BASELINE AND ALTERNATE DREDGE AREAS IS 8 FEET. ADDITIONAL PERMITTED DREDGE AREA IS PROVIDED IF GREATER DRAFT IS REQUIRED FOR DREDGE VESSEL.
8. WATER DEPTHS IN ATCHAFALAYA BAY ARE ADEQUATE FOR ACCESS TO PERMITTED DREDGING SITE.
9. DREDGING CONTRACTOR MUST MAINTAIN A MINIMUM DISTANCE OF 900' OFF THE WESTERN POINT AU FER SHORELINE FOR ALL DREDGING OPERATIONS.
10. IN NO CASE SHALL THE CONTRACTOR DREDGE BELOW 12 FEET BELOW THE EXISTING BAY BOTTOM.
11. DREDGING SEQUENCE SHALL BEGIN AT THE EXTREME SOUTHEASTERN POINT (POINT 1) AND PROCEED IN A NORTH-WESTERLY DIRECTION.

SCALE IN FEET
1000' 0 1000' 2000' 3000'

LEGEND:

- 50(+)± ACRE BASELINE (B) DREDGING AREA
- 78± ACRE ALTERNATE (B) DREDGING AREA
- 1,000(+)± ACRE TOTAL PERMITTED DREDGING AREA

PREPARED BY
BURK-KLEINPETER, INC.
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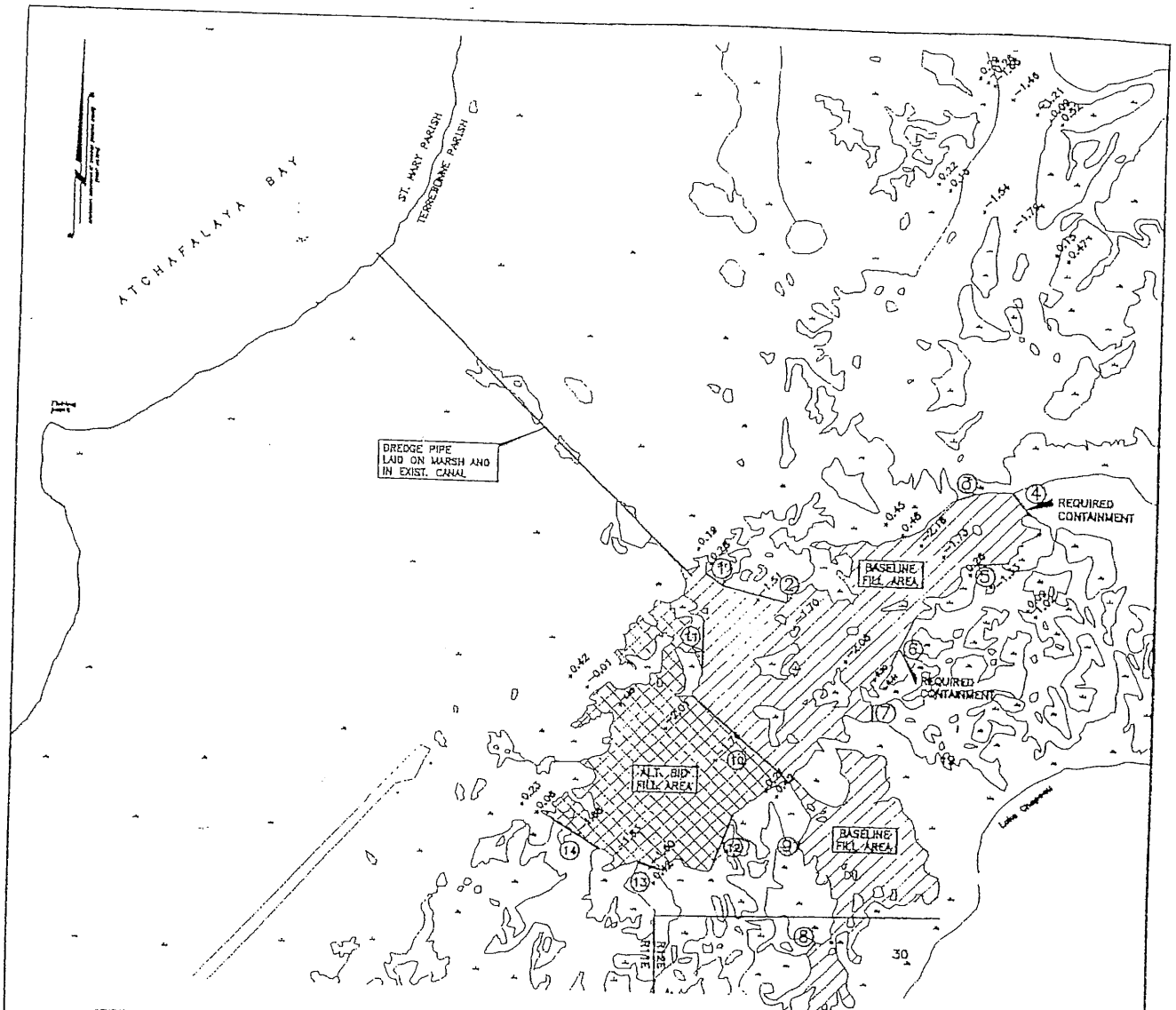
SHEET 3 OF 8

DREDGE AREA SITE PLAN

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION

PARISHES OF ST. MARY AND TERREBONNE
STATE OF LOUISIANA

APPLICATION BY NATIONAL MARINE FISHERIES SERVICE
BATON ROUGE, LOUISIANA – JUNE 1997



GENERAL NOTES:

1. AVERAGE ELEVATION OF OPEN WATER CONTAINMENT AREA IS −1.5' NGVD.
2. AVERAGE ELEVATION OF MARSH IN VICINITY OF CONTAINMENT AREA IS +0.5' NGVD.
3. ASSUMED INITIAL FILL ELEVATION IN CONTAINMENT AREA TO ACHIEVE FINAL MARSH ELEVATION OF +0.5' NGVD AFTER CONSOLIDATION IS +1.5' NGVD.
4. THE BASELINE FILL AREA SHOWN WILL YIELD A SURFACE AREA OF ABOUT 196 ACRES.
5. WITH AN AVERAGE FILL DEPTH OF 3 FEET IN THE BASELINE FILL AREA, THE TOTAL REQUIRED VOLUME OF FILL MATERIAL IS APPROXIMATELY 912,500 CUBIC YARDS.
6. THE ALTERNATE BID FILL AREA SHOWN WILL YIELD AN ADDITIONAL SURFACE AREA OF ABOUT 82 ACRES, CORRESPONDING TO A TOTAL FILL AREA OF 280 ACRES.
7. WITH AN AVERAGE FILL DEPTH OF 3 FEET IN THE ALTERNATE BID FILL AREA, THE TOTAL REQUIRED VOLUME OF FILL MATERIAL IS APPROXIMATELY 1,254,400 CUBIC YARDS.
8. THE SECTIONS OF CONTAINMENT LABELLED "10" AND "11" ARE ONLY TO BE CONSTRUCTED FOR THE BASELINE BID CASE.
9. THE SECTIONS OF CONTAINMENT LABELLED "12," "13," AND "14" ARE ONLY TO BE CONSTRUCTED FOR THE ALTERNATE BID CASE.

APPROXIMATE CONTAINMENT LOCATIONS

SITE No.	BEARING	LENGTH
1	S55°20'55"E	248'
2	S76°31'38"E	764'
3	N70°08'19"E	341'
4	S38°54'32"E	308'
5	S88°40'01"W	303'
6	S28°08'32"W	606'
7	DUE S	180'
8	N38°35'39"E	173'
9	N31°07'24"E	102'
10	N49°48'12"W	1,444'
11	N00°28'58"E	384'
12	S18°37'48"W	675'
13	N72°08'32"W	268'
14	N56°04'48"W	641'

LEGEND:

BASE BID FILL AREA

ALTERNATE BID FILL AREA

CONTAINMENT

SCALE IN FEET
600' 300' 0 600' 1200' 1800'

DRAWING NOTES:
TOPOGRAPHY TAKEN FROM U.S.G.S. QUADRANGLE "POINT AU FER, LA."
TOP OF WATER AT −0.06' N.G.V.D.

SHEET 4 OF 8

CONTAINMENT AREA SITE PLAN

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION

PARISHES OF ST. MARY AND TERREBONNE
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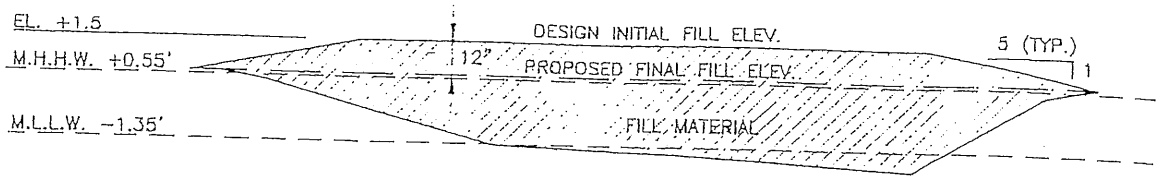
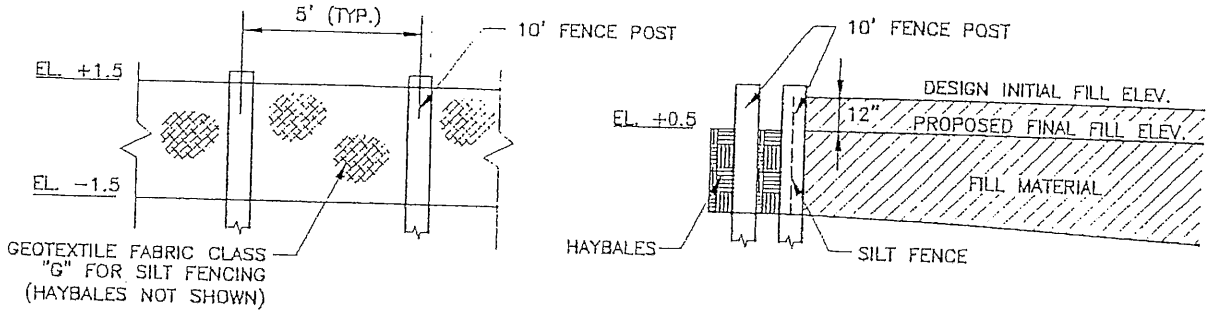


TYPICAL CONTAINMENT AREA SECTION
NOT TO SCALE

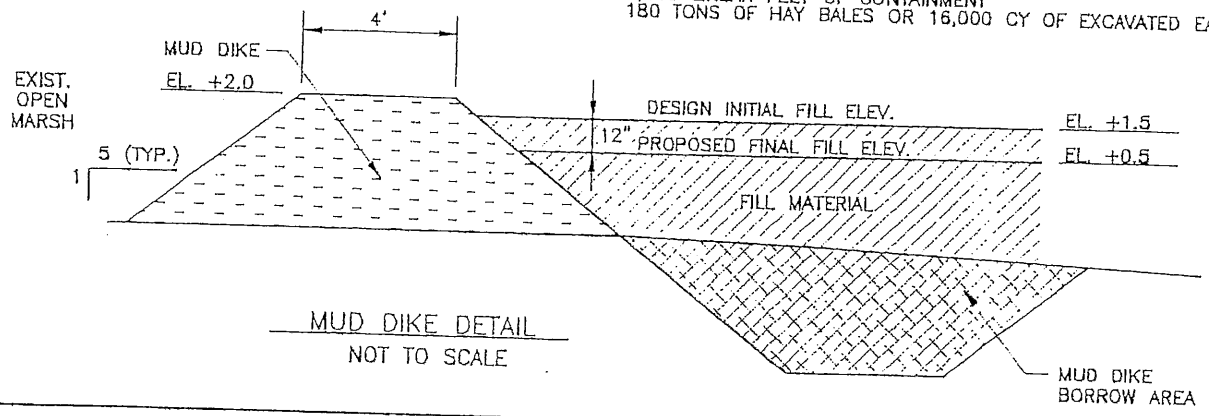
NOTE: FILL TO BE CONTAINED BY NATURAL EMERGENT MARSH EXCEPT WHERE SPECIFIED ON SHEET 4. CONSTRUCTED CONTAINMENT SYSTEMS MAY BE EITHER SILT FENCE WITH HAYBALES OR MUD DIKE EXCAVATED FROM WITHIN CONTAINMENT AREA.



SILT FENCE DETAILS
NOT TO SCALE

CONTAINMENT NOTES:

1. SILT FENCING AND HAYBALES SHALL BE AS PER SECTION 204 OF THE "LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES," 1992 ED.
2. EARTH FOR CONTAINMENT DIKE SHALL BE EXCAVATED FROM WITHIN OPEN MARSH AREA.
3. BASE BID QUANTITIES :
   4,960 LINEAR FEET OF CONTAINMENT
   200 TONS OF HAY BALES OR 17,640 CY OF EXCAVATED EARTH
4. ALTERNATE BID QUANTITIES :
   4,500 LINEAR FEET OF CONTAINMENT
   180 TONS OF HAY BALES OR 16,000 CY OF EXCAVATED EARTH



MUD DIKE DETAIL
NOT TO SCALE

SHEET 4A OF 8
TYPICAL CONTAINMENT SECTIONS

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION

PARISHES OF ST. MARY AND TERREBONNE
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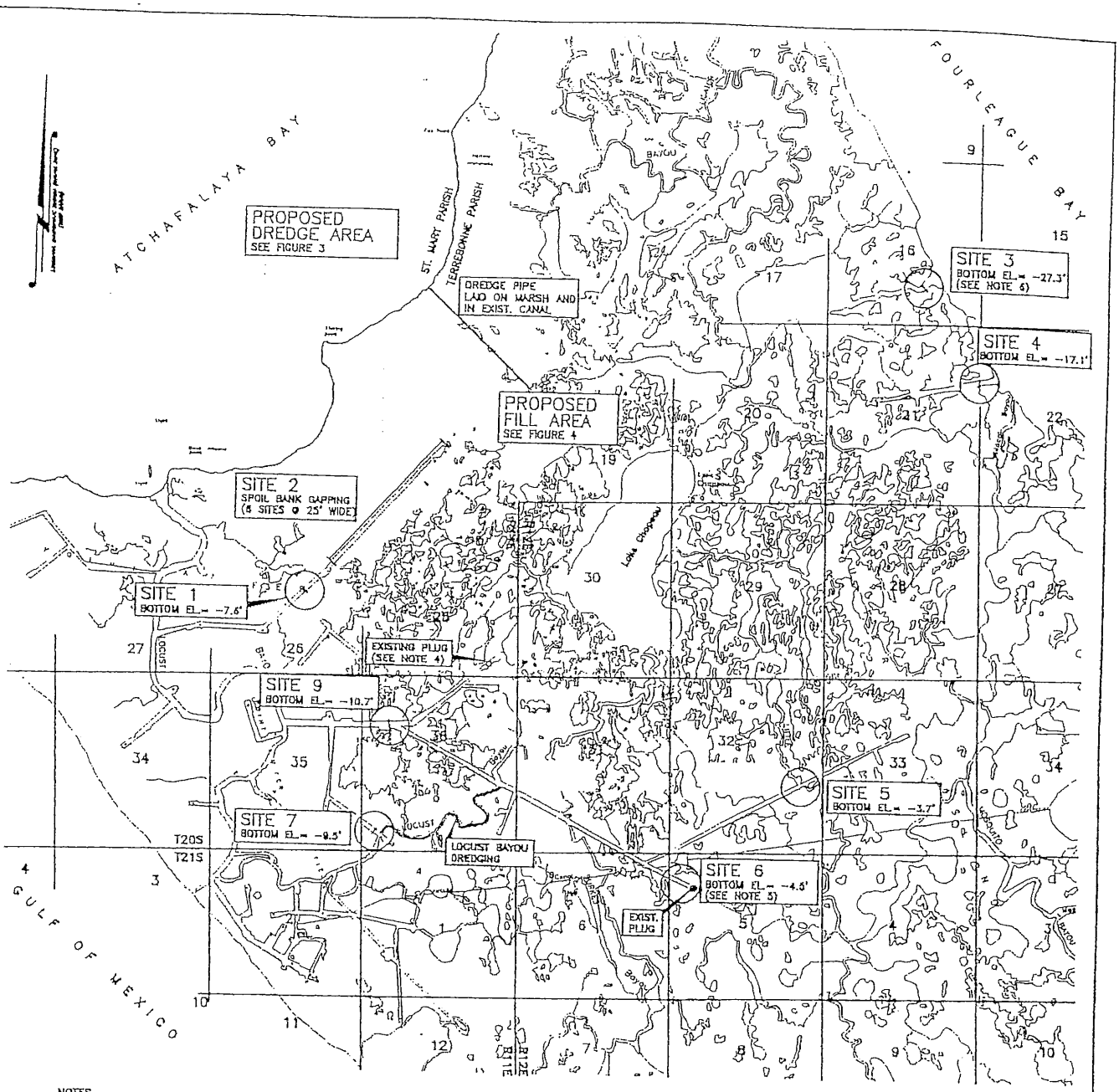

NOTES

1. FOR SHELL PLUG DETAILS SEE SHEET 6.
2. FOR SPOIL BANK GAPPING DETAILS SEE SHEET 7.
3. FOR LOCUST BAYOU DREDGING DETAILS SEE SHEET 8
4. THE EXISTING PLUG NEAR SITE 9 IS A BURNED TIMBER STRUCTURE WITH SHELL ARMOR PLATING. IT MAY BE REMOVED AT THE CONTRACTOR'S DISCRETION AND RESPONSIBILITY IF NECESSARY FOR ACCESS INTO LOCUST BAYOU. ALTERNATE ROUTES ARE POSSIBLE.
5. THE EXISTING PLUG AT SITE 6 IS A DILAPIDATED SHELL STRUCTURE. THE NEW SHELL PLUG 6 WILL BE CONSTRUCTED OVER THIS EXISTING PLUG USING THE IN-PLACE MATERIAL AS A CORE.
6. THE CREST OF PLUG 3 IS REQUIRED TO BE SET AT ELEVATION -4.0' NGVD. ALL OTHER STRUCTURES HAVE CREST ELEVATIONS OF 0.0 NGVD.
7. ALL ELEVATIONS REFER TO NATIONAL GEODETIC VERTICAL DATUM (NGVD).
8. STRUCTURE MARKERS ARE 2" PVC PIPES DRIVEN APPROXIMATELY 30' ON EITHER SIDE OF NORMAL HIGH BANK LOCATIONS.

SCALE IN FEET

2000' 0 2000' 4000' 6000'

SHEET 5 OF 8

PROPOSED PLUG SITE PLAN

DRAWING NOTES

TOPOGRAPHY TAKEN FROM U.S.G.S. QUADRANGLES "POINT AU FER, LA.", "FOURLEAGUE BAY, LA.", AND OYSTER BAYOU, LA." BASE MAP TAKEN FROM 1994 INFRARED AERIAL PHOTOGRAPHY SUPPLIED BY NBS.

