OPERATION, MAINTENANCE, AND REHABILITATION PLAN FOR THE BRADY CANAL HYDROLOGIC RESTORATION PROJECT TE-28

February 14, 2002

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
COASTAL RESTORATION AND MANAGEMENT

USDA NRCS Natural Resources Conservation Service

OPERATION, MAINTENANCE, AND REHABILITATION PLAN FOR THE BRADY CANAL HYDROLOGIC RESTORATION PROJECT TE-28

FEBRUARY 14, 2002

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

and

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History of Revisions

10/12/2000	Pyburn & Odom MCA submit draft plan to LDNR.
03/18/2001	NRCS comments submitted to LDNR.
07/30/2001	Revised draft plan submitted to landowners and NRCS for final review.
04/25/2002	Spring Structure Operations Report
08/2002	Attachment VII - Fall 2002 Structure Operations Report
04/2003	Attachment VII - Spring 2003 Structure Operations Report
09/2003	Attachment VII - Fall 2003 Structure Operations Report
09/11/2003	Amended Attachment III and IV to include the Project Completion Report and As-built Drawings for the Brady Canal Breach Repair Project (2003).
1/16/2004	Amend Attachment III and IV to include the Project Completion Report and As-built Drawings for the Jug Lake Levee Refurbishment Project
1/28/2004	Issued Project Completion Report and As-built Drawings for work performed by Apache Corporation for refurbishment of levee along the west bank Jug Lake.
03/2004	Attachment VII - Spring 2004 Structure Operations Report
10/2004	Attachment VII - Fall 2004 Structures Operations Report
03/2005	Attachment VII - Spring 2005 Structure Operations Report
10/2005	Attachment VII - Fall 2005 Structure Operations Report
03/2006	Attachment VII - Spring 2006 Structure Operations Report
09/2006	Attachment VII - Fall 2006 Structure Operations Report
03/2007	Attachment VII - Spring 2007 Structure Operations Report
09/2007	Attachment VII - Fall 2007 Structure Operations Report
03/2008	Attachment VII - Spring 2008 Structure Operations Report
10/3008	Attachment VII - Fall 2008 Structure Operations Report
03/2009	Attachment VII - Spring 2009 Operations Report

OPERATION, MAINTENANCE, AND REHABILITATION PLAN

BRADY CANAL HYDROLOGIC RESTORATION

(TE-28)

The Louisiana Department of Natural Resources (LDNR) and the Natural Resources Conservation Service (NRCS) agree to carry out the terms of this Operation, Maintenance, Repair, and Rehabilitation Plan (hereinafter referred to as the "Plan") of the accepted, completed project features in accordance with the Cost Sharing Cooperative Agreement 68-7217-7-11, DNR Agreement No. 2511-98-08 dated June 17, 1998 (Attachment I).

The project features covered by this plan are inclusive of and are identified as the Brady Canal Hydrologic Restoration Project (TE-28). 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.

Construction of the Brady Canal Project was authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning Protection and Restoration act (CWPPRA) enacted on November 29, 1990 as amended. The Brady Canal Project was approved on the third Priority Project List.

Landowner, Fina Oil and Chemical Company (FINA) purchased by LaTerre Co., Ltd. By: Castex Energy, Inc., G.P. (and managed by Castex LaTerre, Inc.) and landowner, Louisiana Land and Exploration Company (LL&E) purchased by Burlington Resources have agreed to provide LDNR support as described within the Cost Sharing Agreement.. (Attachment I - Cost Share Agreement)

1. PROJECT DESCRIPTION, PURPOSE, AND LOCATION

The Brady Canal Hydrologic Restoration Project consists of 7,653 acres (3,097 ha) located in the Terrebonne basin, within the Bayou Penchant - Lake Penchant watershed in Terrebonne Parish, Louisiana. The project is bounded by Bayou Penchant, Brady Canal, and Little Carencro Bayou to the north, Bayou DeCade and Turtle Bayou to the south, Superior Canal to the east, and Little Carencro Bayou and Voss Canal to the west. (See Attachment II - Brady Canal Hydrologic Restoration Project Features).

The Brady Canal Hyrologic Restoration Project involves the installation and maintenance of fixed crested weirs with barge bays and variable crest sections, construction and maintenance of earthen, rock and rock armored earthen embankments, and the placement of rock armor to stabilize the channel cross-sections. These structures are designed to reduce the adverse tidal

effects in the project area (that have occurred through man-made channels and the enlarged natural channels) and to promote freshwater introduction to better utilize available freshwater and sediment retention. The rate of shoreline erosion will be reduced and a hydrologic regime conducive to sediment and nutrient deposition will encourage the re-establishment of emergent and submergent vegetation in eroded areas to a more historic low energy environment.

The Project has a twenty-year (20 year) economic life which began in July 2000.

The principal project features include:

Site 6 - fixed crest weir with barge bay.
Site 7 - rock plug.
Site 10 - stabilization rock armored channel liner.
Site 14 - fixed crest weir with variable crest section.
Site 20 - stabilization rock armored channel liner.
Site 21 - fixed crest weir with three (3) variable crest sections.
Site 23 - fixed crest weir with two (2) variable crest sections.
Site 24 - fixed crest weir.
4405 ft. - Rock armored earthen embankment.
3660 ft. - Rock dike
8531 ft. - Earthen embankment
Maintenance of existing overflow bank (21,600 ft.)
Maintenance of shore and earthen embankment.
Maintenance of existing structures.

2. CONSTRUCTION COMPLETION

The Brady Canal Project completion report is included in Attachment III of the Plan along with the "As-Built project plans. Within this completion report is a summary of information and significant events including: project personnel; final as-built project features and benefitted acres; construction cost and CWPPRA project estimates; construction oversight costs; construction activities and change orders; pipeline and utility crossing owner information; and other significant milestone dates and comments.

The project "As-built" construction drawings are updated with all field changes and modifications that occurred. (Attachment III - Project Completion Report and Attachment IV - Construction As-built Drawings)

3. PROJECT PERMITS

Project permit applications were completed and submitted to appropriate agencies and permits were received prior to construction. These permits and permit applications are included in Attachment V. Provisions for renewal of certain Federal and State Permits may be required.

4. ITEMS REQUIRING MAINTENANCE AND REHABILITATION

The following completed structural components project features jointly accepted by LDNR, and NRCS, Burlington Resources and Castex Laterre will require operation, maintenance, repair, and /or rehabilitation throughout the twenty (20) year life of the project. All elevations are referenced to the 1988 North American Vertical Datum (NAVD88).

2. Site/Structure #6- 244 linear ft. steel pile fixed crest weir with a 70 linear ft. Barge bay across an oil field access canal on the north side of Bayou DeCade west of Jug Lake. The structure consists of 4,752 square feet of sheet piling. The 70 linear ft. wide barge bay is set with an invert of the mudline depth of the channel or at an elevation of approximately -0.5 ft. The fixed crest is set at +0.5 ft. On each side of the canal is a 15 linear ft. wide earthen wing-wall section set at +4.0 ft. to tie into the embankment. 12" x 50 ft. timber batter piles exists at the 70 linear ft. barge bay opening. Solar powered Navigation Aid with battery backup and aluminum warning signs are set on batter piles. Sheet piling, pile caps, batter piles, railings and miscellaneous angle brackets, are galvanized and/or painted. Nuts and bolts are stainless steel or galvanized. Aluminum warning signs supported by angle brackets on 12"x 50 ft. round timber piles are set on both sides of the barge bay. **Note: The invert of the 70 ft. barge bay should be monitored for scour.**

3. Site/Structure #7 - 415 linear ft. rock riprap plug (approximately 6,000 tons of rock riprap) across an oil field access canal on the north side of Bayou DeCade west of Site #6. The top of the rock plug is set at +4.0 ft. which corresponds to the elevation of the armored earthen embankment on either side of the canal. Aluminum warning signs supported by angle brackets on 12" x 50 ft. round timber piles with galvanized pile caps, are set on both sides of the plug. **Note: The rip rap plug should be monitored for settlement.**

4. Site/Structure #10 - 275 ft. x 48 ft. loose rock riprap channel lining (approximately 1,800 tons of rock riprap) placed three (3) feet minimum thickness, lining the opening if the channel with the outlets from the west end of Bay Long intersecting Voss Canal. Aluminum warning signs on 12" x 50 ft. round timber piles with galvanized pile caps are set on both sides of the channel lining. **Note: The channel lining should be monitored for scour.**

5. Site/Structure #14 - 82 linear ft. steel pile fixed crest weir with a six (6) ft. wide

variable crest section. This structure replaced a fixed crest weir located on the east side of Little Carencro Bayou north of Camp Better Livin. The structure consists of fixed crest weir 36 linear feet in length (18 linear feet on each side of the variable crest section) for a total of 828 square feet of sheet piling set at 1.0 ft. BML (approximately 0.0 ft. NAVD88) and the 6 ft. wide variable crest section containing a stop log bay with one (1) bay of 10 each 4" x 6" stop logs mounted in a steel structured stop log guide, locking channel secured by locks, which can be adjusted from 1.0 ft. BML to 5.0 ft. BML. To access, install, and remove stop logs is a 6" x 8" timber hoist support including galvanized walkways, grating, handrails, pile caps, pull-up bars, and miscellaneous channels, and angle bracings, nuts and bolts which are galvanized or have painted surfaces. On each side of the fixed crest section structure is a 15 linear ft. wide earthen wing wall section set at +4.0 ft. NAVD88 to tie into the existing earthen embankment. Aluminum warning signs are attached to round timber piles with galvanized pile caps, set at the variable crest section, stop log bay.

6. Site/Structure #20 - 180 ft. x 48 ft. loose rock riprap channel lining (approximately 1,300 tons of rock rip rap) placed three (3) ft. minimum thick, lining the opening at the northwest corner of Jug Lake connection to the interior marsh. Aluminum warning signs supported by angle brackets attached to 12" x 50 ft. round timber piles with galvanized pile caps are set on both sides of the channel lining. **Note: Structure should be monitored for settlement.**

7. Site/Structure #21 - 100 linear ft. steel sheet pile fixed crest weir with three (3)- 6 ft. wide variable crest sections for a total of 2,180 square feet of sheet piling. This structure replaced a timber weir located on the north side of Jug Lake. This steel sheet pile structure consists of four (4) fixed crest weir sections set at 1.0 BML (approximately 0.0 ft.) for a total of 2,180 square feet of sheet piling and the three (3), 6 ft. wide variable crest sections containing stop log bays, with 10 each, 4" x 6" stop logs in steel structured stop log guides, including locking channels, secured by locks, which can be adjusted from 1.0 ft. BML to 5.0 ft. BML. To access, install, and remove stop logs is a 6" x 8" timber hoist support including a galvanized walkway, grating, handrails, pile caps, pull-up bars and miscellaneous channels, and angle bracing nuts and bolts which are galvanized or have painted surfaces. On either side of the fixed crest sections of the structure is a 15 linear ft. wide earthen wing wall sections set at +4.0 ft. to tie-in to the existing earthen embankments. Aluminum warning signs are attached to round timber piles with galvanized pile caps set at the variable crest sections and stop log bays.

8. Site/Structure #23 - 92 ft. steel sheet pile fixed crest weir with two, 6 ft. wide variable crest sections for a total of 2,000 square feet of sheet piling. This structure replaced a timber fixed crest weir located on the east side of Jug Lake. The fixed crest weir sections are set at 1.0 ft. BML (approximately 0.0 ft.) and two, 6 ft. wide variable crest sect ions containing stop log bays with 10 each, 4" x 6" stop log guides,

locking channels, secured by locks which can be adjusted from 1.0 ft. BML to 5.0 ft. BML. To access, install, and remove stop logs is a 6" x 8" timber hoist support including galvanized walkways, grating, handrails, pile caps, pull-up bars, and miscellaneous channels and angle bracing, nuts, and bolts which are galvanized or have painted surfaces. On either side of the fixed crest sections of the structure is a 15 linear ft. wide earthen wing wall section set at +4.0 ft. to tie-in to the existing embankments. Aluminum warning signs are attached to round timber piles with galvanized pile caps set at the variable crest sections and stop log bays.

9. Site/Structure #24 - 140 ft. steel pile fixed crest weir located adjacent to the southeast corner of Jug Lake replaced a timber fixed crest weir. The structure consists of a fixed crest weir with 3,320 square feet of sheet piling of which 60 linear ft. is set at 4.0 ft. elevation, 30 linear ft. is set at 1.5' elevation, and 50 linear ft. is set at -0.3' elevation. On either side of the structure is a 15 linear ft. wide earthen wing wall sections set at +4.0 ft. NAVD88 to tie-in to the existing earthen embankments. Aluminum warning signs are set at either side of the 50 linear ft. section of sheet piling, and are supported by round 12" x 50 ft. long timber piles with galvanized pile caps.

I. **Rock Armored Earthen Embankment** - Maintenance of approximately 4,405 linear ft. of rock armored earthen embankment canal along Bayou DeCade and Voss Canal.

J. **Earthen Embankment** - Maintenance of approximately 8,531 linear feet of earthen embankment along Voss Canal and along Little Carencro Bayou, and Carencro Bayou.

K. **Rock Dike** - Maintenance of approximately 3,660 linear feet along Bayou DeCade.

5. OPERATION AND MAINTENANCE BUDGET

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

6. WATER MANAGEMENT - OPERATION OF STRUCTURES

The schedule for operations of structures 14, 21, and 23 has been jointly determined by NRCS, LDNR, Castex LaTerre and Burlington Resources and based on analysis of monitoring data provided by LDNR. Operation schedules may require modification in the future should hydrologic conditions within the project area change. In accordance with the Cost Share Agreement, LDNR shall assume responsibility for operation of these structures.

Based on present data, the operation schedule for the project shall be as described in Attachment VII - Structure Operation Schedule.

7. RESPONSIBILITIES – OPERATIONS

1. LDNR will:

    1. In accordance with the Cost Share Cooperative Agreement 68-7217-7-11 DNR Cooperative Agreement No.2511-98-08, assume all responsibilities for maintenance and rehabilitation of the accepted and completed project features identified in Section 4.

    2. Submit an annual report to NRCS detailing the structural operations completed for that year.

    3. Jointly approve any variations in the Structure Operation Schedule (Attachment VII) with NRCS, Castex Laterre, and Burlington Resources.

    4. Provide a total contribution equal to the amount outlined in the Cost Sharing Agreement for the operation cost needed for the twenty (20) year life of the project.

B. NRCS will:

1. Jointly approve any variations in the Structure Operation Schedule (Attachment VII) with LDNR, Castex Laterre, and Burlington Resources.

2. Provide a total contribution equal to the amount outlined in the Cost Sharing Agreement for the operation cost needed for the twenty (20) year life of the project.

3. Upon the request of LDNR and to the extent its resources allow, provide consultation assistance for the operation of the project.

C. Castex LaTerre will:

1. Jointly approve any variations in the Structure Operation Schedule (Attachment VII) with LDNR, NRCS, and Burlington Resources.

2. Provide a total contribution equal to the amount outlined in the Cost Sharing Agreement for the operation cost needed for the twenty (20) year life of the project.

D. Burlington Resources (Burlington) will:

1. Jointly approve any variations in the Structure Operation Schedule (Attachment VII) with LDNR, NRCS and Castex Laterre.

2. Provide a total contribution equal to the amount outlined in the Cost Sharing Agreement for the operation cost needed for the twenty (20) year life of the project.

8. RESPONSIBILITIES - MAINTENANCE AND REHABILITATION

A. LDNR will:

1. In accordance with the Cost Sharing Agreement, assume all responsibilities for maintenance and rehabilitation of the accepted completed project features identified in Part 3.

2. Conduct joint site inspections with NRCS, Castex Laterre and Burlington Resources of the project site at least annually and after major storm events if determined to be necessary by LDNR and/or NRCS. LDNR will submit to NRCS 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 an assessment of the urgency of such action.

3. Perform or have performed any corrective actions needed, if such corrections have been approved by LDNR or NRCS. NRCS 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 30 calendar days prior to the date of formal request for construction bids, LDNR or its appointed representative shall provide NRCS with final copies of all project corrective action designs and specifications for review and concurrence by NRCS. 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 NRCS. Any plan and/or specification changes both before and after award of construction contracts, shall be approved by LDNR in coordination with NRCS.

4. The representatives appointed above shall meet as necessary during the period of construction for corrective actions and shall make such recommendations as they deem necessary.

5. Provide a total contribution equal to the amount outlined in the Cost Share

Agreement for the maintenance and rehabilitation cost needed for the 20-year life of the project.

B. NRCS will:

1. Conduct joint inspections with LDNR, Castex Laterre and Burlington Resources of the project site at least annually and after major storm events if determined to be necessary by LDNR or NRCS.

2. Provide guidance for the development of plans and implementation of the project, review final copies of any maintenance and rehabilitation project designs and specifications, and provide review and approval of all planning and construction details prior to formal request for construction bids or any corrective actions for the project.

3. Provide a total contribution equal to the amount outlined in the Cost Share Agreement for the maintenance and rehabilitation cost needed for the twenty (20) year life of the project.

4. Conduct quarterly reviews of the State's progress against the goals and objectives of the Cooperative Agreement.

C. Castex LaTerre will:

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

2. Review preliminary design of any operation and maintenance project and provide concurrence prior to formal request for construction bids on any corrective actions for the project.

3. Provide a total contribution equal to the amount outlined in the Cost Share Agreement for the non-federal share of maintenance and rehabilitation cost needed for the 20-year life of the project. Contributions will include cash and/or credit for in-kind contribution at an agreed-to-value.

D. Burlington Resources will:

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

2. Review preliminary design of any operation and maintenance project and

provide concurrence prior to formal request for construction bids on any corrective actions for the project.

3. Provide a total contribution equal to the amount outlined in the Cost Share Agreement for the non-federal share of maintenance and rehabilitation cost needed for the 20-year life of the project.. Contributions will include cash and/or credit for in-kind contribution at an agreed-to-value.

The undersigned parties, acting on behalf of their respective agencies, agree to operate, maintain, and rehabilitate the Brady Canal Hydrologic Restoration Project (TE-28) according to this document, referenced Cooperative Agreement, plans, and all applicable permits and laws.

NATURAL RESOURCES CONSERVATION SERVICE

By: Donald W. Gohmert Date: 6/19/20

Title: State Conservationist

LOUISIANA DEPARTMENT OF NATURAL RESOURCES

By: [signature] Date: 7/16/02

Title: Asst. Sec., OCRM, DNR

LATERRE CO., Ltd.
By: CASTEX ENERGY, Inc., G.P.

By: John W. Woodard Date: April 12, 2002
John W. Woodard
Attorney-in-Fact

BURLINGTON RESOURCES

By: Kermit J. Coulon Date: 5/29/2002
Kermit J. Coulon, Jr.

Title: Manager.

ATTACHMENT I

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

COST SHARE AGREEMENT

DNR AGREEMENT NO. 2[illegible]95-11
OCR AGREEMENT NO. 435-5026
NRCS AGREEMENT NO. 68-7217-4-44

AMENDMENT NO. 1

TO

COST SHARING AGREEMENT

BETWEEN

USDA - NATURAL RESOURCES CONSERVATION SERVICE

AND

STATE OF LOUISIANA

FOR CONSTRUCTION, OPERATION, MAINTENANCE, REHABILITATION AND MONITORING OF THE

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

In accordance with ARTICLE XXI - AMENDMENTS TO BE IN WRITING, this agreement is terminated through agreement of both parties.

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed on the 17th day of June, 1998, at Baton Rouge, Louisiana before the undersigned witnesses.

THE STATE OF LOUISIANA

BY: Jack Caldwell
Jack Caldwell, Secretary
Louisiana Department of
Natural Resources

WITNESSES

Vicki M. Schulling
Katherine Alford
Karen Y. Lewis

IN WITNESS WHEREOF, the parties hereto have caused this Amendment to be executed on the 6th day of July, 1998, at Lafayette, Louisiana before the undersigned witnesses.

USDA, NATURAL RESOURCES CONSERVATION SERVICE

BY: Donald Gohmert

APPROVED
Office of the Governor
Office of Contractual Review
AUG [illegible] 1998

Susan Smith
DIRECTOR

WITNESSES

Cheryl C. Waller
Mary Woodum

CF 533601
Cooperative Agreement No. 68-7217-7-11
DNR Agreement No. 2511-98-08

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COST SHARE AGREEMENT

BETWEEN

USDA-NATURAL RESOURCES CONSERVATION SERVICE

THE STATE OF LOUISIANA

FINA OIL AND CHEMICAL COMPANY

AND

THE LOUISIANA LAND AND EXPLORATION COMPANY

FOR CONSTRUCTION, OPERATION, MAINTENANCE, REHABILITATION

AND MONITORING OF THE

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

PTE-26b/TE-28

THIS AGREEMENT, entered into this 15th day of May, 1998 by and between the U.S. Department of Agriculture, represented by the Natural Resources Conservation Service, (hereinafter referred to as "NRCS"), acting by and through the State Conservationist, the State of Louisiana, acting by and through the Secretary, Department of Natural Resources, (hereinafter referred to as "DNR"), Fina Oil and Chemical Company, acting by and through E. A. Nash Vice President, (hereinafter referred to as "Fina"), and The Louisiana Land and Exploration Company, acting by and through J. N. Wood, Vice President, (hereinafter referred to as "LL&E").

WITNESSETH, THAT:

WHEREAS, implementation of the Brady Canal Hydrologic Restoration Project (PTE-26b/TE-28) was authorized by the Coastal Wetlands Planning, Protection, and Restoration Act (hereinafter referred to as "CWPPRA") of 1990, 16 U.S.C. Section 3961 *et seq.*, (Public Law 101-646, Title III), and for local sponsorship by the Louisiana Coastal Wetlands Conservation and Restoration Plan, by the State of Louisiana in April 1994; and

WHEREAS, Section 303(f) of CWPPRA specifies the cost-sharing requirements applicable to the Project, and states that total project costs, including construction, operation, maintenance,

rehabilitation, and monitoring, are to be seventy-five percent (75%) federal and twenty-five (25%) non-federal, subject to modification of the cost-share formula upon approval of the State's Coastal Wetlands Conservation Plan pursuant to Section 304 of CWPPRA; and

WHEREAS, the State's Coastal Wetlands Conservation Plan was approved on November 30, 1997; all costs incurred prior to or on November 30, 1997, are shared at seventy-five percent (75%) federal and twenty-five (25%) non-federal, and all costs incurred on or after December 1, 1997, are shared at eighty-five percent (85%) federal and fifteen (15%) non-federal; and

WHEREAS, Section 303(e) of CWPPRA states that the Secretary of the Army shall not fund the identified project unless said project is subject to such terms and conditions necessary to ensure that wetlands restored, enhanced, or managed through the project will be administered for the long-term conservation of such lands and waters and dependent fish and wildlife populations; and

WHEREAS, NRCS is authorized by federal law to enter into a cost-sharing agreement with DNR, Fina and LL&E to provide financial cost-share assistance for the construction, operation, maintenance, rehabilitation, and monitoring of the project; and

WHEREAS, La. R.S. 49:213 and La. R.S. 49:214 state that the Secretary of DNR may enter into cost-sharing agreements with the federal government in order to conserve, restore, create, and enhance vegetated wetlands in coastal Louisiana in accordance with prescribed legislative oversight; and

WHEREAS, Fina has agreed to provide to DNR sixty percent (60%) of the non-federal share of the total Project costs, through cash or in-kind services; LL&E has agreed to provide to DNR forty percent (40%) of the non-federal share of the total Project costs, through cash or in-kind services; and

WHEREAS, Fina and LL&E have agreed to provide to DNR three percent (3%) and two percent (2%), respectively, of the total Project(s) cost in actual cash and the remaining balance of the non-federal share in the form of cash or in-kind contributions; and,

WHEREAS, DNR, Fina and LL&E are willing to participate in cost-sharing and financing in accordance with the terms of this Agreement;

NOW, THEREFORE, the parties agree as follows:

ARTICLE I - DEFINITIONS AND GENERAL PROVISIONS

For the purposes of this Agreement:

a. The term **"Project"** shall mean that work authorized by congress as specified above for the construction of the PTE-26b/TE-28 Brady Canal Hydrologic Restoration Project. The PTE-26b/TE-28 Project is located in western Terrebonne Parish, about 20 miles south of the community of Gibson. The approximately 7,700 acre project area is bounded on the north by Bayou Penchant, Brady Canal, and Little Carencro Bayou; on the south by Bayou DeCade; on the east by Superior Canal; and on the west by Little Carencro Bayou and Voss Canal. The project will benefit approximately 1,100 acres of wetlands by enhancing freshwater, and sediment and nutrient delivery to the highly fragmented transitional area.

b. The term **"total Project costs"** shall mean all costs incurred by DNR, NRCS, Fina and LL&E directly related to implementation of the Project. Such costs shall be those costs incurred after November 1, 1993; and which shall include, but not necessarily limited to, the following: actual costs of applicable geotechnical investigations, detailed engineering and design; actual construction costs; construction management, supervision and inspection costs; operation costs; monitoring costs; the cost of land rights acquisition, easements, servitudes, rights-of-way; utility and facility alterations or relocations; maintenance; and rehabilitation for the Project.

c. The term **"total first cost"** shall mean all costs incurred by DNR, NRCS, Fina and LL&E directly related to completion of the construction phase of the project as identified in the official CWPPRA authorization document prepared by the CWPPRA Task Force (November 1993) and submitted to Congress.

d. The term **"period of construction"** shall mean the time from the advertisement of the first construction contract to the time that NRCS certifies to DNR, Fina and LL&E that construction of the entire project is complete. NRCS shall furnish to DNR, Fina and LL&E copies of the Government's written Notice of Acceptance and Completion of Work for all contracts for the Project.

e. The term **"Contracting Officer"** shall mean the warranted Contracting Officer of NRCS awarding a federal contract.

f. The term **"relocations"** shall mean the preparation of plans and specifications for, and the accomplishment of any alteration, modification, lowering or raising in place, and/or new construction related to, but not limited to, existing: buildings, pipelines, public utilities (such as municipal water and sewer lines, telephone lines, and storm drains), aerial utilities, cemeteries, and other facilities, structures, and improvements determined by NRCS and DNR to be necessary for the construction, operation, maintenance, monitoring, and rehabilitation of the Project.

g. The term **"utility"** shall mean pipelines, cables, and similar facilities.

h. The term **"fiscal year"** shall mean one fiscal year of the United States Government, unless otherwise specifically indicated. The Government fiscal year begins on October 1 and ends on September 30.

i. The term **"construction management costs"** shall mean costs incurred by NRCS directly supervising and administering construction contracts, to include related overhead costs, as specified in applicable contracting regulations.

j. The term **"Project Monitoring Plan"** shall mean the plan dated August 13, 1996, jointly developed and approved by DNR and NRCS specifically for the Project which identifies all monitoring requirements, parameters and procedures. DNR will be responsible for collection of monitoring data and assimilation as part of the non-federal cost-share responsibilities. Monitoring will be conducted for the expected life of the Project or as agreed by NRCS, DNR, Fina and LL&E.

k. The term **"maintenance"** shall mean any action completed after the construction period that is required to maintain the Project at "as built" standards, and costing less than twenty percent (20%) of original construction cost.

l. The term **"rehabilitation"** shall mean any action completed after the construction period that is required to maintain the Project at "as built" standards, and costing twenty percent (20%) or more of the original construction cost.

m. The term **"Operation, Maintenance, and Rehabilitation Plan"** shall be a plan jointly developed and approved by NRCS, DNR, Fina and LL&E upon completion of the Project and prior to acceptance by DNR, NRCS, Fina and LL&E of the completed Project or functional portion of the Project. The Operation, Maintenance, and Rehabilitation Plan will address specific items, with estimated costs, to be performed throughout the expected life-span of the Project and will be revised periodically to reflect actual needs.

n. The term **"operations, maintenance, and rehabilitation costs"** shall mean all costs incurred by DNR, NRCS, Fina and LL&E related to operating, maintaining, and rehabilitating the final accepted Project. Specific requirements and responsibilities shall be identified and mutually accepted by all aforementioned parties in an "Operations, Maintenance, and Rehabilitation Plan".

o. The term **"obligation"** refers to amount of orders placed, contracts awarded, services rendered, or other commitments made during a given period which will require outlay during the same or some future period.

p. The term **"engineering and design costs"** shall mean all costs incurred by DNR and NRCS related to the development, approval, and acceptance of detailed engineering and design plans, specifications, and Project bid documents. This will also include all supervision and administrative costs associated with the engineering and design phase of the Project and will terminate with the award of a Project construction contract.

q. The term **"monitoring costs"** shall mean all costs incurred by DNR, NRCS, Fina and LL&E in developing and implementing the Project Monitoring Plan to evaluate the effectiveness of the Project in reaching Project objectives. This shall include, but not be limited to, such items as plan development and review, conducting pre- and post-construction monitoring procedures, collection and evaluation of data, and preparation of monitoring reports.

r. The term **"functional portion of the Project"** shall mean a completed portion of the Project as determined by NRCS, DNR, Fina and LL&E in writing to be suitable for operation, maintenance, and rehabilitation in advance of completion of the entire Project. To be suitable for operation, maintenance and rehabilitation, NRCS must determine that the completed portion of the Project can function independently and for a useful purpose, although the balance of the Project is not complete.

s. The term **"life of the Project"** shall mean the next twenty (20) years starting at the date of acceptance of the final Project, or functional portion of the Project, as provided in Article V.e. of this Agreement.

ARTICLE II - OBLIGATIONS OF THE PARTIES

a. No federal funds may be used to meet the non-federal share of Project costs under this agreement unless the expenditure of such funds is expressly authorized by statute as verified in writing by the granting agency.

b. DNR shall:

1. Establish and manage a separate interest-bearing account within the Treasury of the State of Louisiana. Such account shall be designated for the specific purpose of implementation of the Project. The account will be hereinafter referred to as the "Brady Canal Account". As interest accrues, it shall remain in the Brady Canal Account.

2. Receive funds from Fina, LL&E and NRCS; deposit such funds into the Brady Canal Account; withdraw and distribute as specified in this Agreement.

3. Over the life of the Project, withdraw funds from the Brady Canal Account to compensate DNR for activities performed by DNR related to Project implementation; such activities may include, but are not limited to, acquisition of land rights, easements, servitudes and rights of way, administration and management, pre- and post-construction monitoring, permitting coordination, geotechnical investigation, and some engineering services.

4. Over the life of the Project, withdraw from the Brady Canal Account funds provided by Fina and/or LL&E and distribute to NRCS via Escrow Account a minimum cash contribution of five percent (5%) of the total Project costs and any additional funds needed to meet the non-federal share of the total Project costs, after non-federal in-kind credits have been accounted for.

5. Over the life of the Project, withdraw from the Brady Canal Account funds provided by NRCS and distribute to Fina and/or LL&E those funds needed to meet the federal share of the total Project costs, after federal expenditures have been accounted for.

6. Prior to the advertisement of each federal construction contract, and as further specified in Article VI.b.2. hereof, DNR shall provide from the Brady Canal Account to NRCS via the "Coastal Wetlands, Planning Protection and Restoration Act Projects Construction Fund" (hereinafter referred to as the "Escrow Account") a minimum cash contribution of five percent (5%) of that portion of the total first costs incurred to date and anticipated to be expended through completion of that construction contract.

7. Prior to the advertisement of each federal construction contract, and as further specified in Article VI.b.2. hereof, DNR shall provide a contribution equal to the non-federal share of that portion of total first costs incurred to date and anticipated to be expended through completion of that construction contract. Said contribution will include cash from the Brady Canal Account and/or credit granted to DNR, Fina and LL&E for land rights, easements, servitudes, and rights-of-way acquisition, relocations, administrative and management costs, construction contributions, engineering services, etc., directly related to implementation of the Project. Each of the contributions identified must be completed, approved and accepted by NRCS before it can be considered for credit.

8. Implement the August 13, 1996 Project Monitoring Plan as further specified in Article VIII., to assure the performance of the long-term monitoring requirements.

9. Provide specific engineering services associated with the Project, subject to the cost-sharing provisions, and as mutually agreeable to both DNR and NRCS, or its engineering representative. Specific engineering services to be provided by DNR may include design surveys, plan preparation, post-construction surveys, etc. All such services will be approved by, and subject to, the supervision and guidance of NRCS engineering representatives.

10. Acquire all land rights, servitudes, rights-of-way, easements, and material borrow and disposal areas associated with the Project which are determined to be necessary, subject to cost-sharing terms previously identified.

11. Develop an "Operation, Maintenance, and Rehabilitation Plan" jointly with NRCS, Fina and LL&E which will identify specific long-term maintenance, operation, and rehabilitation requirements. Said plan will be developed upon completion of the Project features in accordance with Article I.m., and reviewed and modified as necessary after an evaluation conducted by DNR, with NRCS, Fina and LL&E participation, within twelve (12) to eighteen (18) months following completion of construction.

12. Obtain approval from the State Land Office prior to the placement of any structure(s) on state-claimed waterbottoms.

13. Assume lead responsibility for operation, maintenance, and rehabilitation of the Project upon acceptance of the completed Project, or functional portion of the Project, limited only by the provisions of Article XVII. DNR shall coordinate with Fina and LL&E to determine whether DNR, Fina, or LL&E will perform the necessary work. The non-federal share of operation, maintenance, and rehabilitation costs will be provided by Fina and LL&E pursuant to Article II.d.10. and Article II.e.10., either in cash to DNR or with in-kind services at an agreed-to value. NRCS will reimburse DNR for the federal share of such costs subject to the availability of funds.

c. NRCS shall:

1. Over the life of the Project, fund a total contribution equal to the federal share of the total Project costs, including any relocation costs associated with the Project.

2. During the design phase of the Project, provide draft plans and specifications to DNR, Fina and LL&E for review and comment. Should Fina and/or LL&E indicate, in writing to NRCS, a desire to construct a portion of the Project, NRCS shall:

a. Coordinate with Fina and/or LL&E to confirm Fina and/or LL&E's capabilities to perform work in accordance with the furnished plans and specifications; and

b. Isolate the work to be performed by Fina and/or LL&E into a separate construction unit.

3. Provide to Fina and/or LL&E final plans and specifications for those construction units they have indicated a desire to construct.

4. Review written information submitted, pursuant to Articles II.d.4. and II.e.4., by Fina and/or LL&E within 30 days. Negotiate and settle upon, in writing, the value of work to be performed by Fina and/or LL&E.

5. Upon inspection and acceptance of work completed by Fina and/or LL&E, provide DNR for deposit into the Brady Canal Account the federal share of the value of in-kind work performed by Fina and/or LL&E.

6. Prior to the advertisement of each federal construction contract, NRCS shall provide a contribution equal to the federal share of that portion of total first costs incurred to date and anticipated to be expended through completion of that construction contract, including any relocation costs associated with the Project.

7. Except as limited by the provisions of Article VIII.b., and subject to the availability of appropriations, reimburse DNR for the federal share of the approved cost of pre- and post-construction monitoring of the Project upon receipt of the request for reimbursement.

8. Reimburse DNR for the federal share of the actual costs incurred by DNR for all engineering services provided for the Project, permitting coordination, and acquiring all land rights (easements, servitudes, and rights-of-way, including suitable borrow material and disposal areas) as determined by NRCS to be necessary for Project construction, operation, monitoring, maintenance, and rehabilitation.

9. Provide all engineering, design, land services, and construction services, except those mutually agreed as specified in Article II.b.9., associated with the Project, subject to the cost-sharing provisions identified.

10. Provide to DNR the federal share of costs identified in the "Operation, Maintenance, and Rehabilitation Plan" and actually incurred by DNR, Fina and LL&E, subject to the limitations on expenditures set forth in Article XXI.

11. Comply with the Federal Acquisition Regulation (FAR), Agriculture Acquisition Regulation (AGAR), Natural Resources Conservation Service Acquisition Regulation (NRCSAR), and any permits issued for this Project for all federal contracts associated with the Project.

12. Provide authorized technical services including, but not limited to, obtaining basic information; preparation of drawings, design, and specifications; and performance of layout, inspection services, and quality assurance during construction.

13. Arrange for and conduct final inspection of the completed works of improvement with DNR, Fina and LL&E to determine whether all work has been performed in accordance with the contractual requirements for federal construction, or in accordance with plans and specifications for in-kind work. Based on this determination, accept work from the contractor, or Fina and/or LL&E in the case of in-kind work, and notify DNR, Fina and LL&E of acceptance.

14. Participate, with DNR, Fina and LL&E, in an evaluation within twelve (12) to eighteen (18) months following the completion of construction to assess maintenance, operation, and rehabilitation needs. NRCS will also participate with DNR, Fina and LL&E in any subsequent evaluations as the parties deem necessary to address long-term maintenance, operation, and rehabilitation of the Project.

15. Ensure that all National Environmental Policy Act (NEPA) and regulatory requirements, including permit requirements for the Project, are met.

16. Obtain approval from the State Land Office prior to the placement by NRCS of any structure(s) on state-claimed waterbottoms.

17. Install signs, navigation aids, and/or safety lights required, through regulations or otherwise, by the U.S. Coast Guard as a result of the construction by NRCS of any barrier to navigation.

d. Fina shall:

1. Over the life of the Project, provide a minimum cash contribution of three percent (3%) of the total Project costs. The maximum amount of Fina's minimum cash contribution is $176,922.00.

2. Over the life of the Project, fund a total contribution equal to sixty percent (60%) of the non-federal share of the total Project costs. Such total contribution will include cash and/or credit for in-kind contributions. Because a portion of the total Project costs were incurred prior to approval of the State's Coastal Wetlands Conservation Plan, some of the costs are shared at seventy-five percent (75%) federal and twenty-five (25%) non-federal and some of the costs are shared at eighty-five percent (85%) federal and fifteen (15%) non-federal. Hence, Fina's maximum total contribution would be greater than $530,766.00, but less than $884,610.00. It is the intent of the parties that Fina will receive its share of any monetary benefits accruing to the State of Louisiana as a result of approval of the State's Coastal Wetlands Conservation Plan.

3. Review draft plans and specifications provided by NRCS and indicate in writing to NRCS, within thirty (30) days of receipt of the draft plans and specifications, whether Fina desires to construct a portion of the Project. **Fina will protect the confidentiality of these plans and specifications by not providing them to private contractors and/or sources outside of the Fina organization prior to either the advertisement of work for federal contracts or the performance of work by Fina for in-kind credit.**

4. Within thirty (30) days of receipt of final plans and specifications for any construction unit which Fina has indicated a desire to construct, provide a detailed cost estimate (materials, labor, equipment costs, etc.) in writing to NRCS.

5. Negotiate and settle upon with NRCS, DNR, and LL&E the value of work to be performed by Fina. The settled upon value shall be documented in a letter agreement among all parties. Any changes in work or changes in scope of work must be negotiated, settled upon, and confirmed in writing by all parties prior to its occurrence.

6. For that portion of the Project which Fina has agreed to construct, jointly develop with NRCS and DNR a construction schedule (with start date, milestones, and completion date). It is acknowledged that the construction schedule may be adjusted in accordance with those provisions customarily used by NRCS in its construction contracts.

7. For that portion of the Project which Fina has agreed to construct, perform construction in accordance with any permits issued for this Project and in accordance with final plans and specifications furnished by NRCS.

8. When requested by DNR to do so, provide Fina's cash contribution to DNR. The cash payment will be made by certified check payable to the State of Louisiana, Department of Natural Resources. Upon receipt of the payment referenced above, DNR shall deposit the full amount into the

Treasury of the State of Louisiana. The deposit will be made into a separate, interest-bearing account that will be designated for use for the specific purpose of implementation of the Project. The account will be hereinafter referred to as the "Brady Canal Account". As interest accrues, it will remain in the Brady Canal Account.

9. Provide prior to the advertisement of any federal construction contract or the beginning of any in-kind construction, at no cost to DNR or NRCS all lands, easements, servitudes, rights-of-way and any interest in, over, under and upon any lands, waterbodies, and/or waterbottoms owned and/or leased by Fina and determined by NRCS and DNR to be necessary for construction, inspection operation, maintenance, rehabilitation and monitoring of the Project. Supply surface use information and identify all leasees. No title to the property affected by the Project, including mineral rights therein, are transferred with any easement, servitudes, rights-of-way provided by Fina pursuant to this Agreement. No public rights of ownership will be transferred or vested in private parties as a result of the restoration activities associated with the Project.

10. Participate in the operation, maintenance, and rehabilitation of the Project upon acceptance of the completed Project, or functional portion of the Project. DNR shall coordinate with Fina and LL&E to determine whether DNR, Fina, or LL&E will perform the necessary work. Fina shall contribute sixty percent (60%) of the non-federal share of operation, maintenance, and rehabilitation costs, either in cash to DNR or with in-kind services at an agreed-to value. NRCS will contribute the federal share of operation, maintenance, and rehabilitation costs.

11. Annually reimburse DNR for sixty percent (60%) of the non-federal share of Project Monitoring costs unless covered by the agreed-to value of in-kind services.

12. Prior to the dredging of the proposed access channel, Fina will coordinate with Union Oil Company of California (UNOCAL) to determine precise locations of pipelines which would be crossed by the channel and to make arrangements necessary to ensure that these pipelines are not damaged by the dredging activity. This activity is not part of this Project. This activity shall not be financed with CWPPRA funds and no in-kind credit will be granted.

e. LL&E shall:

1. Over the life of the Project, provide a minimum cash contribution of two percent (2%) of the total Project costs. The maximum amount of LL&E's minimum cash contribution is $117,948.00.

2. Over the life of the Project, fund a total contribution equal to forty percent (40%) of the non-federal share of the total Project costs. Such total contribution will include cash and/or credit for in-kind contributions. Because a portion of the total Project costs were incurred prior to approval of the State's Coastal Wetlands Conservation Plan, some of the costs are shared at seventy-five percent (75%) federal and twenty-five (25%) non-federal and some of the costs are shared at eighty-five percent (85%) federal and fifteen (15%) non-federal. Hence, LL&E's maximum total contribution would be greater than $353,844.00, but less than $589,740.00. It is the intent of the parties that LL&E will

receive its share of any monetary benefits accruing to the State of Louisiana as a result of approval of the State's Coastal Wetlands Conservation Plan.

3. Review draft plans and specifications provided by NRCS and indicate in writing to NRCS, within thirty (30) days of receipt of the draft plans and specifications, whether LL&E desires to construct a portion of the Project. **LL&E will protect the confidentiality of these plans and specifications by not providing them to private contractors and/or sources outside of the LL&E organization prior to either the advertisement of work for federal contracts or the performance of work by LL&E for in-kind credit.**

4. Within thirty (30) days receipt of final plans and specifications for any construction unit which LL&E has indicated a desire to construct, provide a detailed cost estimate (materials, labor, equipment costs, etc.) in writing to NRCS.

5. Negotiate and settle upon with NRCS, DNR, and Fina the value of work to be performed by LL&E. The settled upon value shall be documented in a letter agreement among all parties. Any changes in work or changes in scope of work must be negotiated, settled upon, and confirmed in writing by all parties prior to its occurrence.

6. For that portion of the Project which LL&E has agreed to construct, jointly develop with NRCS and DNR a construction schedule (with start date, milestones, and completion date). It is acknowledged that the construction schedule may be adjusted in accordance with those provisions customarily used by NRCS in its construction contracts.

7. For that portion of the Project which LL&E has agreed to construct, perform construction in accordance any permits issued for this Project and in accordance with final plans and specifications furnished by NRCS.

8. When requested by DNR to do so, provide LL&E's cash contribution to DNR. The cash payment will be made by certified check payable to the State of Louisiana, Department of Natural Resources. Upon receipt of the payment referenced above, DNR shall deposit the full amount into the Treasury of the State of Louisiana. The deposit will be made into a separate, interest-bearing account that will be designated for use for the specific purpose of implementation of the Project. The account will be hereinafter referred to as the "Brady Canal Account". As interest accrues, it will remain in the Brady Canal Account.

9. Provide prior to the advertisement of any federal construction contract or the beginning of any in-kind construction, at no cost to DNR or NRCS all lands, easements, servitudes, rights-of-way and any interest in, over, under and upon any lands, waterbodies, and/or waterbottoms owned and/or leased by LL&E and determined by NRCS and DNR to be necessary for construction, inspection, operation, maintenance, rehabilitation and monitoring of the Project. Supply surface use information and identify all leasees. No title to the property affected by the Project, including mineral rights therein, are transferred with any easement, servitudes, rights-of-way provided by LL&E pursuant

to this Agreement. No public rights of ownership will be transferred or vested in private parties as a result of the restoration activities associated with the project.

10. Participate in the operation, maintenance, and rehabilitation of the Project upon acceptance of the completed Project, or functional portion of the Project. DNR shall coordinate with LL&E and Fina to determine whether DNR, LL&E or Fina will perform the necessary work. LL&E shall contribute forty percent (40%) of the non-federal share of operation, maintenance, and rehabilitation costs, either in cash to DNR or with in-kind services at an agreed-to value. NRCS will contribute the federal share of operation, maintenance, and rehabilitation costs.

11. Annually reimburse DNR for forty percent (40%) of the non-federal share of Project monitoring costs unless covered by the agreed-to value of in-kind services.

12. Prior to the dredging of the proposed access channel, LL&E will coordinate with Union Oil Company of California (UNOCAL) to determine precise locations of pipelines which would be crossed by the channel and to make arrangements necessary to ensure that these pipelines are not damaged by the dredging activity. This activity is not part of this Project. This activity will not be financed by CWPPRA and no in-kind credit will be granted.

ARTICLE III - LAND RIGHTS, FACILITIES, AND PUBLIC LAW 91-646 RELOCATION ASSISTANCE

a. On Non-Federal lands, DNR shall acquire all land rights, easements, servitudes, rights-of-way, and material borrow and disposal areas determined to be necessary for construction of the Project and as mutually agreed-to by DNR and NRCS. Prior to the advertisement of any construction contract, DNR shall provide certification to NRCS that all land rights, easements, servitudes, rights-of-way and material borrow and disposal areas required, have been acquired as part of this Agreement and shall furnish to NRCS evidence supporting actual rights-of-way acquired by DNR for Project construction, operation, monitoring, and maintenance.

b. The State 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, maintenance, and rehabilitation of the Project.

c. No title to the property or minerals affected herein are transferred with any easements, servitudes, rights-of-way, and material borrow and disposal areas provided 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 material borrow and disposal areas shall provide for reasonable access for mineral exploration and development.

ARTICLE IV - VALUE OF LAND RIGHTS AND FACILITIES

a. The value of the land rights, easements, servitudes, and rights-of-way to be included in total Project costs and credited towards the non-federal share of total Project costs will be determined in accordance with the following procedures:

1. The costs associated with securing all land rights, easements, servitudes, and rights-of-way to be acquired by DNR (Article III.a.) 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. An estimate of such costs will be prepared by DNR and approved by NRCS for credit allowance as part of the non-federal cost-share. Credit allowance for any costs above this estimate must be approved by NRCS.

2. Any costs incurred for relocations will be included in total Project costs and will be accomplished as part of Project construction through the agreed cost-share arrangement.

ARTICLE V - CONSTRUCTION PHASING AND MANAGEMENT

a. To provide for consistent and effective communication between DNR, NRCS, Fina and LL&E during the period of construction, DNR, NRCS, Fina and LL&E shall appoint representatives to coordinate scheduling, plans, specifications, modifications, contract costs, and other matters relating to construction of the Project.

b. DNR, Fina and LL&E will participate with NRCS, or its appointed representative, in the engineering and design phases of the Project. Oversight of engineering and construction of the Project will be the responsibility of NRCS or its appointed representative. At least thirty (30) calendar days prior to the date of formal request for construction bids, NRCS, or its appointed representative, shall provide DNR, Fina and LL&E with final copies of all Project designs and specifications for review and concurrence by DNR, Fina and LL&E. NRCS, or its appointed representative, DNR, Fina and LL&E shall approve the final designs and specifications prior to proceeding with bid solicitations on all project construction contracts. Any plan and/or specification(s) changes, both before and after award of construction contracts, shall be jointly approved by NRCS, DNR, Fina and LL&E.

c. The representatives appointed above shall meet as necessary during the period of construction and shall make such recommendations as they deem warranted to the Contracting Officer for federal contracts and to the NRCS State Conservationist for in-kind construction.

d. The Contracting Officer shall consider the recommendations of the representatives in all matters relating to federal construction contracts for the Project; but the Contracting Officer, having ultimate responsibility for federal contracts of the Project, has complete discretion to accept, reject, or modify the recommendations. The State Conservationist shall consider the recommendations of the representatives in all matters relating to in-kind construction of the Project and shall make a sincere effort to accept such recommendations and to ensure that structural integrity is maintained.

e. Following completion of the Project, or functional portion of the Project, final acceptance of the Project, or functional portion of the Project, will be jointly made by NRCS, DNR, Fina and LL&E. Should the Project, or functional portion of the Project, not meet plan specification objectives, then DNR, Fina and LL&E will have the option to modify the completed work, address this modification in the "Operation, Maintenance, and Rehabilitation Plan", or to terminate this Agreement. However, DNR, NRCS, Fina and LL&E shall endeavor to modify the completed work or address these modifications in the "Operation, Maintenance, and Rehabilitation Plan" to ensure that the original plan specification objectives are achieved.

ARTICLE VI - METHOD OF PAYMENT

a. DNR shall coordinate with Fina and LL&E and provide the non-federal contributions required under Article II of this Agreement. The PL 101-646 Task Force has estimated a total Project cost of $4,717,900.00 and authorized a maximum total Project cost of $5,897,400.00 for this particular Project. DNR will coordinate the contribution of in-kind services or cash to meet the non-federal share of the total Project costs. The maximum non-federal contribution is $1,474,350.00. This figure is subject to modification as provided for in Section 303(f) of CWPPRA. Any cost in excess of the maximum total project cost of $5,897,400.00 are subject to amendment of this Agreement and Task Force approval, as provided in Article XXI. The maximum amount of the non-federal required minimum five percent (5%) cash contribution is $294,870.00.

b. DNR shall provide the required non-federal cash contribution in proportion to the rate of federal expenditures in accordance with the following provisions:

1. For purposes of budget planning, NRCS shall notify DNR, Fina and LL&E by October 1 of each year of the estimated funds that will be required to meet the non-federal share of total Project costs for the subsequent fiscal year.

2. No later than sixty (60) calendar days prior to the advertisement of each federal construction contract, NRCS shall notify DNR of the non-federal share of that portion of total first costs incurred to date and anticipated to be expended through completion of that contract. This amount will include the non-federal share of total first costs in cash and credit as described in Article II.b.7., and the minimum cash contribution of five percent (5%) of total first costs as described in Article II.b.6. No later than 30 calendar days thereafter, DNR shall verify to the satisfaction of NRCS or its representative, that it has deposited the requisite amount in the Escrow Account with interest accruing to DNR.

3. For the second and subsequent fiscal years of Project implementation, no later than sixty (60) calendar days prior to the beginning of the fiscal year, DNR shall make the necessary funds available to NRCS through the funding mechanism specified in Article VI.b.2. of this agreement. As construction of the Project proceeds, NRCS shall adjust the amounts required to be provided under this paragraph to reflect actual costs.

4. If, at any time during the period of construction NRCS determines that additional non-federal funds will be needed, NRCS shall so notify DNR, Fina and LL&E and DNR, no later than

45 calendar days from receipt of such notice, shall make the necessary funds available through the funding mechanism specified in Article VI.b.2. of this Agreement.

c. NRCS will draw on the Escrow Account such sums as NRCS deems necessary to cover contractual and in-house fiscal obligations attributable to the Project on an annual basis, as well as costs incurred by NRCS prior to the initiation of construction but after November 1, 1993, according to Article I.b.

d. The Escrow Account will be managed for NRCS by the New Orleans District, U.S. Army Corps of Engineers. Funds will be withdrawn from the account and disbursed to NRCS as requested.

e. Upon completion of the Project or termination of this Agreement in accordance with Article XVII. of this Agreement, and resolution of all relevant contract claims and appeals, NRCS shall compute the total Project costs and tender to DNR, Fina and LL&E a final accounting of the non-federal share of Project costs. In the event that the total non-federal contribution is less than the minimum required share of total Project costs, DNR shall, no later than ninety (90) calendar days after receipt of written notice, make a cash payment to NRCS of whatever sum is required to meet its minimum required share of total Project costs.

f. In the event that non-federal cash contributions are in excess of five percent (5%) of total Project costs which result in the non-federal parties having provided more than their required share of total Project costs, NRCS shall, no later than ninety (90) calendar days after the final accounting is complete, subject to the availability of appropriations, return said excess to DNR. DNR will then provide these funds in previously mentioned proportions to Fina and LL&E. The non-federal parties shall not be entitled to any refund of the five percent (5%) cash contribution required pursuant to Article II.b.6. of this Agreement.

g. If the non-federal total contribution under this Agreement (including land rights, easements, rights-of-way, relocations, material borrow and disposal areas, and work-in-kind provided by DNR, Fina and LL&E and approved by NRCS) exceeds the required non-federal share of total Project costs, NRCS shall verify the actual exceeded costs and direct the U.S. Army Corps of Engineers, subject to the availability of appropriations for that purpose, and the minimum five percent (5%) cash requirement, refund the excess to DNR no later than 90 calendar days after the final accounting is complete. DNR will then provide these funds in previously mentioned proportions to Fina and LL&E.

ARTICLE VII - DISPUTES

Before any party to this Agreement may bring suit in any court concerning an issue relating to this Agreement, such party must first seek in good faith to resolve the issue through negotiation or other forms of non-binding alternative dispute resolution mutually acceptable to the parties.

ARTICLE VIII - MONITORING, OPERATING, MAINTENANCE, AND REHABILITATION

a. After NRCS has accepted, with the concurrence of DNR, Fina and LL&E, the completed Project or the functional portion of the Project, DNR shall assume long-term monitoring responsibilities in accordance with the Project Monitoring Plan defined in Article I.j. and in accordance with the language of Article II.b.8 of this Agreement. At this same time, DNR will assume responsibilities for operation, maintenance and rehabilitation of the completed Project or functional portion of the Project, following the recommendations jointly developed and approved by DNR, NRCS, Fina and LL&E in the Project "Operation, Maintenance, and Rehabilitation Plan" defined in Article I.m. of this Agreement. These responsibilities will remain in effect for the expected life of the Project which is twenty (20) years from the date of acceptance of the final Project, or functional portion of the Project, unless otherwise agreed-to by NRCS, DNR, Fina and LL&E.

b. DNR, Fina and LL&E grants NRCS the right to enter, at reasonable times and in a reasonable manner, upon land which it owns or maintains access easements to the Project, for the purpose of inspection related to monitoring, operating, maintaining, replacing, or rehabilitating the Project. If an inspection shows that DNR, Fina and LL&E, for any reason, are failing to fulfill their obligations under this Agreement, NRCS will send a written notice to DNR, Fina and LL&E concerning a need for compliance. If DNR, Fina or LL&E persists in such failure for thirty (30) calendar days after receipt of the notice, then NRCS shall have a right to cancel the federal assistance portion of this Agreement for any additional expenses related to monitoring, operation, maintenance, and rehabilitation costs of the Project.

ARTICLE IX - MAINTENANCE OF RECORDS

NRCS, DNR, Fina and LL&E shall keep books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to this Agreement to the extent and in such detail as will properly reflect total Project costs. NRCS, DNR, Fina and LL&E shall maintain such books, records, documents and other evidence for a minimum of three (3) years after completion of construction, operation, maintenance, repair, replacement, rehabilitation, and monitoring of the Project and resolution of all relevant claims arising therefrom, and shall make available at their offices at reasonable times, such books, records, documents, and other evidence for inspection and audit by authorized representatives of the parties to this Agreement.

ARTICLE X - GOVERNMENT REVIEW OF RECORDS

NRCS shall conduct a review, when appropriate, of DNR, Fina and LL&E's records for the Project to ascertain the reasonableness and allowability of their costs for inclusion as credit against the non-federal share of Project costs.

ARTICLE XI - STATE REVIEW OF RECORDS

DNR shall have the right to conduct an audit, when appropriate, of NRCS, Fina and LL&E's records for the Project to ascertain the reasonableness and allowability of their costs for inclusion as credit against the federal and non-federal share of Project costs.

ARTICLE XII - FINA REVIEW OF RECORDS

Fina may conduct a review, when appropriate, of NRCS, DNR and LL&E's records for the Project to ascertain the reasonableness and allowability of their costs for inclusion as credit against the federal and non-federal share of Project costs.

ARTICLE XIII - LL&E REVIEW OF RECORDS

LL&E may conduct a review, when appropriate, of NRCS, DNR and Fina's records for the Project to ascertain the reasonableness and allowability of their costs for inclusion as credit against the federal and non-federal share of Project costs.

ARTICLE XIV - RELATIONSHIP OF PARTIES

The parties to this Agreement act in an independent capacity in the performance of their respective functions under this Agreement, and neither party is to be considered the officer, agent, or employee of the other.

ARTICLE XV - OFFICIALS NOT TO BENEFIT

No member of, or delegate to, the Congress, or resident commissioner, shall be admitted to any share or part of this Agreement, or to any benefit that may arise therefrom.

ARTICLE XVI - COVENANT AGAINST CONTINGENT FEES

DNR, Fina, and LL&E warrant that no person or selling agency has been employed or retained to solicit or secure this Agreement upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by DNR, Fina, and LL&E for the purpose of securing business. For breach or violation of this warranty, NRCS shall have the right to annul this Agreement without liability, or, in its discretion, to add to the Agreement or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE XVII - TERMINATION OR SUSPENSION

a. If NRCS or DNR fails to receive annual appropriations for the Project in amounts sufficient to meet Project expenditure for the then-current or upcoming fiscal year, NRCS or DNR shall so notify the other parties. After sixty (60) calendar days either party may elect, without penalty, to

terminate this Agreement pursuant to this Article or to defer future performance hereunder; however, deferral of future performance under this Agreement shall not affect existing obligations or relieve the parties of liability for any obligation previously incurred. In the event that either party elects to terminate this Agreement pursuant to this Article, both parties shall conclude their activities relating to the Project and proceed to a final accounting in accordance with Article VI of this Agreement. In the event that either party elects to defer future performance under this Agreement pursuant to this Article, such deferral shall remain in effect until such time as NRCS or DNR receives sufficient appropriations or until either party elects to terminate this Agreement.

b. Except as provided in paragraph (a) above, if at any time DNR fails to make the payments required under this Agreement, NRCS shall terminate or suspend work on the Project until DNR is no longer in arrears, unless NRCS determines that continuation of work on the Project is in the best interest of the United States or is necessary in order to satisfy agreements with any other non-federal interests in connection with the Project. DNR shall not be liable for any future payments should NRCS continue work on the project, but shall remain liable for obligations previously incurred.

ARTICLE XVIII - OBLIGATIONS OF FUTURE APPROPRIATIONS

Nothing herein shall constitute, or be deemed to constitute, an obligation of future appropriations by the legislature of the State of Louisiana when obligating future appropriations would be inconsistent with the State's constitutional or statutory limitations.

ARTICLE XIX - NOTICES

a. All notices, requests, demands, and other communications required or permitted to be given under this Agreement shall be deemed to have been duly given if in writing and delivered personally, given by prepaid telegram, or mailed by first-class (postage pre-paid), registered, or certified mail, as follows:

If to DNR:

Secretary, Department of Natural Resources
P.O. Box 94396
Baton Rouge, LA 70804-9396

If to NRCS:

State Conservationist
USDA-Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

If to Fina:

John Woodard
Fina Oil and Chemical Company
P.O. Box 206
Houma, LA 70361

If to LL&E:

Kermit J. Coulon
Louisiana Land and Exploration Company
P.O. Box 7097
Houma, LA 70361

b. A party may change the address to which such communications are to be directed by giving written notice to the other party in the manner provided in this Article.

c. Any notice, request, demand, or other communication made pursuant to this Article shall be deemed to have been received by the addressee at such time as it is personally delivered or seven (7) calendar days after it is mailed, as the case may be.

ARTICLE XX - CONFIDENTIALITY

To the extent permitted by the laws governing each party, the parties agree to maintain the confidentiality of exchanged information when requested to do so by the providing party.

ARTICLE XXI- PROJECT COST LIMITS

a. The PL 101-646 Task Force estimated the total Project cost for this Project to be $4,717,900.00. That estimated total Project cost includes the following Project phases and associated estimated costs.

1.	Engineering and design costs (also including supervision and administration, and lands) of	$250,000.00
2.	Total first costs (including construction and related contingency, and supervision and inspection) of	$2,337,000.00
3.	Operation, maintenance and rehabilitation costs of	$1,267,700.00
4.	Monitoring costs of	$863,200.00

b. To provide flexibility in the planning and construction of coastal restoration projects, the PL 101-646 Task Force authorized a maximum total Project cost of 125% of the estimated Project cost, or $5,897,400.00, for this particular Project.

c. Based on updated cost estimates available at the time of execution of this Agreement, all parties acknowledge and concur with the following revised budget, pending any necessary approvals by the PL 101-646 Task Force:

1.	Engineering and design costs (also including supervision and administration, and lands) of	$250,000.00
2.	Total first costs (including construction and related contingency, and supervision and inspection) of	$2,337,000.00
3.	Operation, maintenance and rehabilitation costs of	$1,447,900.00
4.	Monitoring costs of	$921,500.00

d. If, at any time during the performance of a particular Project phase, the actual or anticipated cost of that phase exceeds the estimated cost of that phase as set forth in Article XXI.c. of this Agreement, all work in that particular Project phase shall cease. NRCS, DNR, Fina and LL&E may agree to increase the cost of completing that particular phase of the Project, but only if such increase would not result in the total Project costs exceeding the maximum total Project cost defined in Article XXI.b. of this Agreement. Such agreement regarding cost increases for the cost of a particular Project phase shall be made by letter agreement confirmed by the mutual written approval of both the NRCS State Conservationist, the DNR Secretary, Fina and LL&E. Work on that particular Project phase shall thereafter resume.

e. At any time during the life of this Project, any party to this Agreement may provide notification to the other parties to this Agreement, together with facts, data, and quantifiable projections, which indicates that the project cost will exceed $5,897,400.00. All parties agree to meet and determine the validity of such concern within 30 calendar days of receiving such notification. If it is determined and agreed by all parties that project costs will exceed $5,897,400.00, then all work on the Project, including the award of contracts, shall cease until the Task Force approves such cost increase and this Agreement is amended. The maximum non-federal contribution from Fina and LL&E through DNR under the terms of this Agreement would range from $884,610.00 to $1,474,350.00; any contribution in excess of that amount shall be subject to written amendment to this Agreement, including review and approval by the Division of Administration, State of Louisiana.

ARTICLE XXII - AMENDMENTS TO BE IN WRITING

This Agreement may be modified by agreement of the parties, in accordance with the provisions of CWPPRA and applicable federal and state regulations. All such amendments, modifications,

revisions, and/or changes to this Agreement must be made in writing and acknowledged by signature of the authorized parties of this agreement. All such amendments, modifications, revisions, and/or changes to this Agreement shall be subject to review and approval by the Division of Administration, State of Louisiana.

ARTICLE XXIII - EQUAL OPPORTUNITY AND CIVIL RIGHTS

a. The program or activities conducted under this Agreement will be in compliance with the nondiscrimination provision contained in the Titles VI and VII of the Civil Rights Act of 1964, as amended; the Civil Rights Restoration Act of 1987 (Public Law 100-259); and other nondiscrimination statutes: namely, Section 504 of the Rehabilitation Act of 1973, Title IX of the education Amendments of 1972, and the Age discrimination Act of 1975. They will also be in accordance with regulations of the Secretary of Agriculture (7 CFR-15, Subparts A & B), which provide that no person in the United States shall on the grounds of race, color, national origin, age, sex, religion, marital status, or handicap be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance from the Department of Agriculture or any agency thereof.

b. The Contracting Party shall not discriminate on the basis of sexual orientation.

ARTICLE XXIV - SURVEY

Prior to commencement of any construction activities, NRCS or the Office of Coastal Restoration and Management of DNR, at the option of DNR, shall (1) cause to be conducted, a survey to determine the highest tide during winter season or such other time which will indicate the extent of State ownership existing prior to commencement of any restoration activities, or (2) obtain aerial photographs or satellite images of the project area taken within one year prior to commencement of the restoration activity, or (3) acquire such other information as is acceptable to DNR to indicate the extent of State ownership. Any costs associated with this Article are considered a part of total Project costs and shall be cost-shared according to the terms previously identified.

ARTICLE XXV - FEDERAL AND STATE LAWS

a. In the exercise of DNR's rights and obligations hereunder, DNR agrees to comply with all applicable federal and State laws and regulations.

b. NRCS agrees to comply with all applicable federal and State of Louisiana laws and/or regulations, unless state law and regulations are preempted by federal law.

c. In the exercise of Fina and LL&E's rights and obligations hereunder, Fina and LL&E agree to comply with all applicable federal and State laws and regulations.

Cooperative Agreement No. 68-7217-7-11
DNR Agreement No. 2511-98-08

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (PTE-26b/TE-28)

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed on the 15th day of May, 1998, before the undersigned witnesses.

USDA
NATURAL RESOURCES CONSERVATION SERVICE

BY: Donald W. Gohmert
Donald W. Gohmert
State Conservationist

WITNESSES:

THE STATE OF LOUISIANA

BY: Jack C. Caldwell
Jack C. Caldwell, Secretary
Louisiana Department of
Natural Resources

WITNESSES:

Julian Schilling
Katherine Alford

FINA OIL AND CHEMICAL COMPANY

BY: E. A. Nash

Name: E. A. Nash

Title: Vice President

WITNESSES:

Ronald E. Smalley

THE LOUISIANA LAND AND EXPLORATION COMPANY

BY: J. N. Wood

Name: J. N. Wood

Title: Vice President

WITNESSES:

Laurcia M. Brown

APPROVED
Office of the Governor
Office of Contractual Review

JUN 1 1998

DIRECTOR

CERTIFICATE OF AUTHORITY

I, WARREN A. FLEET, do hereby certify that I am the principal legal officer of the Department of Natural Resources for the State of Louisiana, that the Department of Natural Resources for the State of Louisiana is a legally constituted public body with full authority and legal capability to perform the terms of the Agreement between the Natural Resources Conservation Service and the State of Louisiana in connection with the Brady Canal Hydrologic Restoration Project (PTE-26b), Terrebonne Parish, LA, and that the persons who have executed this Agreement on behalf of the State have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this certification this 15th day of May, 1998

Warren A Fleet

General Counsel
TITLE

CERTIFICATE OF AUTHORITY

I, Cullen M. Godfrey, do hereby certify that I am the principal attorney of Fina Oil and Chemical Company, that Fina Oil and Chemical Company has the authority and legal capability to perform the terms of the Agreement between the Natural Resources Conservation Service, the State of Louisiana and The Louisiana Land and Exploration Company in connection with the Brady Canal Hydrologic Restoration Project (PTE-26b/TE-28), Terrebonne Parish, LA, and that the persons who have executed this Agreement on behalf of the Fina Oil and Chemical Company have acted within their authority.

IN WITNESS WHEREOF, I have made and executed this certification this 5th day of May, 1998.

Cullen M Godfrey

General Counsel and Vice President
TITLE

CERTIFICATE OF AUTHORITY

I, Frederick J. Plaeger, do hereby certify that I am the principal attorney of The Louisiana Land and Exploration Company, that The Louisiana Land and Exploration Company has full authority and capability to perform the terms of the Agreement between the Natural Resources Conservation Service, State of Louisiana and Fina Oil and Chemical Company in connection with the Brady Canal Hydrologic Restoration Project (PTE-26b/TE-28), Terrebonne Parish, LA, and that the persons who have executed this Agreement on behalf of The Louisiana Land and Exploration Company have acted within their authority.

IN WITNESS WHEREOF, I have made and executed this certification this 23rd day of April, 1998

Senior Vice-President
TITLE

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

DATE: 5/15/98

JACK CALDWELL, Secretary
Department of Natural Resources
State of Louisiana

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

DATE: 5/4/98

E A Nash

Name: E. A. Nash

Title: Vice President

Fina Oil and Chemical Company

CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of his or her knowledge and belief that;

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

DATE: 4/23/98

J. N. Wood

Name: J. N. Wood

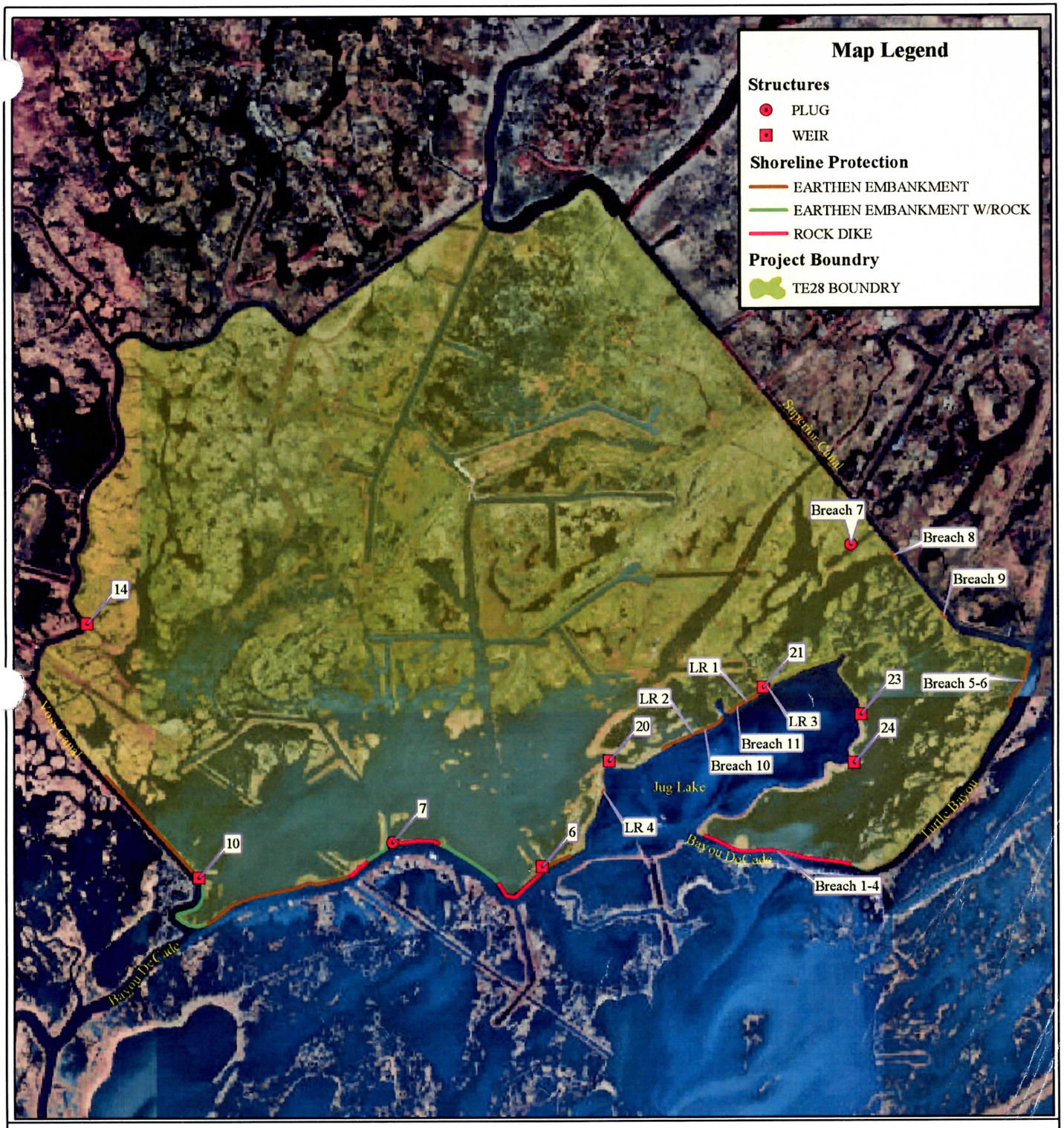
Title: Vice President

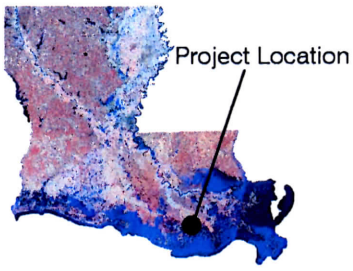
The Louisiana Land and Exploration Company

ATTACHMENT II

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

PROJECT FEATURES





TE28 - Brady Canal Hydrologic Restoration

PROJECT FEATURES MAP

0 1 2 Miles

0 1.5 3 Kilometers

N

Data Source:

LA Dept. Natural Resources
Coastal Engineering Division
Thibodaux Field Office

1998 DOQQ AERIAL

Date: March 2, 2005

Map ID: 2005-TFO-010

ATTACHMENT III

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

PROJECT COMPLETION REPORT

State of Louisiana

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

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

January 28, 2004

Mr. Brad Sticker, P.E.
Natural Resource Conservation Service
U.S. Department of Agriculture
3737 Government Street
Alexandria, La. 71302

RE: TE-28 Brady Canal Hydrologic Restoration Project
Project Completion Report and As-Built Drawings
Maintenance Project – Levee Refurbishment along the west bank of Jug Lake.

Dear Brad,

Please find enclosed a copy of the History of Revisions, Project Completion Report and As-built Drawings for the above referenced maintenance project. The levee refurbishment project along the west bank of Jug Lake was contracted through the Apache Corporation and included the removal of an existing water control structure and refurbishment and seeding of approximately 5,050 linear feet of existing bank.

Should you have any questions or comments concerning this project, please do not hesitate to contact me at (985) 447-0956.

Sincerely,

Brian J. Babin, P.E.
O&M Manager

BJB:bjb

COASTAL RESTORATION DIVISION • 1440 TIGER DRIVE, SUITE B • THIBODAUX, LA 70301
PHONE: (985) 447-0991 • FAX: (985) 447-0997
AN EQUAL OPPORTUNITY EMPLOYER

CC: TE-28 file
Garrett Broussard, LDNR
Brad Sticker, NRCS
Dale Garber, NRCS
Britt Paul, NRCS
Tim Allen, Apache Corporation
Evance Adams, Burlington Resources
TE-28 O&M Plan

w/Attachments

PROJECT COMPLETION REPORT

Project Name: **TE-28 Brady Canal Maintenance Project**
Levee Refurbishment along the west bank of Jug Lake

Report Date: **January 28, 2004**

Report By: **Louisiana Department of Natural Resources**

Project Personnel:

DNR O&M Manager:	Brian Babin	(985) 447-0956
NRCS O&M Manager:	Brad Sticker	(318) 473-7791
Apache Construction Manager:	Tim Allen	(985) 897-3528

Project Location and Description

The maintenance project is located within the Brady Canal Hydrologic Restoration boundary along the west bank of Jug Lake from Structure No.21 south to Bayou Decade. The project consist of removing a dilapidated water control structure installed by the Fish and Wildlife Service, refurbishing approximately 5,050 linear feet of existing levee and seeding newly place dredge material obtained from Jug Lake.

Sequence of Events:

As a result of inspections of the existing levee with representatives of LDNR, NRCS and the land owners, it was determined that the existing levee should be elevated to prevent breaches from occurring along the west bank of Jug Lake due to extensive wave action. The land owner, Apache Corporation, agreed to contract the maintenance work using in-kind service credits authorized in the Brady Canal Cost Share Agreement, Cooperative Agreement No. 68-7217-7-11, DNR Agreement No. 2511-98-08 dated June 17, 1998. The contractor selected to perform the maintenance work is Berry Bros. General Contractors of Houma, La. Below is the sequence of events leading up to construction and project completion.

September 3, 2003 – Timothy Allen with Apache Corporation requested in writing there wishes to refurbish approximately 3,100 linear feet of existing levee embankment which was at risk of breaching. Apache agreed to contract the work to be charge to the project as in-kind services. Apache estimated the repairs of the levee at $35,000.

September 3, 2003 – LDNR issued a request for Coastal Zone Consistency to Greg Ducote with La. Office of Coastal Restoration and Management to remove the existing water control structure and refurbish existing levee.

September 11, 2003 – Ronald Paille with FWS confirmed through e-mail that the existing water control structure located along the west bank of Jug Lake was installed by the Fish and Wildlife Service for marsh management research was no longer need and may be removed and disposed of.

September 12, 2003 – Brad Sticker with NRCS issued concurrence in writing to LDNR to removing flap gated structure and refurbishment of existing levee.

September 15, 2003 – Coastal Zone Consistency Modification C960231 was issued to LDNR for work to be performed by the Apache Corporation.

September 15, 2003 – Apache Corporation was issued a letter from LDNR approving their request to remove the existing water control structure and refurbishment of existing levee.

September 24, 2003 – Contractor, Berry Bros. General Contractors, mobilized equipment and began construction.

September 29, 2003 – With concurrence from NRCS, an additional $1,000 was authorized to seed existing levee once levee refurbishment was completed. The total authorized amount was increased from $35,000 to $36,000.

September 29, 2003 – Berry Bros completed removal of existing water control structure and refurbishment of levee.

December 2, 2003 – Apache Corporation submitted final invoice to LDNR for in-kind service credits. The total amount for services provide by Apache is $34,284.87. This cost included construction of approximately 5,050 linear feet of levee refurbishment, structure removal and seeding.

Maintenance Project Cost Elements:

Berry Bros.:	$31,323.80
Caillou Island Towing:	$ 1,155.00
South La. Seed Co.	$ 469.07
Apache (const. Oversight & Equipment)	$ 1,338.00
	$34,294.87
As-built Survey (Shaw Coastal):	$ 5,100.60
Total Maintenance Cost:	**$39,395.47**

Major Equipment Used:

Tug "Shawnee" 900 HP

9/24/03	2 hrs.
9/28/03	8 hrs.
9/29/03	16.5 hrs.

Dredge "Captain Buford" (8 cu. Yd.)

9/24/03	1 hr tow, 14 hrs. operating
9/25/03	24 hrs. operating
9/26/03	24 hrs. operating
9/27/03	24 hrs. operating
9/28/03	23 hrs. operating, 1 hr. repair

State of Louisiana

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

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

September 8, 2003

MEMORANDUM

TO: Brad Sticker, NRCS, O&M Manager

FROM: Brian Babin, LDNR, O&M Manager BB.

SUBJECT: TE-28 Brady Canal Maintenance Project (2003)
Project Completion Report and As-built Drawings

Attached is a copy of the Project Completion Report and As-built Drawings for the above referenced project. It shall be the responsibility of the O&M Plan holder to update their copy of the O&M Plan with these documents.

Should you have any questions, please contact me at (985) 447-0956.

BJB/bjb

Attachment(s)
O&M Plan

cc: Mr. Dale Garber, NRCS, Thibodaux Watershed Office
Mr. Gene Loupe, NRCS, Thibodaux Field Office
Mr. Tim Allen, Apache Corporation
Mr. Evance Adams, Burlington Resources
Mr. Garrett Broussard, DNR, Baton Rouge

f:\engineering\Basins\TE\TE-28\2003 Brady Canal Breach Repair Project\Construction\Project Completion Report

COASTAL RESTORATION DIVISION • 1440 TIGER DRIVE, SUITE B • THIBODAUX, LA 70301
PHONE: (985) 447-0991 • FAX: (985) 447-0997
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PROJECT COMPLETION REPORT

PROJECT NAME: **Brady Canal Breach Repair Project (2003)**

CWPPRA/STATE PROJECT NO. **TE-28 – Maintenance Project**

REPORT DATE: **August 12, 2003**

PREPARED BY: **LDNR**

1. Project Managers/ Contracting Parties

DNR Project Manager: **Brian Babin**

O&M/ Construction Manager: **Brian Babin**

DNR Monitoring Manager: **Todd Folse**

NRCS Project Manager: **Brad Sticker**

Construction Administrator/ Inspection: Mike Maillet – Pyburn & Odom

2. Location and description of maintenance project.

The Brady Canal Hydrologic Restoration Project is located in the Terrebonne Basin, within the Bayou Penchant watershed in Terrebonne Parish, Louisiana. The project area is bounded by Bayou Penchant, Brady Canal, and Little Carencro Bayou to the north, Bayou Decade and Turtle Bayou to the south, Superior Canal to the east, and Little Carencro Bayou and Voss Canal to the west. **This project completion report will include project features repaired and rehabilitated under the Brady Canal Breach Repair Project (2003).**

The Brady Canal Breach Repair Project consist of repairing levee breaches at (11) eleven locations within the Brady Canal Hydrologic Restoration project and replacement of a damaged timber dolphin at Structure No.6. Plans and specifications were prepared by Pyburn and Odom MCA of Baton Rouge. The project specification and plans included a base bid and one (1) alternate. The base bid required the installation of 6,200 tons of Broken Stone Rip-Rap and repair of 2,200 linear feet of earthen embankment. The alternate bid provided for the placement of an additional 2,550 tons of Broken Stone Rip-rap along the north bank of Bayou Decade from Tutle Bayou to Jug Lake. Manson Gulf Construction of Houma, Louisiana, submitted the lowest bid on the project and was awarded the construction contract for the base and alternate bid to complete the maintenance work.

3. **Final As-built features constructed and rehabilitated.**

Below are a description and location and method of repair of breaches:

Base Bid: (All broken stone rip-rap sections were constructed using ASTM R-600 grade stone and designed with a crest elevation of +3.5' and 1:3 side slopes above a geotextile fabric. The earthen embankment sections were designed with a crown elevation of +3.5' with 1:6 side slopes. For actual constructed elevations, see as-built drawings)

Breach 1 – 660 linear feet of broken stone rip-rap dike above geotextile fabric located along the northern bank of Bayou Decade near Jug Lake.

Breach 2&3 – 1,130 linear feet of broken stone rip-rap dike above geotextile fabric located along the northern bank of Bayou Decade.

Breach 4 – 160 linear feet of broken stone rip-rap dike above geotextile fabric located along the northern bank of Bayou Decade.

Breach 5&6 – 1,500 linear feet of earthen embankment construction located along Turtle Bayou.

Breach 7 – 261 linear feet of broken stone rip-rap dike above geotextile fabric located along an existing oil field canal off of Superior Canal.

Breach 8 – 200 linear feet of earthen embankment construction located Superior Canal.

Breach 9 – 200 linear feet of earthen embankment construction located along Superior Canal.

Breach 10 – 90 linear feet of earthen embankment construction located along the west bank of Jug Lake near an existing culver/flap gated structure.

Breach 11 – 300 linear feet of earthen embankment construction located along the west bank of Jug Lake north of Breach 10.

Alternate No.1 : (All broken stone rip-rap sections were constructed using ASTM R-600 grade stone and designed with a crest elevation of +3.5' and 1:3 side slopes above a geotextile fabric. No earthen embankments were constructed under the alternate bid. For actual constructed elevations, see as-built drawings)

Breach repairs under alternate bid consisted of the following:

- 1,700 linear feet of rip-rap dike along Bayou Decade between breach 1 and 2.
- 400 linear feet of rip-rap dike along Bayou Decade beginning at the end of breach 3 and the beginning of breach 4.

4. Project Cost Estimates

	Work Order Estimate	Actual Cost
Construction	$538,000	$471,329.65
Engineering and Design	$ 44,134	$ 54,743
Bidding	$ 4,100	$ 4,472
Construction Administration	$ 7,096	$ 8,020
Construction Oversight	$ 24,540	$ 49,635
As-built Survey and Drawings	$ 13,130	$ 12,873
Project Totals:	**$631,000**	**$604,289**

Note: Engineering, Design, Construction Administration, Construction Oversight and As-built survey and drawings services were provided by Pyburn & Odom MCA of Baton Rouge.

5. Final Contract Quantities

Item	Description	Units	Unit Rate	Item Total
1	Mobilization	Lump Sum	100%	$ 10,000.00
2	Dolphin Repair	Lump Sum	100%	$ 9,000.00
3	Broken Stone Rip Rap	7,114 tons	$39.35	$ 279,935.90
4	Earthen Embankment	2,325 L.F.	$13.00	$ 30,255.00
5	Geotextile Fabric	8,983 S.Y.	$ 3.00	$ 26,949.00
6.	Seeding & Fertilizing	3.1 acres	$1,000	$ $3,100.00
7.	Broken Stone Rip Rap	2,550 tons	$39.00	$ 99,450.00
8.	Geotextile Fabric	5,631 S.Y.	$ 2.25	$ 12,669.75
Total Project Cost:				**$ 471,329.65**

6. Construction and Construction Oversight

Prime Contractor	Manson Gulf Construction Co.
Original Construction Contract	$448,069
Change Orders (over) Runs	$ 39,350
Revised Construction Contract	$487,419
Balancing Change order (under) run	$ 16,089
Final Construction Contract	$471,329

7. Major Equipment Used:

Rock Barge
18' Survey Boat
20' Work Boat
14' Work boat
4600 Manitowic Crane with 140' boom
54' x 165' Work Barge

8. Discuss construction and sequences and activities.

4/16 - Contractor began construction – began placing fabric and rock on the easterly end of breach 4.
4/18 - began placing fabric and rock at Breach 3.
4/21 - placing fabric and rock at Breach 2&3 (Sta. 5+46 to Sta. 4+90)
4/23 - placing fabric and rock at Breach 2&3 (Sta. 4+90 to Sta. 1+30)
4/24 - placing fabric and rock at Breach 2&3 to Alt 1 (Sta. 0+80 to Sta. 3+20)
4/25 - placing fabric and rock at Breach Alt 1 (Sta. 14+00 to Sta. 10+50)
4/26 - Rock placement – Breach Alt 1 (Sta. 10+50 to Sta. 4+40)
4/27 - Rock placement – Breach Alt 1 (Sta. 4+20 to Sta. 0+40)
4/28 - Rock placement – Breach Alt 1 to Breach 1 (Sta. 0+40 to Sta. 5+50)
4/29 - Rock Placement – Breach 1 (Sta. 5+50 to Sta. 4+50)
4/30 - Rock Placement – Breach1 (Sta. 4+50 to Sta. 0+85), completed lift of rock at all breaches along Bayou Decade and began dressing dike and placing additional rock in low areas.
5/3 - Began rebuilding earthen sections at Breach 5,6 & 8.
5/4 - Began rebuilding earthen section at Breach 10 & 11.
5/5 - Began placement of fabric and rock at Breach 7.
5/6 - Began rebuilding earthen section at Breach 9 and dressing Breach 5 & 6.
5/8 - completed repair of broken timber pile at site No.6.
5/31 - Began placing additional rock under change order along Breach 1 thru 4.
6/2 - Completed placement of additional rock.
6/12 - Performed Substantial Completion Inspection.
6/24 - Issued punch-list items
8/13 - Performed final inspection and accepted the project as complete.

9. Construction Change Orders and Field Changes

Change Order No.1 - (5/9/2003), increased base bid quantity of required broken stone rip-rap from 6,200 tons to 7,200 tons. Additional 1,000 tons at $39.35 increased the contract by $39,350. Change Order No.1 also increased the contract time by 39 days with the new completion of May 30, 2003.

Change Order No.2 – increased the contract time to complete the project from May 30, 2003 to August 30, 2003. Final acceptance was granted to the contractor on August 13, 2003.

10. Pipelines and other utility Crossings

No pipelines were within the construction limits of this project.

11. Safety and Accidents

On May 5, 2003, one of the contractor's employee was working on the brake drum on the spud winch when the rope supporting the drum broke and the drum fell on his thigh and top left foot. First-aid was administered on site and the employee was transported to the hospital. Word from the hospital indicated this person has a broken foot.

In a separate incident on the weekend of July 5, 2003, an accident occurred along Bayou Decade in which a boat was traveling along the bayou and loss control, colliding with the newly placed rock dike, installed under this contract, approximately 300' east of Jug Lake. The operation and maintenance manager contacted Wildlife and Fisheries to obtain a copy of the accident report. The O&M manager was told that the accident report could not be release because the investigation was ongoing. No further information is available at this time.

12. Additional comments pertaining to construction of the project.

A. During construction, it was discovered that the barge tables for the rock riprap delivered to the site indicated the gradation to be COE R-650 designation. The rock specified and approved for the project was a ASTM R-300 designation. Gradation test data sheets for the COE R-650 riprap was requested from the contractor. The supplier of the rock (River Mountain Quarry) was contacted for an explanation. The supplier explained that since the gradations of the ASTM R-300 and COE 650 are so close in gradation that they actually perform the same gradation test for both designations. The gradation test for the R-650 was plotted on the gradation curve for the COE R-300 rock. I was determined that the COE R-650 riprap fell within the gradation limits of the ASTM R-300. Therefore, the COE R-650 was approved through a field change as an acceptable alternate riprap for the project.

B. The construction contract required the repair of an existing breach adjacent to a culvert flap gate along the west bank of Jug Lake. This breach was repaired as required by the contract. Not long after the repairs were made, over-wash from Tropical Storm Bill re-opened the breach. Through discussions with NRCS, LDNR and the landowners, a consensus was established that this structure should be removed to prevent future deterioration of the levee bank. LDNR is pursuing the removal of this structure.