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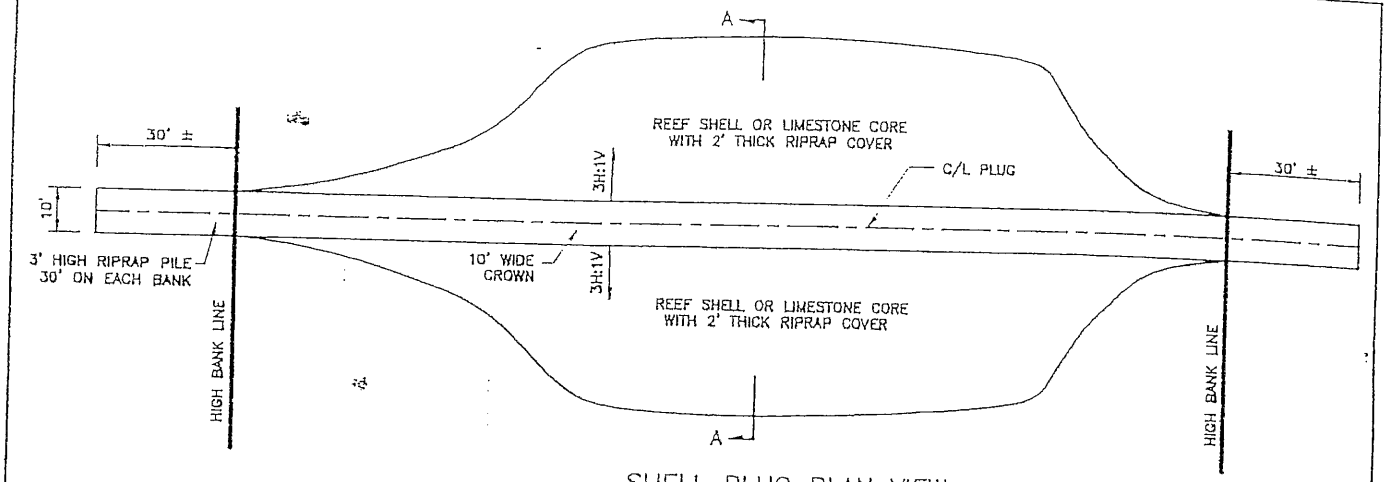
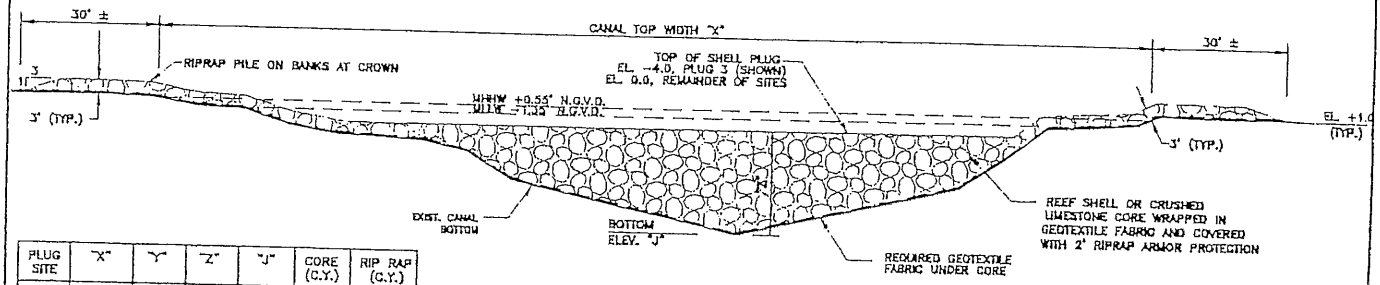


SHELL PLUG PLAN VIEW

NOT TO SCALE



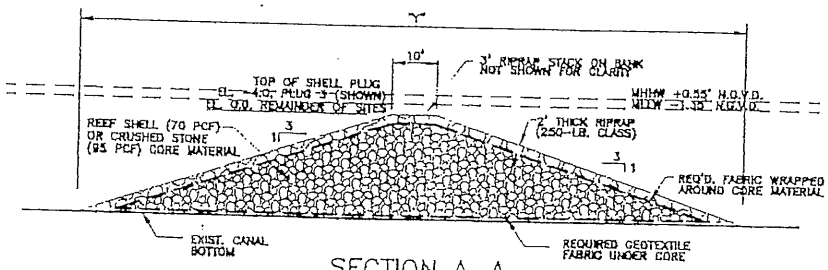
SHELL PLUG ELEVATION

NOT TO SCALE

PLUG SITE	"X"	"Y"	"Z"	"J"	CORE (C.Y.)	RIP RAP (C.Y.)
1	147.5'	56'	7.8'	-7.8	300	400
3	229.1'	150'	23.3'	-27.3	5,200	1,200
4	173.8'	113'	17.1'	-17.1	3,600	1,100
5	70.0'	32'	3.7'	-3.7	20	200
6	145.1'	37'	4.5'	-4.5	100	400
7	157.1'	67'	9.5'	-9.5	600	500
9	240.4'	74'	10.7'	-10.7	1,600	1,000

STONE SIZE (LBS.)	% OF STONE SMALLER THAN
1250	100
500	45--100
250	15--50
80	0--15

RIPRAP GRADATION
250-LB. CLASS



SECTION A-A

NOT TO SCALE

SHEET 6 OF 8

TYPICAL SECTION - PLUG STRUCTURE

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION

PARISHES OF ST. MARY AND TERREBONNE
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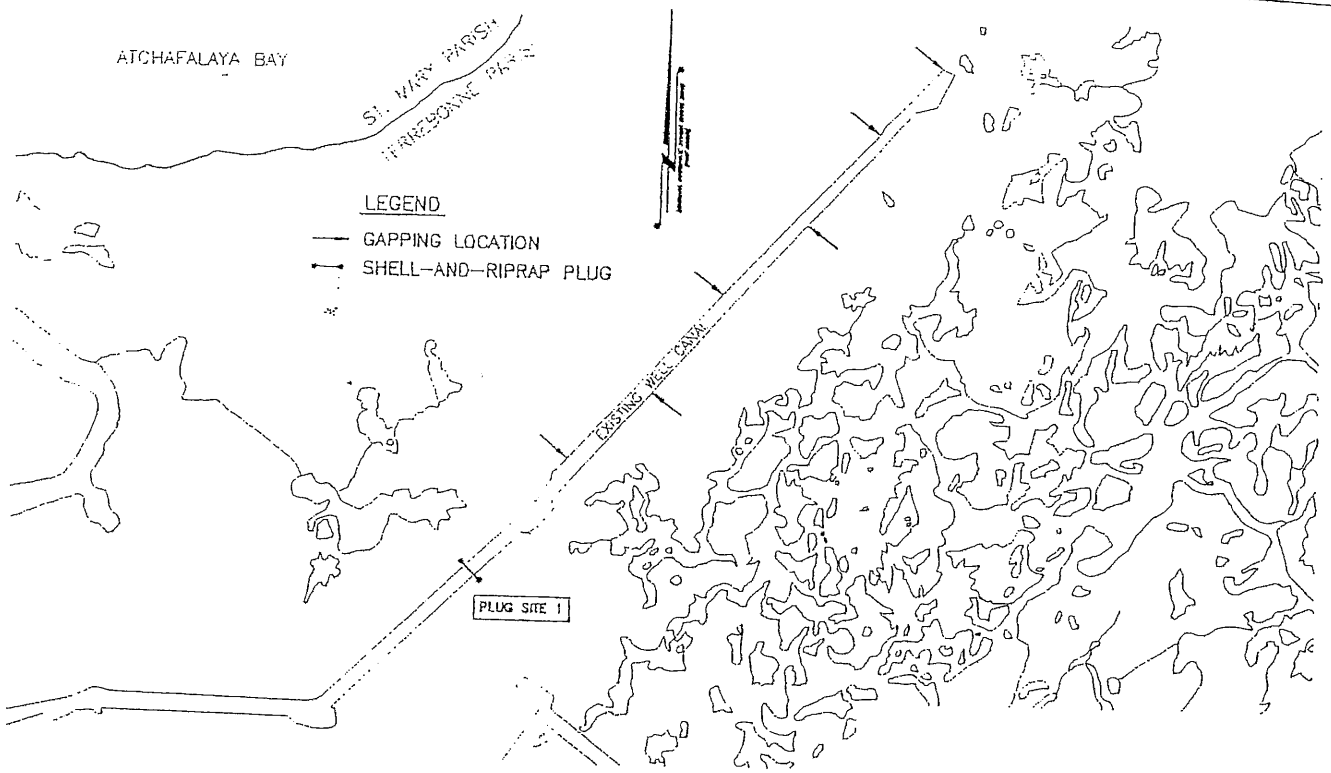
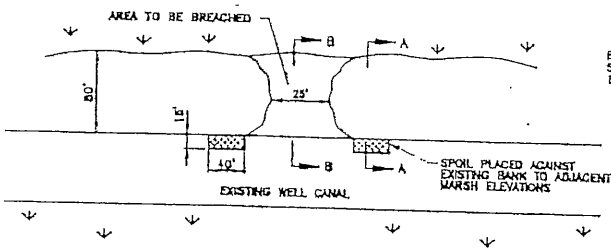
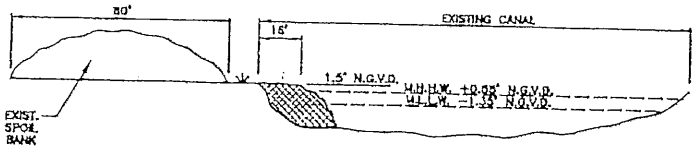


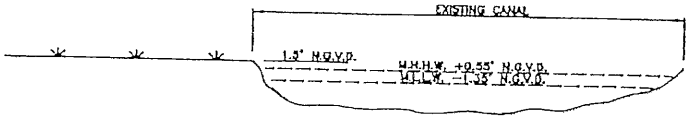
GAPPING LOCATION PLAN
NOT TO SCALE



GAPPING DETAIL
NOT TO SCALE



TYPICAL CROSS SECTION – A
NOT TO SCALE



TYPICAL CROSS SECTION – B
NOT TO SCALE

NOTE :

TOTAL OF 1,350 CUBIC YARDS (CY) OF SPOIL BANK TO BE EXCAVATED (AVERAGE OF 225 CY PER GAP SECTION).

SHEET 7 OF 8

SPOIL BANK GAPPING – SITE 2

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION

PARISHES OF ST. MARY AND TERREBONNE
STATE OF LOUISIANA

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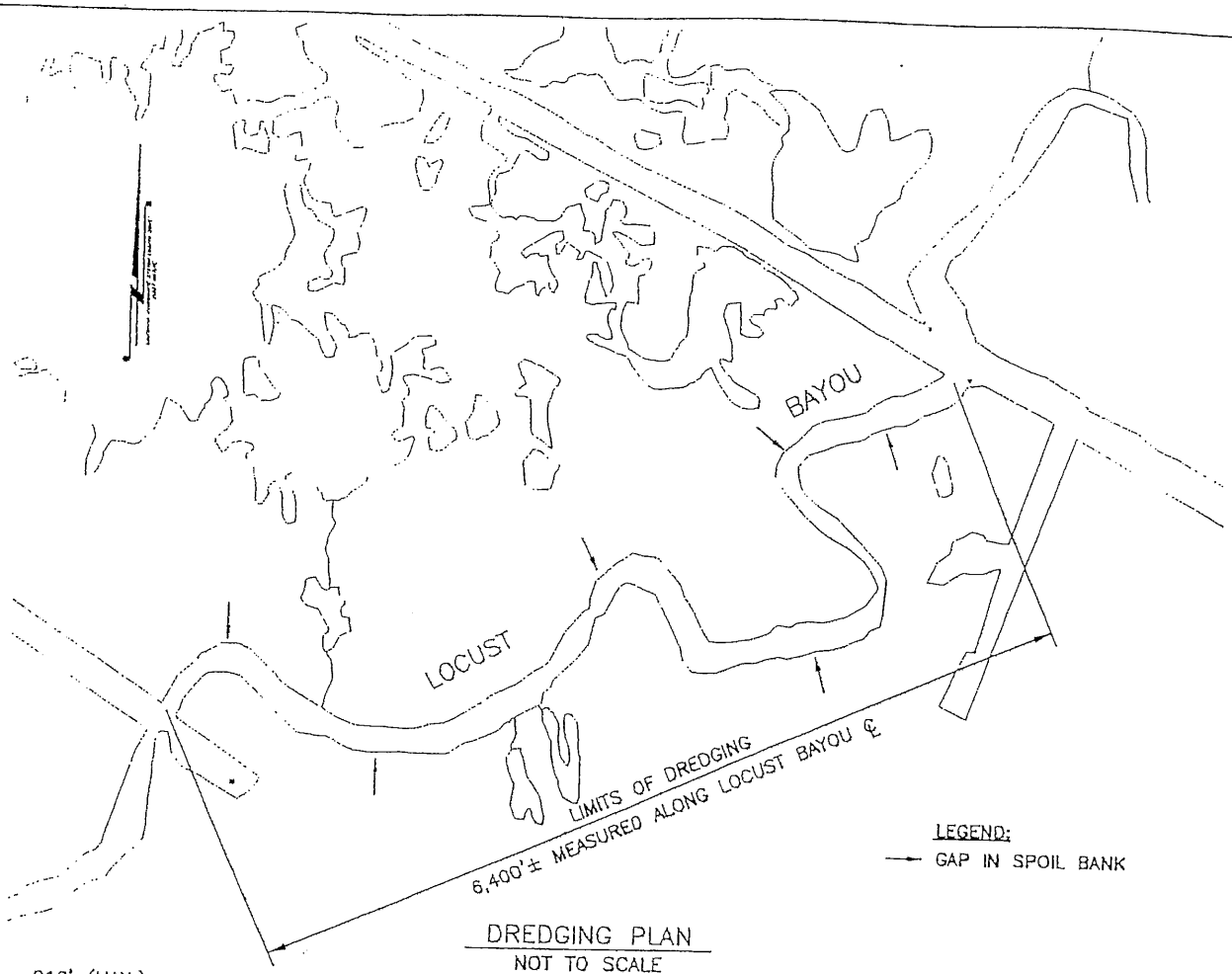
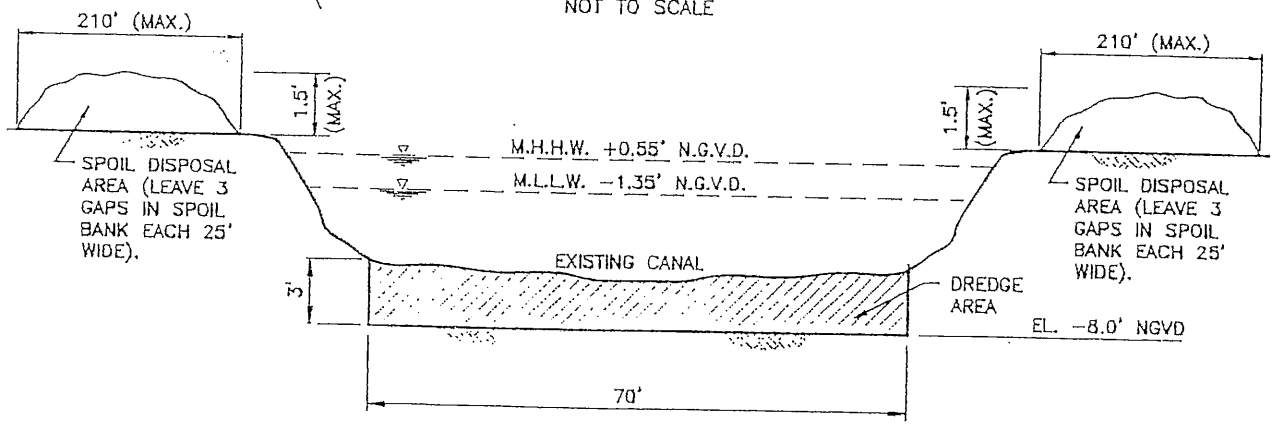


DREDGING PLAN
NOT TO SCALE



NOTE :

TOTAL OF 51,000 CUBIC YARDS (CY) OF DREDGE MATERIAL TO BE DISPOSED ALONG NORTH AND SOUTH BANKS.

DREDGING SECTION
NOT TO SCALE

NOTE:

PERMITTEE SHALL CONTACT "LOUISIANA ONE CALL" (1-800-272-3020) AT LEAST 48 HRS. PRIOR TO THE START OF DREDGING ACTIVITY.

SHEET 8 OF 8
LOCUST BAYOU DREDGING PLAN

LAKE CHAPEAU SEDIMENT INPUT AND HYDROLOGIC RESTORATION

PARISHES OF ST. MARY AND TERREBONNE
STATE OF LOUISIANA

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BATON ROUGE, LOUISIANA – JUNE 1997

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UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Habitat Conservation Division
c/o Louisiana State University
Baton Rouge, Louisiana 70803-7535

January 13, 1999 F/SER44/RR:jk
225/389-0508

Mr. Martin S. Mayer
New Orleans District
U.S. Army, Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Mr. Mayer:

Enclosed you will find a completed application, project design plats, and supporting material for spoil bank breach repair near Lake Chapeau in Terrebonne Parish, Louisiana. By letter to the Louisiana Department of Natural Resources of November 13, 1998, a copy of which was provided to you, I requested that the subject work be authorized under the emergency procedures provisions of the Corps of Engineers' Programmatic General Permit (PGP).

Thank you for your past assistance and attention to this matter.

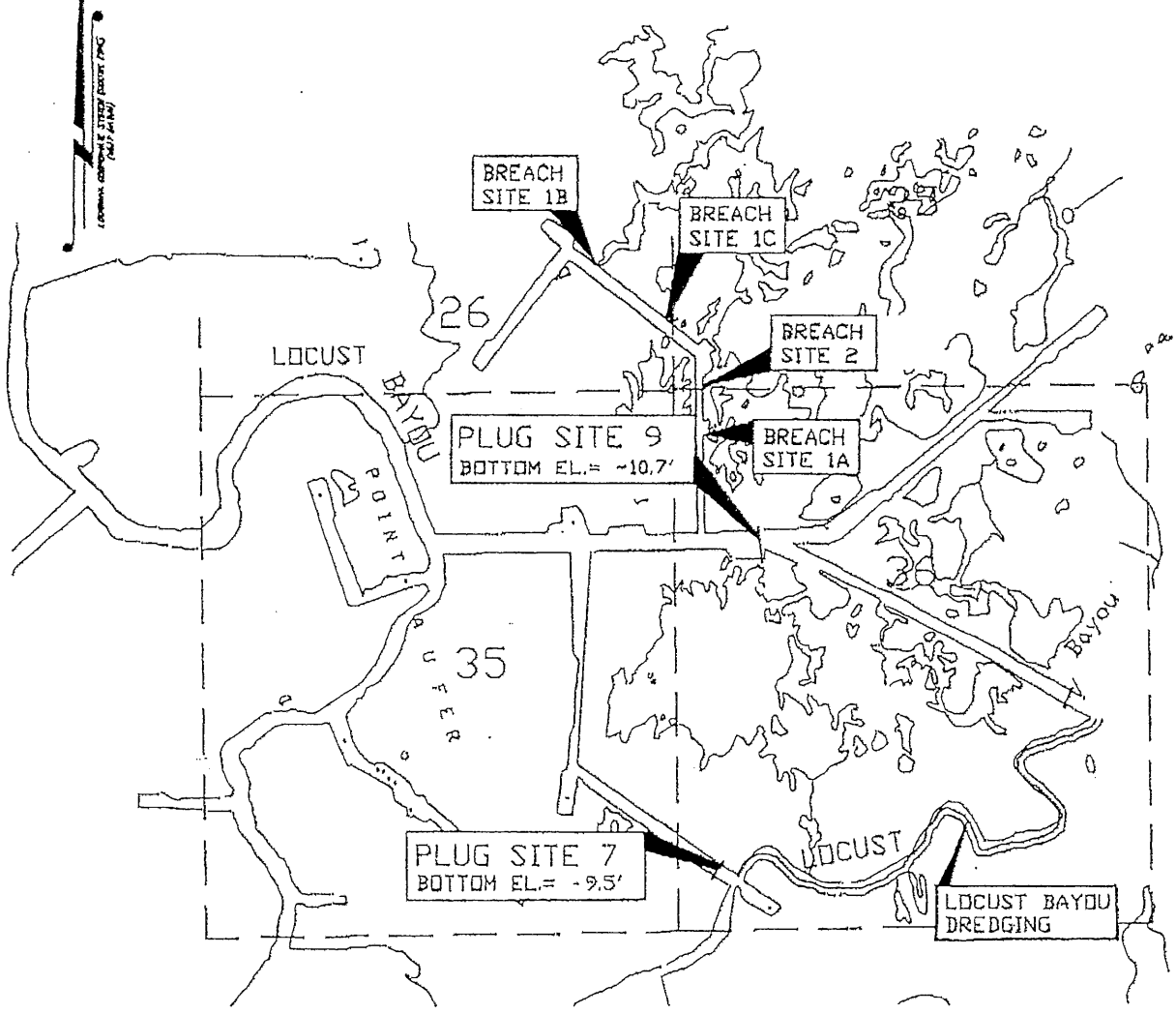
Sincerely,

Rickey N. Ruebsamen

Rickey N. Ruebsamen
Chief, Baton Rouge Office

Enclosure

c: PROJ FILE TE-26



BREACH AREA SITE MAP

NOT TO SCALE

NOTES:

1. LOCATIONS ARE APPROXIMATE. CONTRACTOR TO LOCATE IN FIELD WITH PROJECT ENGINEER.
2. BREACHES 1A, 1B, & 1C ARE TO BE REPAIRED PRIOR TO BREACH 2.

SHEET 1 OF 3

BREACH AREA SITE MAP

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION

PARISHES OF ST. MARY AND TERREBONNE
STATE OF LOUISIANA

APPLICATION BY NATIONAL MARINE FISHERIES SERVICE
BATON ROUGE, LOUISIANA – DECEMBER 1998

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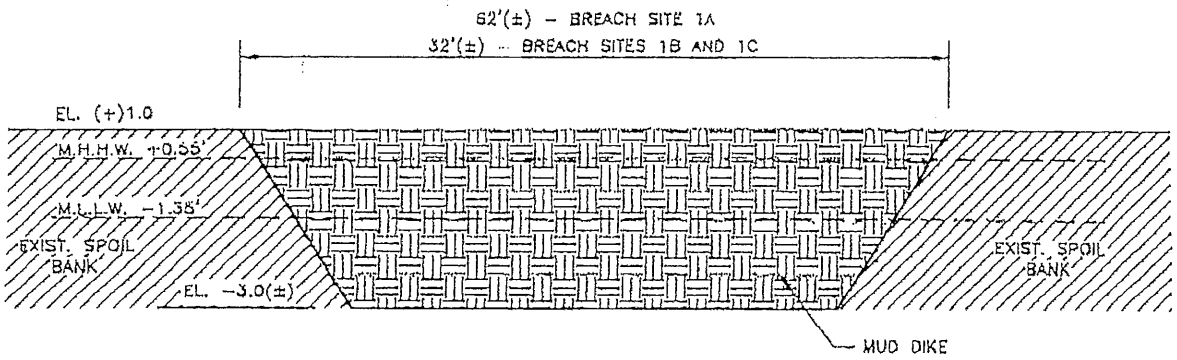
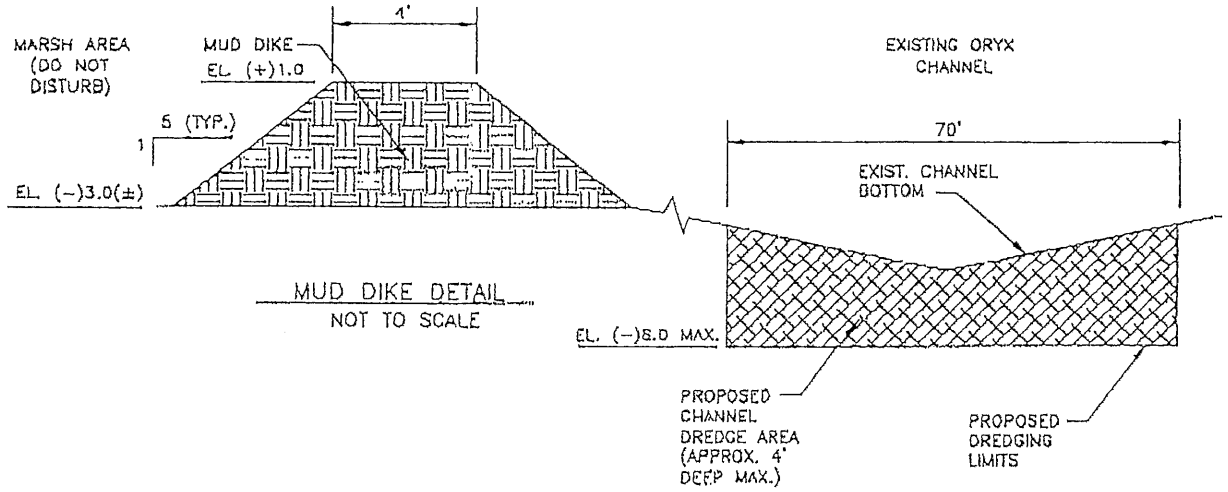


TYPICAL BREACH SECTION
NOT TO SCALE

NOTES:

1. BREACH FILL TO BE CONSTRUCTED WITH MUD DREDGED FROM THE BOTTOM OF THE ORYX CHANNEL.
2. CONTRACTOR IS RESPONSIBLE FOR ACCESS TO BREACH AREA.
3. TOTAL OF 500 CY OF MUD REQUIRED FOR REPAIR OF BREACHES 1A, 1B, AND 1C, AS FOLLOWS:
   TOTAL OF 260 CY OF MUD REQUIRED FOR REPAIR OF BREACH 1A;
   TOTAL OF 120 CY OF MUD REQUIRED FOR REPAIR OF BREACH 1B.
   TOTAL OF 120 CY OF MUD REQUIRED FOR REPAIR OF BREACH 1C.



MUD DIKE DETAIL
NOT TO SCALE

SHEET 2 OF 3
TYPICAL SECTIONS – BREACH AREAS 1A, 1B, & 1C

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION

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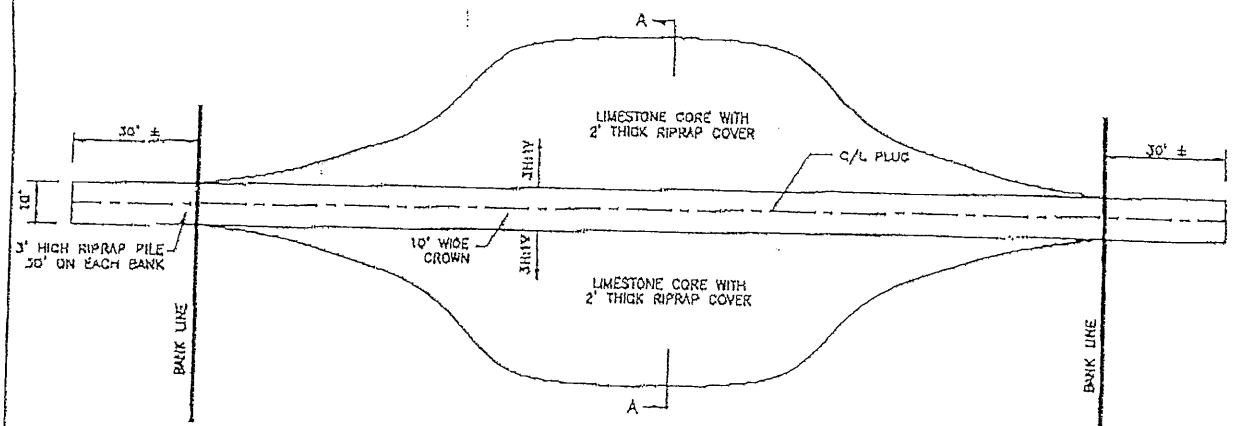
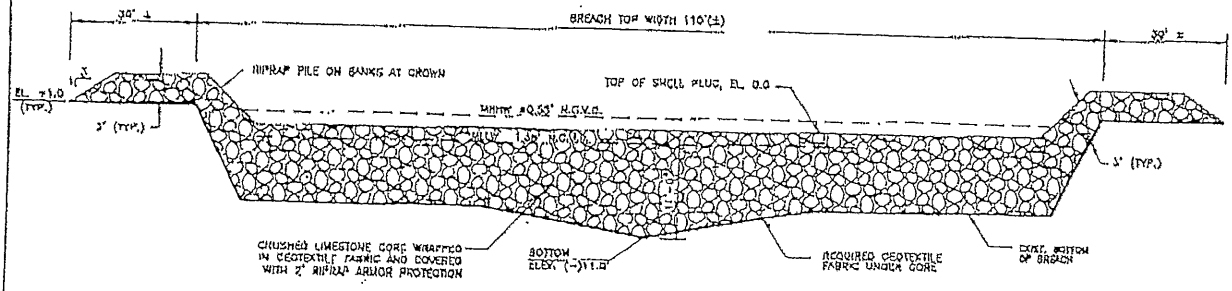


ROCK PLUG PLAN VIEW
NOT TO SCALE

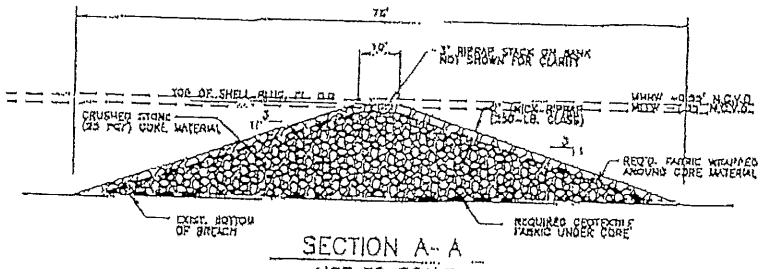


ROCK PLUG ELEVATION
NOT TO SCALE

NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR ACCESS TO BREACH AREA.
2. TOTAL OF 600 TONS OF RIPRAP REQUIRED FOR REPAIR OF BREACH (1998 LSDHS SECTION 711, 250-LB. CLASS).
3. TOTAL OF 350 TONS OF CRUSHED LIMESTONE REQUIRED FOR REPAIR OF BREACH (1982 LSDHS SECTION 1003.01).
4. TOTAL OF 720 SQUARE YARDS OF WOVEN GEOTEXTILE FABRIC REQUIRED FOR REPAIR OF BREACH.

STONE SIZE (LBS.)	% OF STONE SMALLER THAN
1250	100
500	45-100
250	15-50
60	0-15

RIPRAP GRADATION
250-LB. CLASS



SECTION A-A
NOT TO SCALE

SHEET 3 OF 3
TYPICAL SECTIONS – BREACH AREA 2

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION

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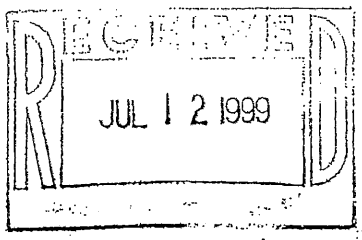
State of Louisiana

M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

July 7, 1999



Richard Hartman
Branch Chief
National Marine Fisheries Service
Habitat Conservation Division
c/o LSU Center for Wetland Resources
Baton Rouge, Louisiana 70803-7535

RE: **C970313**, Coastal Zone Consistency Modification
National Marine Fisheries Service
Direct Federal Action
Construction of 170' of geotextile and rip-rap on the Point au Fer shoreline to close an eroding gap, Lake Chapeau Sediment Input and Hydrologic Restoration CWPPRA Project (PTE-23/26a/33)
Terrebonne and St. Mary Parishes, Louisiana

Dear Mr. Hartman:

The above referenced modification has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The modification, as proposed in the application, is consistent with the LCRP. If you have any questions concerning this determination please contact Brian Marcks of the Consistency Section at (225) 342-7951 or 1-800-267-4019.

Sincerely,

Terry Howey

Terry W. Howey,
Administrator

TWH/JDH/bgm

cc: Fred Dunham, LDWF
Ron Ventola, NOD-COE
Martin Mayer, NOD
Jerome Zeringue, STTMCD
Rod Pierce, CMD FI
Matt Sevier, Terrebonne Ph.
Carol Vinning, St. Mary Ph.

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
P.O. BOX 60267
NEW ORLEANS, LOUISIANA 70160-0267

REPLY TO
ATTENTION OF:

July 13, 1999

JUL 14 1999

Operations Division
Western Evaluation Section

Subject: WH-19-990-3235, Programmatic General Permit

National Marine Fisheries Service
c/o LSU Center for Wetland Resources
Baton Rouge, LA 70803-7535

Gentlemen:

The proposed work, shown on the attached drawings, is authorized under **Category I** of the **Programmatic General Permit** provided that all conditions of the permit are met.

This authorization has a blanket water quality certification from the Louisiana Department of Environmental Quality (DEQ), Office of Water Resources. As such, no additional authorization from DEQ is required.

However, prior to commencing work on your project, you must obtain approvals from state and local agencies as required by law and by terms of this permit. These approvals include, but are not limited to, a permit or waiver from the Coastal Management Division of the Louisiana Department of Natural Resources.

If the work is initiated within two (2) years of the date of this letter, the authorization remains valid for a total of five (5) years from the date of this letter. If the work is not initiated within two (2) years, this authorization becomes null and void.

Should you have any further questions concerning this matter, please contact Martin S. Mayer of this office at (504) 862-2276.

Sincerely,

Ronnie W. Duke

for Ronald J. Ventola
Chief, Regulatory Branch

Attachments

PGP SPECIAL CONDITIONS

1. Activities authorized under this general permit shall not be used for piecemeal work and shall be applied to single and complete projects. All components of a single and complete project shall be treated together as constituting one single and complete project. All planned phases of multi-phased projects shall be treated together as constituting one single and complete project. This general permit shall not be used for any activity that is part of an overall project for which an individual permit is required.

2. No activity is authorized under this general permit which may adversely affect cultural resources listed or eligible for listing in the National Register of Historic Places until the requirements for Section 106 of the National Historic Preservation Act are met. Upon discovery of the presence of a previously unknown historic or archaeological site, all work must cease and the permittee must notify the State Historic Preservation Office and the Corps of Engineers. The authorization is suspended until it is determined whether or not the activity will have an adverse effect on the cultural resource. The authorization may be reactivated or modified through specific conditions if necessary, if it is determined that the activity will have no adverse effect on the cultural resource. The NOD-PGP authorization will be revoked if it is determined that the cultural resource would be adversely affected, and an individual permit may be necessary.

3. There shall be no unreasonable interference with navigation by the existence or use of the activity authorized herein. The permittee will, at his or her expense, install and maintain any safety lights, signals, and signs prescribed by the United States Coast Guard, through regulations or otherwise, on authorized facilities or on equipment used in performing work under the authorization.

4. No activity may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including those species which normally migrate through the area, unless the activity's primary purpose is to block or impound water.

5. If the proposed activity involves the installation of aerial transmission lines, submerged cable, or submerged pipelines across navigable waters of the United States the following is applicable:

The National Ocean Service (NOS) has been notified of this authorization. You must notify NOS and this office in writing, at least two weeks before you begin work and upon completion of the activity authorized by this permit. Your notification of completion must include a drawing which certifies the location and configuration of the completed activity (a certified permit drawing may be used). Notification to NOS will be sent to the following address: National Ocean Service, Office of Coast Survey, N/CS261, 1315 East West Highway, Silver Springs, Maryland 20910-3282.

13. Activities proposed for authorization under the PGP must comply with all other necessary federal, state, and/or local permits, licenses, or approvals. Failure to do so would result in a violation of the terms and conditions of NOD-PGP.

14. The permittee shall permit the District Engineers or his authorized representative(s) or designee(s) to make periodic inspections of the project site(s) and disposal site(s) if different from the project site(s) at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

15. This general permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and it does not authorize any injury to property or invasion of rights or any infringement of federal, state, or local laws or regulations nor does it obviate the requirements to obtain state or local assent required by law for the activity authorized herein.

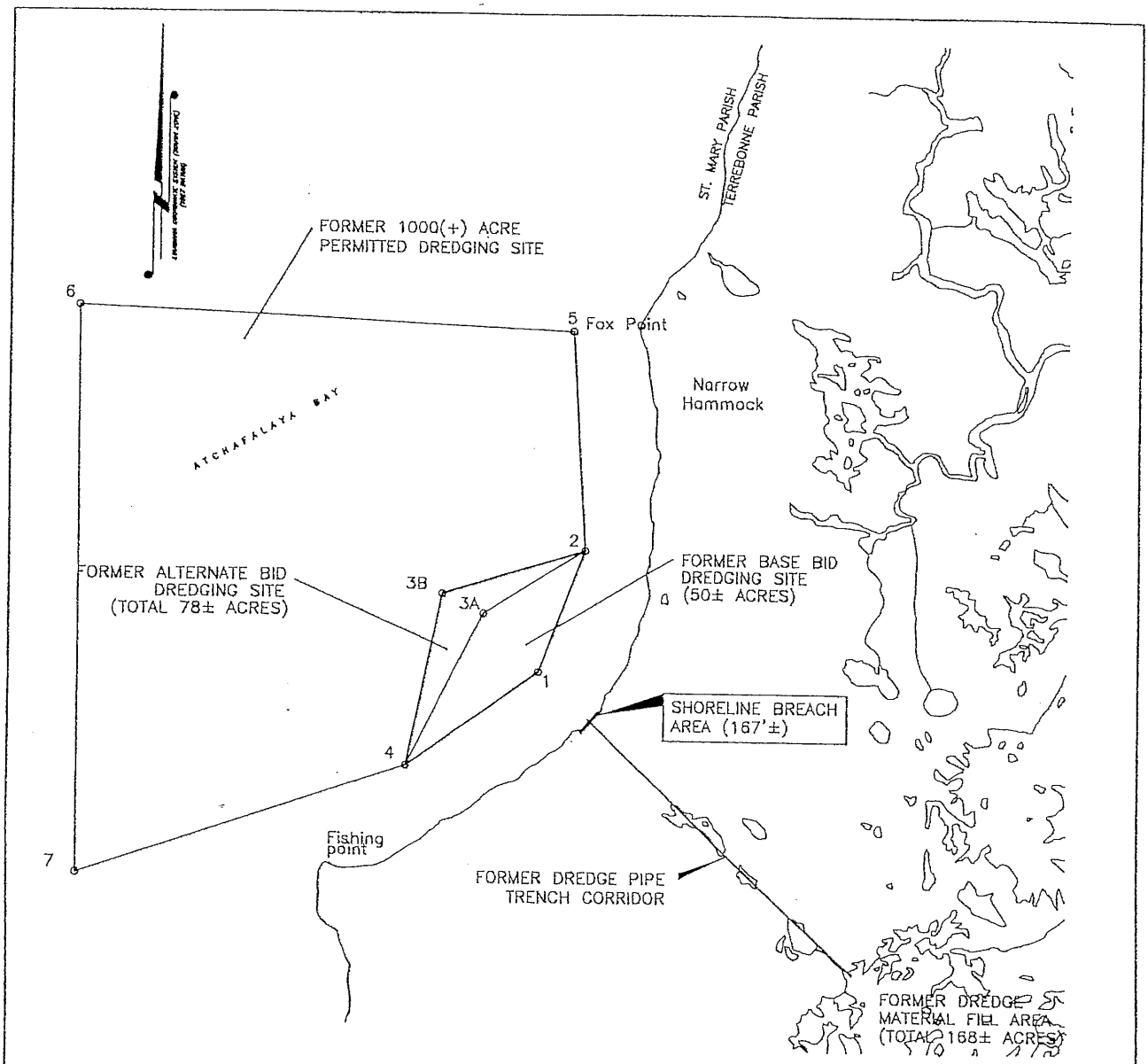
16. In issuing authorizations under this permit, the federal government will rely upon information and data supplied by the applicant. If, subsequent to the issuance of an authorization, such information and data prove to be false, incomplete, or inaccurate, the authorization may be modified, suspended, or revoked, in whole or in part.

17. For activities resulting in sewage generation at the project site, such sewage shall be processed through a municipal sewage treatment system or, in areas where tie-in to a municipal system is not practical, the on-site sewerage system must be approved by the local parish sanitarian before construction.

18. Any modification, suspension, or revocation of this permit or any individual authorization granted under this permit will not be the basis for any claim for damages against the United States.

19. Additional conditions deemed necessary to protect the public interest may be added to the general permit by the District Engineer at any time. If additional conditions are added, the public will be advised by public notice. Individual authorizations under this PGP may include special conditions deemed necessary to ensure minimal impact and compliance with this PGP.

20. A review of cumulative losses under the general permit will be accomplished yearly in or around the month of October. A report of losses will be furnished to the Environmental Protection Agency, the U.S. Fish and Wildlife Service, the National Marine Fisheries Service, and the Louisiana Department of Wildlife and Fisheries. Comments from reviewing agencies will be considered in determination as to whether modifications to the general permit are needed. Should the District Engineer make a determination not to incorporate a change proposed by a reviewing agency, after normal negotiations between the respective agencies, the District Engineer will explain in writing to the reviewing agency the basis and rationale for his decision.



DREDGE AREA LOCATIONS

POINT No.	X-COORD.	Y-COORD.	DIST. FROM POINT AU FER SHORELINE	DIST. FROM PVC MARKER AT CHANNEL
1	2,016,801.2680	240,870.8585	900'	2700'
2	2,017,429.1118	242,381.3289	800'	3800'
3A	2,016,020.9942	241,890.0056	2100'	3600'
3B	2,015,447.8641	241,982.9105	2700'	4400'
4	2,014,949.2456	239,561.3611	900'	3800'

PERMITTED DREDGE SITE

POINT No.	X-COORD.	Y-COORD.	DIST. FROM POINT AU FER SHORELINE	DIST. FROM PVC MARKER AT CHANNEL
1	2,016,801.2680	240,870.8585	900'	2700'
3	2,017,244.5694	245,611.8606	800'	5800'
5	2,010,467.0182	245,929.0951	7000'	10,800'
7	2,010,467.0182	238,036.0104	3300'	8300'

SCALE IN FEET
1000' 0 1000' 2000' 3000'

SHEET 1 OF 2

SHORELINE BREACH AREA SITE PLAN

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION

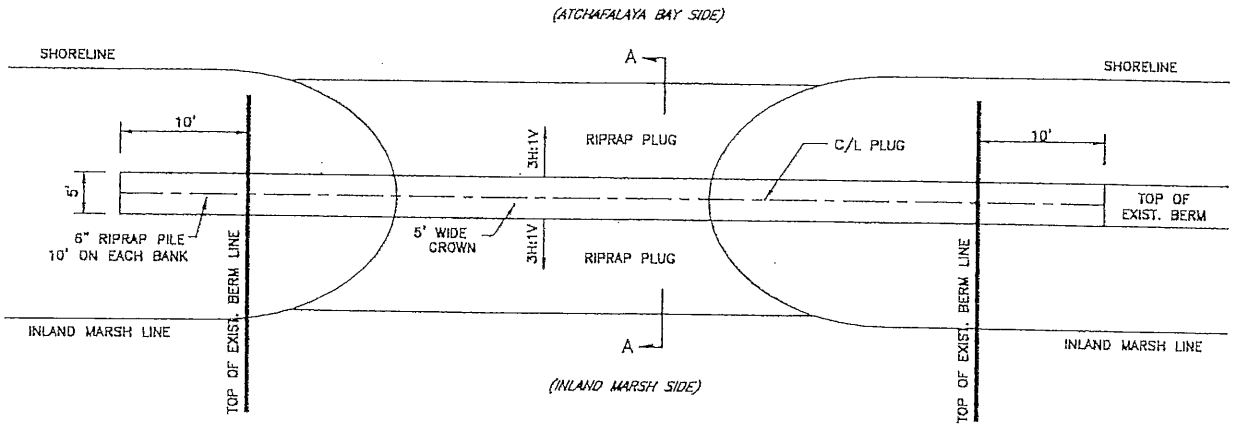
PARISHES OF ST. MARY AND TERREBONNE
STATE OF LOUISIANA

APPLICATION BY NATIONAL MARINE FISHERIES SERVICE
BATON ROUGE, LOUISIANA – JUNE 1999

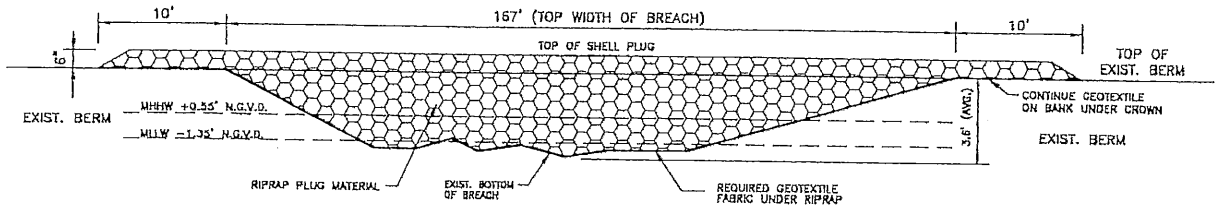
PREPARED BY

BURK-KLEINPETER, INC.