C. At the land-owners request, LDNR approached the contractor to perform additional work along the west bank of Jug Lake. The additional work included placing additional rock along the low areas of Breach 1 & 4 and to install a rock rip-rap cap along the earthen embankment at Breach 10 & 11. The contractor submitted a cost of $69,647 to complete this additional work. After discussing the cost with NRCS and the landowner, it was determined that the contractor's cost was too high and the money remaining in the project budget was insufficient to cover the additional work.

13. **Significant Construction Dates**

	Date	Bid I.D.
LDNR Bid Identification:		**File No. J24908DL** **PO# 3521619**
Pre-Bid Conference	**11/7/2002**	
Bid Opening	**11/21/2002**	
Construction Contract Award	**1/15/2003**	
Pre-construction Conference	**3/6/2003**	
Notice to Proceed	**3/6/2003**	
Mobilization	**4/11/2003**	
Construction Start	**4/16/2003**	
Final Acceptance	**8/13/2003**	

14. **Photos of completed maintenance repairs.**

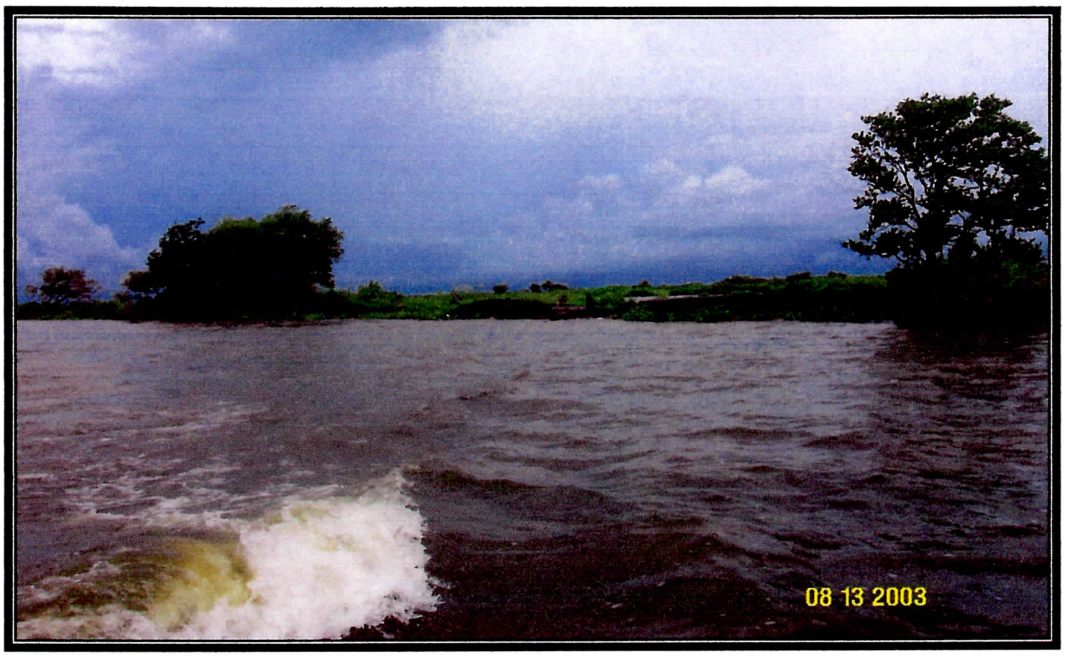
Breach 5 & 6 – Photo of breach repair along Turtle Bayou looking south.

Breach 9 – Photo of breach repair along Superior Canal looking south.

Breach 8 – Photo of levee repair along Superior Canal looking south.

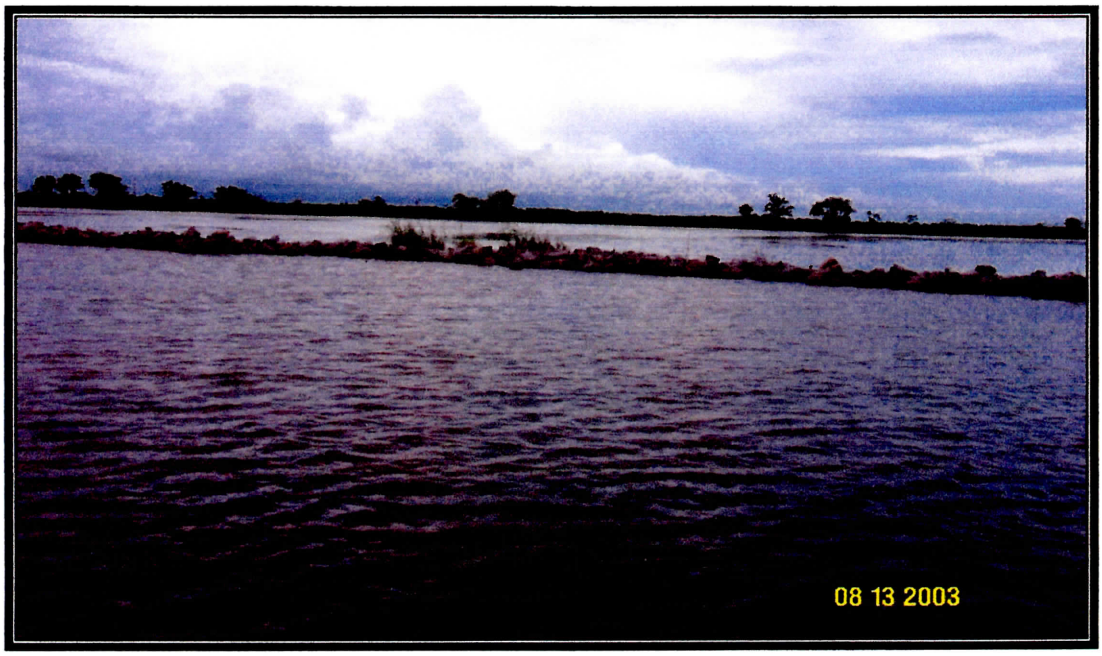
Breach 7 – Photo of rip-rap breach repair along oil field canal looking north.

Photo of timber pile repair at Structure No.6 along Bayou Decade.



Breach 10 – photo of breach repair along the west bank of Jug Lake.

Breach 11 – photo of breach repair along the west bank of Jug Lake.



Breach 1 thru 4 – rock dike along Bayou Decade looking north.

Breach 1 thru 4 – rock dike along Bayou Decade looking north.

Breach 1 thru 4 – rock dike along Bayou Decade looking north.

PROJECT COMPLETION REPORT[1]

PROJECT NAME Brady Canal

CWPPRA/STATE PROJECT NO. TE 28 / PTE 26B

Report Date: May 16, 2001 BY: USDA - NRCS

1. Project Managers/Contracting Officer:

DNR Project Manager	Clark Allen	Telephone	(225) 342-6738
DNR Construction Project Manager	Clark Allen	Telephone	(225) 342- 6738
DNR Monitoring Manager	Todd Folse	Telephone	(504) 447-0996
Federal Agency Project Manager	Faye Talbot	Telephone	(318) 473-7817
Federal Agency Contracting Officer	Charles Phillips	Telephone	(318) 473-7796

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

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

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

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

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

Actual Benefited Acres 297

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

4. Key project cost elements

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

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

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

6. Construction and construction oversight

Prime construction contractor	All South General Contractors
Subcontractor	Dolphin Services
Subcontractor	
Original construction contract	$2,318,801.00
Change orders	$ 228,991.00
Over/(Under) Runs	$ - 26,466.10
Final construction contract	$2,521,325.90

Const. oversight contractor _____ Const. amt. $

Cons. O.S./Admin. agency _____ Est. amt. $ _____

7. Major equipment used.

1. Spud barge with American 999 crane
2. Spud barge with American 5300 crane
3. Spud barge with American 9260 crane
4. Spud barge with American 99C crane
5. Marshbuggy with Cat. 320 excavator
6. Spud barge with Cat 322 excavator
   Spud barge with Daewoo 280 LC excavator
8. Deck barges (3)
9. Bobcat front-end loader (2)

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

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

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

9. Construction change orders and field changes.

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

   This modification also reduced the mobilization for compensation of allowing the contractor to work additional hours. Appropriate drawings and specifications were changed. The total dollar of the contract was changed from $2,330,592 to 2,547,792 for a net increase of $217,000. Also the contract performance time was increased by 30 calendar days.
6. Modification #6 included specification changes to define the placement of the rock riprap. This was a no time or cost change modification.

10. **Pipeline and other utility crossings.**

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

11. **Safety and Accidents.**

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

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

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

Other comments can be found on the Continuation sheets.

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

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

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

Other significant Project Dates

	Date
Project Implementation closeout**	
Start of Preconstruction Monitoring***	
Preconstruction Aerial Photography Acquisition***	
Monitoring Plan Completion***	

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

***** To be completed by DNR Project Manager.**

SCHEDULE OF ITEMS

Item No.	Work	Est. Quantity	Unit	Est. Unit Price	Estimated Amount	Final Quan.	Bid Unit Price	Final Amount	% Over or Under
1	Mobilization and Demobilization	1	Job	$ 100,000.00	$ 100,000.00	1	$ 87,950.00	$ 87,950.00	0%
2	Pollution Control	1	Job	$ 10,000.00	$ 10,000.00	1	$ 10,000.00	$ 10,000.00	0%
3	Construction Surveys	1	Job	$ 5,000.00	$ 5,000.00	1	$ 15,000.00	$ 15,000.00	0%
4	Permanent Vegetation Seeding	23	Acre	$ 300.00	$ 6,900.00	23	$ 800.00	$ 18,400.00	0%
5	Fertilization	23	Acre	$ 200.00	$ 4,600.00	23	$ 300.00	$ 6,900.00	0%
6	Overseeding	4	Acre	$ 300.00	$ 1,200.00	4	$ 800.00	$ 3,200.00	0%
7	Structure Removal, Sites 14, 21, 23 & 24	1	Job	$ 42,000.00	$ 42,000.00	1	$ 35,000.00	$ 35,000.00	0%
8	Steel Sheetpiling, Sites 6, 14, 21, 23 & 24	13,824	S.F.	$ 22.00	$ 304,128.00	13,953	$ 24.00	$ 334,879.20	1%
9A	Round Timber Piling, Sites 6, 14, 21 & 23	26	Ea.	$ 700.00	$ 18,200.00	26	$ 650.00	$ 16,900.00	0%
9B	Round Timber Piling, Warning Signs	52	Ea.	$ 700.00	$ 36,400.00	52	$ 750.00	$ 39,000.00	0%
10	Rock Riprap, Sites 6, 7, 10 & 20	9,680	Tons	$ 37.00	$ 358,160.00	9,121	$ 39.00	$ 355,719.00	-6%
11	Geotextile, Sites 6, 7, 10 & 20	6,780	S.Y.	$ 4.25	$ 28,815.00	6,637	$ 4.50	$ 29,865.15	-2%
12	Metal Fabrication & Installation, Variable Crest Weir, Site 14	1	Job	$ 40,000.00	$ 40,000.00	1	$ 10,000.00	$ 10,000.00	0%
13	Metal Fabrication & Installation, Variable Crest Weir, Site 21	1	Job	$ 50,000.00	$ 50,000.00	1	$ 28,000.00	$ 28,000.00	0%
14	Metal Fabrication & Installation, Variable Crest Weir, Site 23	1	Job	$ 60,000.00	$ 60,000.00	1	$ 19,000.00	$ 19,000.00	0%
15	Metal Fabrication & Installation, Warning Signs & Railing	1	Job	$ 49,000.00	$ 49,000.00	1	$ 58,000.00	$ 58,000.00	0%
16	Timber Fabrication & Installation, Cross Members & Stop Logs	1	Job	$ 4,000.00	$ 4,000.00	1	$ 17,000.00	$ 17,000.00	0%
17	Timber Fabrication & Installation, Staff Gage Posts, Sites 21 & 23	4	Ea.	$ 50.00	$ 200.00	4	$ 250.00	$ 1,000.00	0%
18	Embankment Construction	14,000	L.F.	$ 7.00	$ 98,000.00	12,676	$ 12.00	$ 152,112.00	-9%
19	Geotextile, Embankment	38,400	S.Y.	$ 2.75	$ 105,600.00	38,908	$ 4.00	$ 155,632.80	1%
20	Rock Riprap, Embankment	24,820	Tons	$ 37.00	$ 918,340.00	215	$ 30.50	$ 6,557.50	-99%
21	Rockfill	160	Tons	$ 37.00	$ 5,920.00	163	$ 32.00	$ 5,216.00	2%
ADDITIVE A									
22	Rock Riprap, Embankment	1,420	Tons	$ 37.00	$ 52,540.00	957	$ 30.50	$ 29,188.50	-33%
23	Geotextile, Embankment	780	S.Y.	$ 2.75	$ 2,145.00	894	$ 5.00	$ 4,472.00	15%
ADDITIVE B									
24	Rock Riprap, Embankment	1,360	Tons	$ 37.00	$ 50,320.00	878	$ 30.50	$ 26,779.00	-35%
25	Geotextile, Embankment	810	S.Y.	$ 2.75	$ 2,227.50	856	$ 5.00	$ 4,277.50	6%
ADDITIVE C									
26	Rock Riprap, Embankment	750	Tons	$ 37.00	$ 27,750.00	308	$ 30.50	$ 9,394.00	-59%
27	Geotextile, Embankment	450	S.Y.	$ 2.75	$ 1,237.50	391	$ 5.00	$ 1,956.00	-13%
	Original Estimated Amount			**$**	**2,382,683.00**				
Modifications									
19A*	Geotextile, Embankment Sta 49+70 50+50	233	S.Y.	$ 5.00	$ 1,165.00	210	$ 5.00	$ 1,050.00	-10%
20A*	Rock Riprap, Embankment Sta 49+70 - 50+50	372	Tons	$ 30.50	$ 11,346.00	106	$ 30.50	$ 3,233.00	-72%
28**	Rock Riprap, Rock Dike	11,400	Tons	$ 35.00	$ 399,000.00	15,711	$ 35.00	$ 549,885.00	38%
29**	Rock Riprap, Embankment Armor	12,800	Tons	$ 37.50	$ 480,000.00	11,307	$ 37.50	$ 424,012.50	-12%
30**	Geotextile, Rock Dike	1,217	S.Y.	$ 4.50	$ 5,476.50	771	$ 4.50	$ 3,469.50	-37%
31**	Geotextile, Embankment Armor	20,363	S.Y.	$ 4.50	$ 91,633.50	12,951	$ 4.50	$ 58,277.25	-36%
					Final Contract Amount		**$**	**2,521,325.90**	

* Modification #2

** Modification #5

NRCS SUPPLEMENT TO COMPLETION REPORT

CONTRACT ADMINISTRATION

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

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

CONSTRUCTION PLANS

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

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

CONSTRUCTION SPECIFICATIONS

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

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

GENERAL COMMENTS

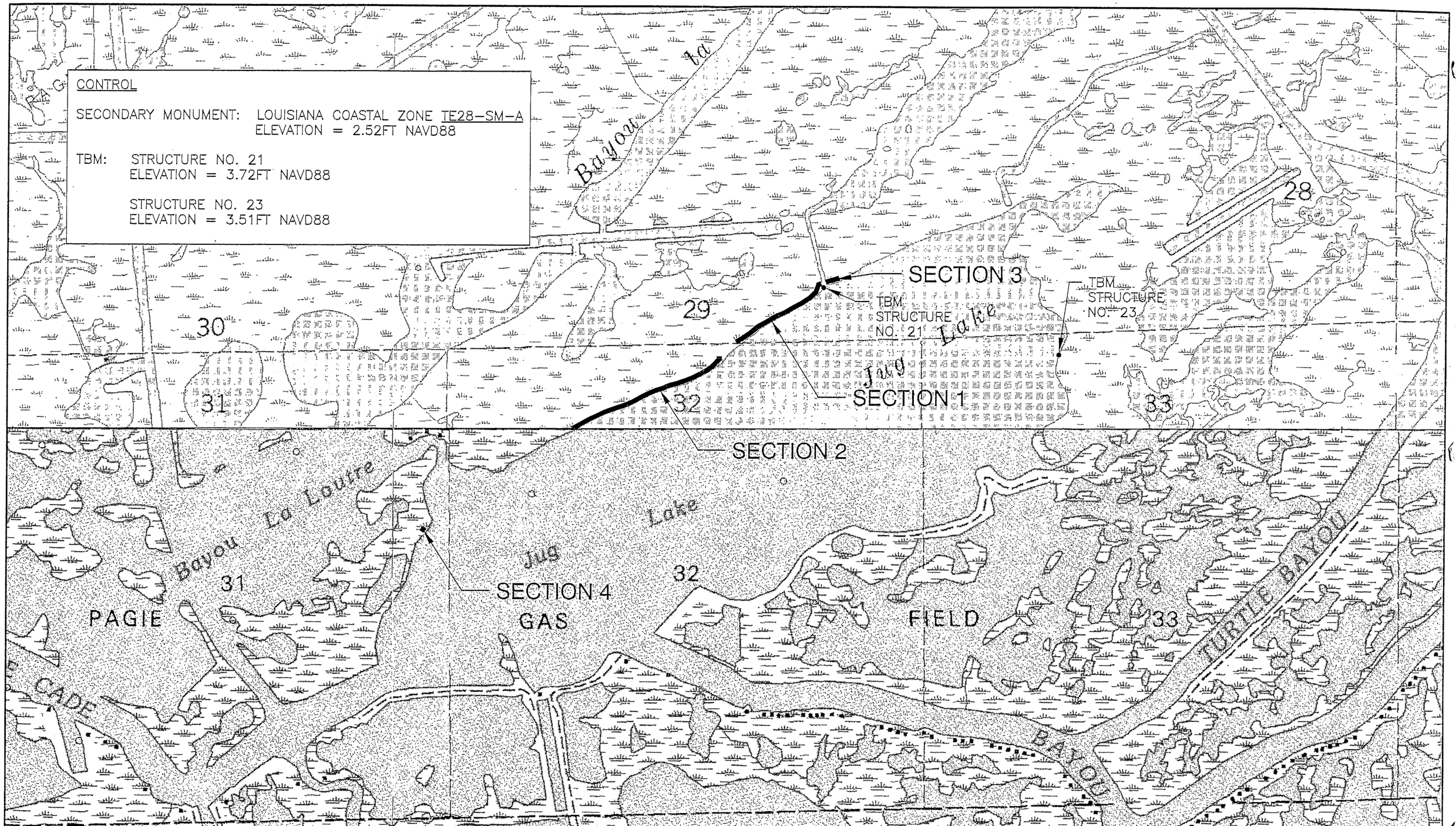
List any significant items which worked well and should be repeated or which caused problems, need clarification or changes for future contracts of this nature.

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

ATTACHMENT IV

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

AS-BUILT DRAWINGS



SCALE						
1" = 1000'	File Location: F:\Engineering\Basins\TE\TE-28\Operation and Maintenance\Jug Lake Shoreline Repair\Site Layout	REV.	DATE	DESCRIPTION	BY	

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
COASTAL ENGINEERING DIVISION
1440 TIGER DRIVE, SUITE B, THIBODAUX, LA 70301

DRAWN BY: SHANE TRICHE APPROVED BY: BRIAN BABIN, P.E.

BRADY CANAL HYDROLOGIC RESTORATION
JUG LAKE - LEVEE REFURBISHMENT
LOCATION MAP

PROJECT NO.: TE-28

TERREBONNE PARISH
LOUISIANA

DATE: 01/16/04

SHEET 1 OF 5

SECTION 4
LEVEE REFURBISHMENT
SCALE: 1" = 100'

SECTIONS 1,2 & 3
LEVEE REFURBISHMENT
SCALE: 1" = 200'

IMAGE:

1998 DIGITAL ORTHOGRAPHIC QUARTER QUADRANGLE

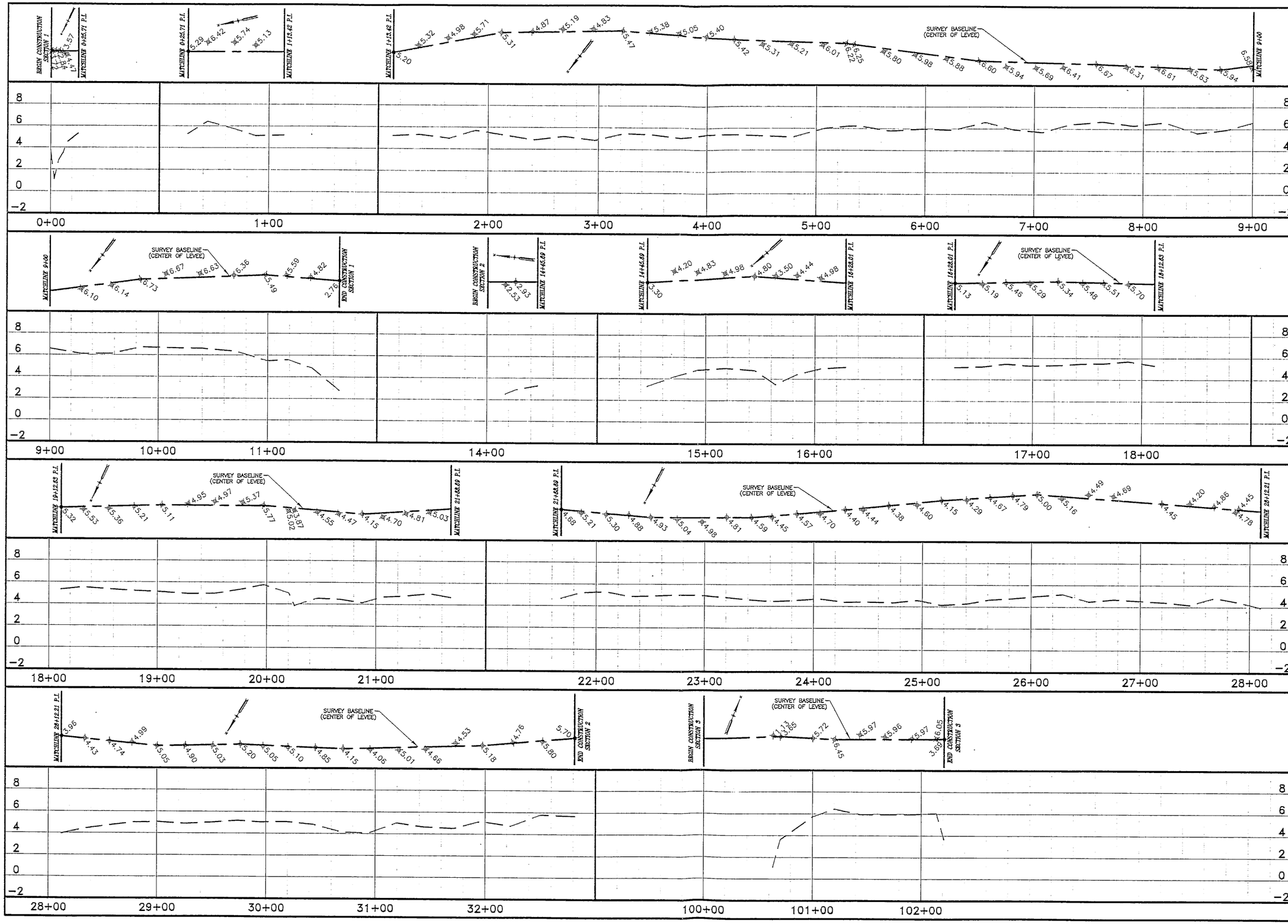
DATA SOURCE:

DEPARTMENT OF NATURAL RESOURCES/COASTAL ENGINEERING DIVISION/THIBODAUX FIELD OFFICE

SURVEY INFORMATION:

COASTAL ENGINEERING AND ENVIRONMENTAL CONSULTANTS, INC.

SCALE		REV.	DATE	DESCRIPTION	BY	LOUISIANA DEPARTMENT OF NATURAL RESOURCES COASTAL ENGINEERING DIVISION 1440 TIGER DRIVE, SUITE B, THIBODAUX, LA 70301	BRADY CANAL HYDROLOGIC RESTORATION JUG LAKE - LEVEE REFURBISHMENT SITE LAYOUT	TERREBONNE PARISH LOUISIANA
AS SHOWN	File Location: F:\Engineering\Basins\TE\TE-28\Operation and Maintenance\Jug Lake Shoreline Repair\Site Layout					DRAWN BY: SHANE TRICHE APPROVED BY: BRIAN BABIN, P.E.	PROJECT NO.: TE-28	DATE: 01/16/04 SHEET 2 OF 5



TERREBONNE PARISH
LOUISIANA

DATE: 01/16/04

SHEET 3 OF 5

BRADY CANAL HYDROLOGIC RESTORATION
JUG LAKE - LEVEE REFURBISHMENT
PLAN AND PROFILE

PROJECT NO.: TE-28

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
COASTAL ENGINEERING DIVISION
1440 TIGER DRIVE, SUITE B, THIBODAUX, LA 70301

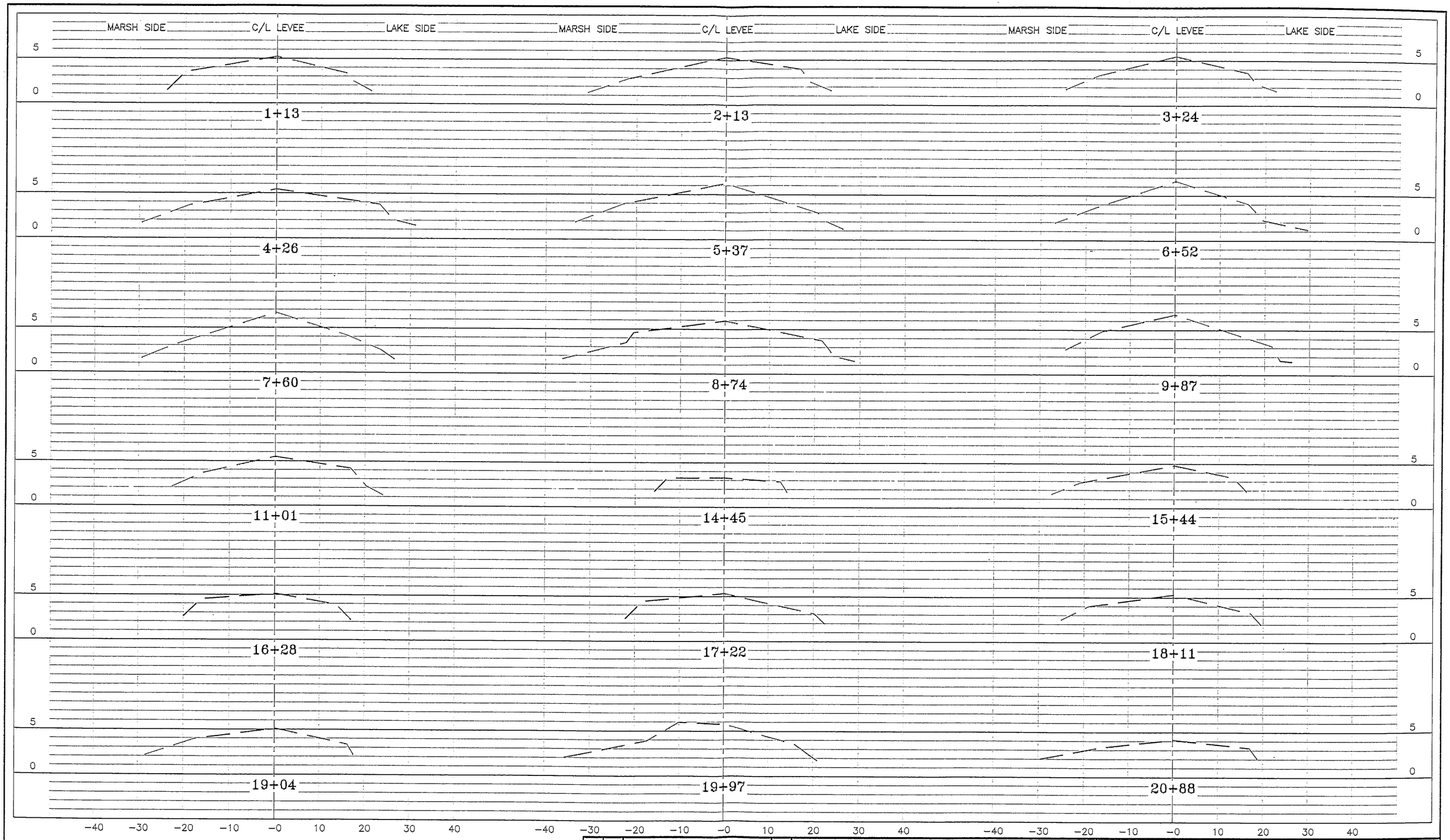
DRAWN BY: SHANE TRICHE

APPROVED BY: BRIAN BABIN, P.E.

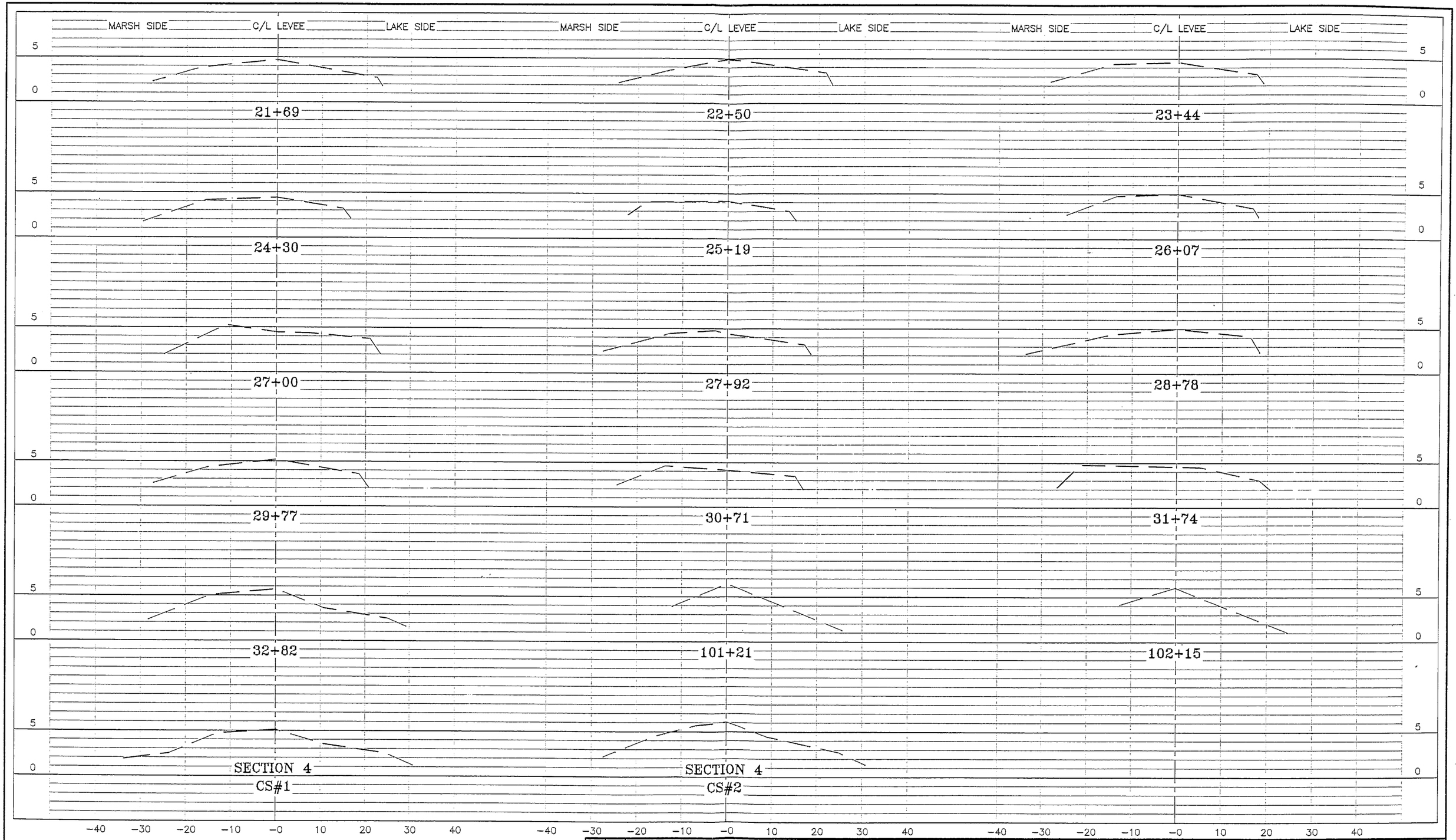
BY	DESCRIPTION	DATE	REV.

SCALE

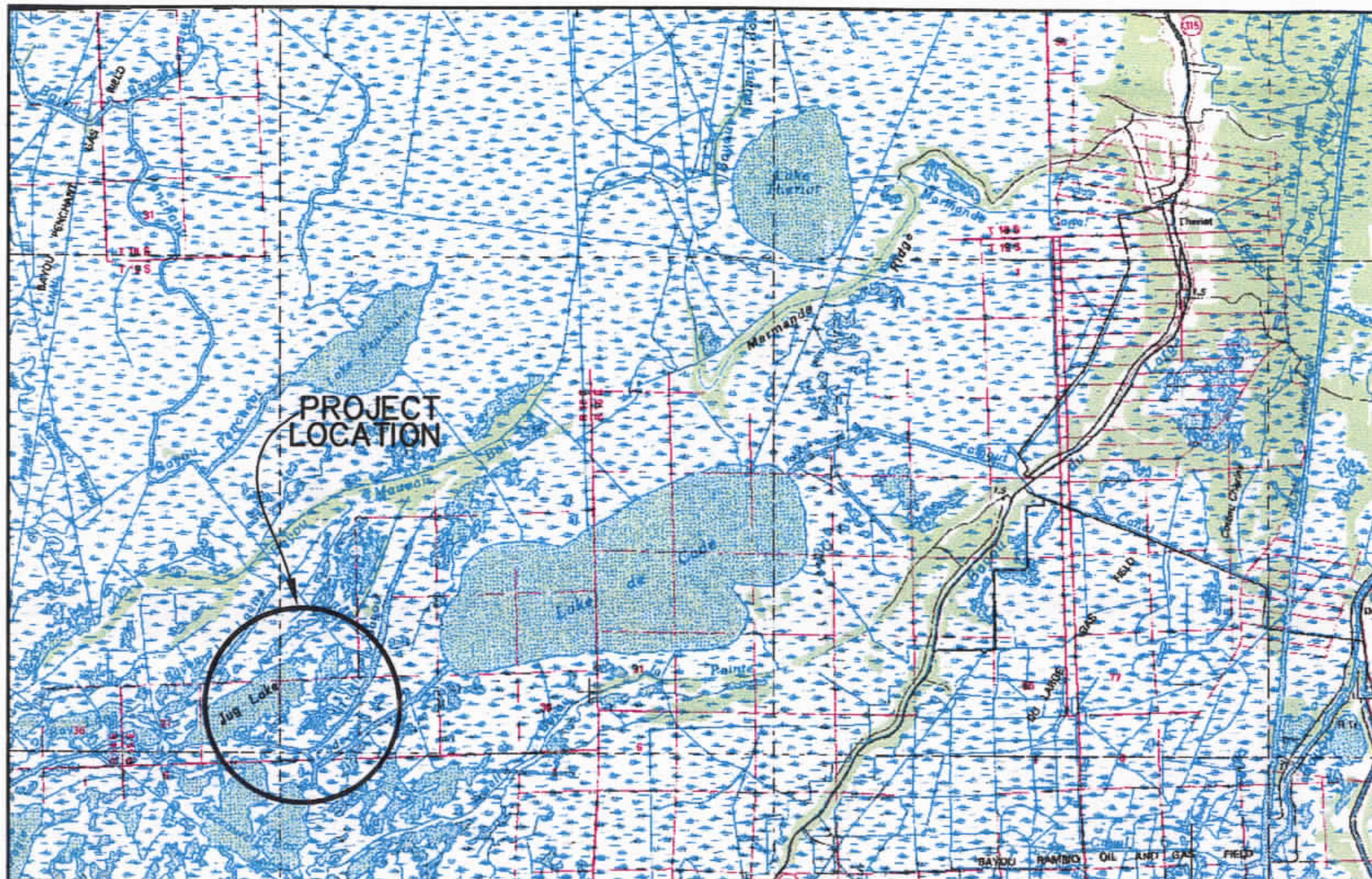
NO SCALE



SCALE							
1" = 10'	File Location: F:\Engineering\Basins\TE\TE-28\Operation and Maintenance\Jug Lake Shoreline Repair\Cross Sections	REV.	DATE	DESCRIPTION	BY	LOUISIANA DEPARTMENT OF NATURAL RESOURCES **COASTAL ENGINEERING DIVISION** 1440 TIGER DRIVE, SUITE B, THIBODAUX, LA 70301 DRAWN BY: SHANE TRICHE APPROVED BY: BRIAN BABIN, P.E.	BRADY CANAL HYDROLOGIC RESTORATION JUG LAKE - LEVEE REFURBISHMENT **CROSS SECTIONS** PROJECT NO.: TE-28	TERREBONNE PARISH LOUISIANA DATE: 01/16/04 SHEET 4 OF 5



SCALE					LOUISIANA DEPARTMENT OF NATURAL RESOURCES **COASTAL ENGINEERING DIVISION** 1440 TIGER DRIVE, SUITE B, THIBODAUX, LA 70301	BRADY CANAL HYDROLOGIC RESTORATION JUG LAKE - LEVEE REFURBISHMENT **CROSS SECTIONS**	TERREBONNE PARISH LOUISIANA
1" = 10'	File Location: F:\Engineering\Basins\TE\TE-28\Operation and Maintenance\Jug Lake Shoreline Repair\Cross Sections	REV.	DATE	DESCRIPTION	BY	DRAWN BY: SHANE TRICHE APPROVED BY: BRIAN BABIN, P.E.	PROJECT NO.: TE-28	DATE: 01/16/04 SHEET 5 OF 5



BRADY CANAL HYDROLOGIC RESTORATION (TE–28) MODIFICATIONS

COASTAL WETLAND PLANNING, PROTECTION AND RESTORATION ACT
PUBLIC LAW 101–646
BY THE
LOUISIANA DEPARTMENT OF NATURAL RESOURCES
WITH THE ASSISTANCE
OF THE
NATURAL RESOURCES CONSERVATION SERVICE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE

AS–BUILT PLANS 9/04/03

VICINITY MAP

LOCATION IN LOUISINA

INDEX OF DRAWINGS

TITLE SHEET	SHEET 1
PROJECT LOCATION MAP	SHEET 2
BREACH 1	SHEET 3
BREACH 2 & 3	SHEET 4 & 5
BREACH 4	SHEET 6
BREACH 5 & 6	SHEET 7 & 8
BREACH 7	SHEET 9
BREACH 8	SHEET 10
BREACH 9	SHEET 11
BREACH 10	SHEET 12
TYPICAL EARTH FILL SECTION	SHEET 13
DOLPHIN REPAIR	SHEET 14

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 1

DATE | REVISIONS DESCRIPTION | BY

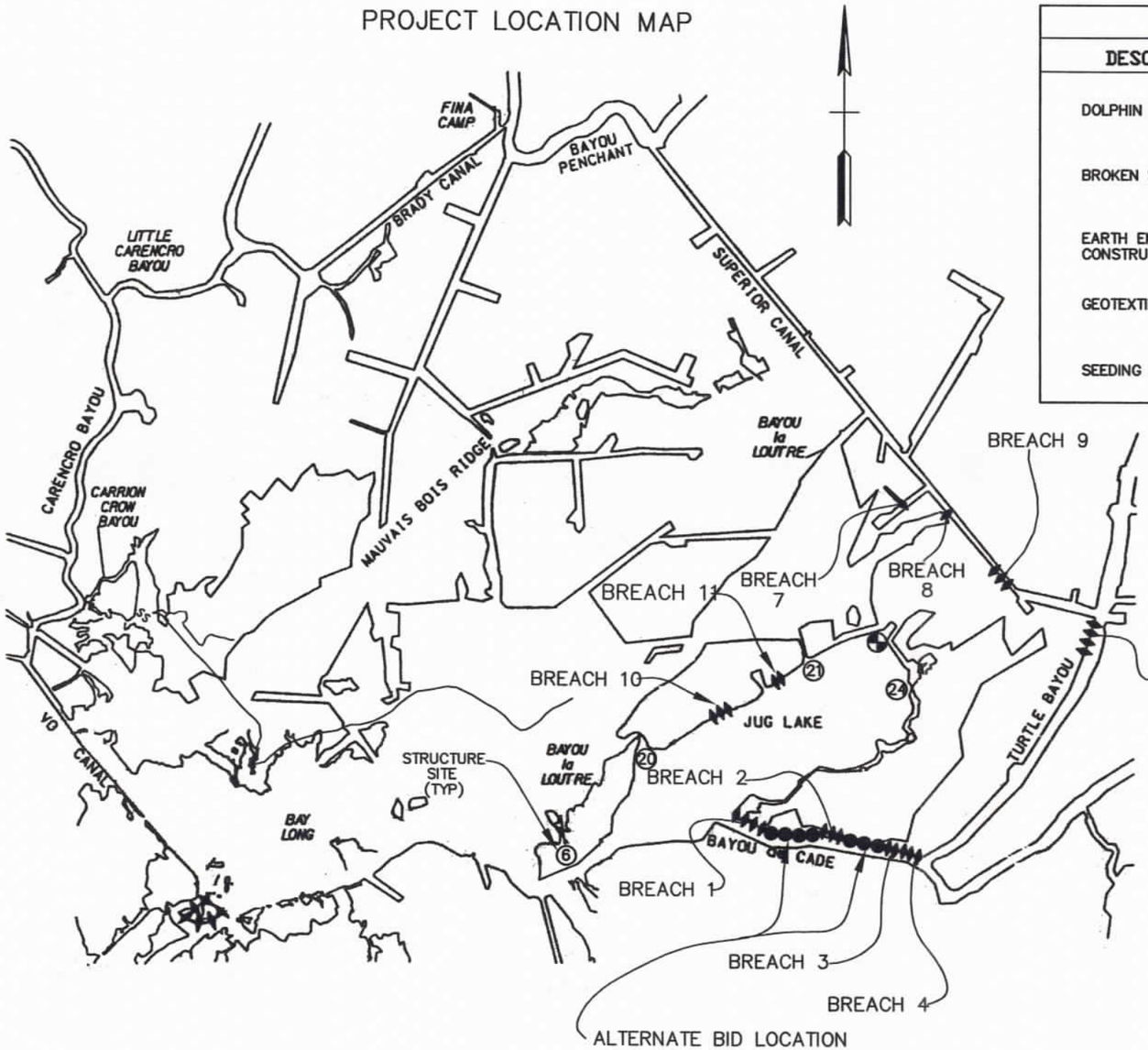
DATE :
CHECKED BY : M.P.M.
DRAWN BY : W.J.U.
SCALE : 1" = 100'

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
LEVEE RESTORATION PROJECT
BRADY CANAL TERREBONNE PARISH, LOUISIANA

Jul 25, 2002 – 07:55:53[P&O FILE: G:\CAD\ACAD\10-1628\COVER.dwg] [Login: Winda]

P&O FILE NO. 10-1628-cover

PROJECT LOCATION MAP



PROJECT QUANTITIES		
DESCRIPTION	ESTIMATED QUANTITY	FINAL CONTRACT QUANTITIES
DOLPHIN REPAIR	1 EACH	1 EACH
BROKEN STONE RIP-RAP	6,200 TONS (BASE) 2,500 TONS (ALT.)	7,114 TONS (BASE) 2,550 TONS (ALT.)
EARTH EMBANKMENT CONSTRUCTION	2200 LINIAR FEET	2325 LINIAR FEET
GEOTEXTILE FABRIC	8983 S.Y. (BASE) 12,000 S.Y. (ALT.)	8983 S.Y. (BASE) 5,631 S.Y. (ALT.)
SEEDING & FERTILIZER	3.1 ACRES	3.1 ACRES

NOTE:

KNOWN PIPELINES AND UTILITIES ARE SHOWN ON THE PLANS. IT IS POSSIBLE THAT SOME MAY EXIST THAT HAVE NOT BEEN SHOWN. THE CONTRACTOR SHALL BE ON THE ALERT FOR SUCH PIPELINES AND UTILITIES, AND SHALL REPORT THEM IMMEDIATELY TO THE CONTRACTING OFFICER.

NOTICE:

48 HOURS BEFORE DIGGING
CALL 1-800-272-3020
TO LOCATE UTILITY LINES

AS-BUILT PLANS
9/04/03

LEGEND:

- STRUCTURE LOCATION
- BREACH LOCATION
- BREACHMARK – TOP OF BOLT ON NORTHERLY SHEET PILE WALL AT STRUCTURE 23, EL. = 3.51'
- ALTERNATE BID LOCATION

PROJECT DESCRIPTION

BASE BID: INSTALL BROKEN STONE ROCK DIKE OR EARTH EMBANKMENT AT BREACH NO. 1 THRU 11 IN ACCORDANCE WITH CONSTRUCTION PLANS. ALSO REPLACE BROKEN TIMBER AT STRUCTURE SITE 6.

ALTERNATE BID: INSTALL BROKEN STONE DIKE IN ACCORDANCE WITH CONSTRUCTION PLANS CONNECTING THE ROCK DIKE AT BREACH 1 WITH BREACH 2 AND BREACH 2 WITH BREACH 3

4000 0 4000 8000
(IN FEET)
SCALE: 1" = 4000 '

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 2

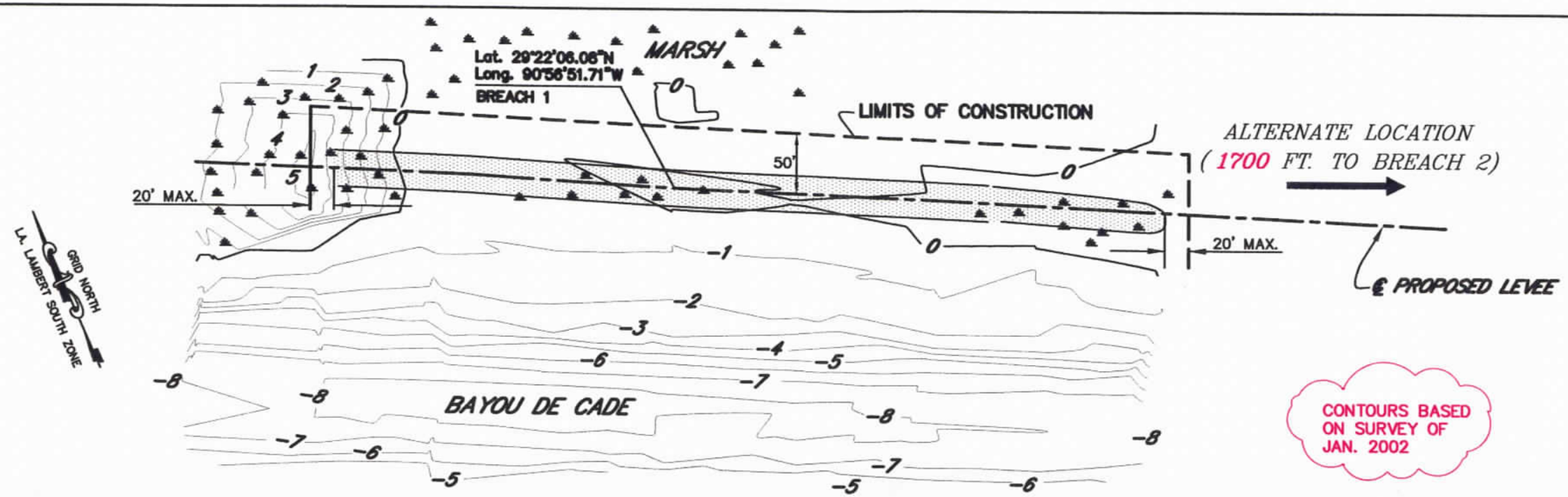
DATE	BY	REVISIONS DESCRIPTION
11/12/02	P&O	ADDED BREACH 11 AND REVISED QUANTITIES

DATE :
CHECKED BY : M.P.M.
DRAWN BY : W.J.U.
SCALE : 1" = 100'

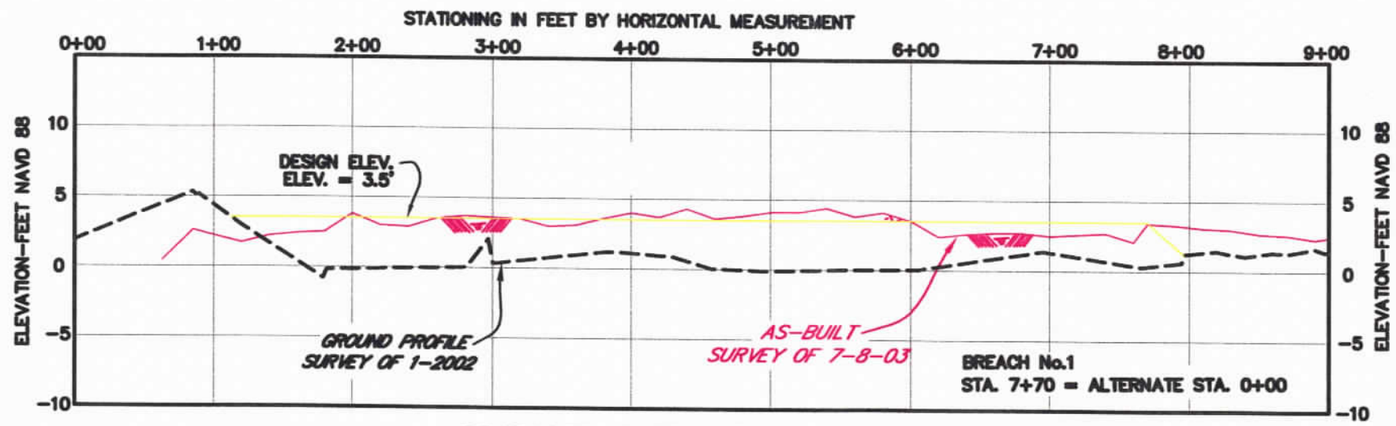
LOUISIANA DEPARTMENT OF NATURAL RESOURCES
PROJECT LOCAATION MAP
BRADY CANAL TERREBONNE PARISH, LOUISIANA

Nov 12, 2002 - 11:06:16[P&O FILE: G:\CAD\ACAD\10-1628\LOC_MAP.dwg] [Login: Winda]

P&O FILE NO. 10-1628-Loc_map



PLAN
SCALE: 1" = 100'



PROPOSED LEVEE ℄ PROFILE
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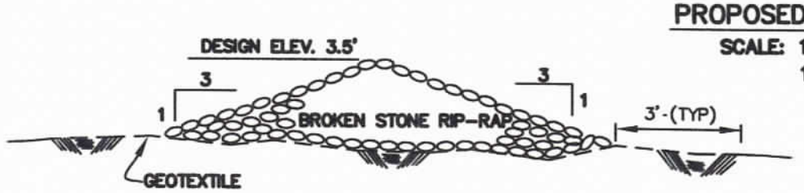
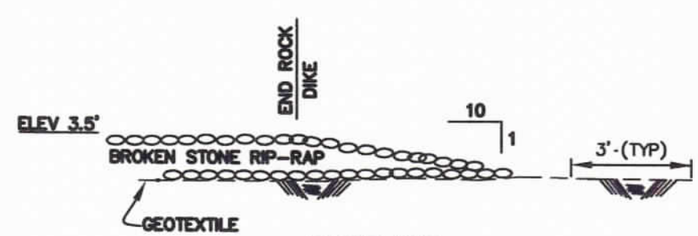
1" = 10' VERTICAL



SEE ATTACHED DRAWINGS FOR AS-BUILT CROSS SECTIONS

BASE BID AND ALTERNATE
TYPICAL CROSS SECTION
N.T.S.



BASE BID
TYPICAL END SECTION
N.T.S.

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 3

DATE | REVISIONS DESCRIPTION | BY

DATE:
CHECKED BY: H.P.H.
DRAWN BY: W.J.U.
SCALE: 1" = 100'

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
AS-BUILT
BREACH 1
BRADY CANAL TERREBONNE PARISH, LOUISIANA

Aug 06, 2003 – 10:16:44[P&O FILE: G:\CAD\ACAD\10-1628\As-Built-7-03\br_1.dwg] [Login: WUnderwood]

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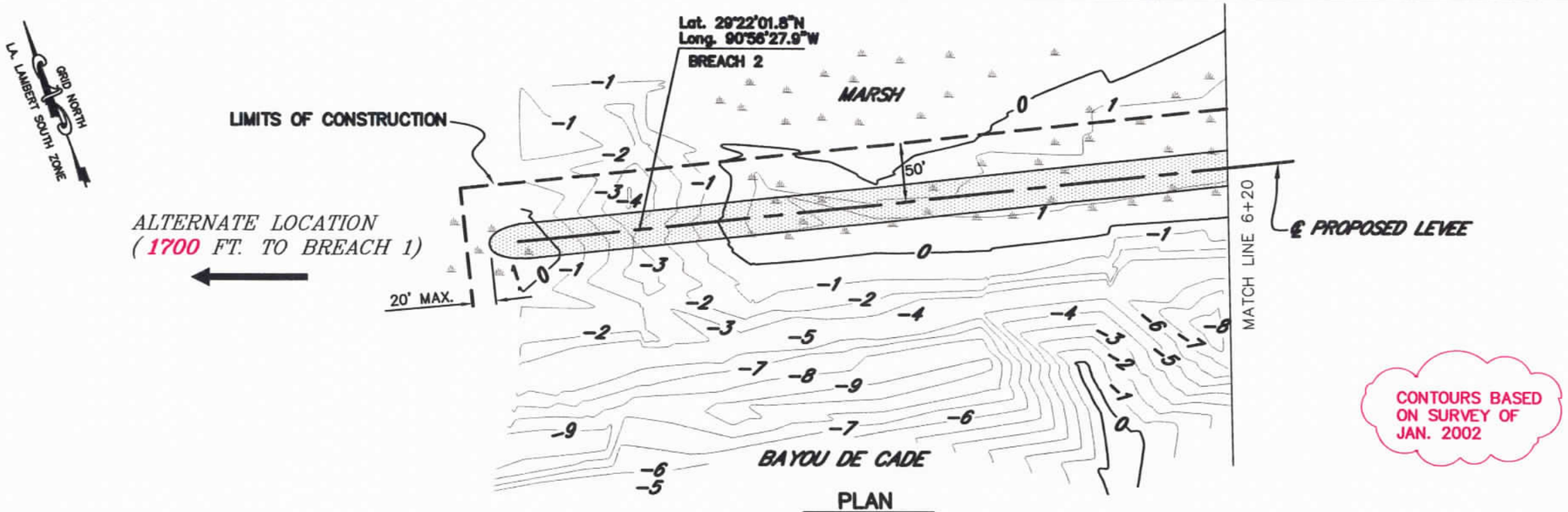
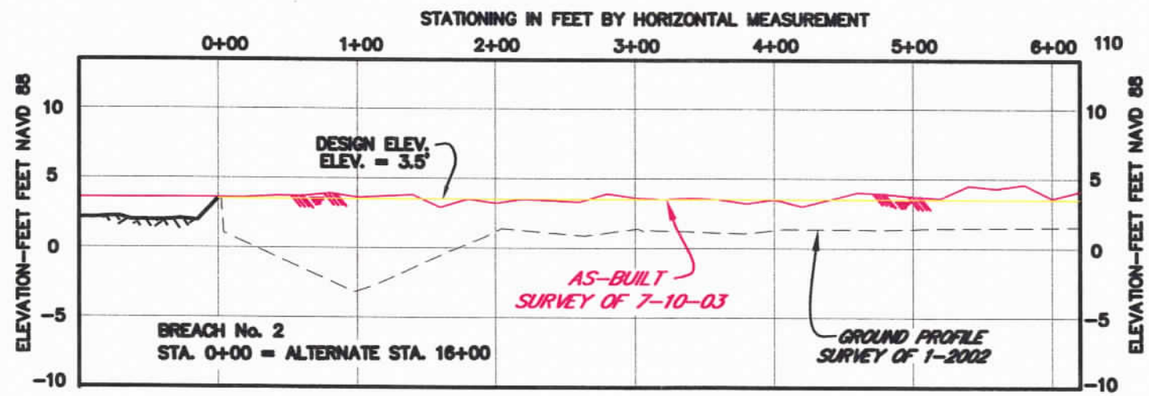


CONTOURS BASED ON SURVEY OF JAN. 2002

PLAN

SCALE: 1" = 100'



PROPOSED LEVEE ℄ PROFILE

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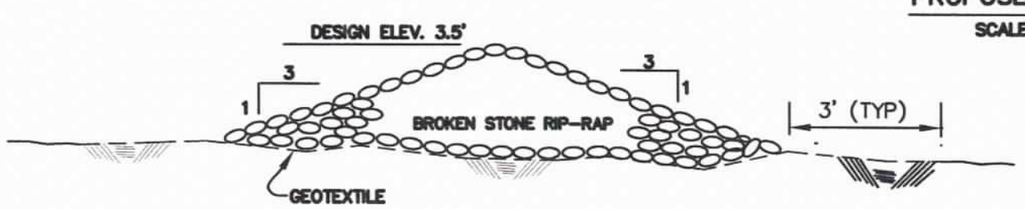
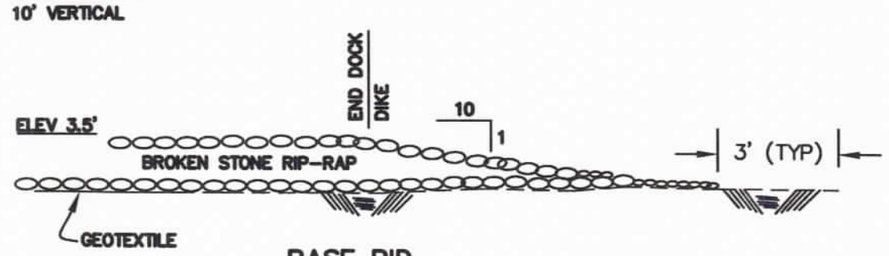
1" = 10' VERTICAL



SEE ATTACHED DRAWINGS FOR AS-BUILT CROSS SECTIONS

BASE BID AND ALTERNATE TYPICAL CROSS SECTION

N.T.S.



BASE BID TYPICAL END SECTION

N.T.S.

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 4

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
AS-BUILT
BREACH 2 & 3
BRADY CANAL TERREBONNE PARISH, LOUISIANA

Aug 06, 2003 - 09:11:41[P&O FILE: G:\CAD\ACAD\10-1628\As-Built-7-03\br_2_3.dwg] [Login: WUnderwood]

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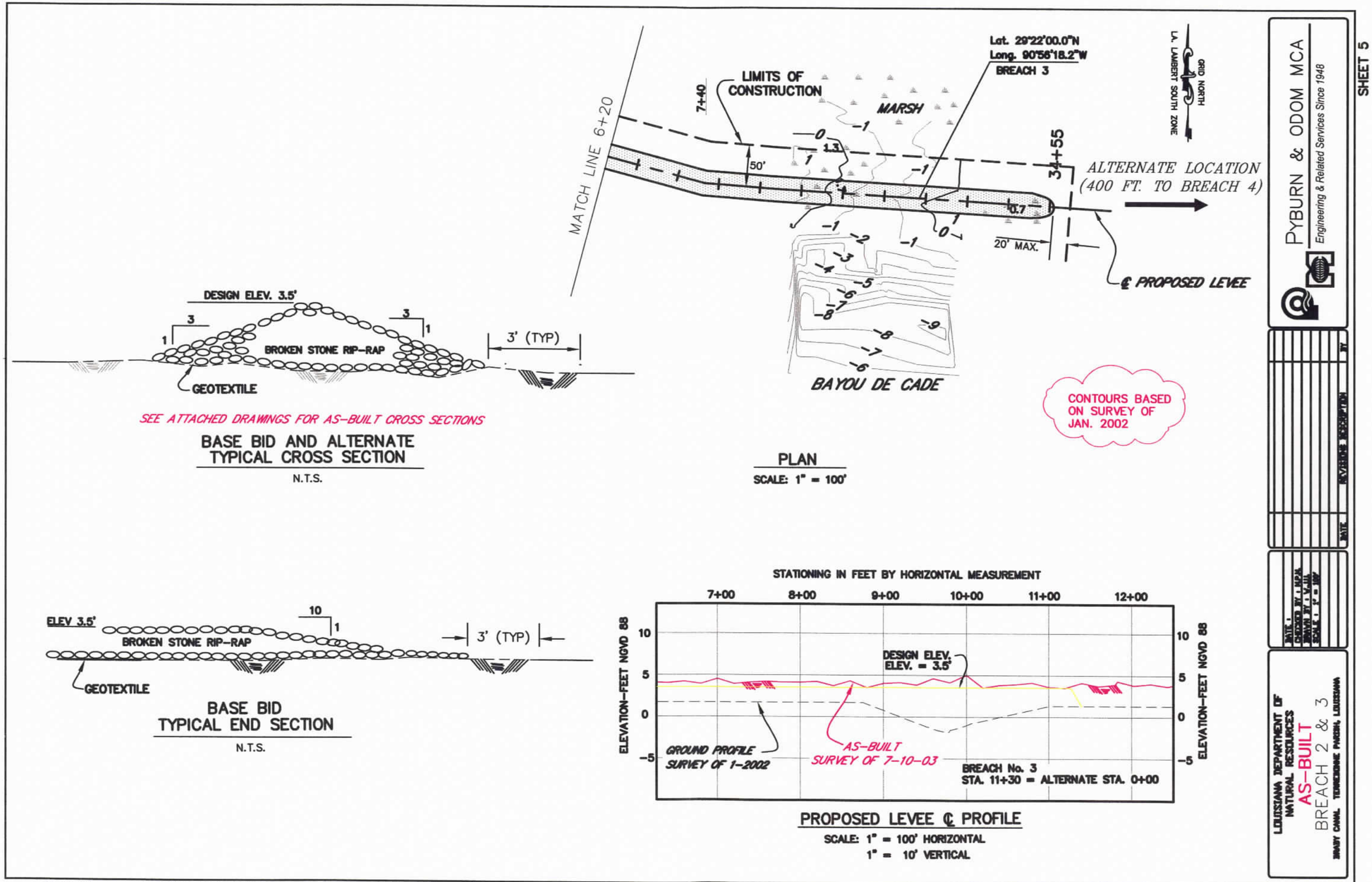

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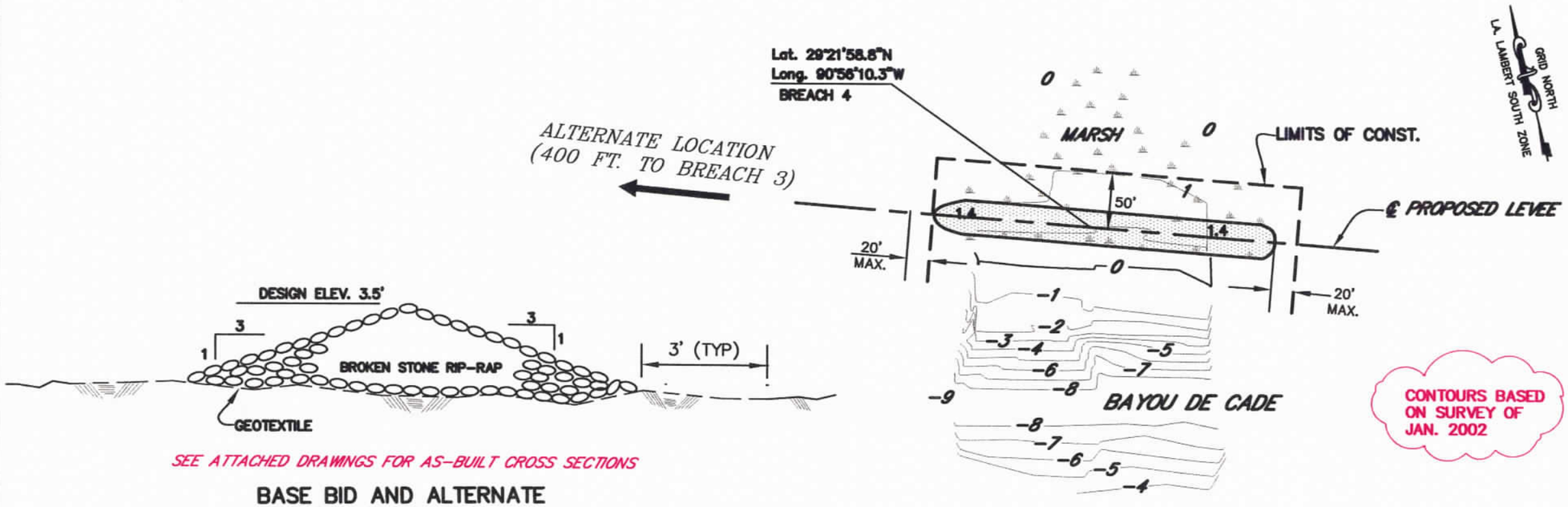


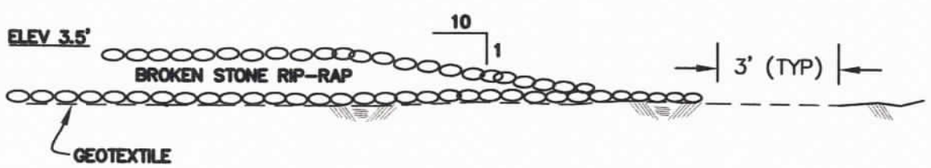
SEE ATTACHED DRAWINGS FOR AS-BUILT CROSS SECTIONS

BASE BID AND ALTERNATE TYPICAL CROSS SECTION

N.T.S.

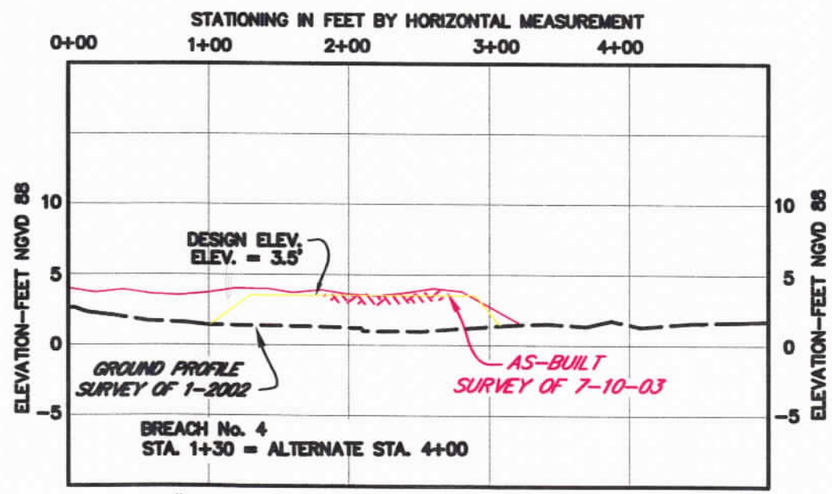
PLAN

SCALE: 1" = 100'



BASE BID TYPICAL END SECTION

N.T.S.



PROPOSED LEVEE ℄ PROFILE

SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 6

DATE | REVISIONS DESCRIPTION | BY

DATE:
CHECKED BY: M.P.M.
DRAWN BY: V.J.U.
SCALE: 1" = 100'

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
AS-BUILT
BREACH 4
BRADY CANAL TERREBONNE PARISH, LOUISIANA

Aug 06, 2003 – 14:11:55[P&O FILE: G:\CAD\ACAD\10-1628\As-Built-7-03\br_4.dwg] [Login: WUnderwood]

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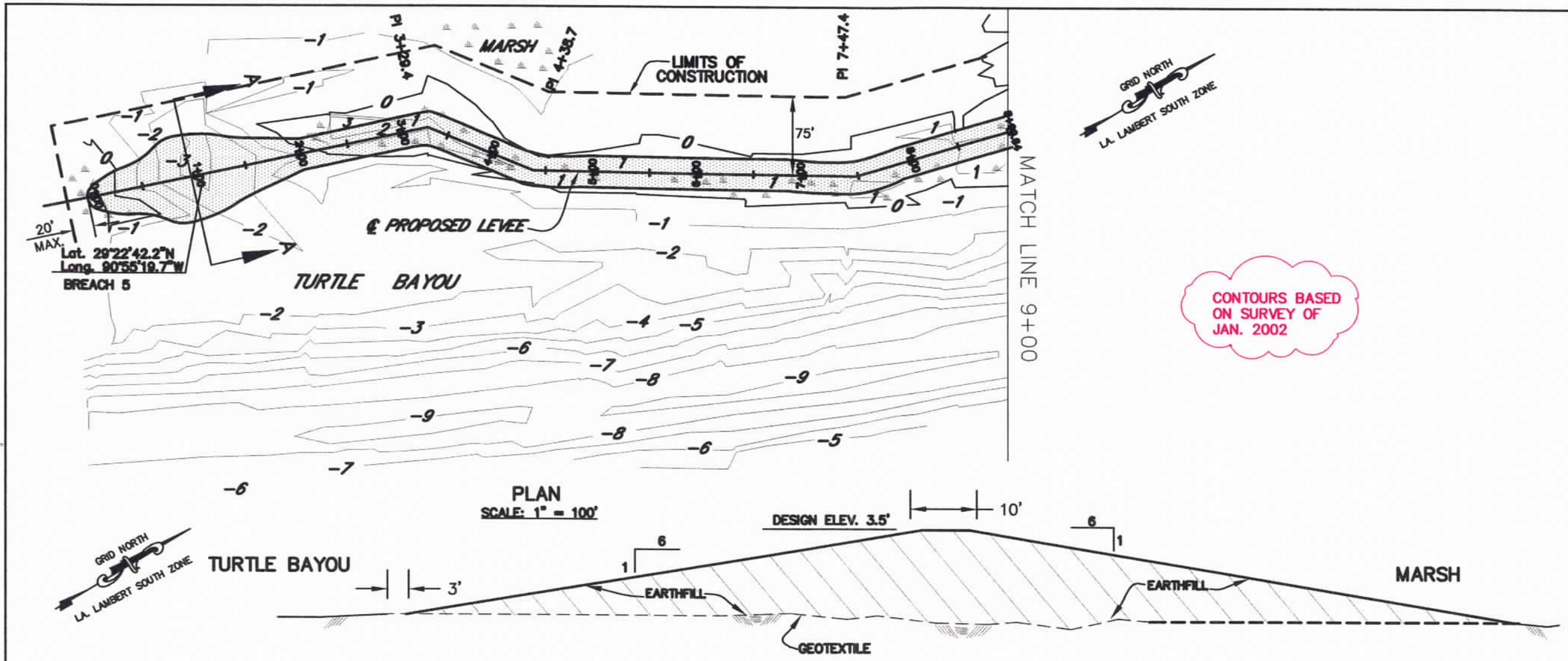
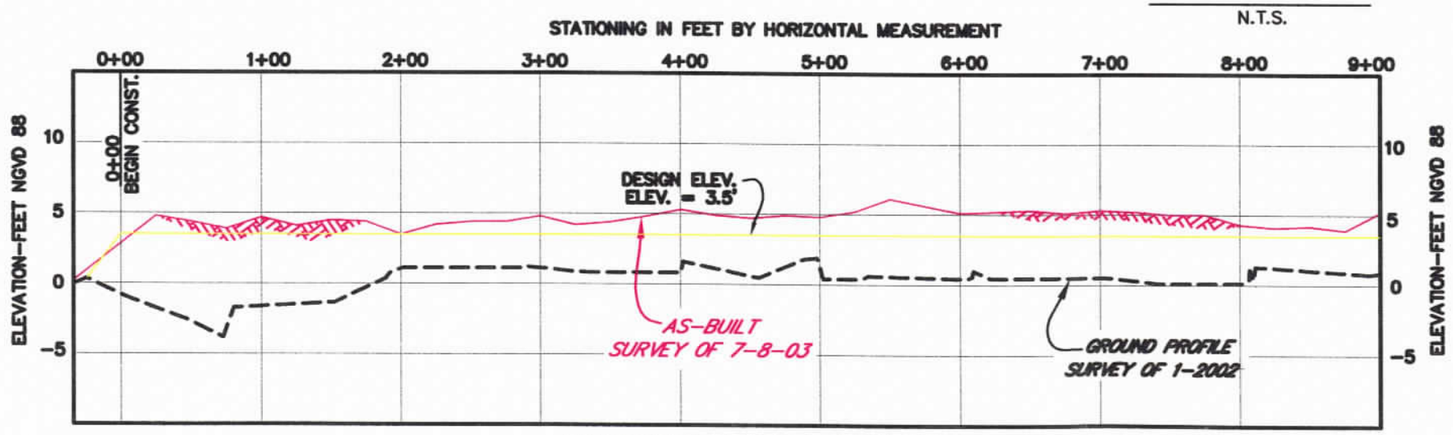


PLAN
SCALE: 1" = 100'

SECTION A-A
N.T.S.



PROPOSED LEVEE ℄ PROFILE
SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 7

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
AS-BUILT
BREACH 5 AND 6
SANDY CANAL, TERREBONNE PARISH, LOUISIANA

Aug 06, 2003 – 09:59:06[P&O FILE: G:\CAD\ACAD\10-1628\As-Built-7-03\br_5_6.dwg] [Login: WUnderwood]

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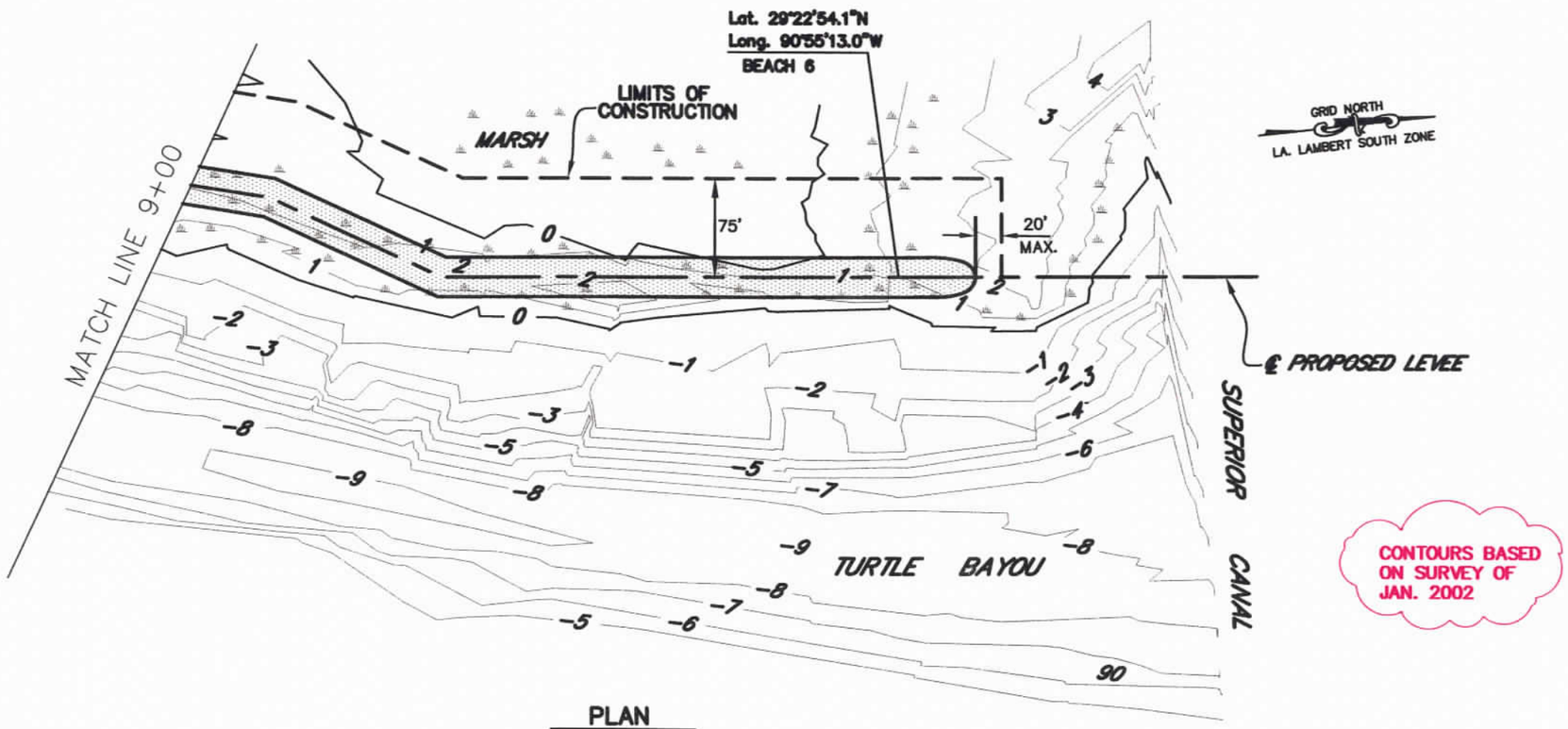
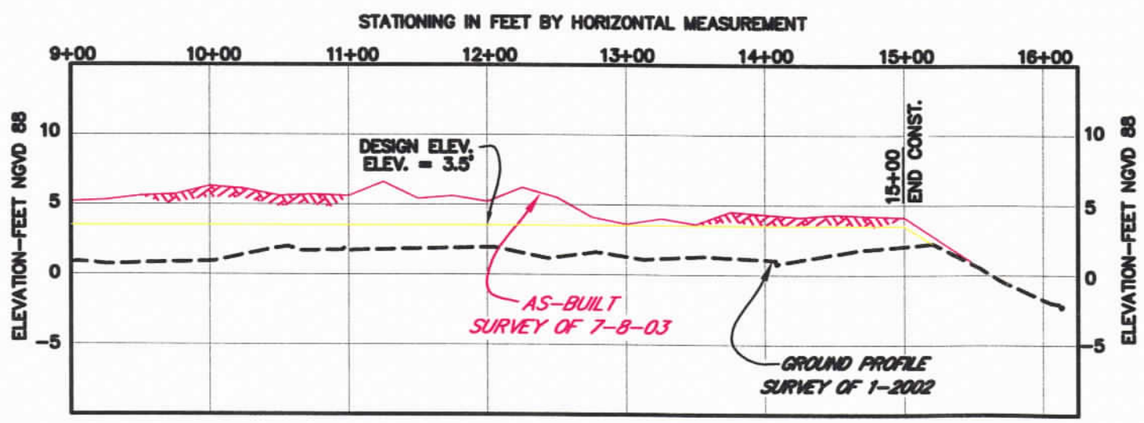


PLAN

SCALE: 1" = 100'



PROPOSED LEVEE ℄ PROFILE

SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 8

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
AS-BUILT
BREACH 5 AND 6
BRADY CANAL TERREBONNE PARISH, LOUISIANA

Aug 06, 2003 - 09:59:06[P&O FILE: G:\CAD\ACAD\10-1628\As-Built-7-03\br_5_6.dwg] [Login: WUnderwood]

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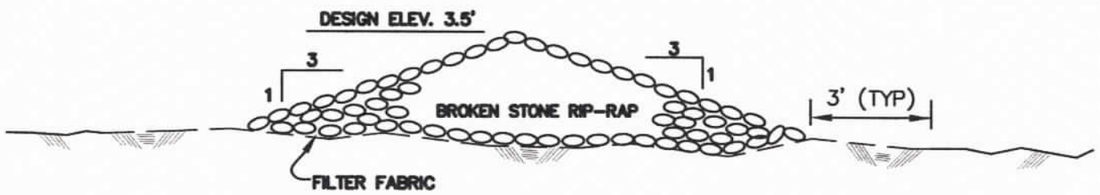
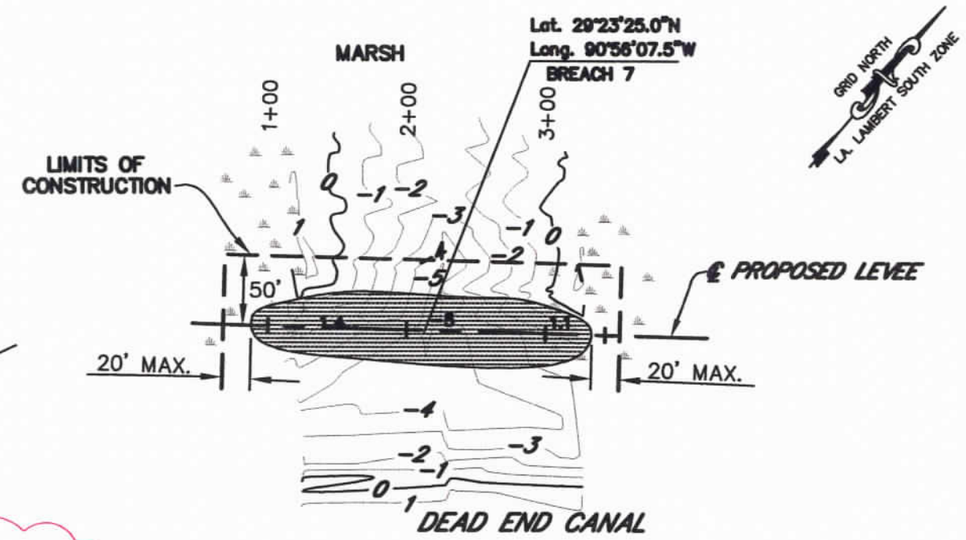


SEE ATTACHED DRAWINGS FOR AS-BUILT CROSS SECTIONS

TYPICAL CROSS SECTION

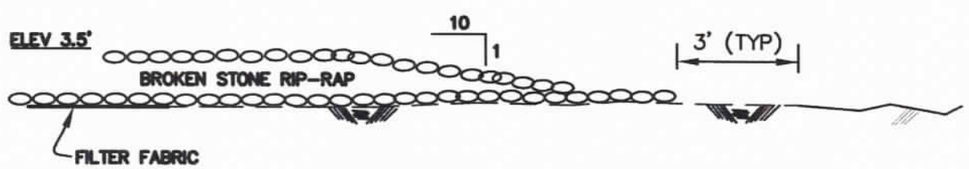
N.T.S.



CONTOURS BASED ON SURVEY OF JAN. 2002

PLAN

SCALE: 1" = 100'



TYPICAL END SECTION

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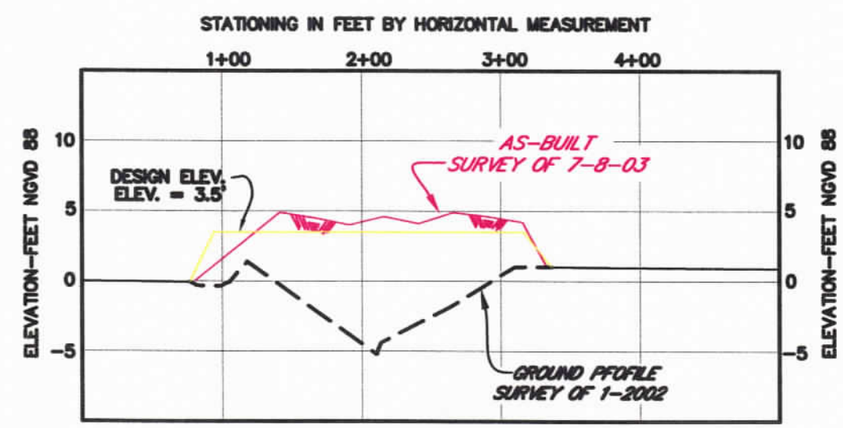


PROPOSED LEVEE ℄ PROFILE

SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 9

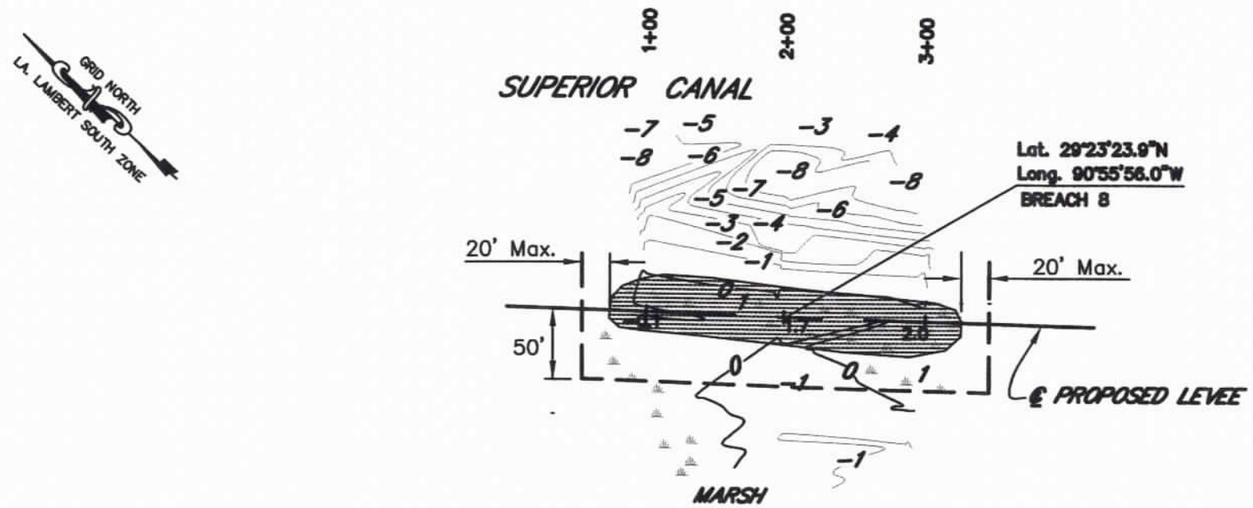
DATE	REVISIONS DESCRIPTION	BY

DATE:
CHECKED BY: MPM
DRAWN BY: W.J.U.
SCALE: 1" = 100'

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
AS-BUILT
BREACH 7
BRADY CANAL TERREBONNE PARISH, LOUISIANA

Aug 06, 2003 - 13:15:02[P&O FILE: G:\CAD\ACAD\10-1628\As-Built-7-03\br_7.dwg] [Login: WUnderwood]

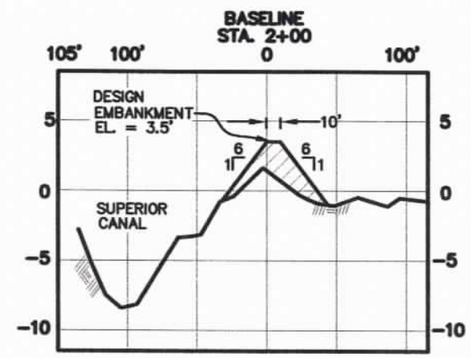
P&O FILE NO. 10-1628-breach7



CONTOURS BASED ON SURVEY OF JAN. 2002

PLAN

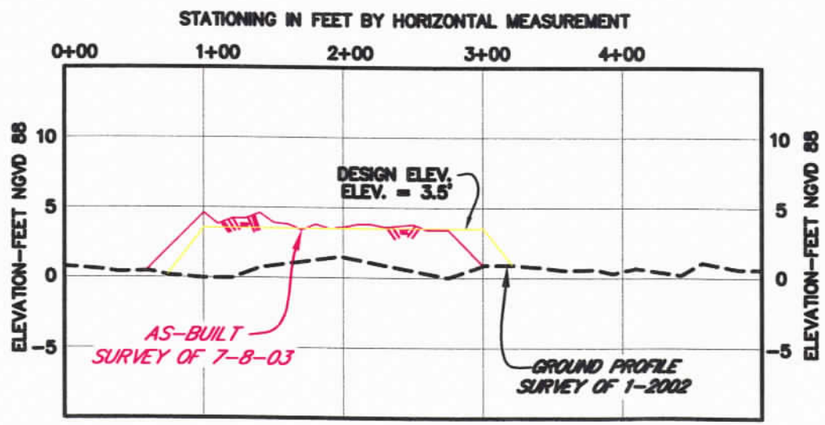
SCALE: 1" = 100'



SEE ATTACHED DRAWINGS FOR AS-BUILT CROSS SECTIONS

CROSS SECTION AT STA. 2+00

SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL



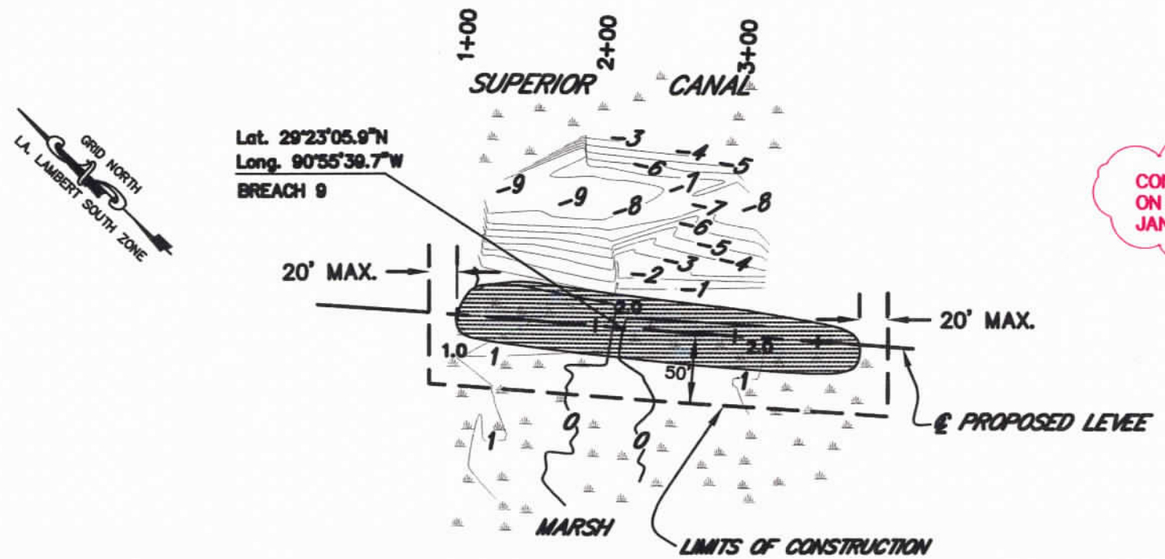
PROFILE

SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 10

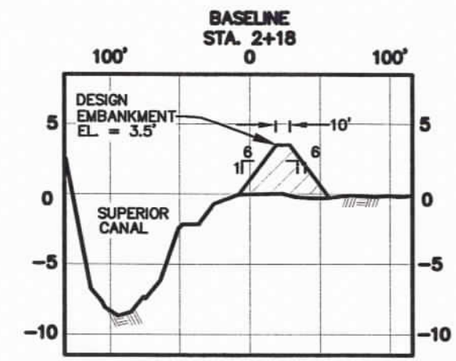
LOUISIANA DEPARTMENT OF NATURAL RESOURCES
AS-BUILT
BREACH 8
BINDY CANAL TERREBONNE PARISH, LOUISIANA



CONTOURS BASED ON SURVEY OF JAN. 2002

PLAN

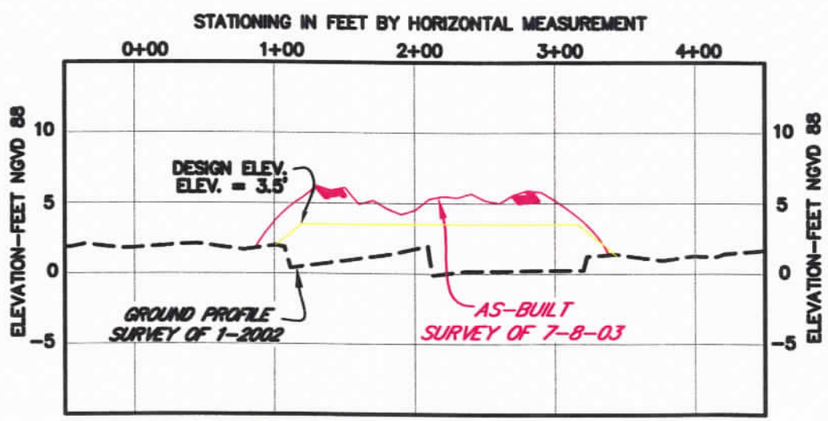
SCALE: 1" = 100'



SEE ATTACHED DRAWINGS FOR AS-BUILT CROSS SECTIONS

CROSS SECTION AT STA. 2+18

SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL



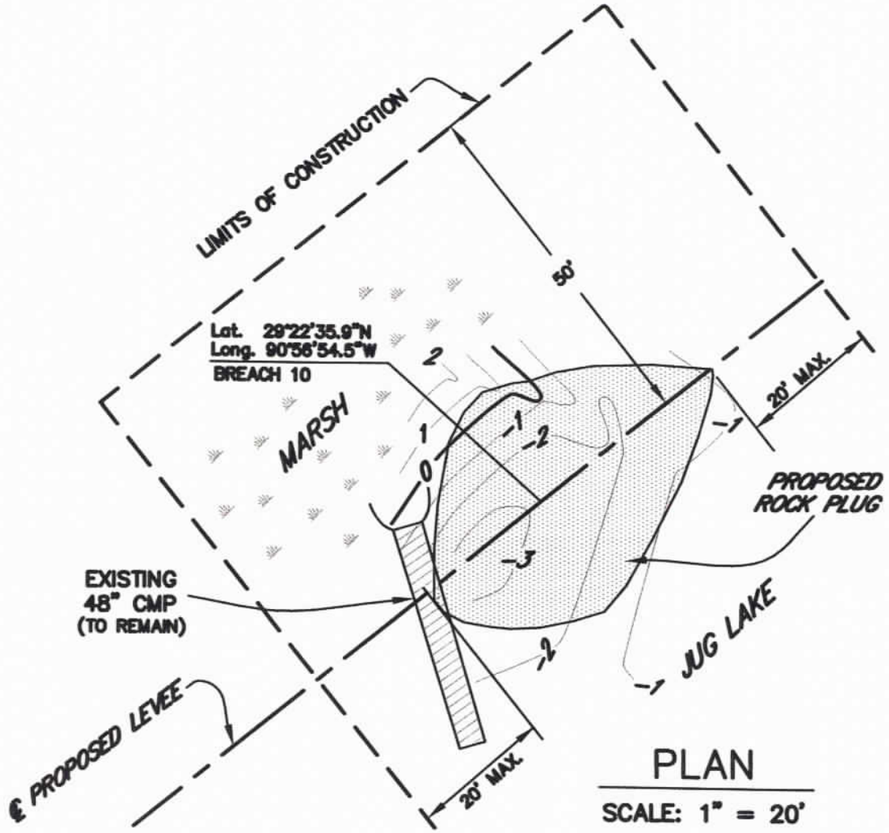
PROPOSED LEVEE ℄ PROFILE

SCALE: 1" = 100' HORIZONTAL
1" = 10' VERTICAL

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 11

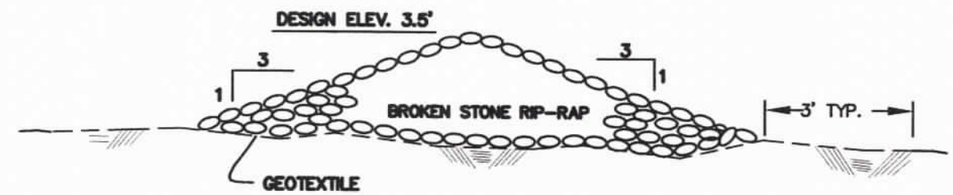
LOUISIANA DEPARTMENT OF NATURAL RESOURCES
AS-BUILT
BREACH 9
BRASSY CANAL, TERREBONNE PARISH, LOUISIANA



PLAN

SCALE: 1" = 20'

NOTE: NO ROCK INSTALLED EARTH EMBANKMENT USED TO REPAIR BREACH

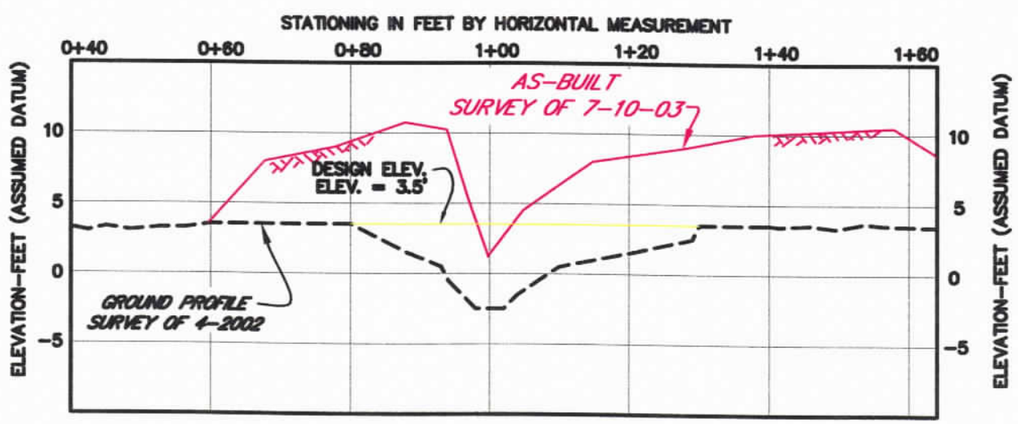


SEE ATTACHED DRAWINGS FOR AS-BUILT CROSS SECTIONS

BASE BID AND ALTERNATE TYPICAL CROSS SECTION

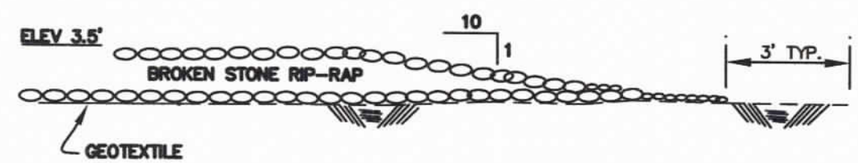
N.T.S.

CONTOURS BASED ON SURVEY OF JAN. 2002



PROPOSED LEVEE ℄ PROFILE

SCALE: 1" = 20' HORIZONTAL
1" = 10' VERTICAL



BASE BID TYPICAL END SECTION

N.T.S.

PYBURN & OMOM MCA
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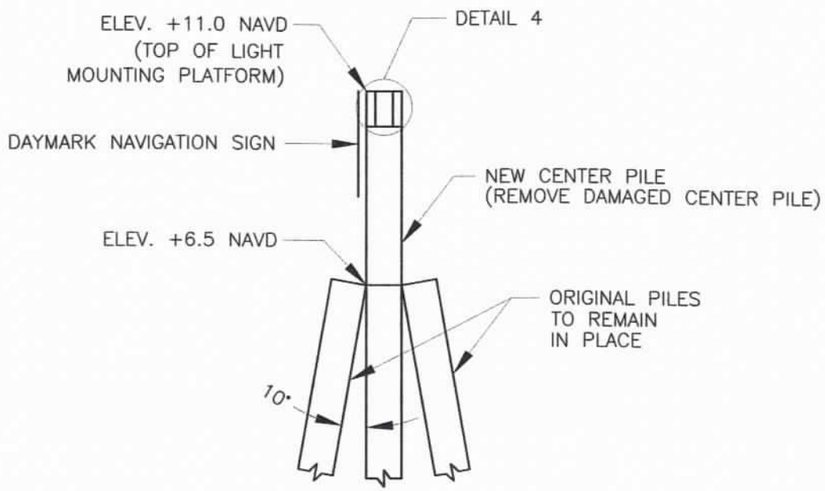
SHEET 12

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
AS-BUILT
BREACH 10
BINSBY CANAL TERREBONNE PARISH, LOUISIANA

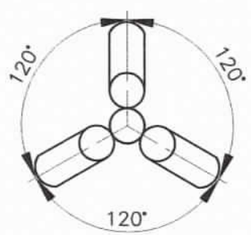
NOTES:

1. ALL ¾"ø ALL–THREAD TIE RODS (ASTM A–615 GR60 GALV.) SHALL BE SECURED BY NOTCHED IN PLACE OGEE WASHERS AND TACK WELDED NUTS.
2. 3 WRAPS OF ½"ø STAINLESS STEEL CABLE BETWEEN THE 3¾"ø ALL–THREAD TIE RODS.
3. THE ½"ø CABLE SHALL BE SECURED USING 3 STAINLESS STEEL CLAMPS.
4. THE ¾"ø ALL–THREAD TIE RODS SHALL BE A MIN. OF 6" BELOW TOP OF BATTER PILES AND 3" VERTICAL CLEARANCE FROM ADJACENT TIE ROD.
5. NEW TIMBER PILE FOR FOUR PILE NAVIGATION AID DOLPHIN SHALL BE 12"x50'.
6. SIGN SHALL BE REINSTALLED ON NEW TIMBER PILE DOLPHIN WITH 3–⅝"x8" STAINLESS STEEL LAG SCREWS WITH 1⅜" O.D. S.S. WASHER.
7. DOLPHIN REPAIR WORK SHOULD BE INCLUDED AS PART OF BASE BID, ITEM NO. 2, DOLPHIN REPAIR.

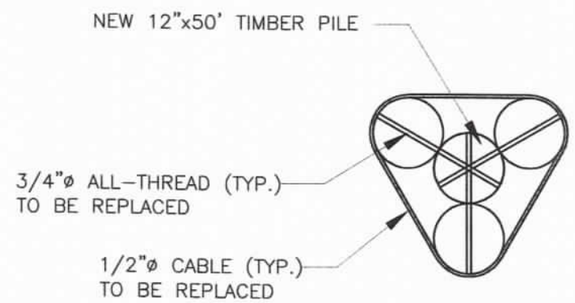
AS–BUILT PLANS
9/04/03



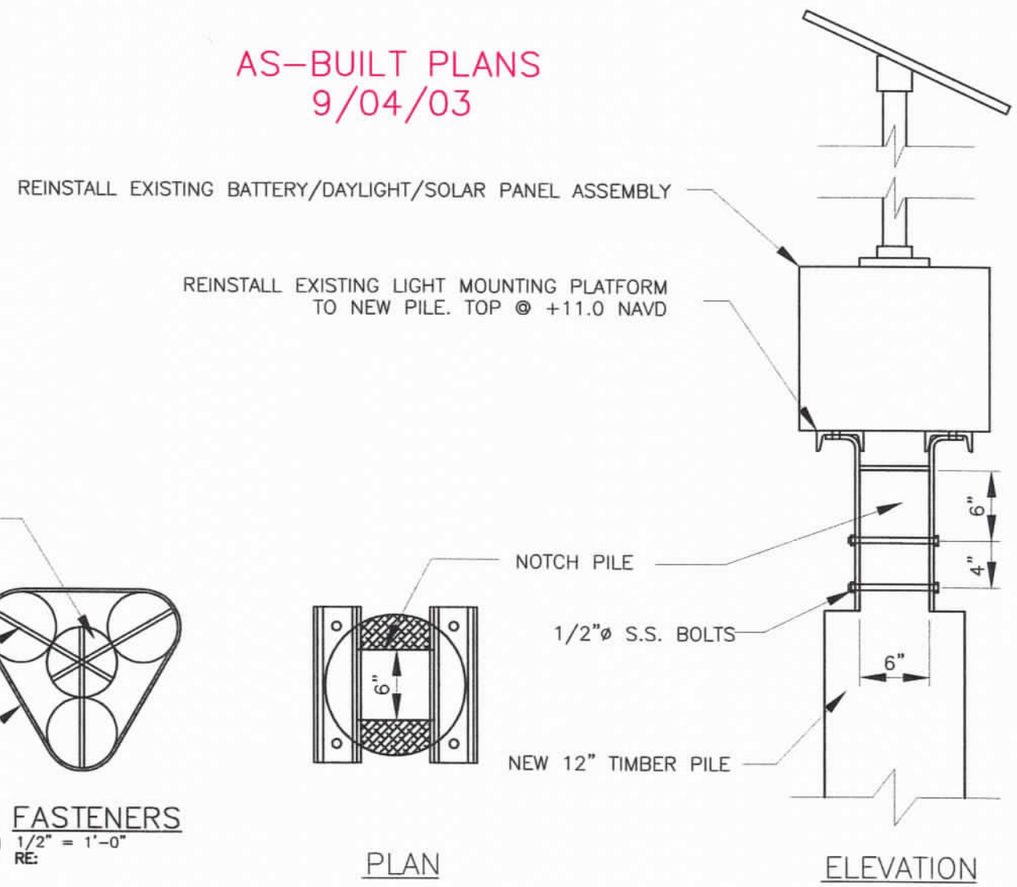
1 TIMBER PILE DOLPHIN–ELEVATION VIEW
1/4" = 1'–0"
RE:



2 TIMBER PILE DOLPHIN–PLAN VIEW
1/4" = 1'–0"
RE:



3 FASTENERS
1/2" = 1'–0"
RE:



4 MOUNTING DETAILS–DAYLIGHT ASSEMBLY
1" = 1'–0"
RE: 1

STATE OF LOUISIANA
ROBERT C. COLVIN
REG. No. 29590
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 14

DATE	REVISIONS DESCRIPTION	BY

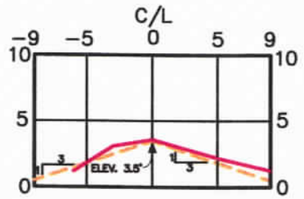
DATE :
CHECKED BY : M.P.M.
DRAWN BY : R.C.C.
SCALE : AS SHOWN

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
DOLPHIN REPAIR
BRADY CANAL TERREBONNE PARISH, LOUISIANA

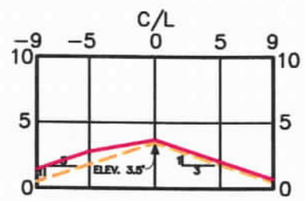
Jul 25, 2002 – 08:35:39[P&O FILE: G:\CAD\ACAD\10-1628\breach1_9\Dolphin.dwg] [Login: Winda]

P&O FILE NO. 10-1628-DOLPHIN

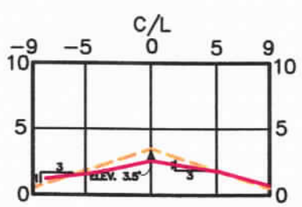
AS-BUILT
8/29/03



CROSS SECTION C/L STA. 3+00



CROSS SECTION C/L STA. 2+00



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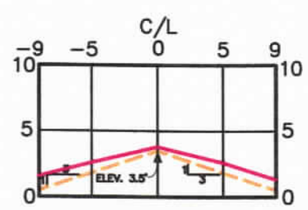
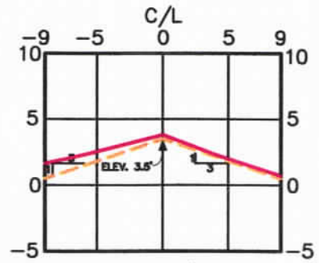
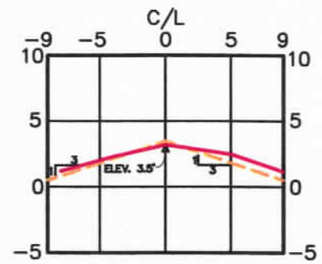


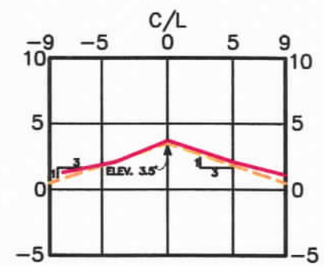
CROSS SECTION C/L STA. 0+00



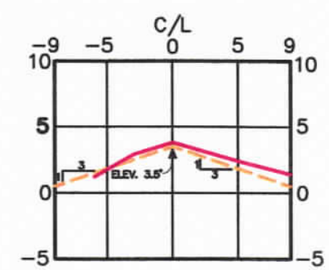
CROSS SECTION C/L STA. 7+00



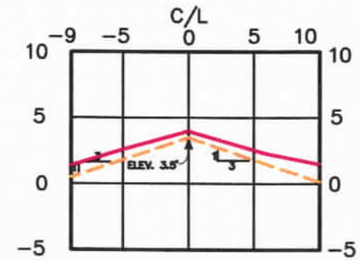
CROSS SECTION C/L STA. 6+00



CROSS SECTION C/L STA. 5+00



CROSS SECTION C/L STA. 4+00



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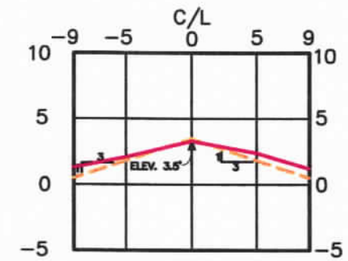
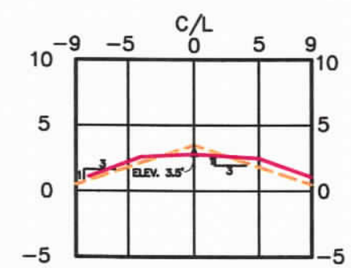
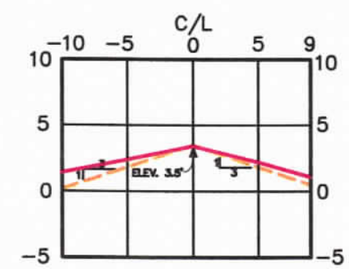


CROSS SECTION C/L STA. 10+00



CROSS SECTION C/L STA. 9+00



CROSS SECTION C/L STA. 8+00

LEGEND

JULY 9, 2003 AS-BUILT

DESIGN GRADE SECTION

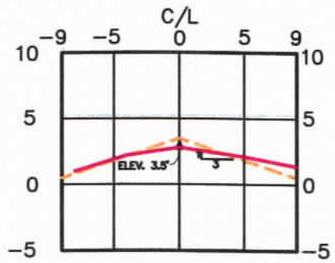
ALT. 1
CROSS SECTIONS

SHEET 1 OF 2

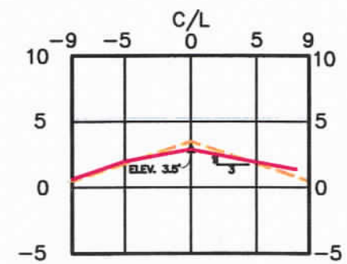
SCALE: 1" = 5' HORIZ. & VERT.

DNR – BRADY CANAL
P & O FILE NO. 10–1628

AS-BUILT
8/29/03



CROSS SECTION C/L STA. 14+00



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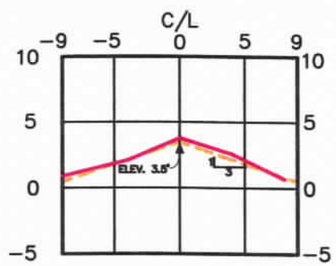

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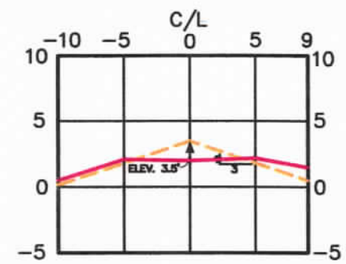

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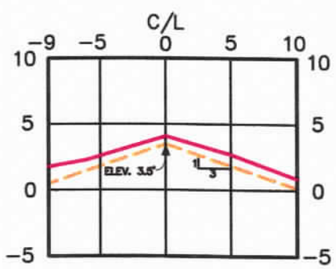
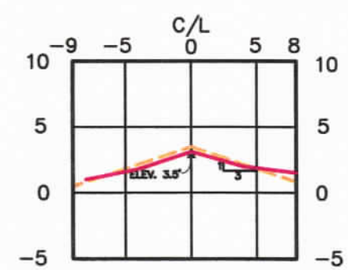


CROSS SECTION C/L STA. 12+00



CROSS SECTION C/L STA. 15+00

LEGEND

JULY 9, 2003 AS-BUILT

DESIGN GRADE SECTION

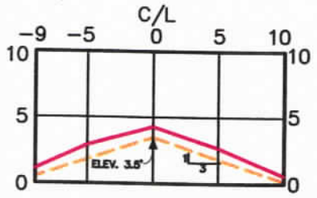
ALT. 1
CROSS SECTIONS

SHEET 2 OF 2

SCALE: 1" = 5' HORIZ. & VERT.

DNR – BRADY CANAL
P & O FILE NO. 10–1628

AS-BUILT
8/29/03



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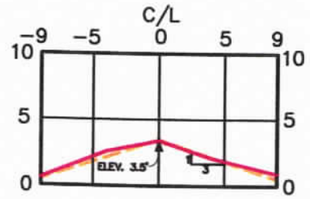
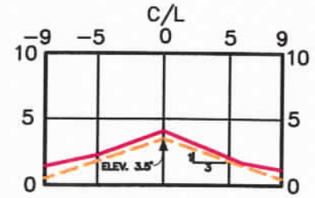


CROSS SECTION C/L STA. 1+00



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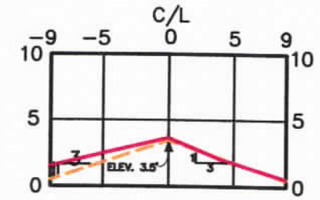
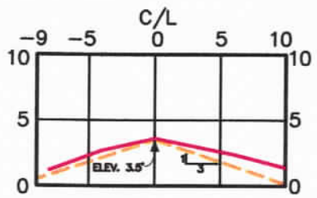
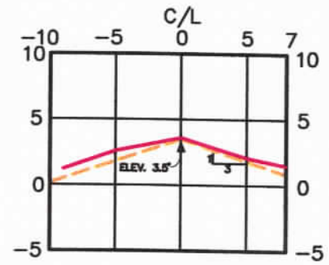


CROSS SECTION C/L STA. 3+00

ALT. NO. 2



CROSS SECTION C/L STA. 1+30



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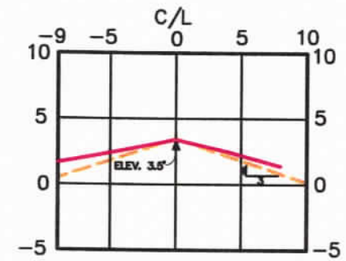
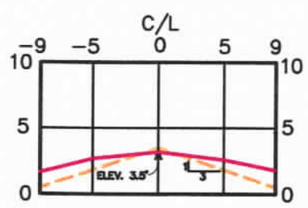


CROSS SECTION C/L STA. 3+00

BREACH NO. 4



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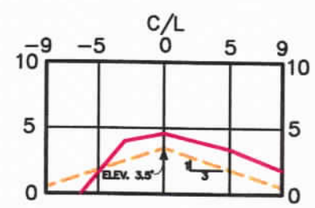
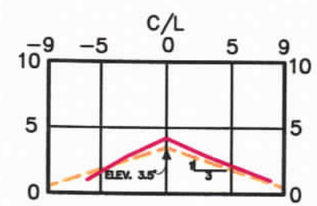


CROSS SECTION C/L STA. 1+00



CROSS SECTION C/L STA. 2+00

BREACH NO. 7
CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.

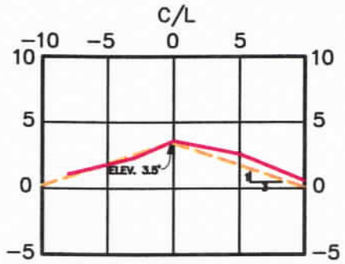
LEGEND

JULY 9, 2003 AS-BUILT

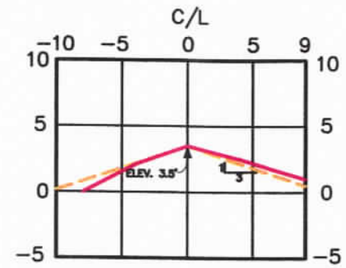
DESIGN GRADE SECTION

DNR – BRADY CANAL
P & O FILE NO. 10–1628

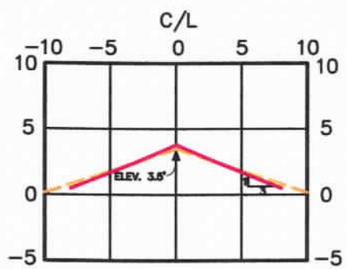
AS-BUILT
8/29/03



CROSS SECTION C/L STA. 3+00



CROSS SECTION C/L STA. 6+00



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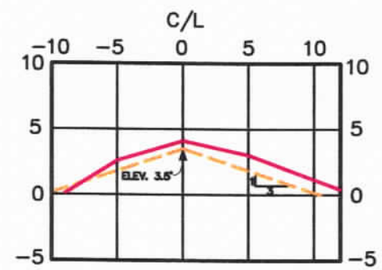
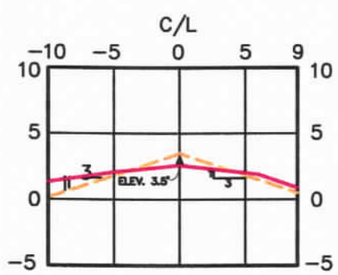
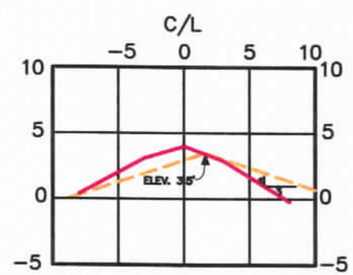


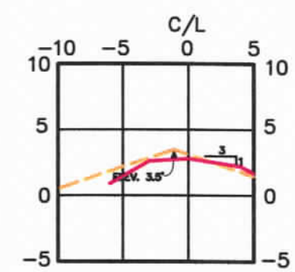
CROSS SECTION C/L STA. 5+00



CROSS SECTION C/L STA. 0+85



CROSS SECTION C/L STA. 4+00



CROSS SECTION C/L STA. 7+00

BREACH NO. 1
CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.

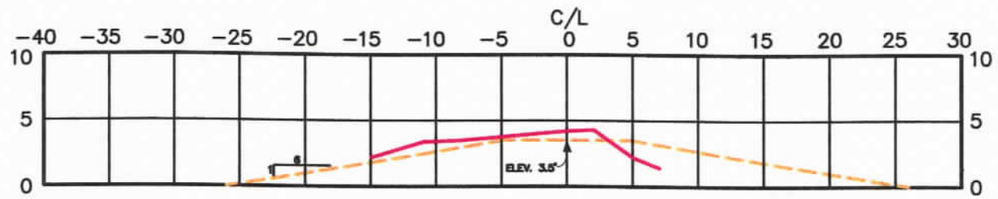
LEGEND

JULY 9, 2003 AS-BUILT

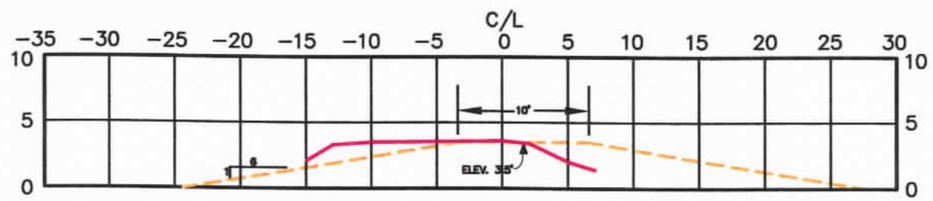
DESIGN GRADE SECTION

DNR – BRADY CANAL
P & O FILE NO. 10–1628

AS-BUILT
8/29/03



CROSS SECTION C/L STA. 1+30



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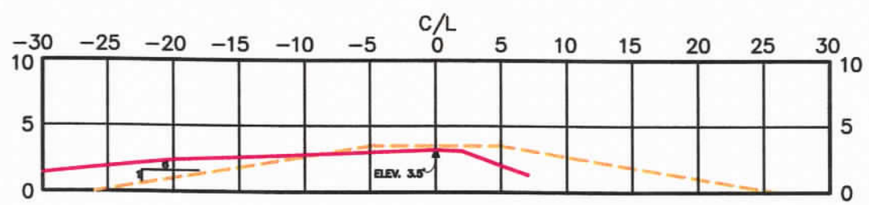

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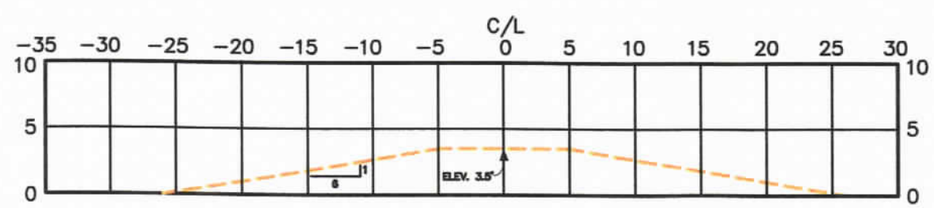


CROSS SECTION C/L STA. 0+18

LEGEND

JULY 9, 2003 AS-BUILT

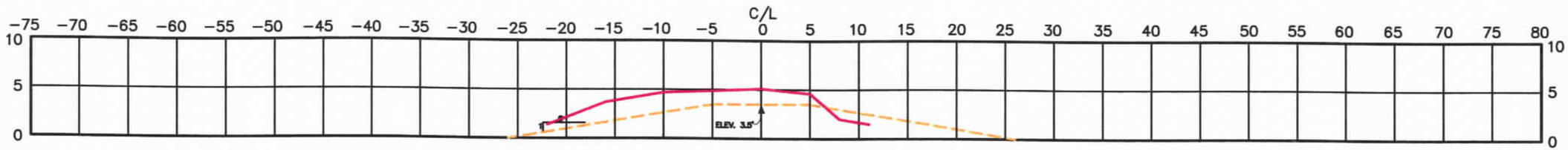
DESIGN GRADE SECTION

BREACH 10
CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.

DNR – BRADY CANAL
P & O FILE NO. 10–1628

AS-BUILT
8/29/03



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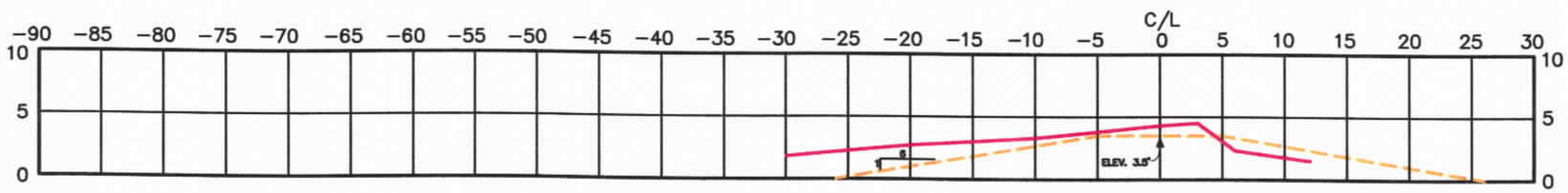

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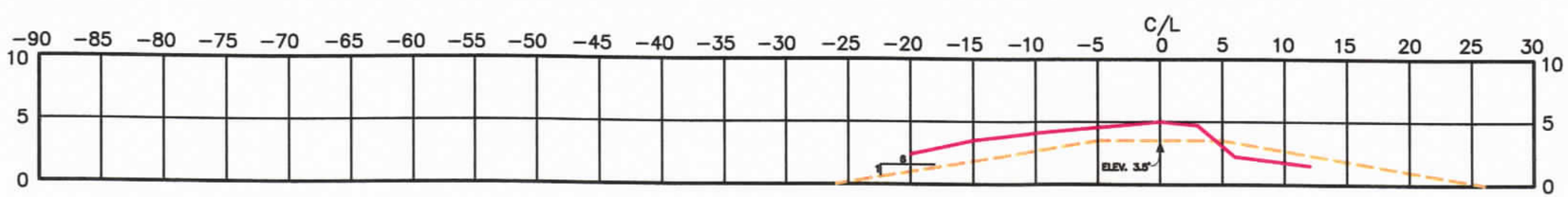
CROSS SECTION C/L STA. 1+00



CROSS SECTION C/L STA. 0+00

LEGEND

JULY 9, 2003 AS-BUILT

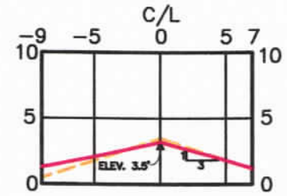
DESIGN GRADE SECTION

BREACH 11
CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.

DNR – BRADY CANAL
P & O FILE NO. 10–1628

AS-BUILT
8/29/03



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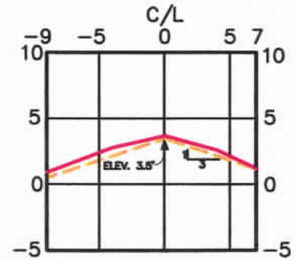

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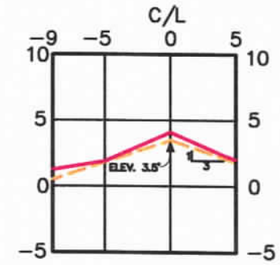

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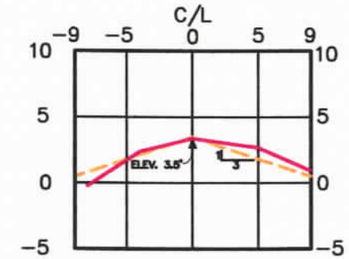

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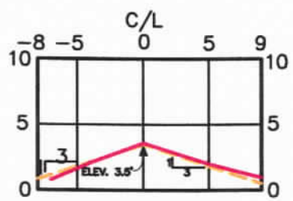

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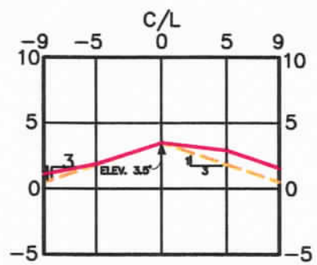
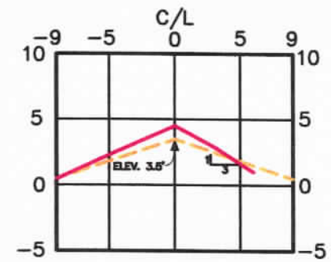
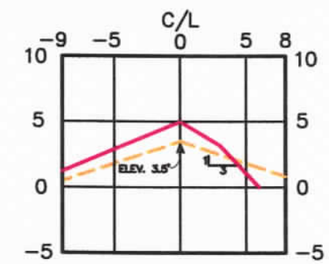


CROSS SECTION C/L STA. 4+00



CROSS SECTION C/L STA. 7+00



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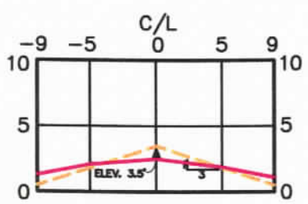

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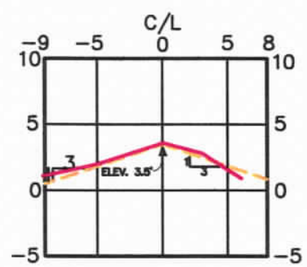

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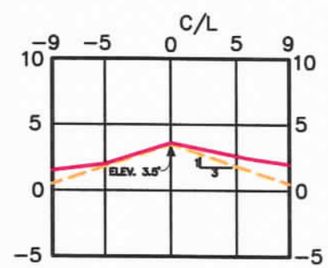
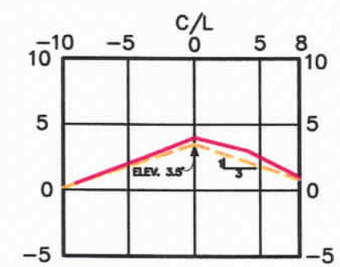


CROSS SECTION C/L STA. 6+00



CROSS SECTION C/L STA. 9+00

BREACHES NO. 2 AND NO. 3
CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.

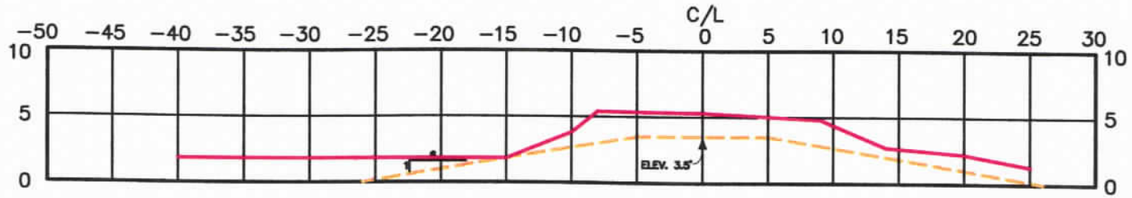
LEGEND

JULY 9, 2003 AS-BUILT

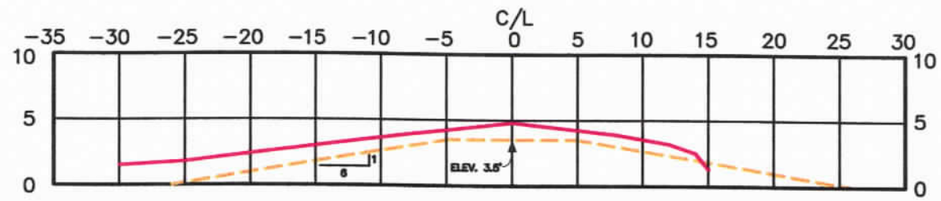
DESIGN GRADE SECTION

DNR – BRADY CANAL
P & O FILE NO. 10–1628

AS-BUILT
8/29/03



CROSS SECTION C/L STA. 4+00



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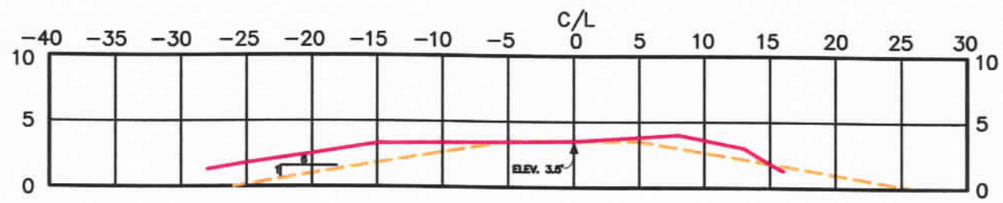

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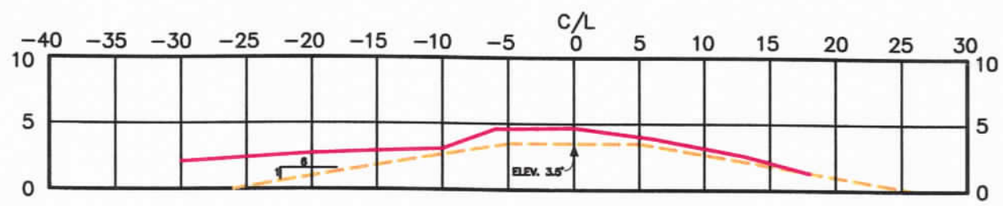

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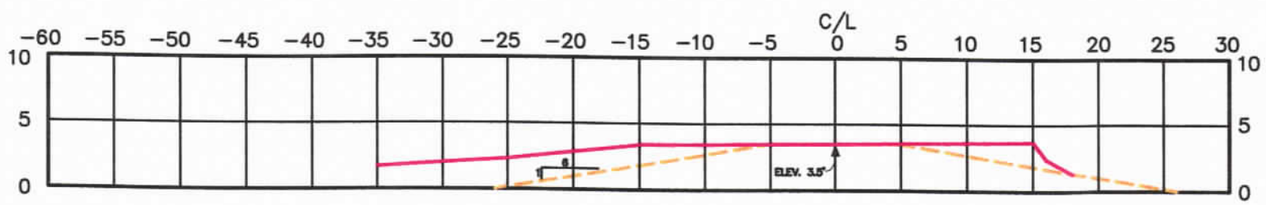


CROSS SECTION C/L STA. 0+00

LEGEND

JULY 9, 2003 AS-BUILT

DESIGN GRADE SECTION

BREACHES 5 & 6
CROSS SECTIONS

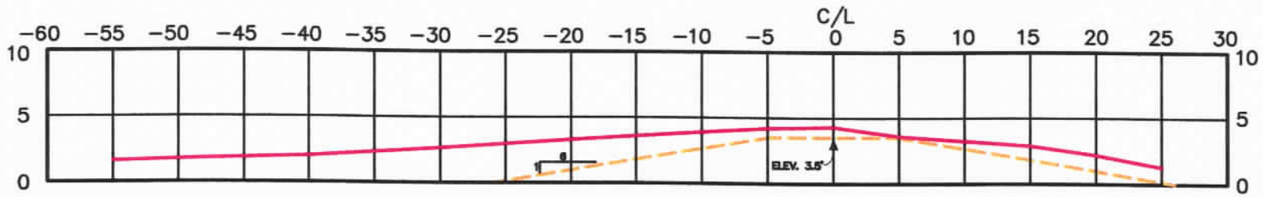
SHEET 1 OF 3

SCALE: 1" = 5' HORIZ. & VERT.

DNR – BRADY CANAL
P & O FILE NO. 10–1628

AS-BUILT
8/29/03

CROSS SECTION C/L STA. 9+00



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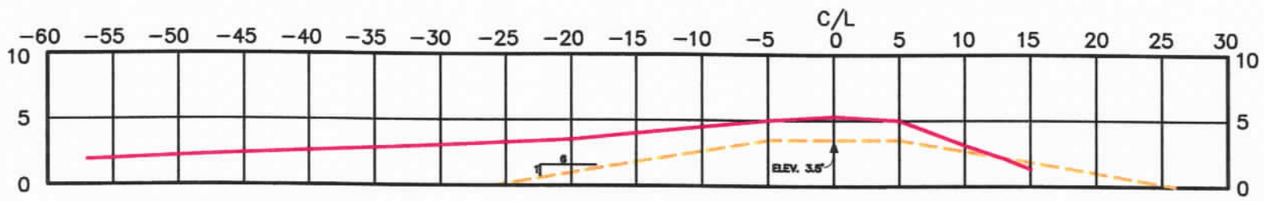

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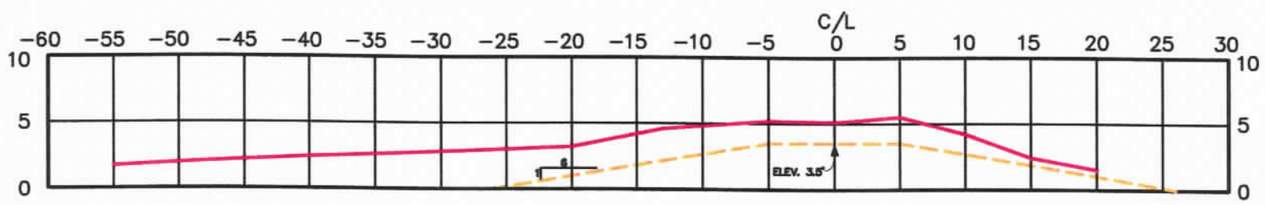

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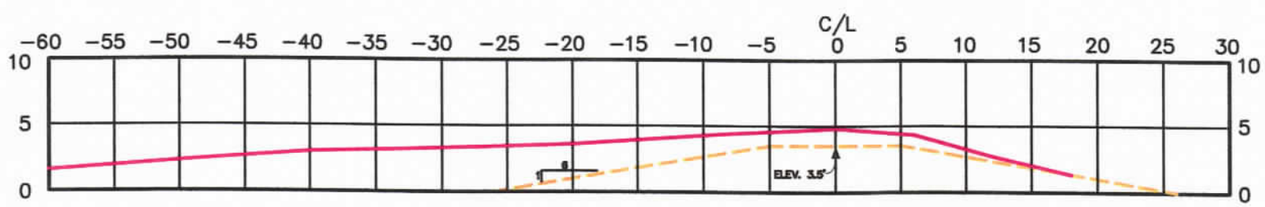


CROSS SECTION C/L STA.5+00

LEGEND

JULY 9, 2003 AS-BUILT

DESIGN GRADE SECTION

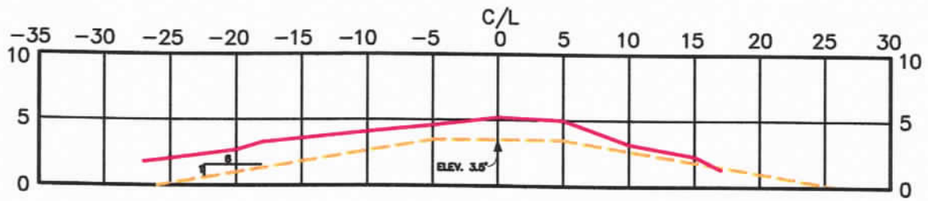
BREACHES 5 & 6
CROSS SECTIONS

SHEET 2 OF 3

SCALE: 1" = 5' HORIZ. & VERT.

DNR – BRADY CANAL
P & O FILE NO. 10–1628

AS-BUILT
8/29/03



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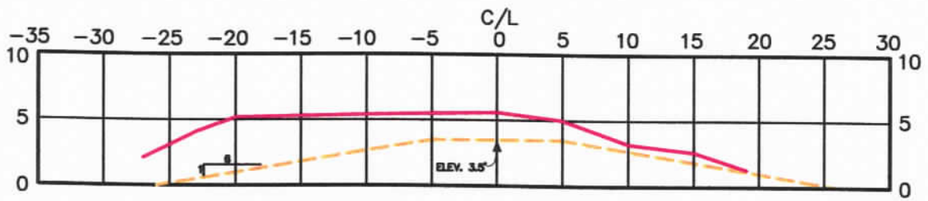
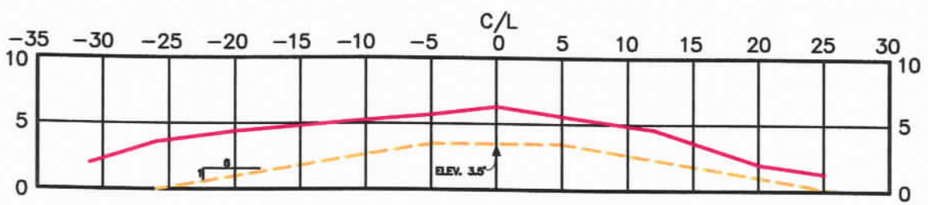


CROSS SECTION C/L STA. 11+00



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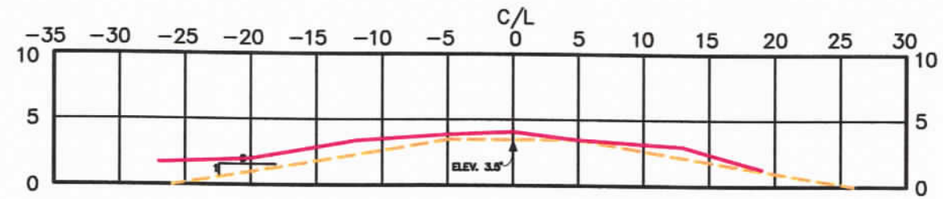

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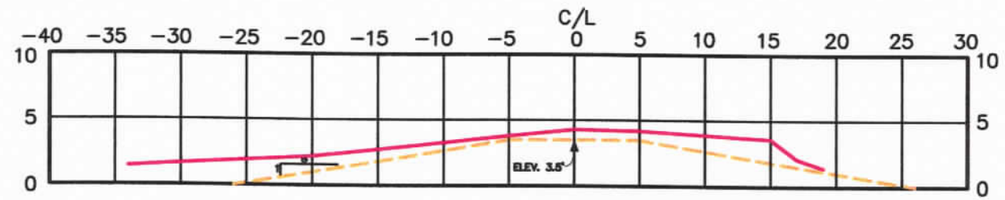


CROSS SECTION C/L STA. 14+00

CROSS SECTION C/L STA. 13+00

LEGEND

JULY 9, 2003 AS-BUILT

DESIGN GRADE SECTION

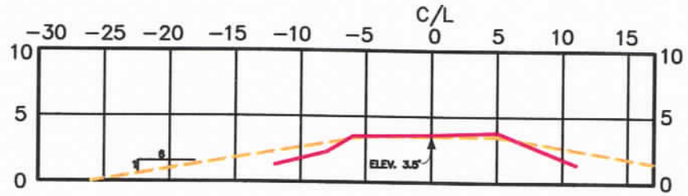
BREACHES 5 & 6
CROSS SECTIONS

SHEET 3 OF 3

SCALE: 1" = 5' HORIZ. & VERT.

DNR – BRADY CANAL
P & O FILE NO. 10–1628

AS-BUILT
8/29/03



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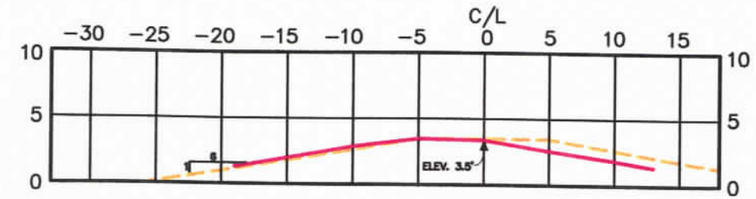
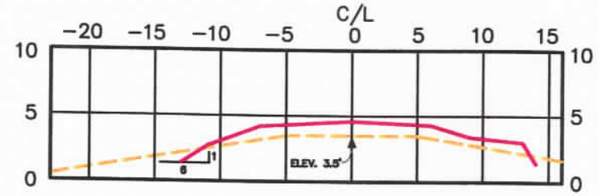


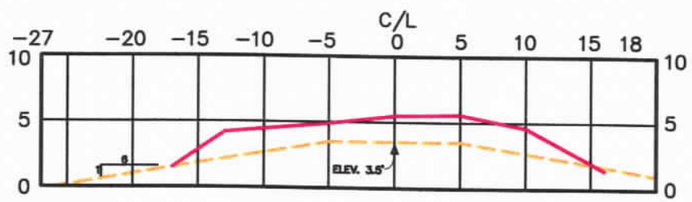
CROSS SECTION C/L STA. 2+75



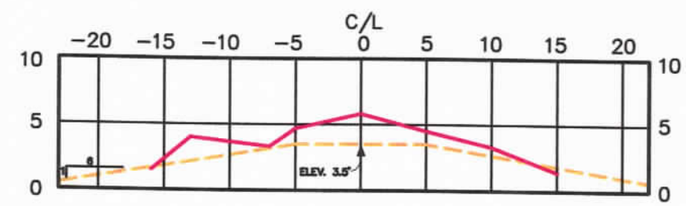
CROSS SECTION C/L STA. 1+00

BREACH NO.8
CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.



CROSS SECTION C/L STA. 2+20



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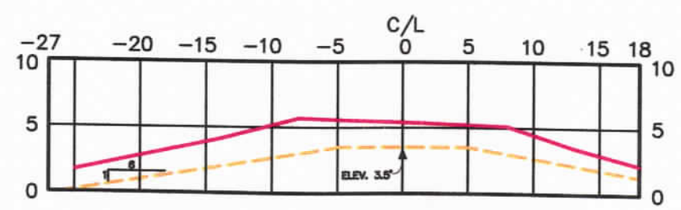


CROSS SECTION C/L STA. 1+20

BREACH NO.9
CROSS SECTIONS

SCALE: 1" = 5' HORIZ. & VERT.

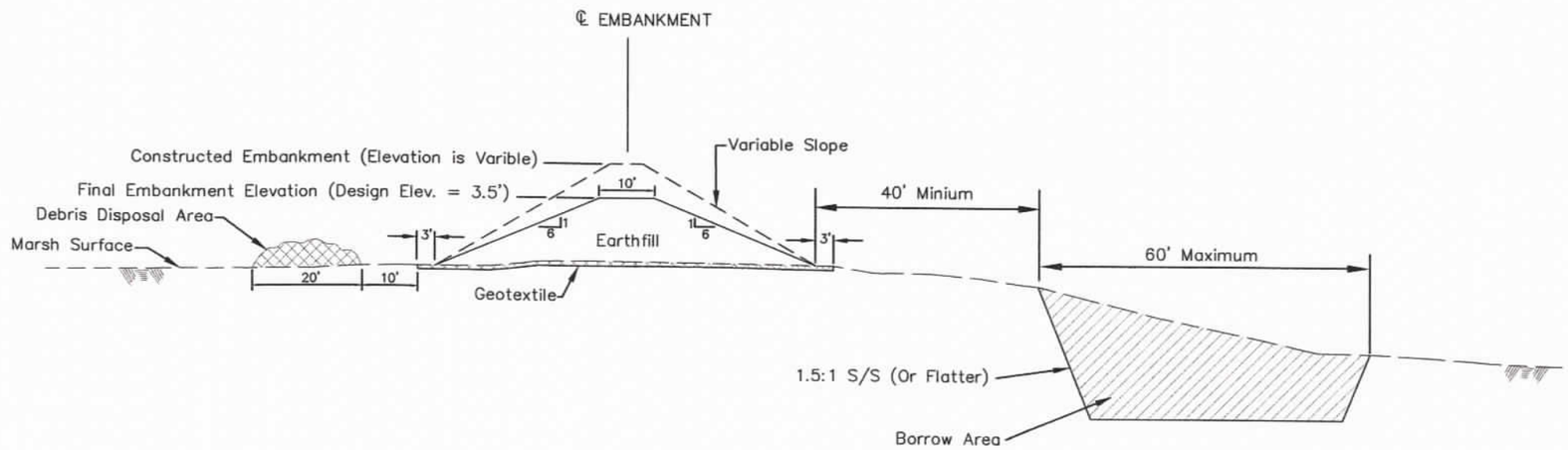
LEGEND

JULY 9, 2003 AS-BUILT

DESIGN GRADE SECTION

DNR – BRADY CANAL
P & O FILE NO. 10–1628

AS-BUILT PLANS
9/04/03



BASE BID
TYPICAL EARTH FILL SECTION
WITH GEOTEXTILE

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

SHEET 13

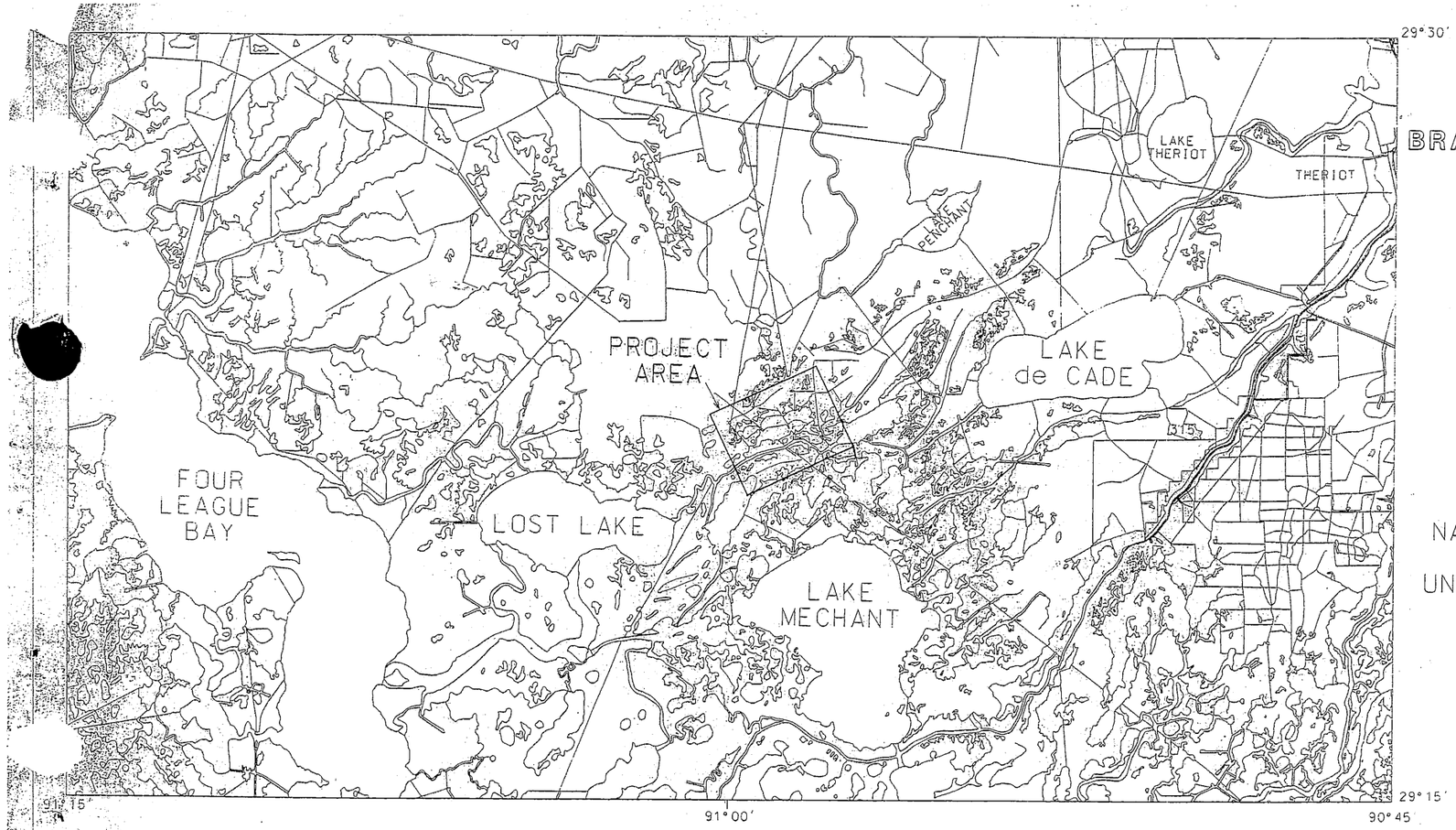
DATE	REVISIONS DESCRIPTION	BY

DATE :
CHECKED BY : M.P.M.
DRAWN BY : W.J.U.
SCALE : 1" = 100'

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
TYPICAL SECTIONS
BRADY CANAL TERREBONNE PARISH, LOUISIANA

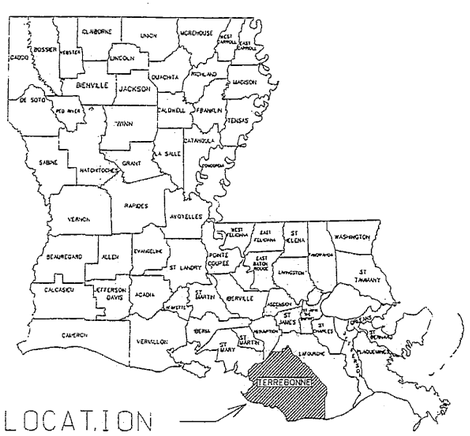
Jul 25, 2002 – 08:31:51[P&O FILE: G:\CAD\ACAD\10-1628\breach1_9\TYPSEC.dwg] [Login: Winda]

P&O FILE NO. 10-1628-typsec

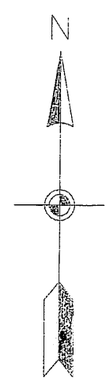


VICINITY MAP

SCALE IN MILES



LOCATION IN LOUISIANA



BRADY CANAL HYDROLOGIC RESTORATION
CONSTRUCTION UNIT 1, (PTE-26B)

BUILT UNDER THE
COASTAL WETLANDS
PLANNING, PROTECTION,
AND
RESTORATION ACT
PUBLIC LAW 101-646

BY THE
LOUISIANA
DEPARTMENT OF NATURAL RESOURCES

WITH THE ASSISTANCE OF THE
NATURAL RESOURCES CONSERVATION SERVICE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE
1999

"AS-BUILT PLANS"

SUBMITTED BY: [signature] 10/17/00
GOVERNMENT REPRESENTATIVE DATE

APPROVED BY: [signature] 10/24/00
ASSISTANT STATE CONSERVATION ENGINEER DATE

[signature] 10/25/00
STATE CONSERVATION ENGINEER DATE

CONTRACT NO. 50-7217-9-06 DATE 5/4/99
CONTRACTOR All South General Contractors
INSPECTOR Melvin Rodrigue
DATE OF COMPLETION 7/31/00

INDEX OF DRAWINGS

1 COVER SHEET
2 PROJECT LOCATION MAP
3 PROPOSED EMBANKMENT - PLAN VIEW
4 EMBANKMENT PROFILE - 0+00 - 30+00
5 EMBANKMENT PROFILE - 30+00-60+00
6 EMBANKMENT PROFILE - 60+00-90+00
7 EMBANKMENT PROFILE - 90+00-120+00
8 EMBANKMENT PROFILE - 120+00-150+00
9 EMBANKMENT PROFILE - 150+00-177+63
10 TYPICAL SECTIONS

STATE OF LOUISIANA
E.J. GIERING
REG NO. 8038
REGISTERED PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

Designed	C. E. LaFleur	Date 02/98
Drawn	A. J. Gremillion	02/98
Traced		
Checked	James N. Moore	01/99

Approved by ____ Date ____
Title ____
Title ____

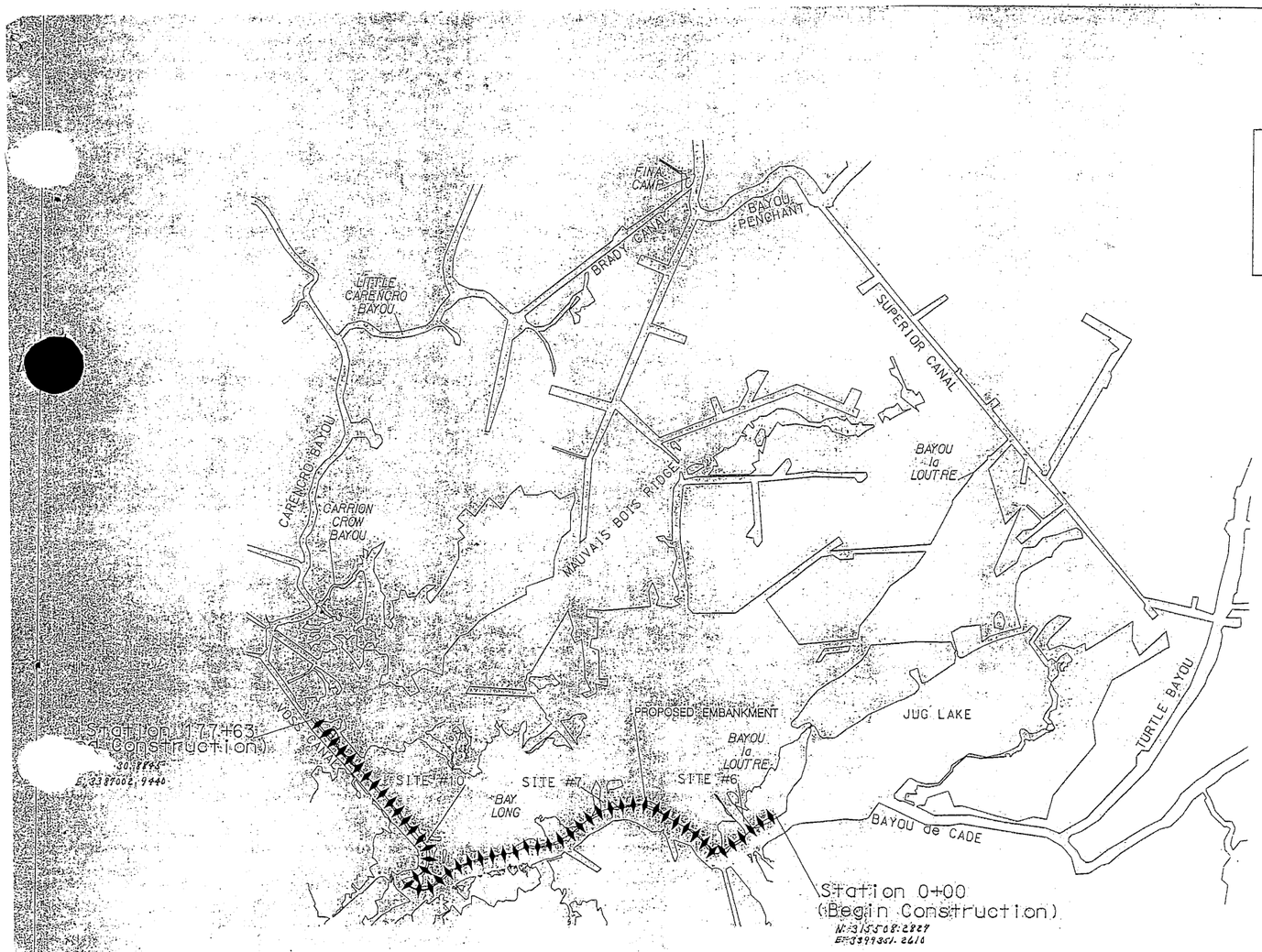
COVER SHEET
CONSTRUCTION UNIT NO. 1
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS

DATE	APPR.	TITLE

CAD FILE NO. LA-231
DRAWING NO. 231_02
SHEET NO 1 OF 10



PROJECT LOCATION MAP

SCALE IN FEET
2000 0 2000 4000 6000 8000
1/8 3/4 5/8 1/2 3/8 1/4 1/8 0 1
SCALE IN MILES

NOTE:
KNOWN PIPELINES AND UTILITIES ARE SHOWN ON THE PLANS. IT IS POSSIBLE THAT SOME MAY EXIST THAT HAVE NOT BEEN SHOWN. THE CONTRACTOR SHALL BE ON THE ALERT FOR SUCH PIPELINES AND UTILITES, AND SHALL REPORT THEM IMMEDIATELY TO THE CONTRACTING OFFICER.

NOTICE:
48 HOURS BEFORE DIGGING
CALL 1-800-272-3020
TO LOCATE UTILITY LINES

N

"AS-BUILT"

NOTES:

1. ALL ELEVATIONS ARE BASED ON NAVD 88 DATUM.
2. KNOWN UTILITIES ARE SHOWN ONLY ON THE PROPOSED EMBANKMENT-PLAN VIEW (SHEET 3 OF 10).
3. SEE SHEET 3 OF 10 FOR LAND RIGHTS INFORMATION.
4. THE FINAL ALINGNMENT OF THE EARTHEN EMBANKMENT WILL BE STAKED IN THE FIELD BY THE COTR.
5. ALL HORIZONTAL POSITIONS BASED ON NAD 83 STATE PLANE COORDINATES LOUISIANA SOUTH ZONE 1702

STATE OF LOUISIANA
E. J. LAFLEUR III
REG. NO. 8033
REGISTERED PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REVISIONS			
DATE	APPR.	TITLE	

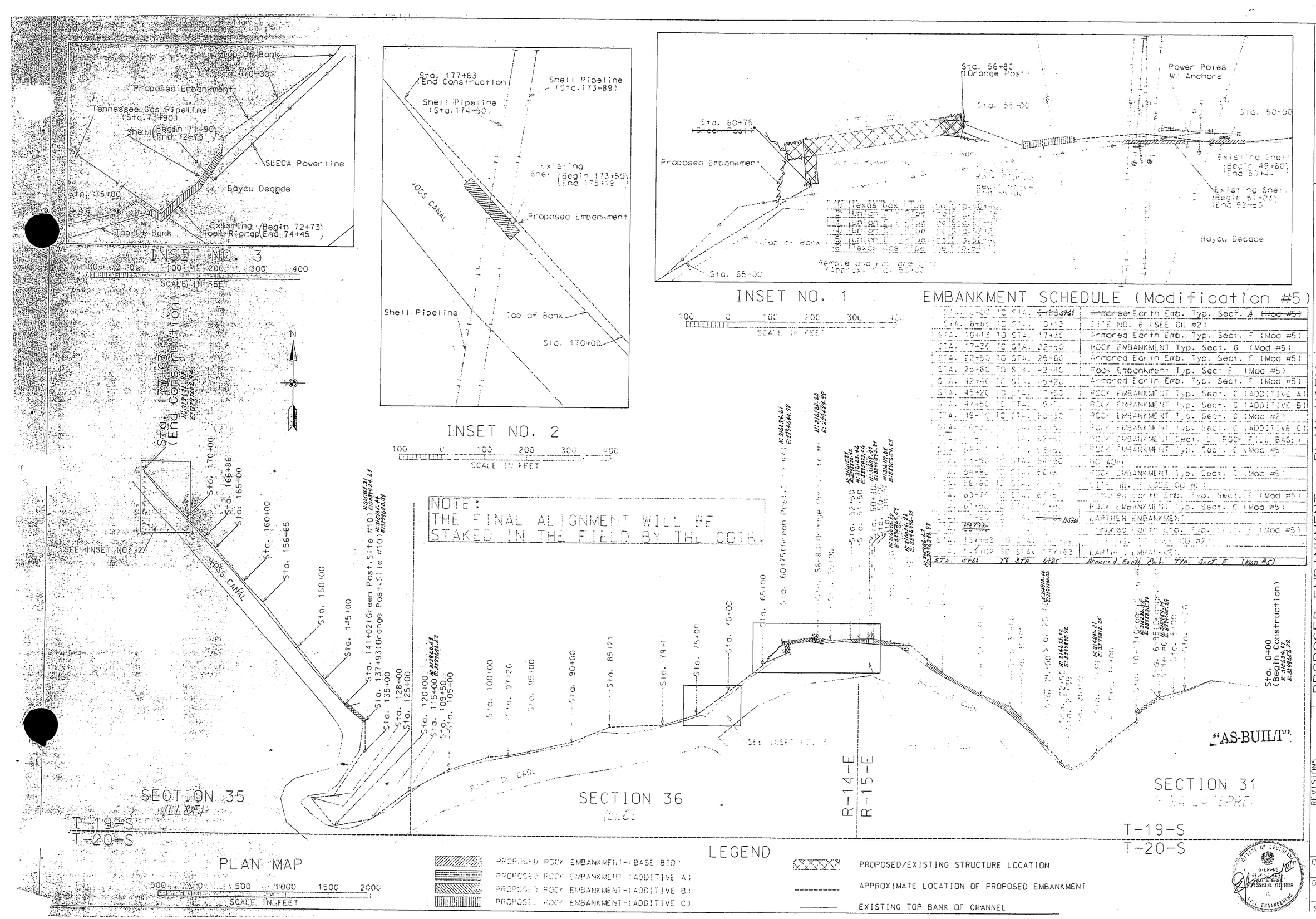
CAD FILE NO. LA-231
DRAWING NO.
PROJECT
SHEET NO. 2 OF 10

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

PROJECT LOCATION MAP
CONSTRUCTION UNIT NO. 1
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

		Date
Designed	C. E. LaFleur	11/97
Drawn	A. J. Gremillion	11/97
Traced		
Checked	James N. Moore	01/99

Approved by _____ Date
Title _____
Title _____



EMBANKMENT SCHEDULE (Modification #5)

STA. 0+00 TO STA. ~~1+85.5~~	~~Armored Earth Emb. Typ. Sect. A (Mod #5)~~
STA. 6+85 TO STA. 10+15	SITE NO. 6 (SEE CO #2)
STA. 10+15 TO STA. 17+30	Armored Earth Emb. Typ. Sect. F (Mod #5)
STA. 17+30 TO STA. 22+50	ROCK EMBANKMENT Typ. Sect. G (Mod #5)
STA. 22+50 TO STA. 25+60	Armored Earth Emb. Typ. Sect. F (Mod #5)
STA. 25+60 TO STA. 42+40	Rock Embankment Typ. Sect. F (Mod #5)
STA. 42+40 TO STA. 45+20	Armored Earth Emb. Typ. Sect. F (Mod #5)
STA. 45+20 TO STA. 47+50	ROCK EMBANKMENT Typ. Sect. G (ADDITIVE A)
STA. 47+50 TO STA. [illegible]	ROCK EMBANKMENT Typ. Sect. G (ADDITIVE B)
STA. 49+50 TO STA. 50+30	ROCK EMBANKMENT Typ. Sect. G (Mod #2)
STA. [illegible]	ROCK EMBANKMENT Typ. Sect. G (ADDITIVE C)
STA. [illegible]	ROCK EMBANKMENT Typ. Sect. G ROCK FILL BASE)
STA. [illegible]	ROCK EMBANKMENT Typ. Sect. G (Mod #5)
STA. 54+50 TO STA. 54+80	[illegible]
STA. 54+80 TO STA. [illegible]	ROCK EMBANKMENT Typ. Sect. G (Mod #5)
STA. 56+60 TO STA. [illegible]	SITE NO. 7 (SEE CO #2)
STA. 60+75 TO STA. [illegible]	Armored Earth Emb. Typ. Sect. F (Mod #5)
STA. [illegible]	ROCK EMBANKMENT Typ. Sect. G (Mod #5)
STA. [illegible]	EARTHEN EMBANKMENT
STA. [illegible]	Armored Earth Emb. Typ. Sect. F (Mod #5)
STA. 177+63 TO STA. 177+63	EARTHEN EMBANKMENT
STA. [illegible] TO STA. 1+85	Armored Earth Emb. Typ. Sect. F (Mod #5)

Designed	C. E. LaFleur	Date 11/97
Drawn	A. J. Gremillion	11/97
Traced		
Checked	James N. Moore	01/99

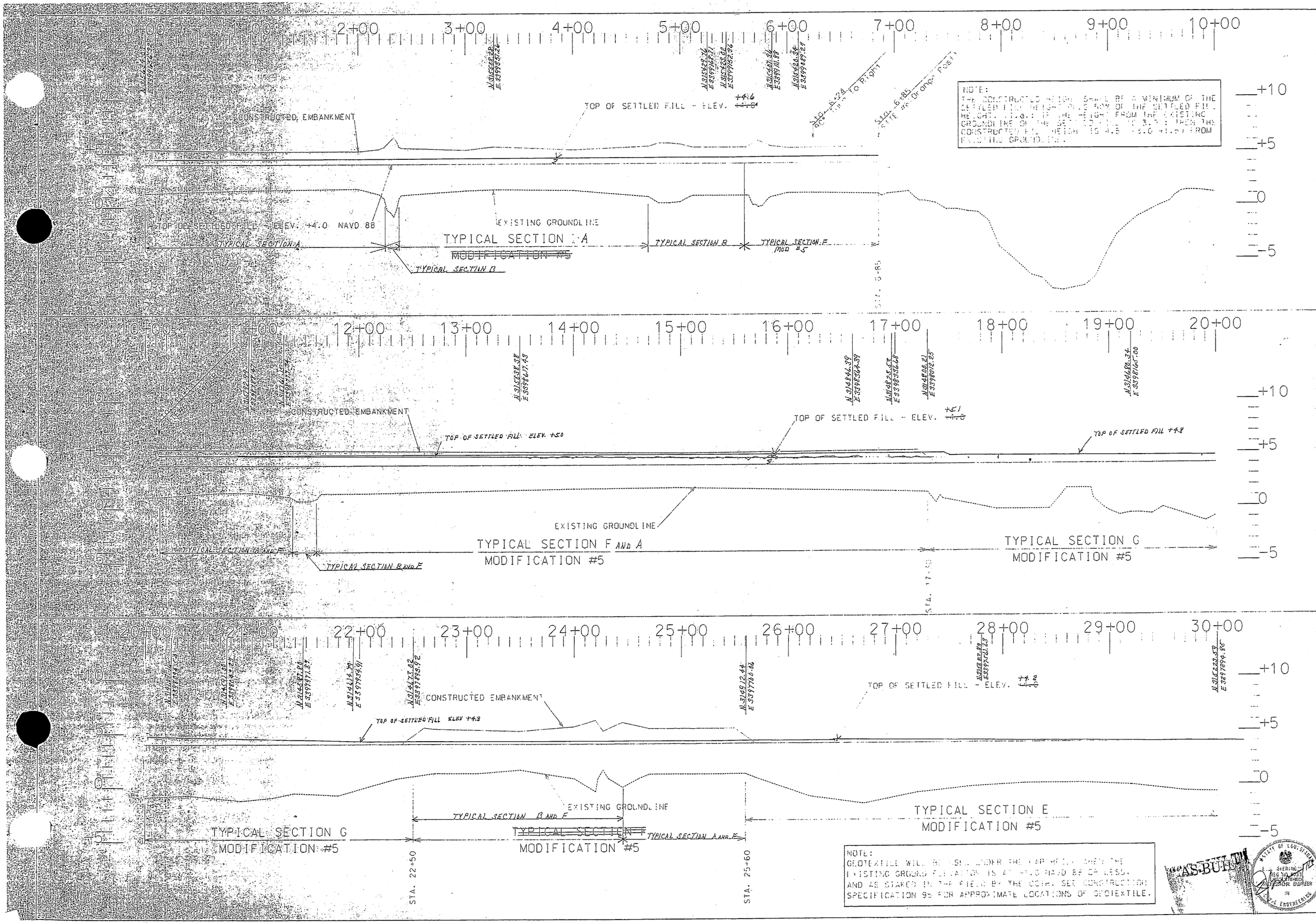
Approved by ..... Date
Title
Title

PROPOSED EMBANKMENT – PLAN VIEW
CONSTRUCTION UNIT NO. 1
BRADY CANAL HYD. REST. – PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS			
DATE	APPR.	TITLE CONS. ENG.	MOD #5
2/18/00	B.S.		

CAD FILE NO. LA-231
DRAWING NO. EMBANK
SHEET NO. 1 OF [illegible]



NOTE:
THE CONSTRUCTED HEIGHT SHALL BE A MINIMUM OF THE SETTLED FILL HEIGHT PLUS 50% OF THE SETTLED FILL HEIGHT. (i.e.: IF THE HEIGHT FROM THE EXISTING GROUNDLINE TO THE SETTLED FILL IS 3.0', THEN THE CONSTRUCTED FILL HEIGHT IS 4.5' (3.0' + 1.5') FROM EXISTING GROUNDLINE.

NOTE:
GEOTEXTILE WILL BE USED UNDER THE EMBANKMENT WHERE THE EXISTING GROUND ELEVATION IS AT +4.0 NAVD 88 OR LESS, AND AS STAKED IN THE FIELD BY THE CONS. SEC. CONSTRUCTION SPECIFICATION 9s FOR APPROXIMATE LOCATIONS OF GEOTEXTILE.

AS-BUILT

STATE OF LOUISIANA
GERALD J. BOUDREAUX
REGISTERED
SENIOR ENGINEER
CIVIL ENGINEERING

Date
Approved by
Title

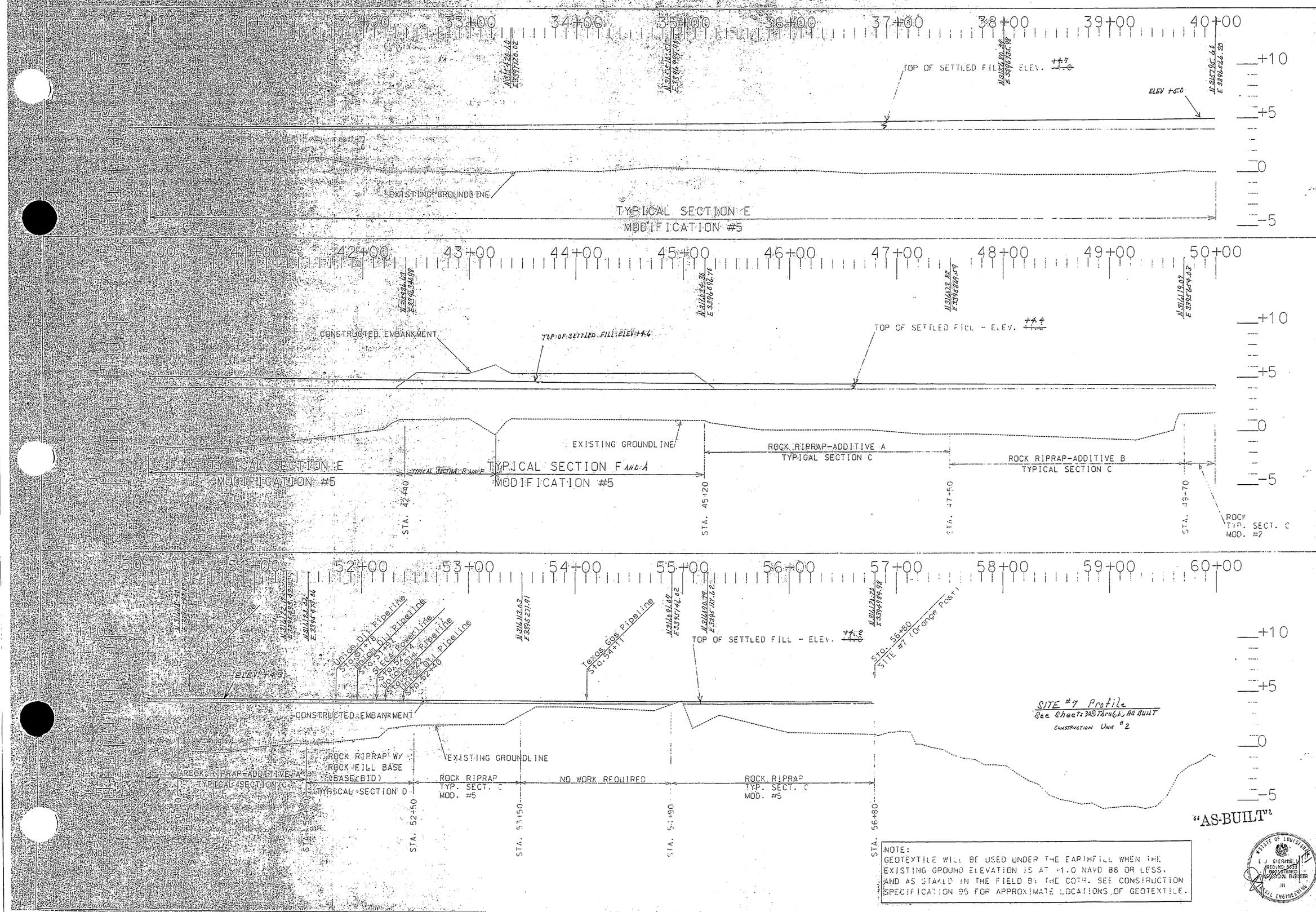
Designed Cherie E. Lafleur 11/97
Drawn A. J. Gremillion 11/97
Traced
Checked James N. Moore 01/99

EMBANKMENT PROFILE - 0+00 - 30+00
CONSTRUCTION UNIT NO. 1
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS			
DATE	APPR.	TITLE	
2/18/00	B.S.	CONS. ENG. MOD #5	

CAD FILE NO. LA-231
DRAWING NO. EMBANK-0-30
SHEET NO. 4 OF 10



"AS-BUILT"

NOTE:
GEOTEXTILE WILL BE USED UNDER THE EARTHFILL WHEN THE EXISTING GROUND ELEVATION IS AT +1.0 NAVD 88 OR LESS, AND AS STAKED IN THE FIELD BY THE CO'TR. SEE CONSTRUCTION SPECIFICATION 95 FOR APPROXIMATE LOCATIONS OF GEOTEXTILE.

STATE OF LOUISIANA
E. J. GIERING
REG. NO. 9633
REGISTERED
PROFESSIONAL ENGINEER
CIVIL ENGINEERING

EMBANKMENT PROFILE - 30+00-60+00
CONSTRUCTION UNIT NO. 1
BRADY CANAL HYD. REST. - PTE-26B
TERRBONNE PARISH, LOUISIANA

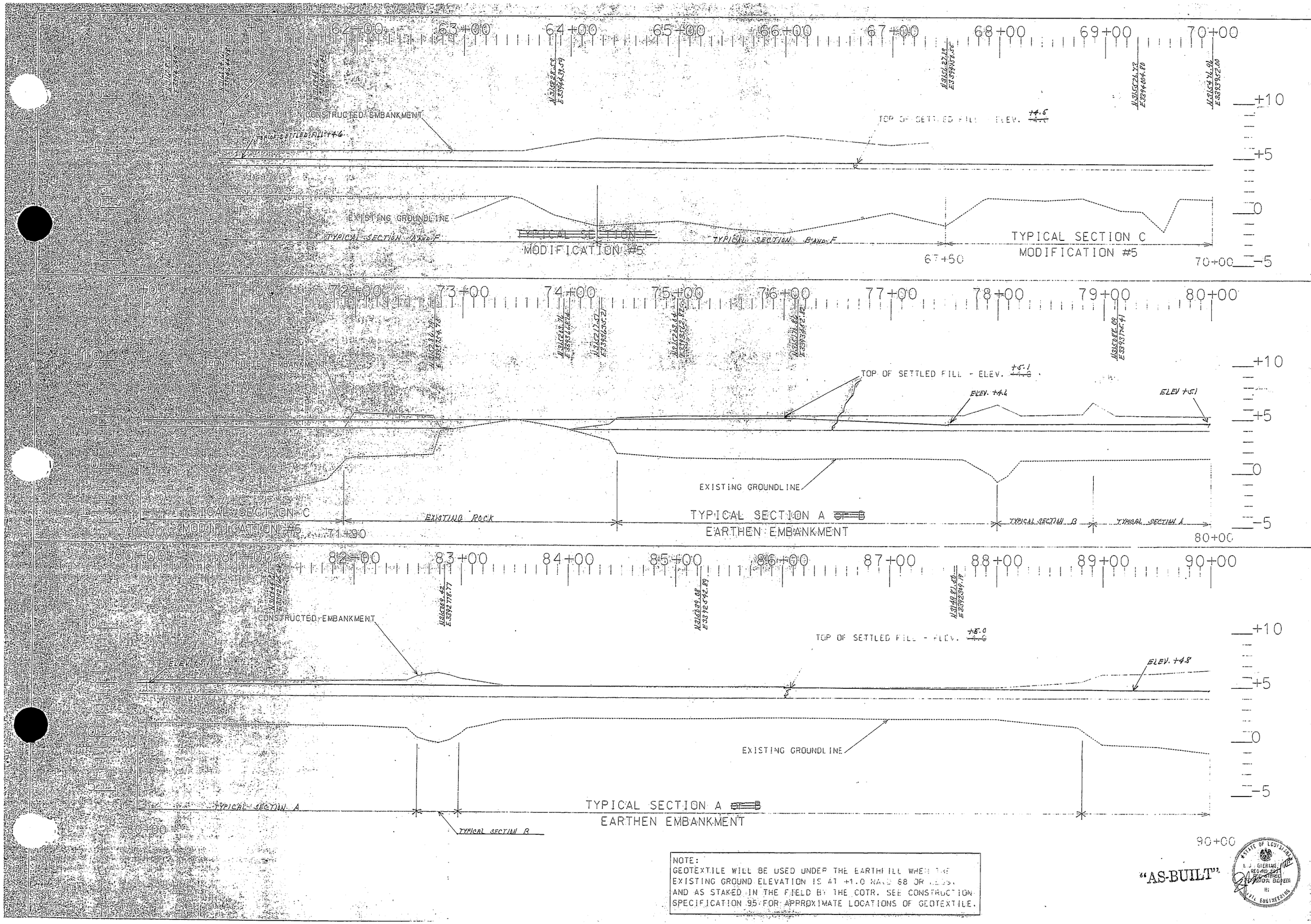
U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE

Designed	C. E. La Fleur	11/97	Approved by
Drawn	A. J. Gremillion	11/97	Title
Traced			
Checked	James N. Moore	01/99	Title

REVISIONS

DATE	APPR.	TITLE
2/18/00	B.S.	CONS. ENG. MOD #5

CAD FILE NO. LA-231
DRAWING NO. EMBANK-30-60
SHEET NO. 5 OF 10



NOTE:
GEOTEXTILE WILL BE USED UNDER THE EARTHFILL WHEN THE EXISTING GROUND ELEVATION IS AT +1.0 NAVD 88 OR LESS, AND AS STAKED IN THE FIELD BY THE COTR. SEE CONSTRUCTION SPECIFICATION 95 FOR APPROXIMATE LOCATIONS OF GEOTEXTILE.