ENGINEERS, ARCHITECTS, PLANNERS, ENVIRONMENTAL SCIENTISTS
4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 486-1714



RIPRAP PLUG PLAN VIEW
NOT TO SCALE

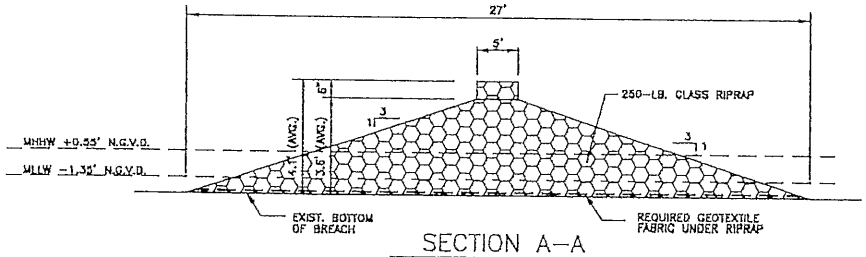


ROCK PLUG ELEVATION
NOT TO SCALE

STONE SIZE (LBS.)	% OF STONE SMALLER THAN
1250	100
500	45–100
250	15–50
80	0–15

RIPRAP GRADATION
250-LB. CLASS

NOTES:
1. CONTRACTOR IS RESPONSIBLE FOR ACCESS TO BREACH AREA.
2. TOTAL OF 365 TONS OF RIPRAP REQUIRED FOR REPAIR OF BREACH (1992 LSSRB SECTION 711, 250-LB. CLASS).
3. TOTAL OF 400 SQUARE YARDS OF WOVEN GEOTEXTILE FABRIC REQUIRED FOR REPAIR OF BREACH.



SECTION A–A
NOT TO SCALE

SHEET 2 OF 2
TYPICAL SECTIONS – SHORELINE BREACH AREA

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION

PARISHES OF ST. MARY AND TERREBONNE
STATE OF LOUISIANA

APPLICATION BY NATIONAL MARINE FISHERIES SERVICE
BATON ROUGE, LOUISIANA – JUNE 1999

PREPARED BY
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4176 CANAL STREET, NEW ORLEANS, LOUISIANA 70119-5994
(504) 486-5901 FAX (504) 488-1714

State of Louisiana

M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

August 4, 1999

RECEIVED
AUG - 5 1999

Richard Hartman
Branch Chief
National Marine Fisheries Service
Habitat Conservation Division
c/o LSU Center for Wetland Resources
Baton Rouge, Louisiana 70803-7535

RE: C970313, Coastal Zone Consistency Modification
National Marine Fisheries Service
Direct Federal Action
Reestablish a blown out section of spoil bank with 1,500 tons of rip rap, Lake Chapeau Sediment Input and Hydrologic Restoration CWPPRA Project(PTE-23/26a/33) **Terrebonne and St. Mary Parishes, Louisiana**

Dear Mr. Hartman:

The above referenced modification has been reviewed for consistency with the approved Louisiana Coastal Resource Program (LCRP) as required by Section 307 of the Coastal Zone Management Act of 1972, as amended. The modification, as proposed in the application, is consistent with the LCRP. If you have any questions concerning this determination please contact Brian Marcks of the Consistency Section at (225)342-7939 or 1-800-267-4019.

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL # of pages ➤

To Dave Burkholder	From R. Hartman
Dept/Agency	Phone #
Fax #	Fax #

NSN 7540-01-317-7368 5099-101 GENERAL SERVICES ADMINISTRATION

Sincerely,

Terry Howey

Terry W. Howey,
Administrator

TWH/bgm

cc: Fred Dunham, LDWF
Ron Ventola, NOD-COE
Martin Mayer, NOD
Jerome Zeringue, STTMCD
Rod Pierce, CMD FI
Matt Sevier, Terrebonne Ph.
Carol Vinning, St. Mary Ph.

This notice of authorization must be conspicuously displayed at the site of work.

United States Army Corps of Engineers

September 16, 19 99

A permit to deposit and maintain rip-rap to close a breach in a canal bank on Point au Fer Island pursuant to the Lake Chapeau Sediment Input and Hydrologic Restoration Project, on Point au Fer Island, at a location at central to a point about 30 miles southwesterly from Morgan City, La, in Terrebonne Parish.

has been issued to National Marine Fisheries Service on Sept 16, 1999

Address of Permittee Baton Rouge, Louisiana 70803-0508

Permit Number

WH-19-970-4707

Ronald J. Ventola

Ronald J Ventola

for the *District Commander*

ENG FORM 4336 , Jul 81 (33 CFR 320-330) EDITION OF JUL 70 MAY BE USED (Proponent CECW O)

This notice of authorization must be conspicuously displayed at the site of work.

United States Army Corps of Engineers

August 3, 19 99

A permit to install and maintain approximately 3,700 linear feet of rip-rap to construct a breakwater in Areas 4 and 5 of Phase II of the Point au Fer Island Hydrologic Restoration Project, on Point au Fer Island, at a at location central to a point about 30 miles southwesterly from Morgan City, Louisiana, in Terrebonne Parish.

has been issued to NMFS c/o LSU on Aug 3, 1999

Address of Permittee Baton Rouge, Louisiana 70803-0508

Permit Number

WH-19-970-0171

Ronald J. Ventola

Ronald J. Ventola

for the *District Commander*

ENG FORM 4336 , Jul 81 (33 CFR 320-330) EDITION OF JUL 70 MAY BE USED (Proponent CECW O)

State of Louisiana

M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

July 26, 1999

Richard Hartman
National Marine Fisheries Service
c/o LSU Center for Westland Resources
Baton Rouge, LA 70803-7535

RE: Permit Application for Breach Site 3 Repairs
Grant No. NA57FZ0177 "Lake Chapeau Sediment Input and Hydrologic Restoration (PTE-23/26a)," State Project No. TE-26

Dear Mr. Hartman:

Enclosed are permit-application drawings for the spoil bank breach repair to be done in the canal west of Plug Site 9. I have designed this repair as "Breach Site 3" following the numbering convention used for the previous repairs. This work is included in the Point au Fer shoreline protection extension bid package presently being finalized by Brian Kendrick of the DNR/CRD Thibodaux office.

Please advise if you have any questions concerning the enclosed drawings or need DNR/CRD to complete ENG FORM 4365.

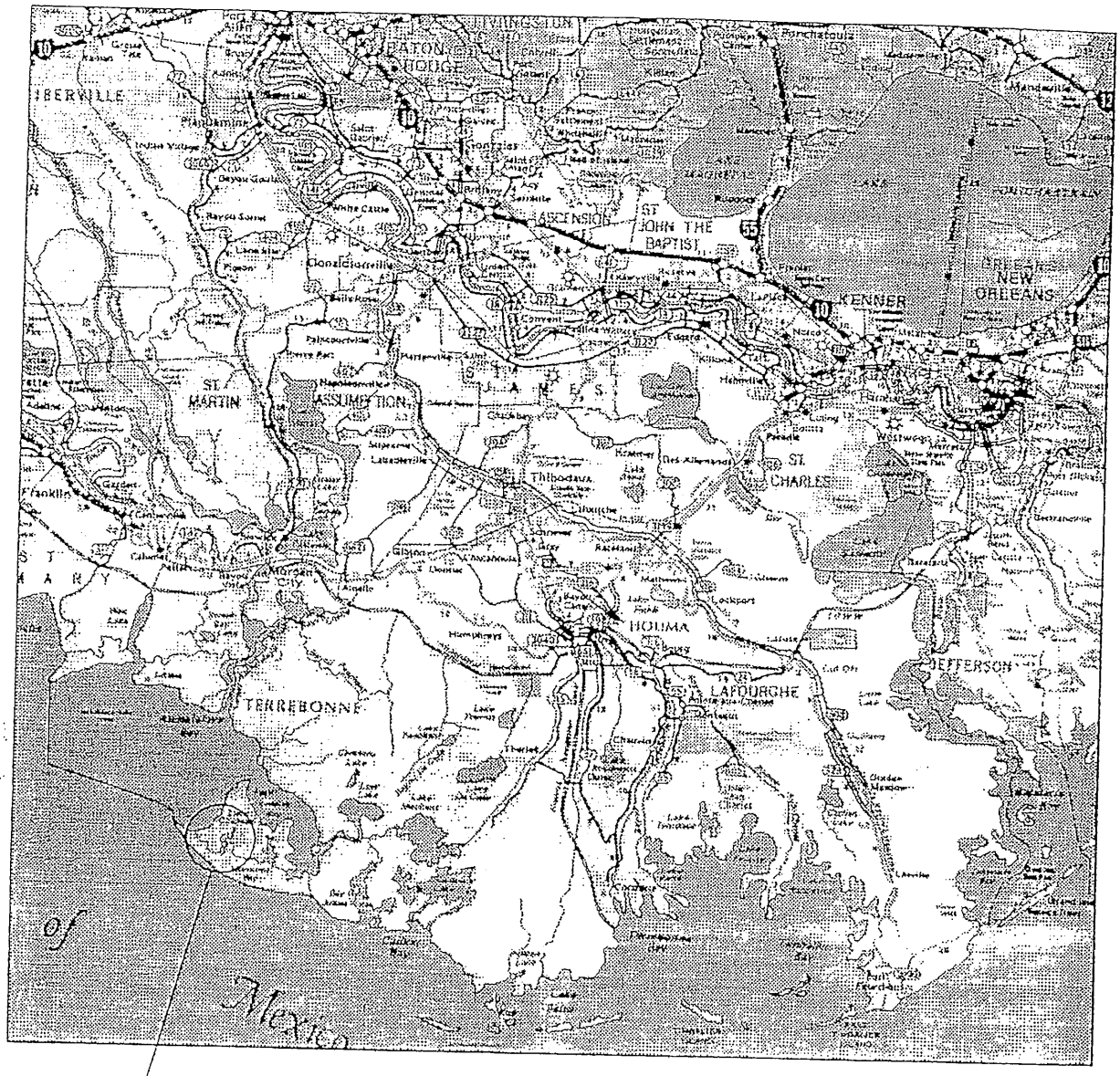
Sincerely,

David M. Burkholder, P.E.
Design Engineer Supervisor

Enclosures

c: Gerry Duszynski, Assistant Administrator, DNR/CRD
George Boddie, Engineer Manager, DNR/CRD
Brian Kendrick, Design Engineer Supervisor, DNR/CRD
Erik Zobrist, Ph.D., NMFS Restoration Center
Project File TE-26

Coastal Restoration Division
P.O. Box 94396 . Baton Rouge, Louisiana 70804-9396 . Telephone (225) 342-7308 . Fax (225) 342-9417



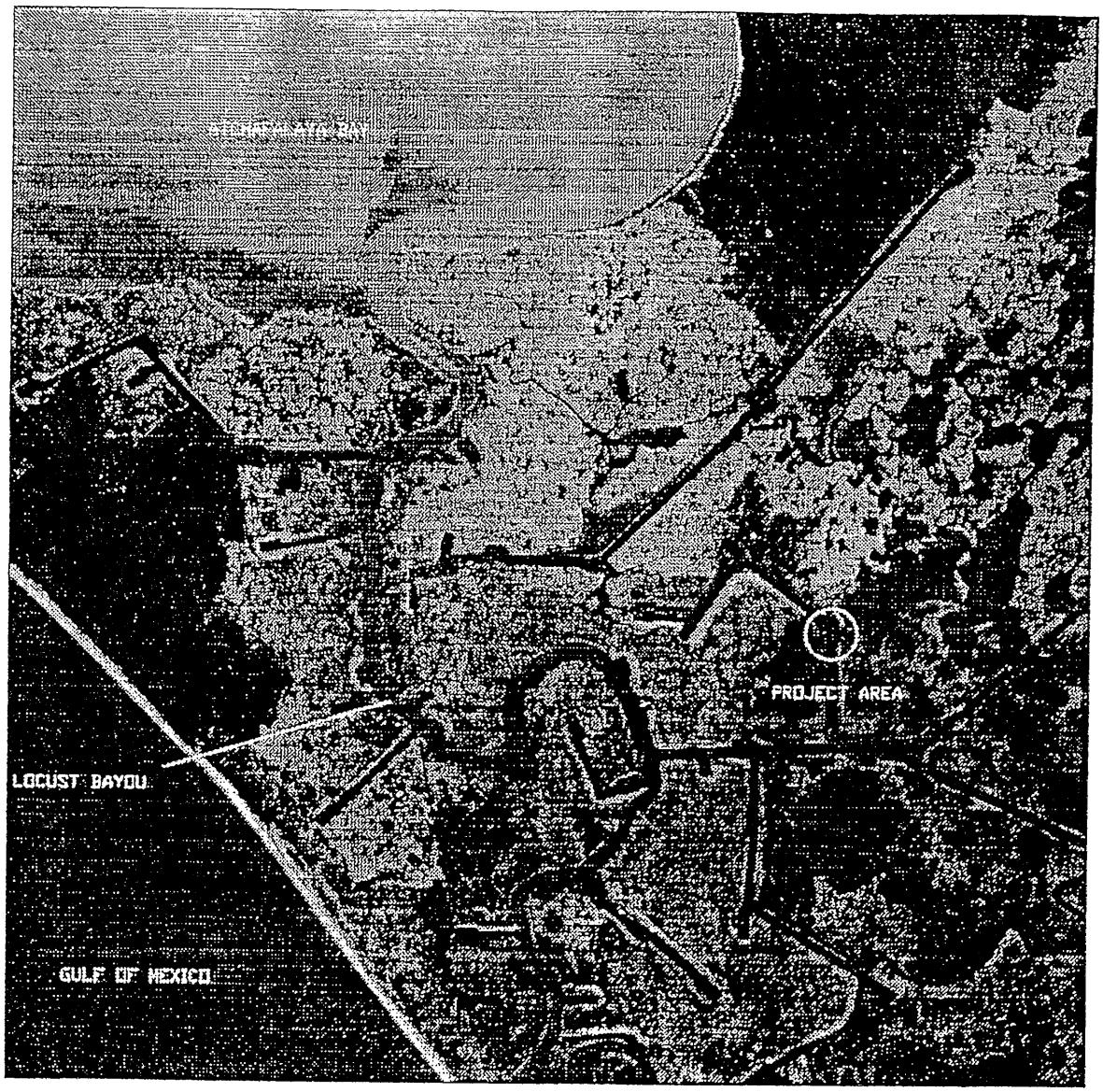
SHEET 1 OF 4
LOCATION MAP

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION
BREACH SITE 3 REPAIRS

TERREBONNE PARISH
STATE OF LOUISIANA

APPLICATION BY NATIONAL MARINE FISHERIES SERVICE
BATON ROUGE, LOUISIANA

PREPARED BY:
LOUSIANA DEPARTMENT OF NATURAL RESOURCES
COASTAL RESORATION DIVISION



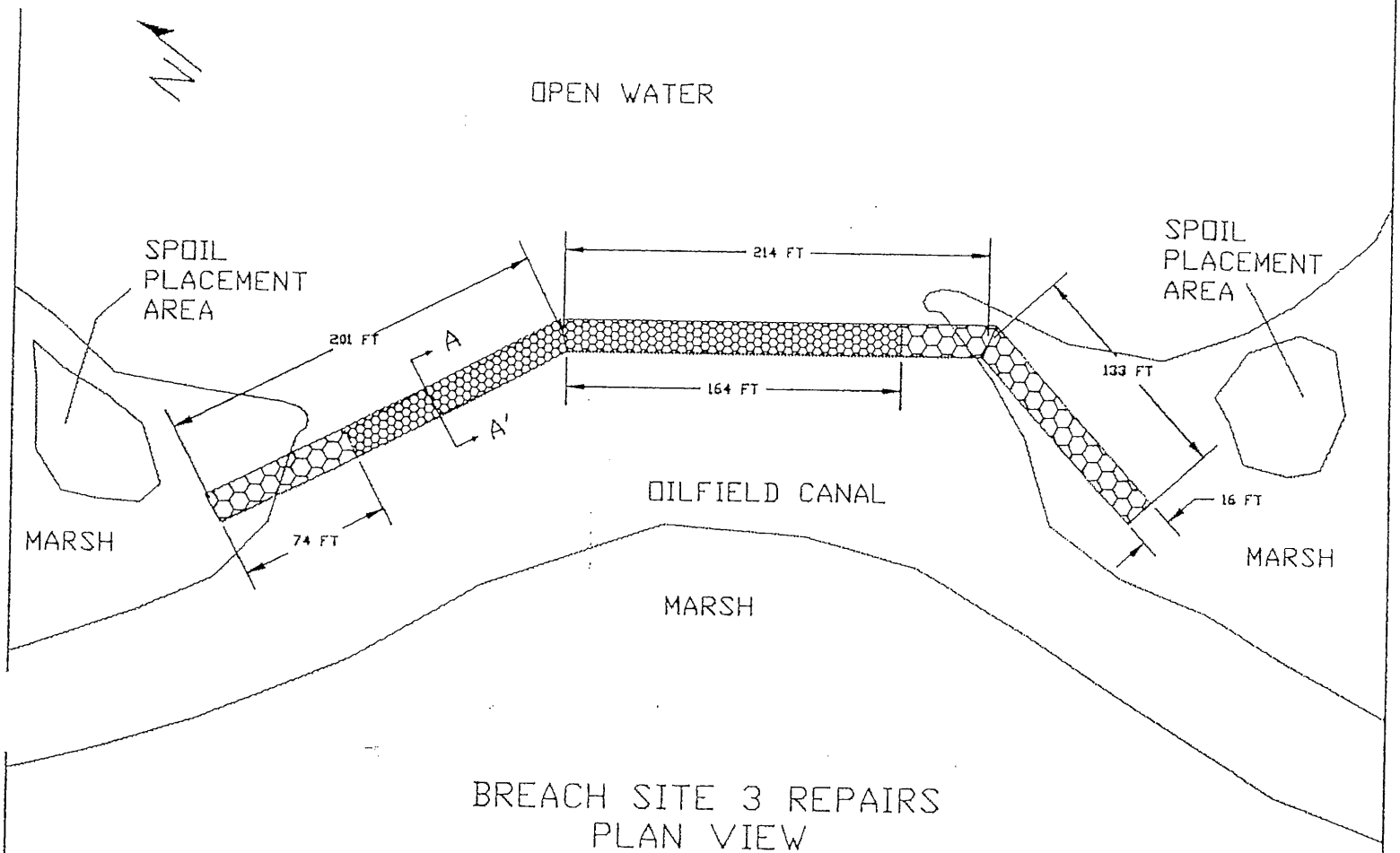
SHEET 2 OF 4
VICINITY MAP

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION
BREACH SITE 3 REPAIRS

TERREBONNE PARISH
STATE OF LOUISIANA

APPLICATION BY NATIONAL MARINE FISHERIES SERVICE
BATON ROUGE, LOUISIANA

PREPARED BY:
LOUSIANA DEPARTMENT OF NATURAL RESOURCES
COASTAL RESORATION DIVISION



BREACH SITE 3 REPAIRS
PLAN VIEW
(NTS)

NOTES:

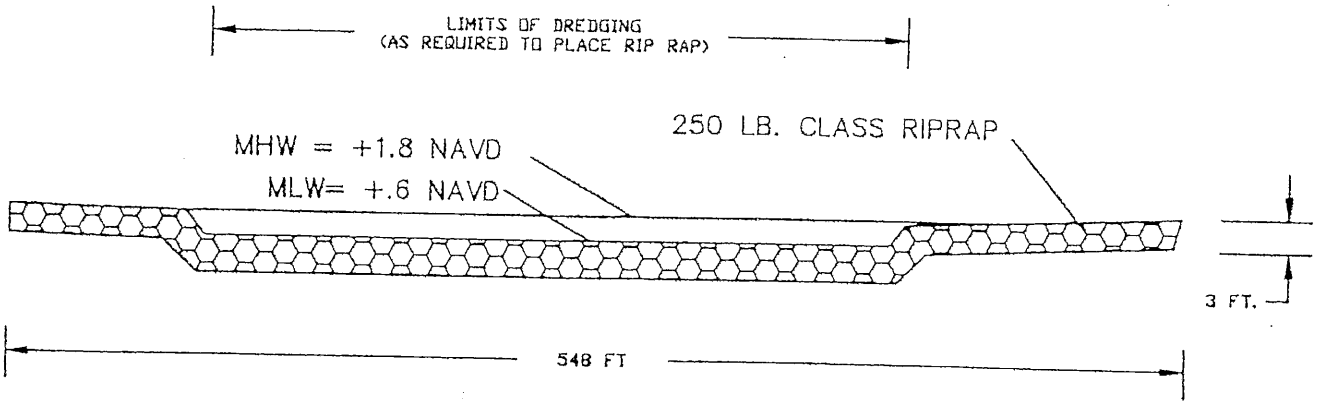
1. LIMITS OF DREDGING ARE SHOWN BY SMALL HATCH PATTERN (PRIOR TO PLACEMENT OF ROCK)
2. APPROXIMATELY 300 CUBIC YARDS OF DREDGED MATERIAL SHALL BE PLACED ON EXISTING SPOIL BANKS STACKED NO HIGHER THAN 1.5 FT.
3. 1,500 TONS OF 250 LB. CLASS RIP RAP WILL BE PLACED OVER HATCHED AREA TO A THICKNESS OF 3 FT.

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION
BREACH SITE 3 REPAIRS

TERREBONNE PARISH
STATE OF LOUISIANA

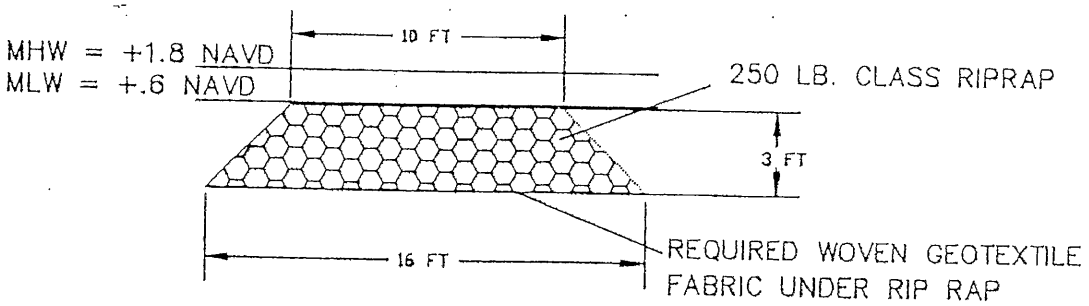
APPLICATION BY NATIONAL MARINE FISHERIES SERVICE
BATON ROUGE, LOUISIANA

PREPARED BY:
LOUSIANA DEPARTMENT OF NATURAL RESOURCES
COASTAL RESORATION DIVISION



TYPICAL CROSS SECTION

NTS



CROSS SECTION A – A'

NTS

NOTE: CROSS SECTION A - A' IS FOR SUBMERGED SECTION. CROSS SECTIONS OF ELEVATED SECTION HAVE THE SAME DIMENSIONS BUT THE ELEVATIONS VARY.

LAKE CHAPEAU SEDIMENT INPUT
AND HYDROLOGIC RESTORATION
BREACH SITE 3 REPAIRS

TERREBONNE PARISH
STATE OF LOUISIANA

APPLICATION BY NATIONAL MARINE FISHERIES SERVICE
BATON ROUGE, LOUISIANA

PREPARED BY:
LOUSIANA DEPARTMENT OF NATURAL RESOURCES
COASTAL RESORATION DIVISION

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Habitat Conservation Division
c/o Louisiana State University
Baton Rouge, Louisiana 70803-7535

March 30, 2000 F/SER44:RH:
225/389-0508

RECEIVED
2000 APR 4 AM 9 18
COASTAL RESTORATION
DIVISION

Mr. Ronald Ventola, Chief
Regulatory Functions Branch
Department of the Army
New Orleans District, Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Dear Mr. Ventola:

Enclosed is an application for a Corps of Engineers' permit for work on Point Au Fer Island, in Terrebonne Parish, Louisiana. We believe it may qualify for authorization as a modification of existing work previously approved under New Orleans District permit WH-19-970-4707. Please ask Martin Mayer of your staff to give me a call at (225) 389-0508 once a determination is made of if, or how, this work may be authorized by the New Orleans District..

Please contact me should there be any questions or if other information is needed.

Sincerely,

Richard Hartman

Richard Hartman
Chief, Baton Rouge Office

Enclosures

State of Louisiana

M.J. "MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

March 29, 2000

VIA FACSIMILE (Hard copy to follow)

Richard Hartman
National Marine Fisheries Service
c/o LSU Center for Wetland Resources
Baton Rouge, LA 70803-7535

RE: Permit Modification for Spoil Bank Breach Repairs & Maintenance
Grant No. NA57FZ0177 "Lake Chapeau Sediment Input and Hydrologic Restoration (PTE-23/26a)," State Project No. TE-26

Dear Mr. Hartman:

Enclosed are drawings of a proposed permit modification for spoil bank breach repairs and maintenance to be done in the canals west of Plug Site 9. These repairs/maintenance are designated as "Sites 4 - 8" following the numbering convention used for the previous repairs done under the River Road contract. I estimate that this work will take two 12 hour days to complete at an approximate cost of $8,760.00. This work is included in a change order to the Johnny Smith Dragline/Bertucci contract requested by Brian Kendrick of the DNR/CRD Thibodaux office and presently being processed by State Purchasing

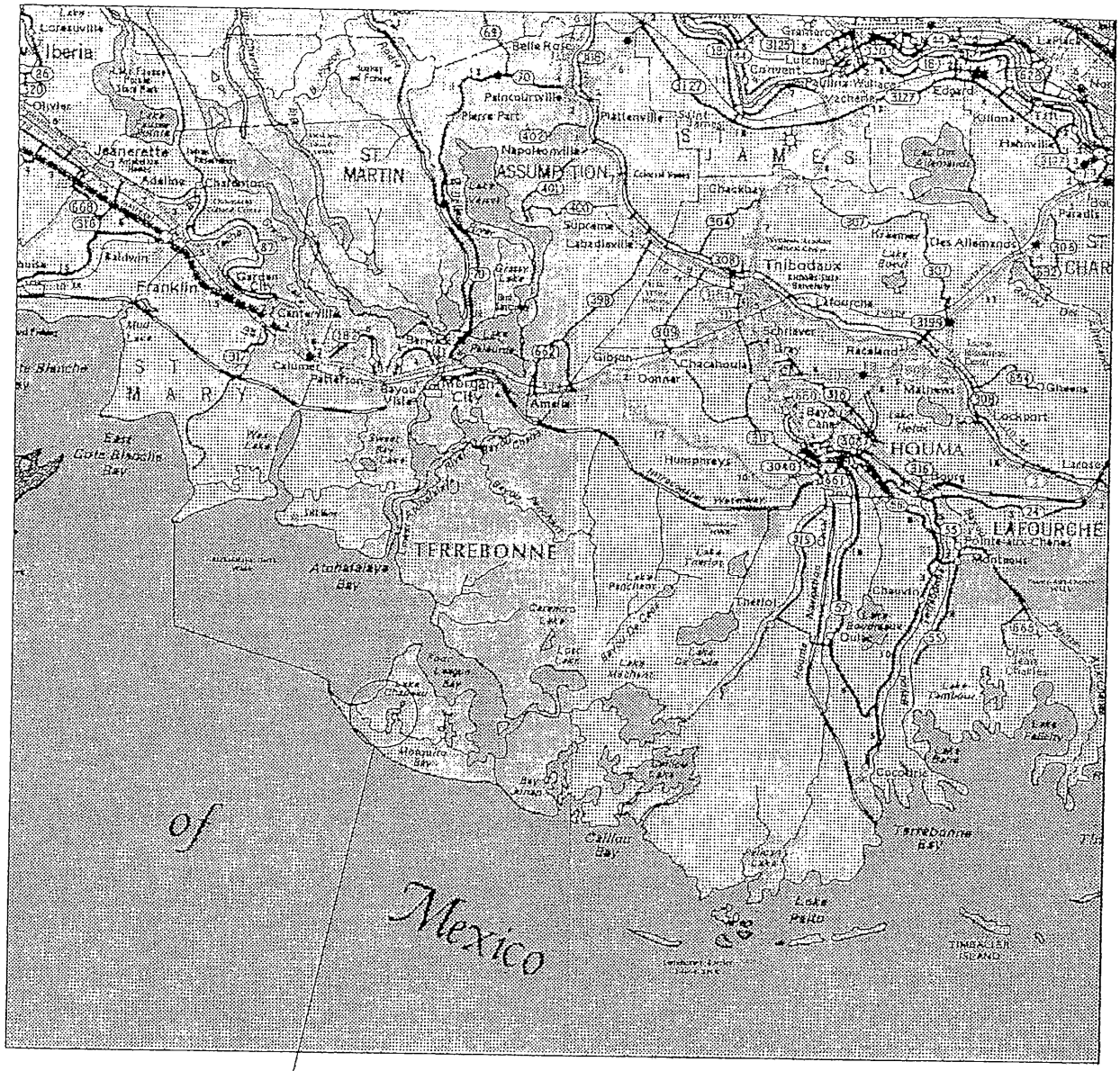
If you are in agreement with the proposed permit modification please forward the enclosed drawings to the appropriate regulatory agencies for approval. **DNR will not expend any additional construction funds without approval from NMFS.** If you have any questions concerning these drawings or the pending change order, please contact me at (225) 342-6814.

Sincerely,

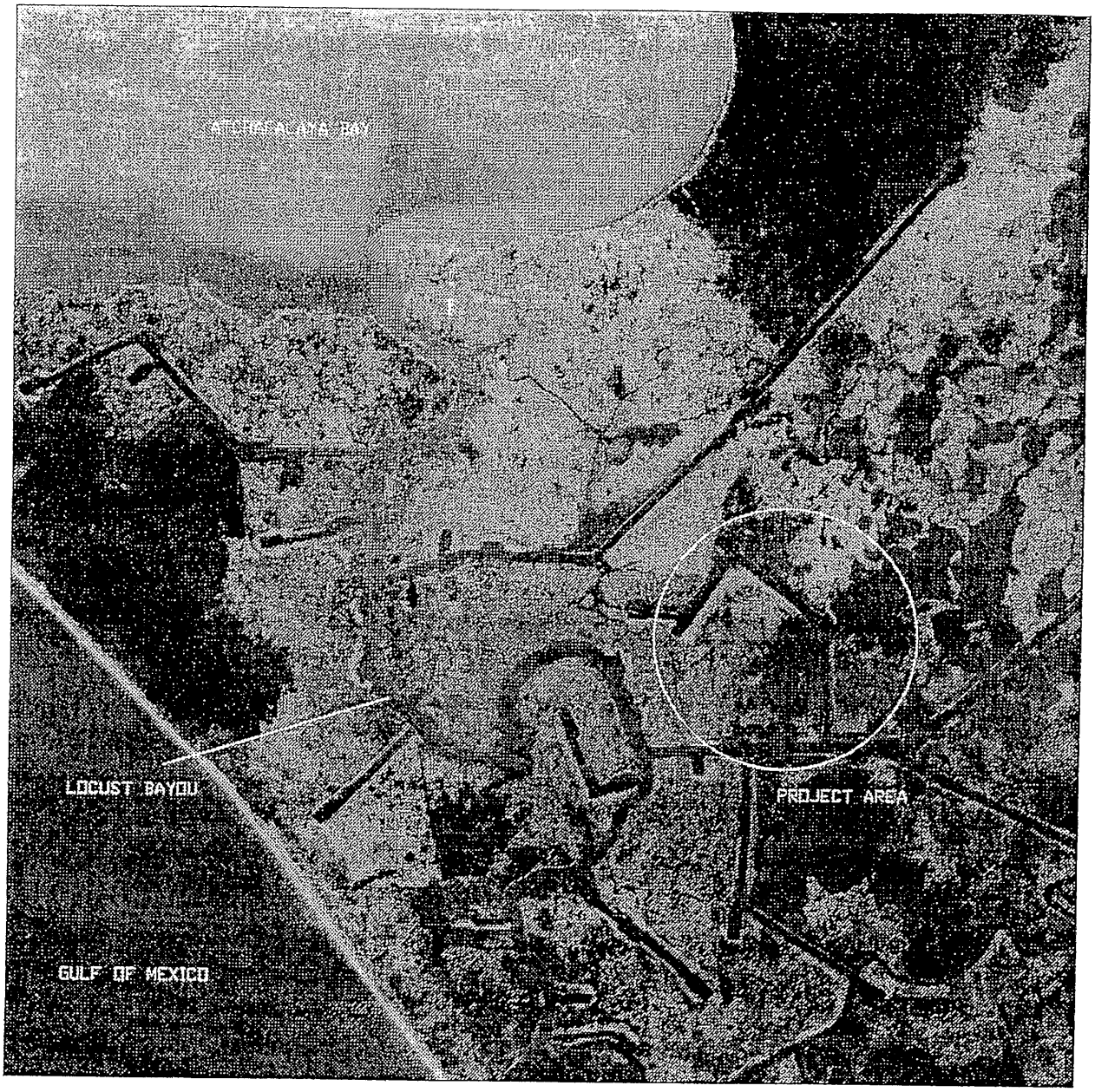
David M. Burkholder, P.E.
Design Engineer Supervisor

Enclosures

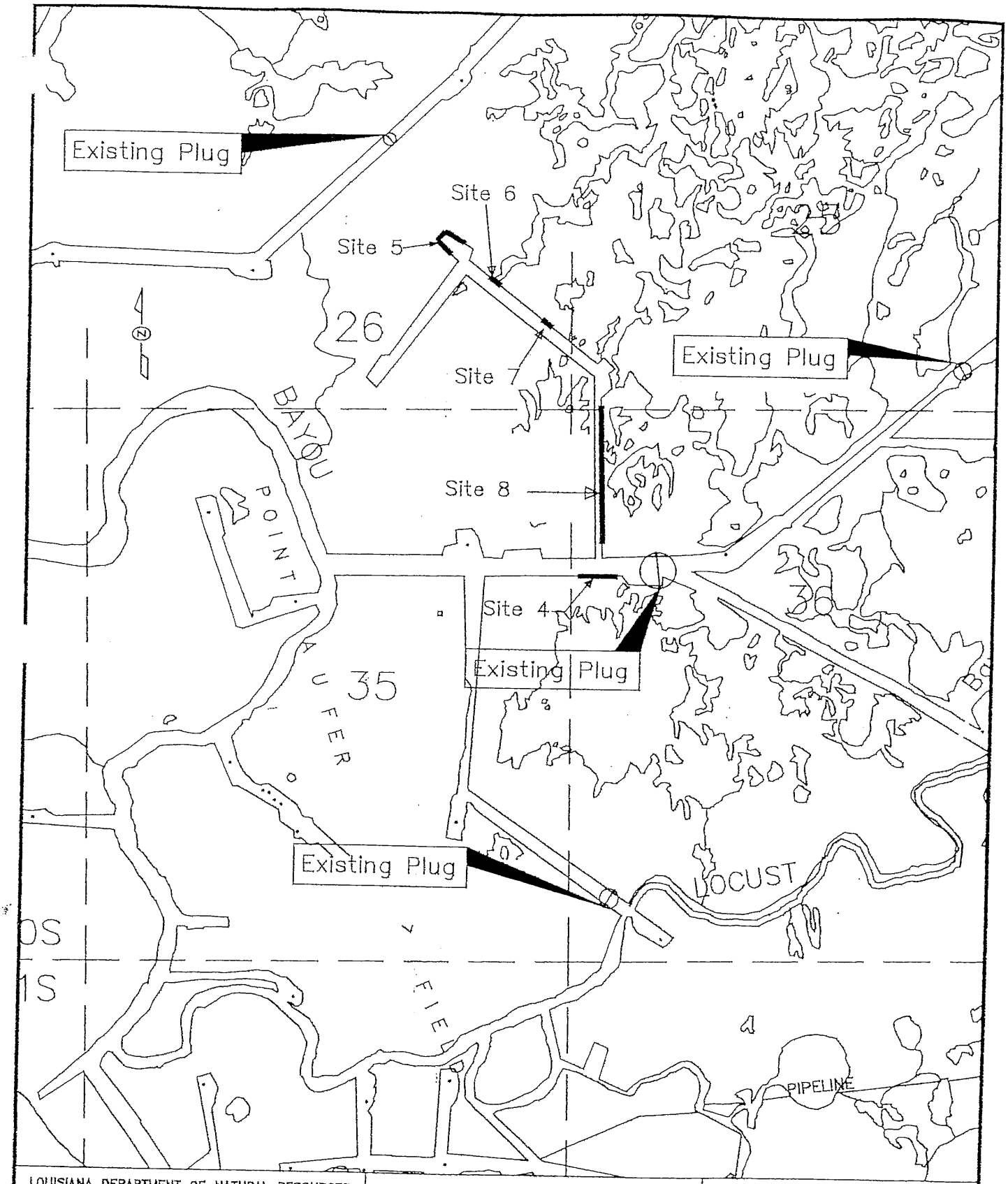
c: George Boddie, Engineer Manager, DNR/CRD
Brian Kendrick, Design Engineer Supervisor, DNR/CRD
Erik Zobrist, NMFS Restoration Center
Project File TE-26



LOUISIANA DEPARTMENT OF NATURAL RESOURCES COASTAL RESTORATION DIVISION 625 N 4th STREET BATON ROUGE, LA 70802	LAKE CHAPEAU HYDRAULIC RESTORATION TERREBONNE PARISH	LOCATION MAP
		SCALE: NOT TO SCALE
APPROVED BY: DMB	STATE PROJECT NO.: TE-26	DATE: MARCH 2000
DESIGNED BY: TMA	FEDERAL PROJECT NO.: PTE-23/26A	SHEET 1 OF 6



LOUISIANA DEPARTMENT OF NATURAL RESOURCES COASTAL RESTORATION DIVISION 625 N 4th STREET BATON ROUGE, LA 70802	LAKE CHAPEAU HYDRAULIC RESTORATION TERREBONNE PARISH	VACINITY MAP
		SCALE: NOT TO SCALE
APPROVED BY: DMB	STATE PROJECT NO.: TE-26	DATE: MARCH 2000
DESIGNED BY: TMA	FEDERAL PROJECT NO.: PTE-23/26A	SHEET 2 OF 6



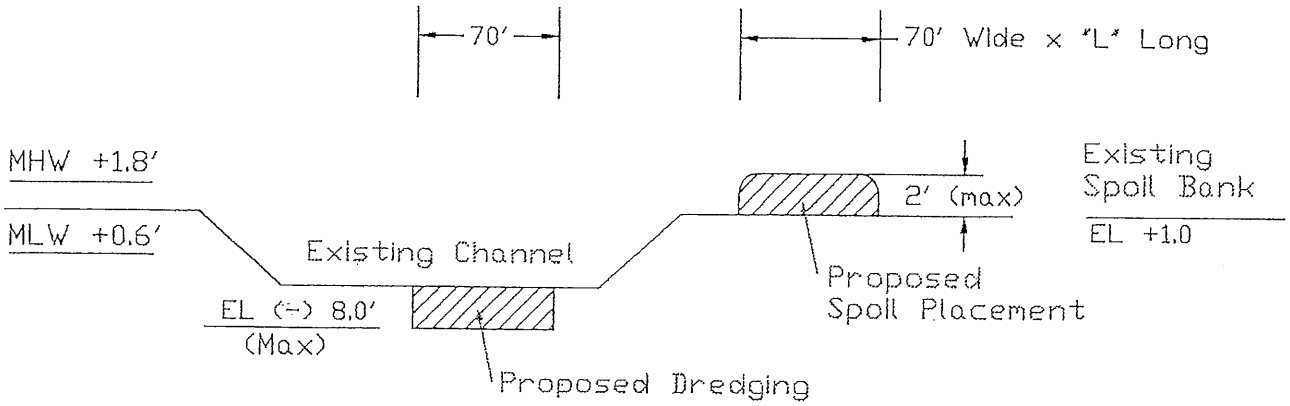
LOUISIANA DEPARTMENT OF NATURAL RESOURCES COASTAL RESTORATION DIVISION 625 N 4th STREET BATON ROUGE, LA 70802	LAKE CHAPEAU HYDROLOGIC RESTORATION TERREBONNE PARISH	BREACH AREA SITE MAP
		SCALE: NOT TO SCALE
APPROVED BY: DMB	STATE PROJECT NO.: TE-26	DATE: MARCH 2000
DESIGNED BY: TMA	FEDERAL PROJECT NO.: PTE-23/26A	SHEET 3 OF 6

SITE	LENGTH "L" (FEET)	DREDGING QUANTITY (CY)
4	450	2330
5	400	2070
6	50	60
7	50	60
8	1700	2200
	TOTAL =	6270

NOTES:

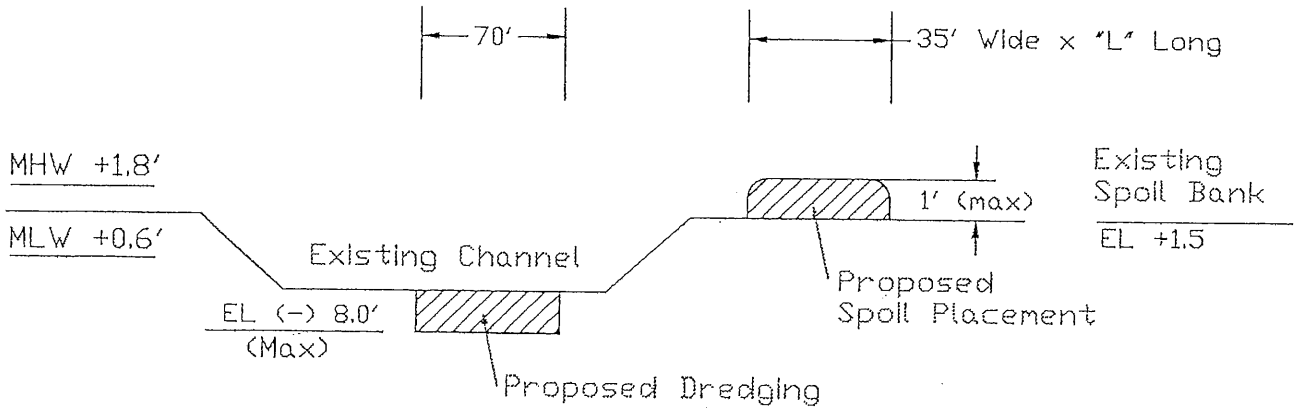
1. Locations are approximate. Contractor to locate in field with project engineer.
2. All elevations are based on NAVD 88 datum.