"AS-BUILT"

STATE OF LOUISIANA
E. J. GIERING
REGISTERED
PROFESSIONAL ENGINEER
CIVIL ENGINEERING

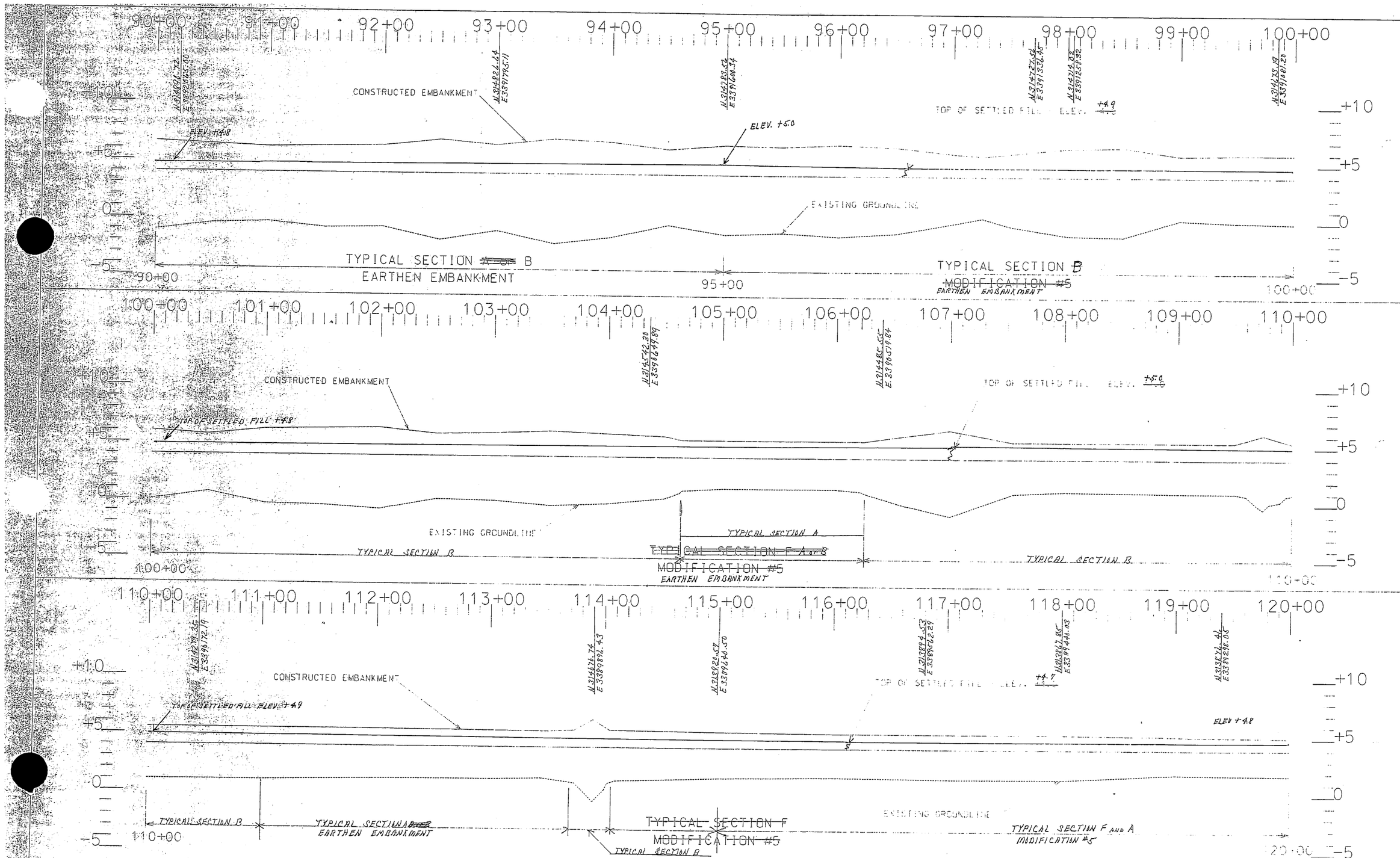
EMBANKMENT PROFILE 60+00 - 90+00
CONSTRUCTION UNIT NO. 1
BRADY CANAL HYD. REST. - PTE 26B
TERRBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS		
DATE	APPR.	TITLE
2/18/00	B.S.	CONS. ENG. MOD #5

Designed C. E. La Fleur 11/97
Drawn A. J. Gremillion 11/97
Traced
Checked James N. Moore 01/99
Approved by
Title
Title
Date

CAD FILE NO. LA-231
DRAWING NO. EMBANK-60-90
SHEET NO. 6 OF 10



NOTE:
GEOTEXTILE WILL BE USED UNDER THE EARTHFILL WHEN THE EXISTING GROUND ELEVATION IS AT +1.0 NAVD 88 OR LESS, AND AS STAKED IN THE FIELD BY THE COTR. SEE CONSTRUCTION SPECIFICATION 95 FOR APPROXIMATE LOCATIONS OF GEOTEXTILE.

"AS-BUILT"

STATE OF LOUISIANA
GIERING
REGISTERED PROFESSIONAL ENGINEER
ENGINEERING

Designed C. E. LaFleur Date 11/97
Drawn A. J. Gremillion 11/97
Traced
Checked James N. Moore 01/99
Approved by
Title
Title

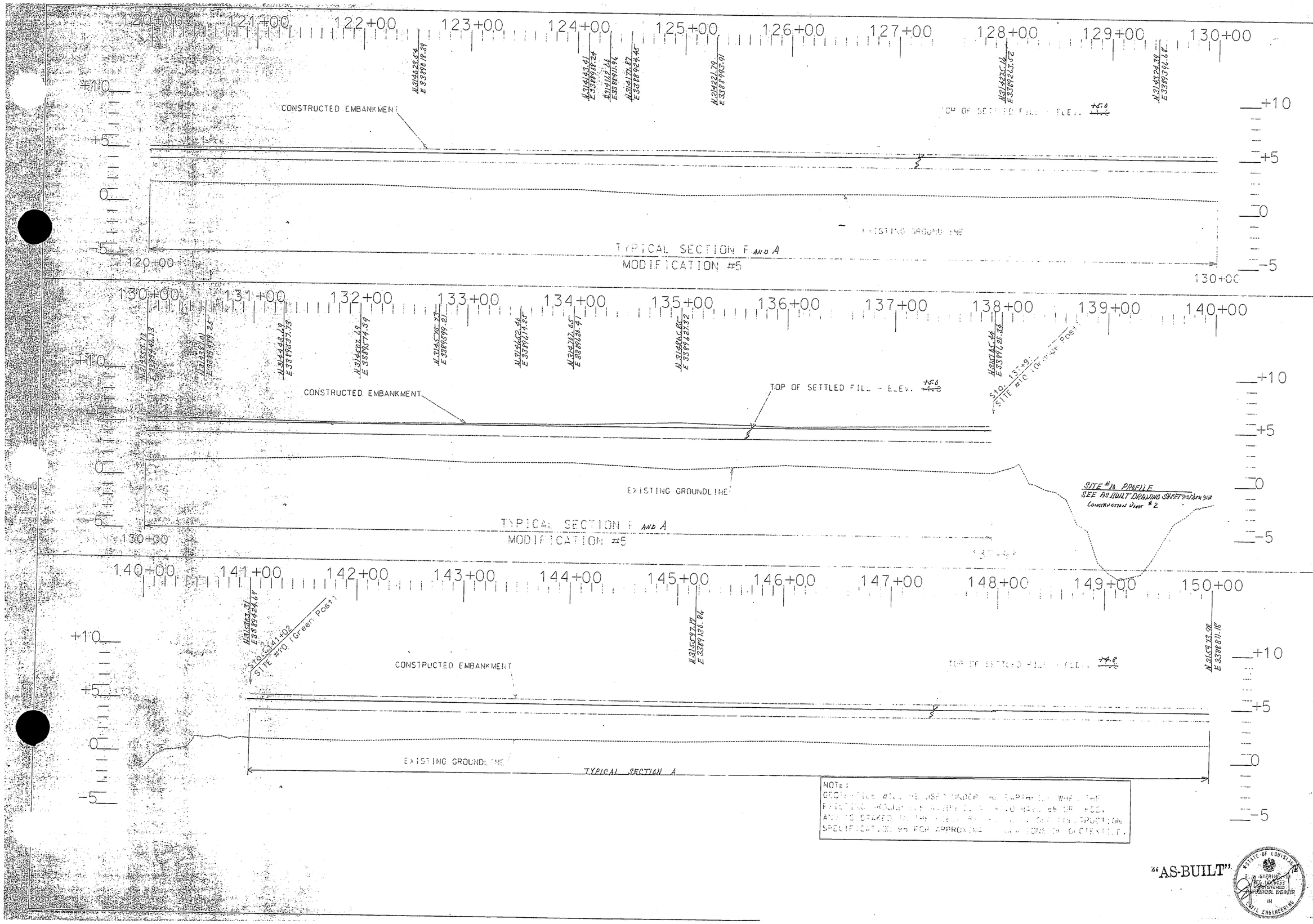
EMBANKMENT PROFILE-(90+00-120+00)
CONSTRUCTION UNIT NO. 1
BRADY CANAL HYD. REST. - RTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS

DATE	APPR.	TITLE
2/18/00	B.S.	CONS. ENG. MOD #5

CAD FILE NO. LA-231
DRAWING NO. EMBANK-90-120
SHEET NO. 7 OF 10



NOTE:
GEOTEXTILE WILL BE USED UNDER THE EMBANKMENT WHERE THE EXISTING GROUND LINE IS BELOW ELEV. 0.0 FEET. AREAS STAKED IN THE FIELD AS REQUIRED BY THE CONSTRUCTION SPECIFICATIONS FOR APPROXIMATE LOCATIONS OF GEOTEXTILE.

"AS-BUILT"

STATE OF LOUISIANA
S. H. GIERING
No. 23633
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

REVISIONS		
DATE	APPR.	TITLE
2/18/00	B.S.	CONS. ENG. MOD #5

CAD FILE NO. LA-233

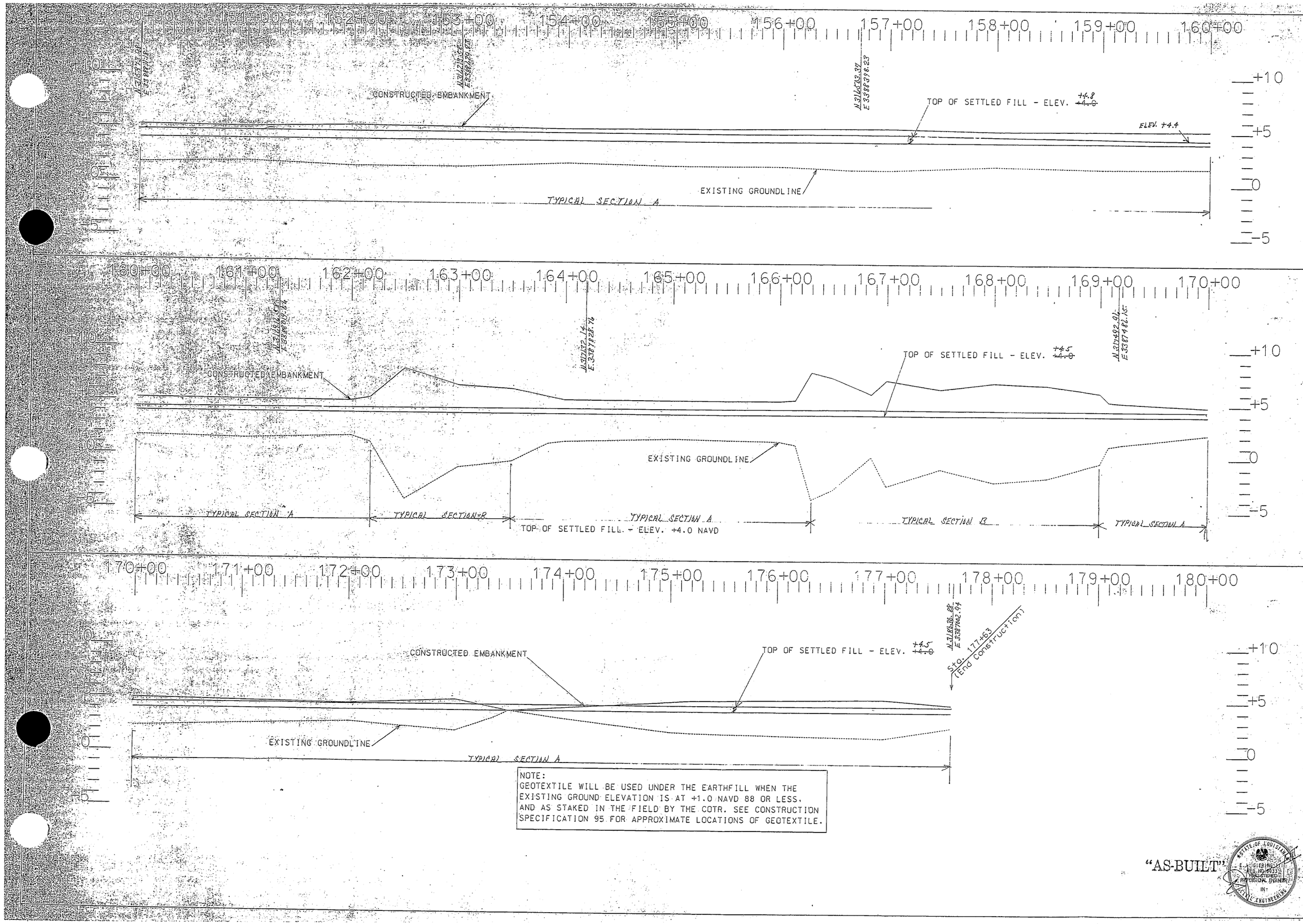
DRAWING NO. EMBANK-120-150

EMBANKMENT PROFILE-(120+00-150+00)
CONSTRUCTION UNIT NO. 1
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

		Date
Designed	C. E. La Fleur	11/97
Drawn	A. J. Gremillion	11/97
Traced		
Checked	James N. Moore	01/99

Approved by
Title



NOTE:
GEOTEXTILE WILL BE USED UNDER THE EARTHFILL WHEN THE EXISTING GROUND ELEVATION IS AT +1.0 NAVD 88 OR LESS, AND AS STAKED IN THE FIELD BY THE COTR. SEE CONSTRUCTION SPECIFICATION 95 FOR APPROXIMATE LOCATIONS OF GEOTEXTILE.

"AS-BUILT"

STATE OF LOUISIANA
E. J. GIERING III
REG. NO. 6033
REGISTERED PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

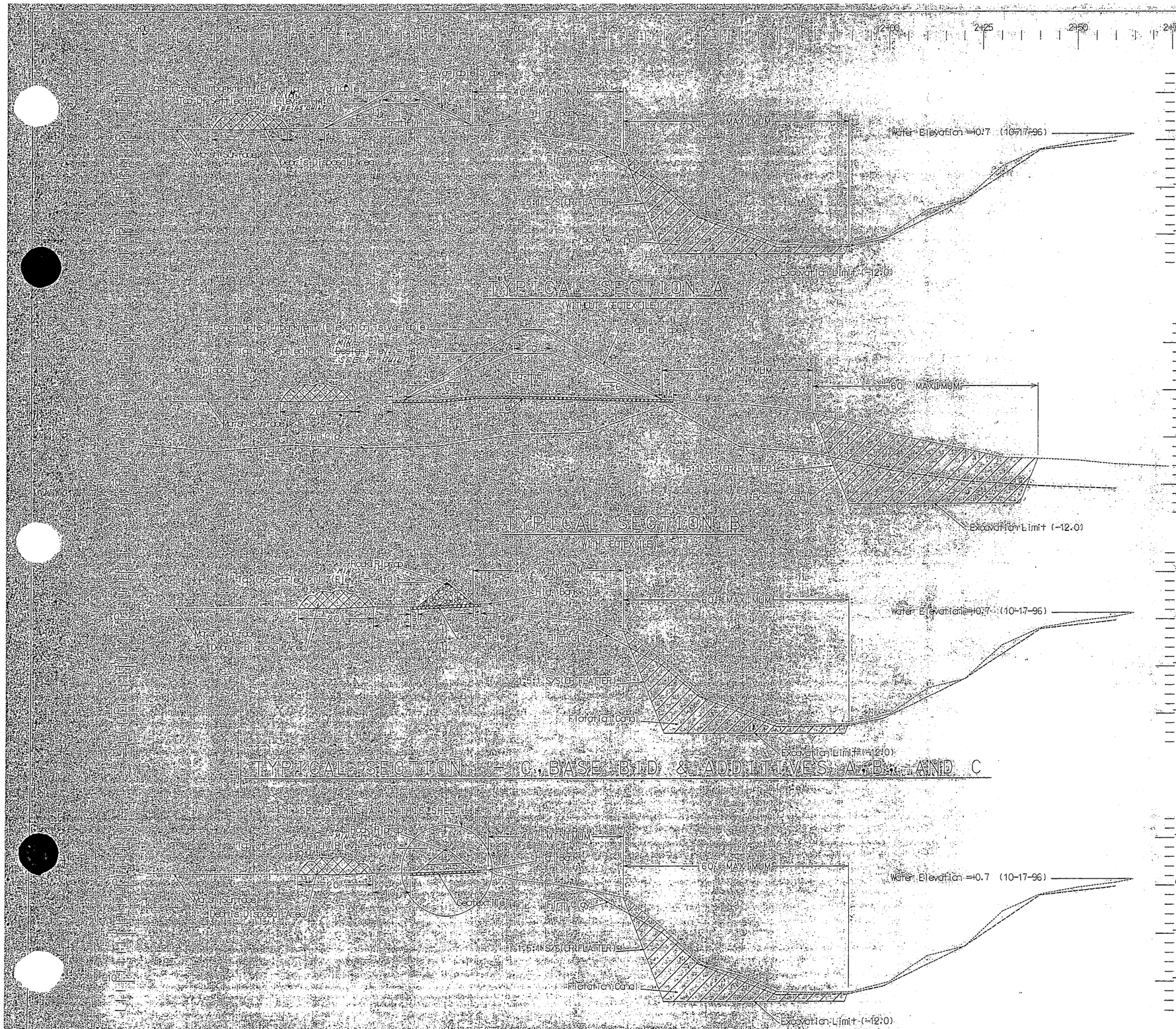
EMBANKMENT PROFILE - (150+00-177+63)
CONSTRUCTION UNIT NO. 1
BRADY CANAL HYD. REST. - PTE-26B
TERRBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS		
DATE	APPR.	TITLE

	Date		Date
Designed	C. E. LaFleur	11/97	Approved by
Drawn	A. J. Gremillion	11/97	Title
Traced			
Checked	James N. Moore	01/99	Title

CAD FILE NO. LA-231
DRAWING NO. EMBANK-150-177
SHEET NO. 9 OF 10



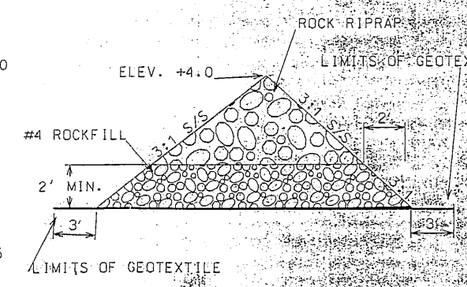
NOTE:
THE CONSTRUCTED HEIGHT SHALL BE A MINIMUM OF THE SETTLED FILL HEIGHT PLUS 50% OF THE SETTLED FILL HEIGHT. (i.e.: IF THE HEIGHT FROM THE EXISTING GROUNDLINE OF THE SETTLED FILL IS 3.0', THEN THE CONSTRUCTED FILL HEIGHT IS 4.5' (3.0'+1.5') FROM EXISTING GROUNDLINE.)

NOTE:
GEOTEXTILE WILL BE USED UNDER THE EARTHFILL WHEN THE EXISTING GROUND ELEVATION IS AT +1.0 OR LESS AND AS STAKED IN THE FIELD BY THE COTR. SEE CONSTRUCTION SPECIFICATION 95 FOR APPROXIMATE LOCATIONS OF GEOTEXTILE.

NOTE:
GEOTEXTILE WILL BE USED UNDER ALL THE ROCK RIPRAP. SEE CONSTRUCTION SPECIFICATION 95 FOR APPROXIMATE LOCATIONS OF GEOTEXTILE.

CONSTRUCTION LIMITS	
Construction Width	Construction Length
300'	1776
ESTIMATED QUANTITIES	
Geotextile	38400 SY
Rockfill	160 Tons

NOTE:
SEE CONSTRUCTION SPECIFICATION 61 FOR APPROXIMATE LOCATIONS OF ROCK RIPRAP



DETAIL A

NOTE:
SEE CONSTRUCTION SPECIFICATION 25 FOR APPROXIMATE LOCATIONS OF ROCKFILL

"AS BUILT"

STATE OF LOUISIANA
ENGINEERING
REG. NO. 8933
REGISTERED
PROFESSIONAL ENGINEER

DATE	APPR.	REVISIONS	TITLE

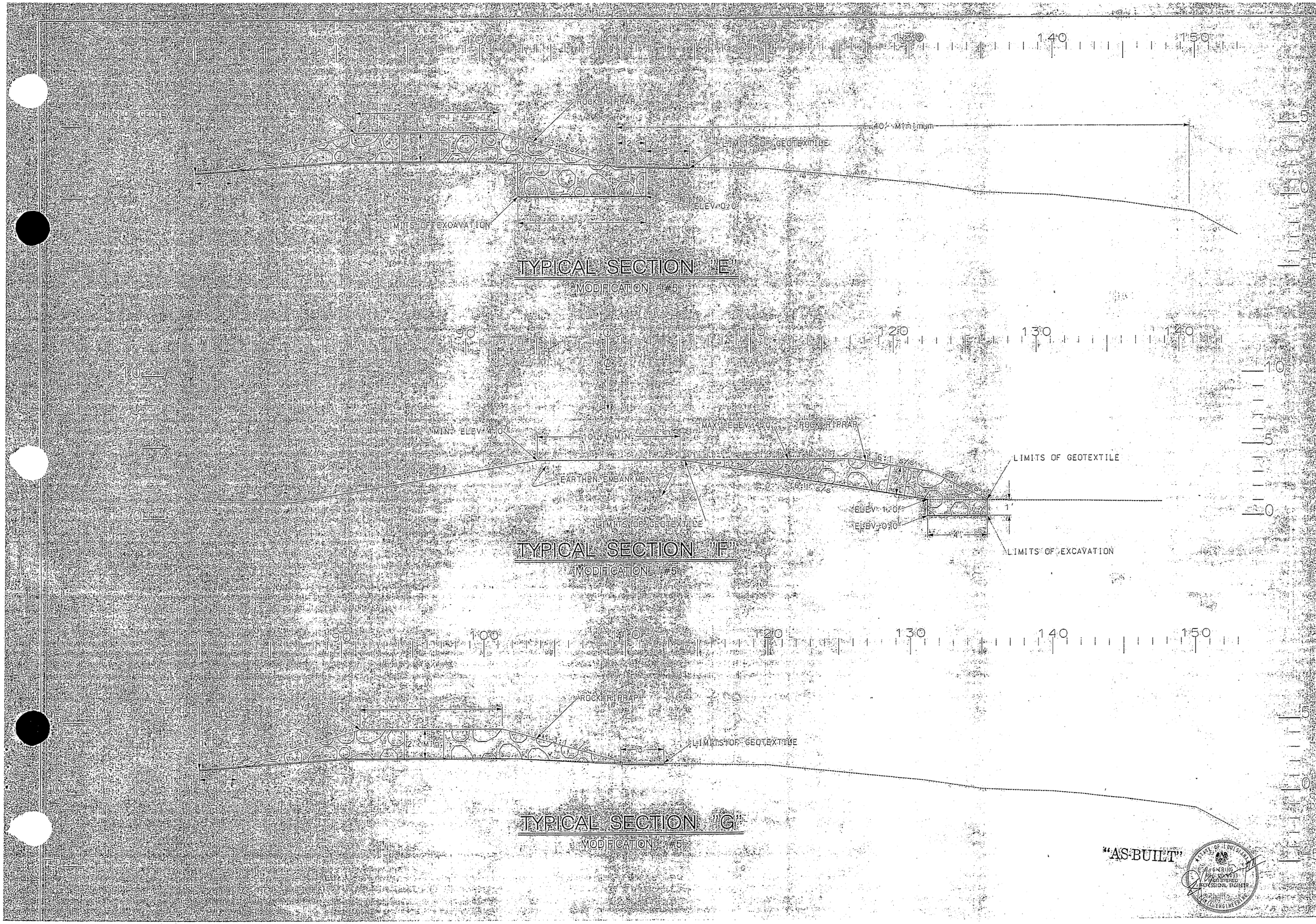
U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

BRADY CANAL HYD. RESTORATION UNIT NO. 1
TERREBONNE PARISH, LOUISIANA

TYPICAL SECTIONS

Designed: CC | Date: 1-17-97
Drawn: JA | Scale: 1" = 5'
Traced: | Date: 7-23-97
Checked: James A. Moore | Date: 01-29-97
Approved by: | Date:

CAD FILE NO. LEA-281
DRAWING NO. 2-TYPICALS
SHEET NO. 10 OF 10



TYPICAL SECTION "E"

MODIFICATION #5

TYPICAL SECTION "F"

MODIFICATION #5

TYPICAL SECTION "G"

MODIFICATION #5

"AS-BUILT"

MODIFICATION # 4
CONSTRUCTION NO. 1
BRADY CANAL HYD. REST. - PIE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

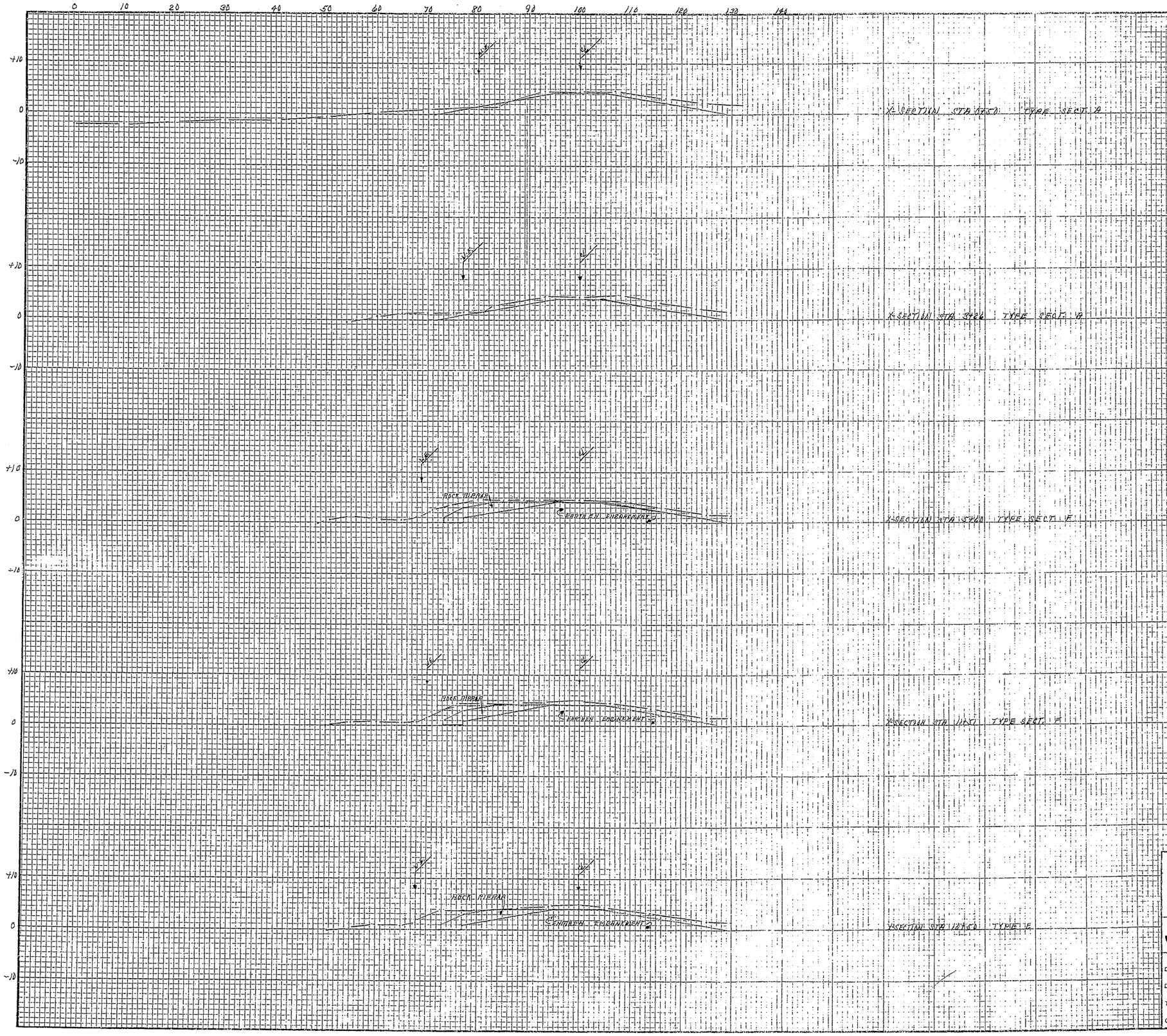
REVISIONS

DATE	APPR.	TITLE
2/18/00	B.S.	CONS. ENG. MOD. #5

CAD FILE NO. sht_no_10a

DRAWING NO. LA-231

sht. 10A of 10



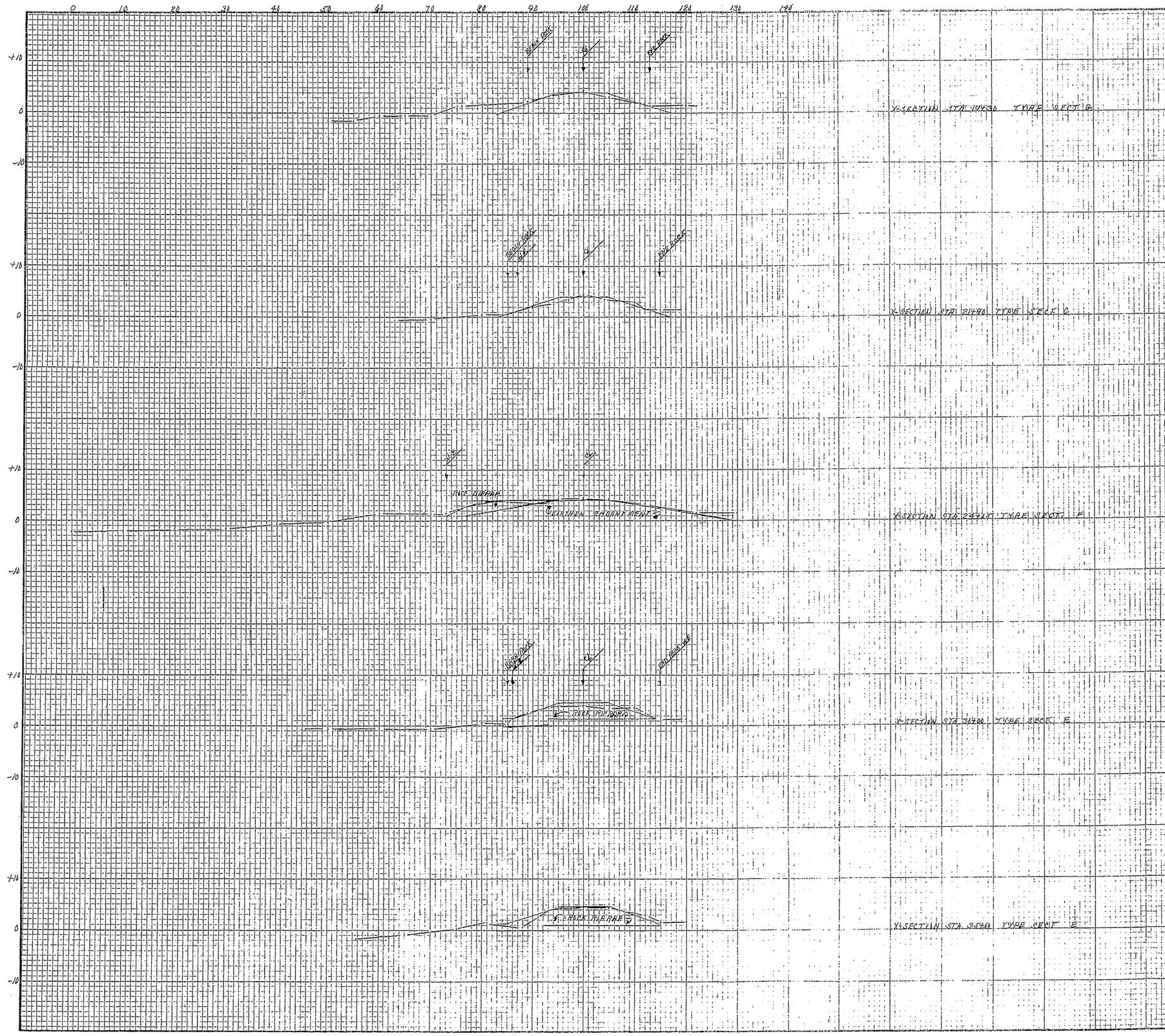
"AS-BUILT"

TYPICAL SECTIONS
CONSTRUCTION UNIT "1
BRADY CANAL HYD. REST. PTE 26B
SECTIONS TAKEN STA. 0+50, 3+26, 5+60, 11+51

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

	Date	
Designed		Approved by
Drawn M.E.R.	6/22/66	Title
Traced		Title
Checked		Sheet No. 1AB of 7AB — Drawing No.

SCS-ENG 315 REV 8-75



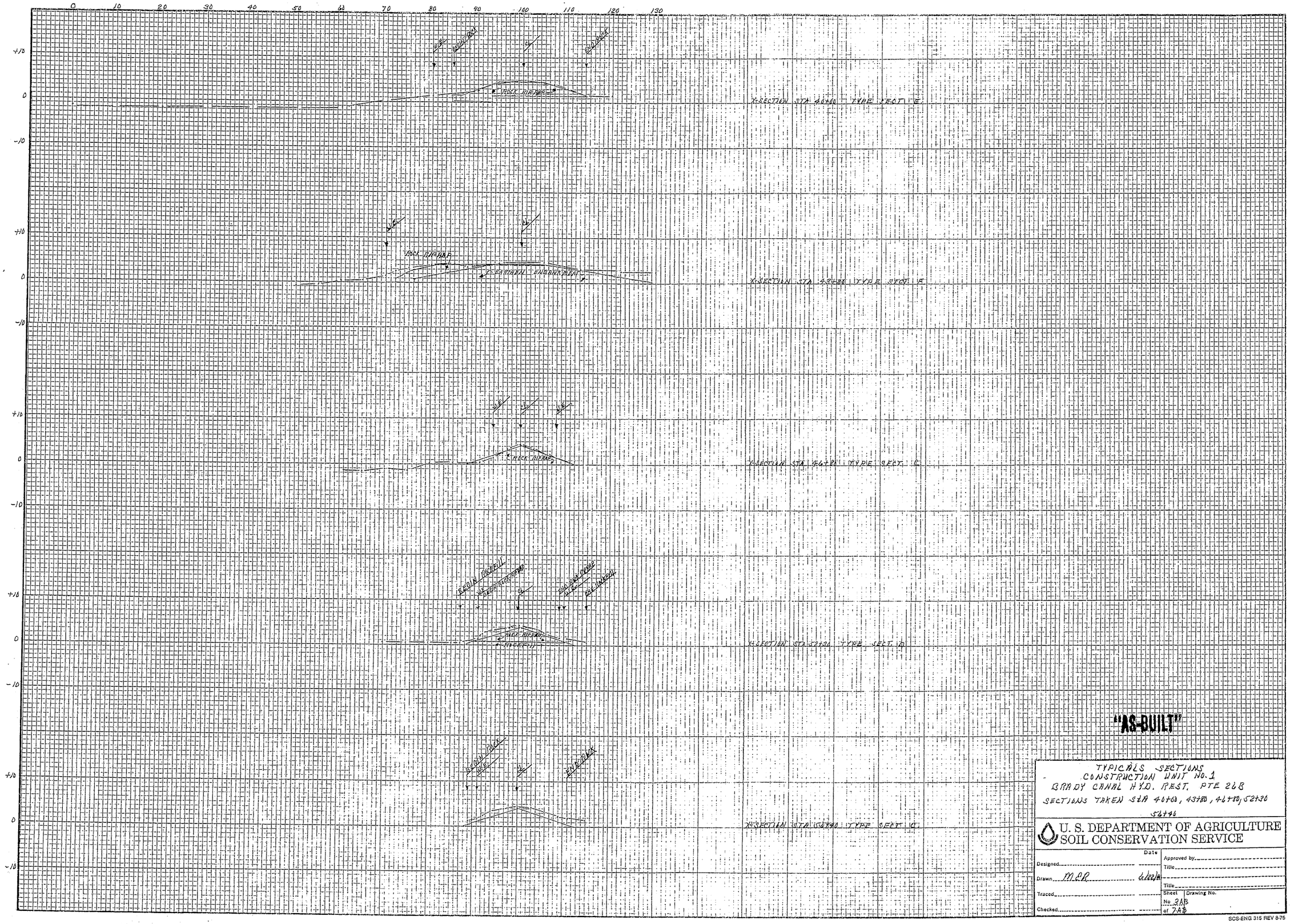
"AS-BUILT"

TYPICAL SECTIONS
CONSTRUCTION UNIT 1
BRADY CANAL HYD. REST. PTE 26B
SECTIONS TAKEN STA 17+30, 21+90, 24+05, 30+01, 35+40

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

	Date		
Designed		Approved by	
Drawn MER	4/22/14	Title	
Traced		Title	
Checked		Sheet No 2AB of 2AB	Drawing No.

SCS-ENG 315 REV 8-75



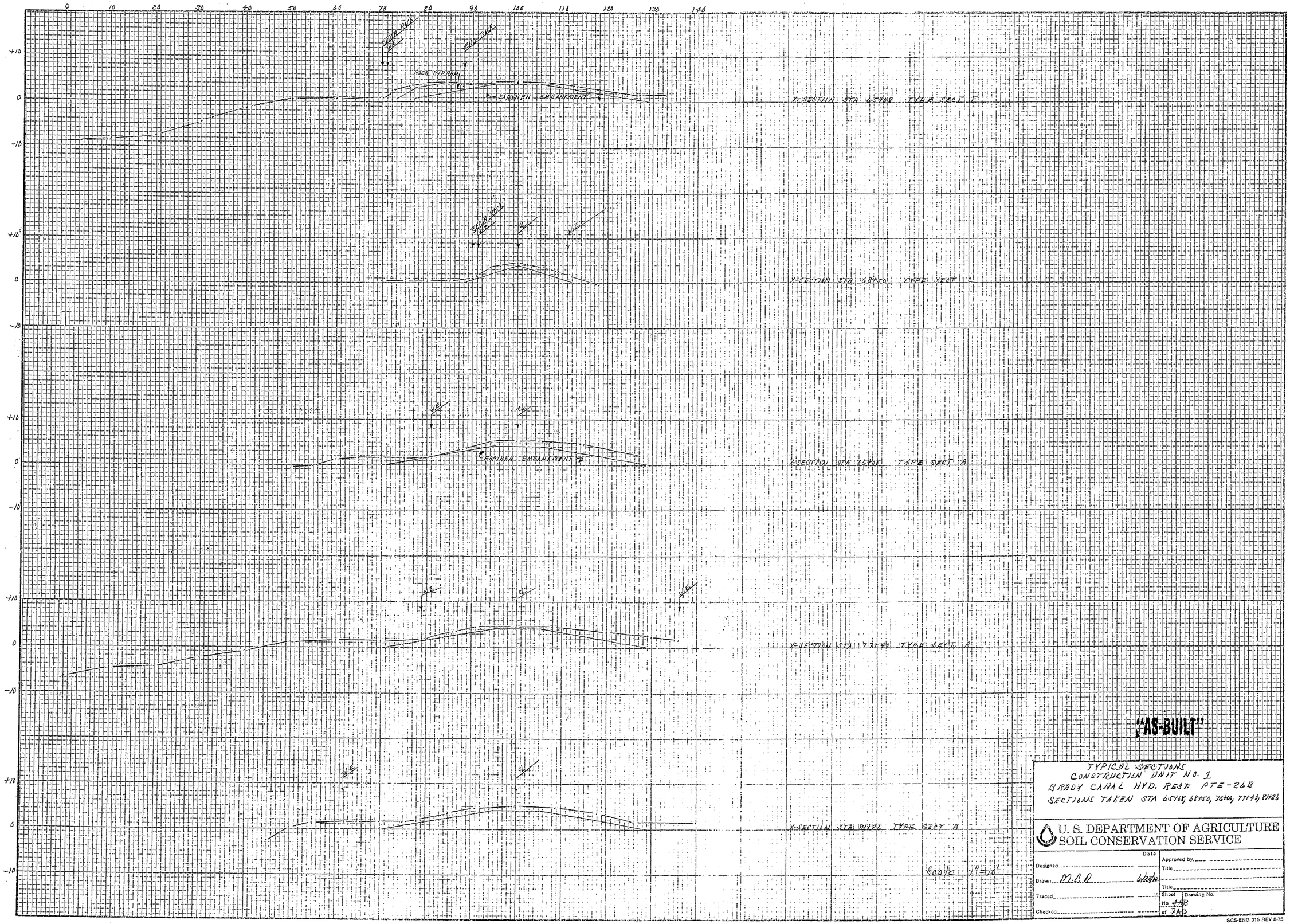
"AS-BUILT"

TYPICALS SECTIONS
CONSTRUCTION UNIT NO. 1
BRADY CANAL H.V.D. REST. PTE 26B
SECTIONS TAKEN STA 40+60, 43+80, 46+80, 52+30
56+46

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

	Date		
Designed		Approved by	
Drawn M.S.R.	6/22/76	Title	
Traced		Title	
Checked		Sheet No. 3 of 7	Drawing No. 3AB

SCS-ENG 315 REV 8-75



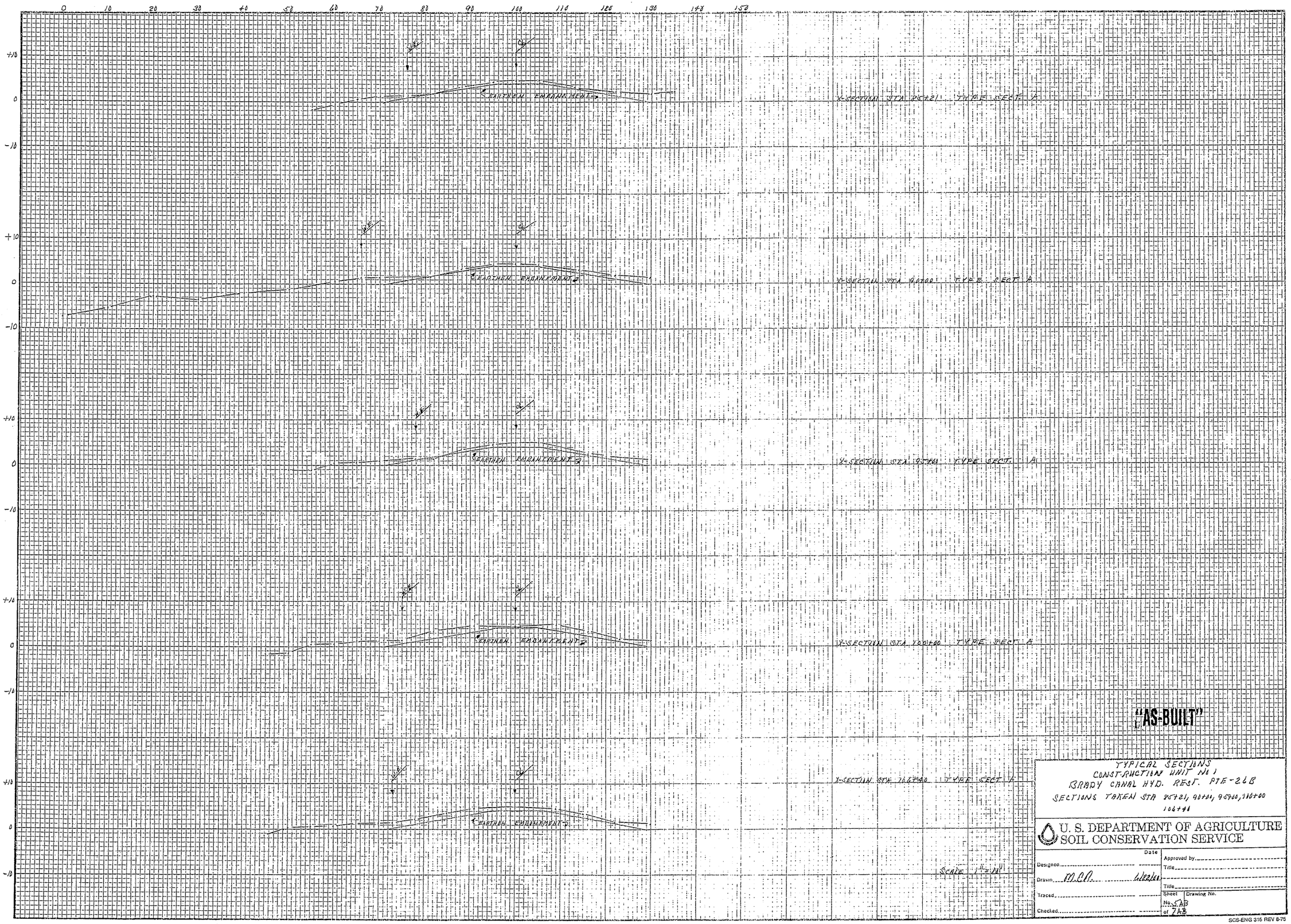
"AS-BUILT"

TYPICAL SECTIONS
CONSTRUCTION UNIT NO. 1
BRADY CANAL HYD. REST PTE-2LB
SECTIONS TAKEN STA 65+68, 68+50, 76+00, 77+40, 81+26

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	Date	Approved by
Drawn M.L.R.	6/23/64	Title
Traced		Title
Checked		Sheet No. 4A3 of 7A3 / Drawing No.

SCS-ENG 315 REV 8-75



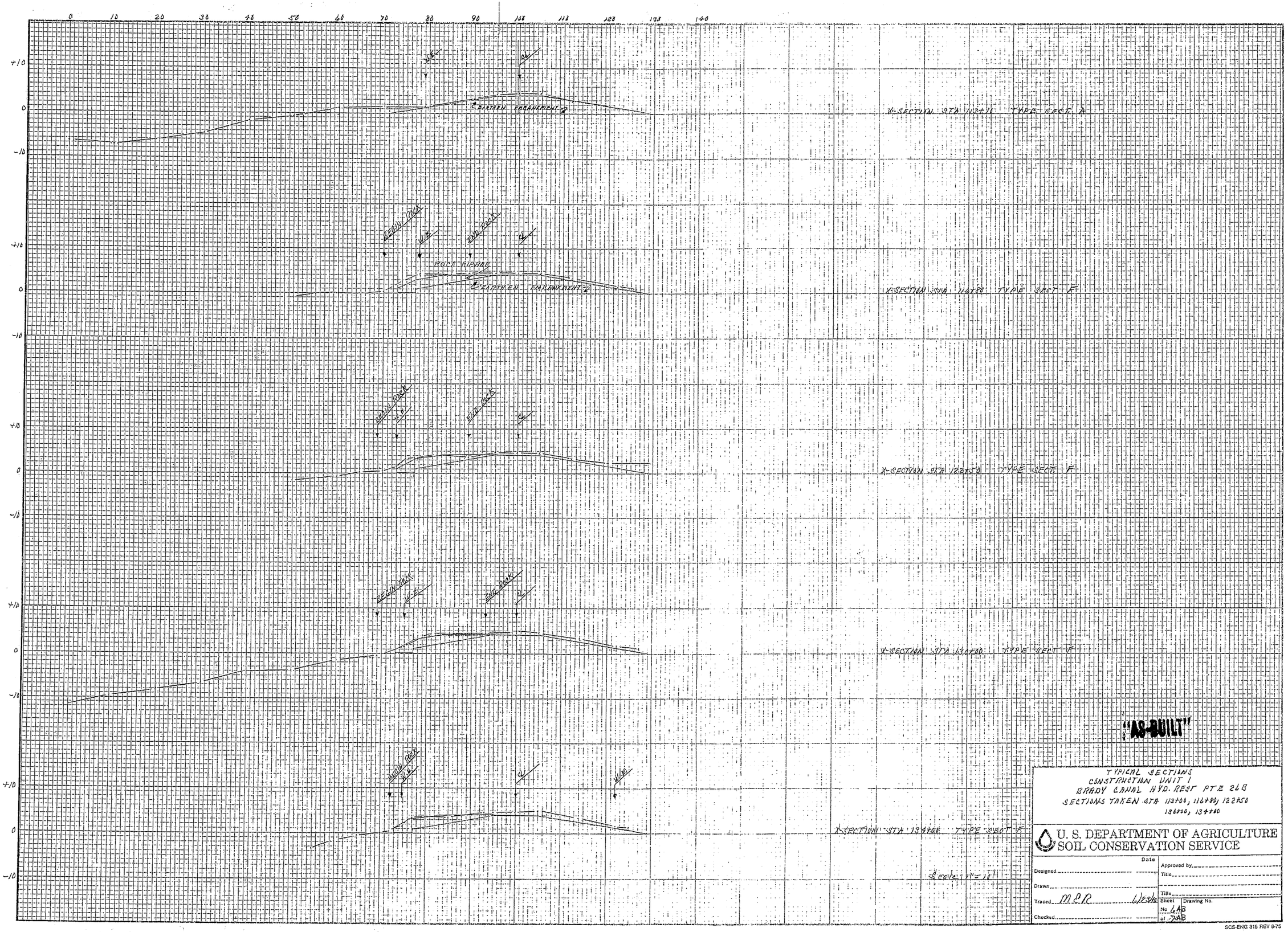
"AS-BUILT"

TYPICAL SECTIONS
CONSTRUCTION UNIT No 1
BRADY CANAL HYD. REST. PTE-26B
SECTIONS TAKEN STA 85+21, 90+00, 95+00, 100+00
106+40

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

	Date	
Designed		Approved by
Drawn M.C.A.	6/22/60	Title
Traced		Title
Checked		Sheet No. 5AB of 7AB — Drawing No.

SCS-ENG 315 REV 8-75



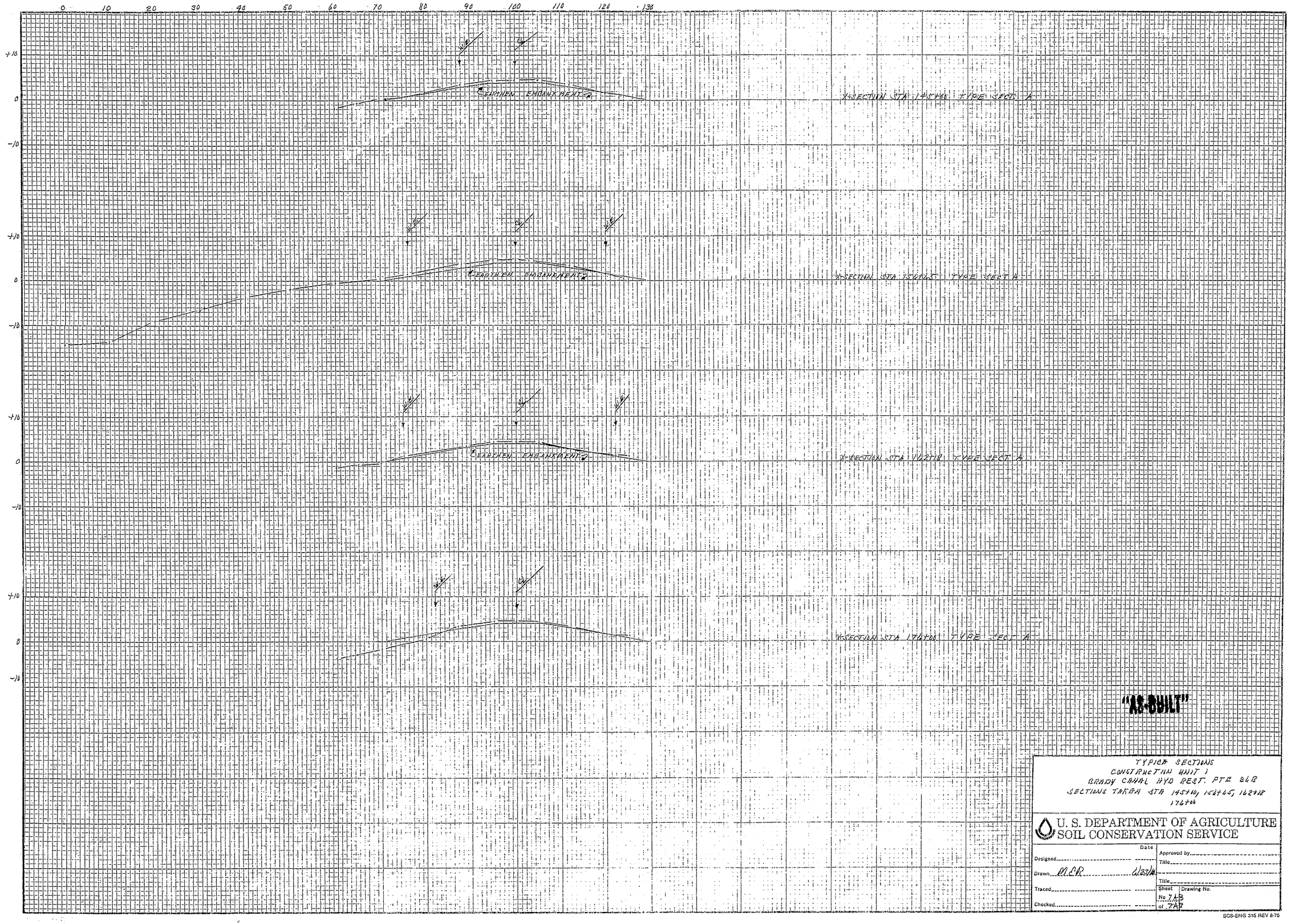
"AS-BUILT"

TYPICAL SECTIONS
CONSTRUCTION UNIT I
BRADY CANAL HYD. REST PT E 26B
SECTIONS TAKEN STA 113+00, 116+80, 122+50
136+00, 134+60

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	Date	Approved by	
Drawn		Title	
Traced MCR	6/23/70	Title	
Checked		Sheet No. 6 of 7	Drawing No. 26B

SCS-ENG 315 REV 8-75



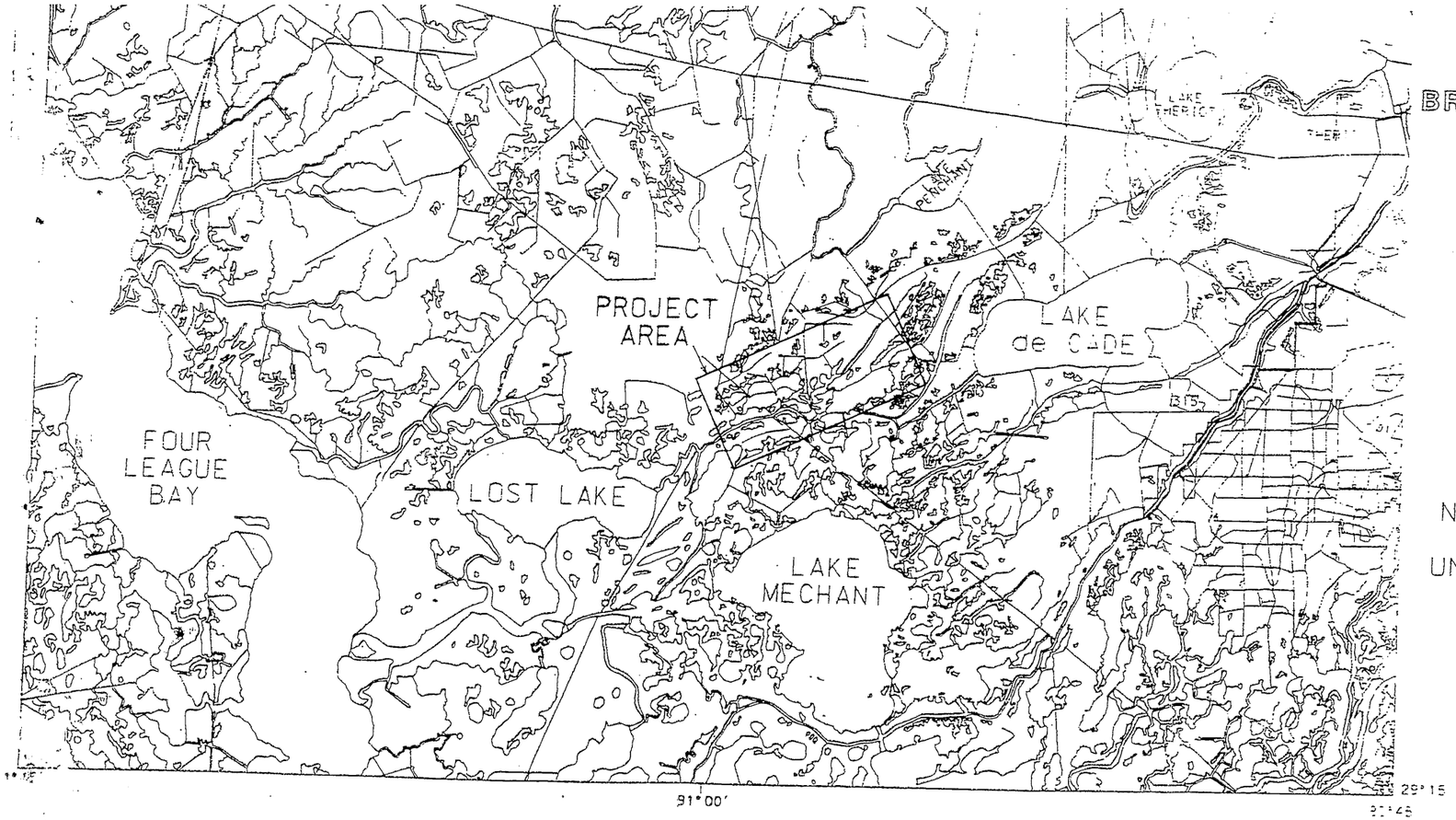
"AS-BUILT"

TYPICAL SECTIONS
CONSTRUCTION UNIT 1
BRADY CANAL HYD REST. PTE 26B
SECTIONS TAKEN STA 145+40, 156+65, 162+18
176+06

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

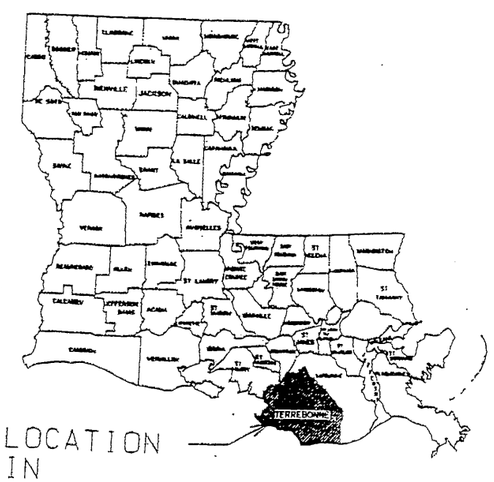
	Date		
Designed		Approved by	
Drawn M.C.R.	1/23/74	Title	
Traced		Title	
Checked		Sheet No 7 of 7	Drawing No. 26B

SCS-ENG 315 REV 8-75

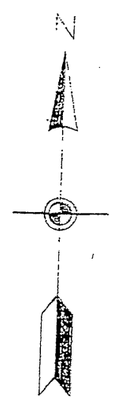


VICINITY MAP

1 0 1 2 3
SCALE IN MILES



LOCATION IN LOUISIANA



BRADY CANAL HYDROLOGIC RESTORATION
CONSTRUCTION UNIT 2,(PTE-26B)

BUILT UNDER THE
COASTAL WETLANDS
PLANNING, PROTECTION,
AND
RESTORATION ACT
PUBLIC LAW 101-646

BY THE
LOUISIANA
DEPARTMENT OF NATURAL RESOURCES

WITH THE ASSISTANCE OF THE
NATURAL RESOURCES CONSERVATION SERVICE
OF THE
UNITED STATES DEPARTMENT OF AGRICULTURE
1999

"AS-BUILT PLANS"

SUBMITTED BY: [signature] GOVERNMENT REPRESENTATIVE — 10/17/00 DATE

APPROVED BY: [signature] ASSISTANT STATE CONSERVATION ENGINEER — 10/24/00 DATE

[signature] STATE CONSERVATION ENGINEER — 10/25/00 DATE

CONTRACT NO. 50-2017-9-02 DATE 5/4/99
CONTRACTOR All South General Contractors
INSPECTOR Melvin Rodrigue
DATE OF COMPLETION 7/31/00

INDEX OF DRAWINGS

1 COVER SHEET
2 LAND RIGHTS MAP
3 PROJECT LOCATION MAP
4 INDIVIDUAL SITE LOCATION MAP
5 SOIL BORING LOGS
6 PLAN AND PROFILE - SITE NO. 6
7 BATTER PILE DETAILS - SITE NO. 6
8 PLAN AND PROFILE - SITE NO.7
9 PLAN AND PROFILE - SITE NO.10
10 PLAN AND PROFILE - SITE NO. 14
11 DECKING DETAILS - SITE NO. 14
12 PLAN AND PROFILE - SITE NO. 20
13 PLAN AND PROFILE - SITE NO. 21
14 DECKING DETAILS - SITE NO. 21
15 PLAN AND PROFILE - SITE NO. 23
16 DECKING DETAILS - SITE NO. 23
17 PLAN AND PROFILE - SITE NO. 24
18 STOP LOG BAY DETAILS (TYPICAL)
19 PILE CAP TO SHEET PILE - DETAILS
20 WARNING SIGN LOCATION MAP
21 WARNING SIGN DETAILS
22 WARNING SIGN AND RAILING DETAILS
23 TYPE "F" WARNING SIGN DETAILS.

STATE OF LOUISIANA
E. J. GIERING III
REG. NO. 19933
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

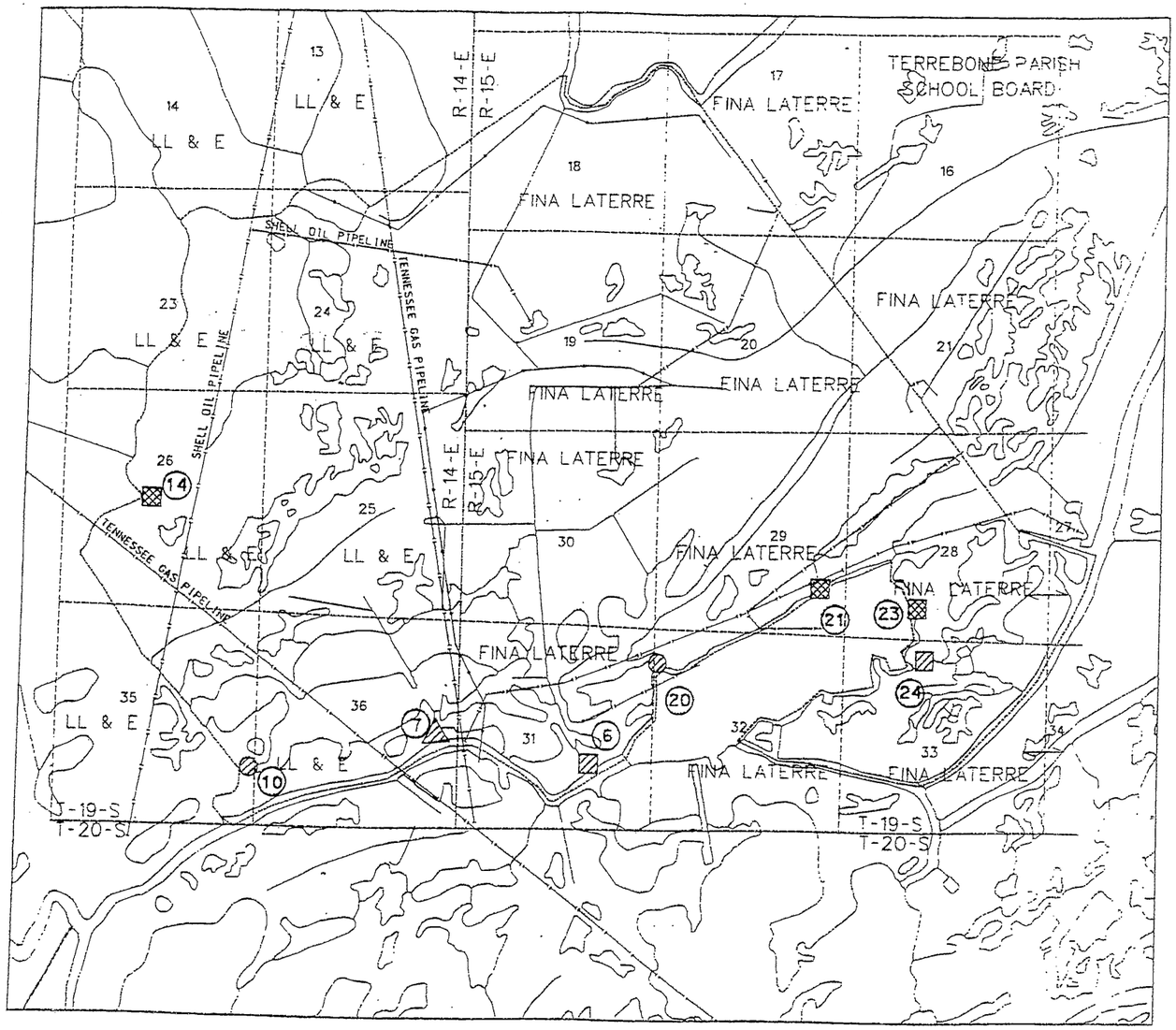
	Date		
Designed C. E. LaFleur	02/98	Approved by	
Drawn A. J. Gremillion	02/98	Title	
Traced			
Checked James N. Moore	01/99	Title	

COVER SHEET
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE

REVISIONS			
DATE	APPR.	TITLE	

CAD FILE NO.
LA-231
DRAWING NO.
231_01
SHEET NO.



BRADY CANAL - LAND RIGHTS MAP

2000 0 2000 4000
Scale in Feet

STRUCTURE LEGEND

- FIXED CREST WEIR W/VARIABLE CREST SECTIONS
- FIXED CREST WEIR
- CHANNEL ARMOR
- ROCK PLUG

NOTE

THE SERVICE DOES NOT GUARANTEE THE COMPLETENESS AND ACCURACY OF OWNERSHIP SHOWN. APPARENT OWNERSHIP HAS BEEN OBTAINED FROM MAPS IN THE OFFICE OF PARISH CLERK OF COURT OR TAX ASSESSOR

NOTE:

KNOWN PIPELINES AND UTILITIES ARE SHOWN ON THE PLANS. IT IS POSSIBLE THAT SOME MAY EXIST THAT HAVE NOT BEEN SHOWN. THE CONTRACTOR SHALL BE ON THE ALERT FOR SUCH PIPELINES AND UTILITES, AND SHALL REPORT THEM IMMEDIATELY TO THE CONTRACTING OFFICER.

NOTICE:
48 HOURS BEFORE DIGGING
CALL 1-800-272-3020
LOCATE UTILITY LINES

LEGEND

———	PIPELINE
———	POWERLINE
———	TOWNSHIP / RANGE LINE
- - - -	SECTION LINE
22	SECTION NUMBER
———	WORK LIMITS
(14)	STRUCTURE NUMBER

"AS-BUILT"

STATE OF LOUISIANA
E. J. GLERING
REG. NO. 8033
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

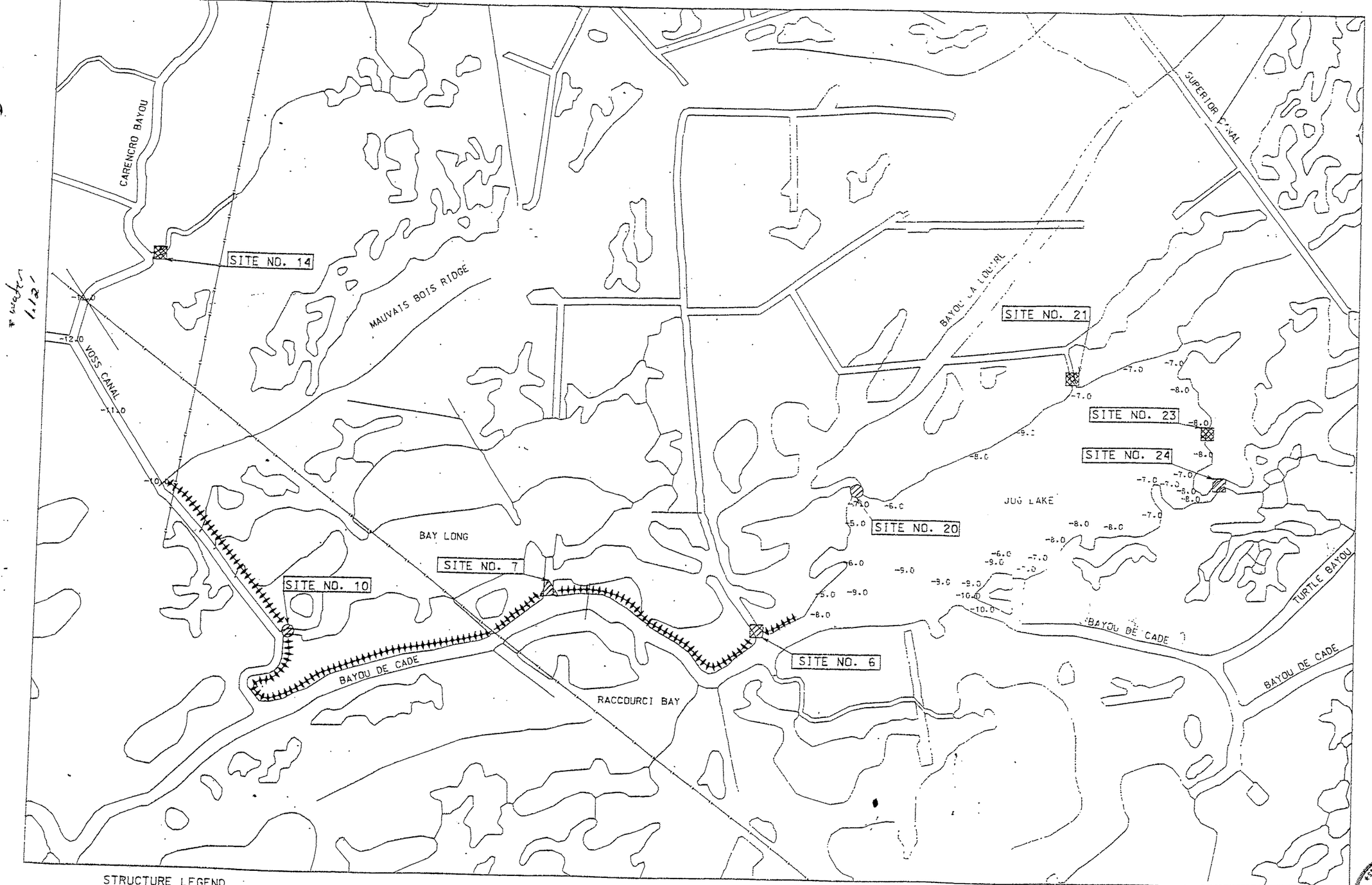
Designed C. E. LaFleur 07/94
Drawn A. J. Gremillion 07/94
Traced
Checked JAMES N. MOORE 02/99

Approved by
Title
Title

LAND RIGHTS MAP
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

REVISIONS		
DATE	APPR.	TITLE

CAD FILE NO. BRADY-LR
DRAWING NO. LA-231
SHEET NO. 2 OF 2



STRUCTURE LEGEND

- FIXED CREST WEIR W/VARIABLE CREST SECTIONS
- FIXED CREST WEIR
- CHANNEL ARMOR
- ROCK PLUG
- EMBANKMENT- (SEE CONSTRUCTION 1 UNIT FOR DETATILS)

PROJECT LOCATION MAP

1000 0 1000 2000 3000 4000

SCALE IN FEET

NOTES:

1. -X.X= WATER SOUNDING
2. ALL WATER SOUNDINGS WERE TAKEN ON 4/17/98. THE STAFF GAUGE AT DULARGE MARINA READ 1.8' NGVD.
3. ALL ELEVATIONS ARE BASED ON THE N.A.V.D. 88 DATUM.
4. ALL HORIZONTAL POSITIONS BASED ON NAD 83 STATE PLANE LOUISIANA SOUTH ZONE 1702

"AS-BUILT"

STATE OF LOUISIANA
E. J. GIERING III
REG. NO. 8033
REGISTERED PROFESSIONAL ENGINEER
IN CIVIL ENGINEERING

REVISIONS		
DATE	APPR.	TITLE

PROJECT LOCATION MAP
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

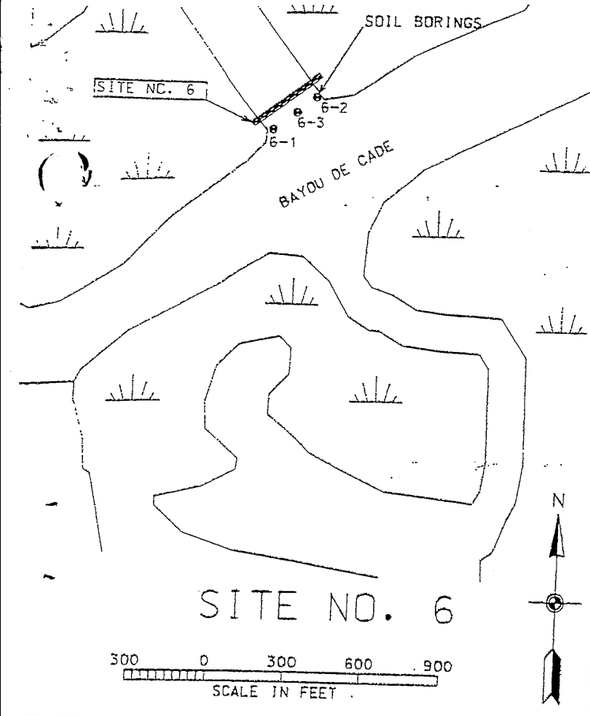
		Date
Designed	C. E. LaFleur	02/98
Drawn	A. J. Gremillion	02/98
Traced		
Checked	James N. Moore	01/99

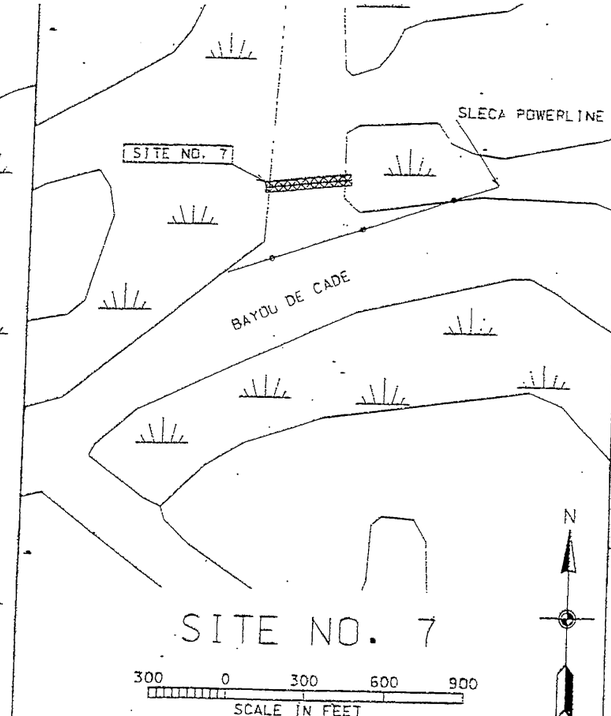
Approved by _____ Title _____ Title _____

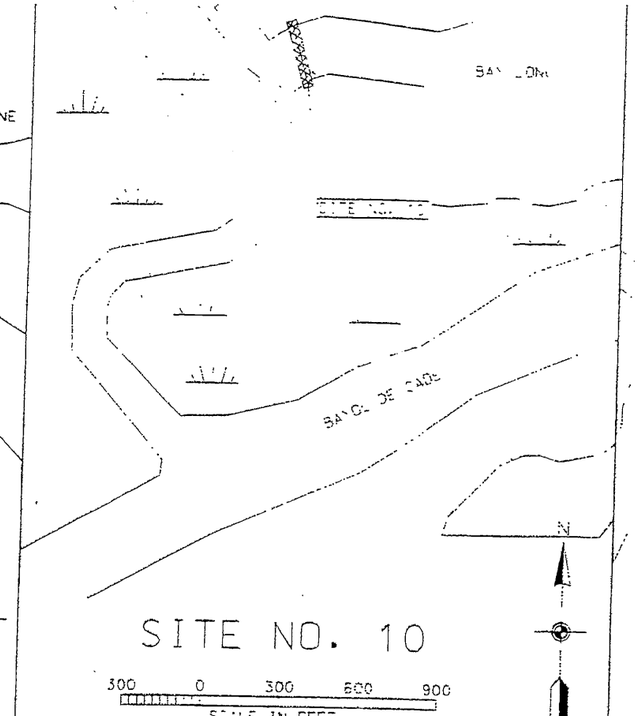
CAD FILE NO. PROJECT-2

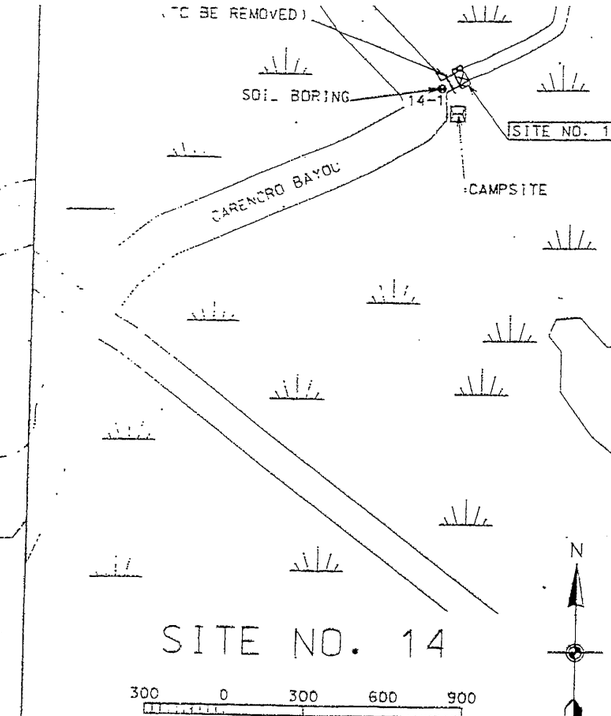
DRAWING NO. LA-231

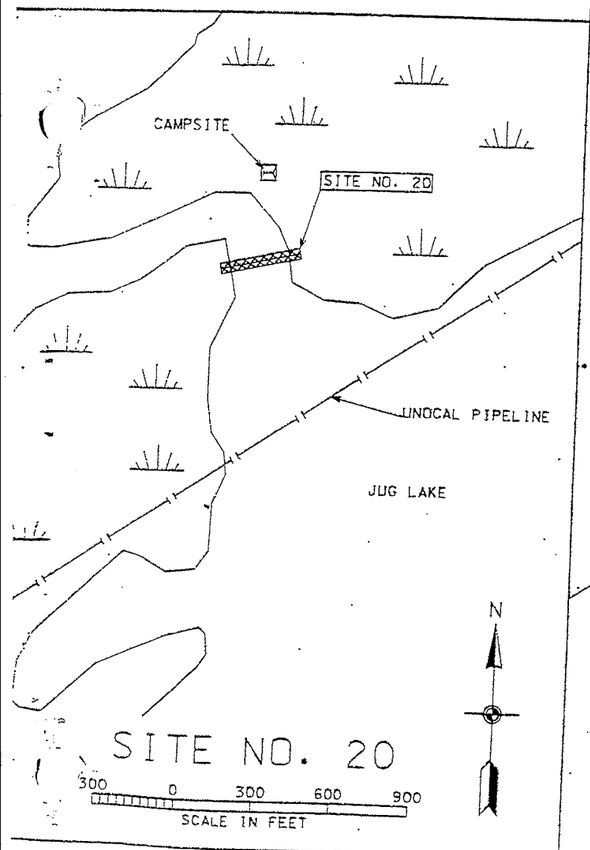
SHEET NO 3 OF 23

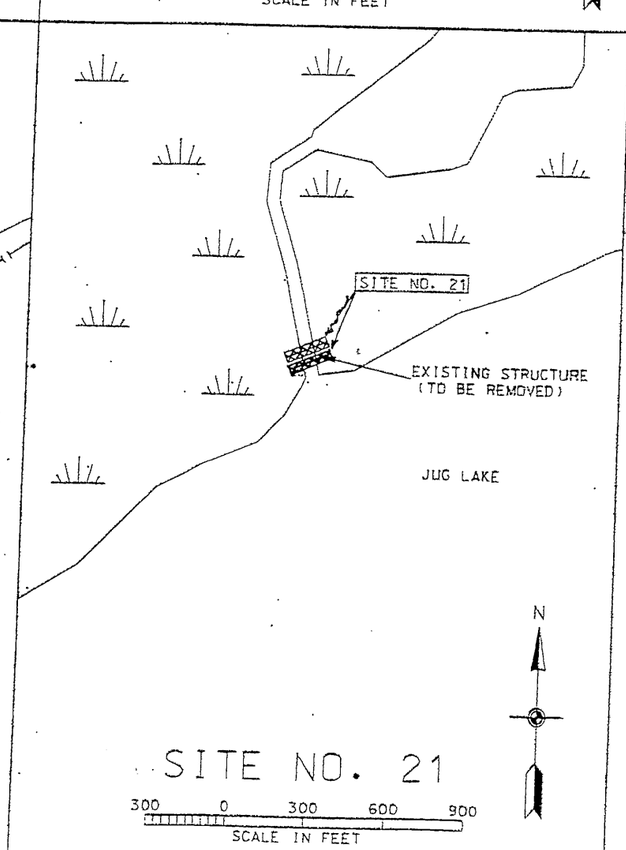


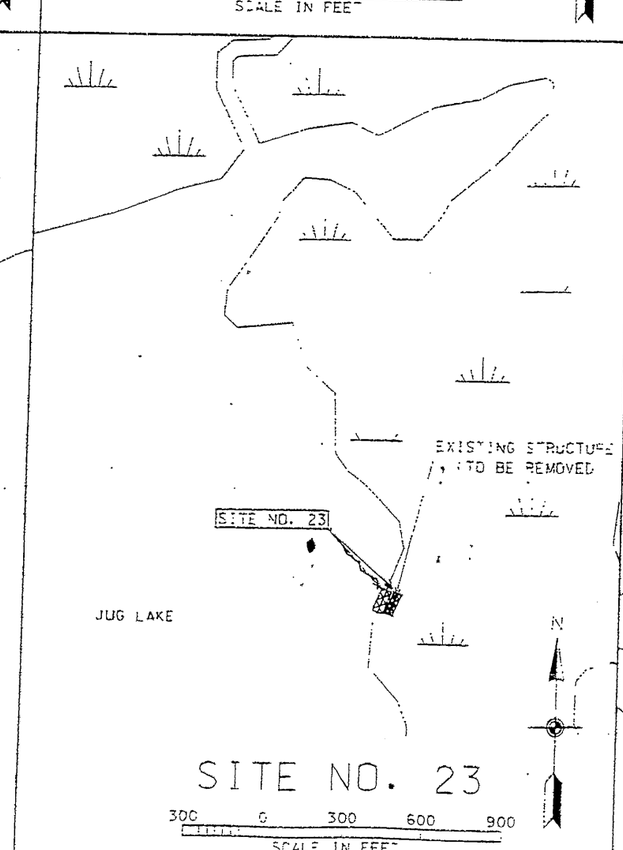


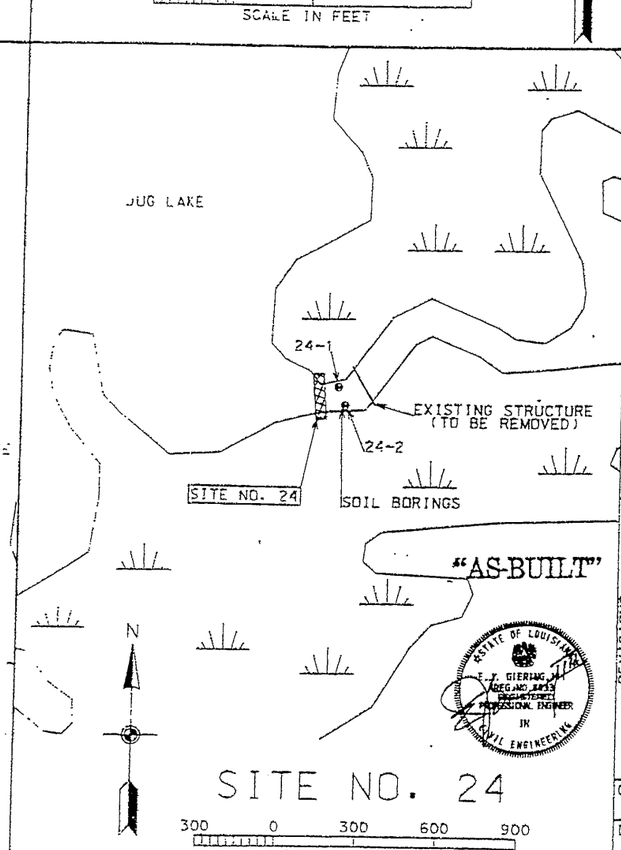












Designed	C. E. LaFleur	02/98	Approved by
Drawn	A. J. Gremillion	02/98	Title
Traced			
Checked	James N. Moore	01/99	Title

INDIVIDUAL SITE LOCATIONS
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

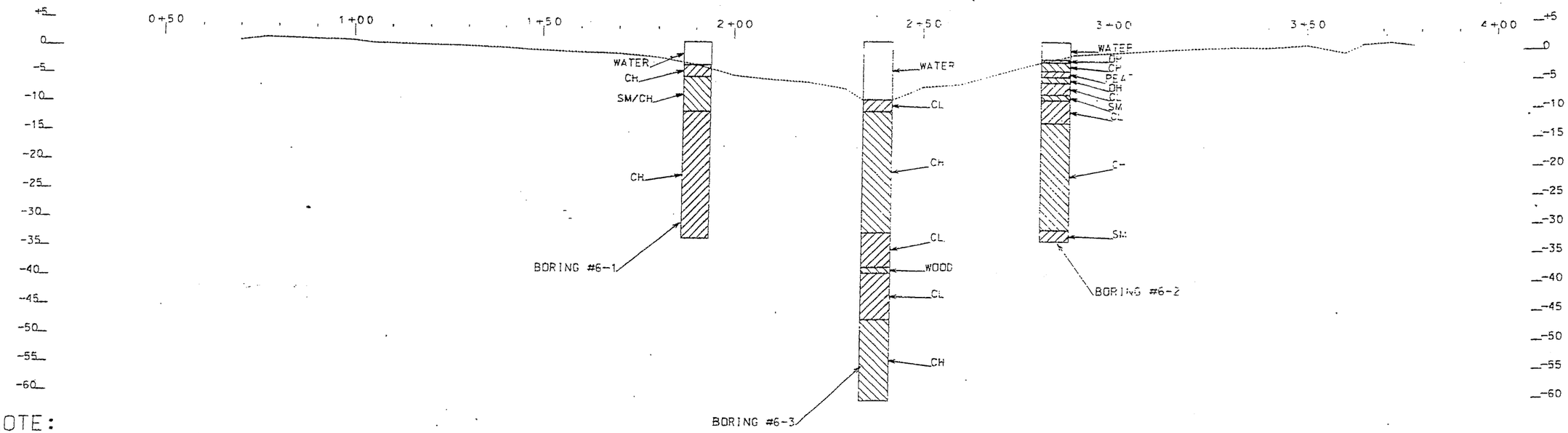
U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS		
DATE	APPR.	TITLE

CAD FILE NO. INDIV-LOCATION

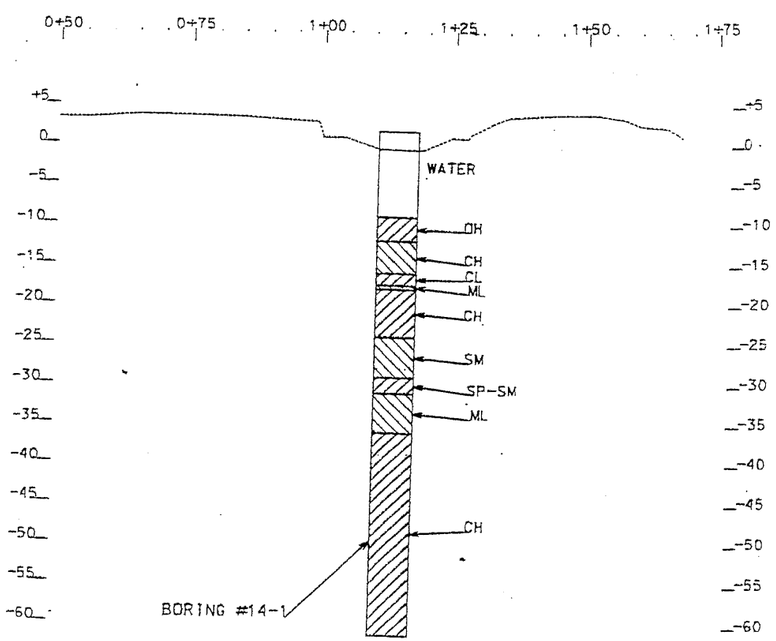
DRAWING NO. LA-231

SHEET NO 4 OF 23

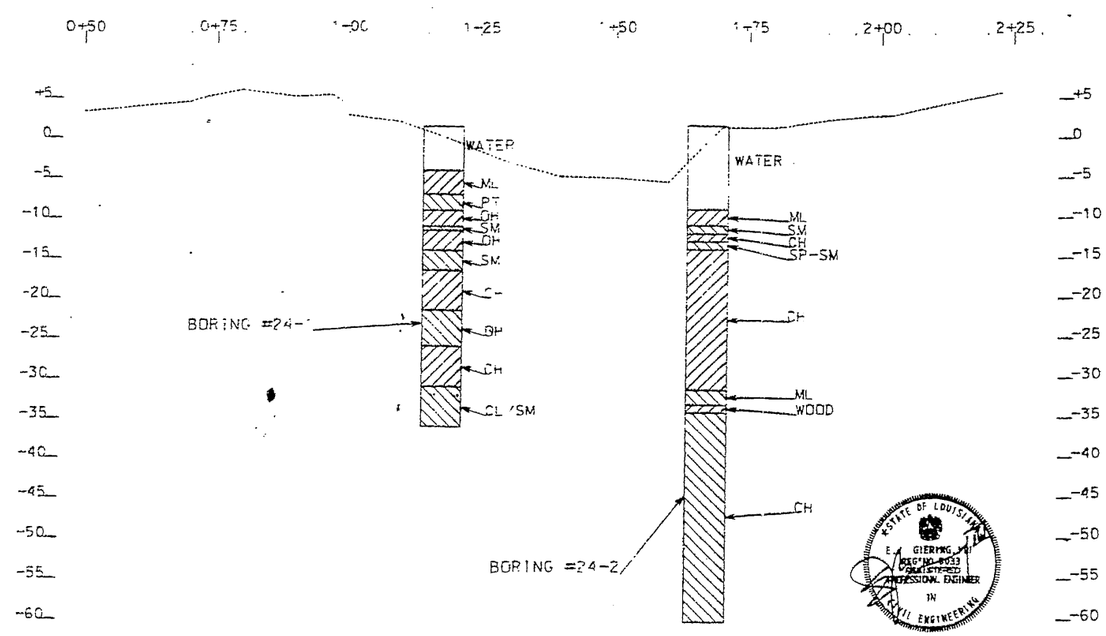


NOTE:
SOIL BORINGS AND X-SECTIONS WERE TAKEN AT DIFFERENT LOCATIONS, AS A RESULT THERE MAY BE SOME ELEVATION DISCREPANCY.