LOUISIANA DEPARTMENT OF NATURAL RESOURCES COASTAL RESTORATION DIVISION 625 N 4th STREET BATON ROUGE, LA 70802	LAKE CHAPEAU HYDRAULIC RESTORATION TERREBONNE PARISH	SITE DETAILS
		SCALE: NOT TO SCALE
APPROVED BY: DMB	STATE PROJECT NO.: TE-26	DATE: MARCH 2000
DESIGNED BY: TMA	FEDERAL PROJECT NO.: PTE-23/26A	SHEET 4 OF 6



SPOIL BANK BREACH REPAIR
TYPICAL SECTION - SITES 4 & 5

LOUISIANA DEPARTMENT OF NATURAL RESOURCES COASTAL RESTORATION DIVISION 625 N 4th STREET BATON ROUGE, LA 70802	LAKE CHAPEAU HYDRAULIC RESTORATION TERREBONNE PARISH	SPOIL BANK BREACH REPAIRS
		SCALE: NOT TO SCALE
APPROVED BY: DMB	STATE PROJECT NO.: TE-26	DATE: MARCH 2000
DESIGNED BY: TMA	FEDERAL PROJECT NO.: PTE-23/26A	SHEET 5 OF 6



SPOIL BANK MAINTENANCE
TYPICAL SECTION - SITES 6,7, & 8

LOUISIANA DEPARTMENT OF NATURAL RESOURCES COASTAL RESTORATION DIVISION 625 N 4th STREET BATON ROUGE, LA 70802	LAKE CHAPEAU HYDRAULIC RESTORATION TERREBONNE PARISH	SPOIL BANK MAINTENANCE
		SCALE: NOT TO SCALE
APPROVED BY: DMB	STATE PROJECT NO.: TE-26	DATE: MARCH 2000
DESIGNED BY: TMA	FEDERAL PROJECT NO.: PTE-23/26A	SHEET 6 OF 6

ATTACHMENT VII

LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION

OPERATION, MAINTENANCE AND REHABILITATION BUDGET

OPERATION, MAINTENANCE AND REHABILITATION BUDGET

TE-26 LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION

LEAD AGENCY: National Marine Fisheries Service

DESIGN BASIS:

Project Budget: $3,995,023
Amended Operation and Maintenance (O&M) Budget: $150,000

PROJECT FEATURES:

- Hydraulic dredging of 721,931 cubic yards (C.Y.) of material to create 168 acres of marsh from Atchafalaya Bay.
- Seven (7) shell core plugs with 250# stone rip-rap armor including six (6) plugs, top one foot below water level, one (1) plug, top 4 feet below water level for boat traffic, and warning signs to be replaced at each plug.
- Dredge 6,700 ft. of Locust Bayou to recover natural channel, with spoil deposited along the bank in segments.

OPERATION AND MAINTENANCE / REHABILITATION ASSUMPTIONS

A. Revision No.1 - No maintenance dredging will be required to maintain the created marsh land, or to aerially seed the area at year 1 (2001). (This assumption was based on information provided by the Thibodaux Field Monitoring Section).

B. Revision No.2 - Repair of broken buoy systems and shoreline protection/plug to close an opening created by the pipeline used to slurry sediments will require a lift of rock at year 1 (2001).

C. Plugs/Weirs are functional with settlements up to one foot; if greater that one foot settlement occurs these plugs will require additional capping with #250 stone: (This assumption was based on information provided by the Thibodaux Field Monitoring Section)

Year 10 - 100% cap replacement (18" rip-rap #250 stone cap)

D. Replace 100% signage

OPERATION AND MAINTENANCE COST CONSIDERATIONS:
(Based on a 20 year project life; cost include inflation)

A. ANNUAL INSPECTIONS: **$96,818**
(1 Field day with 3 team members including federal participant, boat and report form Schedule A-1)

B. COST FOR MAINTENANCE, PROJECT AT YEAR 1 (2001)(Revised)
(Includes a ten percent construction contingency (cc) and inflation factor of 1.0260)

1. Cost to Repair Capsule Warning Buoys $5,130
(1 field day @ $5000/day x 1.0260)

2. Cost to Repair / Cap 18" 250 lb. stone $16,160
Along 100 L.F. of shoreline
(350 tons x $45/ton x 1.0260)

3. Contractor Mobilization / Demobilization $10,000

4. Design Cost / Administration: $ 4,169
(1 week project, $4,063 x 1.026 inflation Factor from Schedule C-1)

5. Consultant Design Services: $ 5,130
($5,000 minimum x 1.0260)

TOTAL COST FOR MAINTENANCE PROJECT AT YEAR 1 (2001) **$40,589**

C. COST FOR MAINTENANCE PROJECT AT YEAR 10 (2010)
(Includes a ten percent construction contingency (cc) and Inflation factor of 1.2926).

1. Contractor Mobilization / Demobilization: $ 27,500

2. Cap 18" #250 stone on 7 plugs: $148,500
(4,500 tons x $30/ton x 1.1)

3. Replace warning signs, one at each plug: $ 19,250
($2,500/sign x 1 each x 7 plugs x 1.1)

Contractor Subtotal: $195,250

Contractor Cost with Inflation: ($195,250 x 1.293) **$252,385**

4.	Design Cost / Administration: (1 week project, $4,063 x 1.293 from Schedule D-1)		$ 5,252
5.	Engineering Consultant Design, Survey and Inspection:		$ 34,676
	Basic Services: (10.5% from Schedule E-1 $195,250 contractor cost x 1.293)	$26,500	
	Survey Supplemental Services: (2 day @ $1,250/day x 1.293 from Schedule E-2)	$ 3,232	
	Resident Inspection: (5 workday x $765/day x 1.293 from Schedule E-3)	$ 4,944	

TOTAL COST FOR MAINTENANCE PROJECT AT YEAR 10 $292,313

Previously Expended Funds (through June 10, 1998) $ 124.53

TOTAL ESTIMATED OPERATION AND MAINTENANCE COST $429,720
(Revised total based on December 2000 inputs)

OPERATION AND MAINTENANCE (O&M) BUDGET SUMMARY
TE-26 LAKE CHAPEAU MARSH CREATION & HYDROLOGIC RESTORATION

Original O&M Budget	**$150,000**
Revised O&M Budget	**$429,000**
Budget (Increase) Decrease	**$279,720**

ATTACHMENT VIII

LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION

ANNUAL INSPECTIONS

The purpose of the annual inspections is to inspect and evaluate the conditions of all project features to determine if structures are operating correctly and identify any deficiencies which require maintenance. An annual inspection report outlining these field observations will be drafted by LDNR. This report shall include the type of structure and description, date and time of inspection, personnel present for inspection, general conditions and observed damages to structures. These reports may be compiled under Attachment VIII - Annual Inspections.

In the case of severe storms and tidal events, additional inspections may be required during the annual inspection period to assess potential damage from such weather conditions.

ATTACHMENT IX

LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION

PROJECT COMPLETION REPORT

WARNING BUOY REPLACEMENT

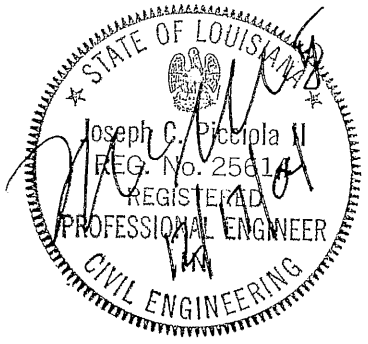
DECEMBER 2004

DNR Contract No. 2503-03-18
Surveying and Engineering Services

Lake Chapeau Warning Buoy Replacement (TE – 26)
Terrebonne Parish, LA

FINAL REPORT

RECEIVED
JAN 18 2005



Picciola & Associates, Inc.
Consulting Engineers & Land Surveyors
P.O. Box 687
Cut Off, LA 70345

December 2004

1. Project Managers/Contracting Officers:

Federal Agency:	NMFS		
Project Manager:	Cheryl Brodnax	Phone:	(225) 578-7923
State Agency:	Louisiana Department of Natural Resources		
Construction Manager:	Shane Triche	Phone:	(985) 447-5073
Engineering Manager:	Brian Babin	Phone:	(985) 447-0956
Project Representative:	Picciola & Associates, Inc.		
Project Manager:	Joe Picciola	Phone:	(985) 632-5786
Constr. Admin.:	Harold Duet	Phone:	(985) 632-5786
Project Rep.:	Ray Leblanc	Phone:	(985) 632-5786
Land Owner:	Point Au Fer, L.L.C.		
Land Manager:	Allan Ensminger	Phone:	(337) 462-0762
Contractor:	Dupre Brothers Construction Co., Inc.		
Project Manager:	Kevin Parfait	Phone:	(985) 879-4440

2. Location and description of projects as approved for construction:

The Lake Chapeau Marsh Creation Project is located on the Point Au Fer Island, in the vicinity of Lake Chapeau, approximately 30 miles south of Morgan City, Louisiana. The project is bounded by Four League bay to the north, Atchafalaya Bay to the West, Locust Bayou and a network of canals to the south, and Wildcat Bayou to the east. The principle project featured include seven (7) rock plugs structures across existing oil field canals with warning buoy systems, dredging of 6,400 linear feet of Locust Bayou and hydraulic placement of 722,000 cubic yards of sediment.

The Project consists of replacing the existing warning buoy system with a galvanized steel pipe system at six (6) of the seven (7) rock plugs mentioned above. The structures to be modified are Sites 1, 4, 5, 6, 7, & 9. The existing buoy system is constructed of 4" schedule 40 pipes set on both sides of the structure with orange floating capsule buoys connected by steel cables to form a visual barrier system blocking the canal. This project requires the removal of the existing buoy system at the six (6) plug sites and replacing it with the more rigid galvanized steel structure to block access to the structure. The proposed structure shall consist of timber piles driven every 20 ft. across the canal with 4" diameter horizontal galvanized piping connecting the vertical members. Each structure shall be marked with appropriate warning signs and reflective tape to assure visibility at night.

3. Final, As-Built features.

The Final Project features followed exactly as planned save for three (3) Items.

a) We increased the height of the bottom rail of the warning barricade from +2.0 Ft. NAVD to +2.5 NAVD at the request of the DNR Construction Manager.
b) Timber piles were allowed to be provided with 2.5 CCA Treatment in lieu of 20# Creosote as requested by the Contractor. This was approved by the Project Representative and DNR as a no Cost Change.
c) The contractor also proposed to provide pipeline shrink wrap (SHAIC HS-340) around the Galvanized Pipe Field Splices in lieu of prepping and cold galvanizing. This was approved by the Project Representative and DNR as a no Cost Change.

The lengths of the barriers varied slightly from the planned quantity and are noted on the record drawings provided by the Contractor and included in this report.

4. Key Project Cost Elements

	Work Order Estimate	Actual Cost
Construction	$226,055	$273,670
Engineering and Design	$25,300	$25,160.50
Engineering and Design (LDNR)	-	$7,840
Bidding	$1,172	$1,080
Construction Administration	$7,208	$4,360
Construction Administration (LDNR)	-	$4,540
Construction Oversight	$14,840	$14,095
Project Totals:	$274,215	$330,745.50

5. Items of Work:

Base Bid

Item No.	Item of Work	Quantity	Unit	Unit Price	Amount
1	Mobilization & Demobilization	1	LS	$20,000.00	$20,000.00
2	Removal of Existing Warning Buoy Structures	1	LS	$12,000.00	$12,000.00
3	Timber Pilings 20' L	1,000	LF	$23.00	$23,000.00
	Timber Pilings 30' L	1,740	LF	$23.00	$40,020.00
	Timber Pilings 40' L	880	LF	$23.00	$20,240.00
4	Piling Caps (Galvanized)	130	Each	$12.00	$1,560.00
5	Fabricated Brackets (Galvanized)	260	Each	$100.00	$26,000.00
6	4" Schedule 40 Pipe (Galvanized)	4,450	LF	$25.00	$111,250.00
7	Warning Signs	18	Each	$950.00	$17,100.00
8	Retroflective Tape	1	LS	$2,500.00	$2,500.00
	Base Bid Total (Items 1 thru 8)				**$273,670.00**

6. Construction and construction oversight:

ITEM	
Prime Construction Contractor	Dupre Bros. Construction, Inc.
Subcontractor	N/A
Subcontractor	N/A
Original Construction Contract	$273,670.00
Change Orders	$0.00
Over/Under Runs	$0.00
Damages	$0.00
Total Construction Contract Cost:	$273,670.00

7. Major Equipment:

Spud Barge - DB-4 with Crane LS 108
1 – Tug Boat – M/V JJ
Material Barge - LML 102
26 ft. Aluminum Crewboat

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

a) Contractor completed sites in the following order: 1, 7, 9, 6, 5 and 4. All sites were installed in the same sequence as follows.
b) Alignment was established for driving of Timber Piles.
c) Timber Piles were driven to desired Grade.
d) Alignment was established for pipe rails.

e) Timber Piles were notched for brackets and then tops cut.
f) Pipe brackets were installed, nailed then bolted through the timber piles.
g) 4" galvanized pipes were slid through brackets and then splices welded together and end caps installed.
h) Shrink wrap was installed over field splices on 4" galvanized pipe.
i) Galvanized Sheet Metal Pile covers were installed over all piles.
j) Retroreflective tape was installed on 4" galvanized pipe.
k) Warning Signs were installed on Piles as required by the Project Plans.

9. Construction Change Orders and Field Changes:

Not Applicable.

10. Pipeline and other utility crossings.

Not Applicable.

11. Safety and Accidents:

Excellent Safety Record with no Accidents Reported.

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

The Contractor was 60 days over Contract Time. There are a number of factors which contributed to the time delinquency on this project.

The time for pre-fabrication of materials took longer than anticipated. This included fabrication of the pipe brackets and then galvanizing of these brackets.

Additional time was required due to several tropical systems moving in the area. Because of the remote location of the project and proximity to the Gulf of Mexico, all equipment had to be demobilized from the project site when a tropical system threatened and then remobilized to the project site when the weather cleared. During the project, this happened three (3) separate times.

Regarding the remaining days over contract time, consideration should be given to the Contractor because of his diligence and quality of work. All other aspects of the project went primarily as planned.

13. Significant Construction Dates:

Construction Contract Award	06/02/04
Pre-construction Conference	06/15/04
Notice to Proceed	06/16/04
Mobilization	07/30/04
Construction Start	08/02/04
Construction Completion	10/13/04
Final Acceptance	10/19/04

ATTACHMENT X

LAKE CHAPEAU MARSH CREATION AND HYDROLOGIC RESTORATION

AS-BUILT DRAWINGS

ORIGINAL
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U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

and

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES, COASTAL RESTORATION DIVISION

As-Builts (11/02/04)

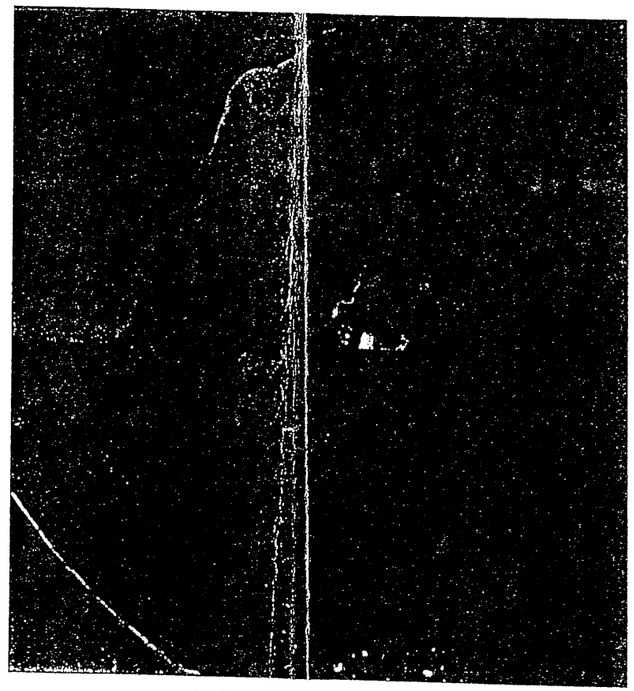
→ Location of Buoys as noted on Plans

Plans of Proposed

TE-26 LAKE CHAPEAU WARNING BUOY REPLACEMENT

TERREBONNE PARISH

MAY 2003



LOCATION MAP
NOT TO SCALE

STATE VICINITY MAP
N.T.S.

INDEX TO SHEETS:

SHEET NO.	DESCRIPTION:
1	TITLE SHEET, STATE AND LOCAL VICINITY MAPS
2	GENERAL NOTES AND ESTIMATED QUANTITIES
3	OVERALL PROJECT SITE PLAN
4	PLAN VIEW – SITE 1
5	PLAN VIEW – SITE 4 AND SITE 5
6	PLAN VIEW – SITE 6 AND SITE 7
7	PLAN VIEW – SITE 9
8	TYPICAL BARRICADE – PLAN & ELEVATION VIEWS
9	TYPICAL BRACKET/PIPE DETAILS
10	TYPICAL SIGN ATTACHMENT DETAILS

TOTAL NO. OF SHEETS 10

REVISIONS:	
DATE:	REMARKS:
01-06-04	ADDRESS COMMENTS FOR SHEET 10

RECOMMENDED FOR APPROVAL

DNR/CRD ENGINEER MANAGER — DATE

DNR/CRD ENGINEER MANAGER — DATE

PREPARED BY:
PICCIOLA & ASSOCIATES, INC.

STATE OF LOUISIANA
Joseph C. Picciola II
REG. No. 25614
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

JOSEPH C. PICCIOLA, II, — DATE 01/06/04

PICCIOLA & ASSOCIATES, INC.
CIVIL ENGINEERS
LAND SURVEYORS
NAVAL ARCHITECTS
MARINE ENGINEERS
P.O. BOX 687
CUT OFF, LOUISIANA 70345
(985) 632-5786

DRAWING PLOTTED AT HALF-SCALE

SHEET 1 OF 10 SET NO

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BASE BID

SUMMARY OF ESTIMATED QUANTITIES

ITEM NO.	DESCRIPTION	UNIT	QUANTITY
1	MOBILIZATION AND DEMOBILIZATION	LUMP SUM	LUMP SUM
2	REMOVAL OF EXISTING WARNING BUOY STRUCTURES	LUMP SUM	LUMP SUM
3	TIMBER PILINGS (CLASS "B", 20 lb. Creosote) 20' LONG	LIN. FT.	1000
	TIMBER PILINGS (CLASS "B", 20 lb. Creosote) 30' LONG	LIN. FT.	1740
	TIMBER PILINGS (CLASS "B", 20 lb. Creosote) 40' LONG	LIN. FT.	880
4	PILING CAPS (GALVANIZED)	EACH	184
5	FABRICATED BRACKETS (HOT DIPPED GALVANIZED) W/(2) 5/8"x12" GALV. BOLTS, NUTS & WASHERS PER UNIT	EACH	328
6	4" GALV. SCH. 40 PIPE	LIN. FT.	2,831'
7	WARNING SIGNS	EACH	22
8	RETROFLECTIVE TAPE	LUMP SUM	LUMP SUM

STATE OF LOUISIANA
Joseph C. Picciola II
REG. NO. 28614
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

GENERAL NOTES:

1. BASIC HORIZONTAL AND VERTICAL CONTROL POINTS HAVE BEEN ESTABLISHED OR DESIGNATED BY THE ENGINEER AND ARE SHOWN ON THE PLANS. CONTRACTOR SHALL MAINTAIN AND PROTECT FROM DAMAGING OR DISLOCATING THESE CONTROLS AND SHALL PERFORM ALL ADDITIONAL SURVEY, LAYOUT, AND MEASUREMENT WORK USING THESE CONTROLS.

2. CONTRACTOR SHALL VERIFY EXISTING GRADES, ELEVATIONS, AND LOCATIONS IN THE FIELD PRIOR TO CONSTRUCTION.

3. THE CONTRACTOR SHALL COMPLY WITH ALL LAWS, RULES AND REGULATIONS OF THE LOUISIANA STATE POLICE, THE TERREBONNE AND ST. MARY PARISH SHERIFF'S OFFICES, DNR, USCG, FEDERAL AUTHORITIES, STATE AND PARISH HEALTH DEPARTMENTS AND OTHER STATE OR PARISH AUTHORITIES HAVING REGULATIONS AND JURISDICTIONAL RIGHTS APPLICABLE TO THE WORK OR JOB SITES.

4. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND PARISH LAWS CONCERNING POLLUTION OF WATERWAYS, AND PROTECTION OF SHELLFISH, FISH, WATERFOWL, WILDLIFE AND DOMESTIC ANIMALS.

5. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO CAUSE THE LEAST POSSIBLE INTERFERENCE WITH BOTH THROUGH AND LOCAL MARINE TRAFFIC.

6. CONTRACTOR SHALL EMPLOY EFFECTIVE MEASURES TO CONTROL EROSION OF NATURAL AND CONSTRUCTED SURFACES.

7. THE SAFETY HAZARDS PROMULGATED BY AND THE PRECAUTIONS DEFINED WITHIN SAME OF THE OSHA, THE USCG AND ALL OTHER REGULATING AUTHORITY HAVING JURISDICTION AND THAT ARE APPLICABLE TO THE WORK SHALL BE ADHERED TO AND ENFORCED BY THE CONTRACTOR.

8. TEMPORARY UTILITIES AND SANITARY FACILITIES FOR OPERATION OF THE CONTRACTOR'S PLANT OR EQUIPMENT SHALL BE PROVIDED AND MAINTAINED AT THE EXPENSE OF THE CONTRACTOR.

9. COASTAL USE PERMITS WILL BE PROVIDED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OTHER PERMITS.

10. CONSTRUCTION SERVITUDES FOR ALL WORK AND RIGHT-OF-ENTRY ONTO THE SITE WILL BE PROVIDED BY OWNER.

11. ALIGNMENTS AND/OR ELEVATIONS MAY BE ADJUSTED IN THE FIELD BY THE PROJECT ENGINEER TO MEET CHANGING FIELD CONDITIONS OR TO BETTER ASSURE ACCOMPLISHMENT OF PROJECT OBJECTIVES. ANY ADDITIONAL QUANTITIES WILL BE PAID FOR AT THE UNIT PRICE BID FOR THE SPECIFIC ITEM.