SITE NO. 6 BORING LOGS



SITE NO. 14 BORING LOGS



SITE NO. 24 BORING LOGS

"AS-BUILT"

SOIL BORING LOGS
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

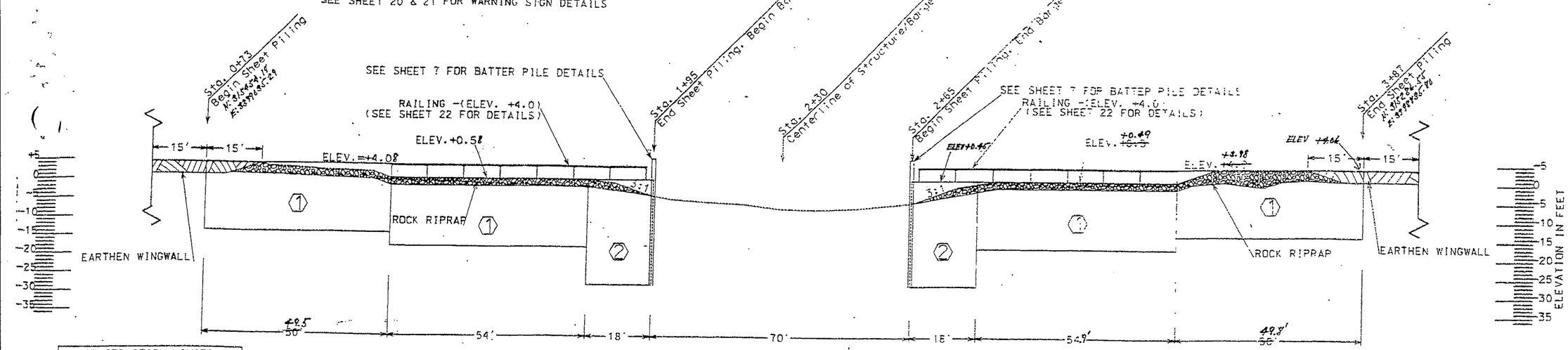
U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

		Date	
Designed	C.E. LaFleur	2/98	Approved by
Drawn	A. J. Gremillion	2/98	Title
Traced			
Checked	James N. Moore	01/99	Title

REVISIONS

DATE	APPR.	TITLE

CAD FILE NO.
BORE-6-14-24
DRAWING NO.
LA-231
SHEET NO 5 OF 23

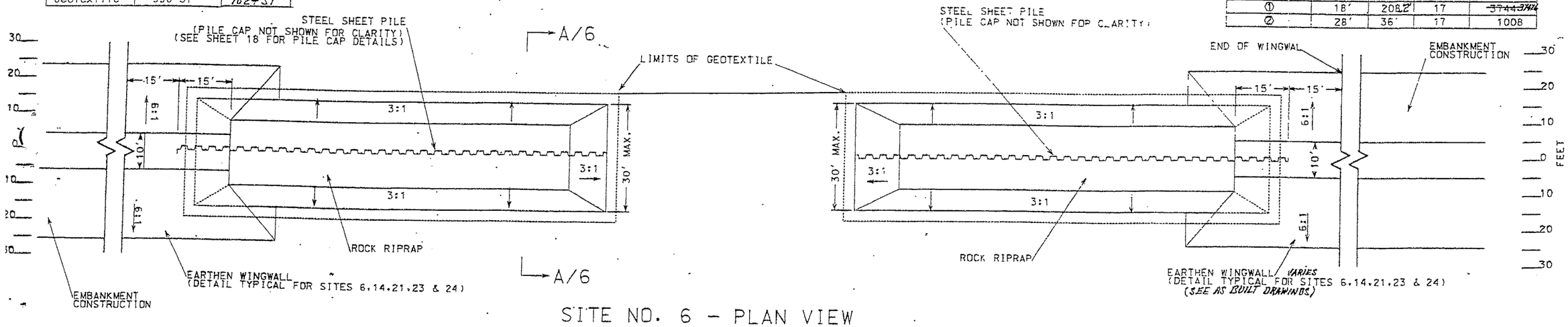


CONSTRUCTION LIMITS		
Construction Width	Construction Length	
250 ft	500 ft	
ESTIMATED QUANTITIES		
Rock Riprap	~~580 Tons~~	733 TONS
Geotextile	~~990 SY~~	1024 SY

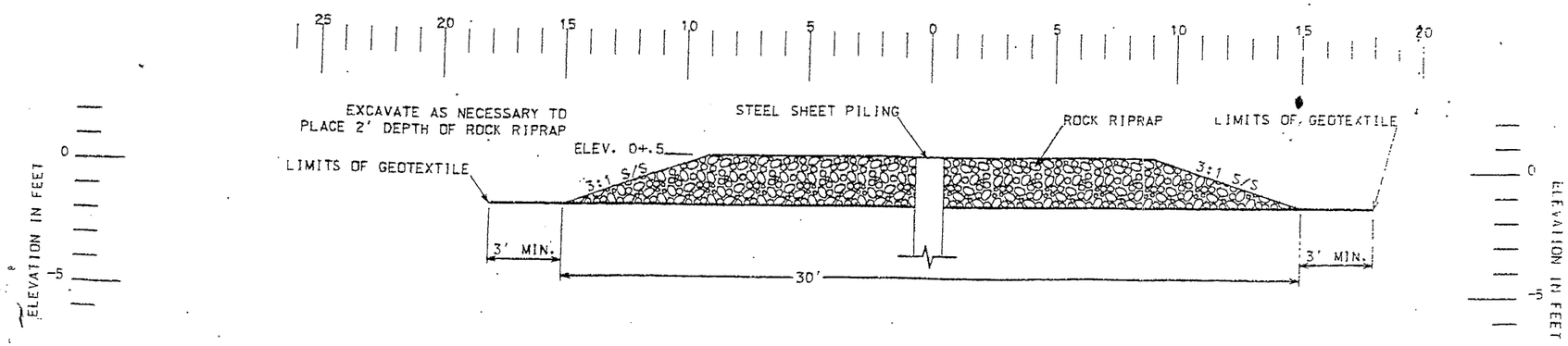
SITE NO. 6 - PROFILE ON CENTERLINE

SHEET PILE SCHEDULE

SHEET PILING NO.	IN-PLACE LENGTH	LINEAR FEET	MINIMUM IN³/FT	SUBTOTALS (FT. SQ)
①	18'	208.2'	17	~~3744~~ 3474
②	28'	36'	17	1008



SITE NO. 6 - PLAN VIEW



SECTION "A-A/6"

NOTE:

1. SHEET PILING AND PILE CAP SHALL BE PAINTED TO THE LIMITS SPECIFIED IN CONSTRUCTION SPECIFICATION 82, CLEANING AND PAINTING METALWORK.
2. THE MINIMUM WEB AND FLANGE THICKNESS OF SHEET PILING SHALL BE 0.35".
3. THE CONTRACTOR SHALL ENSURE THAT THE EARTHEN WINGWALLS SHALL BE CONSTRUCTED TO THE LINES AND GRADES AS SHOWN FOR SITE NO. 6, AS A MINIMUM, FOR ALL SHEET PILE STRUCTURES.
4. FINAL LOCATION OF STRUCTURES TO BE STAKED IN THE FIELD BY THE C.O.T.R.
5. SEE SHEETS 20 AND 21 FOR WARNING SIGN LOCATIONS & DETAILS
6. THE EARHTEN WINGWALLS SHALL BE TIED INTO THE EARTHEN EMBANKMENT.

"AS-BUILT"

(NOT TO SCALE)

PLAN AND PROFILE - SITE NO. 6
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

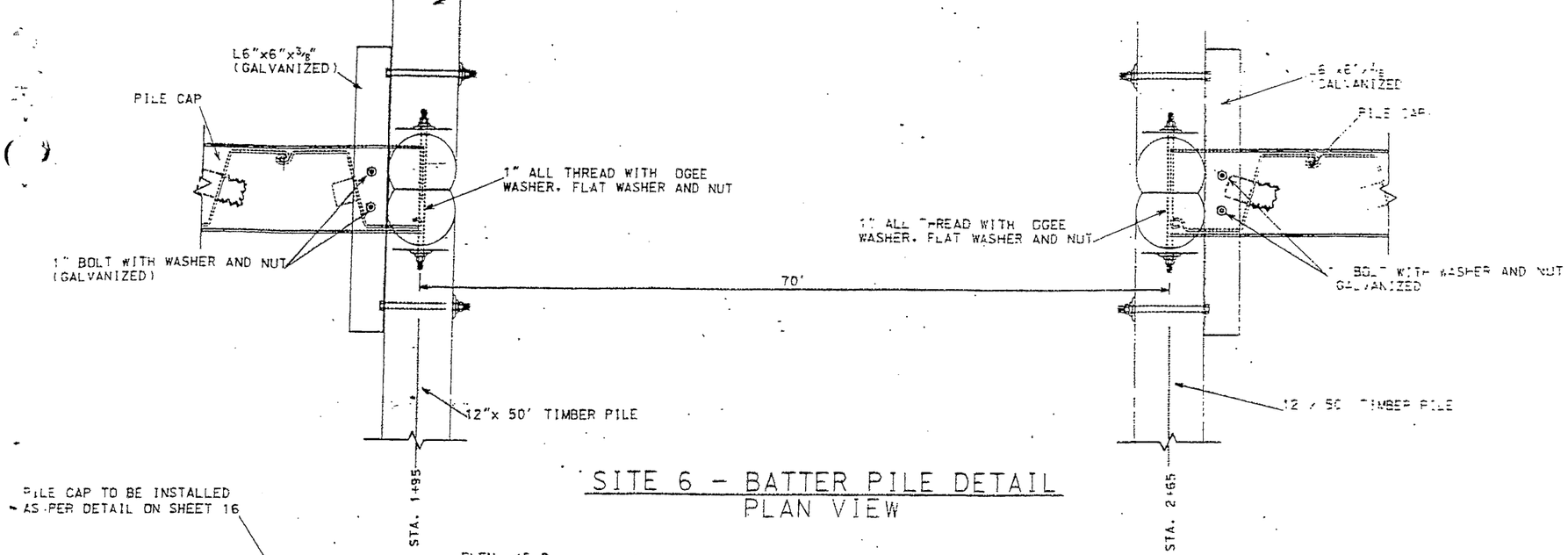
		Date
Designed	C.E.Lafleur	2/98
Drawn	A. J. Gremillion	2/98
Traced		
Checked	James N. Moore	2/99

Approved by
Title
Title

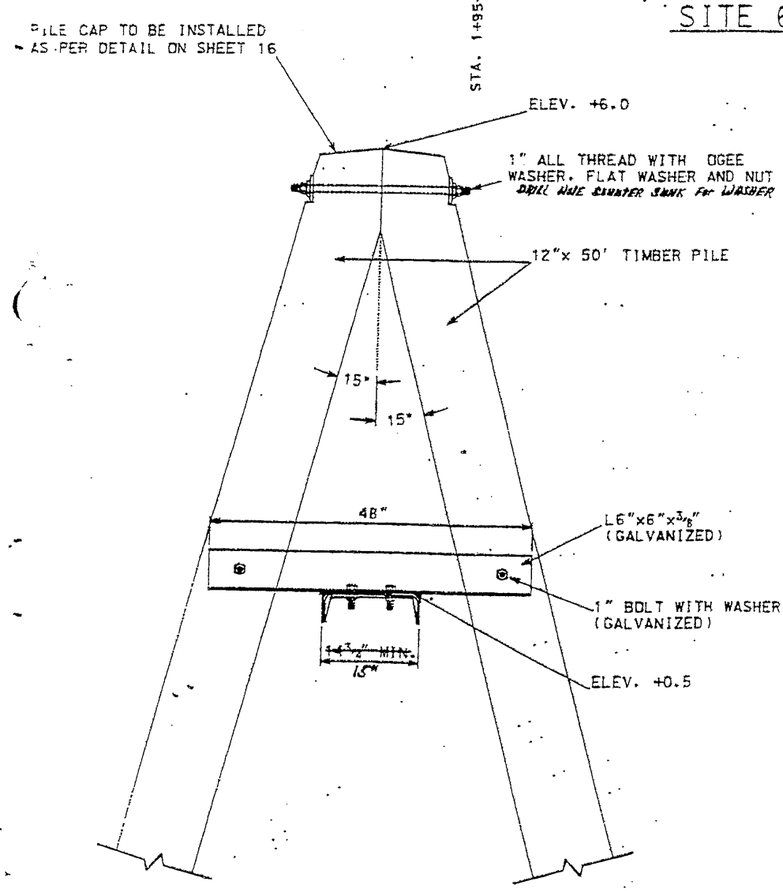
REVISIONS

DATE	APPR.	TITLE

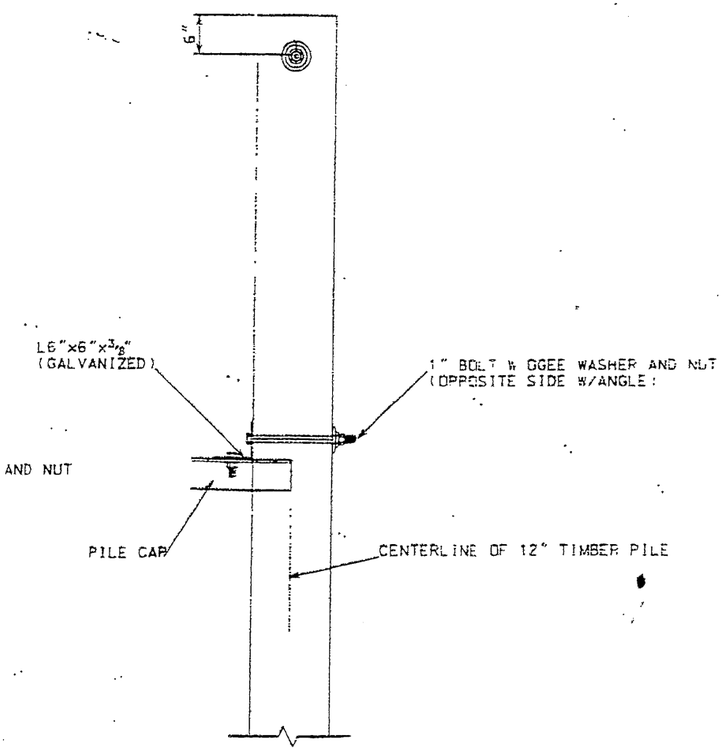
CAD FILE NO. SITE#6
DRAWING NO. LA-231
SHEET NO 6 OF 23



SITE 6 - BATTER PILE DETAIL
PLAN VIEW



SITE 6 - BATTER PILE DETAIL
ELEVATION VIEW



SITE 6 - BATTER PILE DETAIL
SIDE VIEW

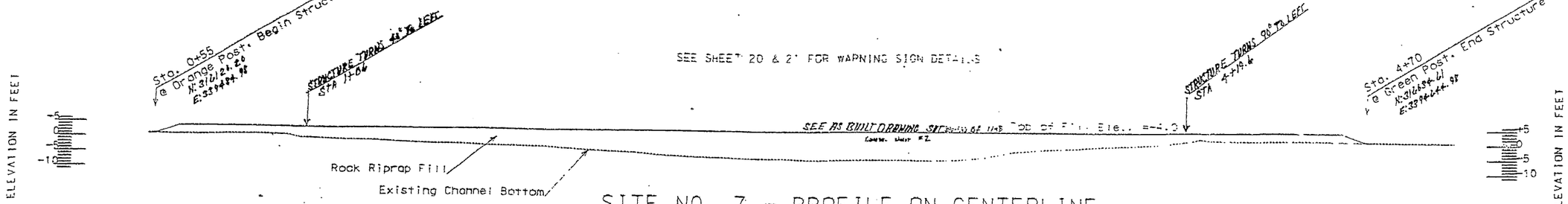
Designed	C.E. LaFleur	Date	Approved by
Drawn	A. J. Gremillion	2/98	Title
Traced		2/98	Title
Checked	James N. Moore	2/99	Title

SITE #6 - BATTER PILE DETAILS
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

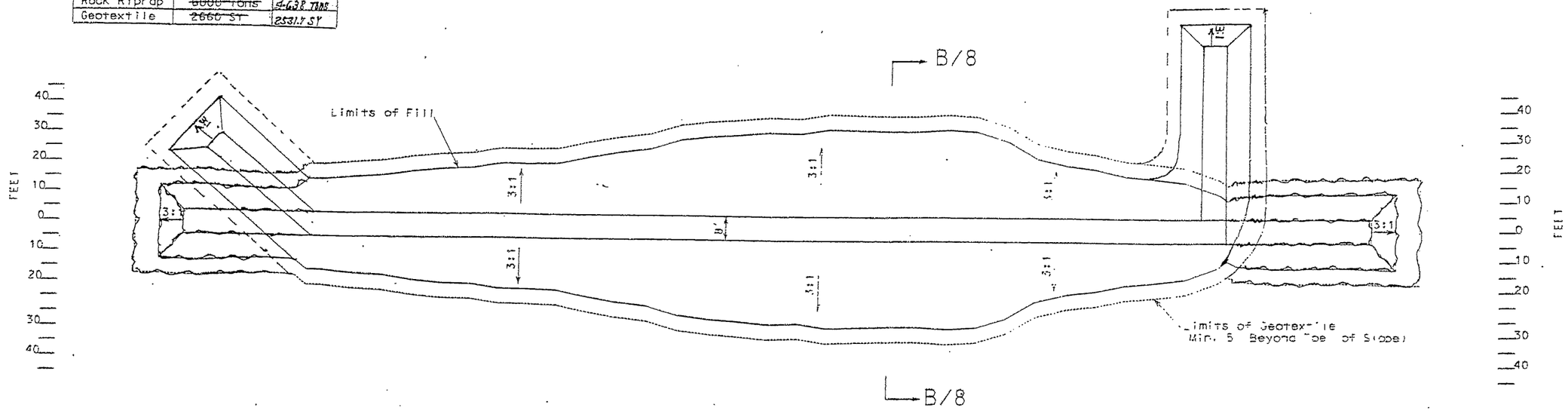
DATE	APPR.	REVISIONS	TITLE

CAD FILE NO.
SITE-6-BATTER
DRAWING NO.
LA-231
SHEET NO 07 OF 23

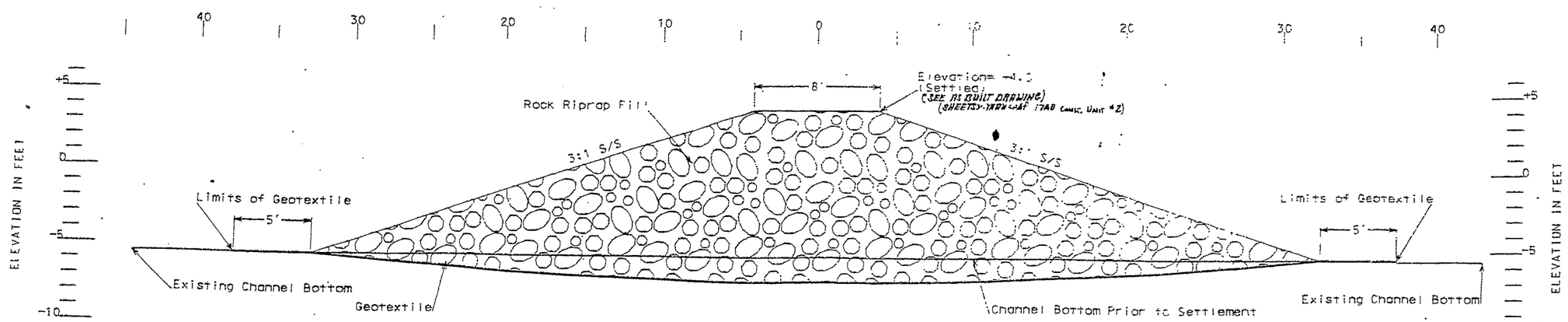


SITE NO. 7 - PROFILE ON CENTERLINE

CONSTRUCTION LIMITS		
Construction Width	Construction Length	
500 ft	500 ft	
ESTIMATED QUANTITIES		
Rock Riprap	~~6000 Tons~~	4638 TONS
Geotextile	~~2660 SY~~	2531.7 SY



SITE NO. 7 - PLAN VIEW



SECTION "B-B/8"

(NOT TO SCALE)

"AS-BUILT"

STATE OF LOUISIANA
REG. NO. 2033
REGISTERED PROFESSIONAL ENGINEER
CIVIL ENGINEERING

PLAN AND PROFILE - SITE NO. 7
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

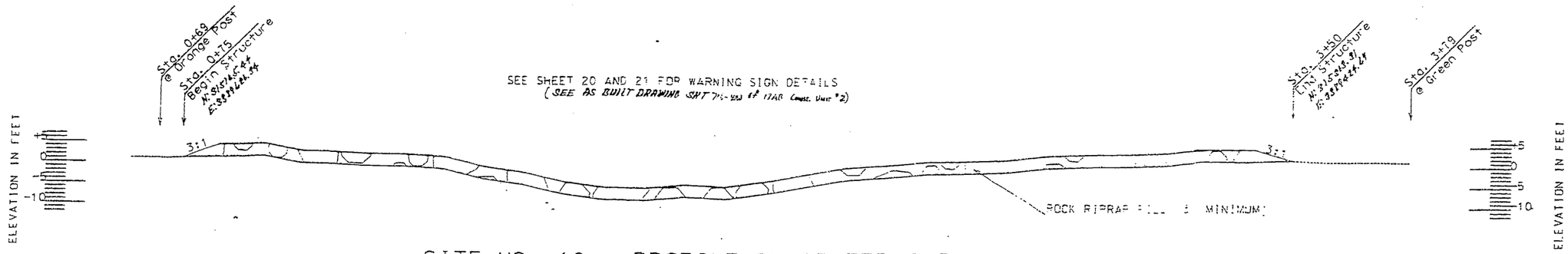
		Date
Designed	C.E.LaFleur	2/98
Drawn	A. J. Gremillion	2/98
Traced		
Checked	James N. Moore	2/99

Approved by
Title
Title

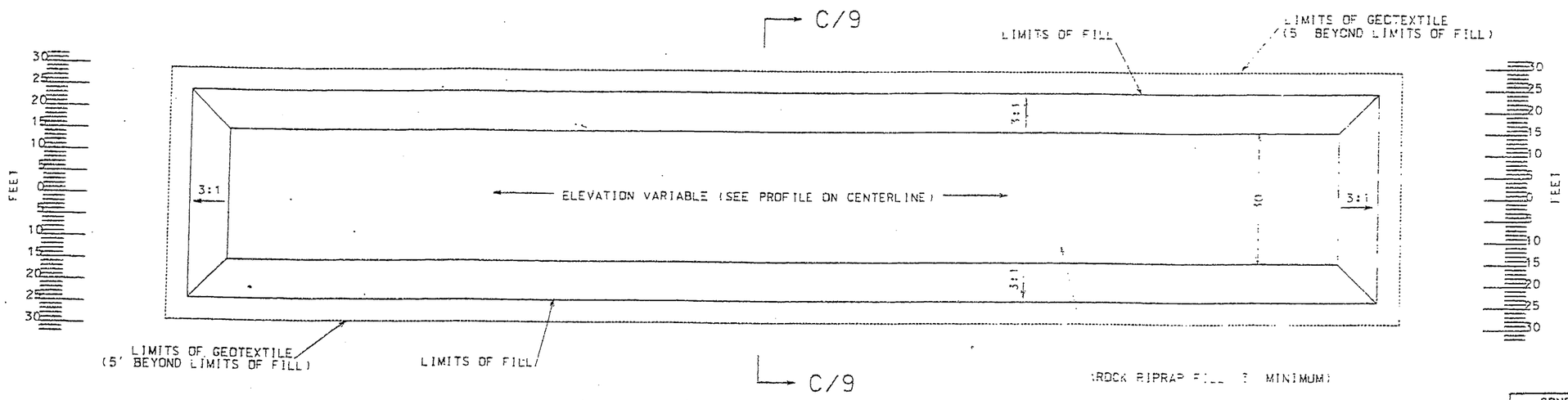
REVISIONS

DATE	APPR.	TITLE

CAD FILE NO. SITE#7
DRAWING NO. LA-231
SHEET NO 8 OF 23

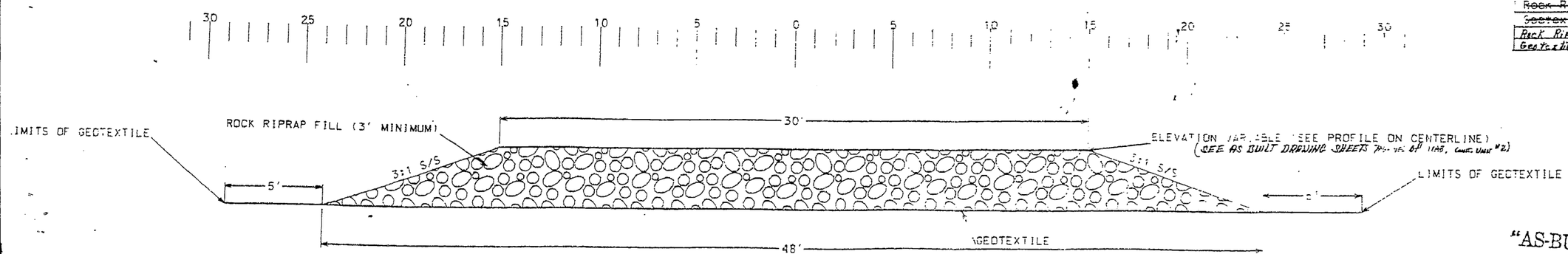


SITE NO. 10 – PROFILE ON CENTERLINE



SITE NO. 10 – PLAN VIEW

CONSTRUCTION LIMITS	
Construction Width	Construction Length
500 ft	500 ft
ESTIMATED QUANTITIES	
~~Rock Riprap~~	~~1800 Tons~~
~~Geotextile~~	~~1840 SY~~
Rock Riprap	2001.6 Tons
Geotextile	1836.7 SY



SECTION "C-C/9"

(NOT TO SCALE)

"AS-BUILT"

STATE OF LOUISIANA
GIERING
REGISTERED PROFESSIONAL ENGINEER
CIVIL ENGINEERING

Designed	C.E. LaFleur	2/98	Approved by
Drawn	A. J. Gremillion	2/98	Title
Traced			
Checked	James N. Moore	2/99	Title

PLAN AND PROFILE – SITE NO. 10
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. – PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE – NATURAL RESOURCES CONSERVATION SERVICE

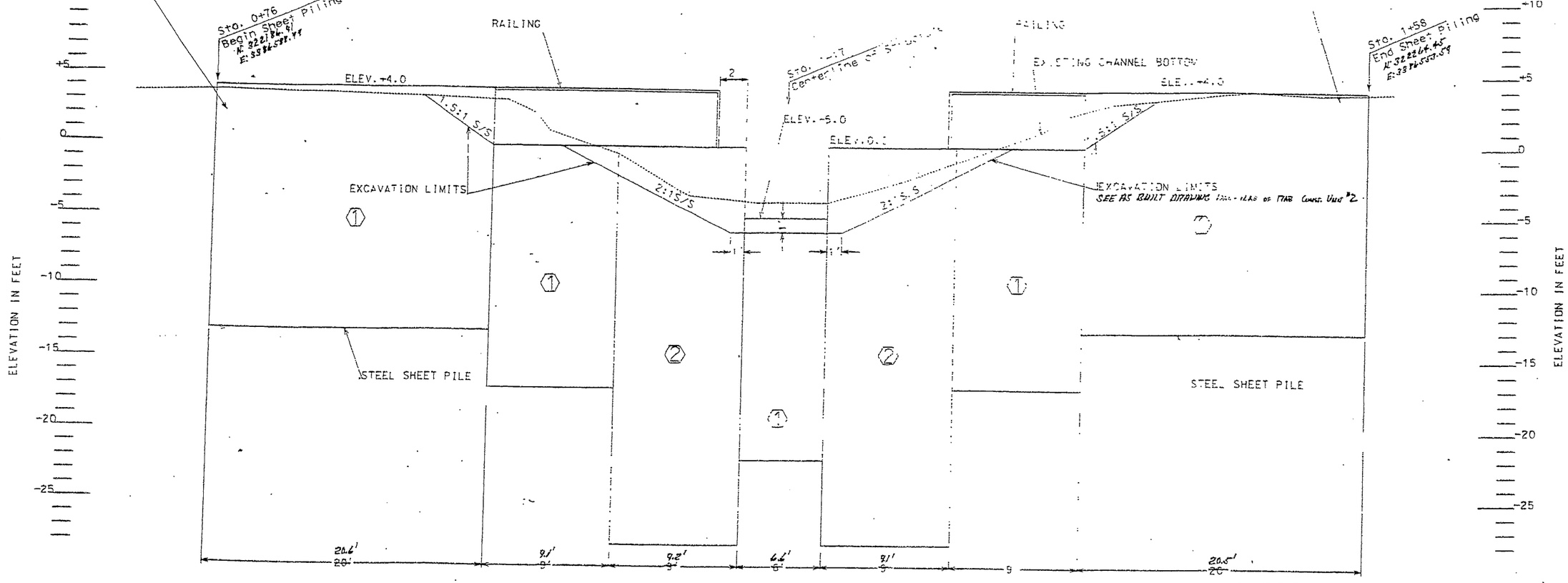
REVISIONS

DATE	APPR.	TITLE

CAD FILE NO. SITE#10

DRAWING NO. LA-231

SHEET NO 9 OF 23

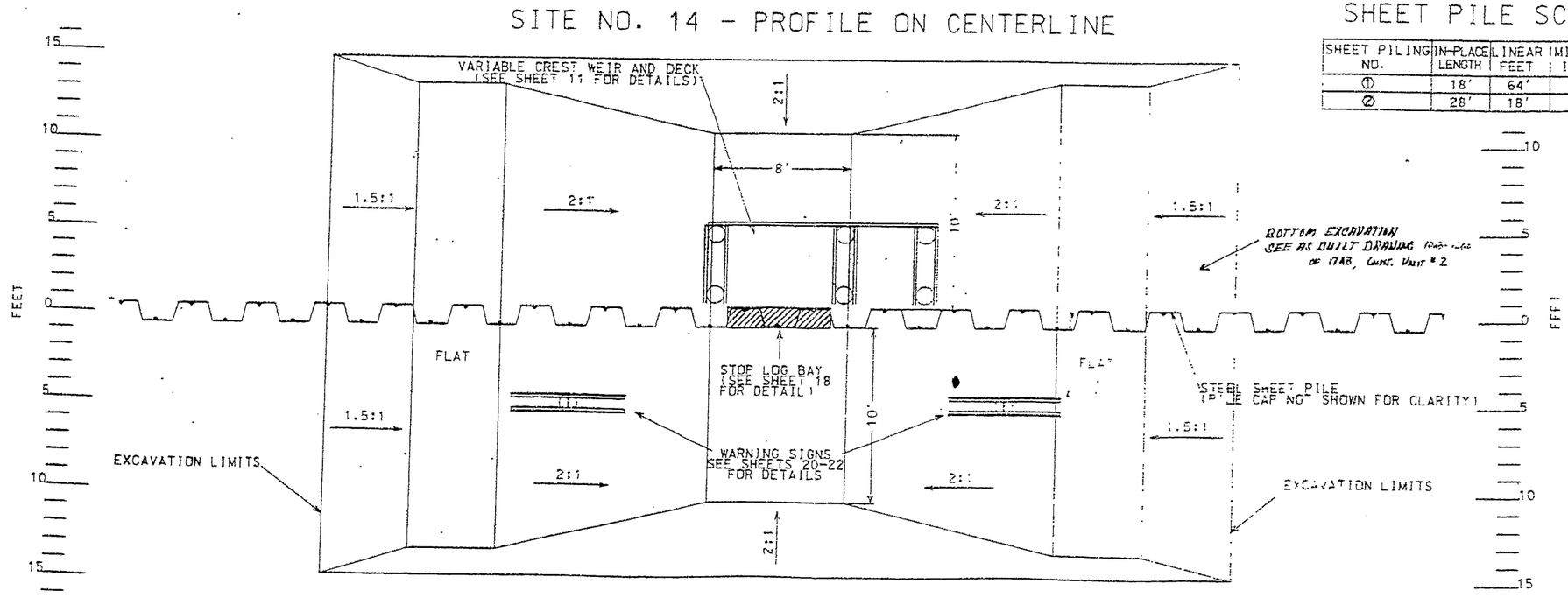


SITE NO. 14 - PROFILE ON CENTERLINE

CONSTRUCTION LIMITS	
Construction Width	Construction Length
305 ft	305 ft

SHEET PILE SCHEDULE

SHEET PILING NO.	IN-PLACE LENGTH	LINEAR FEET	MINIMUM IN³/FT	SUBTOTALS (FT. SQ)	
①	18'	64'	17	~~1152~~	1184.4
②	28'	18'	17	~~504~~	572.4



SITE NO. 14 - PLAN VIEW

(NOT TO SCALE)

"AS-BUILT"

PLAN AND PROFILE - SITE NO. 14
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

		Date	
Designed	C.E. LaFleur	2/98	Approved by
Drawn	A. J. Gremillion	2/98	Title
Traced			
Checked	James N. Moore	2/99	Title

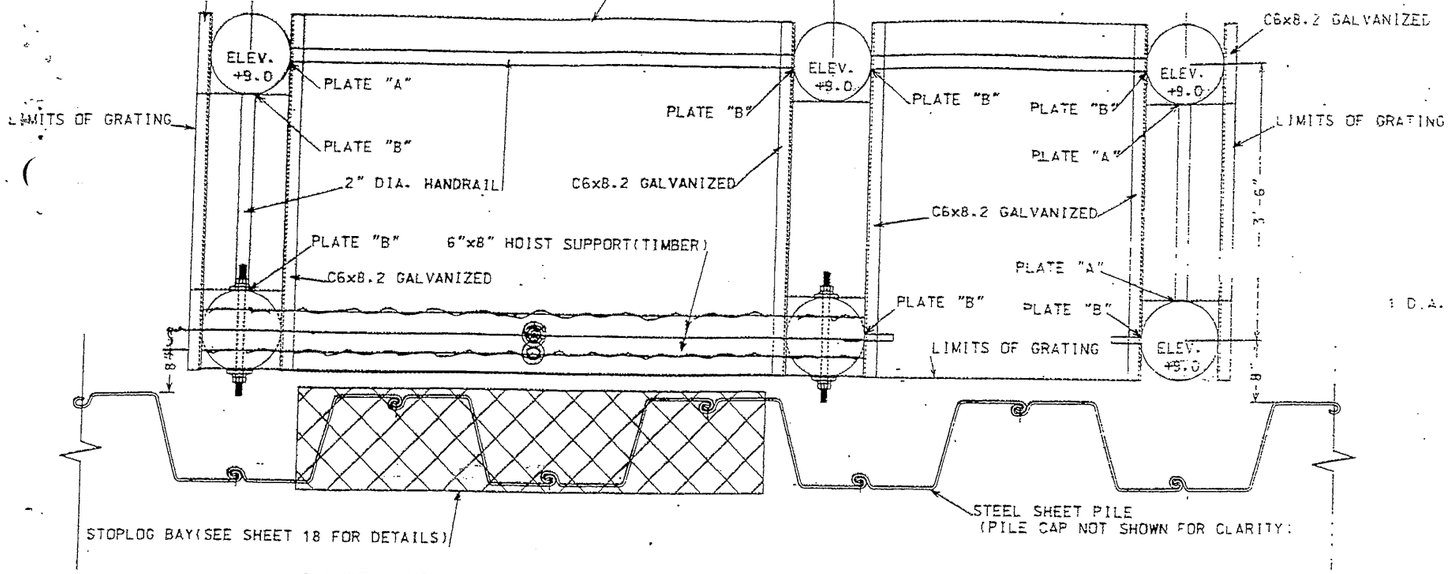
REVISIONS

DATE	APPR.	TITLE

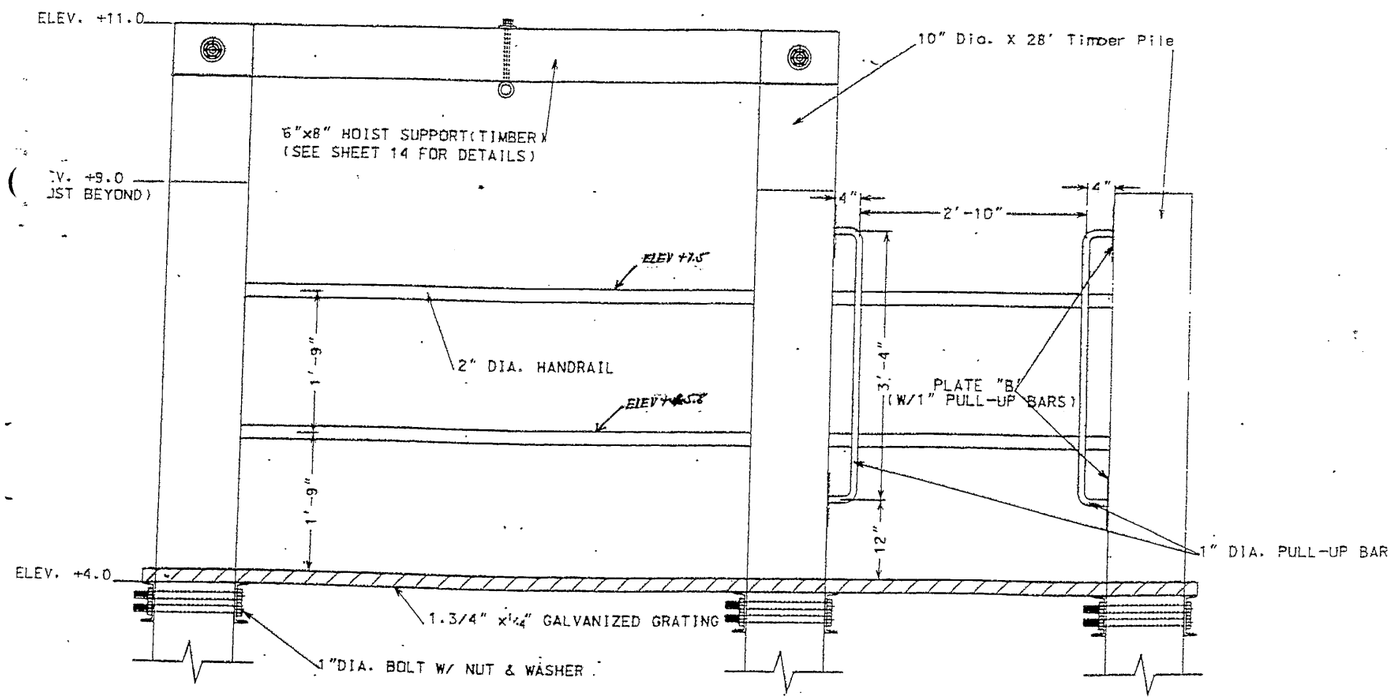
CAD FILE NO. site#14

DRAWING NO. LA-231

SHEET NO 10 OF 23



SITE NO. 14 - DECKING DETAIL (PLAN VIEW)

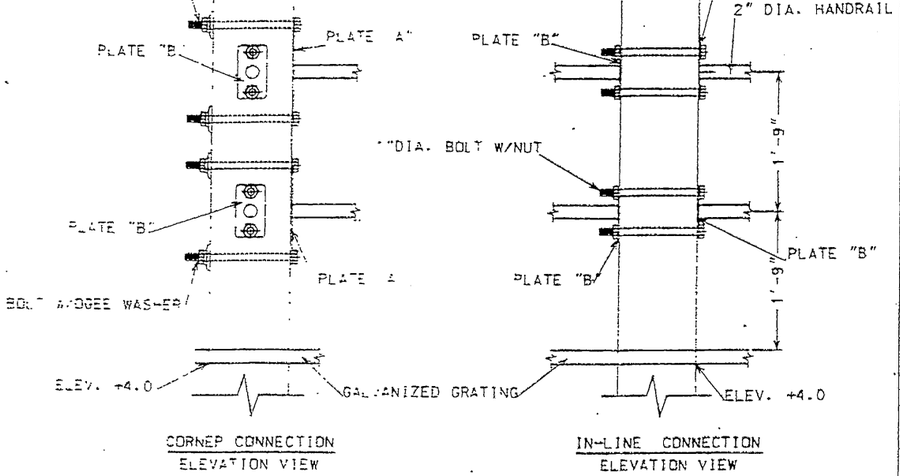


SITE NO. 14 - DECKING DETAIL (ELEVATION VIEW)

NOTES:

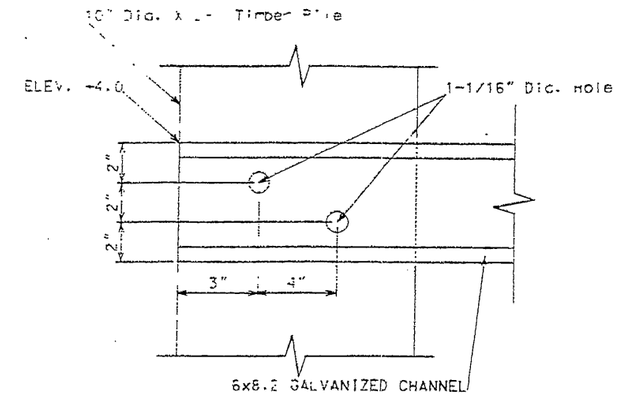
1. ALL TIMBER PILES FOR SITE 14 SHALL BE ASTM D25 10" DIA. x 28'
2. ALL PILES FOR SITE 14 SHALL BE CAPPED AS SHOWN IN THE DETAIL ON SHEET 16.
3. GALVANIZED GRATING SHALL BE ATTACHED PER MANUFACTURER'S RECOMMENDATIONS.
4. SEE SPECIFICATION 82, METAL FABRICATION AND INSTALLATION FOR ADDITIONAL REQUIREMENTS.

(NOT TO SCALE)



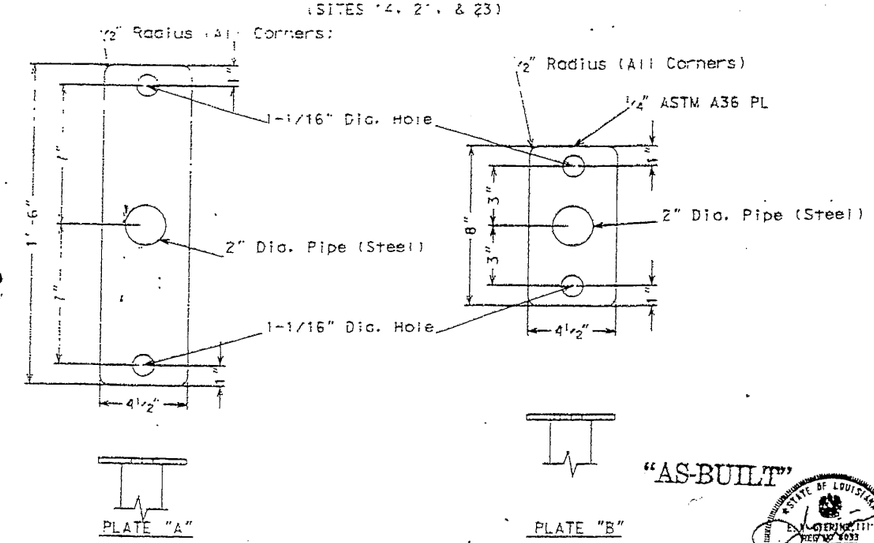
TYPICAL HANDRAIL TO TIMBER PILE CONNECTIONS

(SITES 14, 21, & 23)



CHANNEL TO TIMBER PILE CONNECTION-TYPICAL

(SITES 14, 21, & 23)



"AS-BUILT"

HANDRAIL CONNECTION PLATES-TYPICAL

(SITES 14, 21, & 23)

Designed	C.E.Lafleur	Date	2/98
Drawn	A. J. Gremillion		2/98
Traced			
Checked	James N. Moore		2/99

Approved by ____ Title ____

Title ____

DECKING DETAILS - SITE NO. 14
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

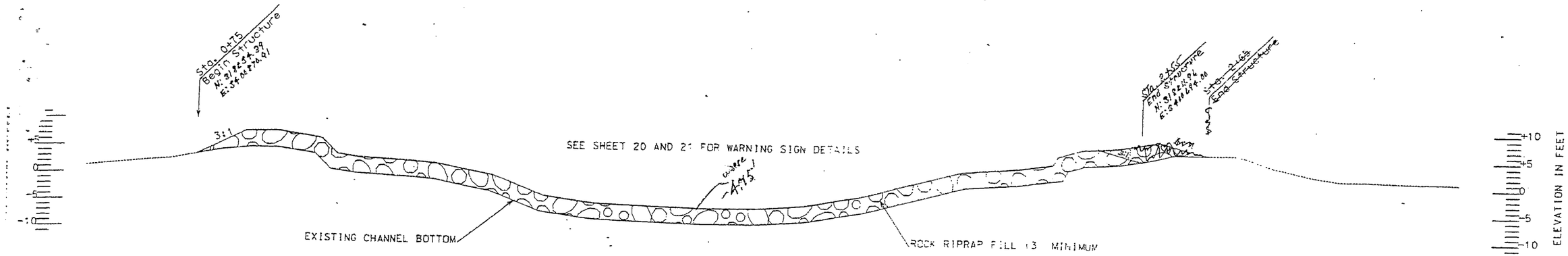
REVISIONS

DATE	APPR.	TITLE

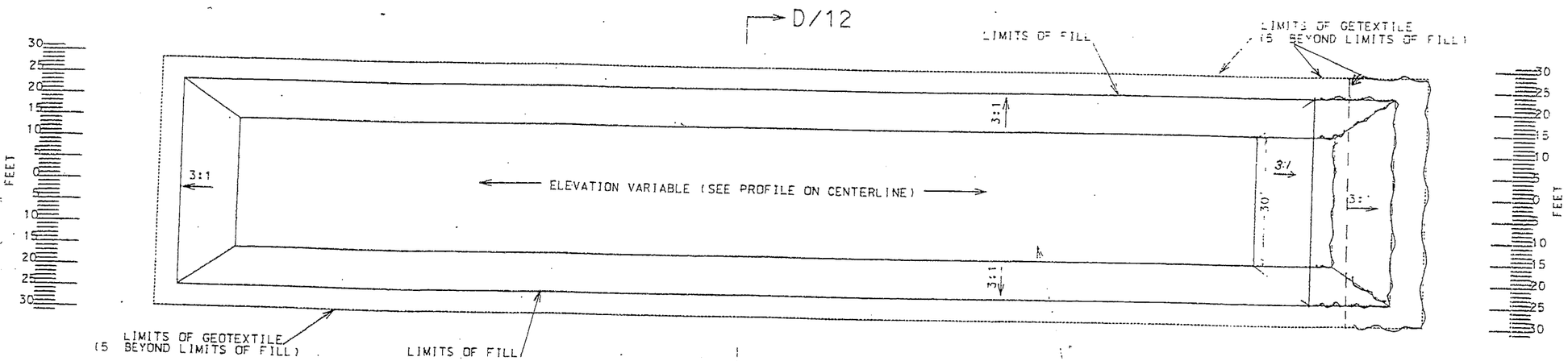
CAD FILE NO. DECK-14

DRAWING NO. LA-231

SHEET NO 11 OF 23

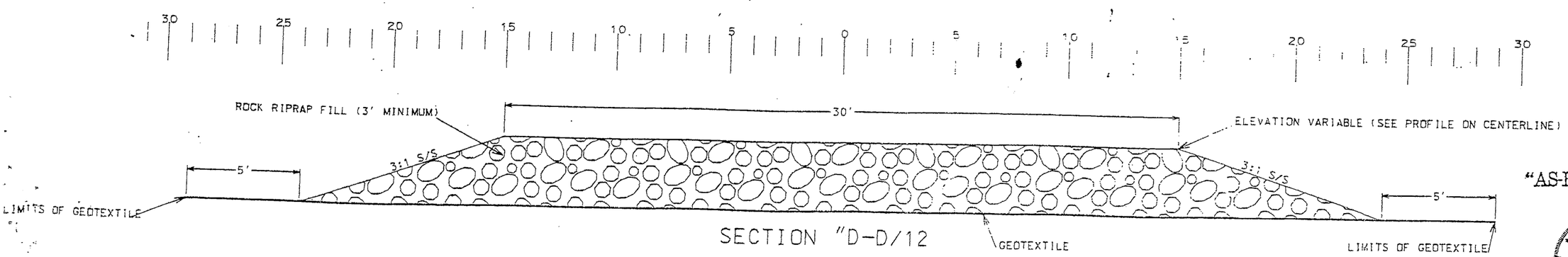


SITE NO. 20 - PROFILE ON CENTERLINE



SITE NO. 20 - PLAN VIEW

CONSTRUCTION LIMITS	
Construction Width	Construction Length
450 ft	300 ft
ESTIMATED QUANTITIES	
Rock Riprap	1300 Tons
Geotextile	1290 SY



SECTION "D-D/12

(NOT TO SCALE)

"AS-BUILT"

STATE OF LOUISIANA
E.J. GIERING
REG NO 8033
REGISTERED PROFESSIONAL ENGINEER
IN CIVIL ENGINEERING

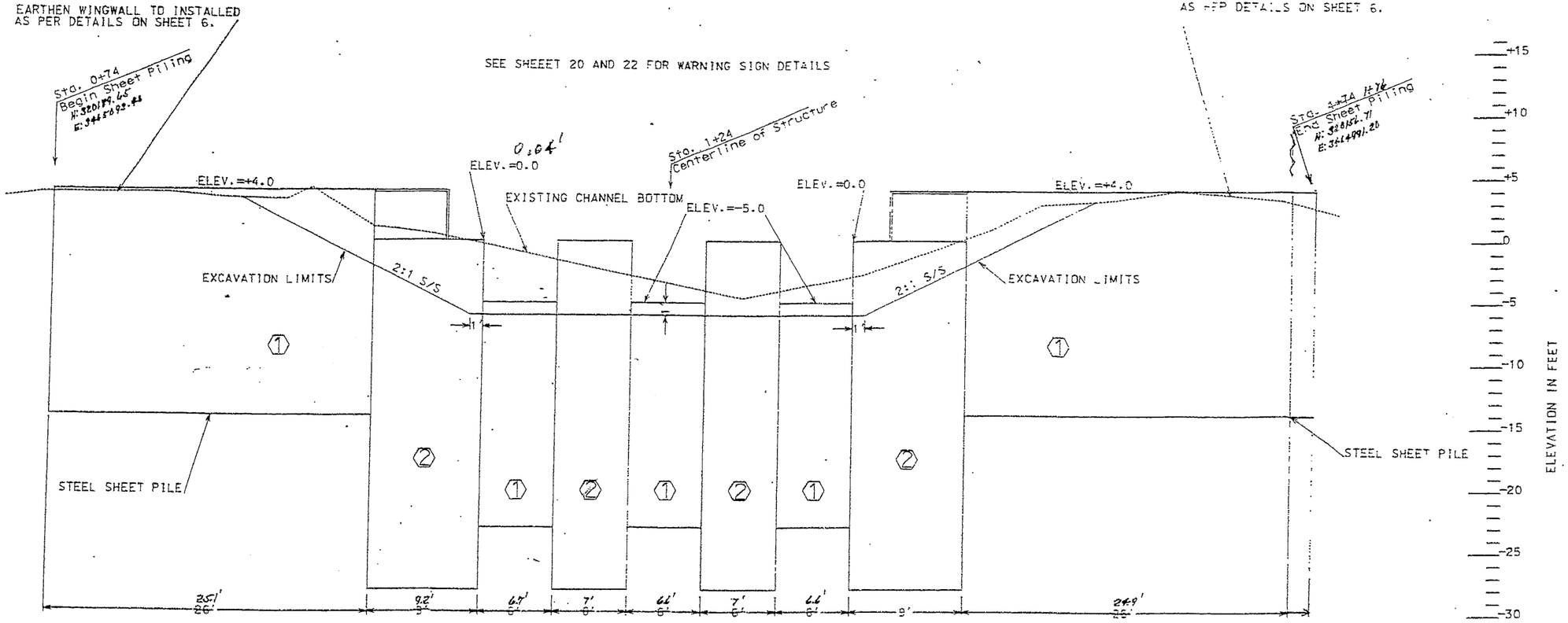
		Date	
Designed	C.E. LaFleur	2/98	Approved by
Drawn	A. J. Gremillion	2/98	Title
Traced			
Checked	James N. Moore	2/99	Title

PLAN AND PROFILE - SITE NO. 20
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS		
DATE	APPR.	TITLE

CAD FILE NO. SITE#20-2
DRAWING NO. LA-231
SHEET NO 12 OF 23



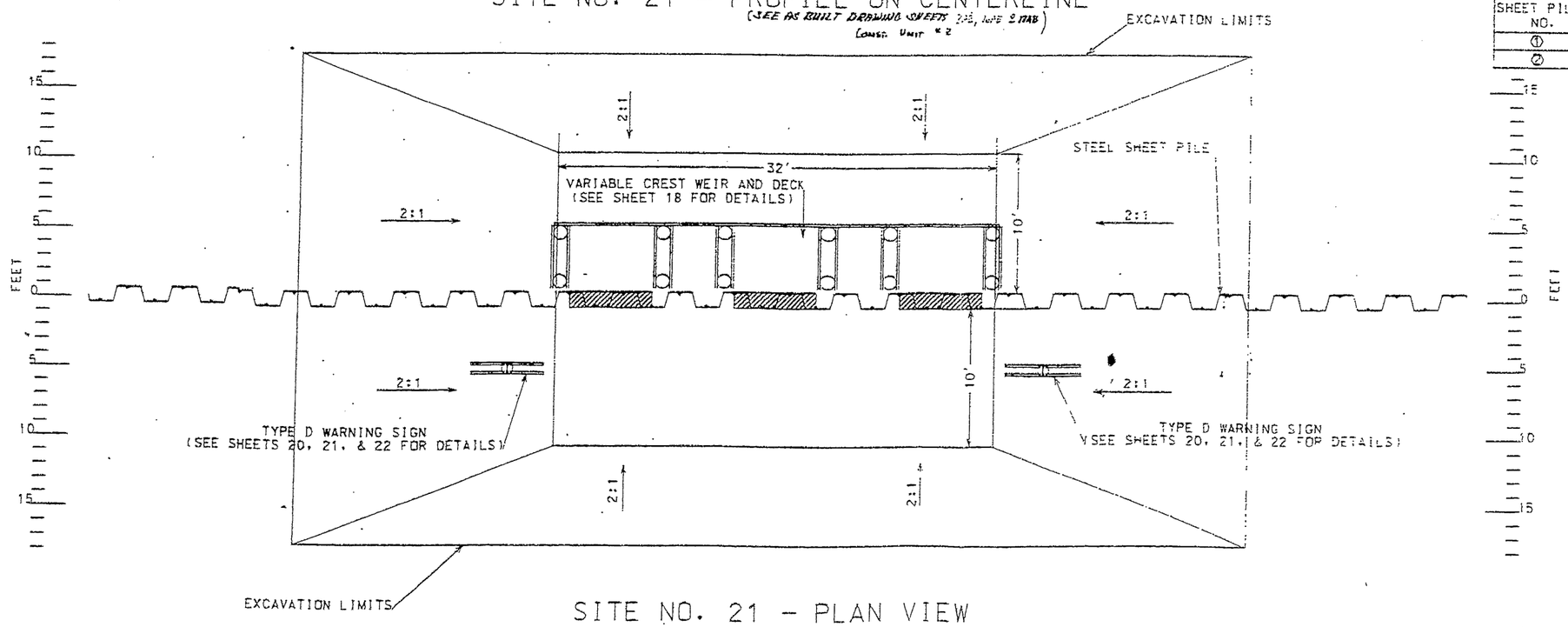
SITE NO. 21 - PROFILE ON CENTERLINE

(SEE AS BUILT DRAWING SHEETS 2-3, 1-2 & 2-TAB)
CONST. UNIT # 2

SHEET PILE SCHEDULE

SHEET PILING NO.	IN-PLACE LENGTH	LINEAR FEET	MINIMUM IN³/FT	SUBTOTALS (FT. SQ)
①	18'	70'	17	~~1260~~
②	28'	30'	17	~~840~~
				1257.8
				901.6

CONSTRUCTION LIMITS	
Construction Width	Construction Length
250 ft	200 ft



SITE NO. 21 - PLAN VIEW

"AS-BUILT"

(NOT TO SCALE)

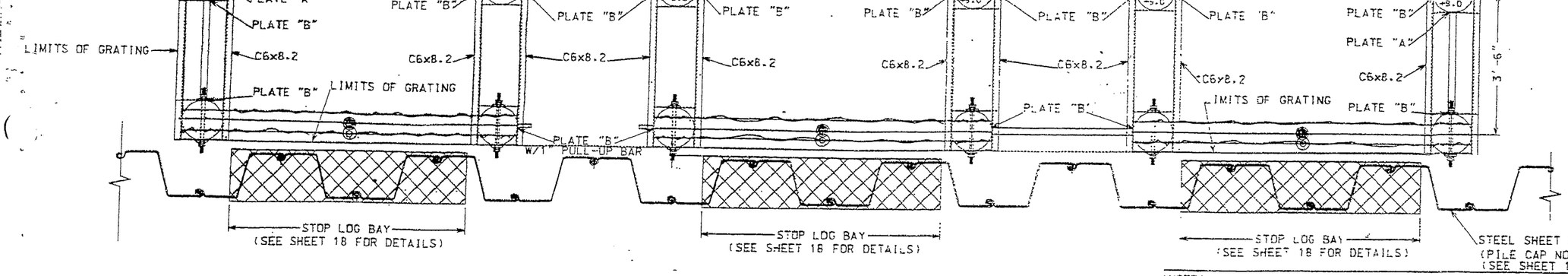
Approved by ..... Date
Designed C.E. LaFleur 2/98
Drawn A. J. Gremillion 2/98
Traced
Checked James N. Moore 2/99
Title
Title

PLAN AND PROFILE - SITE NO. 21
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS | DATE | APPR. | TITLE

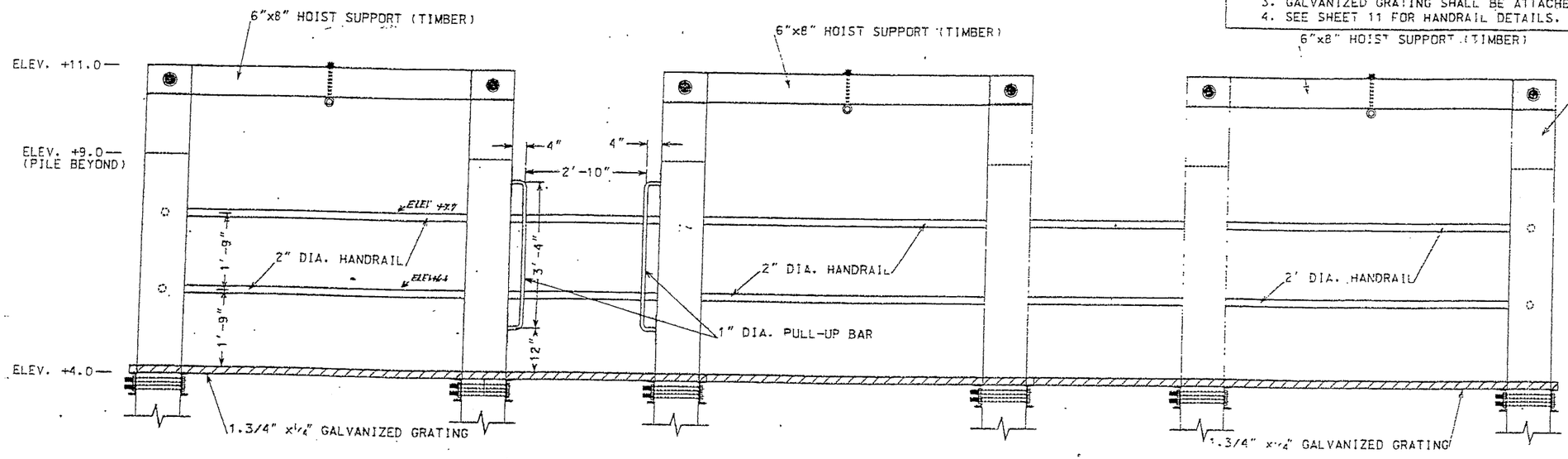
CAD FILE NO. SITE#21-1
DRAWING NO. LA-231
SHEET NO 13 OF 23



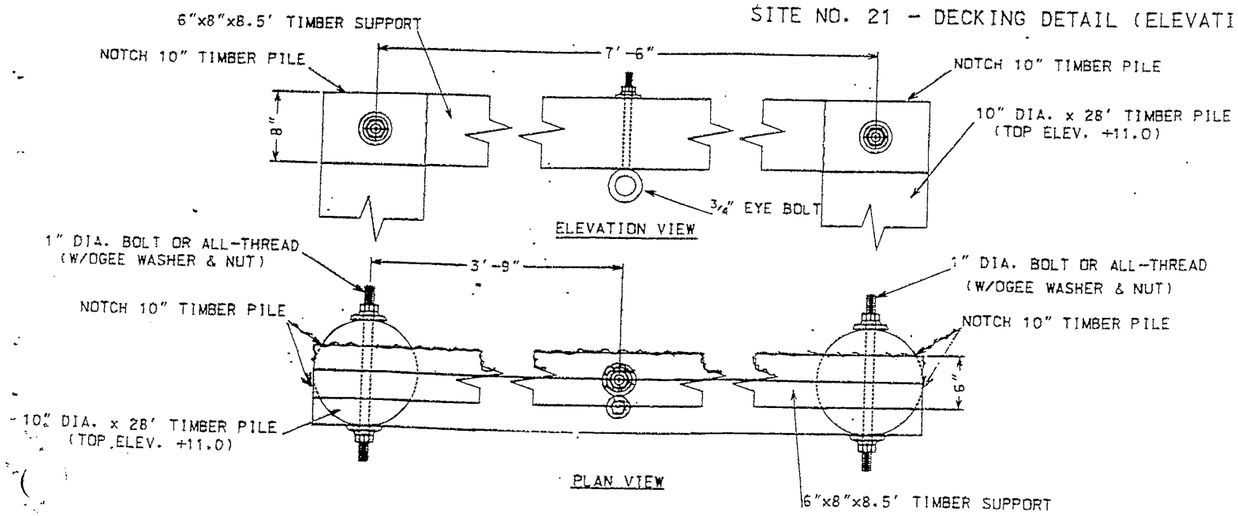
SITE NO. 21 - DECKING DETAIL (PLAN VIEW)

NOTES:

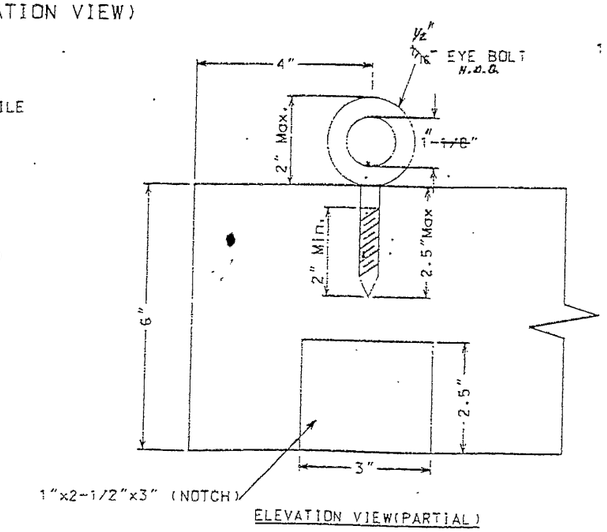
1. ALL TIMBER PILES FOR SITE 21 SHALL BE 10" DIA. x 28'.
2. ALL PILES FOR SITE 21 SHALL BE CAPPED AS SHOWN IN THE DETAIL ON SHEET 16.
3. GALVANIZED GRATING SHALL BE ATTACHED PER MANUFACTURER'S RECOMMENDATIONS.
4. SEE SHEET 11 FOR HANDRAIL DETAILS.

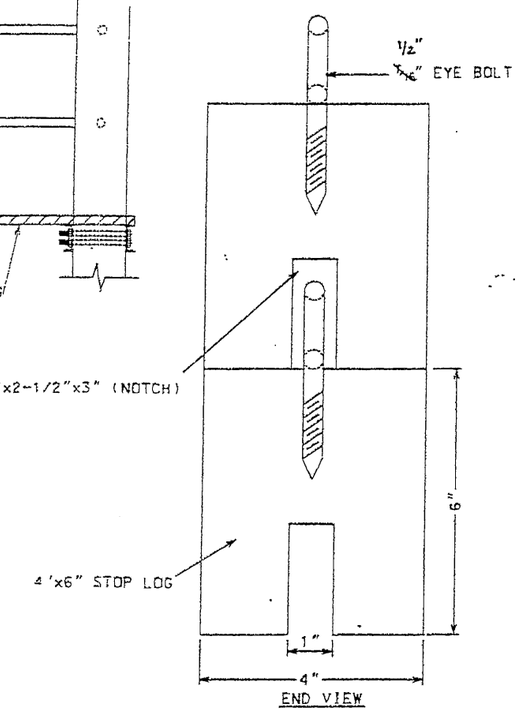


SITE NO. 21 - DECKING DETAIL (ELEVATION VIEW)



HOIST SUPPORT DETAILS
(SITES 14, 21, & 23)





STOP LOG DETAILS

"AS-BUILT"

(SITES 14, 21, & 23)

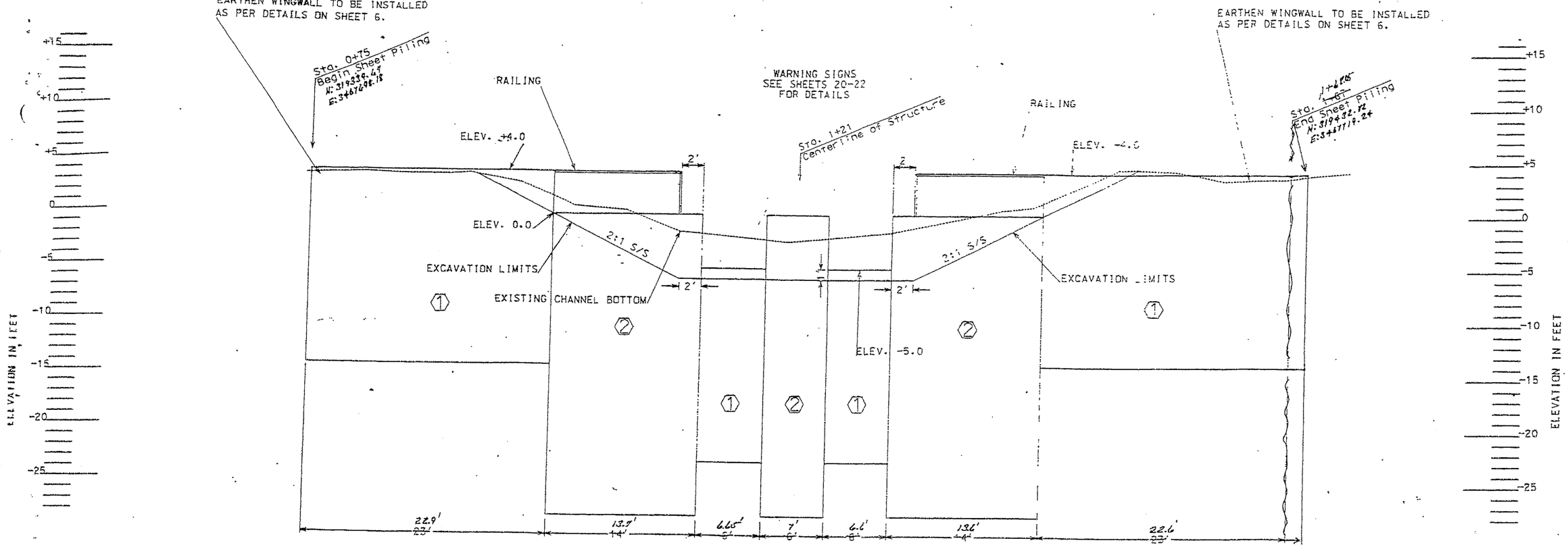
Designed C.E.LeFleur Date 2/98
Drawn A. J. Gremillion 2/98
Traced
Checked James N. Moore 2/99
Approved by
Title
Title

DECKING DETAILS - SITE NO. 21
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS | DATE | APPR. | TITLE

CAD FILE NO. DECK-21
DRAWING NO. LA-231
SHEET NO 14 OF 23

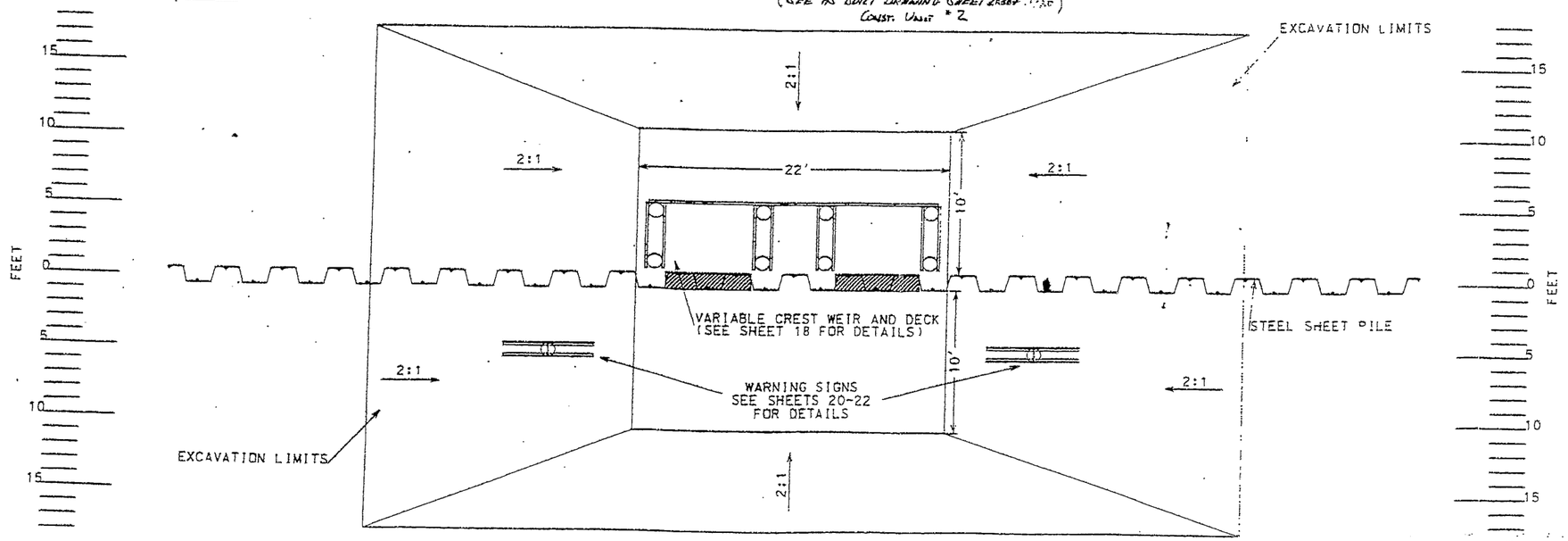


SHEET PILE SCHEDULE

SHEET PILING NO.	IN-PLACE LENGTH	LINEAR FEET	MINIMUM IN³/FT	SUBTOTALS (FT. SQ)	
①	18'	58'	17	~~1044~~	1057.5
②	28'	34'	17	~~952~~	960.4

CONSTRUCTION LIMITS	
Construction Width	Construction Length
250 ft	300 ft

SITE NO. 23 - PROFILE ON CENTERLINE
(SEE AS BUILT DRAWING SHEET 23 of 23)
CONST. UNIT #2



SITE NO. 23 - PLAN VIEW

(NOT TO SCALE)

"AS-BUILT"

STATE OF LOUISIANA
E.J. GIERING III
REG. NO. 8033
REGISTERED PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

PLAN AND PROFILE - SITE NO. 23
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

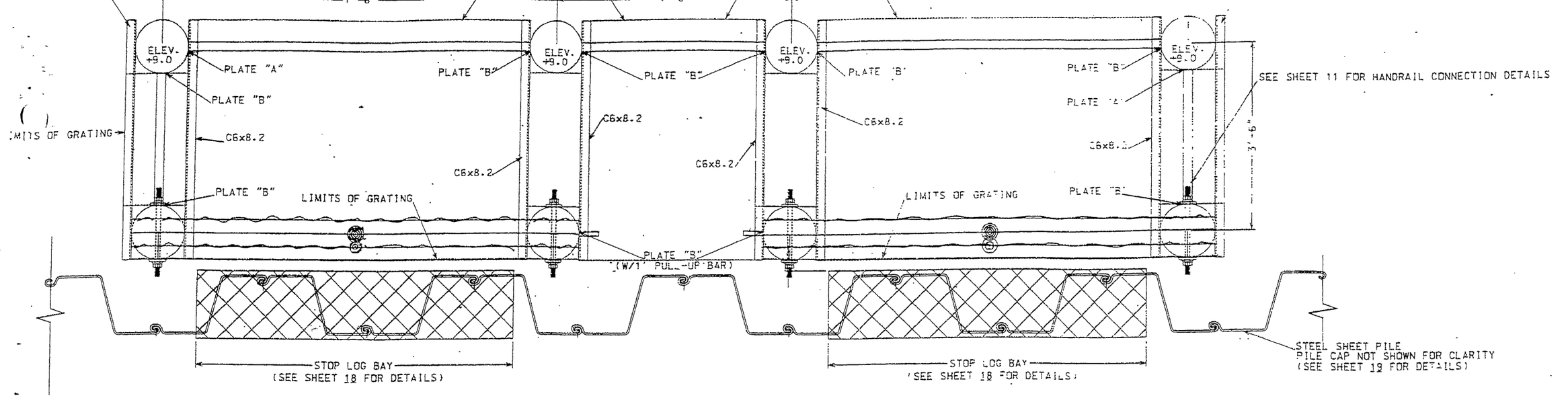
		Date
Designed	C.E. LaFleur	2/98
Drawn	A. J. Gremillion	2/98
Traced		
Checked	James N. Moore	2/99

Approved by
Title
Title

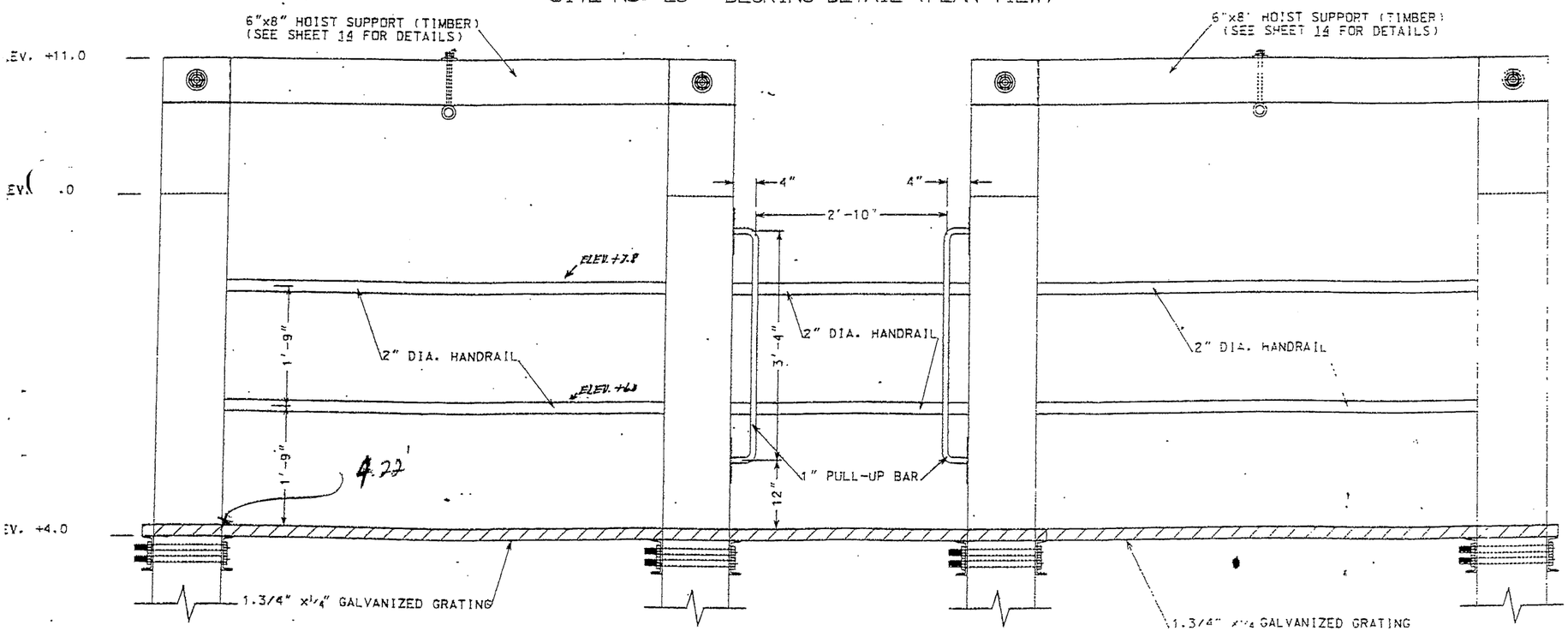
REVISIONS

DATE	APPR.	TITLE

CAD FILE NO. 23-DESIGN
DRAWING NO. LA-231
SHEET NO 15 OF 23

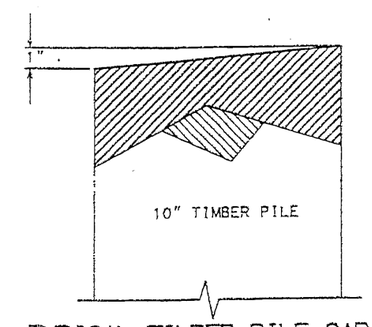


SITE NO. 23 – DECKING DETAIL (PLAN VIEW)

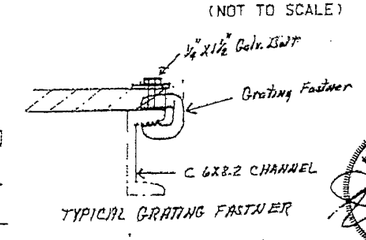


SITE NO. 23 – DECKING DETAIL (ELEVATION VIEW)

COAT TOP OF PILE WITH COAL TAR EPOXY PAINT PRIOR TO PLACING CAP.
24"x24"x26 GA. ~~ALUMINUM~~ GALVANIZED FLASHING
(ATTACH USING ~~ALUMINUM~~ GALVANIZED OR STAINLESS NAILS)



TYPICAL TIMBER PILE CAP
(NOT TO SCALE)



TYPICAL GRATING FASTNER

"AS-BUILT"

NOTES:
1. ALL TIMBER PILES FOR SITE 23 SHALL BE 10" DIA. x 28'.
2. ALL PILES FOR SITE 23 SHALL BE CAPPED AS SHOWN IN THE DETAIL ON SHEET 16.
3. GALVANIZED GRATING SHALL BE ATTACHED PER MANUFACTURER'S RECOMMENDATIONS.

(NOT TO SCALE)

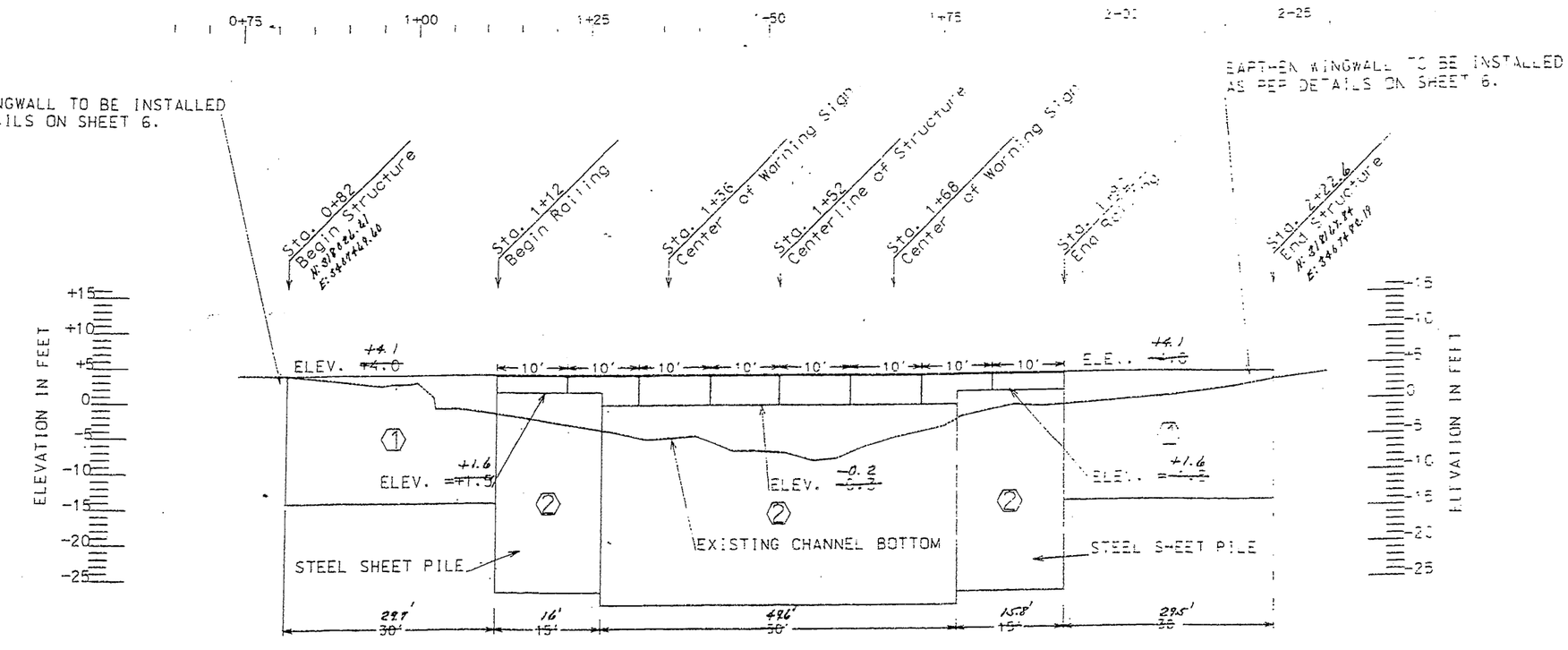
		Date
Approved by		
Title		
Designed	C.E.LaFleur	2/98
Drawn	A. J. Gremillion	2/98
Traced		
Checked	James N. Moore	2/98
Title		

DECKING DETAILS – SITE NO. 23
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. – PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE – NATURAL RESOURCES CONSERVATION SERVICE

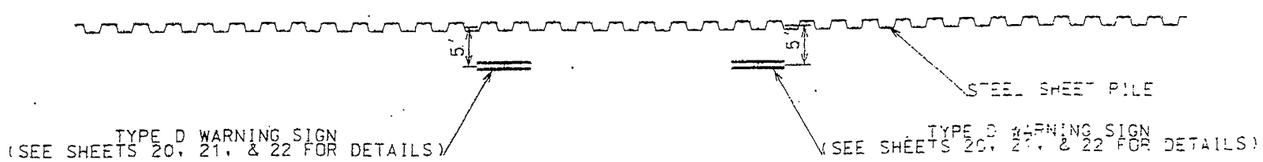
REVISIONS		
DATE	APPR.	TITLE

CAD FILE NO. DECK-23
DRAWING NO. LA-231
SHEET NO 16 OF 23



SEE SHEET 20 AND 22 FOR WARNING SIGN DETAILS

SITE NO. 24 - PROFILE ON CENTERLINE



SITE NO. 24 - PLAN VIEW

(PILE CAP NOT SHOWN FOR CLARITY.

SHEET PILE SCHEDULE

SHEET PILING NO.	IN-PLACE LENGTH	LINEAR FEET	MINIMUM IN^3/FT	SUBTOTALS (FT. SQ)	
①	18'	60'	17	~~1080~~	1065.6
②	28'	80'	17	~~2240~~	2279.2

CONSTRUCTION LIMITS	
Construction Width	Construction Length
250 ft	250 ft

"AS-BUILT"

(NOT TO SCALE)

	Date	
Designed C.E. LaFleur	2/98	Approved by
Drawn A. J. Gremillion	2/98	Title
Traced		
Checked James N. Moore	2/99	Title

PLAN AND PROFILE - SITE NO. 24
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

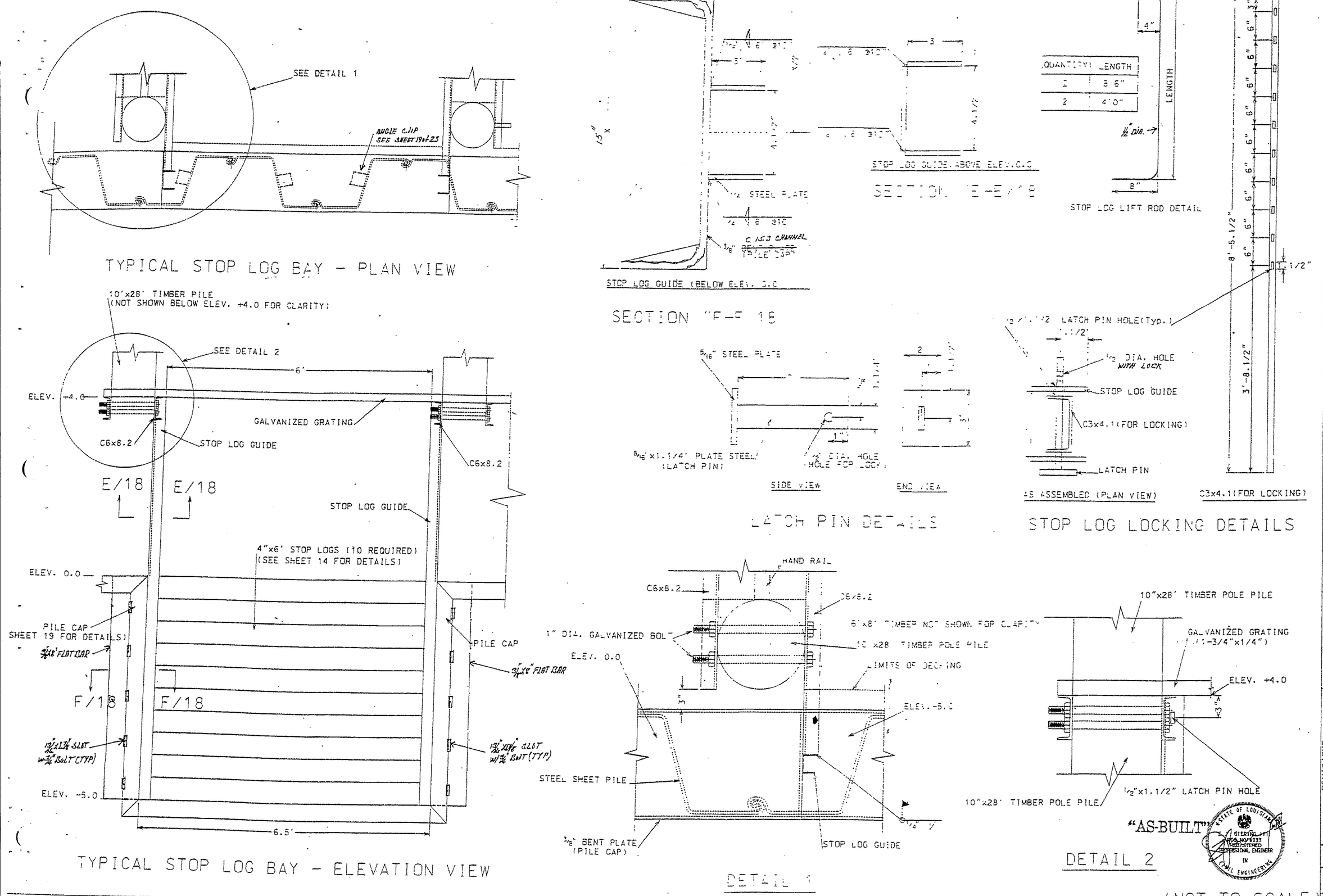
REVISIONS

DATE	APPR.	TITLE

CAD FILE NO. SITE#24-3

DRAWING NO. LA-231

SHEET NO 17 OF 23



(NOT TO SCALE)

STOP LOG BAY DETAILS (TYPICAL)
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

		Date	
Designed	C.E.LaFleur	2/98	Approved by
Drawn	A. J. Gremillion	2/98	Title
Traced			
Checked	James N. Moore	2/99	Title

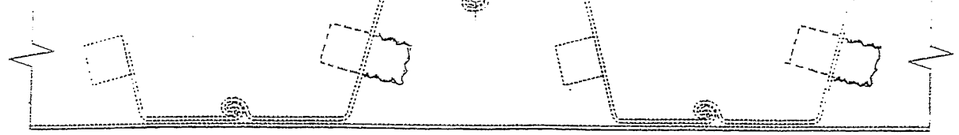
REVISIONS

DATE	APPR.	TITLE

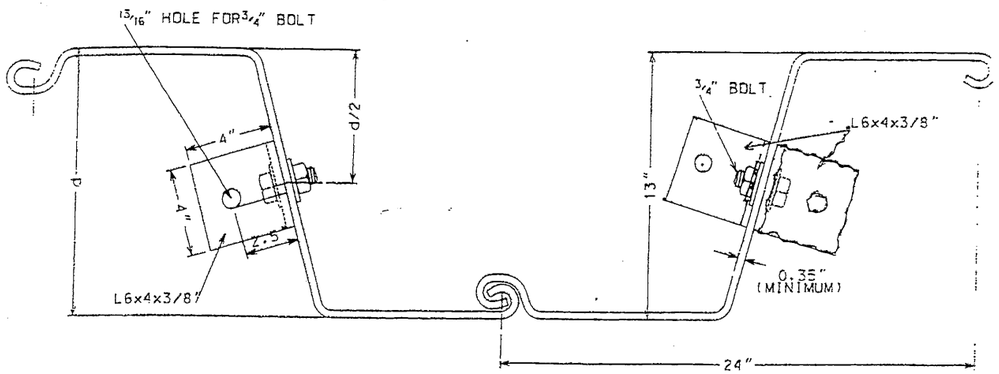
CAD FILE NO. STOP-LOG-BAY

DRAWING NO. LA-231

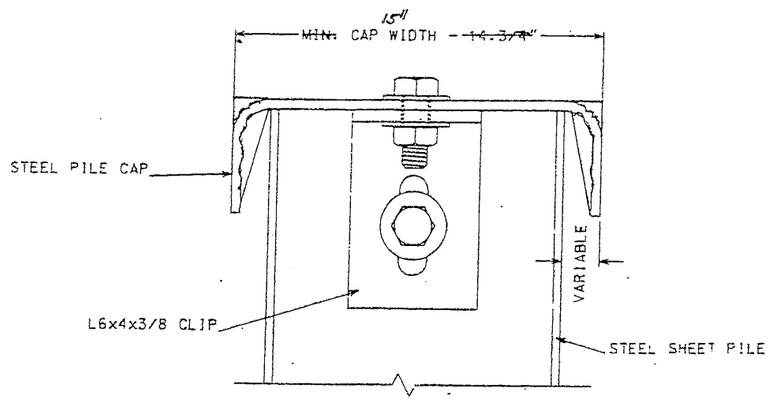
SHEET NO 18 OF 23



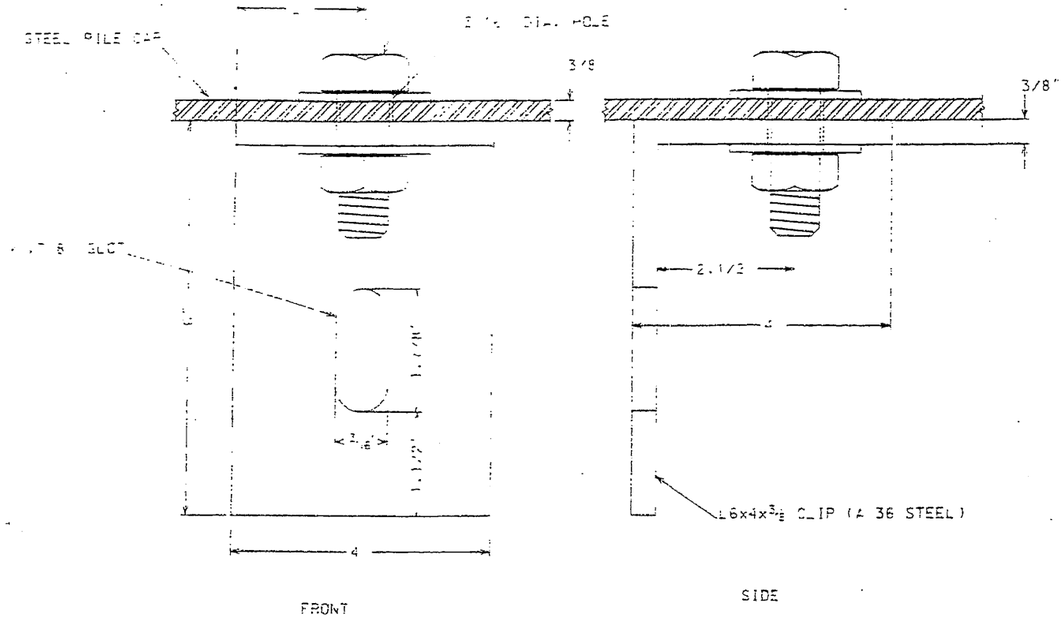
PLAN VIEW
(TYPICAL PILE CAP TO SHEET PILE CONNECTION)



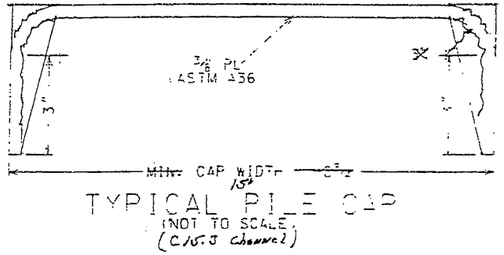
TYPICAL SHEET PILE DETAIL
(NORMAL CONFIGURATION)



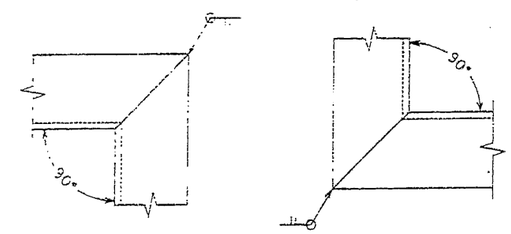
TYPICAL PILE CAP TO SHEET PILE CONNECTION
(SIDE VIEW)



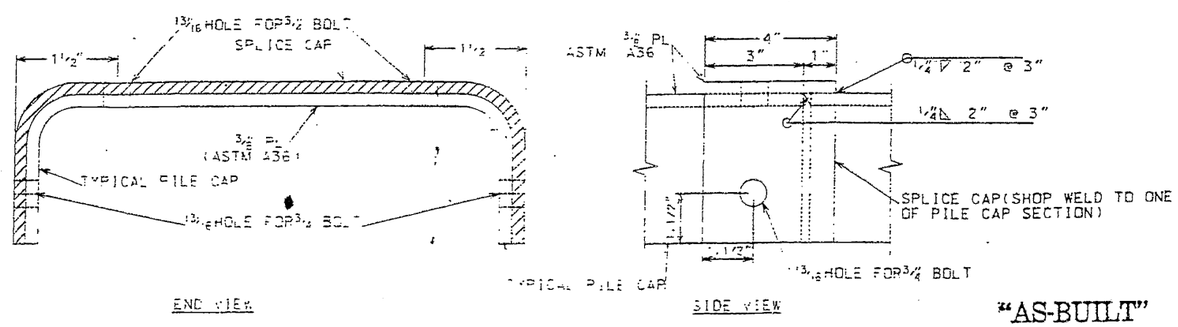
L 6 x 4 x 3/8" (CLIP)



TYPICAL PILE CAP
(NOT TO SCALE)
(C15.3 channel)



90° PILE CAP TRANSITION
(NOT TO SCALE)



PILE CAP SPLICE DETAILS
(NOT TO SCALE)

NOTE: THE CONTRACTOR SHALL BE ALLOWED TO UTILIZE AN APPROPRIATE STANDARD CHANNEL SECTION IN-LIEU OF A FABRICATED PILE CAP. REFER TO CONSTRUCTION SPECIFICATION 81, METAL FABRICATION AND INSTALLATION FOR ADDITIONAL REQUIREMENTS

NOTES:

1. THE MINIMUM WEB AND FLANGE THICKNESS OF SHEET PILES SHALL BE 0.35".
2. THE CONTRACTOR SHALL SUBMIT A METHOD OF CONNECTING THE PILE CAP TO THE SHEET PILE AND ALL DRAWINGS FOR APPROVAL 14 DAYS PRIOR TO FABRICATION.
3. STEEL SHEET PILE SHALL CONFORM TO ASTM A328 OR ASTM A572, GR. 50. ALL CHANNEL, ANGLES AND PLATES SHALL CONFORM TO ASTM A36. THE SHEET PILE AND PILE CAP SHALL BE COATED WITH COAL TAR EPOXY AS SPECIFIED BY CONST. SPEC. 82.
4. ALL SHEET PILE DIMENSIONS ARE TYPICAL, AND ARE SUBJECT TO CHANGE BASED ON MANUFACTURER/SUPPLIER.
5. SHEET PILE WILL BE DRIVEN IN THE "NORMAL CONFIGURATION" AS SHOWN.
6. THE HOLES IN THE SHEET PILE SHALL BE FIELD DRILLED.
7. THE L 6x4x3/8" CLIPS ARE TO BE PLACED ON THE MIDDLE SECTION OF EACH PILE AS SHOWN IN THE DRAWINGS.
8. PILE CAP SHALL BE PLACED ALONG THE ENTIRE LENGTH OF THE SHEET PILE INCLUDING VERTICAL SECTIONS AND THE BOTTOM OF THE WEIR BAYS.

"AS-BUILT"

STATE OF LOUISIANA
E.J. GIERING, III
REG. NO. 8033
REGISTERED PROFESSIONAL ENGINEER
IN CIVIL ENGINEERING

NOT TO SCALE

		Date	
Designed	C.E. LaFleur	2/98	Approved by
Drawn	A. J. Gremillion	2/98	Title
Traced			
Checked	James N. Moore	2/99	Title

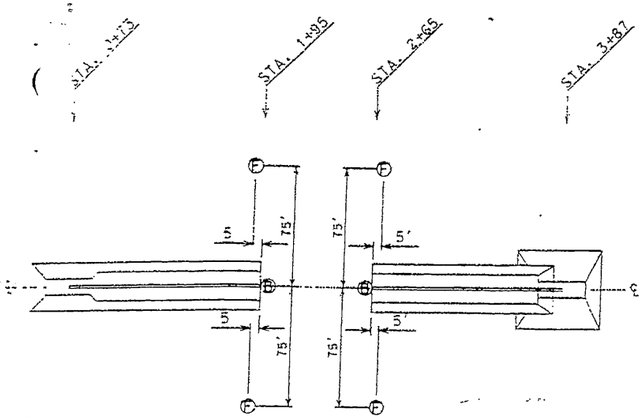
PILE CAP TO SHEET PILE - DETAILS
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

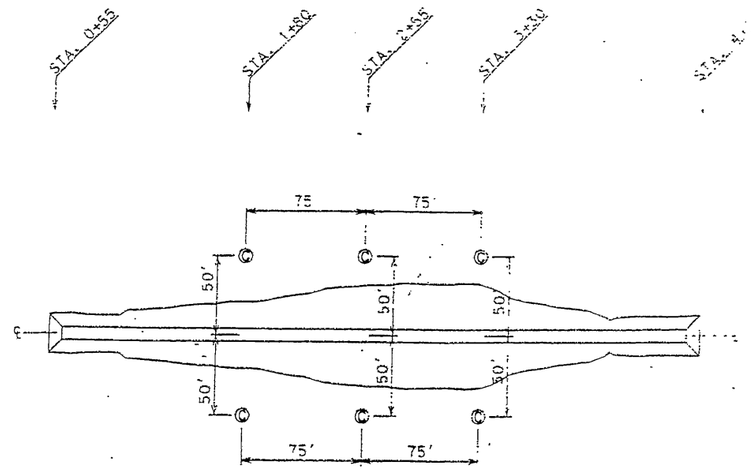
REVISIONS

DATE	APPR.	TITLE

CAD FILE NO. brady-pile-clip
DRAWING NO. LA-231 -
SHEET NO 19 OF 23

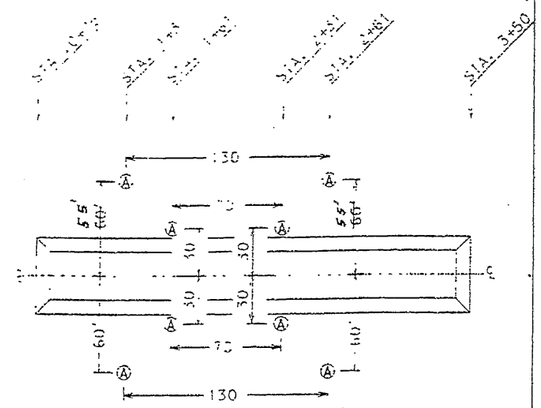


SITE 6-PLAN
SIGN DETAILS

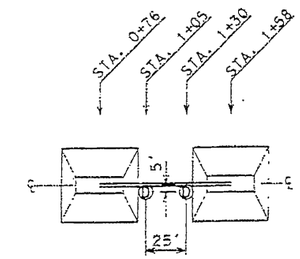


THE SIX (6) SIGNS REQUIRED AT SITE 7 WILL BE SUPPLIED BY NRCS AT NO COST TO THE CONTRACTOR.

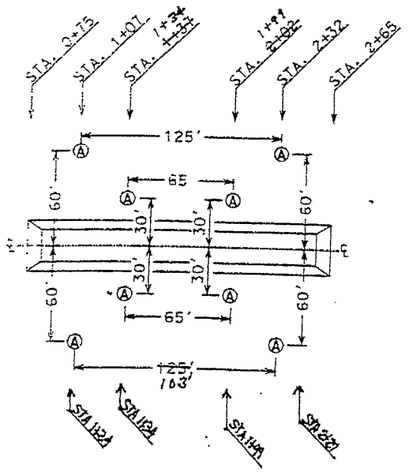
SITE 7-PLAN
SIGN DETAILS



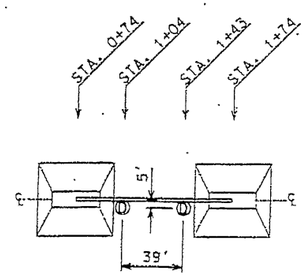
SITE 10-PLAN
SIGN DETAILS



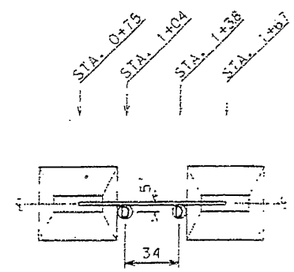
SITE 14-PLAN
SIGN DETAILS



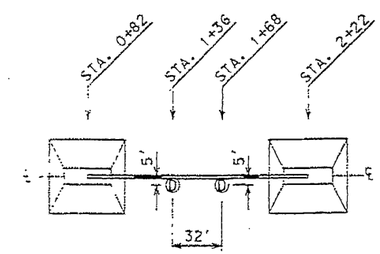
SITE 20-PLAN
SIGN DETAILS



SITE 21-PLAN
SIGN DETAILS



SITE 23-PLAN
SIGN DETAILS



SITE 24-PLAN
SIGN DETAILS

SIGN DETAIL LEGEND

Ⓐ—12"x50' TIMBER PILE WITH WARNING SIGN (DANGER OBSTRUCTION PROCEED WITH CAUTION, AND DIRECTIONAL SIGN.)

Ⓑ—12"x50' TIMBER PILE WITH WARNING SIGN (DANGER OBSTRUCTION PROCEED WITH CAUTION, AND DIRECTIONAL SIGN, BOTH FACES.)

Ⓒ—12"x50' TIMBER PILE WITH WARNING SIGN (DANGER DO NOT PROCEED)

Ⓓ—12"X50' TIMBER PILE WITH WARNING SIGN (DANGER DO NOT PROCEED, BOTH FACES.)

Ⓕ—12"X50' 4 -TIMBER PILE CLUSTER WITH NAVIGATION AID SIGNS AND NAVIGATION OBSTRUCTION LIGHT

50 0 50 100 150 200
SCALE IN FEET

"AS-BUILT"

STATE OF LOUISIANA
E. J. GIERING, III
REG. NO. 8433
REGISTERED PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

Approved by
Title
Title

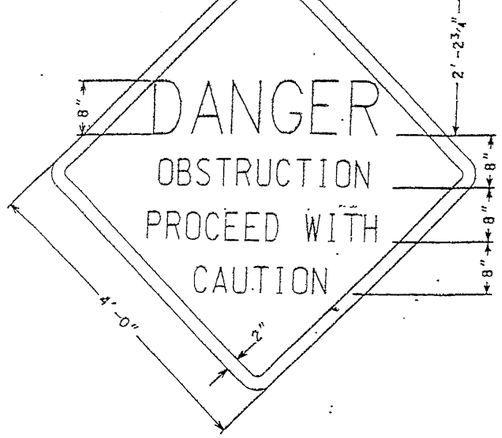
Date
Designed Cherie LaFleur
Drawn A. J. Gramillion
Traced
Checked James N. Moore

WARNING SIGN LOCATIONS
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

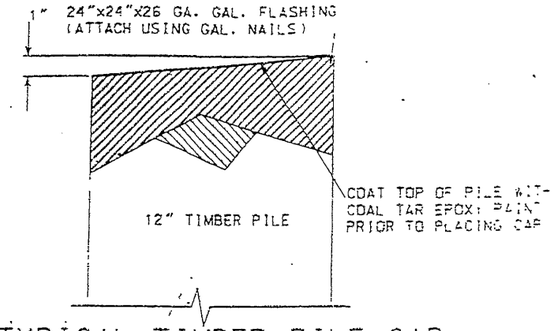
U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS		
DATE	APPR.	TITLE

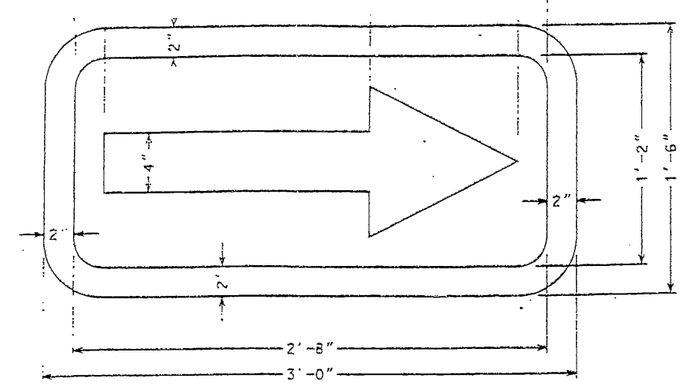
CAD FILE NO. sign-plan
DRAWING NO. LA-231
SHEET NO 20 OF 23



WARNING SIGN DETAILS
(USED WITH SIGN TYPE A AND B)

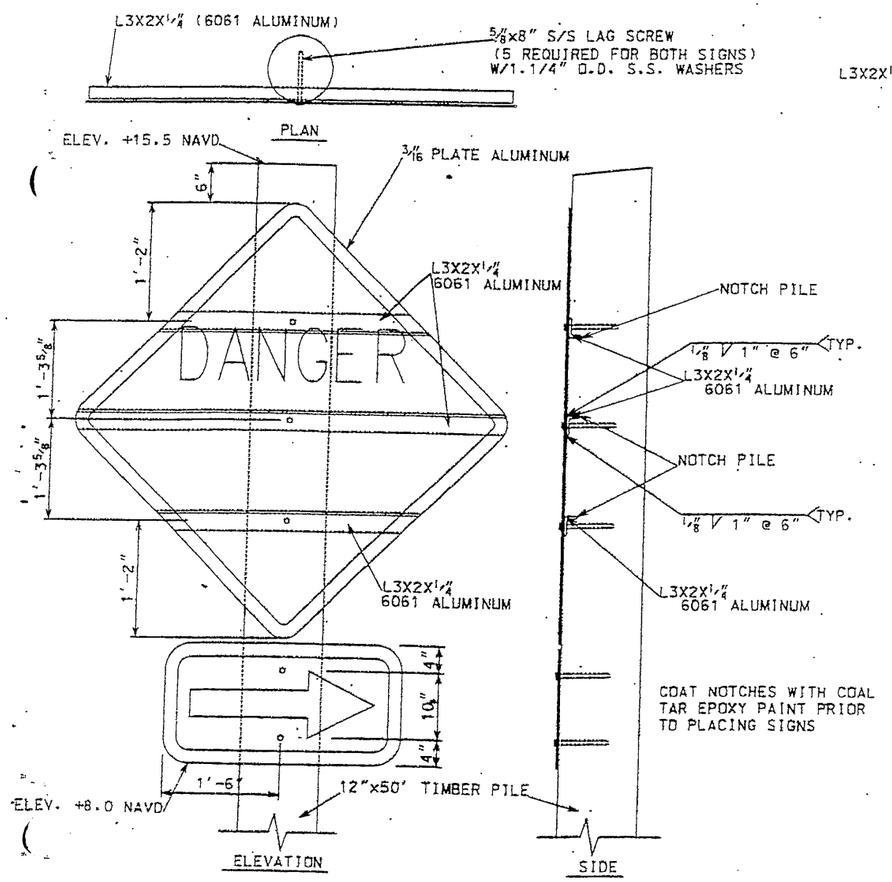


TYPICAL TIMBER PILE CAP
(NOT TO SCALE)

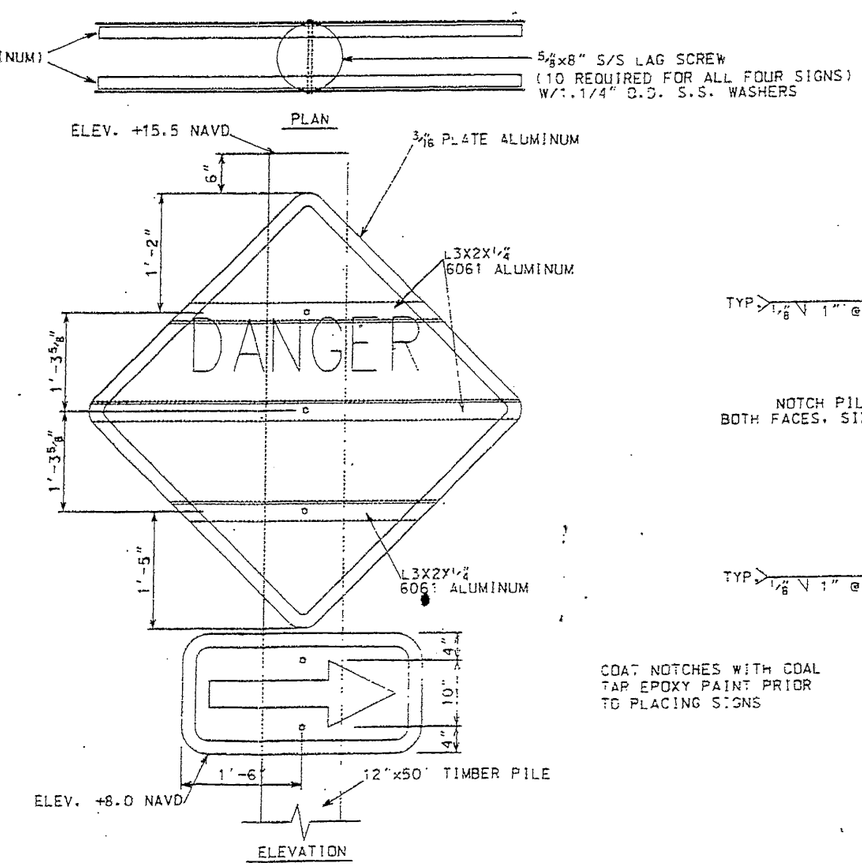


DIRECTIONAL SIGN DETAILS
(USED WITH SIGN TYPE A AND B)

NOTES:
1. SIGNS SHALL BE CONSTRUCTED USING 3/16" PLATE 6061 ALUMINUM.
2. THE 2" BORDER SHALL BE A RETRO-REFLECTIVE MATERIAL OF ORANGE COLOR
3. THE LETTERING AND ARROW FIELD SHALL BE A RETRO-REFLECTIVE MATERIAL OF WHITE COLOR
4. THE LETTERING AND ARROWS FOR THE SIGNS SHALL BE BLACK.



SIGN TYPE A - DETAILS
(USED AT STRUCTURES 10 & 20)



SIGN TYPE B - DETAILS
(USED AT STRUCTURE 6)

"AS-BUILT"

STATE OF LOUISIANA
E. J. GIRARDING, JR.
NO. 24033
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

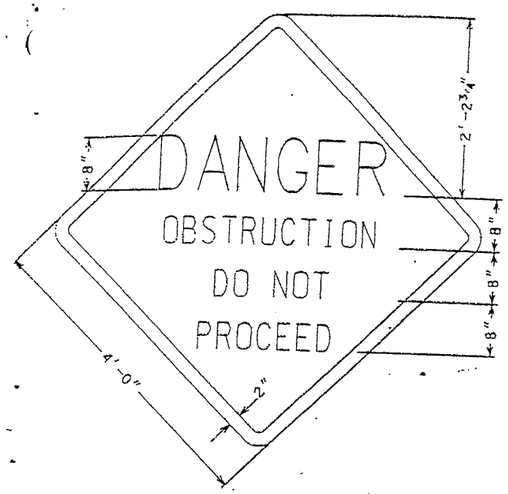
	Date		
Designed G.E.LaFleur	2/98	Approved by	
Drawn A. J. Gremillion	2/98	Title	
Traced			
Checked James N. Moore	2/99	Title	

WARNING SIGN DETAIL
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

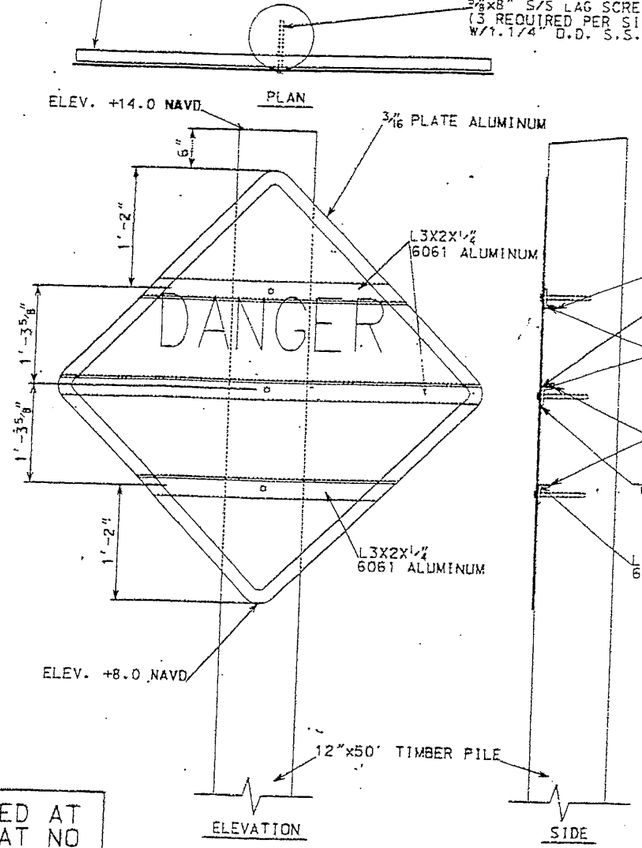
REVISIONS		
DATE	APPR.	TITLE

CAD FILE NO. SIGN-DET1
DRAWING NO. LA-231
SHEET NO 21 OF 23



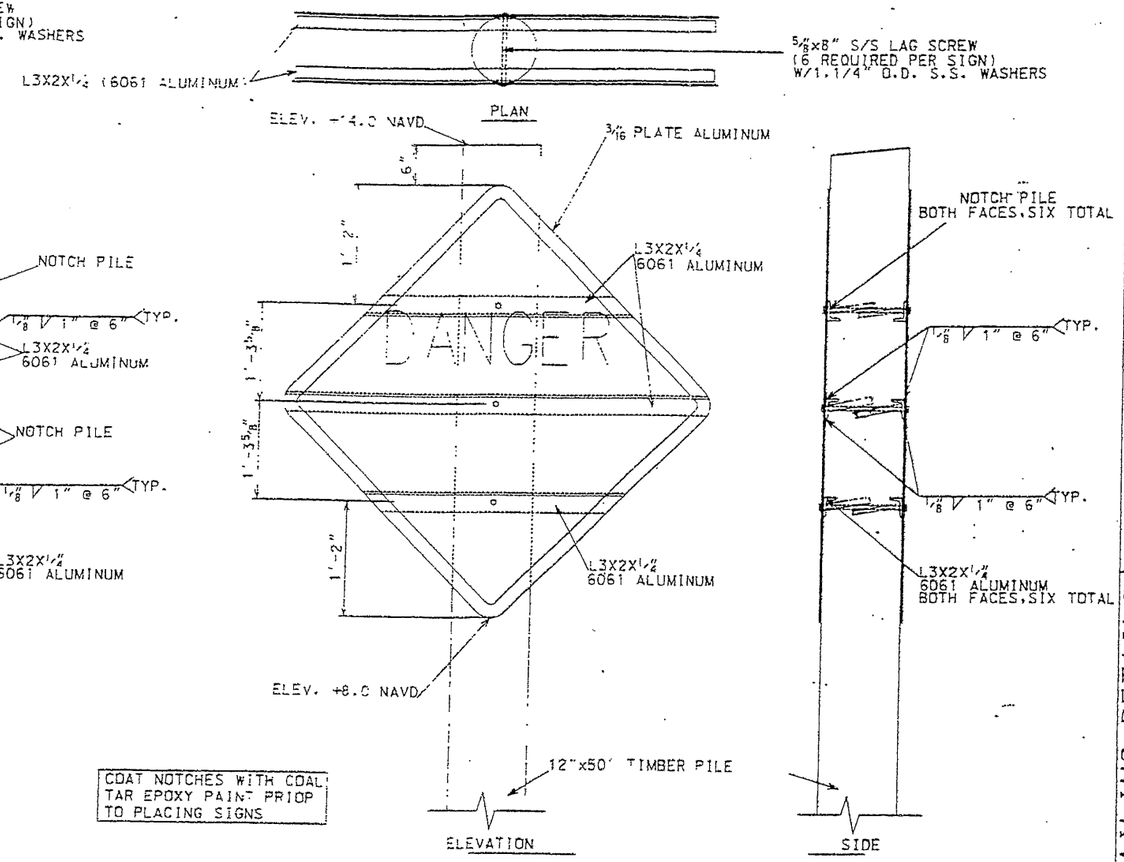
WARNING SIGN DETAILS
(USED WITH SIGN TYPES C & D)

THE SIX (6) TYPE "C" SIGNS REQUIRED AT SITE 7 WILL BE SUPPLIED BY NRCS, AT NO COST TO THE CONTRACTOR.

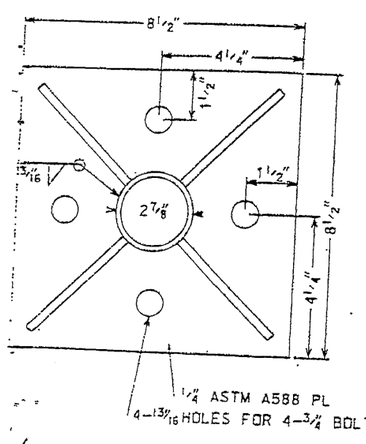


SIGN TYPE C - DETAILS
(USED AT STRUCTURE 7 ONLY)

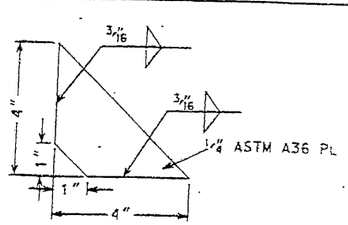
COAT NOTCHES WITH COAL TAR EPOXY PAINT PRIOR TO PLACING SIGNS



SIGN TYPE D - DETAILS
(USED AT STRUCTURES 14,21,23&24)

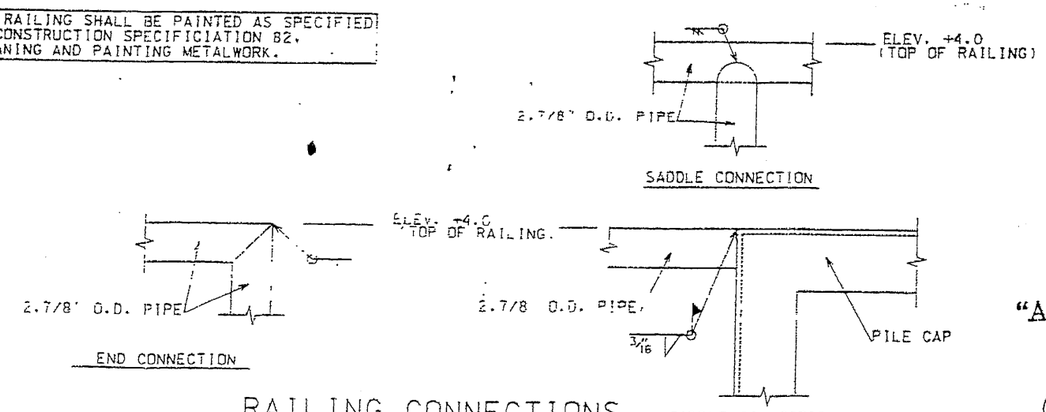


NOTE:
THE BASE PLATE DETAIL BELOW WILL APPLY WHEREVER SIGN TYPE "D" AND RAILING ARE USED.



RAILING AND SIGN SUPPORT BASE PLATE
(NOT TO SCALE)

THE RAILING SHALL BE PAINTED AS SPECIFIED IN CONSTRUCTION SPECIFICIATION 82, CLEANING AND PAINTING METALWORK.



RAILING CONNECTIONS
(NOT TO SCALE)

"AS-BUILT"

STATE OF LOUISIANA
E. V. GLERING III
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

Approved by	Date	
Title	2/98	
Title	2/99	
Designed C.E. LaFleur		
Drawn A. J. Grémillion	2/98	
Traced	2/99	
Checked James N. Moore		

WARNING SIGN AND RAILING DETAILS
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

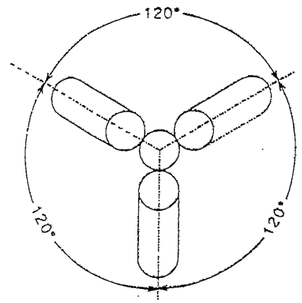
U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

REVISIONS			
DATE	APPR.	TITLE	

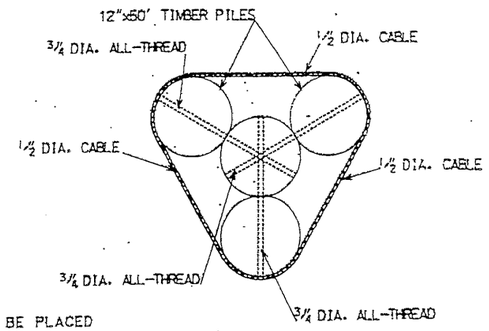
CAD FILE NO.: SIGN-DET2
DRAWING NO. LA-231
SHEET NO 22 OF 23

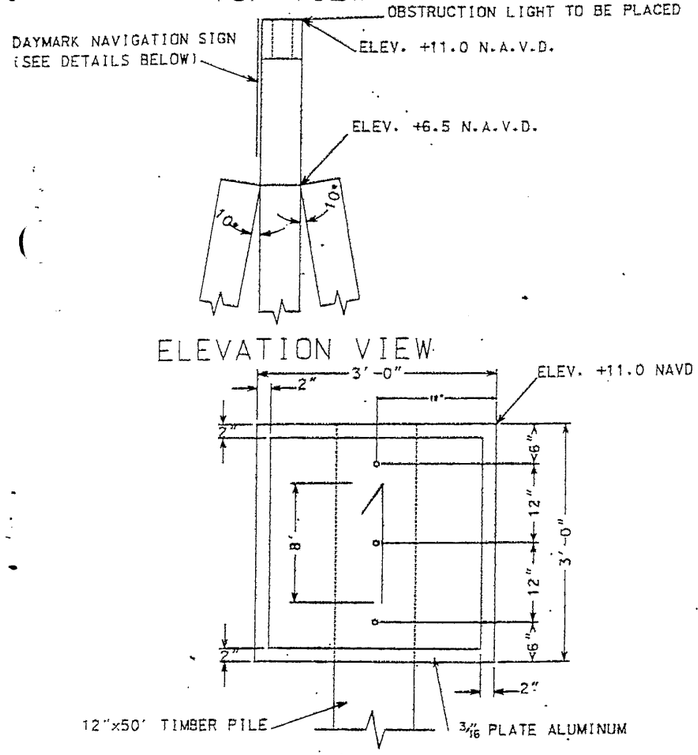
NOTES:

1. ALL 3/4" DIA. ALL THREAD TIE RODS SHALL BE SECURED BY NOTCHED IN PLACE OGEE WASHERS AND TACK WELDED NUTS.
2. 3 RAPS OF 1/2" DIA. CABLE MEETING ASTM A-416 AND ASTM A-882/A-882M-92 BETWEEN THE 3-3/4" DIA. ALL-THREAD ASTM A-615 GR60 GALVANIZED AND EPOXY COATED TIE RODS.
3. THE 1/2" DIA. CABLE SHALL BE SECURED USING 3 STAINLESS STEEL CLAMPS.
4. THE 3/4" DIA. ALL-THREAD TIE RODS SHALL BE A MINIMUM OF 6" BELOW TOP OF BATTER PILE AND AND 3" VERTICAL CLEARANCE FROM ADJACENT TIE ROD.
5. ALL TIMBER PILES FOR FOUR PILE NAVIGATION AID DOLPHIN SHALL BE 12" x 50'.

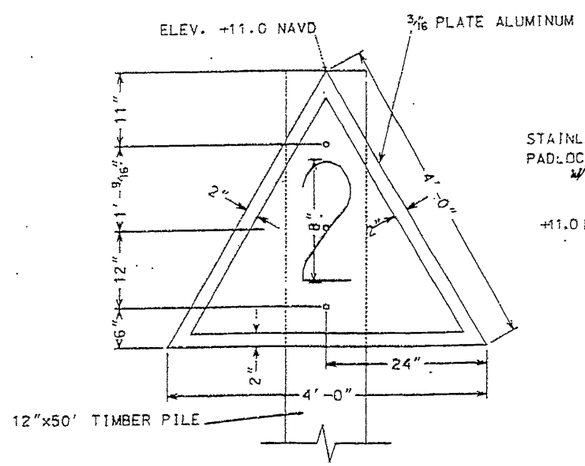


TOP VIEW

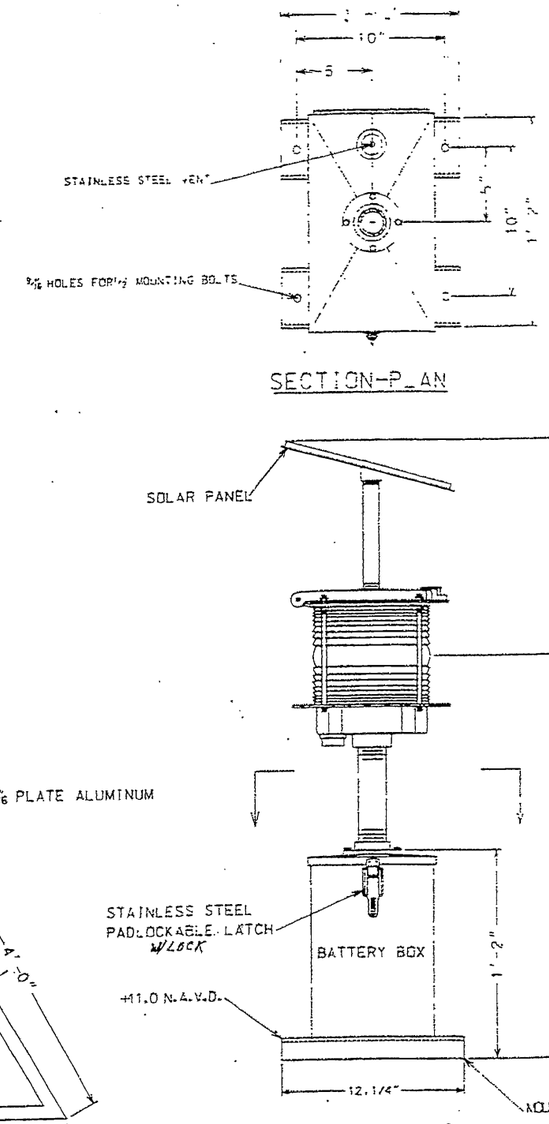




DAYMARK NAVIGATION AID
(PORT SIDE - ODD NUMBER)

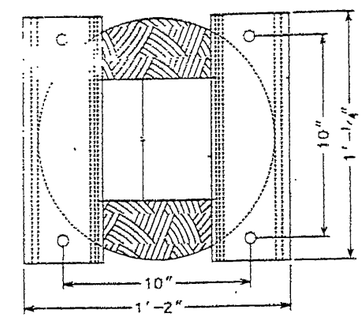


DAYMARK NAVIGATION AID
(STARBOARD SIDE - EVEN NUMBER)

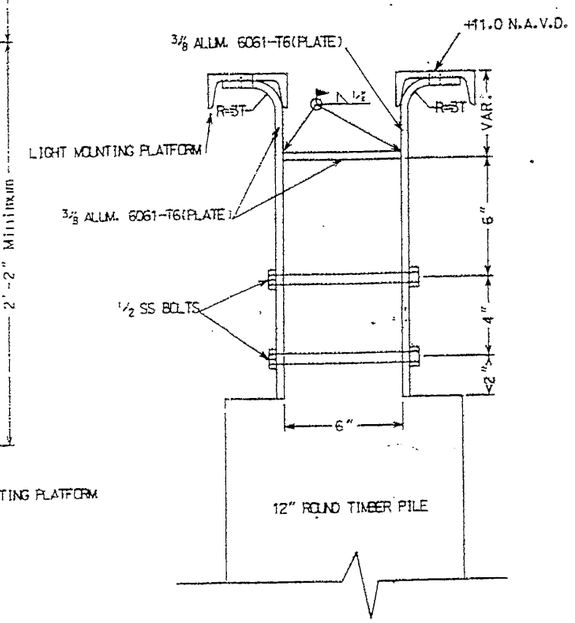


2.5 SEC. DAYLIGHT

1. NOTCH ROUND TIMBER PILE FOR FLUSH ALUMINUM MOUNTING BRACKET ATTACHMENT.
2. HOLES IN ALUMINUM SHALL BE 1/16 OVERSIZE AND HOLES IN ROUND TIMBER PILE SHALL BE 1/8 OVERSIZE FOR THEIR CORRESPONDING BOLTS.



PLAN



ELEVATION

"AS-BUILT"

MOUNTING DETAILS-2.5 SEC. DAYLIGHT

NOTES:

1. SIGNS SHALL BE PLACED ON SIDES OF CHANNEL AS SEEN WHEN ENTERING FROM BAYOU DE CADE.
2. THE BORDER ON THE STARBOARD DAYMARK WILL BE A RETRO-REFLEVCTIVE MATERIAL OF RED COLOR. THE AREA INSIDE THE BORDERS WILL BE A RETRO-REFLECTIVE MATERIAL OF WHITE COLOR. THE NUMBERS WILL BE BLACK.
3. THE BORDER ON THE PORT SIDE DAYMARK WILL BE A RETRO-REFLECTIVE MATERIAL OF GREEN COLOR. THE AREA INSIDE THE BORDER WILL BE A RETRO-REFLECTIVE MATERIAL OF WHITE COLOR. THE NUMBERS WILL BE BLACK.
4. ALL DAYMARK NAVIGATION AIDS SHALL ABIDE BY U.S.C.G. REGULATIONS.
5. SIGNS SHALL BE SECURED TO TIMBER PILE WITH 3-5/8"x8" STAINLESS STEEL LAG SCREWS WITH 1 1/4" O.D. S.S. WASHER.

SIGN DETAIL - TYPE "F"

SIGN DETAIL - TYPE "F"

STATE OF LOUISIANA
E. J. GLERING, III
REG. NO. 19033
REGISTERED
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

Designed	Charlie LaFleur	Date
Drawn	A. J. Gremillion	
Traced		
Checked	James N. Moore	
Approved by		
Title		
Title		

TYPE F WARNING SIGN DETAILS
CONSTRUCTION UNIT NO. 2
BRADY CANAL HYD. REST. - PTE-26B
TERREBONNE PARISH, LOUISIANA

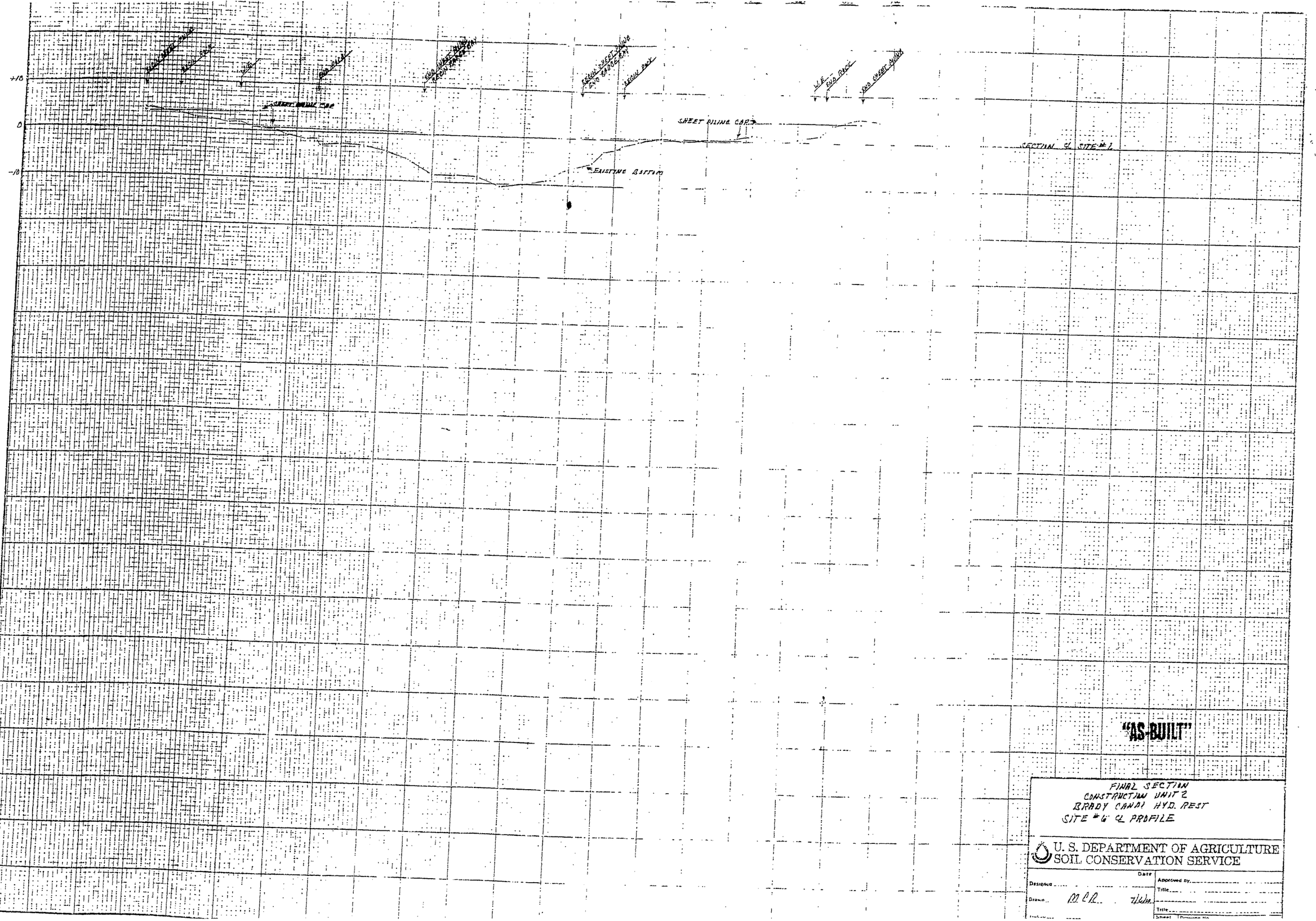
U.S. DEPARTMENT OF AGRICULTURE - NATURAL RESOURCES CONSERVATION SERVICE

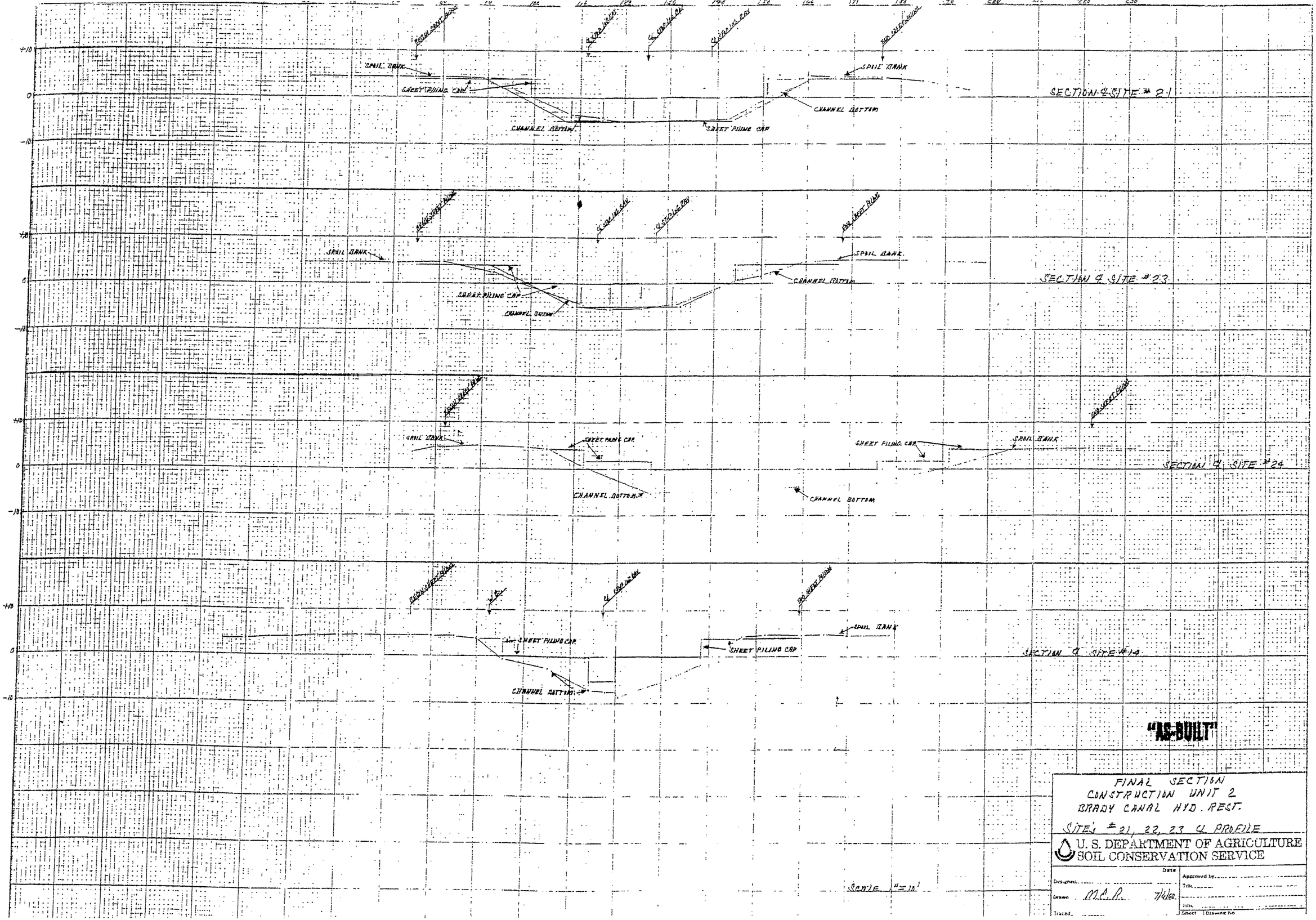
REVISIONS			
DATE	APPR.	TITLE	

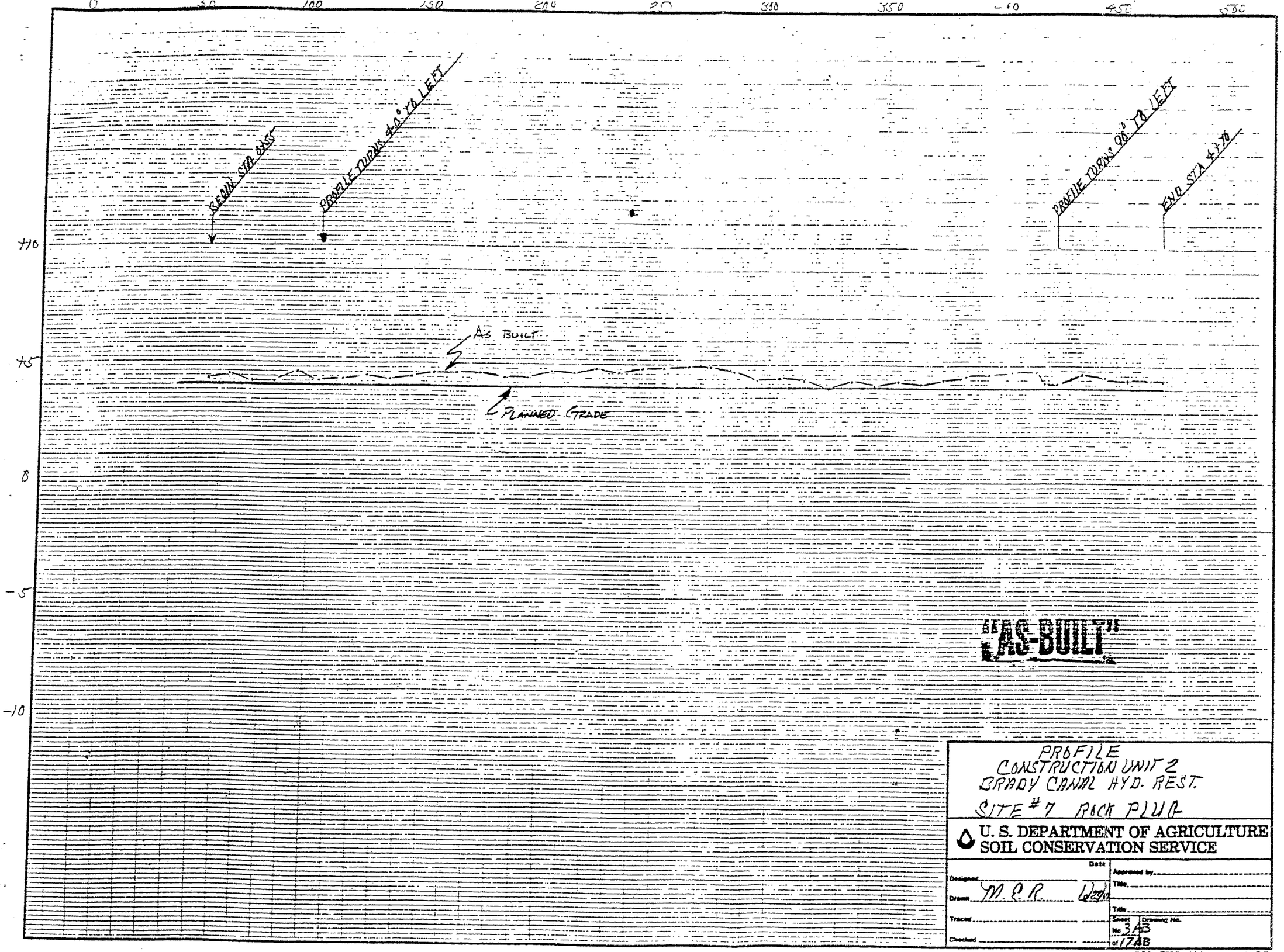
CAD FILE NO. brady-day-mark

DRAWING NO. LA-231

SHEET NO 23 OF 23


+10
0
-10
SHEET PILING CAP
EXISTING BOTTOM
SECTION ℄ SITE #1
"AS-BUILT"
FINAL SECTION
CONSTRUCTION UNIT 2
BRADY CANAL HYD. REST
SITE #6 ℄ PROFILE
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Designed
Date
Drawn
Approved by
Title
Title
Sheet
Drawing No.


SPOIL BANK
SHEET PILING CAP
CHANNEL BOTTOM
SECTION Q SITE # 21
SECTION Q SITE # 23
SECTION Q SITE # 24
SECTION Q SITE # 14
+10
0
-10
"AS-BUILT"
FINAL SECTION
CONSTRUCTION UNIT 2
BRADY CANAL HYD. REST.
SITES #21, 22, 23 & PROFILE
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Designed
Drawn M.C.R. 7/6/60
Traced
Approved by
Title
Sheet
Drawing No
Scale 1" = 10'

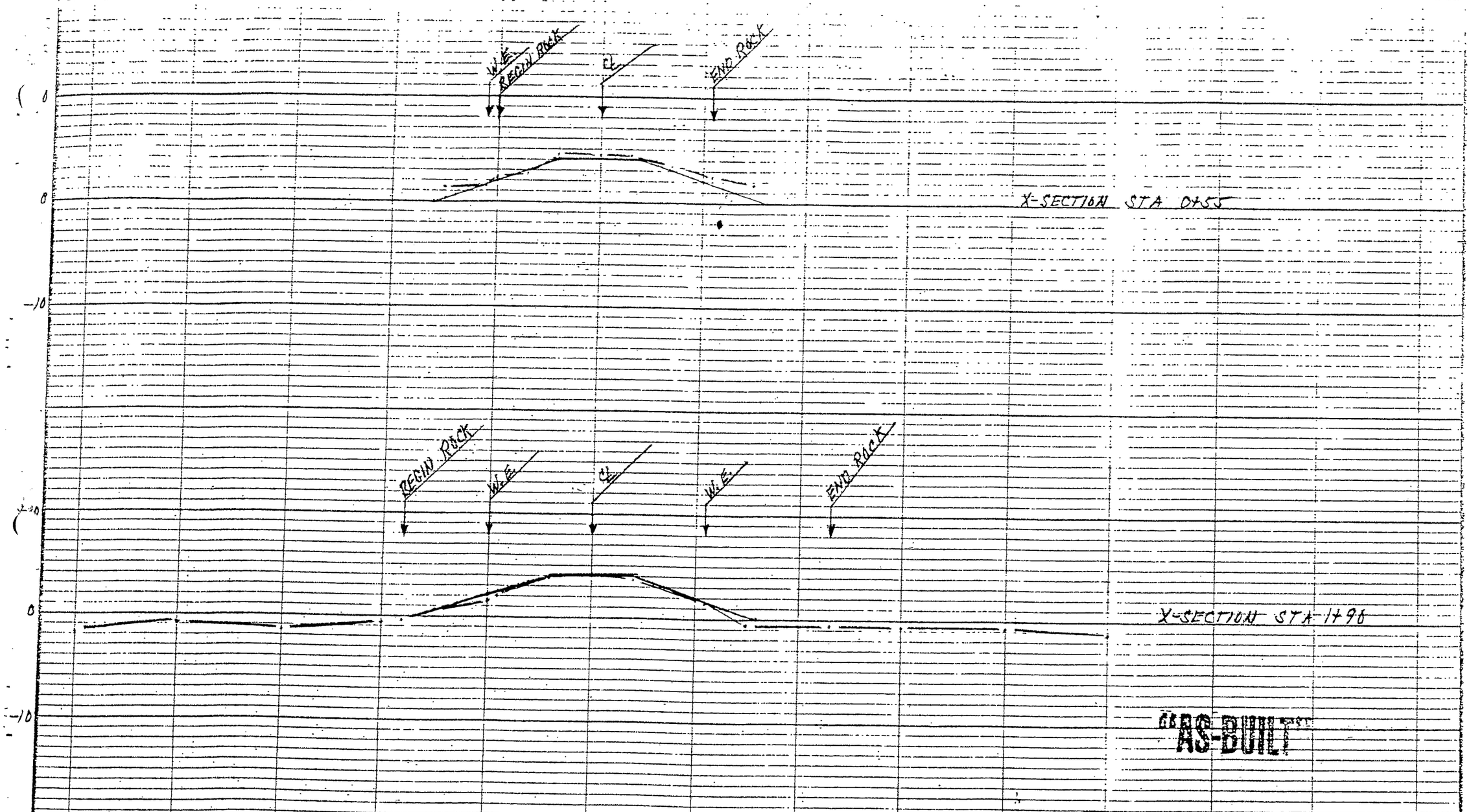


PROFILE
CONSTRUCTION UNIT 2
BRADY CANAL HYD. REST.
SITE #7 ROCK PLUG

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	Date	Approved by
Drawn M.E.R.		Title
Traced		Title
Checked		Sheet No. 3AB of 17AB — Drawing No.

SCS—ENG—315A (Rev. 1—76)

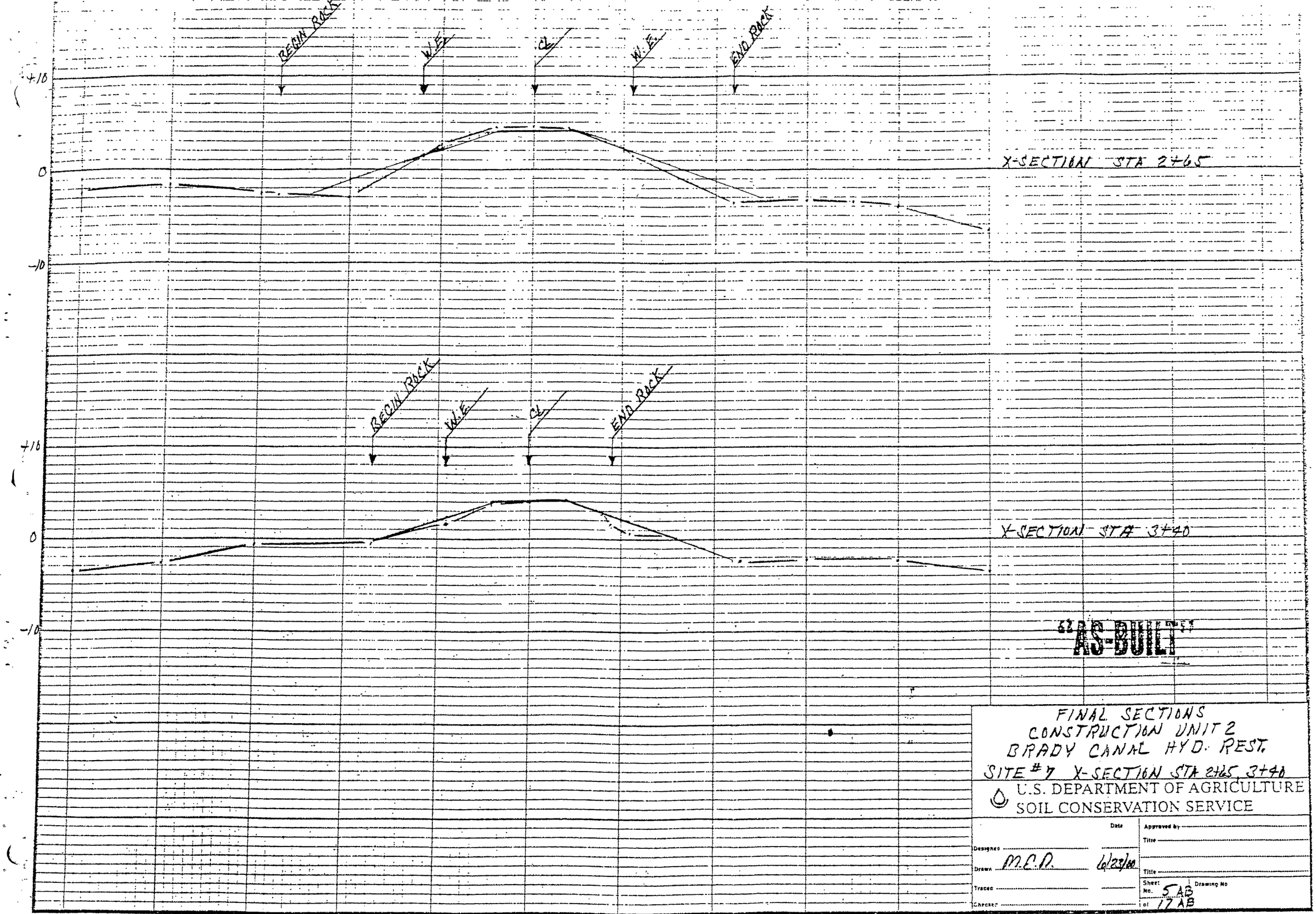


"AS-BUILT"

FINAL SECTIONS
CONSTRUCTION UNIT 2
BRADY CANAL HYD. REST.
SITE # 7 X-SECTION STA 0+55, 1+98

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

		Date	
Designed			Approved by
Drawn	M.E.R.	6/23/60	Title
Traced			Title
Checked			Sheet No. 4AB of 17AB — Drawing No.

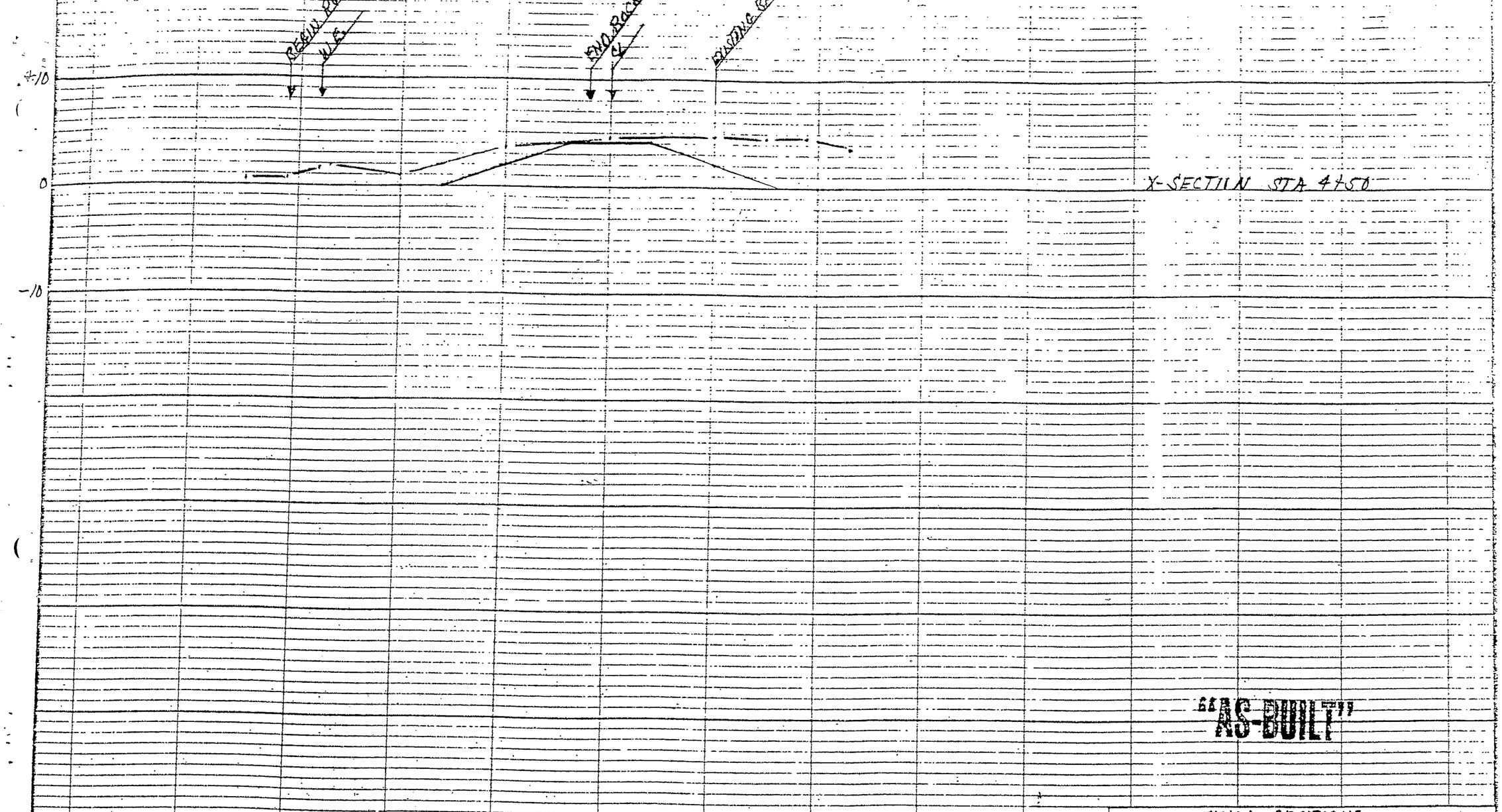


FINAL SECTIONS
CONSTRUCTION UNIT 2
BRADY CANAL HYD. REST.
SITE #7 X-SECTION STA 2+65, 3+40

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

		Date	
Designed			Approved by
Drawn	M.E.R.	6/23/80	Title
Traced			Title
Checked			Sheet No. 5 AB of 17 AB — Drawing No

SCS—ENG—315A 6—81



"AS-BUILT"

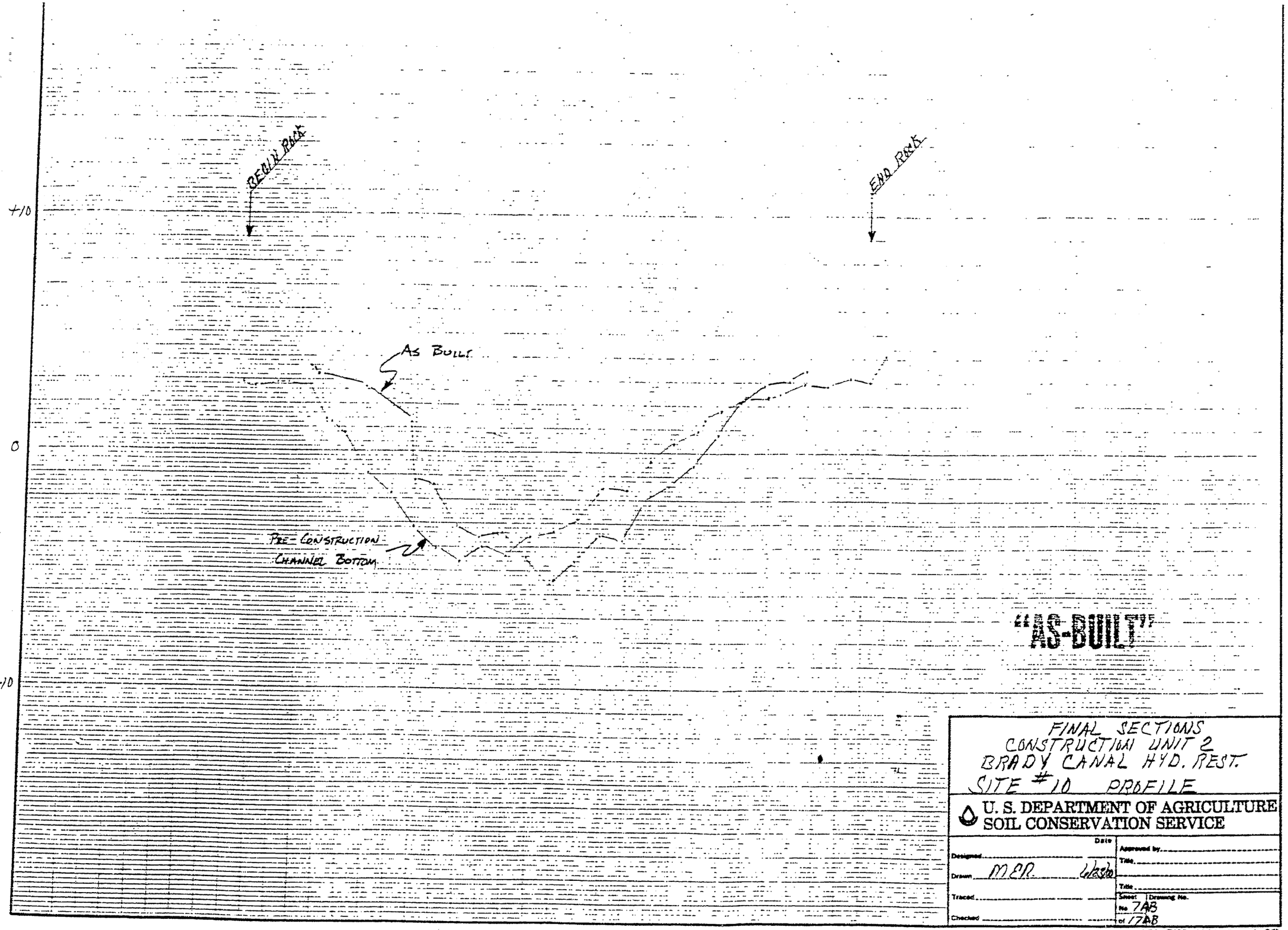
FINAL SECTIONS
CONSTRUCTION UNIT 2
BRADY CANAL HYD. REST.

SITE #7 X-SECTION STA 4+50

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

		Date	
Designed			Approved by
Drawn	M.C.R.	4/23/10	Title
Traced			Title
Checked			Sheet No. 6 AB of 17 AB Drawing No

SCS—ENG—315A 6—81

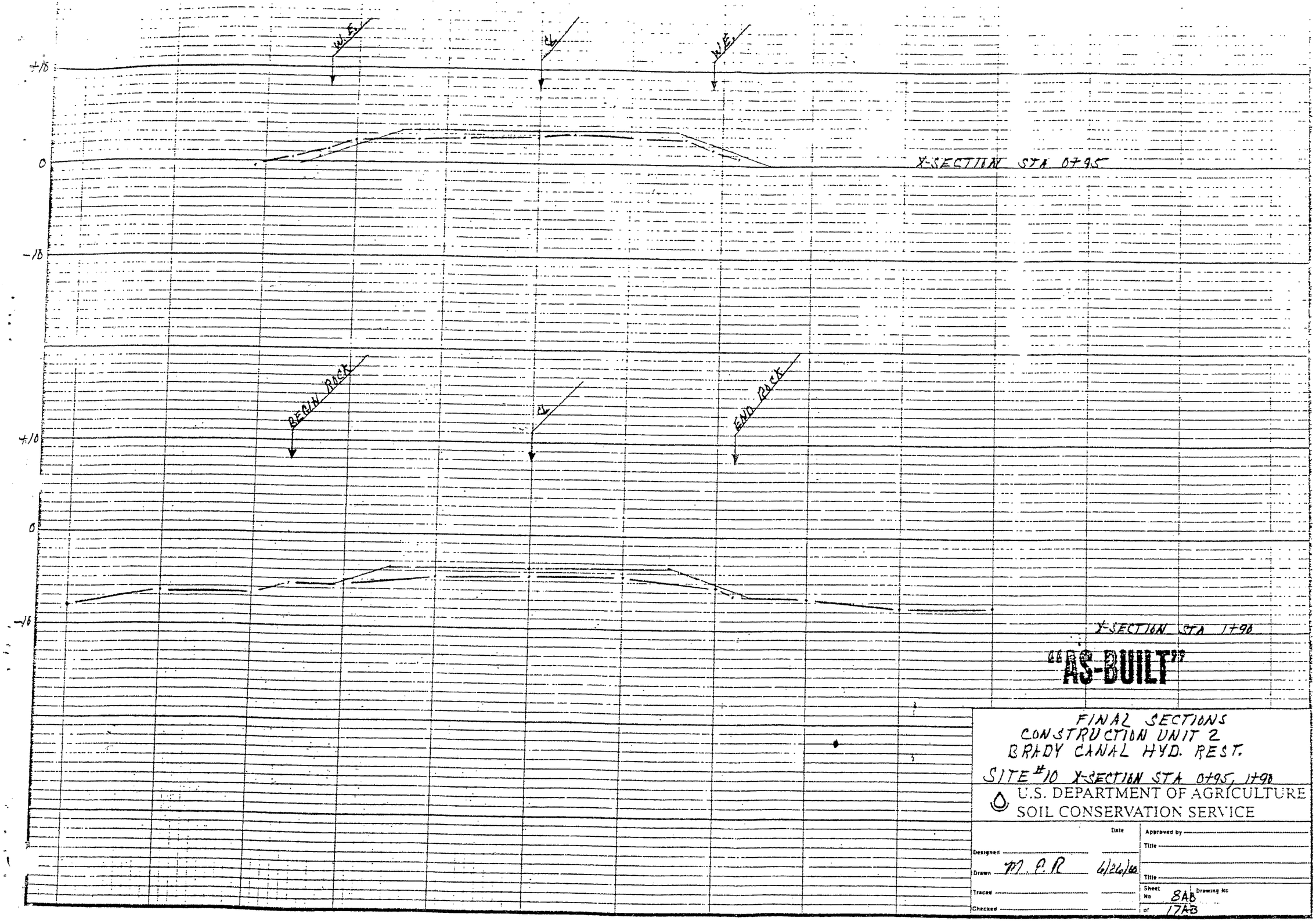


FINAL SECTIONS
CONSTRUCTION UNIT 2
BRADY CANAL HYD. REST.
SITE #10 PROFILE

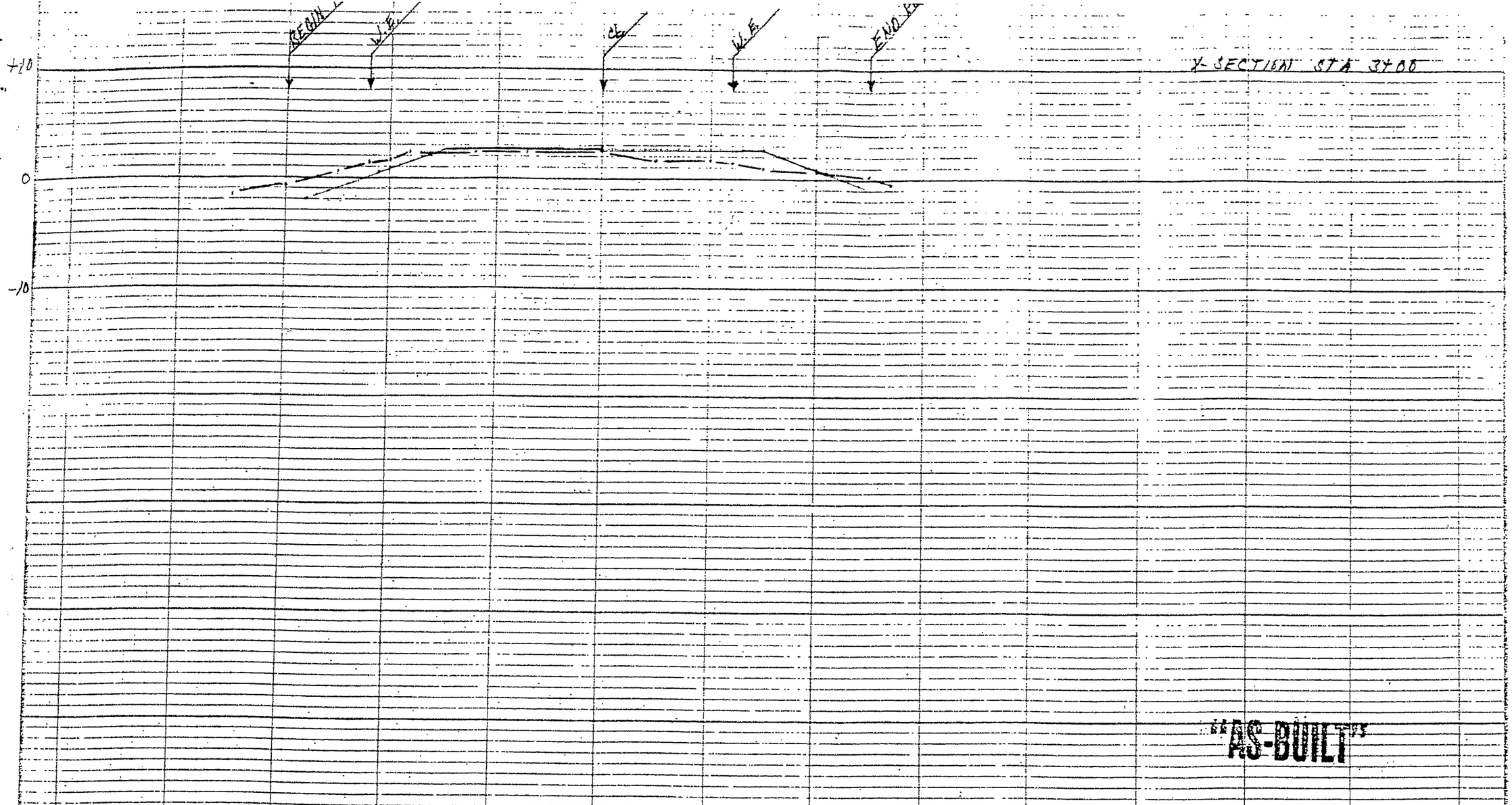
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	Date	Approved by
Drawn MER	6/23/80	Title
Traced		Title
Checked		Sheet No. 7AB of 17AB

SCS—ENG—316A (Rev. 1—76)



SCS—ENG—315A 6—61



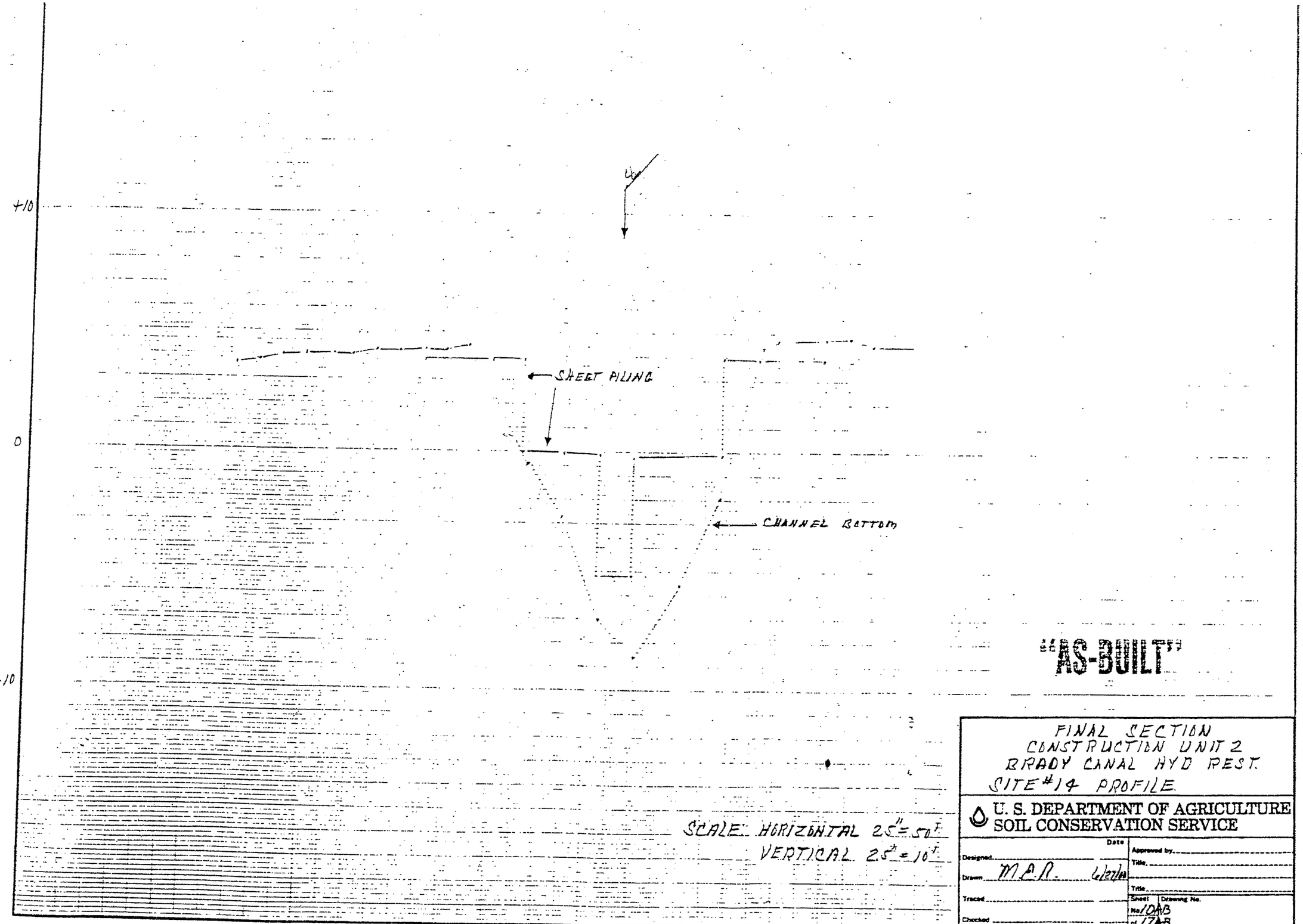
"AS-BUILT"

FINAL SECTION
CONSTRUCTION UNIT 2
BRADY CANAL HYD. REST.
SITE #10 X-SECTION STA 3+00

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

		Date	
Designr			Approved by
Drawn	M.E.R.	6/26/00	Title
Traced			Title
Checked			Sheet No 9AB of 17AB — Drawing No

SCS—ENG—315A 5—81

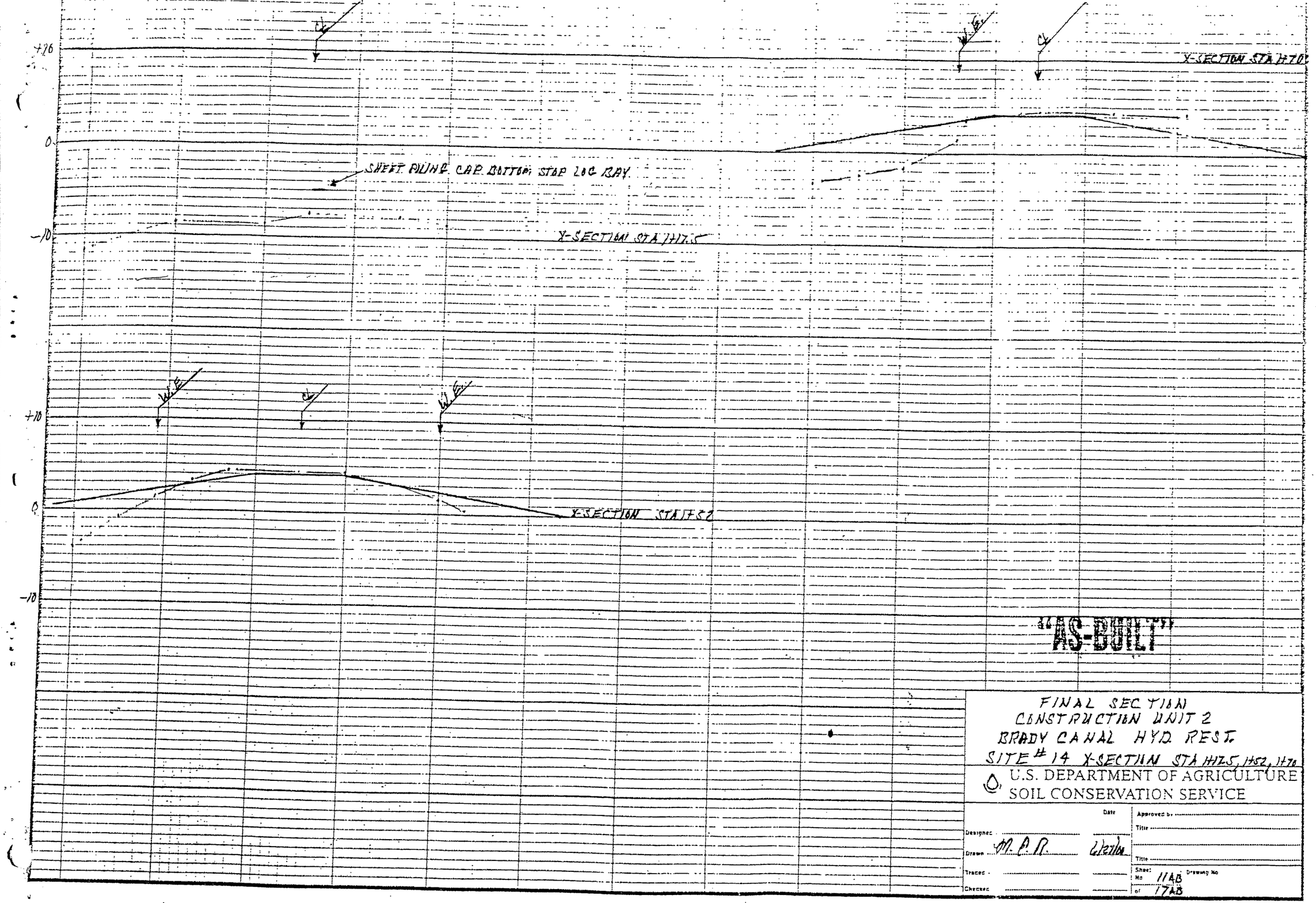


FINAL SECTION
CONSTRUCTION UNIT 2
BRADY CANAL HYD REST.
SITE #14 PROFILE

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed	Date	Approved by	
Drawn M.P.R.		Title	
Traced		Title	
Checked		Sheet No. 10 of 17	Drawing No. AB AB

SCS—ENG—315A (Rev. 1—76)



FINAL SECTION
CONSTRUCTION UNIT 2
BRADY CANAL HYD. REST.
SITE # 14 X-SECTION STA 1417.5, 1452, 1470

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

		Date	
Designed			Approved by
Drawn	M. P. R.	6/2/80	Title
Traced			Title
Checked			Sheet No 11AB of 17AB — Drawing No

SCS—ENG—315A 6—81

ATTACHMENT V

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

PROJECT PERMITS
&
PERMIT AMENDMENTS

State of Louisiana

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

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

August 5, 2002

Faye Talbot
Project Manager
USDA, Natural Resources Conservation Service
646 Cajondome Blvd., Suite 180
Lafayette, Louisiana

RE: **C960231,** Coastal Zone Consistency Modification
Natural Resources Conservation Service
Direct Federal Action
Brady Canal Hydrologic Restoration CWPPRA Project (TE-28), modification to use barged in rock rather than borrow material from canal bottoms at 10 breach closure sites,**Terrebonne Parish, Louisiana**

Dear Ms. Talbot:

The above referenced project 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.