12. CONTRACTOR SHALL NOT BE ALLOWED TO IMPEDE DRAINAGE DURING RAINSTORMS OR WHEN A RAINSTORM IS IMMINENT.

13. DUE TO CHANGING FIELD CONDITIONS, SHORELINES SHALL NOT BE USED AS CONSTRUCTION REFERENCE POINTS.

14. X AND Y COORDINATES ARE BASED ON NAD 83; LATITUDES AND LONGITUDES ARE BASED ON NAD 83; ELEVATIONS ARE BASED ON NGVD 88; SOUNDINGS REFERENCE WATER LEVEL SHOWN.

TECHNICAL NOTES:

1. WARNING SIGNS WILL BE INSTALLED ON EACH COMPLETED BARRICADE AND WILL BE FACING AWAY FROM THE PLUG AS SHOWN ON THE DRAWINGS. SIGNS SHALL CONFORM TO COAST GUARD STANDARD 33CFR 330.4 (a) (1). EACH WARNING SIGN SHALL HAVE A 2" ORANGE BORDER OF RETROFLECTIVE MATERIAL. LETTERING WILL BE BLACK ON A FIELD OF RETROFLECTIVE MATERIAL.

2. IN ADDITION TO WARNING SIGNS, RETROFLECTIVE TAPE SHALL BE WRAPPED AROUND EACH PIPE BETWEEN PILINGS AS SHOWN ON PLANS.

3. NEOPRENE WASHERS SHALL BE PLACED BETWEEN THE WARNING SIGN AND GALVANIZED BOLTS AT ALL POINTS OF CONTACT.

4. THE CONTRACTOR IS NOTIFIED THAT THE WORK SITE IS ACCESSED THROUGH THE ATCHAFALAYA DELTA WILDLIFE MANAGEMENT AREA UNDER THE JURISDICTION OF THE LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES. ALL PERSONNEL SHALL ABIDE BY THE MANAGEMENT AREA RULES AND REGULATIONS.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NAVIGATING WITHIN THE LIMITS OF THE PROJECT AREA.

6. THE CONTRACTOR IS NOTIFIED THAT THE PROJECT SITE IS TOTALLY ON OR ADJACENT TO PRIVATE OR STATE PROPERTY. EXTREME CAUTION SHALL BE EXERCISED IN PROTECTION OF PROPERTY, HABITAT AND WILDLIFE FROM DAMAGE OR HARM.

7. THE CONTRACTOR IS NOTIFIED THAT HE WILL BE CONDUCTING HIS OPERATIONS IN THE VICINITY OF UTILITIES, PIPELINES, FLOWLINES, OIL AND GAS STRUCTURES AND OTHER MINERAL OPERATIONS. THE CONTRACTOR SHALL LOCATE ALL SUCH STRUCTURES IN THE FIELD PRIOR TO CONSTRUCTION. ANY DAMAGE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

8. A LISTING OF ALL COMPANIES KNOWN TO BE CONDUCTING MINERAL OPERATIONS AND HAVE ACTIVE WELLS AND/OR PIPELINES IN THE VICINITY WILL BE PROVIDED FOR REFERENCE. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING WHETHER THERE ARE OTHERS. LOUISIANA ONE CALL CAN BE CONTACTED AT 1-800-272-3020.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING PIPELINE OPERATORS 48 HOURS IN ADVANCE OF THE WORK. IF NECESSARY ALL PIPELINES SHALL BE MARKED WITH BUOYS BY THE CONTRACTOR USING THE COORDINATES GIVEN. THE CONTRACTOR SHALL MAINTAIN BUOYS DURING CONSTRUCTION OR HAVE ADEQUATE NAVIGATIONAL EQUIPMENT ON THE PILE DRIVER TO AVOID DRIVING PILINGS IN RESTRICTED AREAS.

LAND MANAGER:

ALLAN ENSMINGER (337) 462-0762

DRAWING PLOTTED AT HALF-SCALE

NO.	DATE	REMARKS	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

TE-26 LAKE CHAPEAU
WARNING BUOY REPLACEMENT

GENERAL NOTES AND ESTIMATED QUANTITIES

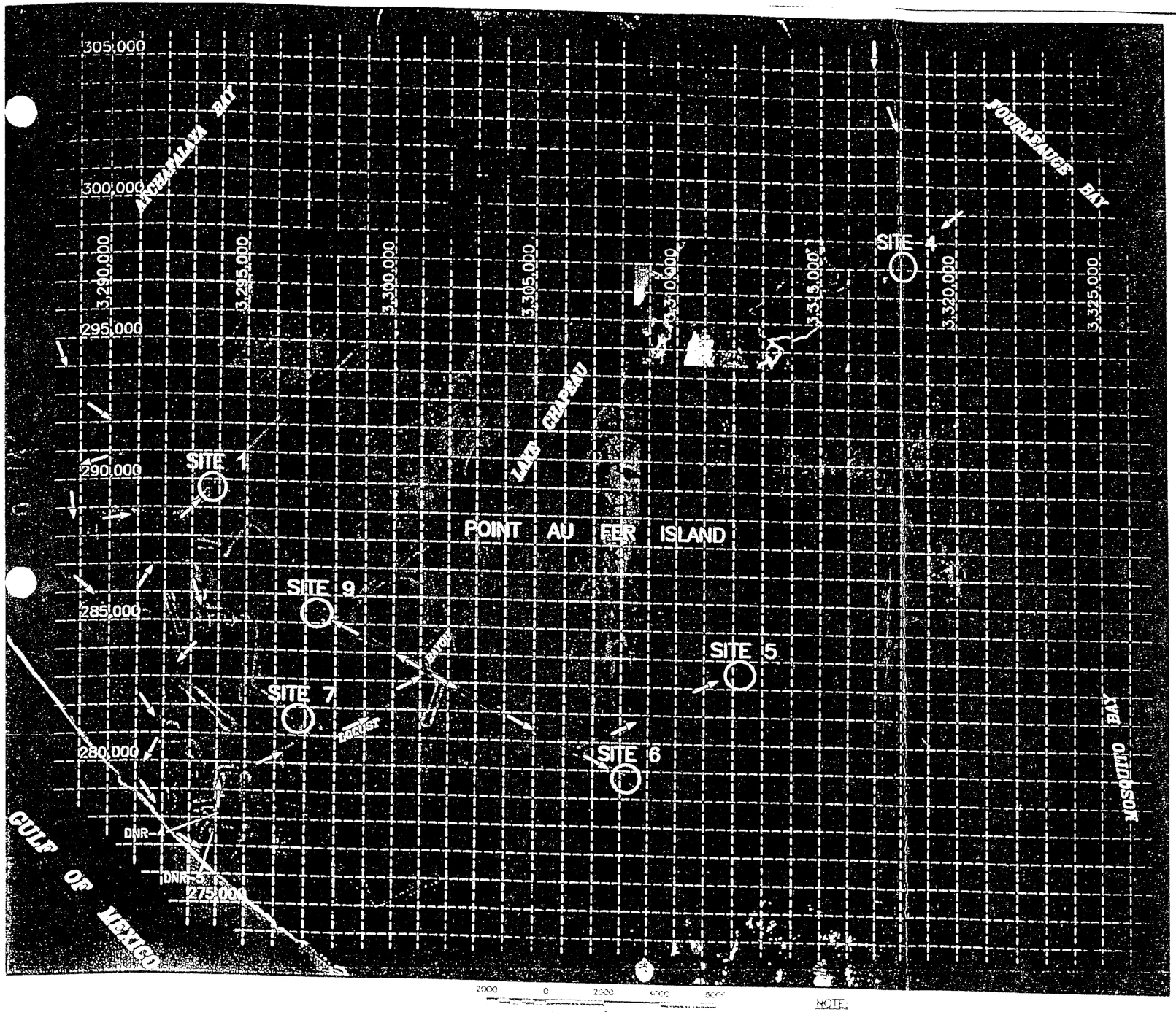
STAMP:

PICCIOLA & ASSOCIATES, INC.
CIVIL ENGR., NAVAL ARCHITECTS, MARINE ENGINEERS, LAND SURVEYORS
P.O. BOX 867 CUT OFF, LA. 70345
PHONE (985) 632-5788 FAX (985) 632-2407

DESIGNED:	J.C.P.	SCALE:	NONE
DETAILED:	L.M.C.	DATE:	APRIL 27, 2003
CHECKED:	J.C.P.		

SHEET NO. 2 OF 10

J.N. 0411-0301



NOTE:

DESCRIPTION OF THE BENCHMARK ON WHICH THE SURVEY IS BASED:

MON. #1 (HESTER CANAL), 4" ALUM. DISK ON TOP OF 20' STAINLESS ROD. ROD & DISK SET INSIDE OF A 6"x6' P.V.C. PIPE DRIVEN TO 15" ABOVE TOP OF SPOIL BANK. SURROUNDED BY CONCRETE STAMPED "LA DNR CRD TE-22/24 G.P.S. #1"

INFORMATION SUPPLIED BY T. BAKER SMITH & SON, INC. (BK. #2243, PG. #5)

DESCRIPTION OF CONTROL USED ON THIS JOB:

DNR-4 = CROSS-MARK ON CONC. PLATFORM
DNR-5 = CROSS-MARK ON CONC. PLATFORM

DESCRIPTION	LATITUDE (NAD 1983)	LONGITUDE (NAD 1983)	"X" (NAD 1983)	"Y" (NAD 1983)	ELEVATION (N.A.V.D) (VERT. 1988)
MON. #1 HESTER CANAL	29°15'30.13080"	91°11'12.92542"	3,327,521.21921	275,827.52598	2.188'
DNR-4	29°15'53.89953"	91°17'29.28324"	3,294,184.61274	278,201.11664	8.164'
DNR-5	29°15'47.85744"	91°17'32.21430"	3,293,923.44575	277,590.68569	9.064'

GEOGRAPHIC LOCATION OF SURVEY CONTROL POINTS

NOTES: CONTROL POINTS ARE 1/2"x5' LONG RE-BARS DRIVEN VERTICALLY TO WITHIN 1/2" OF BEING FLUSH WITH SURFACE OF GROUND. DRAWING POINT NUMBER MATCHES SITE NUMBER.

COORDINATES REFER TO LOUISIANA SOUTH ZONE NAD 83 AND ELEVATIONS REFER TO NAVD 88

SITE NO.	X-COORD.	Y-COORD.	ELEV.	REMARKS
1	3,293,598.93	298,723.04	1.39	NORTH SIDE OF WATERWAY
4	3,318,220.71	297,923.68	1.34	SOUTH SIDE OF WATERWAY
5	3,312,130.68	283,531.24	2.08	WEST SIDE OF WATERWAY
6	3,308,133.92	279,687.34	1.61	SOUTH SIDE OF WATERWAY
7	3,296,770.11	281,469.97	1.39	SOUTH SIDE OF WATERWAY
9	3,297,360.45	285,240.30	2.54	SOUTH SIDE OF WATERWAY

STATE OF LOUISIANA
Joseph C. Picciola III
REG. NO. 25614
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

DRAWING PLOTTED AT HALF-SCALE

REV.	DATE	REMARKS	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

TE-26 LAKE CHAPEAU
WARNING BUOY REPLACEMENT

OVERALL PROJECT SITE PLAN

STAMP:

PICCIOLA & ASSOCIATES, INC.
CIVIL ENG., NAVAL ARCHITECTS, MARINE ENGINEERS, LAND SURVEYORS
P.O. BOX 867 CUT OFF, LA. 70345
PHONE (985) 632-5788 FAX (985) 632-2407

DESIGNED: J.C.P.	SCALE: AS SHOWN	SHEET NO.
DETAILED: L.M.C.	DATE: APRIL 27, 2003	3 OF 10
CHECKED: J.C.P.		

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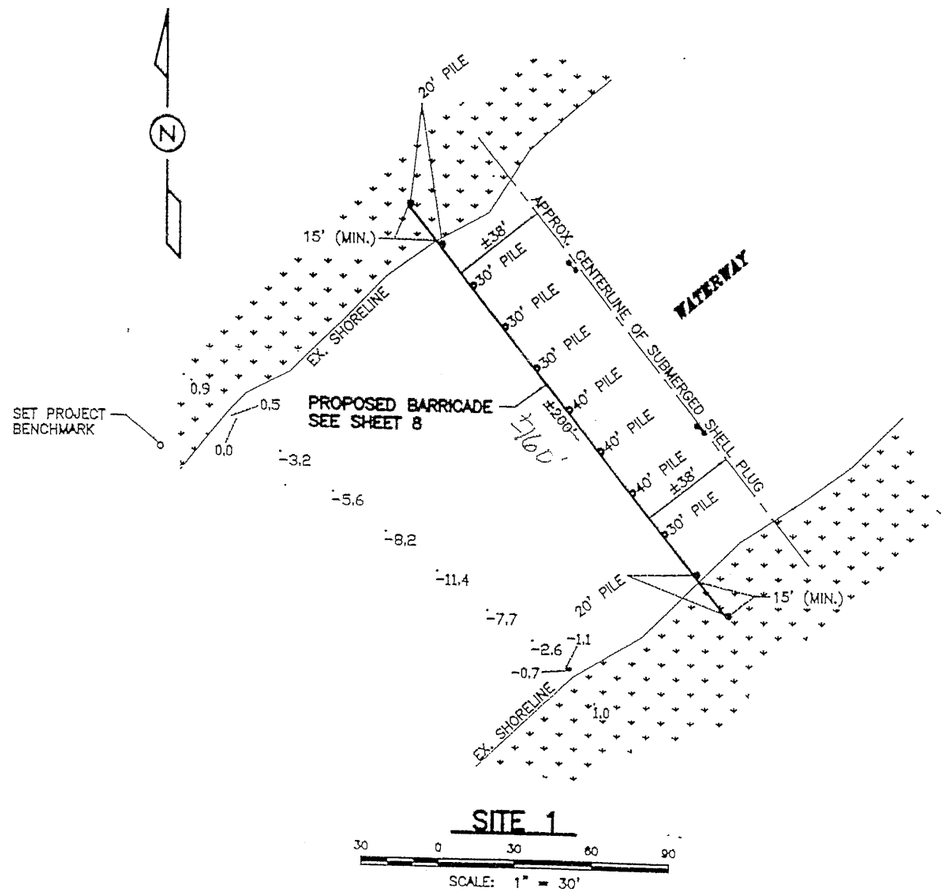

SITE 1

30 0 30 60 90

SCALE: 1" = 30'

LEGEND:

⊷ EXISTING WARNING SIGNS (TO REMAIN)

GENERAL NOTES:

1. CONTRACTOR SHALL NOT DISTURB OR IN ANY WAY DAMAGE THE EXISTING SHELL PLUG AT EACH SITE WHILE CONSTRUCTING BARRICADES.

2. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING SHELL PLUG TOE BEFORE FINAL LOCATION OF BARRICADE IS DETERMINED.

3. CONTRACTOR SHALL NOT REMOVE OR DISTURB THE EXISTING WARNING SIGNS THAT ARE INSTALLED ON THE EXISTING SHELL PLUGS.

4. CONTRACTOR SHALL REMOVE THE EXISTING WARNING BUOY UNITS AT EACH SITE. THIS INCLUDES THE BUOYS, CABLES AND PIPES THAT WERE INSTALLED TO RETAIN THE BUOYS.

5. ALL MATERIAL REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH TITLE 33, PART VII, SUB-PART 1 (SOLID WASTE) OF THE LOUISIANA ENVIRONMENTAL REGULATORY CODE, LATEST EDITION. CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING OF HIS METHOD AND LOCATION OF DISPOSAL.

6. PRIOR TO BEGINNING ANY WORK, CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ANY SUB-SURFACE PIPELINES OR STRUCTURES THAT MAY BE AT OR NEAR EACH SITE. CONTRACTOR SHALL WORK CLOSELY WITH ANY COMPANY THAT MAY HAVE SUCH PIPELINES OR STRUCTURES IN THE AREA. LOUISIANA ONE CALL CAN BE CONTACTED AT 1-800-272-3020.

7. SEE SHEET 2 FOR ADDITIONAL GENERAL AND TECHNICAL NOTES.

STATE OF LOUISIANA
Joseph C. Picciola IV
REG. NO. 25614
REGISTERED PROFESSIONAL ENGINEER IN CIVIL ENGINEERING

DRAWING PLOTTED AT HALF-SCALE

REV.	DATE	REMARKS	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

TE-26 LAKE CHAPEAU
WARNING BUOY REPLACEMENT

STAMP:

PLAN VIEW - SITE 1

PICCIOLA & ASSOCIATES, INC.
CIVIL ENG., MARINE ARCHITECTS, MARINE ENGINEERS, LAND SURVEYORS
P.O. BOX 867 CUT OFF, LA. 70345
PHONE (985) 632-8788 FAX (985) 632-3407

DESIGNED:	J.C.P.	SCALE:	AS SHOWN	SHEET NO.
DETAILED:	L.M.C.	DATE:	APRIL 27, 2003	4 OF 10
CHECKED:	J.C.P.			

J.M. 0411-0301

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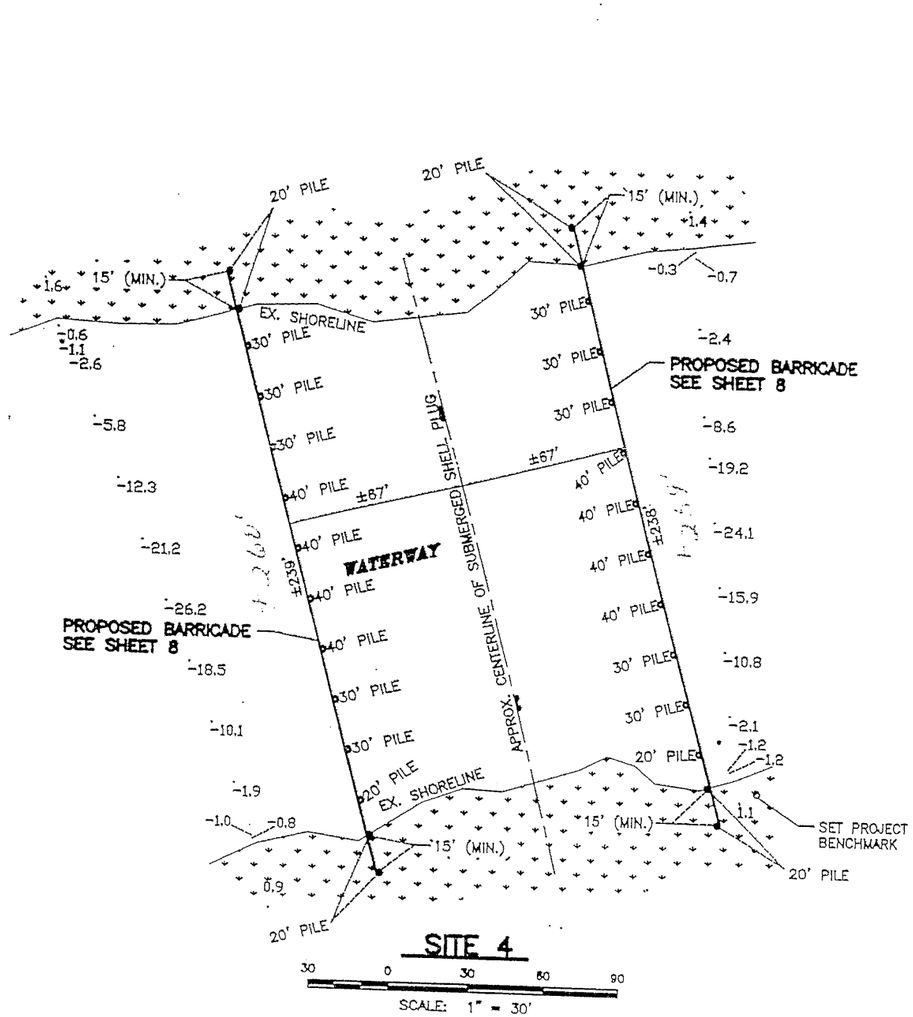

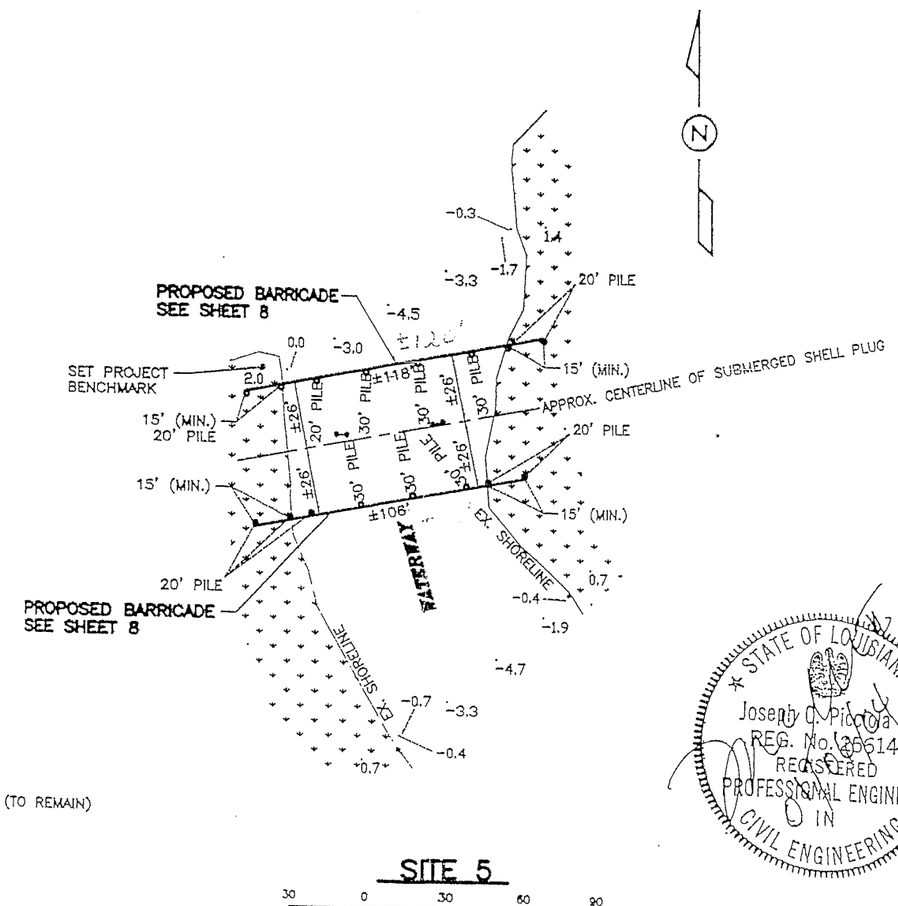

LEGEND:

EXISTING WARNING SIGNS (TO REMAIN)

GENERAL NOTES:

1. CONTRACTOR SHALL NOT DISTURB OR IN ANY WAY DAMAGE THE EXISTING SHELL PLUG AT EACH SITE WHILE CONSTRUCTING BARRICADES.

2. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING SHELL PLUG TOE BEFORE FINAL LOCATION OF BARRICADE IS DETERMINED.