Sincerely,

Jim Ruiz, for

Terry W. Howey,
Administrator

TWH/JDH/bgm

cc: Ron Ventola, NOD-COE
Clark Allen, CRD
Fred Dunham, LDWF
Rod Pierce, CMD/FI
James Miller, Terrebonne Parish

COASTAL MANAGEMENT DIVISION P.O. BOX 44487 BATON ROUGE, LOUISIANA 70804-4487
TELEPHONE (225) 342-7591 FAX (225) 342-9439
AN EQUAL OPPORTUNITY EMPLOYER

State of Louisiana

Department of Environmental Quality

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

DEC 03 1996

J. DALE GIVENS
SECRETARY

WQC 960506-10

USDA Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

Attention: Donald W. Gohmert, State Conservationist and Agent for LA Land & Exploration (LL&E) and Fina Oil and Chemical Co.

Gentlemen:

RE: Proposal to perform dredge and fill activities, to install and maintain rip rap, and to modify/install and maintain water control structures in order to reduce erosion, encourage freshwater, sediment and nutrient influx and to stabilize water levels within a 7,653 acre area of marsh and open water, Brady Canal Hydrologic Restoration Project (PTE-26B), the Bayou Penchant-Lake Penchant watershed in Terrebonne Parish, LA.

This is to acknowledge that you have completed the requirements for Water Quality Certification for the above referenced proposal.

It is our opinion that your proposed project will not violate water quality standards of the State of Louisiana, therefore, we offer no objection to this project provided that the dredged material and the hauled-in fill material used are free of contaminants.

In accordance with statutory authority contained in the Louisiana Revised Statutes of 1950, Title 30, Chapter 11, Part IV, Section 2074 A(3) and provisions of Section 401 of the Clean Water Act (P.L. 95-217), the Office of Water Resources certifies that it is reasonable to expect that water quality standards of Louisiana provided for under Section 303 of P.L. 95-217 will not be violated.

PAUL
FLOYD
CONTI
TOWNSLEY
SAPP
ELDRIDGE

WINDHAM
BARKDULL

Sincerely,

Linda Korn Levy

Linda Korn Levy, Assistant Secretary
Office of Water Resources

LKL:LG

c: Corps of Engineers, New Orleans - SW(Terrebonne PW/L)1087 - John Reddoch
Coastal Management Division - C960231/QWPPRA Project PTE-26b

United States
Department of
Agriculture

Natural Resources
Conservation
Service

3470 NE Evangeline Thrwy
Lafayette, Louisiana
70507-2554

F-6

August 6, 1998

Mr. Kermit Coulon
Land Manager
Burlington Resources
P.O. Box 7097
Houma, La. 70361

Mr. John Woodard
Land Manager
Fina Oil and Chemical Co.
P.O. Box 206
Houma, La. 70361

Subject: Brady Canal Hydrologic Restoration Project (PTE-26B) Permit Modification

Gentlemen,

As I discussed with you both on separate occasions on the telephone, NRCS's engineering cost estimate came in low and there is a possibility of constructing a rock embankment along Bayou DeCade in the critical areas. To add rock we will need to modify the permit.

Enclosed is a copy of the drawing that will be sent to DNR to initiate the modification, since they are the permit holder. We do not know the actual amount of rock that could be used, since the engineer's estimate does not always come out the same as the contractors' bids. The drawing shows the entire amount of rock that could be placed using the engineer's cost and using the entire 125% of the project cost.

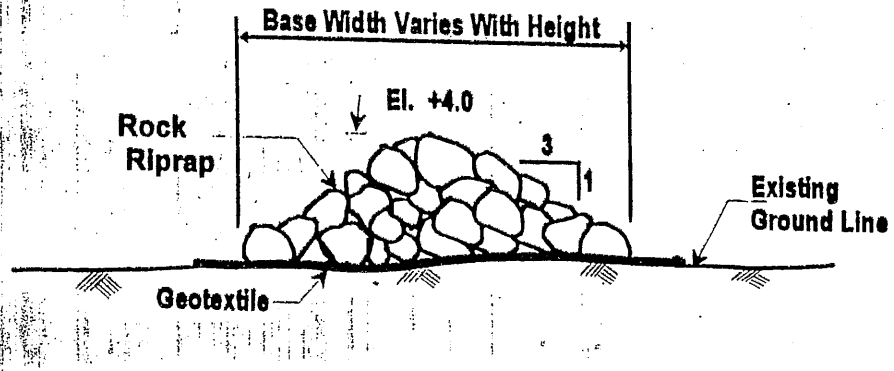
Please review the drawings and let me know your opinion.

Faye Talbot

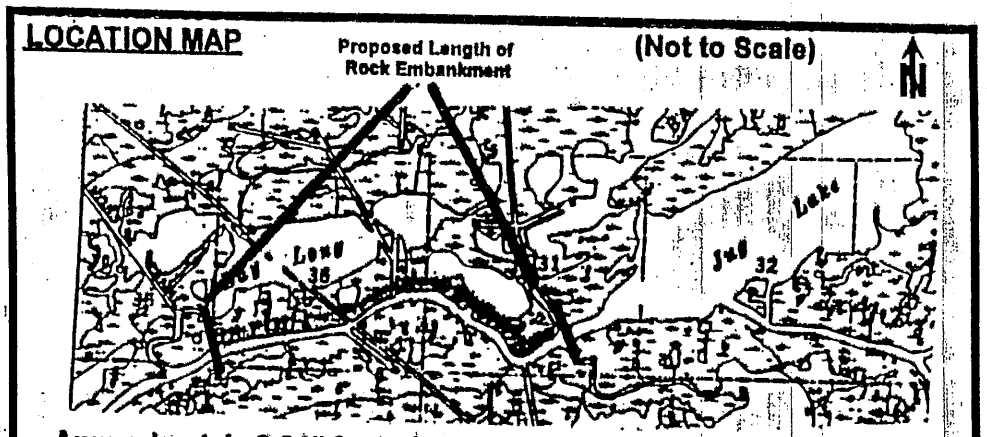
Faye A. Talbot
Staff Leader
Field Office Project
Support Staff

cc: Bruce Lehto
Gary Eldridge
Cherie Lefleur
Tim Landreneau
Britt Paul
Clark Allen

Rock Riprap Embankment

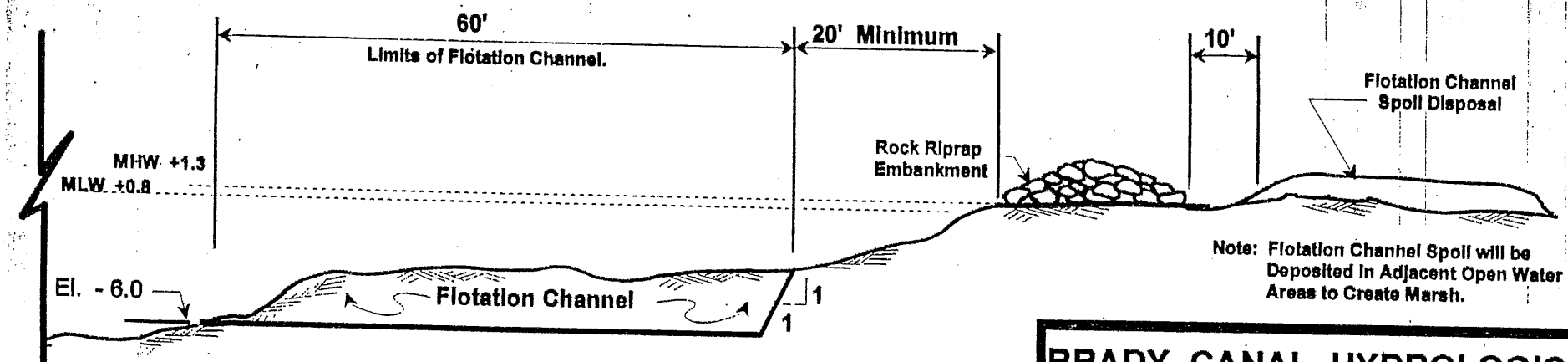


Detail Section - Rock Embankment
(Not to Scale)



Approximately 8,645 feet of Rock Embankment will be constructed within the reach along the N side of Bayou DeCade for a maximum length of 8,645 to the west of Site 6. Section P- P is indicative of this proposed rock embankment construction.

NOT TO SCALE



Note: Flotation Channel Spoil will be Deposited in Adjacent Open Water Areas to Create Marsh.

Typical Section P - P
(Not to Scale)

Notes:
1. All Elevations Shown in N.G.V.D.
2. Maximum Length of Rock Embankment - 8,645 Feet.
3. Maximum Volume of Rock Embankment Fill - 22,000 Cubic Yards.
4. Maximum Flotation Channel Spoil Fill - 96,100 Cubic Yards.

BRADY CANAL HYDROLOGIC RESTORATION

DETAILS - Rock Riprap Embankment
Section P - P

TERREBONNE PARISH LA

USDA United States Department of Agriculture

Natural Resources Conservation Service

3737 Government Street
Alexandria, Louisiana
71302

September 8, 1998

Mr. Larry Wisepape
Certification Coordinator
Louisiana Department of
Environmental Quality
Office of Water Resources
P. O. Box 82215
Baton Rouge, LA 70884-2215

Mr. Terry W. Howey
Director
Louisiana Department of
Natural Resources/CMD
P. O. Box 44487
Baton Rouge, LA 70803

Gentlemen:

Please find attached the permit modification for the Brady Canal Hydrologic Restoration project. The original COE permit number for this project is WL 19-970-0150. At a recent engineering design review, critical areas were designated along Bayou DeCade that will need rock protection.

For your review, I have attached the COE permit cover pages outlining the modification as well as two drawings' modification.

The original Water Quality Certification, WQC 960506-10, was issued in December, 1996 and the State Consistency with the Louisiana Coastal Resource Program, WASS C960231, was issued in July, 1996. The United States Army Corp of Engineers requested that NRCS contact your respective offices and get a re-certification on this project.

This project is nearing the time for advertisement; therefore, I would appreciate your handling of this permit in the most expeditious manner possible. If you have any questions concerning this application, contact Faye Talbot, Staff Leader, Field Office Project Support Staff, Lafayette, Louisiana, at 318-896-8503.

Sincerely,

Kevin Brown, Acting

Donald W. Gohmert
State Conservationist

Attachments

cc: Bruce Lehto, Assistant State Conservationist/Water Resources/Rural Development, NRCS, Alexandria, LA
Faye Talbot, Staff Leader, NRCS, FOPSS, Lafayette, LA
Britt Paul, Staff Leader, NRCS, WRPS, Alexandria, LA
Tim Landreneau, District Conservationist, NRCS, Thibodaux, LA
LL&E, P. O. Box 7097, Houma, LA 70361
Fina Oil & Chemical Co., P. O. Box 206, Houma, LA 70361

The Natural Resources Conservation Service, formerly the Soil Conservation Service, is an Agency of the United States Department of Agriculture

AN EQUAL OPPORTUNITY EMPLOYER

Expires October 1996

Public reporting burden for this collection of information is estimated to average 6 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of InformationOperations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

ority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in, or affecting, navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Routine Uses: Information provided on this form will be used in evaluating the application for a permit. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME
Office of Coastal Restoration
La. Dept. of Natural Resources/OCRM

6. APPLICANT'S ADDRESS
LDNR/CRD
P.O. Box 44487
Baton Rouge, LA 70804-4487

7. APPLICANT'S PHONE NOS. W/AREA CODE
a. Residence
b. Business (225) 342-1375

8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)

9. AGENT'S ADDRESS

10. AGENT'S PHONE NOS. W/AREA CODE
a. Residence
b. Business

11. STATEMENT OF AUTHORIZATION

I here uthorize, _____ to act in my behalf as my agent in the processing of this application and to furnis. upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE

DATE

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Brady Canal Hydrologic Restoration

13. NAME OF WATERBODY, IF KNOWN (if applicable)
Brady Canal, Bayou Mauvais Bois, Bayou DeCade Jug Lake, Superior Canal, Carencro Bayou, Vos Canal

14. PROJECT STREET ADDRESS (if applicable)

. LOCATION OF PROJECT
Terrebonne — COUNTY
LA — STATE

. OTHER LOCATION DESCRIPTIONS, IF KNOWN, (see instructions)
T19S R14E R15E, Approximate center of the project is Lat. 29°52'30" North and Long. 91°29'30" West.

DIRECTIONS TO THE SITE
Approximately 20 miles south of Houma, LA on LA 315 to Falgout Canal Landing. Proceed west by boat across Lake DeCade to Turtle Bayou where eastern edge of project begins. See Exhibit A, Figure 1.

... the installation of various water control structures and measures in a 7,653 acre project area.
(See Exhibit "A" for locations and typical drawings of all structures)
(See Exhibit "C" for detailed description of structures)

19. Project Purpose (Describe the reason or purposes of the project, see instructions) This project plan contains structural measures ...igned to reduce adverse tidal effects and improve hydrological conditions on approximate 7653 Ac of fresh, intermediate, and brackish marsh and shall open water bodies. These structures will meet project objectives to reduce excessive tidal exchange (Continued)

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge
Dredge and/or fill material will be used in the installation of structural measures listed above under Item 18. Any discharges into waterways will be incidental during construction. The proposed activity described in this permit application complies with and will be (Continued)

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards
See Exhibit "C".

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

23. Is Any Portion of the Work Already Complete? Yes ____ No X IF YES, DESCRIBE THE COMPLETED WORK

4. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

A1. and surrounding the project area is owned by the applicants.

. List of Other Certifications or Approvals/Denials Received from other Federal, State or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

This project was approved for funding under PL-646 by a task force composed of the following six agencies: USDA Natural Resources Conservation Service, National Marine Fisheries Service, Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, and the Louisiana Department of Natural Resources.

uld include but is not restricted to zoning, building and flood plain permits

Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT ____ DATE ____ SIGNATURE OF AGENT ____ DATE ____

he application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

3 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

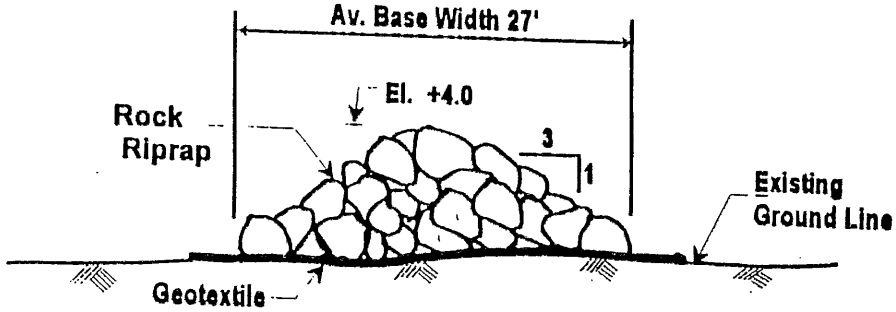
19. Project Purpose -Continued-

between interior marsh and the adjacent bays and bayous. The rate of shoreline erosion will be reduced and a hydrologic regime conducive to sediment and nutrient deposition will encourage the reestablishment of emergent and submergent vegetation in eroded areas. Stabilizing water conditions will return the project area to a more historic low energy environment. (See Exhibit "B" for a detailed description of the project area and components).

20. Reason(s) for Discharge -Continued-

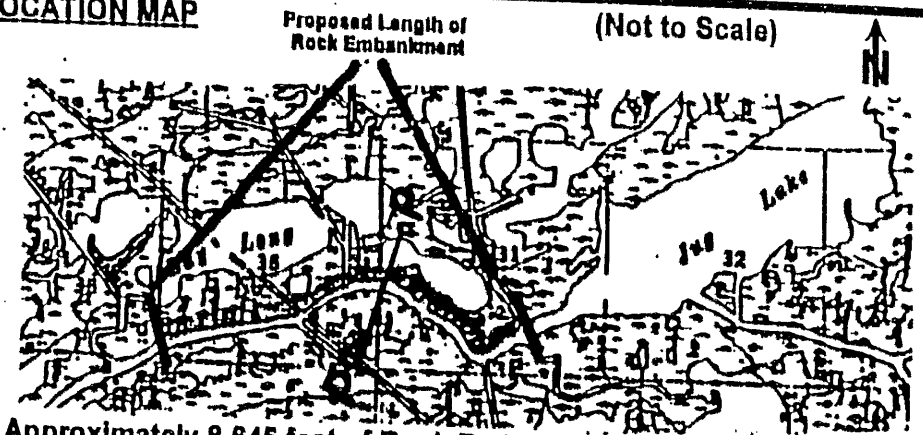
conducted in a manner that is consistent with the Louisiana Coastal Management Program.

Rock Ripra Embankment



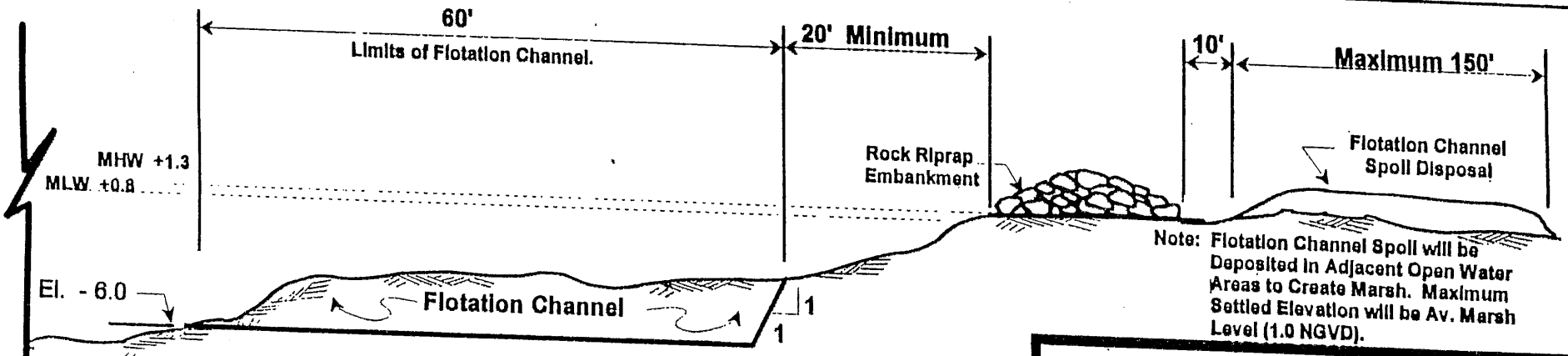
Detail Section - Rock Embankment
(Not to Scale)

LOCATION MAP (Not to Scale)



Approximately 8,645 feet of Rock Embankment will be constructed within the reach along the N side of Bayou DeCade for a maximum length of 8,645 to the west of Site 6. Section P- P is indicative of this proposed rock embankment construction.

NOT TO SCALE



Note: Flotation Channel Spoil will be Deposited in Adjacent Open Water Areas to Create Marsh. Maximum Settled Elevation will be Av. Marsh Level (1.0 NGVD).

Typical Section P - P
(Not to Scale)

Notes:
1. All Elevations Shown in N.G.V.D.
2. Maximum Length of Rock Embankment - 8,645 Feet.
3. Maximum Volume of Rock Embankment Fill - 22,000 Cubic Yards.
4. Maximum Flotation Channel Spoil Fill - 96,100 Cubic Yards.
5. Maximum Area Marsh Created by Flotation Spoil - 30 Acres.

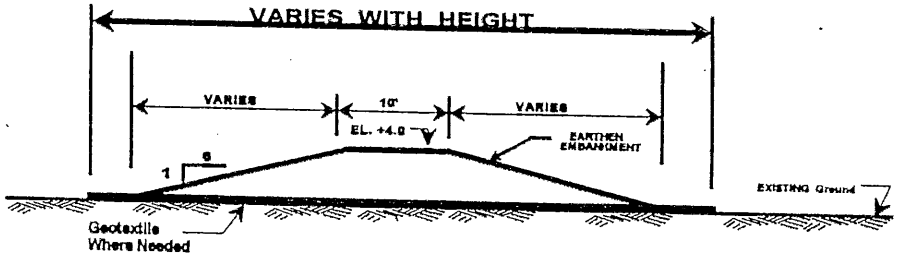
BRADY CANAL HYDROLOGIC RESTORATION

DETAILS - Rock Riprap Embankment Section P - P

TERREBONNE PARISH, LA

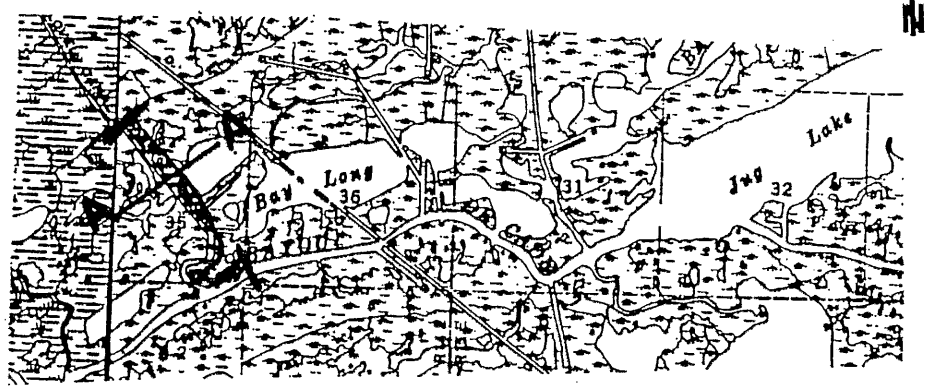
13A of 16

EARTHEN EMBANKMENT SECTION A - A

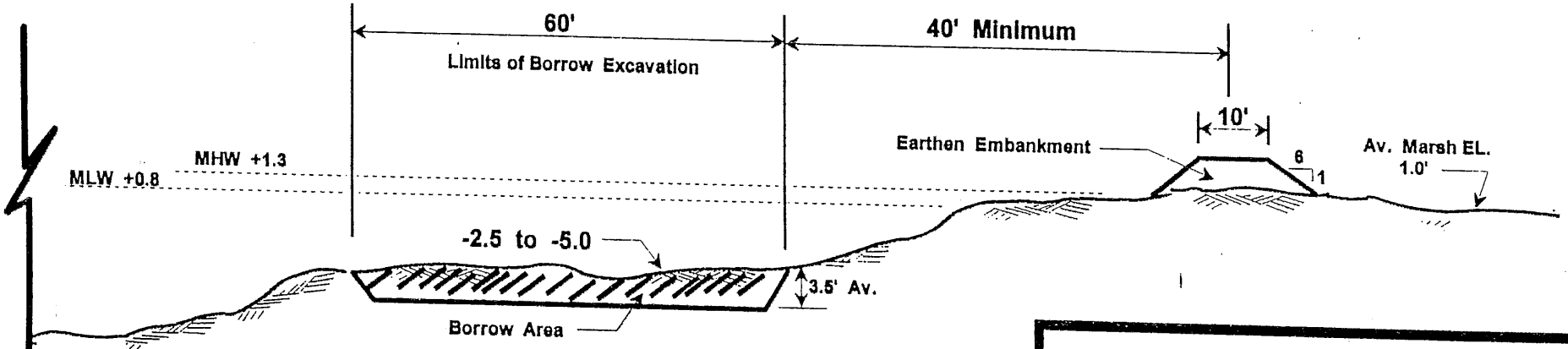


Typical Section
(Not to Scale)

LOCATION MAP



Approximately 6,355 feet of Earthen Embankment will be constructed within the reach along the N side of Bayou DeCade and NE side of Voss Canal. Section A-A is indicative of this proposed construction.



Typical Profile
(Not to Scale)

Notes:
1. All Elevations Shown In N.G.V.D.
2. Total Length of Earthen Embankment - 6,355 Feet.
3. Total Volume of Earthen Embankment Fill - 25,600 Cubic Yards.
4. Borrow Material to be Taken from Bayou DeCade and Voss Canal.

BRADY CANAL HYDROLOGIC RESTORATION

DETAILS - EARTHEN EMBANKMENT SECTION A - A

TERREBONNE PARISH, LA

13 of 16

State of Louisiana

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

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

August 31, 1998

Mr. Bruce Lehto
Assistant State Conservationist
Water Resources
Natural Resources Conservation Service
3737 Government Street
Alexandria, Louisiana 71302

Re: Brady Canal Permit

Dear Mr. Lehto:

I am pleased to enclose a copy of the signed Brady Canal permit.

Very truly yours,

Katherine G. Vaughan
Assistant Secretary

KGV/lb

Enclosure: As stated

cc: (w/enclosures)

Mr. Don Gohmert, Natural Resources Conservation Service
Mr. Jim Buchtel, Department of Natural Resources

OFFICE OF COASTAL RESTORATION AND MANAGEMENT
P.O. Box 44487 · Baton Rouge, Louisiana 70804-4487 · Telephone (504) 342-1375 · Fax (504) 342-1377

An Equal Opportunity Employer

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

AUG 27 1998

SUBJECT: WL-19-970-0150 and
SW(Terrebonne Parish Wetlands)1087

Louisiana Department of
Natural Resources
Post Office Box 94396
Baton Rouge, Louisiana 70804-9396

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 Louisiana Department of Natural Resources

Permit No. WL-19-970-0150 and SW(Terrebonne Parish Wetlands)1087

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 for material to construct and maintain levees, install and maintain water control structures, modify existing structures and place rip-rap in order to implement the Brady Canal Hydrologic Restoration Project, in accordance with the drawings attached in sixteen sheets, dated December 19, 1996.

Project Location:

In Terrebonne Parish, central to a point approximately 16 miles southwesterly from Houma, Louisiana.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on June 30, 2001. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.

2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.

3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

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.

Deborah Vaughan as Asst. Secretary, Louisiana Department of Natural Resources — July 8, 1998

(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 — 27 August 1998

(~~DISTRICT ENGINEER~~) (DATE)

Ronald J. Ventola, Chief, Regulatory 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)

☆U.S. GOVERNMENT PRINTING OFFICE: 1986 — 717-425

Special Conditions
WL-19-970-0150 and
SW(Terrebonne Parish Wetlands)1087

7. The permittee shall ensure that the work authorized herein is performed in accordance with the attached permit drawings and special conditions.

8. Prior to dredging the proposed access channel depicted on sheet 16 of the permit drawings, the permittee shall ensure that all pipelines which would be crossed by the channel have been located and shall employ appropriate measures to prevent damage to these pipelines during the dredging operation.

9. The permittee shall monitor the project in accordance with the June 1, 1998, draft monitoring plan which is attached, in part, to this permit. Monitoring shall commence during the first year of project construction and shall continue throughout the project's operational life. In the event that federal participation or funding for this project is discontinued, the permittee shall remain responsible for monitoring but may request modifications to the monitoring plan. The Corps of Engineers will decide which modifications will be allowed after coordinating the proposed changes with the appropriate state and federal agencies.

10. The permittee shall provide this office with a report or letter describing all work performed each year beginning with the year of permit issuance (1998) and continuing until project construction is completed. These reports, along with annual monitoring data shall be submitted to this office December 31st of each year.

11. Structures will not be placed across any state-owned water bottoms without the approval of the Louisiana Department of Natural Resources, Division of State Lands. The permittee will be responsible for contacting the Division of State Lands to ascertain which, if any, of the structures will be placed over state-owned water bottoms.

12. Barriers will be visible to the boating public both day and night so as to reduce the possibility of boat collision with the barriers.

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

14. The permittees must install and maintain, at his expense, any safety lights and signals prescribed by the US Coast Guard, through regulations or otherwise, on his authorized facilities.

15. The time limit to perform dredging needed to maintain the navigability of the proposed channel and to obtain material needed to maintain the authorized levees expires 10 years from the effective date of this approval.

98 JUN 25 AM 9:30

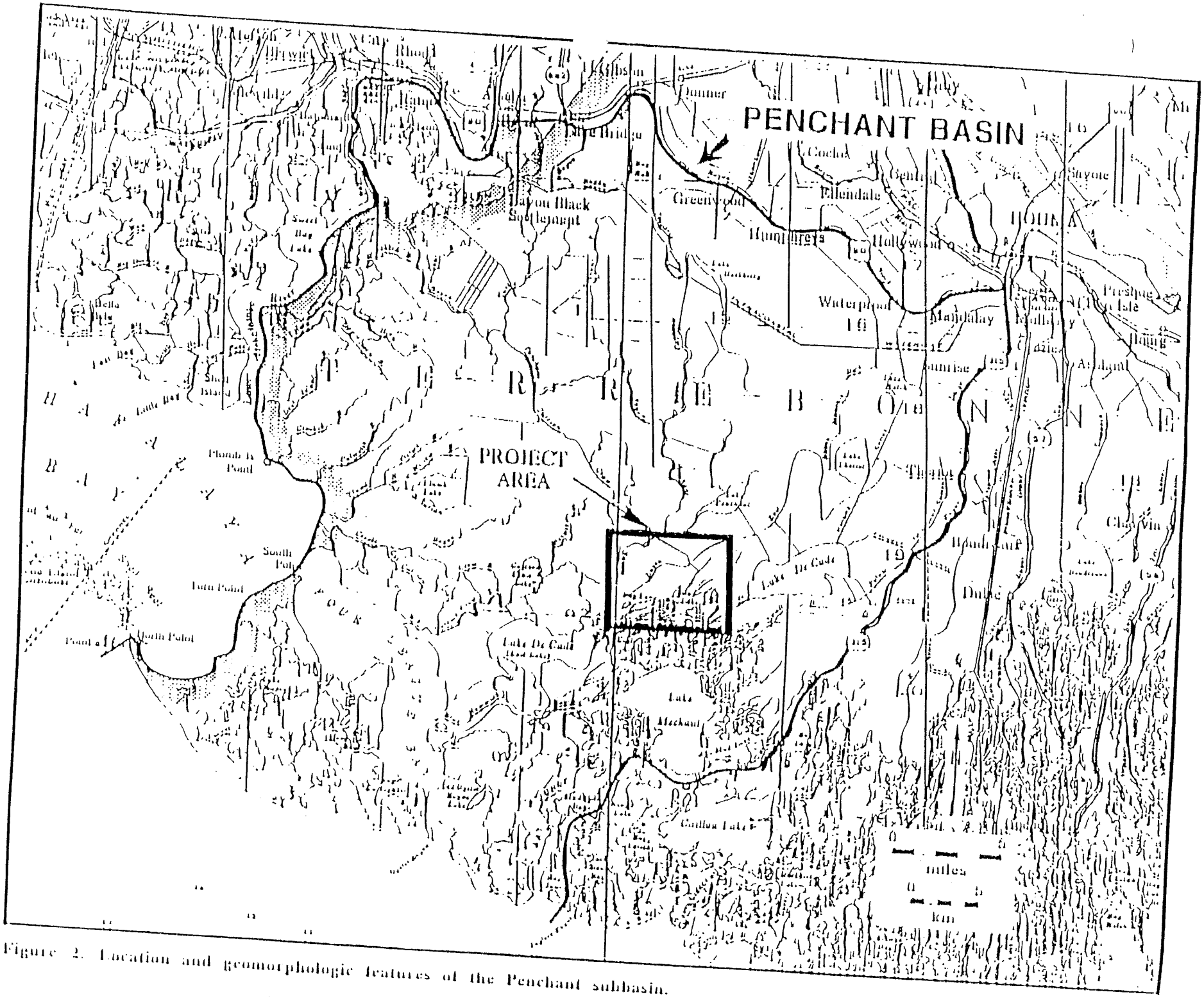
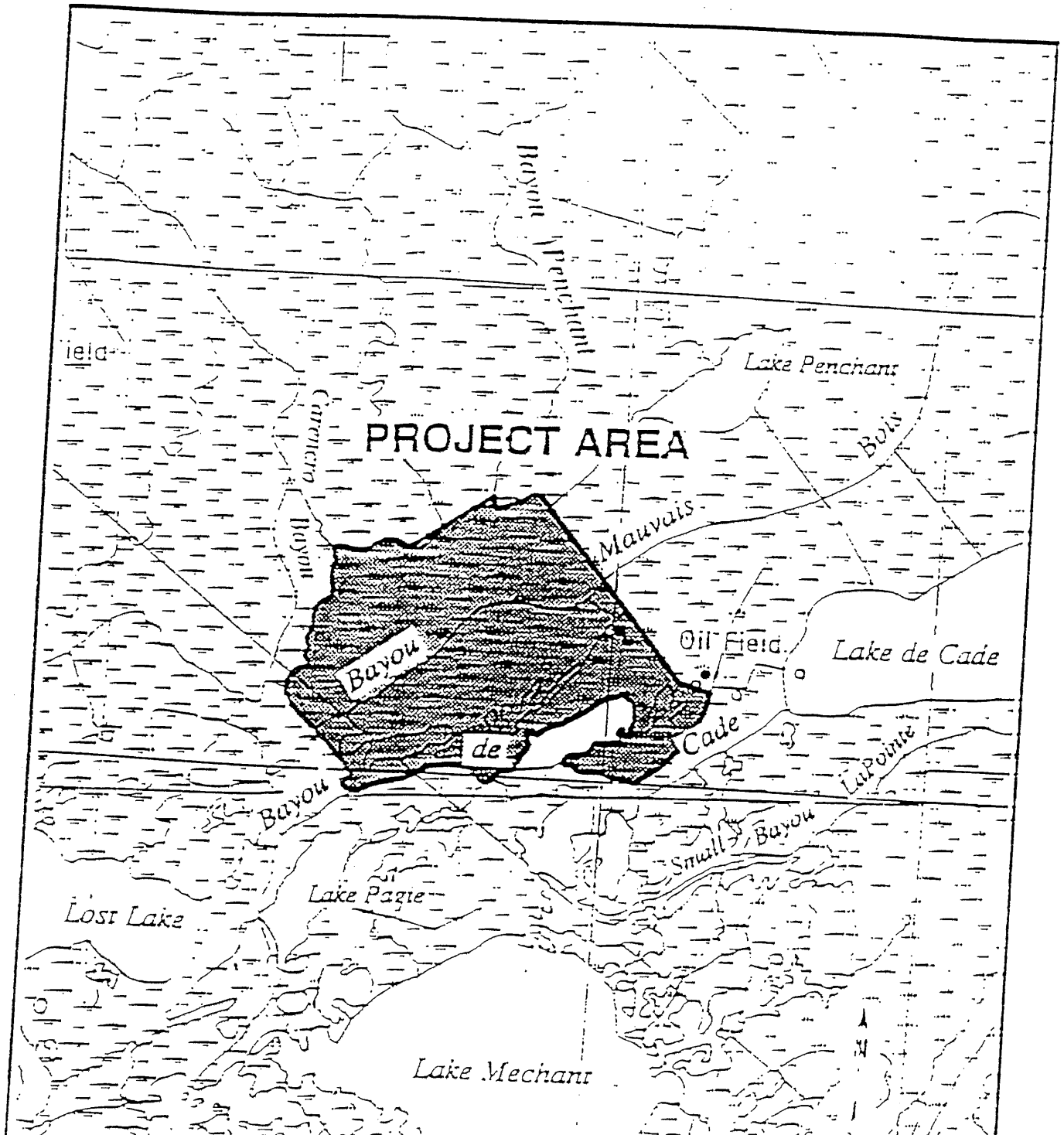
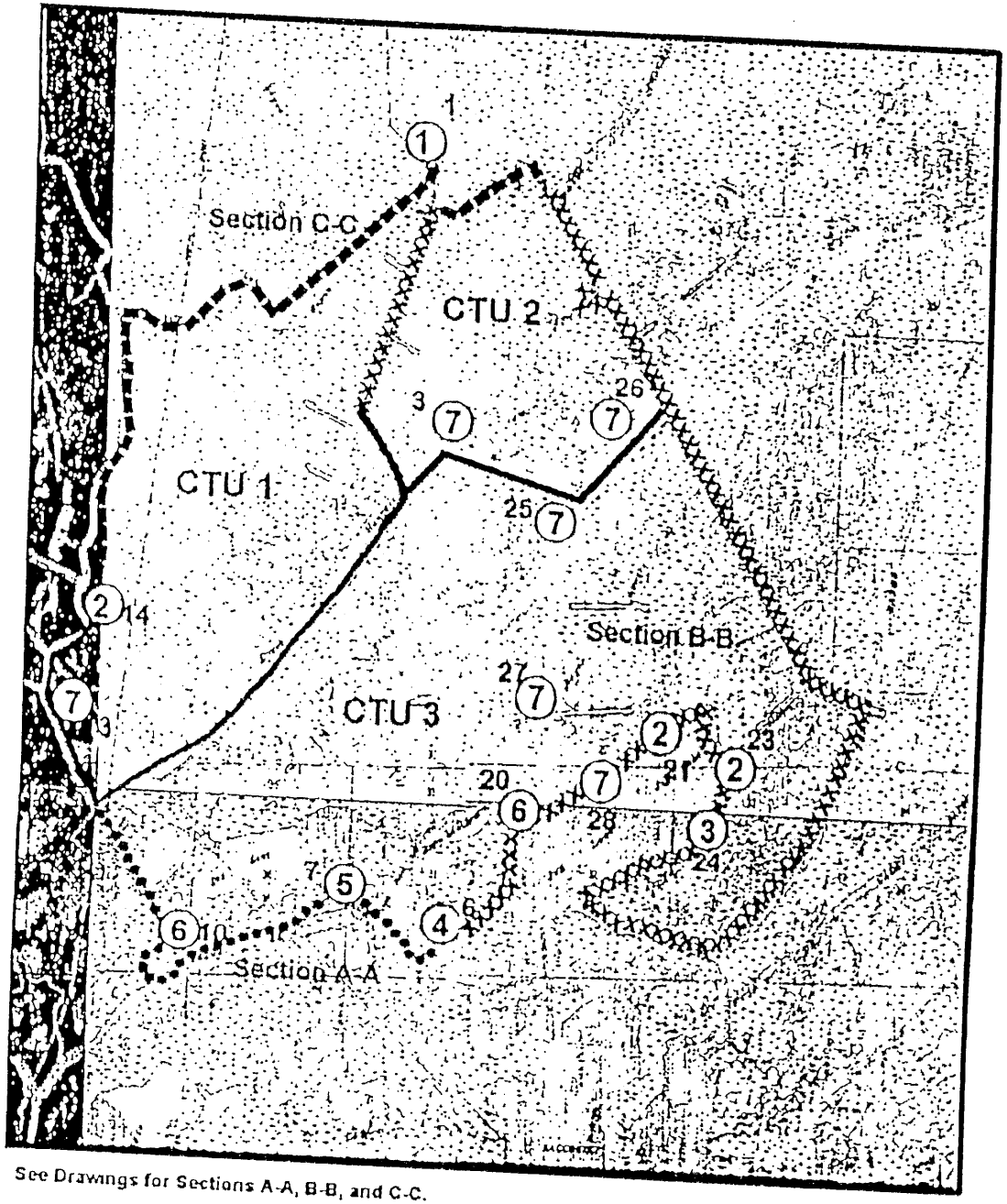


Figure 2. Location and geomorphologic features of the Penchant subbasin.


PROJECT AREA
Bayou Penchant
Lake Penchant
Bois
Mauvais
Oil Field
Lake de Cade
Bayou
de
Cade
Bayou
LaPointe
Small Bayou
Lake Pagie
Lost Lake
Lake Mechant
N



See Drawings for Sections A-A, B-B, and C-C.

BRADY CANAL
HYDROLOGIC RESTORATION
(PTE-26B)

①	Bulkhead W/Boat Bay and Flapgate Stoplog Sections
②	Fixed Crest Weir W/Variable Crest Section(s)
③	Fixed Crest Weir
④	Fixed Crest Weir W/Barge Bay
⑤	Rock Plug
⑥	Stabilized Channel Cross-Section
⑦	Existing Weir
▬▬	Overflow Bank
•••	Embankment Construction
xxx	Shoreline Maintenance
1	Evaluation Site #
—	CTU Boundary

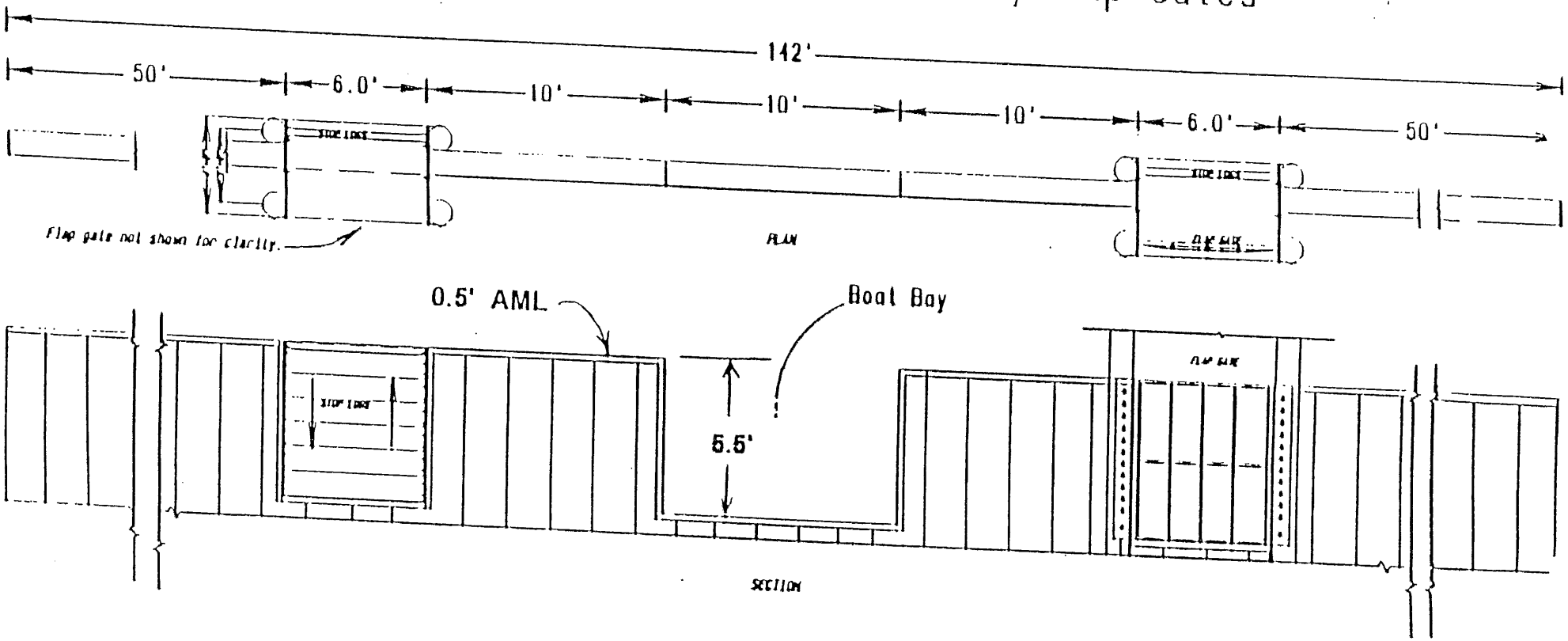
Table 2: Existing Structures and Proposed Project Features Within the Brady Canal Hydrologic Restoration Project Area.

Evaluation Site	Channel		Existing Structure			Proposed Structure		
	Width (ft)	Depth (ft)	Type	Crest Elevation (ft BML)	Crest Width (ft)	Type	Crest Elevation (ft BML)	Crest Width (ft)
1	112	20	Timber Bulkhead	0 5	60	Bulkhead	0 5	120
			Boat Bay	-5 0	9	Boat Bay	-5 0	10
3			Var. Crest Weir	from 0 to -1.4	12	Flap Gates/Stoplog	from 0 5 to -5 0	12
6	285	8 4						
						Fixed Crest Weir	-0 5	145
7	315	8				Barge Bay	-8 0 *	70
						Rock Plug		
10	225	10 9						
						Channel Armor		
14	40	7 8	Fixed Crest Weir	-1.0	33			
						Fixed Crest Weir	-1 0	30
20	160	9				Var. Crest Section	from -1.0 to -6 0	6
21						Channel Armor		
			Fixed Crest Weir	-1.0	48			
						Fixed Crest Weir	-1.0	30
22						Var. Crest Sections	-1.0-6 0	18
			Earthen Plug					
23								
			Fixed Crest Weir	-1 0	40	Fixed Crest Weir	-1.0	48
			Var. Crest Section		18	Var. Crest Section	from -1.0 to -6 0	12
24								
			Fixed Crest Weir			Fixed Crest Weir		
			Section 1	-1 0	30	Section 1	-1 0	30
			Section 2	-2 5	50	Section 2	-2 5	50
25								
			60" Pipe					
			Sluice gate					
			Flapgate					
26								
			Fixed Crest Weir	-0 5	16			
27								
			42" Pipe					
			V crest weir inlet	from 0 to -3 5	6			
			Flapgate					
28								
			42" Pipe					
			V. crest weir inlet	from 0 to -3 5	6			
			Flapgate					

* Below mean low water.

Typical Drawing

Weir w/Boat Bay & VC Sections w/Flap Gates



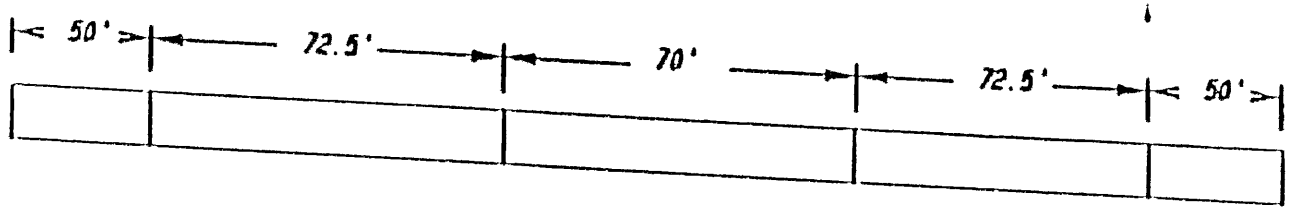
NOT TO SCALE

NOTE:
Dimension shown based upon planning surveys.

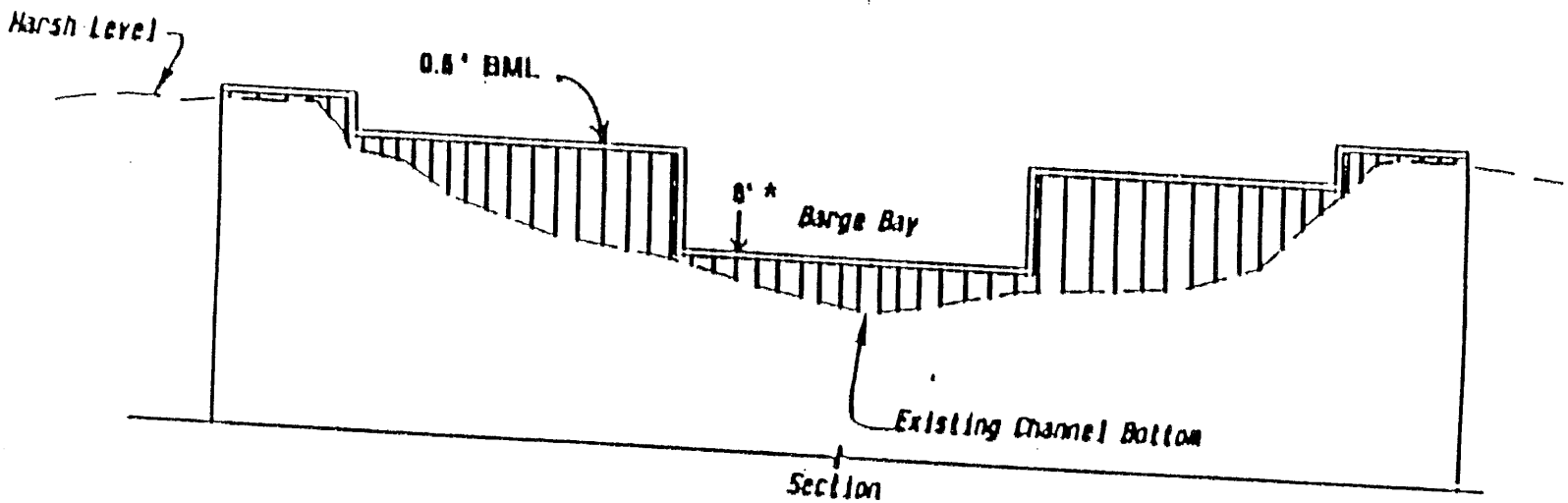
Brady Canal
Hydrologic Restoration
ES-1 Weir W/Boat Bay and
VC Sections w/Flap Gates
Terrebonne Parish, La.

TYPICAL DRAWING

FIXED CREST WEIR WITH BARGE BAY



Plan View



Section

NOTE:

Dimensions shown based upon planning surveys.

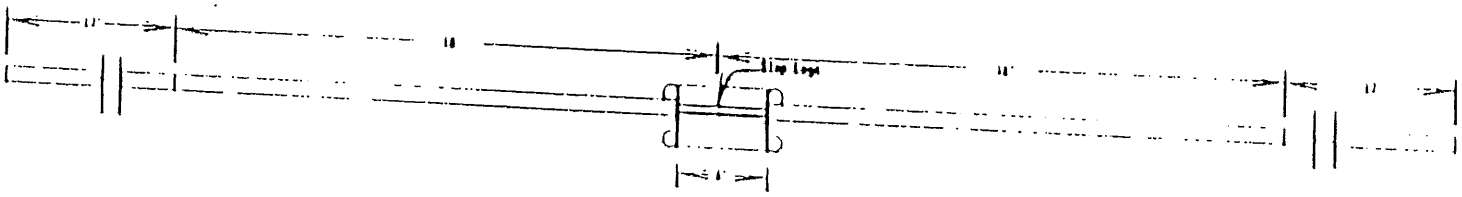
* Below mean low water

Not to Scale

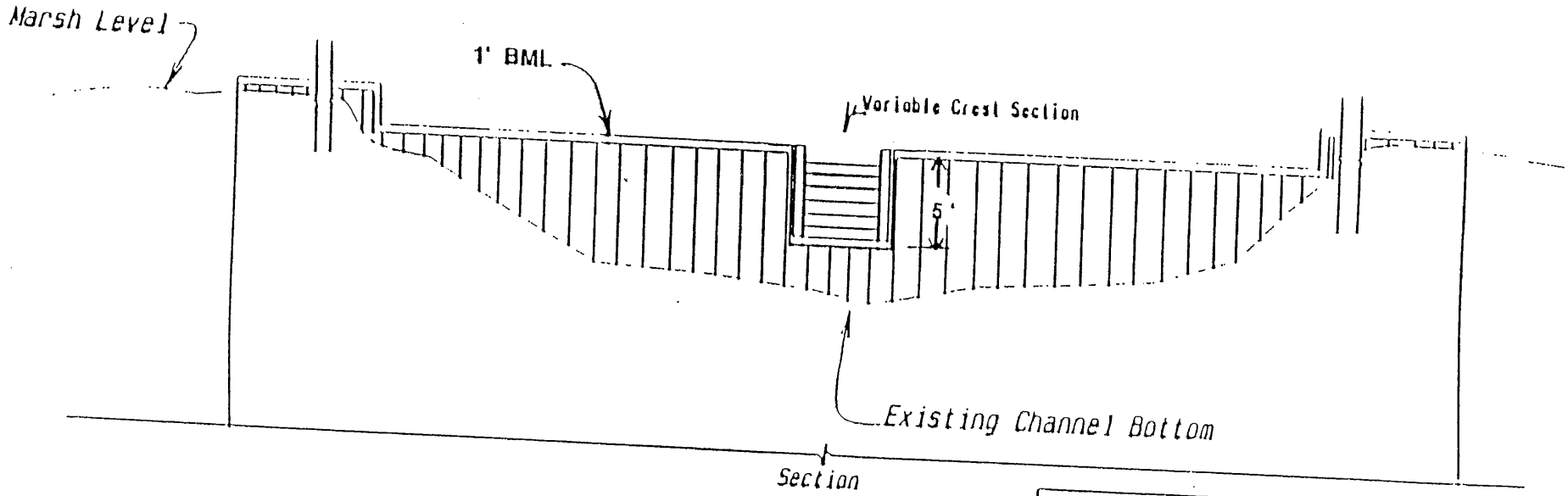
Brady Canal
Hydrologic Restoration
ES-6 Fixed Crest Weir W/Barge Bay
Terrebonne Parish, La.

TYPICAL DRAWING

WEIR W/VARIABLE CREST SECTION



Plan View



Section

NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

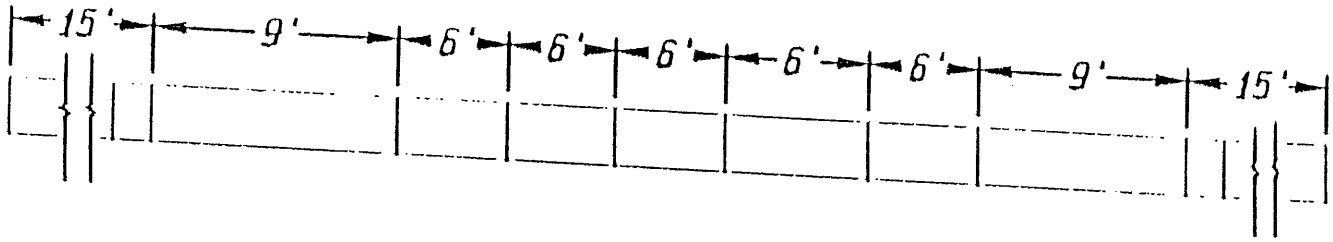
Brady Canal

Hydrologic Restoration

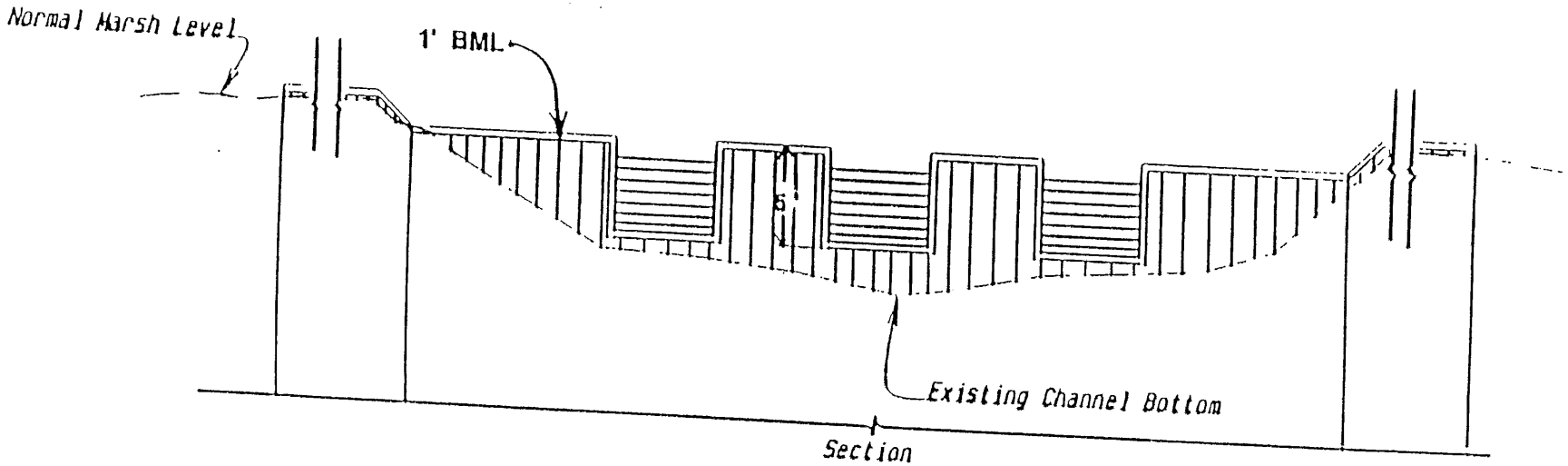
ES-14 Weir W/Variable Crest Sections

TYPICAL DRAWING

WEIR WITH VARIABLE CREST SECTIONS



Plan View



Section

NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

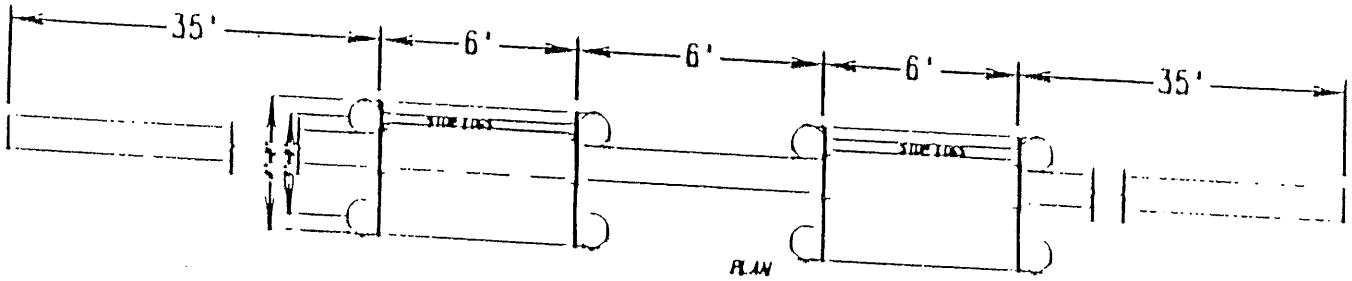
Brady Canal

Hydrologic Restoration

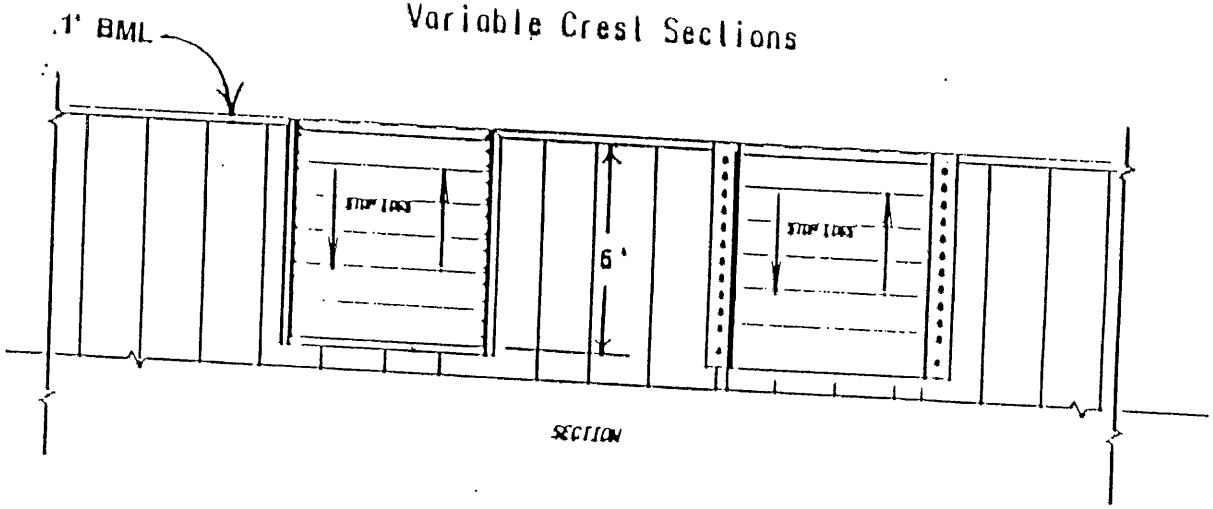
ES-21 Weir W/Variable Crest Sections

Terrebonne Par...

TYPICAL DRAWING
WEIR W/VARIABLE CREST SECTIONS



Variable Crest Sections



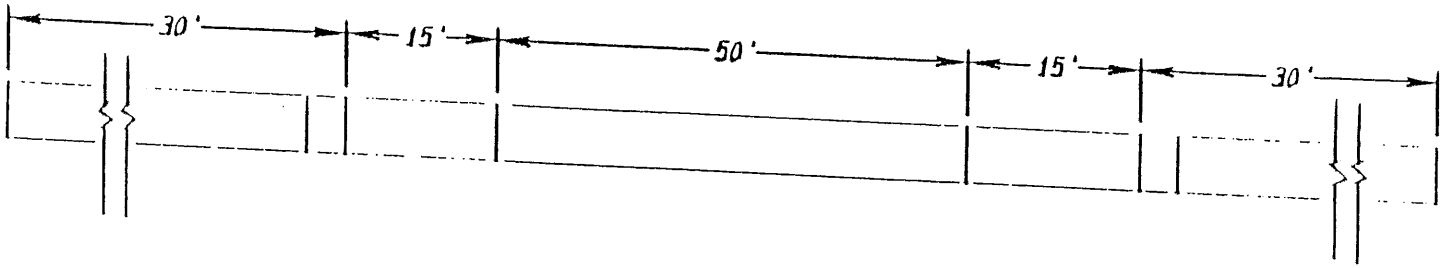
NOT TO SCALE

NOTE:
Dimensions shown based upon planning surveys.

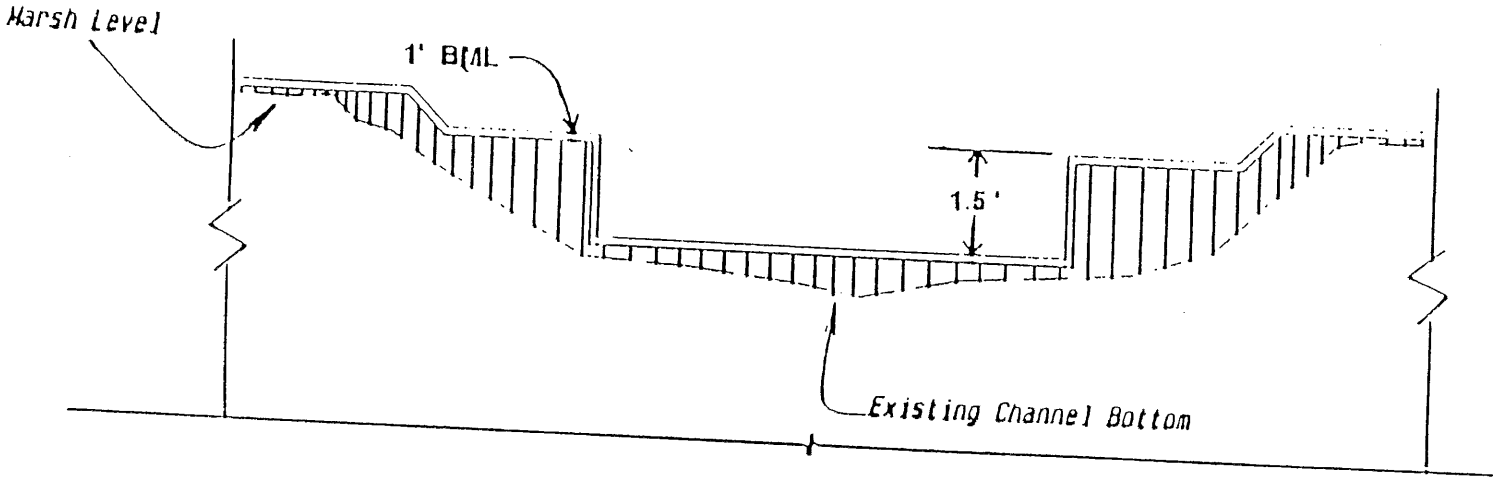
Brady Canal
Hydrologic Restoration
ES-23 Weir W/Variable Crest Sections
Terrebonne Parish, La.

TYPICAL DRAWING

FIXED CREST WEIR



Plan View



Section

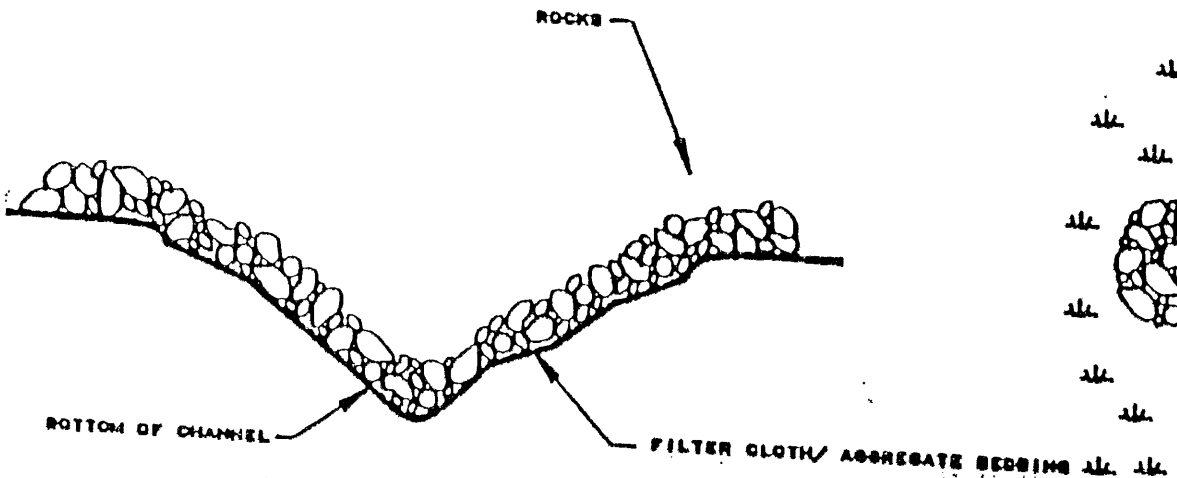
NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

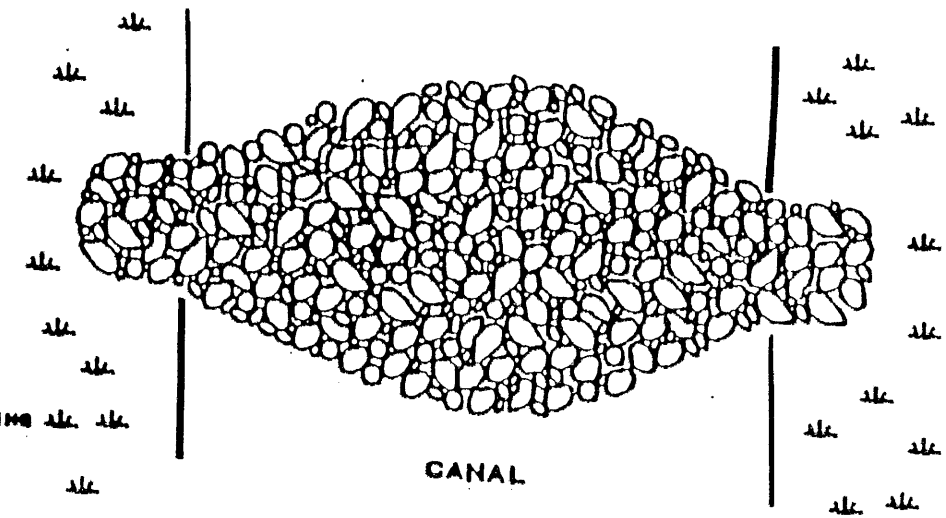
Brady Canal
Hydrologic Restoration
ES-24 Fixed Crest Weir

Terrebonne Parish, La.

TYPICAL DRAWING
ROCK CHANNEL LINER



ELEVATION VIEW
NOT TO SCALE

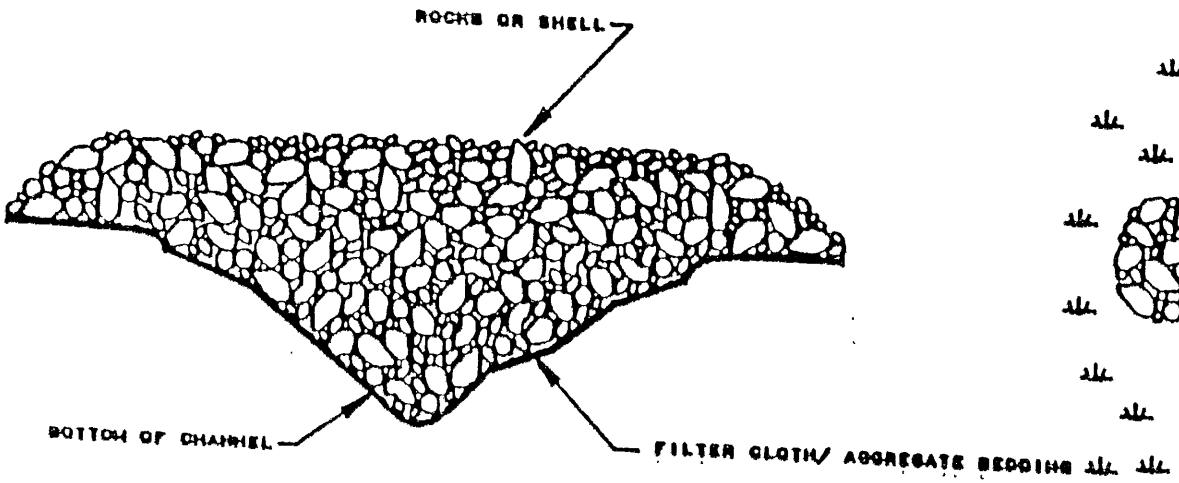


PLAN VIEW
NOT TO SCALE

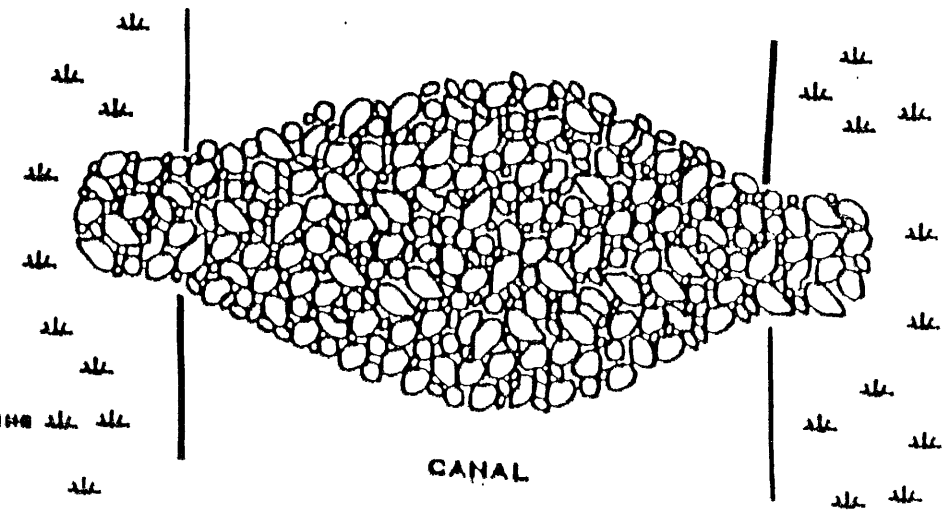
Estimated Volume of Rock Fill	
ES-10	1,440 Cubic Yards
ES-20	1,365 Cubic Yards

Brady Canal
Hydrologic Restoration
ES-10,20 Rock Channel Liner
Terrebonne Parish, La.

TYPICAL DRAWING
ROCK PLUG



ELEVATION VIEW
NOT TO SCALE



PLAN VIEW
NOT TO SCALE

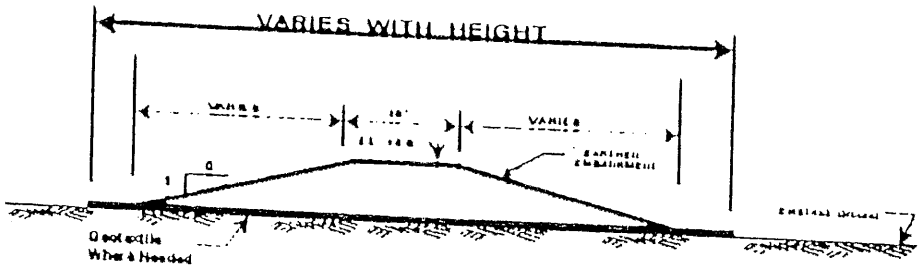
Estimated Volume of Rock Fill	
ES-7	4,375 Cubic Yards

Brady Canal
Hydrologic Restoration
ES-7 Rock Riprap Plug

Terrebonne Parish, La.

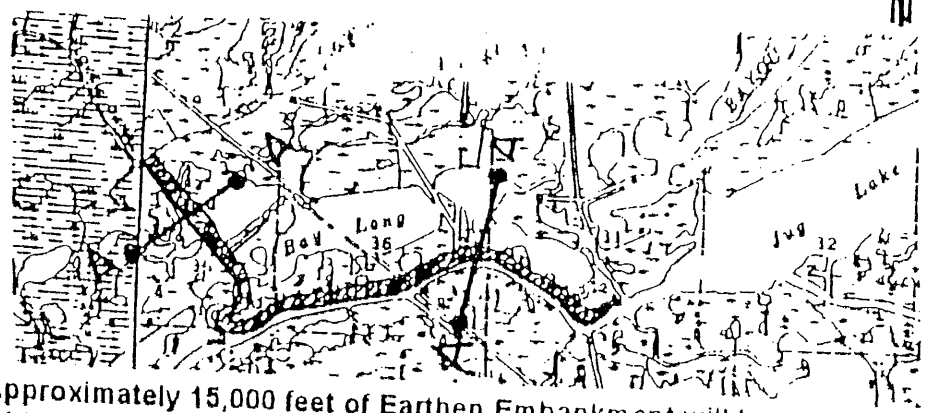
NOT TO SCALE

EARTHEN EMBANKMENT SECTION A - A



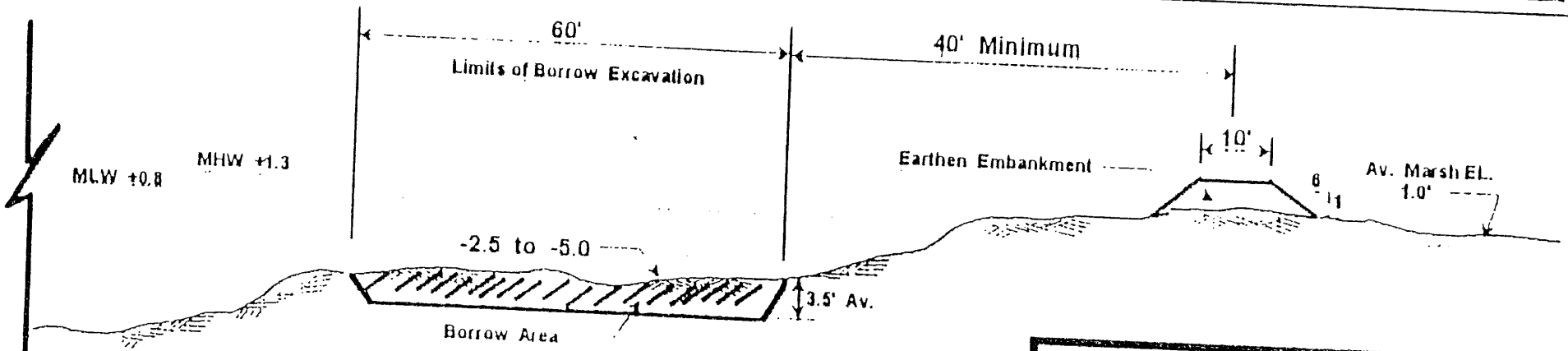
Typical Section

LOCATION MAP



Approximately 15,000 feet of Earthen Embankment will be constructed within the reach along the N side of Bayou DeCade and NE side of Voss Canal. Section A-A is indicative of this proposed construction.

NOT TO SCALE



Typical Profile

Notes:
1. All Elevations Shown in N.G.V.D.
2. Total Length of Earthen Embankment - 15,000 Feet.
3. Total Volume of Earthen Embankment Fill - 60,300 Cubic Yards.
4. Borrow Material to be Taken from Bayou DeCade and Voss Canal.

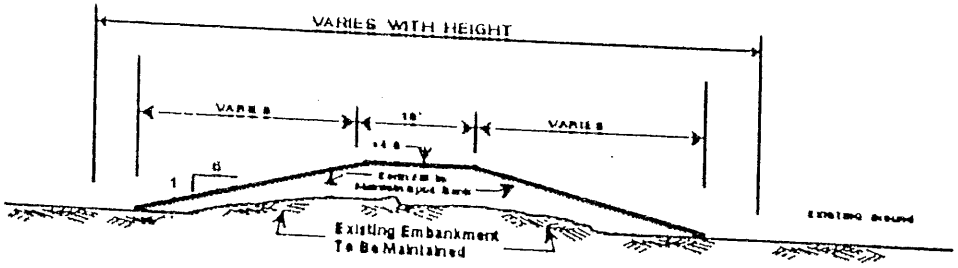
BRADY CANAL HYDROLOGIC RESTORATION

DETAILS - EARTHEN EMBANKMENT SECTION A - A

TERREBONNE PARISH, LA

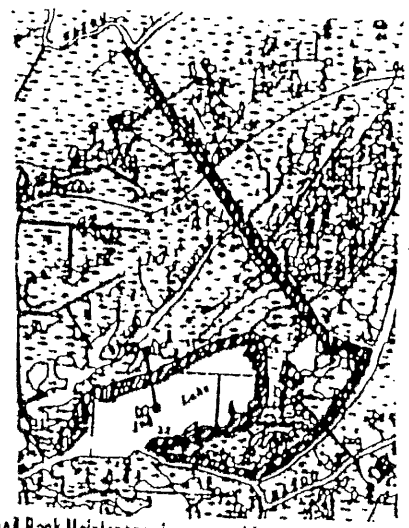
NOT TO SCAI

SPOIL BANK MAINTENANCE
SECTION B - B



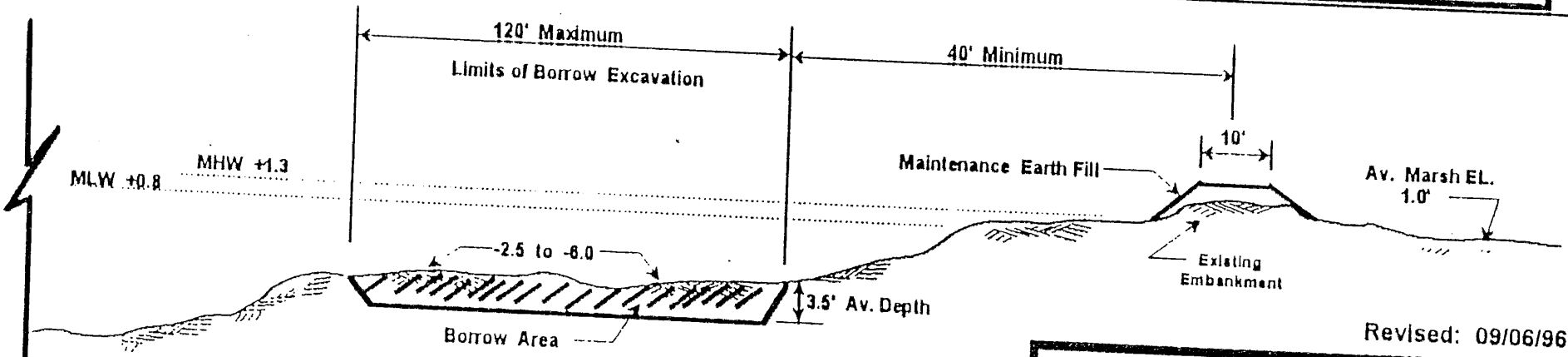
Typical Section

LOCATION MAP



Spoil Bank Maintenance is proposed for approximately 63,000 LF along Superior Canal, Turtle Bayou, Bayou DeCade, and Jug Lake. Section B-B depicts this proposed construction.

NOT TO SCALE



Revised: 09/06/96

Typical Profile

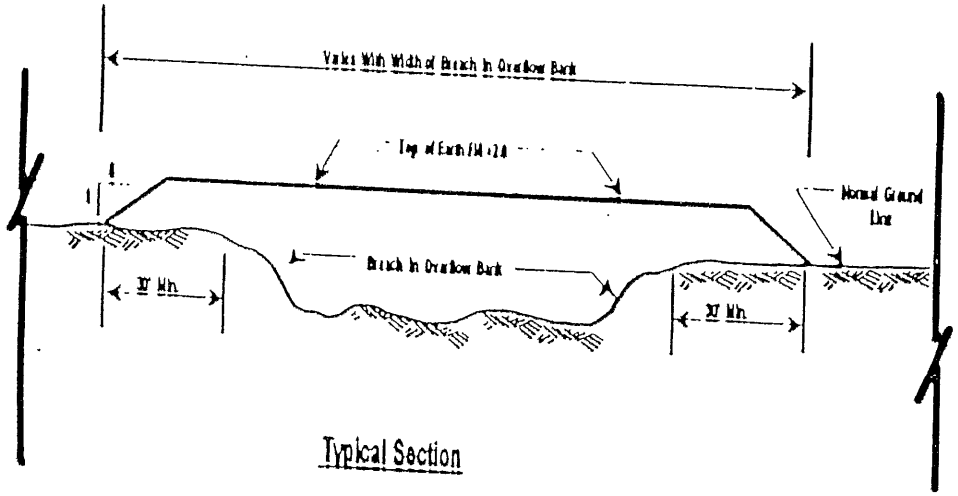
Notes: 1. All Elevations Shown In N.G.V.D.
2. Total Length of Earthen Embankment to be Maintained - 50,000 Feet. This Length Does Not Include Lake Shore of Jug Lake. With Jug Lake Shoreline - Total Length Approximately 69,000 Feet.
3. Estimated Annual Volume of Maintenance Earth Fill - 16,800 Cubic Yards.
4. Borrow Material to be Taken from Superior Canal, Bayou DeCade, Turtle Bayou, Jug Lake, and Voss Canal.

BRADY CANAL HYDROLOGIC RESTORATION

Spoil Bank Maintenance
Section B - B

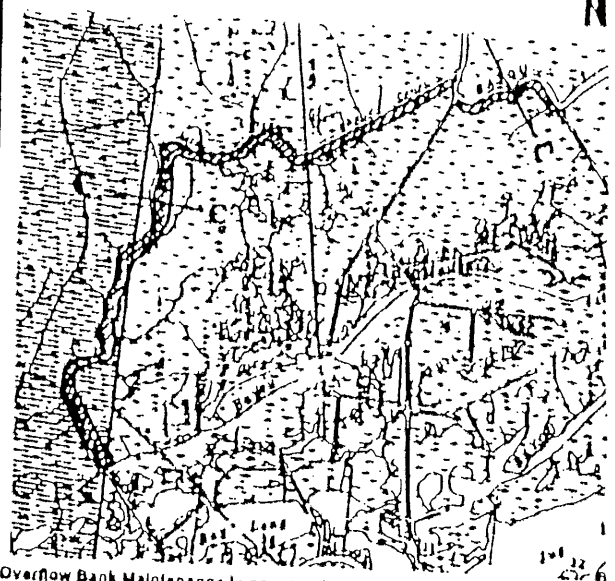
TERREBONNE PARISH, LA

OVERFLOW BANK MAINTENANCE
SECTION C - C



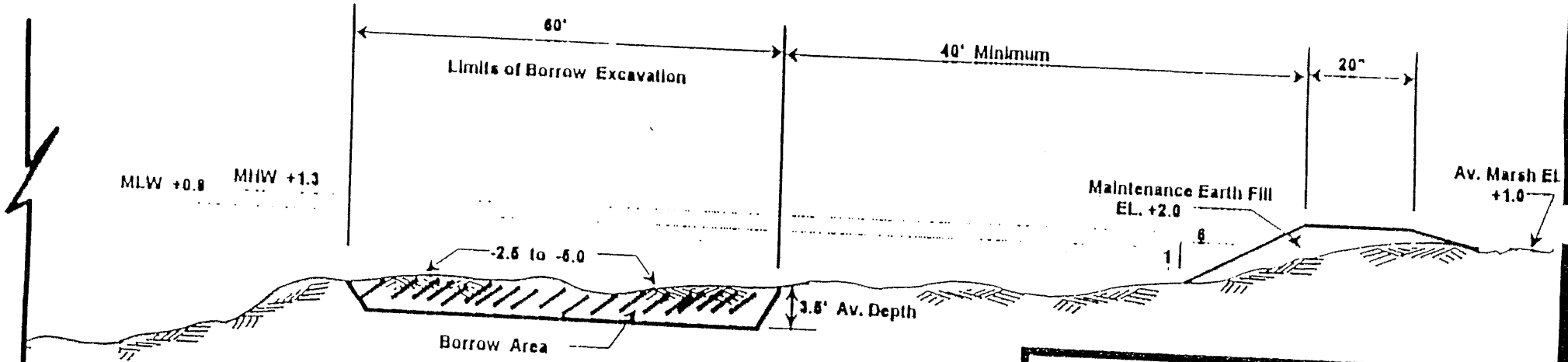
Typical Section

Vicinity Map



Overflow Bank Maintenance is proposed for approximately 29,600 LF along Bayou Carencro, L. Bayou Carencro, Brady Canal, and Bayou Penchant. Section C - C depicts this proposed measure.