3. CONTRACTOR SHALL NOT REMOVE OR DISTURB THE EXISTING WARNING SIGNS THAT ARE INSTALLED ON THE EXISTING SHELL PLUGS.

4. CONTRACTOR SHALL REMOVE THE EXISTING WARNING BUOY UNITS AT EACH SITE. THIS INCLUDES THE BUOYS, CABLES AND PIPES THAT WERE INSTALLED TO RETAIN THE BUOYS.

5. ALL MATERIAL REMOVED SHALL BE DISPOSED OF IN ACCORDANCE WITH TITLE 33, PART VII, SUB-PART 1 (SOLID WASTE) OF THE LOUISIANA ENVIRONMENTAL REGULATORY CODE, LATEST EDITION. CONTRACTOR SHALL NOTIFY ENGINEER IN WRITING OF HIS METHOD AND LOCATION OF DISPOSAL.

6. PRIOR TO BEGINNING ANY WORK, CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ANY SUB-SURFACE PIPELINES OR STRUCTURES THAT MAY BE AT OR NEAR EACH SITE. CONTRACTOR SHALL WORK CLOSELY WITH ANY COMPANY THAT MAY HAVE SUCH PIPELINES OR STRUCTURES IN THE AREA. LOUISIANA ONE CALL CAN BE CONTACTED AT 1-800-272-3020.

7. SEE SHEET 2 FOR ADDITIONAL GENERAL AND TECHNICAL NOTES.

STATE OF LOUISIANA
Joseph C. Piccola II
REG. No. 25614
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

DRAWING PLOTTED AT HALF-SCALE

REV.	DATE	REMARKS	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

TE-25 LAKE CHAPEAU
WARNING BUOY REPLACEMENT

PLAN VIEW - SITE 4 AND SITE 5

STAMP:

PICCIOLA & ASSOCIATES, INC.
CIVIL ENG., NAVAL ARCHITECTS, MARINE ENGINEERS, LAND SURVEYORS
P.O. BOX 867 CUT OFF, LA. 70345
PHONE (985) 632-5766 FAX (985) 632-2407

DESIGNED:	J.C.P.	SCALE: AS SHOWN	SHEET NO.
DETAILED:	L.M.C.	DATE: APRIL 27, 2003	5 OF 10
CHECKED:	J.C.P.		

J.N. 0411-0301

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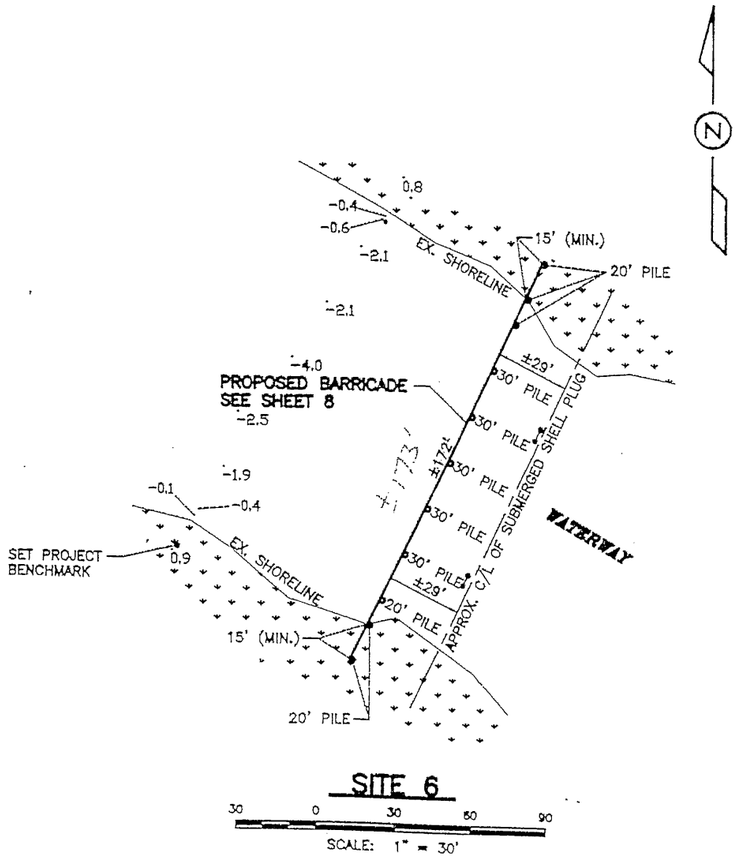
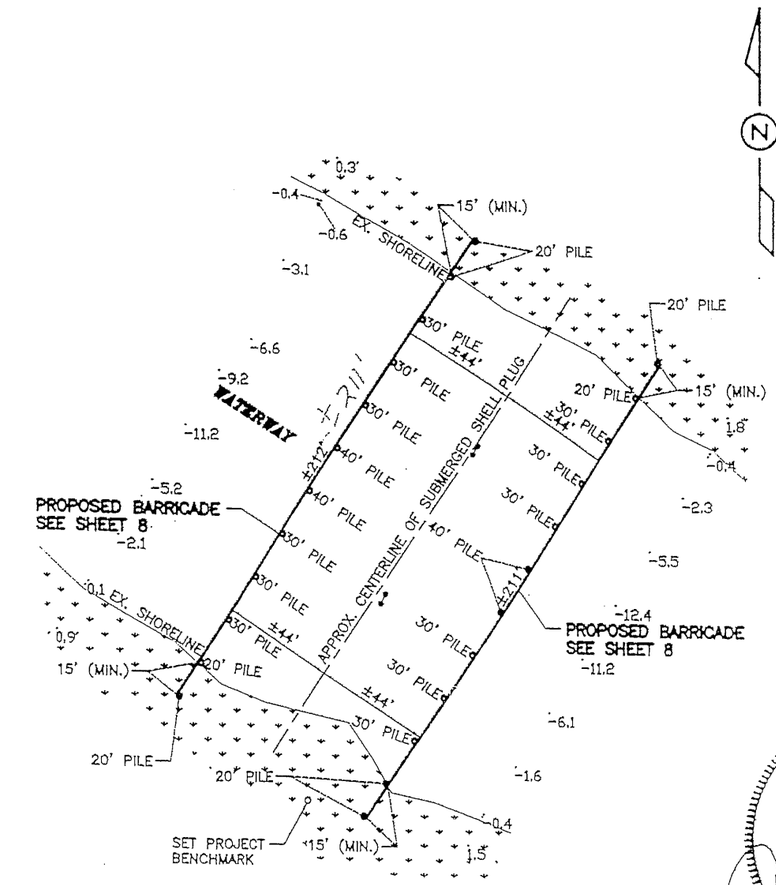


SITE 6

30 0 30 60 90

SCALE: 1" = 30'



SITE 7

30 0 30 60 90

SCALE: 1" = 30'

LEGEND:

⊶ EXISTING WARNING SIGNS (TO REMAIN)

GENERAL NOTES:

1. CONTRACTOR SHALL NOT DISTURB OR IN ANY WAY DAMAGE THE EXISTING SHELL PLUG AT EACH SITE WHILE CONSTRUCTING BARRICADES.

2. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING SHELL PLUG TOE BEFORE FINAL LOCATION OF BARRICADE IS DETERMINED.

3. CONTRACTOR SHALL NOT REMOVE OR DISTURB THE EXISTING WARNING SIGNS THAT ARE INSTALLED ON THE EXISTING SHELL PLUGS.

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7. SEE SHEET 2 FOR ADDITIONAL GENERAL AND TECHNICAL NOTES.

STATE OF LOUISIANA
Joseph C. Picciola II
REG. No. 25614
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

DRAWING PLOTTED AT HALF-SCALE

REV.	DATE	REMARKS	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

TE-26 LAKE CHAPEAU
WARNING BUOY REPLACEMENT

PLAN VIEW - SITE 6 AND SITE 7

STAMP:

PICCIOLA & ASSOCIATES, INC.
CIVIL ENG., NAVAL ARCHITECTS, MARINE ENGINEERS, LAND SURVEYORS
P.O. BOX 887 CUT OFF, LA. 70345
PHONE (985) 632-5788 FAX (985) 632-2407

DESIGNED:	J.C.P.	SCALE:	AS SHOWN
DETAILED:	L.M.C.	DATE:	APRIL 27, 2003
CHECKED:	J.C.P.		

SHEET NO. 6 OF 10

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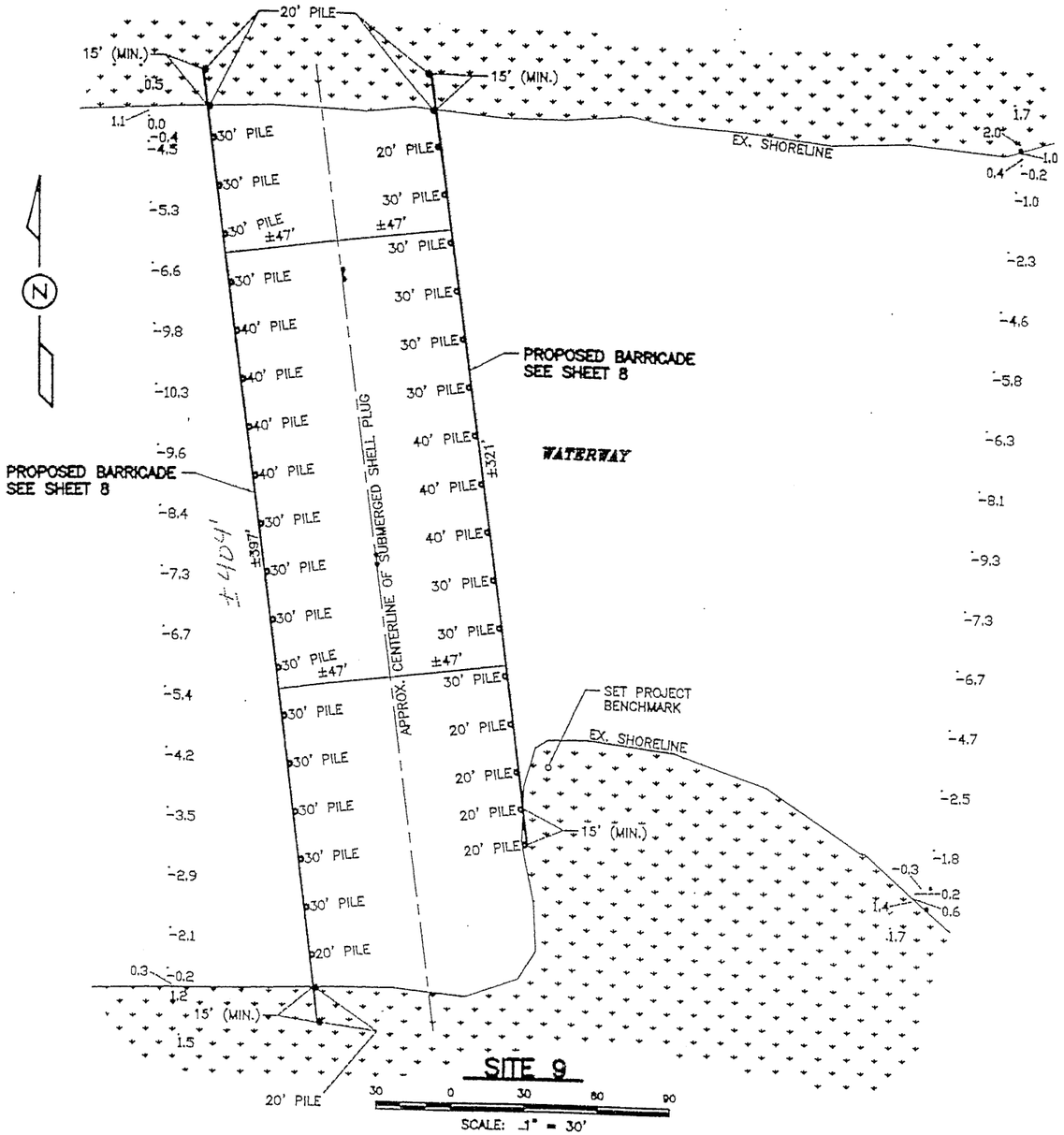

LEGEND:

⊷ EXISTING WARNING SIGNS (TO REMAIN)

GENERAL NOTES:

1. CONTRACTOR SHALL NOT DISTURB OR IN ANY WAY DAMAGE THE EXISTING SHELL PLUG AT EACH SITE WHILE CONSTRUCTING BARRICADES.

2. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF EXISTING SHELL PLUG TOE BEFORE FINAL LOCATION OF BARRICADE IS DETERMINED.

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7. SEE SHEET 2 FOR ADDITIONAL GENERAL AND TECHNICAL NOTES.

STATE OF LOUISIANA
Joseph C. Picciola II
REG. No. 25614
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

DRAWING PLOTTED AT HALF-SCALE

REV.	DATE	REMARKS	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

TE-26 LAKE CHAPEAU
WARNING BUOY REPLACEMENT

PLAN VIEW - SITE 9

STAMP:

PICCIOLA & ASSOCIATES, INC.
CIVIL ENG., NAVAL ARCHITECTS, MARINE ENGINEERS, LAND SURVEYORS
P.O. BOX 867 CUT OFF, LA. 70345
PHONE (985) 632-5766 FAX (985) 632-2407

DESIGNED:	J.C.P.	SCALE:	AS SHOWN	SHEET NO.
DETAILED:	L.M.C.	DATE:	APRIL 27, 2003	7 of 10
CHECKED:	J.C.P.			

J.N. 0411-0301

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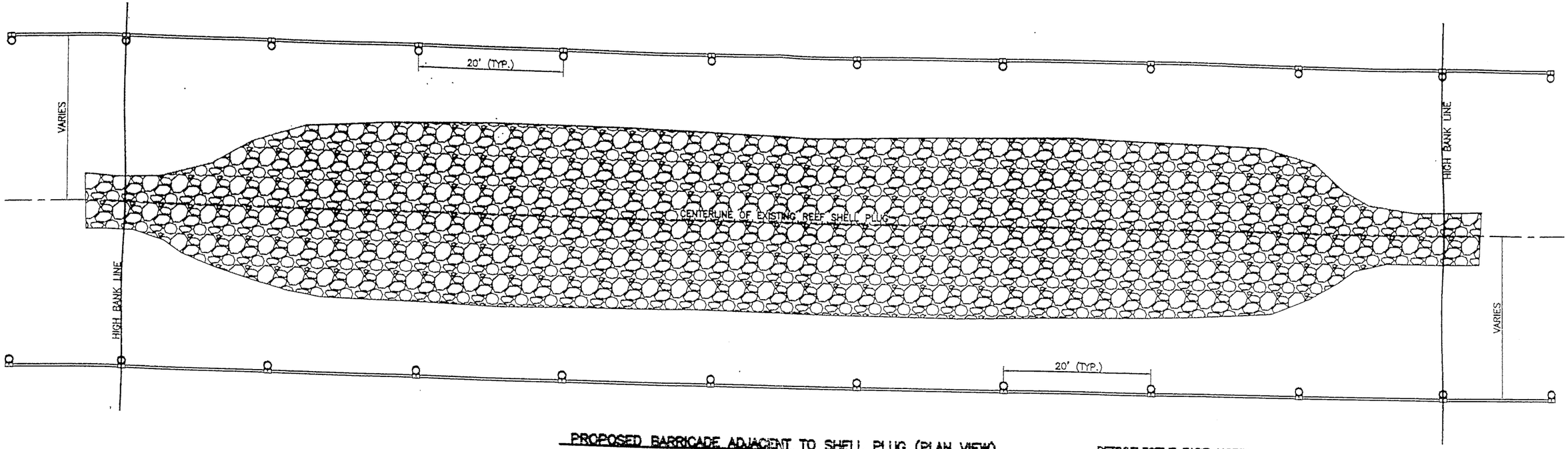


PROPOSED BARRICADE ADJACENT TO SHELL PLUG (PLAN VIEW)

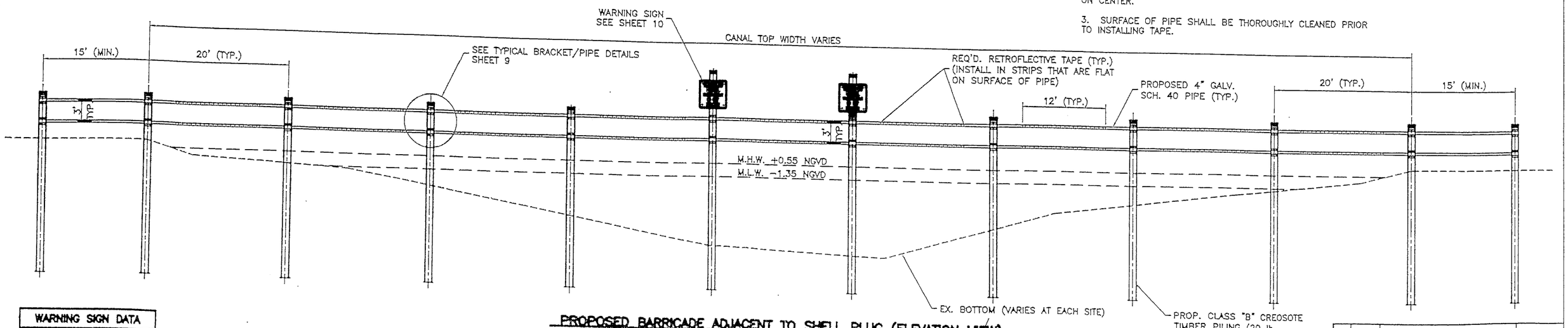
DRAWING NOT TO SCALE

RETROFLECTIVE TAPE NOTES:

1. CONTRACTOR SHALL INSTALL RED 2"x5 MIL (MIN.) VINYL RETROFLECTIVE TAPE MEETING FEDERAL SPEC L-S-300, CLASS I AND FP-79 TYPE II REQUIREMENTS AND HAVING A MIN. REFLECTIVITY OF 50 CANDLE POWER.

2. TWO INCH STRIPS SHALL BE INSTALLED IN STRIPS THAT ARE FLAT ON SURFACE OF PIPE AND SHALL BE PLACED AT 6" ON CENTER.

3. SURFACE OF PIPE SHALL BE THOROUGHLY CLEANED PRIOR TO INSTALLING TAPE.



PROPOSED BARRICADE ADJACENT TO SHELL PLUG (ELEVATION VIEW)

DRAWING NOT TO SCALE

WARNING SIGN DATA	
SITE	SIGNS REQUIRED
1	2
4	4
5	2
6	2
7	4
9	4

WARNING SIGN NOTES:

1. SIGNS SHALL BE INSTALLED SO THAT MAXIMUM VIEWING EFFECT WILL BE ACHIEVED BY ANY APPROACHING VESSEL.

2. FINAL PLACEMENT AS WELL AS NUMBER OF WARNING SIGNS AT EACH SITE SHALL BE APPROVED BY DNR REPRESENTATIVE AND PROJECT ENGINEER.

3. EXISTING WARNING SIGNS SHALL REMAIN IN PLACE.

4. ADDITIONAL FOOTAGE WILL BE REQUIRED FOR PILINGS THAT SIGNS WILL BE ATTACHED TO SO THAT MINIMUM PENETRATION CAN STILL BE ACHIEVED.

STATE OF LOUISIANA
Joseph C. Picciola, III
REG. No. 25614
REGISTERED
PROFESSIONAL ENGINEER
CIVIL ENGINEERING

DRAWING PLOTTED AT HALF-SCALE

STAMP:

REV.	DATE	REMARKS	BY

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION DIVISION

TE-25 LAKE CHAPEAU
WARNING BUOY REPLACEMENT

TYPICAL BARRICADE - PLAN & ELEVATION VIEWS

PICCIOLA & ASSOCIATES, INC.
CIVIL ENGR., NAVAL ARCHITECTS, MARINE ENGINEERS, LAND SURVEYORS
P.O. BOX 867 CUT OFF, LA. 70345
PHONE (985) 632-5784 FAX (985) 632-3407

DESIGNED:	J.C.P.	SCALE:	AS SHOWN
DETAILED:	L.M.C.	DATE:	APRIL 27, 2003
CHECKED:	J.C.P.		

SHEET NO. 8 of 10

J.N. 0411-0301

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WORKING PLOT