NOT TO SCALE



Typical Profile

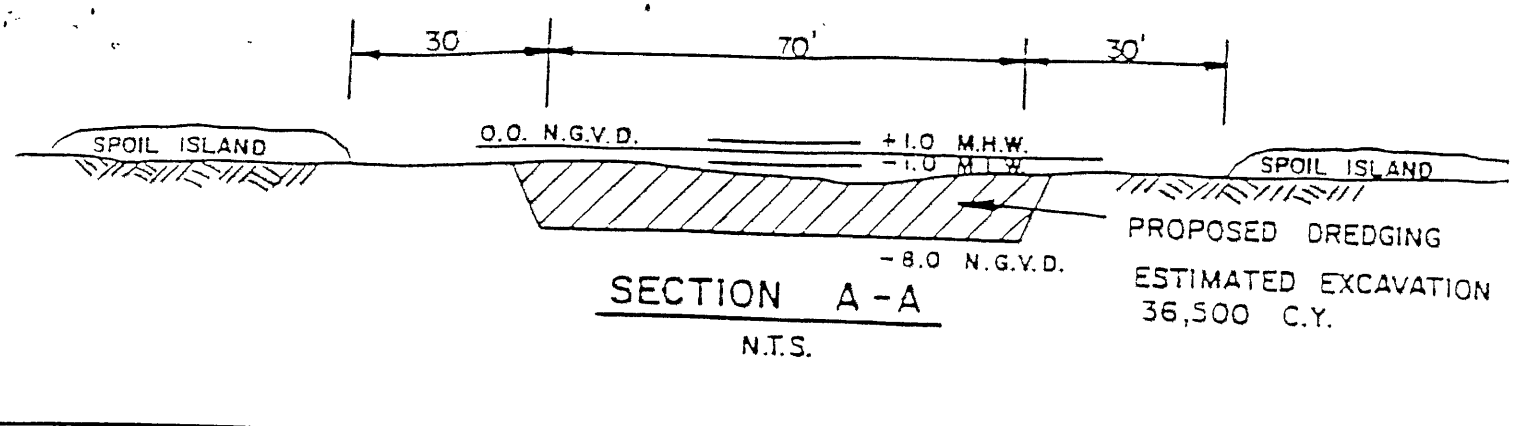
Notes:
1. All Elevations Shown In NGVD
2. Total Length of Earthen Embankment to be Maintained- Approx. 29,600 Feet Along Bayou Carencro, Little Bayou Carencro, Brady Canal, and Bayou Penchant..
3. Estimated Annual Volume of Maintenance Earth Fill for Overflow Banks - 1590 Cubic Yards Based on Repairing 300' of Bank per Year.
4. Borrow Material to be Taken from Adjacent Canal or Bayou.

BRADY CANAL HYDROLOGIC RESTORATION

Overflow Bank Maintenance
Section C - C

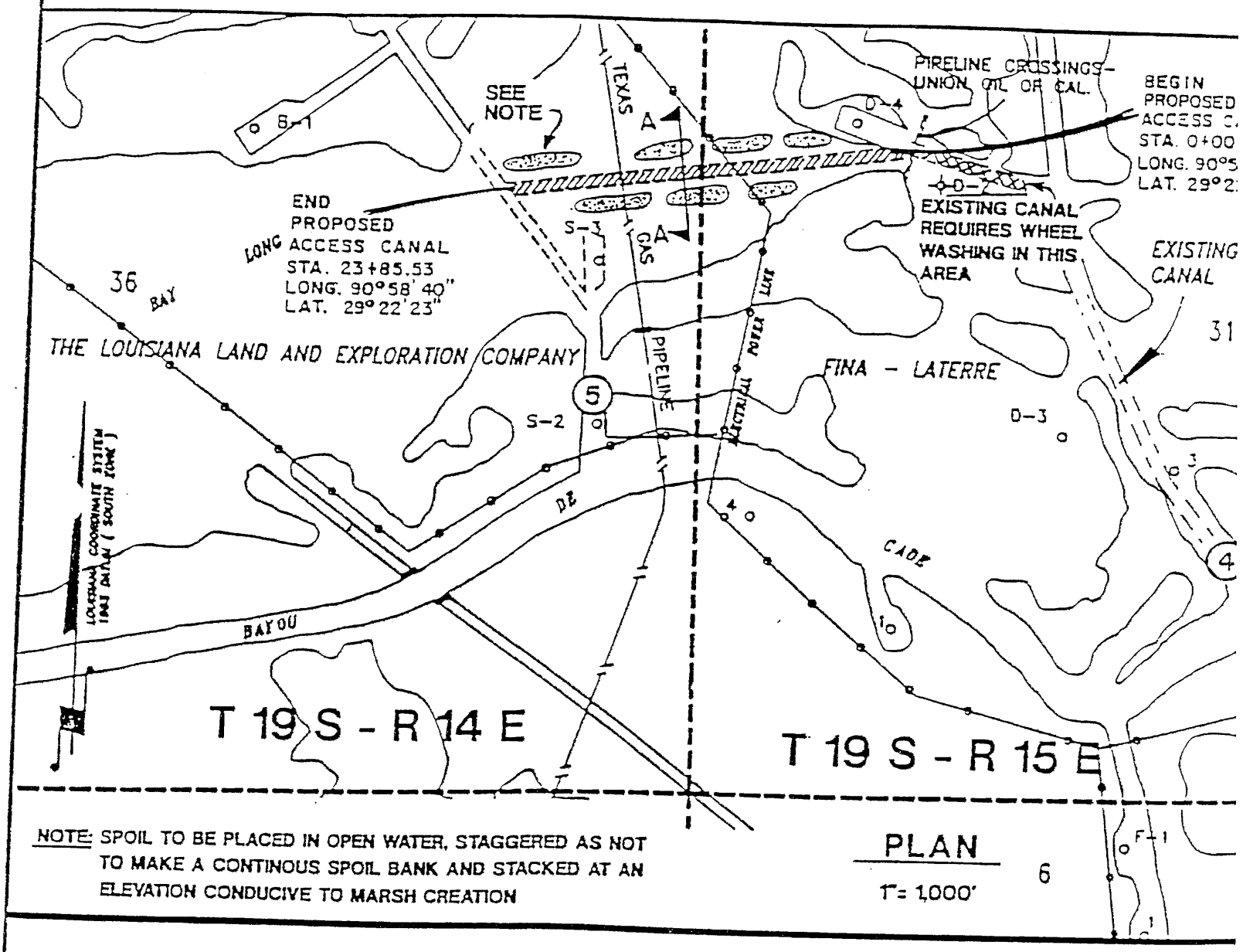
TERREBONNE PARISH, LA

12/10/91 15 of 11



SECTION A-A

N.T.S.



NOTE: SPOIL TO BE PLACED IN OPEN WATER, STAGGERED AS NOT TO MAKE A CONTINOUS SPOIL BANK AND STACKED AT AN ELEVATION CONDUCIVE TO MARSH CREATION

PLAN

1"= 1,000'

PROPOSED ACCESS CANAL TO BE DREDGED IN CONJUCTION WITH THE BRADY CANAL HYDROLOGIC RESTORATION PROJECT LOCATED IN SECTION 31, T19S - R15E AND SECTION 36, T19S - R14E, TERREBONNE PARISH, LA.

12/14/96

MONITORING PLAN

PROJECT NO. TE-28 BRADY CANAL HYDROLOGIC RESTORATION

ORIGINAL DATE: May 29, 1996
REVISED DATE: June 1, 1998

draft

Preface

Pursuant to a CWPPRA Task Force decision on April 14, 1998, the original plan was reduced in scope due to budgetary constraints. Specifically, vegetation will be monitored in years 2, 4, and 6, then every three years thereafter. SAV will be monitored at year 1 post-construction rather than years 13 and 17. Two sondes with marsh mat movement recorders were added to monitor duration and frequency of flooding of floating marsh for years 1998-2004. Water level and salinity will be monitored continuously through 2004. Upon collection and evaluation of this data set, the Technical Advisory Group (TAG) will assist in development of a sampling plan based on an approximate 50% reduction of effort, if technically advisable.

Project Description

The Brady Canal Hydrologic Restoration Project consists of 7,653 ac (3,097 ha) located in the Terrebonne Basin, within the Bayou Penchant-Lake Penchant watershed. The project is bounded by Bayou Penchant, Brady Canal, and Little Carencro Bayou to the north, Bayou de Cade and Turtle Bayou to the south, Superior Canal to the east and Little Carencro Bayou and Voss Canal to the west (figure 1).

Historically the Atchafalaya River has influenced the establishment of freshwater marsh plant species within the Brady Canal Hydrologic Restoration project area (USDA/NRCS 1995). In 1968 the vegetation in the project area was classified as freshwater, intermediate and brackish marsh (Chabreck et al. 1968; figure 2). In 1978 the area was classified as intermediate marsh with a small area of brackish marsh in the southern portion of the project along Bayou de Cade (Chabreck and Linscombe 1988).

The Brady Canal Hydrologic Restoration project is bisected by the Mauvais Bois Ridge, resulting in different hydrologic regimes to the north and south of the ridge. The northern section of the project area still receives freshwater and sediments which is provided through overbank flow from Bayou Penchant, Little Carencro Bayou, and Brady Canal (USDA/NRCS 1995). The Mauvais Bois Ridge forms a barrier to reduce the outflow of freshwater. Freshwater and sediment retention has diminished in the southern portion of the project area due to unimpeded throughflow and tidal exchange combined with a decrease in freshwater and sediment (USDA/NRCS 1995).

The project area north of the Mauvais Bois Ridge is dominated by *Sagittaria lancifolia* (bulltongue), *Sacciolepis striata* (bagscale), *Ludwigia leptocarpa* (false loosestrife), *Hydrocotyle sp.* (pennywort) *Eleocharis sp.* (spikerush), and *Sagittaria latifolia* (duck potato). Submerged aquatic vegetation (SAV) in shallow ponds include *Nymphaea odorata* (white waterlily), *Utricularia sp.* (bladderwort),

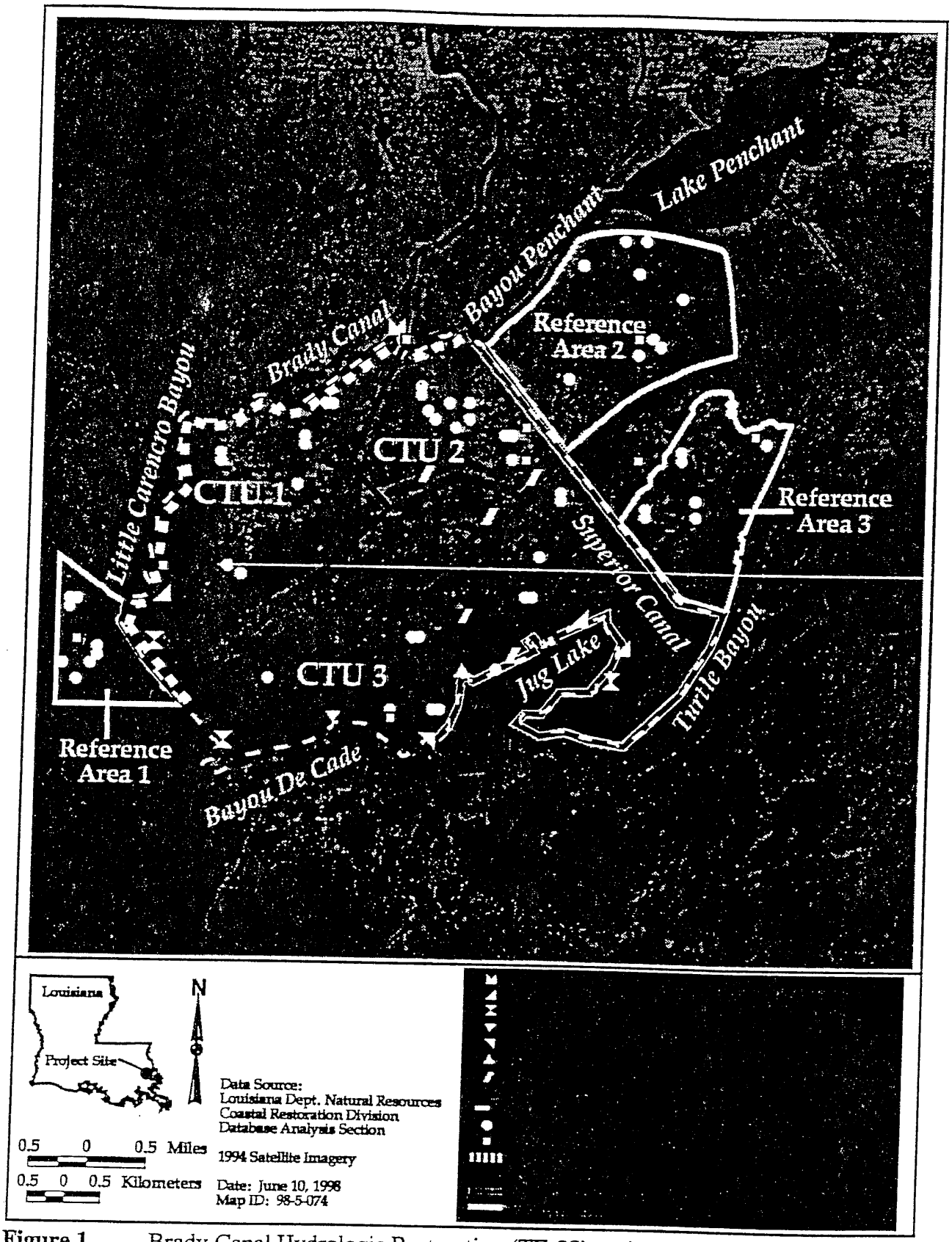


Figure 1. Brady Canal Hydrologic Restoration (TE-28) project boundaries and features.

et al. 1992). Land loss data in the project area indicates that losses were greatest in the southwest portion of the project (USDA/NRCS 1995).

The Brady Canal Hydrologic Restoration project involves the installation and maintenance of canal plugs, the repair, construction, and maintenance of levees, and the placement of stabilized channel cross-sections. The structures are designed to reduce adverse tidal effects in the project area as well as to better utilize available freshwater and sediments.

The principle project features include (figure 1):

1. Bulkhead with boat bay and two flapgated variable crest sections (1)
2. Fixed crest weir with barge bay (1)
3. Fixed crest weir with variable crest sections (3)
4. Fixed crest weir (1)
5. Rock plug (1) (315 ft)
6. Stabilized channel cross-section (rock) (2)
7. Earthen embankment (15,000 ft)
8. Maintenance of existing overflow bank (21,600 ft)
9. Maintenance of shore and earthen embankment
10. Maintenance of existing structures

Project Objectives

1. Maintain and enhance existing marshes in the project area by reducing the rate of tidal exchange.

2. Improve the retention of tidal induced freshwater and sediment.

Specific Goals

The following goals will contribute to the evaluation of the above objectives:

1. Decrease the rate of marsh loss.

2. Maintain or increase the abundance of plant species typical of a freshwater and intermediate marsh.

3. Decrease variability in water level within the project area.

4. Decrease variability in salinities in the southern portion of the project.

5. Increase vertical accretion within the project area.

6. Increase the frequency of occurrence of SAV within the project area.

draft

Reference Areas

The importance of using appropriate reference areas cannot be overemphasized. Monitoring on both project and reference areas provides a means to achieve statistically valid comparisons, and is therefore the most effective means of evaluating project success. The evaluation of sites was based on the criteria that both project and reference areas have a similar vegetative community, soil type, and hydrology.

In addition to the above criteria, reference areas were chosen to pair with the three Conservation Treatment Units (CTU) within the project area. Three reference areas were chosen. Reference area 1 is located south of Little Carencro Bayou and west of Vose Canal and is the reference area for CTU 1. The reference area for CTU 2 is located east of Superior Canal and south of Bayou Penchant. The reference area for CTU 3 is located east of Superior Canal and north of Turtle Bayou (figure 1). Both the project area and the reference areas are classified as freshwater marsh to intermediate marsh (Chabreck and Linscombe 1988) and contain mainly the Allemands Muck and Clovelly Muck soils (USDA/NRCS 1995). Reference areas will be used in the evaluation of all monitoring elements. Although the reference areas have many similarities to the project site, we recognize that interpretation of reference data can be limited or confounded by natural or anthropogenic processes.

Monitoring Elements

The following monitoring elements will provide the information necessary to evaluate the specific goals listed above:

1. Habitat Mapping — To document vegetated and non-vegetated areas, color infrared aerial photography (1:12,000 scale with ground controls) will be obtained. The photography will be photointerpreted, scanned, mosaicked, georectified, and analyzed by National Wetlands Research Center (NWRC) personnel according to the standard operating procedure described in Steyer et al. (1995). The photography will be obtained in 1996 (pre-construction), and in 2002, 2008, and 2017 (post-construction).

2. Vegetation — Species richness and relative abundance will be evaluated in the project and reference areas using techniques described in Steyer et al. (1995). More specifically, the Braun-Blanquet method (Mueller-Dombois and Ellenberg 1974) will be utilized. Five stations were chosen within each CTU and reference area and replicate samples will be collected at each station. Relative abundance will be documented in permanent plots to allow revisiting over time. Plot size will be determined after a field investigation. Sites will be sampled once in 1996 (pre-construction) and 1999 (as-built), and in 2002, 2004, 2006, 2009, 2012, and 2015 post-construction.

3. Water Level — To monitor water level variability, one continuous recorder will be located within each CTU and one recorder located in each reference

draft

area. One additional recorder will be located outside the project area on Bayou Penchant near the northern most water control structure. Mean daily water level variability and duration and frequency of flooding prior to construction will be compared to mean daily water level variability and duration and frequency of flooding after construction within the project area. Mean daily water level variability and duration and frequency of flooding will also be compared between the project and reference areas. Water level will be monitored in 1996-1998 (pre-construction) and in 1999-2004 (post-construction). Upon collection of this data set, the TAG will assist the CRD Monitoring Manager with evaluation of the data and development of a sampling plan based on an approximate 50% reduction of effort, if technically advisable.

4. Salinity

To monitor salinities one continuous recorder will be located in each CTU and reference area. Descriptive and summary statistics will be used to compare salinities in the project area prior to construction to salinities in the project area after construction. Also, salinities will be compared between the project and reference area. Discrete salinities will be determined monthly at five sites within each CTU and reference area. Salinity will be monitored in 1996-1998 (pre-construction) and in 1999-2004 (post-construction). Upon collection of this data set, the TAG will assist the CRD Monitoring Manager with evaluation of the data and development of a sampling plan based on an approximate 50% reduction of effort, if technically advisable.

5. Accretion

Vertical Accretion will be determined in triplicity at each of the five representative stations within each CTU and reference area using techniques described in Steyer et al. (1995). The location of vertical accretion sites will correspond with the location of vegetation sampling sites. Sites will be sampled twice in 1996 and 1999 (pre-construction), and in 2002, 2004, 2006, 2009, 2012, and 2015 (post-construction).

6. Submersed Aquatic Vegetation

The frequency of occurrence of SAV will be compared between project and reference areas. Within the project (by CTU) and reference areas, 5 ponds will be sampled during Fall (October or November) twice in 1996 and 1999 (pre-construction) and in 2002, 2006, 2012, and 2015 (post-construction). Methods described in Nyman and Chabreck (in press) will be used to determine the frequency of occurrence of SAV. Within each pond sampled, the presence/absence of SAV will be determined at 25 random points. Frequency of occurrence will be determined for each pond from the number of points at which SAV occurred and the total number of

draft

points sampled. When SAV occurs at a point, the species occurring will be listed.

7. Marsh Mat Movement

To monitor marsh mat movement, one continuous recorder will be located within CTU #1 and one recorder located in CTU #1 reference area. Mean daily water level variability and duration and frequency of flooding of floating marshes will be determined by comparison to mean daily water level variability and duration and frequency of flooding after construction within the project area. Mean daily water level variability and duration and frequency of flooding of floating marshes will also be compared between the project and reference areas. Marsh mat movement will be monitored in 1998 (pre-construction) and in 1999, 2000, 2001, 2002, 2003, and 2004 (post-construction).

Anticipated Statistical Tests and Hypotheses

The following hypotheses correspond with the monitoring elements and will be used to evaluate the accomplishment of the project goals.

1. Descriptive and summary statistics of historical data (NRS 1956, 1978, 1988) and data from aerial photography and GIS interpretation collected during post-project implementation will be used to evaluate marsh to open water ratios and marsh loss rates. If sufficient historical information is available, regression analyses will be done to examine changes in slope between pre- and post conditions.

   Goal: Decrease rate of marsh loss.

2. The statistical model of a repeated measures ANOVA will be BACI type model (Before-After-Control-Impact). This model will determine if there is a detectable impact (for example, in relative abundance of vegetation) in the project area after construction. Multiple comparisons will be performed to compare individual means across different treatment levels. All original data will be analyzed and transformed (if necessary) to meet the assumptions of ANOVA.

   Goal: Increase species richness and relative abundance of plant species typical of a freshwater and intermediate marsh.

   Hypothesis A:

   H_0: Species richness of vegetation within CTU (a) at time i will not be significantly greater than the species richness of vegetation within reference area (a) at time i.

draft

DEC 12 1996

State of Louisiana

Department of Environmental Quality

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

DEC 03 1996

J. DALE GIVENS
SECRETARY

WQC 960506-10

USDA Natural Resources Conservation Service
3737 Government Street
Alexandria, LA 71302

Attention: Donald W. Gohmert, State Conservationist and Agent for LA Land & Exploration (LL&E) and Fina Oil and Chemical Co.

Gentlemen:

RE: Proposal to perform dredge and fill activities, to install and maintain rip rap, and to modify/install and maintain water control structures in order to reduce erosion, encourage freshwater, sediment and nutrient influx and to stabilize water levels within a 7,653 acre area of marsh and open water, Brady Canal Hydrologic Restoration Project (PTE-26B), the Bayou Penchant-Lake Penchant watershed in Terrebonne Parish, LA.

This is to acknowledge that you have completed the requirements for Water Quality Certification for the above referenced proposal.

It is our opinion that your proposed project will not violate water quality standards of the State of Louisiana, therefore, we offer no objection to this project provided that the dredged material and the hauled-in fill material used are free of contaminants.

In accordance with statutory authority contained in the Louisiana Revised Statutes of 1950, Title 30, Chapter 11, Part IV, Section 2074 A(3) and provisions of Section 401 of the Clean Water Act (P.L. 95-217), the Office of Water Resources certifies that it is reasonable to expect that water quality standards of Louisiana provided for under Section 303 of P.L. 95-217 will not be violated.

Sincerely,

Linda Korn Levy

Linda Korn Levy, Assistant Secretary
Office of Water Resources

LKL:LG

c: Corps of Engineers, New Orleans - SW(Terrebonne PW/L)1087 - John Reddoch
Coastal Management Division - C960231/QWPPRA Project PTE-26b

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

United States Army Corps of Engineers

August 27,,1998

A permit to dredge for material to construct & maintain levees, install & maintain water control structures, modify existing structures & place rip-rap in order to implement the Brady Canal Hydrologic Restoration Project in at Terrebonne Parish, central to a point approximately 16 miles southwesterly from Houma, Louisiana,

has been issued to Louisiana Department of Natural Resources on August 27, 1998

Address of Permittee Post Office Box 94396
Baton Rouge, Louisiana 70804-9396

Permit Number

WL-19-970-0150 and
SW(Terrebonne PH WL)1087

for the

Ronald J. Ventola
District Commander

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

156

State of Louisiana

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

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

STC
DSTC
ASTC/WR/RD
ASTC/O/M
ASTC/CPTFP
ASTC/E
ASTC/SRA
PAS
ASTC/IT
PER
FNM
MS
WR
ASTC/FO/Monroe
ASTC/FO/Lafayette

November 5, 1998

Donald W. Gohmert
State Conservationist
U. S. Dept. of Agriculture
Natural Resources Conservation Service
3737 Government Street
Alexandria, Louisiana 71302

RE: **C960231**, Coastal Zone Consistency Modification
Natural Resources Conservation Service
Direct Federal Action
Brady Canal Hydrologic Restoration CWPPRA Project (TE-28), revision to construct a water control structure at site one and provide 8,645' of rock embankment and 6,355' of earthen embankment for shoreline protection, **Terrebonne Parish, Louisiana**

Dear Mr. Gohmert:

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 project, as modified in this application, is consistent with the LCRP. If you have any questions please call Brian Marcks of the Consistency Section at (225) 342-7591 or 1-800-267-4019.

Sincerely,

Terry W. Howey

Terry W. Howey
Administrator

TWH/JH/bgm
CC: Ron Ventola, NOD-COE
Clark Allen, CRD
Charles Mestayer, CMD, FC
Fred Dunham, LDWF
Fay Talbot, NRCS, Lafayette
Jerome Zerigue, STTMCD

COASTAL MANAGEMENT DIVISION P.O. BOX 44487 BATON ROUGE, LOUISIANA 70804-4487
TELEPHONE (225) 342-7591 FAX (225) 342-9439
AN EQUAL OPPORTUNITY EMPLOYER

State of Louisiana

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

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

MEMORANDUM

May 24, 1996

Carroll Clark,
Federal Assistance Section, CRD

To: Bill Good,
Administrator, DNR-CRD

Via: Terry Howey,
Administrator, DNR-CRD

Through: Greg DuCote,
Program Manager, Interagency Affairs Branch

Through: Jeff Harris,
Section Coordinator, Consistency Section

From: Brian Marcks,
Consistency Analyst (ext. 7939)

Subject: **C960231**, Coastal Zone Consistency
Proposed Brady Canal Hydrologic Restoration CWPPRA Project PTE-26b, located W of Lake DeCade in Terrebonne Parish, Louisiana

Coastal Management Division is presently reviewing the referenced project for consistency with Louisiana Coastal Resources Program. We would appreciate comments from Coastal Restoration Division as to whether this project, as proposed in the enclosed application, conforms to the CWPPRA Task Force proposal.

Please contact me at 342-7939 if there are any questions or if you require additional information.

COASTAL MANAGEMENT DIVISION P.O. BOX 44487 BATON ROUGE, LOUISIANA 70804-4487
TELEPHONE (504) 342-7591 FAX (504) 342-9439
AN EQUAL OPPORTUNITY EMPLOYER

State of Louisiana

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

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

MEMORANDUM

June 20, 1996

TO: Brian Marcks
Consistency Analyst, CMD

THRU: Jeff Harris
Consistency Section Coordinator, CMD

THRU: Greg DuCote
Program Manager
Interagency Affairs Branch, CMD

THRU: Terry Howey
Administrator, CMD

THRU: Bill Good
Administrator

THRU: Diane Smith
Assistant Administrator

FROM: James R. Buchtel, P.E.
Engineer Advanced, FAS

SUBJECT: **C960231**, Coastal Zone Consistency

Response to Request for Comments on Application for the Proposed Brady Canal Hydrologic Restoration Project PTE-26b (TE-28) as to conformity to the CWPPRA Task Force Proposal

Technical review and comparison of the referenced application, as presented, reveals that the applicant has modified the Task Force proposal by deleting two structures and adding four others plus providing for enhanced shoreline maintenance. These changes maintain the spirit of the Task Force intent.

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

On the final page of the application, in the SPOIL BANK MAINTENANCE component, reference is made to shoreline maintenance of Jug Lake being presently permitted. The applicable permit (#P901216), previously held by FINA Oil and Chemical Company, expired on 4 June 1996. They are attempting to renew that permit and simultaneously jointly applying with Louisiana Land and Exploration for the same authority.

Under date of 6 June 1996, we were made aware of a submittal to CMD of a permit modification request to include a 2386' canal dredging feature inside the project area with an estimated excavation of 36,500 c.y., used beneficially parallel to the canal, to create islands. This feature is cited as being necessary by the landowner because of the oil and gas maintenance activity access limitations imposed by a proposed structure and perimeter levee maintenance. This canal feature was not included in the scope of the Task Force proposal and was not addressed in the February 1996 Environmental Assessment promulgated by the sponsoring Federal agency (NRCS). Table 2. and Exhibit C of the original application do not include the additional canal feature requested in the amendment.

CC:JRB

c: Project File--TE-28 (PTE-26b)
James R. Buchtel, CRD Project Manager
Vince Cheramie, CRD Monitoring Manager
Helen K. Hoffpauir, CRD Real Estate
Faye Talbot, Staff Leader, NRCS

United States
Department of
Agriculture

Natural Resources
Conservation Service

,7 Government Street
Alexandria, Louisiana
71302

May 1, 1996

Mr. Ronald Ventola
U.S. Army Corps of Engineers
P.O. Box 60267
New Orleans, Louisiana 70160-0267

Mr. Terry W. Howey
Director
Louisiana Department of
Natural Resources/CMD
P.O. Box 44487
Baton Rouge, Louisiana 70803

Mr. Larry Wisepape
Certifications Coordinator
Louisiana Department of
Environmental Quality
Office of Water Resources
P.O. Box 82215
Baton Rouge, Louisiana 70884-2215

C960215 ~~P960676~~ no ch, MF

Gentlemen:

Please find attached the permit application for the Brady Canal Hydrologic Restoration project. This project was approved for funding under Public Law-646 Coastal Wetlands Planning, Protection, and Restoration Act (Breaux-Johnston Act) on the third year (1993) priority project list. Public Law-646 required projects to be completed in five years; therefore, I would appreciate your handling of this permit in the most expeditious manner possible. The USDA Natural Resources Conservation Service (NRCS) is the federal sponsor for this project. The Louisiana Department of Natural Resources-Coastal Restoration Division is the local sponsor. The Louisiana Land and Exploration Company and Fina Oil and Chemical Company will be the permittees. If you have any questions concerning this application, contact Faye Talbot, Staff Leader, Field Office Project Support Staff, Lafayette, Louisiana, at 318-896-8503.

Sincerely,

Bennett C. Landreneau ACTING FOR

Donald W. Gohmert
State Conservationist

RECEIVED
MAY 03 1996
COASTAL MANAGEMENT DIVISION

cc: Bennett C. Landreneau, Assistant State Conservationist/Water Resources, NRCS, Alexandria
Britt Paul, Water Resources Planning Staff Leader, NRCS, Alexandria
Faye Talbot, Staff Leader, NRCS, FOPSS, Lafayette
Mike Tullos, District Conservationist, NRCS, Houma
LL&E, P.O. Box 7097, Houma LA 70361
Fina Oil & Chemical Company, P.O. Box 206, Houma LA 70361

Attachment

19. Project Purpose -Continued-

The rate of shoreline erosion will be reduced and a hydrologic regime conducive to sediment and nutrient deposition will encourage the reestablishment of emergent and submergent vegetation in eroded areas. Stabilizing water conditions will return the project area to a more historic low energy environment. (See Exhibit "B" for a detailed description of the project area and components).

APPLICATION ' PARTMENT OF THE ARMY PERMIT
(33 CFR 325)

OMB APPROVAL NO. 0710-003
Expires October 1996

Public reporting burden for this collection of information is estimated to average 5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of InformationOperations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Please DO NO RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10; 1413, Section 404. Principal Purpose: These laws require permits authorizing activities in, or affecting, navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Routine Uses: Information provided on this form will be used in evaluating the application for a permit. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED
	P960676 ~~CK~~ Mach MF		

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME
Louisiana Land & Exploration and
Fina Oil & Chemical Co.

8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
Donald W. Gohmert, State Conservationist
USDA Natural Resources Conservation Service

6. APPLICANT'S ADDRESS
LL&E
P.O. Box 7097
Houma, LA 70361

Fina Oil & Chemical Co.
P.O. Box 206
Houma, LA 70361

9. AGENT'S ADDRESS
3737 Government Street
Alexandria, LA 71302

247D 247B
246C
246A

7. APPLICANT'S PHONE NOS. W/AREA CODE
a. Residence
b. Business LL&E 504-879-1517/Fina 504-879-3528

10. AGENT'S PHONE NOS. W/AREA CODE
a. Residence
b. Business 318-473-7751

11. STATEMENT OF AUTHORIZATION

I hereby authorize, Donald W. Gohmert to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

John W. Woodard - FINA
[signature] - LL&E
APPLICANT'S SIGNATURE

April 23, 1996
4/23/96
DATE

NAME, LOCATION AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
Brady Canal Hydrologic Restoration

RECEIVED
MAY 1996
COASTAL MANAGEMENT DIVISION

13. NAME OF WATERBODY, IF KNOWN (if applicable)
Brady Canal, Bayou Mauvais Bois, Bayou DeCade, Jug Lake, Superior Canal, Carencro Bayou, Voss Canal

14. PROJECT STREET ADDRESS (if applicable)

15. LOCATION OF PROJECT
Terrebonne — COUNTY
LA — STATE

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN, (see instructions)
T19S R14E R15E, Approximate center of project is Lat. 29°22'30" North and Long. 91°29'30" West

17. DIRECTIONS TO THE SITE
Approximately 20 miles south of Houma, LA on LA 315 to Falgout Canal Landing. Proceed west by boat across Lake DeCade to Turtle Bayou where eastern edge of project begins. See Exhibit A, Figure 1.

EXHIBIT A

STRUCTURE LOCATIONS & DRAWINGS

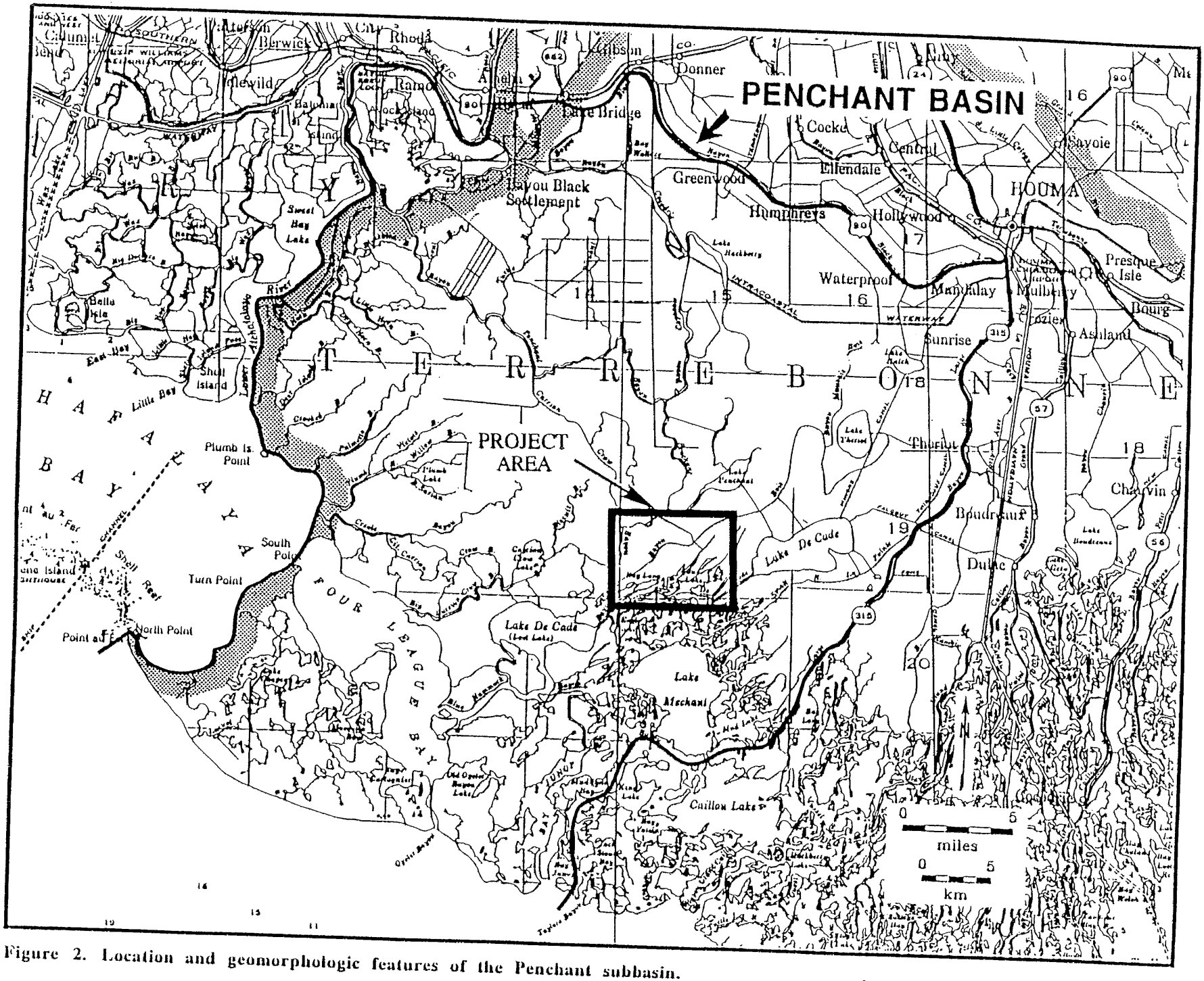


Figure 2. Location and geomorphologic features of the Penchant subbasin.

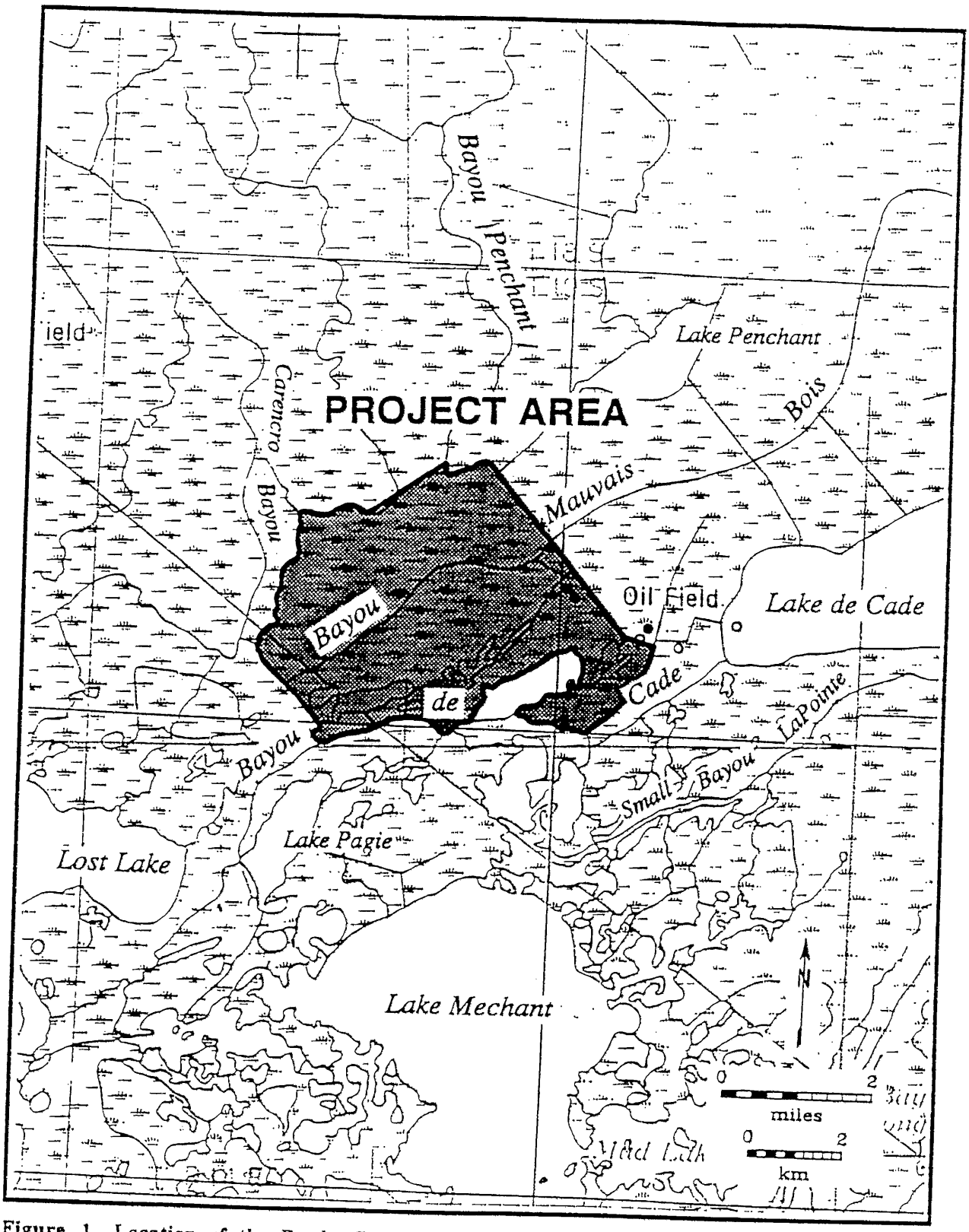


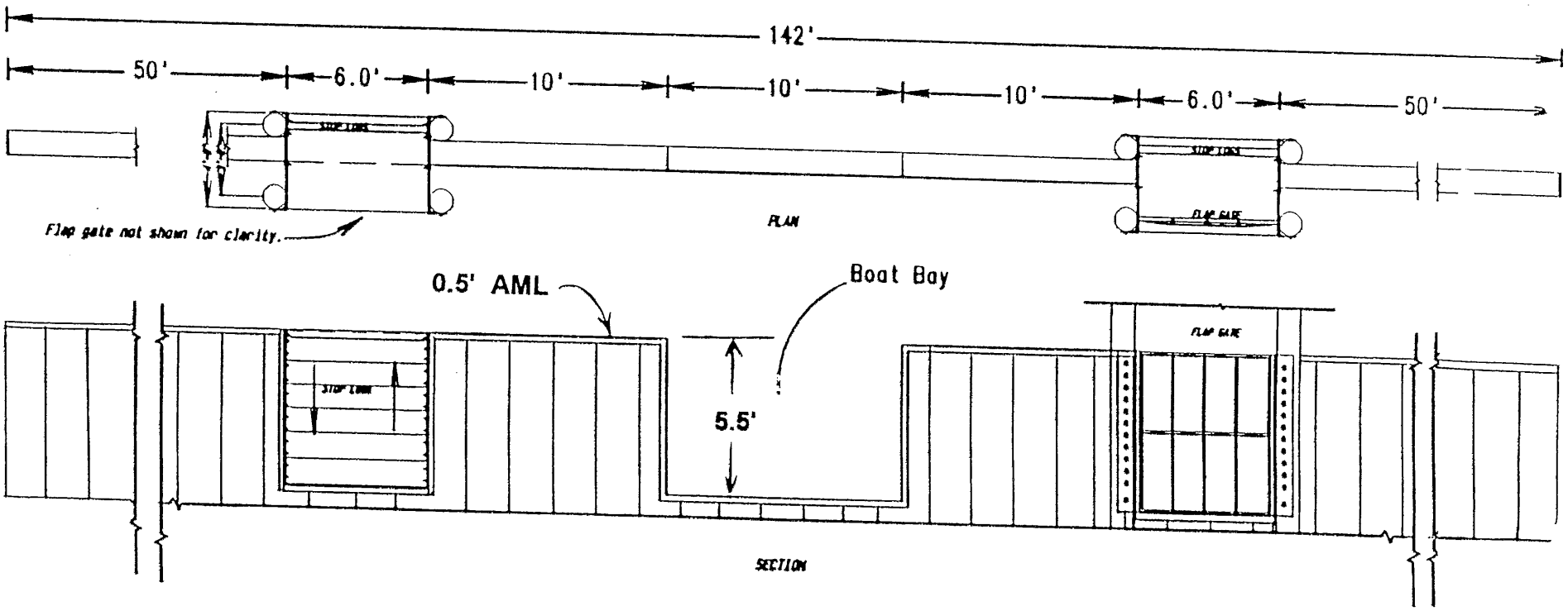
Figure 1. Location of the Brady Canal Hydrologic Restoration Project (PTE-26b).

Table 2: Existing Structures and Proposed Project Features Within the Brady Canal Hydrologic Restoration Project Area.

Evaluation Site	Channel		Existing Structure			Proposed Structure		
	Width (ft)	Depth (ft)	Type	Crest Elevation (ft BML)	Crest Width (ft)	Type	Crest Elevation (ft BML)	Crest Width (ft)
1	112	20	Timber Bulkhead	0.5	60	Bulkhead	0.5	120
			Boat Bay	-5.0	9	Boat Bay	-5.0	10
3			Var. Crest Weir	from 0 to -1.4	12	Flap Gates/Stoplog	from 0.5 to -5.0	12
6	285	8.4				Fixed Crest Weir	-0.5	145
						Barge Bay	-8.5	70
7	315	8				Rock Plug		
10	225	10.9				Channel Armor		
14	40	7.8	Fixed Crest Weir	-1.0	33	Fixed Crest Weir	-1.0	36
						Var. Crest Section	from -1.0 to -6.0	6
20	160	9				Channel Armor		
21			Fixed Crest Weir	-1.0	48	Fixed Crest Weir	-1.0	30
						Var. Crest Sections	-1.0-6.0	18
22			Earthen Plug					
23			Fixed Crest Weir	-1.0	40	Fixed Crest Weir	-1.0	46
			Var. Crest Section		16	Var. Crest Section	from -1.0 to -6.0	12
24			Fixed Crest Weir			Fixed Crest Weir		
			Section 1	-1.0	30	Section 1	-1.0	30
			Section 2	-2.5	50	Section 2	-2.5	50
25			60" Pipe					
			Sluice gate	who operates				
			Flapgate	maintenance				
26			Fixed Crest Weir	-0.5	16			
27			42" Pipe					
			V. crest weir inlet	from 0 to -3.5	6			
			Flapgate	Dr Ho				
28			42" Pipe					
			V. crest weir inlet	from 0 to -3.5	6			
			Flapgate					

Typical Drawing

Weir w/Boat Bay & VC Sections w/Flap Gates



NOT TO SCALE

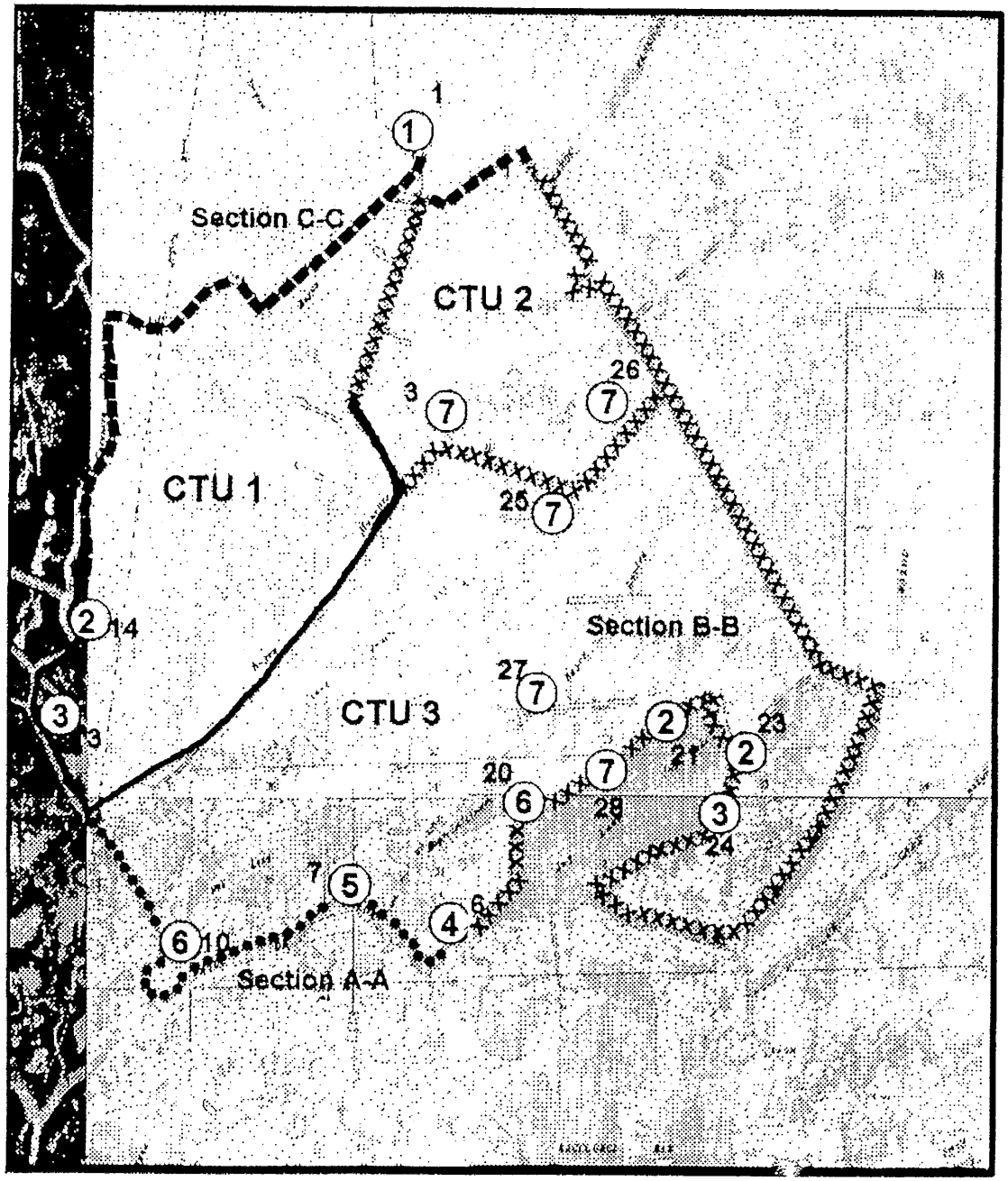
NOTE:
Dimension shown based upon planning surveys.

Brady Canal
Hydrologic Restoration

ES-1 Weir W/Boat Bay and
VC Sections w/Flap Gates

Terrebonne Parish, La.

bradyl



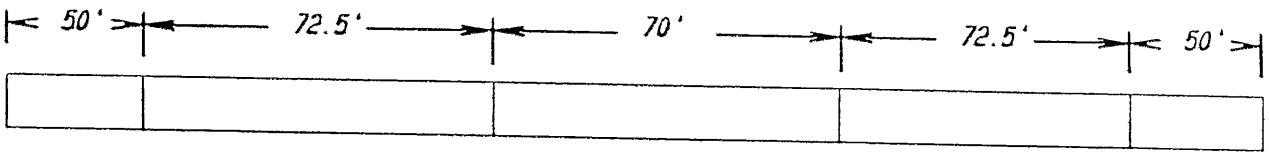
See Drawings for Sections A-A, B-B, and C-C.

BRADY CANAL
HYDROLOGIC RESTORATION
(PTE-26B)

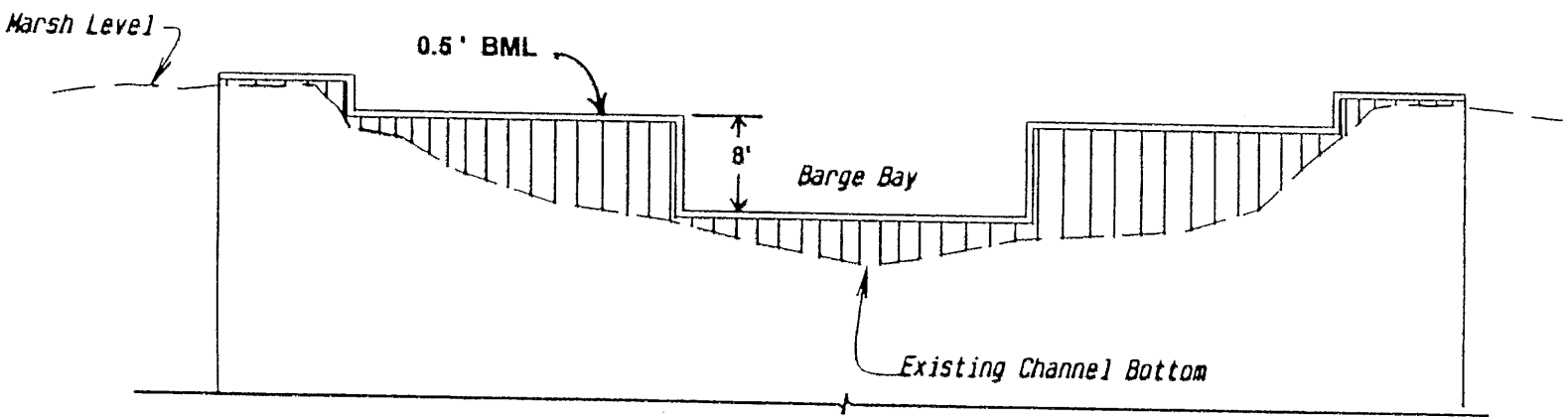
1	Bulkhead W/Boat Bay and Flapgate Stoplog Sections
2	Fixed Crest Weir W/Variable Crest Section(s)
3	Fixed Crest Weir
4	Fixed Crest Weir W/Barge Bay
5	Rock Plug
6	Stabilized Channel Cross-Section
7	Existing Weir
▬▬▬	Overflow Bank
•••	Embankment Construction
xxx	Shoreline Maintenance
1	Evaluation Site #
—	CTU Boundary

TYPICAL DRAWING

FIXED CREST WEIR WITH BARGE BAY



Plan View



Section

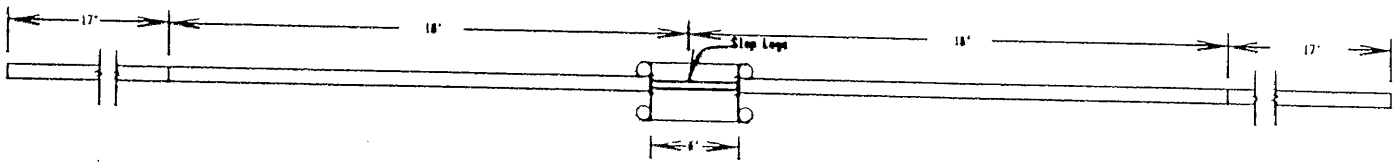
NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

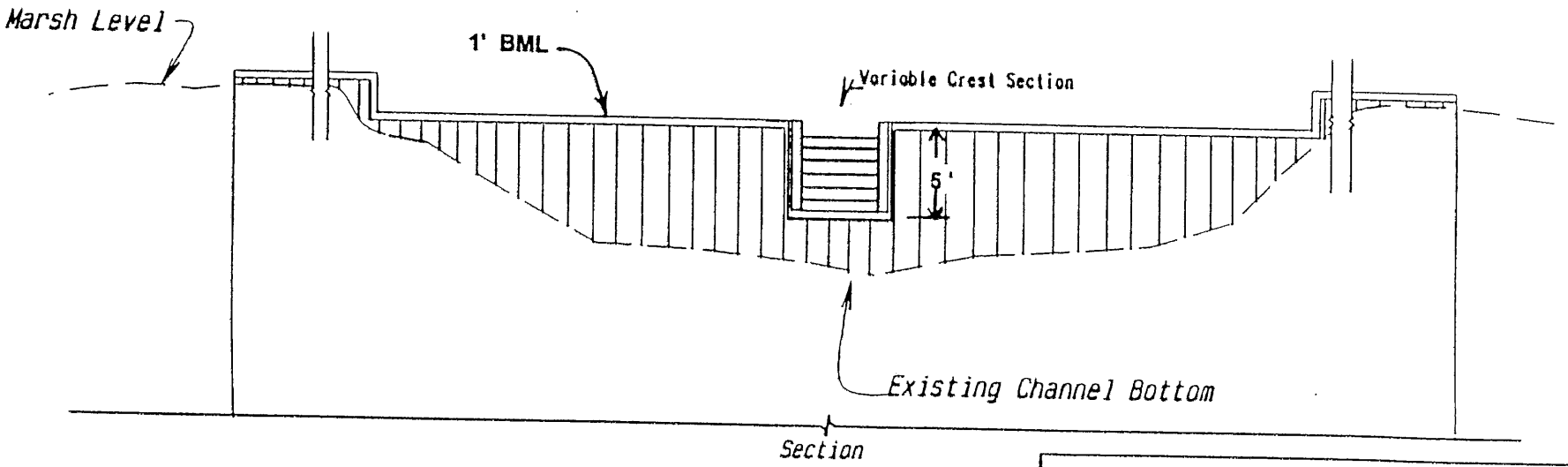
Brady Canal
Hydrologic Restoration
ES-6 Fixed Crest Weir W/Barge Bay
Terrebonne Parish, La.

bradv6

TYPICAL DRAWING
WEIR W/VARIABLE CREST SECTION



Plan View



NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

Brady Canal

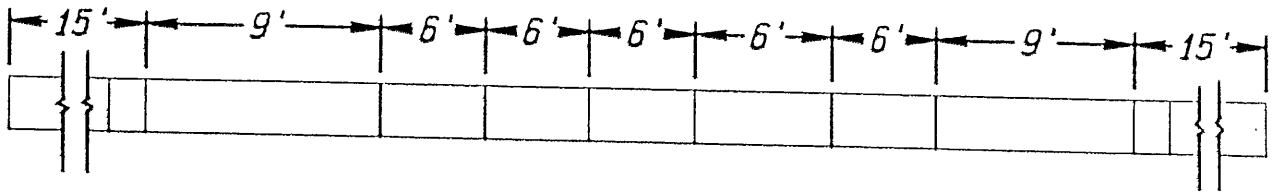
Hydrologic Restoration

ES-14 Weir W/Variable Crest Sections

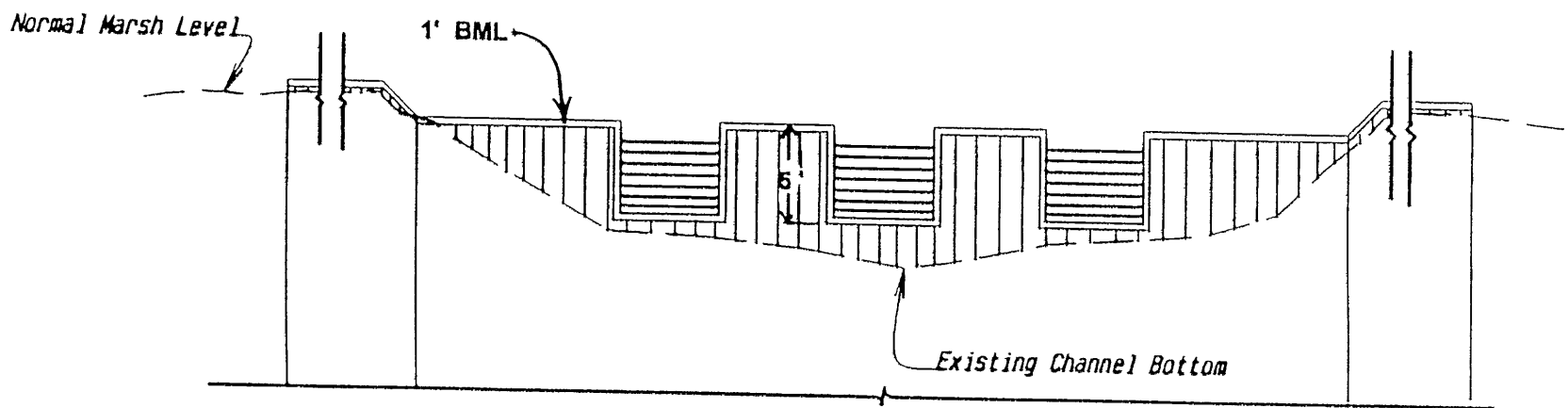
Terrebonne Parish, La.

TYPICAL DRAWING

WEIR WITH VARIABLE CREST SECTIONS



Plan View



Section

NOTE:
Dimensions shown based upon planning surveys.

Not to Scale

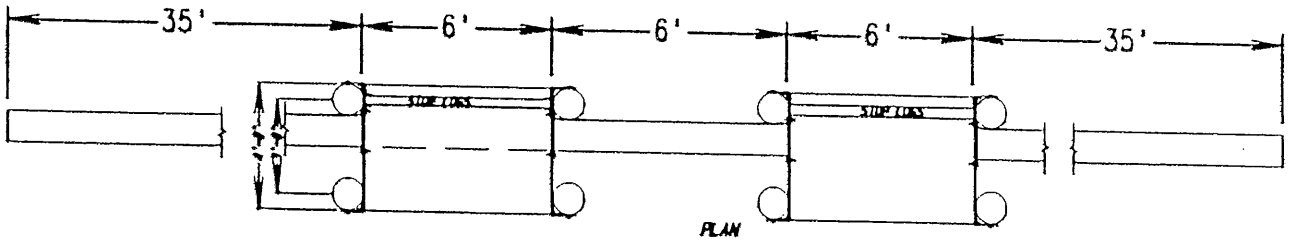
Brady Canal

Hydrologic Restoration

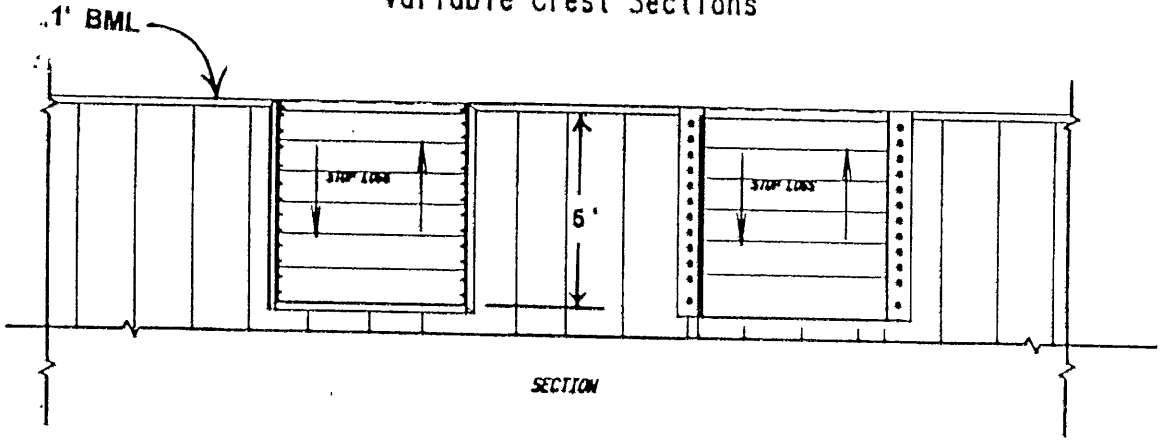
ES-21 Weir W/Variable Crest Sections

Terrebonne Parish, La.

TYPICAL DRAWING
WEIR W/VARIABLE CREST SECTIONS



Variable Crest Sections



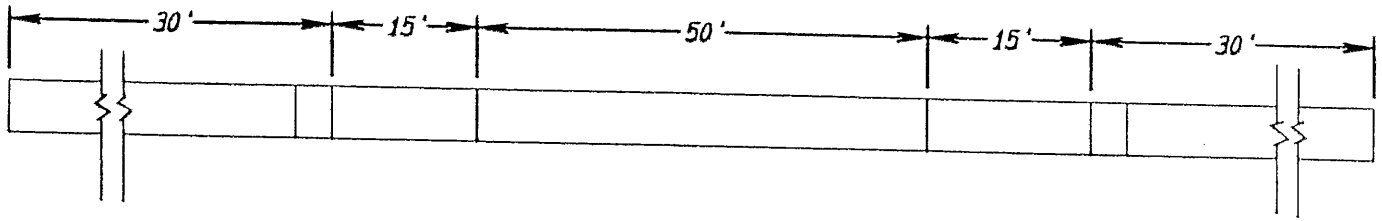
NOT TO SCALE

NOTE:
Dimensions shown based upon planning surveys.

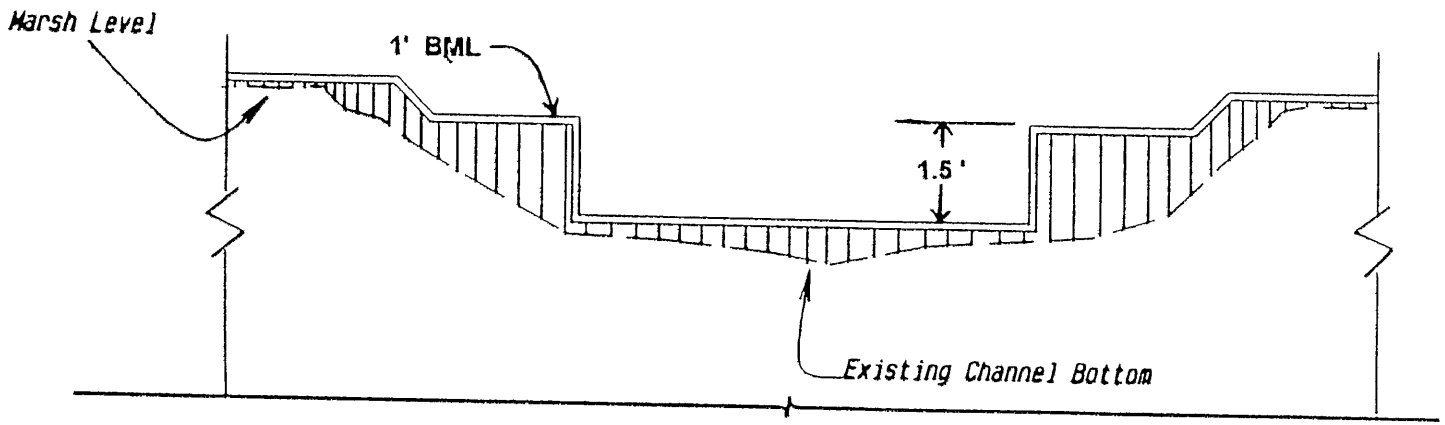
Brady Canal
Hydrologic Restoration
ES-23 Weir W/Variable Crest Sections
Terrebonne Parish, La.

TYPICAL DRAWING

FIXED CREST WEIR



Plan View



Section

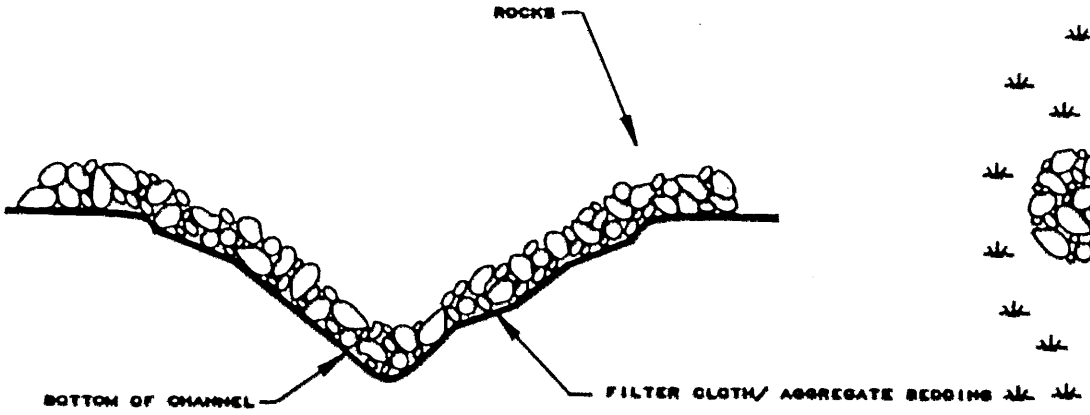
Not to Scale

NOTE:
Dimensions shown based upon planning surveys.

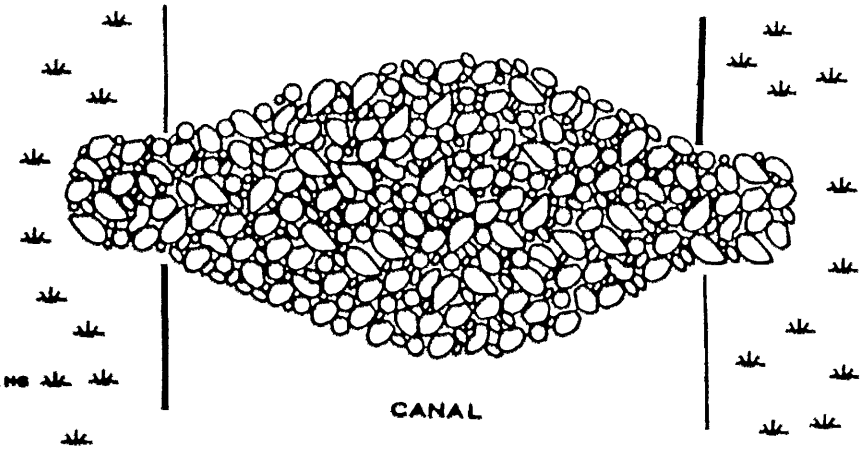
Brady Canal
Hydrologic Restoration
ES-24 Fixed Crest Weir

Terrebonne Parish, La.

TYPICAL DRAWING
ROCK CHANNEL LINER



ELEVATION VIEW
NOT TO SCALE

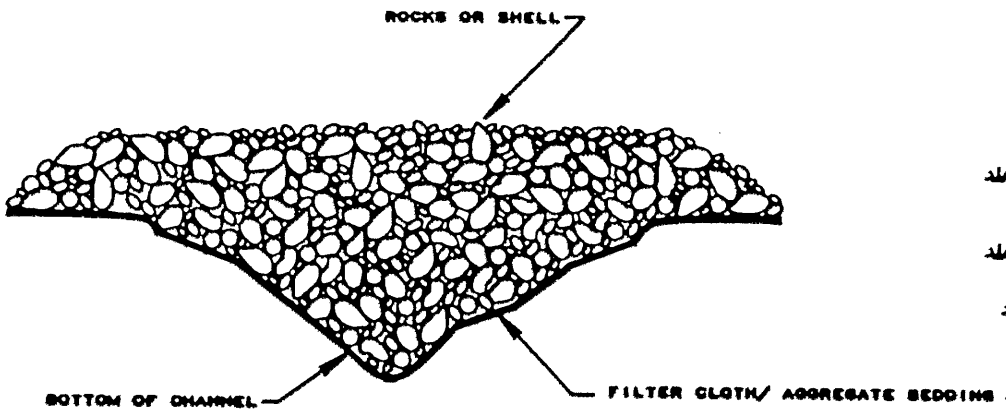


PLAN VIEW
NOT TO SCALE

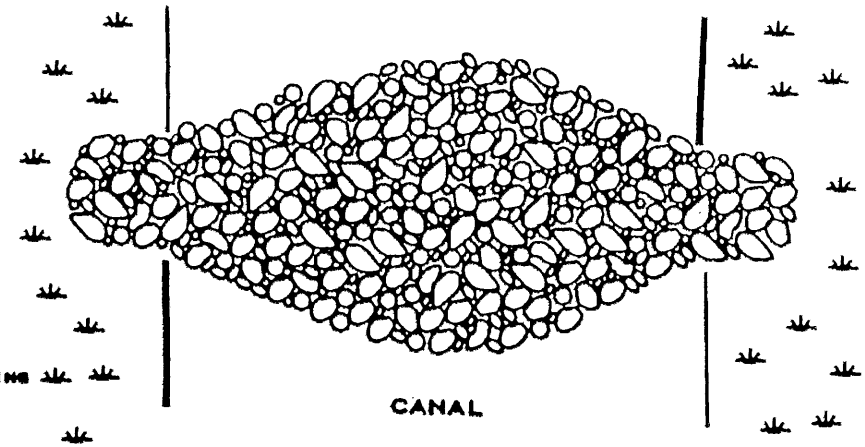
Brady Canal
Hydrologic Restoration
ES-10,20 Rock Channel Liner
Terrebonne Parish, La.

brady18

TYPICAL DRAWING
ROCK PLUG



ELEVATION VIEW
NOT TO SCALE



PLAN VIEW
NOT TO SCALE

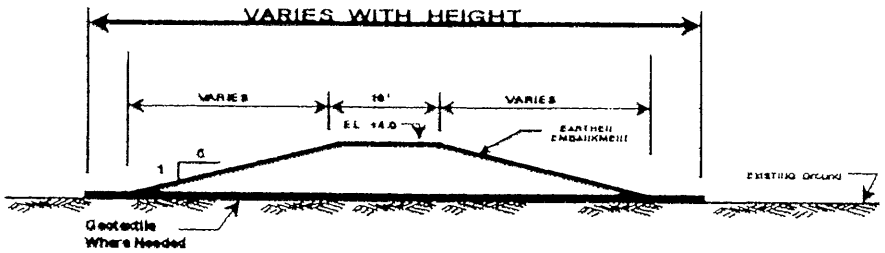
Brady Canal
Hydrologic Restoration
ES-7 Rock Riprap Plug

Terrebonne Parish, La.

BRADY7

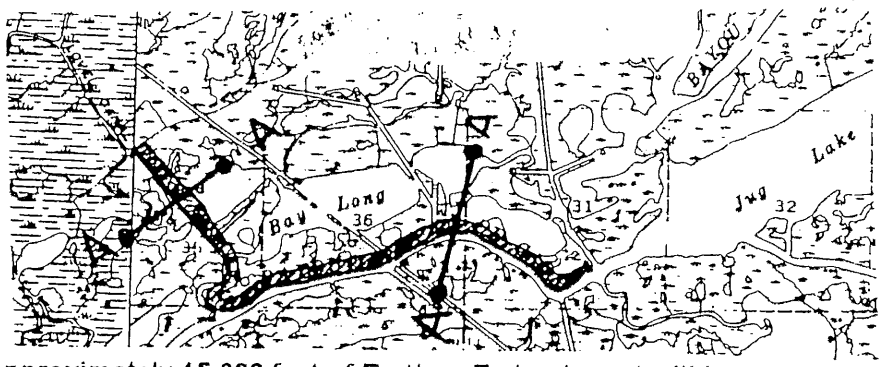
NOT TO SCALE

EARTHEN EMBANKMENT SECTION A - A



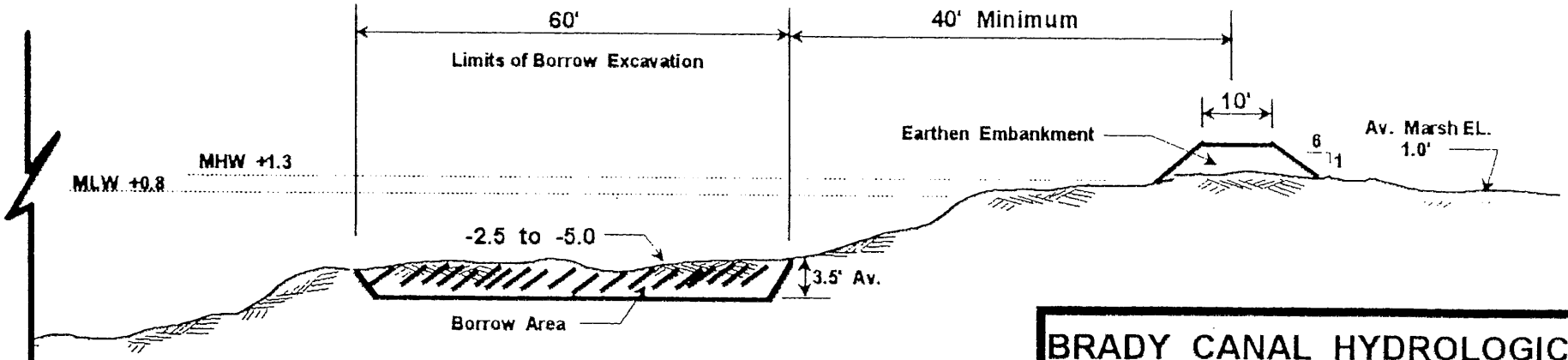
Typical Section

LOCATION MAP



Approximately 15,000 feet of Earthen Embankment will be constructed within the reach along the N side of Bayou DeCade and NE side of Voss Canal. Section A-A is indicative of this proposed construction.

NOT TO SCALE



Typical Profile

Notes:
1. All Elevations Shown in N.G.V.D.
2. Total Length of Earthen Embankment - 15,000 Feet.
3. Total Volume of Earthen Embankment Fill - 60,300 Cubic Yards.
4. Borrow Material to be Taken from Bayou DeCade and Voss Canal.

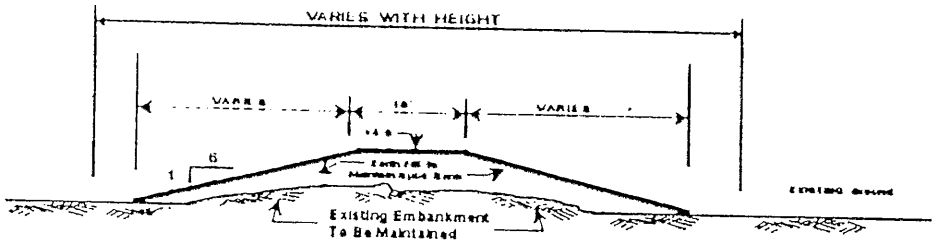
BRADY CANAL HYDROLOGIC RESTORATION

DETAILS - EARTHEN EMBANKMENT SECTION A - A

TERREBONNE PARISH, LA

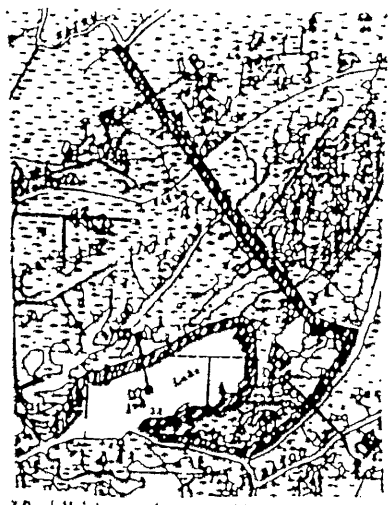
NOT TO SCALE

SPOIL BANK MAINTENANCE
SECTION B - B



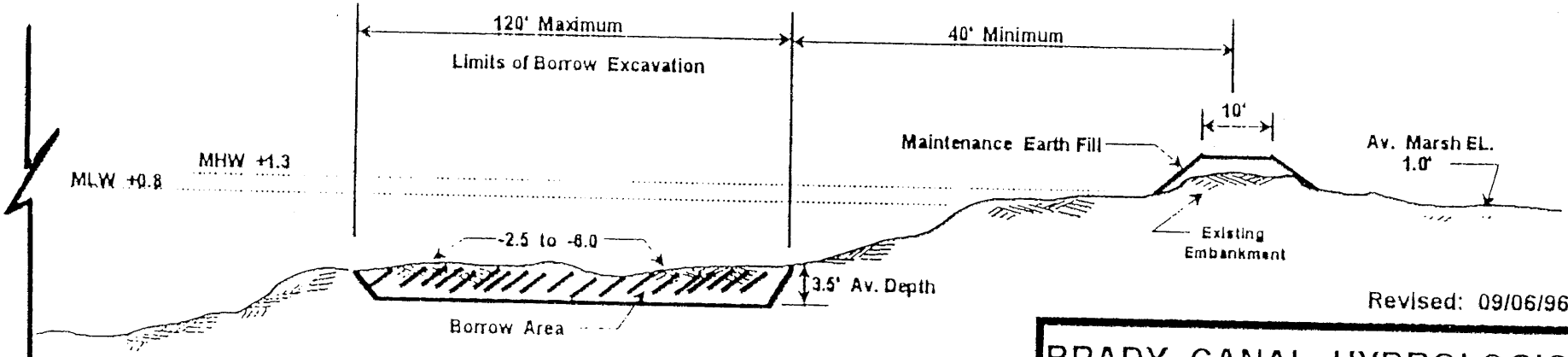
Typical Section

LOCATION MAP



Spoil Bank Maintenance is proposed for approximately 63,000 LF along Superior Canal, Turtle Bayou, Bayou DeCade, and Jug Lake. Section B-B depicts this proposed construction.

NOT TO SCALE



Revised: 09/06/96

Typical Profile

Notes:
1. All Elevations Shown In N.G.V.D.
2. Total Length of Earthen Embankment to be Maintained - 60,000 Feet. This Length Does Not Include Lake Shore of Jug Lake. With Jug Lake Shoreline - Total Length Approximately 69,000 Feet.
3. Estimated Annual Volume of Maintenance Earth Fill - 16,000 Cubic Yards.
4. Borrow Material to be Taken from Superior Canal, Bayou DeCade, Turtle Bayou, Jug Lake, and Voss Canal.

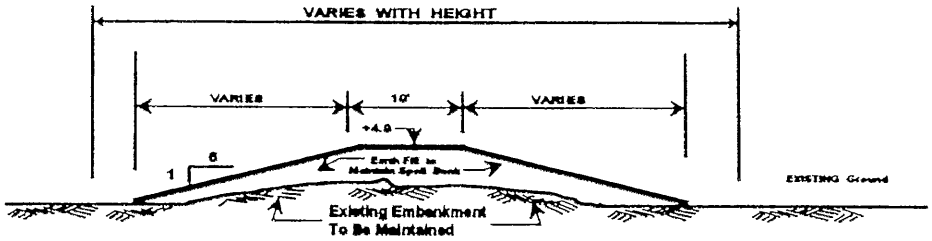
BRADY CANAL HYDROLOGIC RESTORATION

Spoil Bank Maintenance
Section B - B

TERREBONNE PARISH, LA

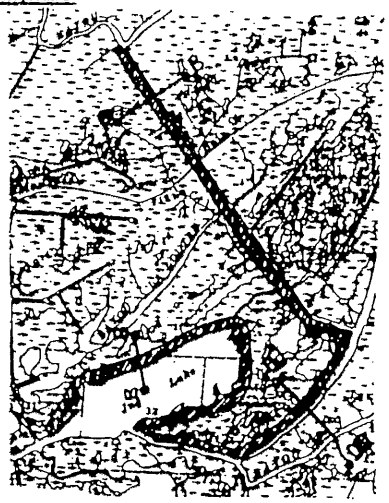
NOT TO SCALE

SPOIL BANK MAINTENANCE SECTION B - B



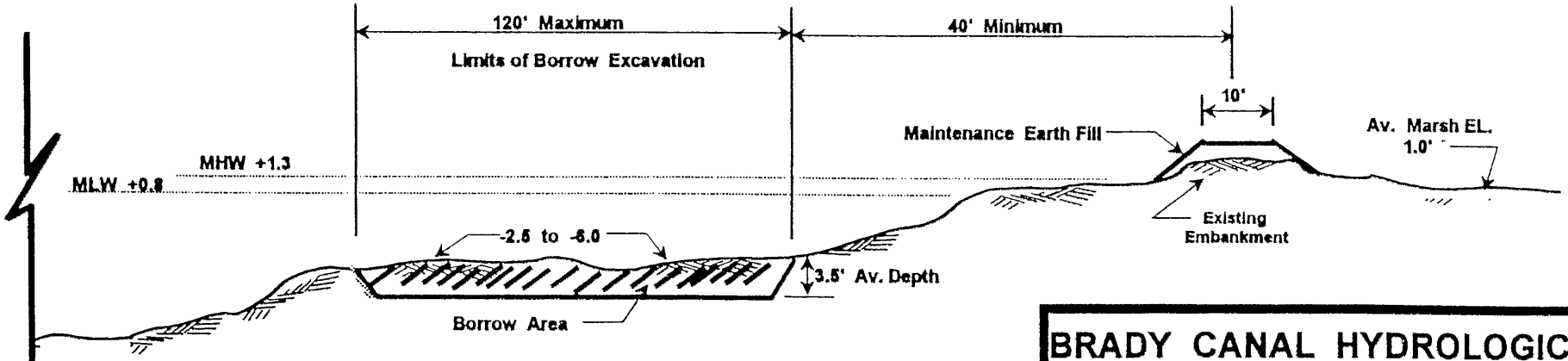
Typical Section

LOCATION MAP



Spoil Bank Maintenance is proposed for approximately 63,000 LF along Superior Canal, Turtle Bayou, Bayou DeCade, and Jug Lake. Section B-B depicts this proposed construction.

NOT TO SCALE



Typical Profile

Notes:
1. All Elevations Shown in N.G.V.D.
2. Total Length of Earthen Embankment to be Maintained- 44,000 Feet. This Length Does Not Include Lake Shore of Jug Lake. With Jug Lake Shoreline - Total Length Approximately 63,000 Feet.
3. Estimated Annual Volume of Maintenance Earth Fill - 15,300 Cubic Yards.
4. Borrow Material to be Taken from Superior Canal, Bayou DeCade, Turtle Bayou, Jug Lake, and Voss Canal.

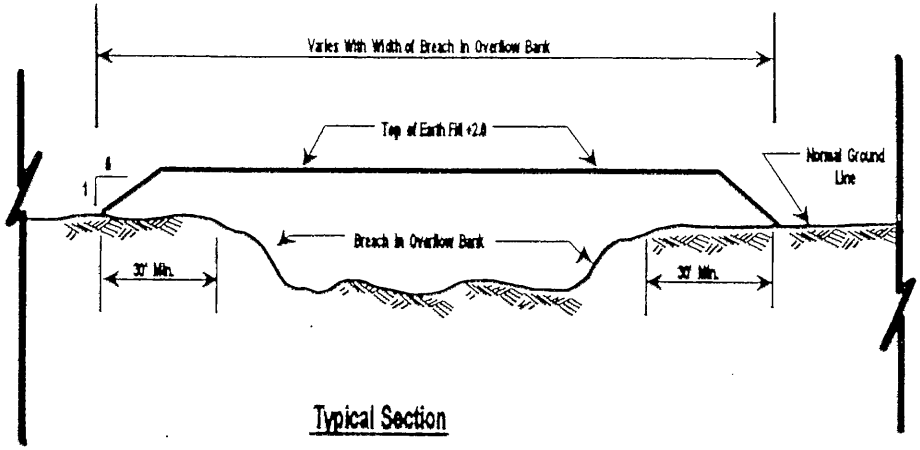
BRADY CANAL HYDROLOGIC RESTORATION

Spoil Bank Maintenance
Section B - B

TERREBONNE PARISH, LA

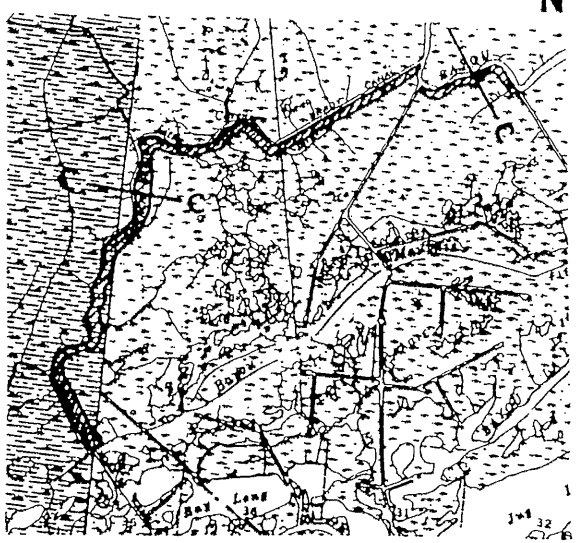
NOT TO SCALE

OVERFLOW BANK MAINTENANCE
SECTION C - C



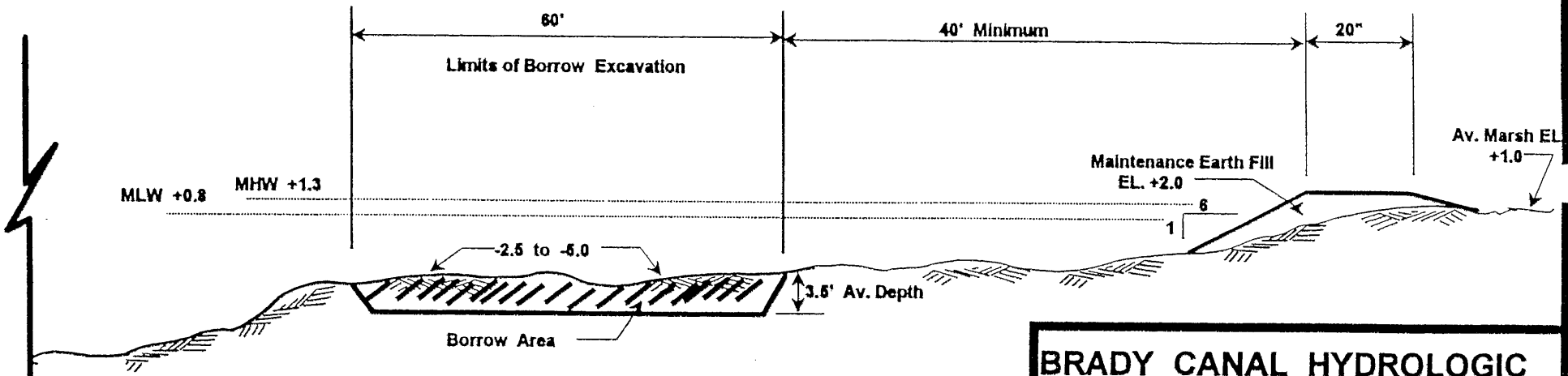
Typical Section

Vicinity Map



Overflow Bank Maintenance is proposed for approximately 29,600 LF along Bayou Carencro, L. Bayou Carencro, Brady Canal, and Bayou Penchant. Section C - C depicts this proposed measure.

NOT TO SCALE



Typical Profile

Notes:
1. All Elevations Shown in NGVD
2. Total Length of Earthen Embankment to be Maintained- Approx. 29,600 Feet. Along Bayou Carencro, Little Bayou Carencro, Brady Canal, and Bayou Penchant..
3. Estimated Annual Volume of Maintenance Earth Fill for Overflow Banks - 1590 Cubic Yards Based on Repairing 300' of Bank per Year.
4. Borrow Material to be Taken from Adjacent Canal or Bayou.

BRADY CANAL HYDROLOGIC RESTORATION

Overflow Bank Maintenance
Section C - C

TERREBONNE PARISH, LA

EXHIBIT B

PROJECT DESCRIPTION

PTE-26B BRADY CANAL HYDROLOGIC RESTORATION

OVERVIEW

The Brady Canal Hydrologic Restoration Project (PTE-26B) has been approved for funding and is included on the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) Third Priority List which was transmitted to Congress in November 1993. The United States Department of Agriculture through the Natural Resources Conservation Service (NRCS) acts as the sponsoring agency for this project. Construction is authorized to begin as soon as compliance with appropriate environmental laws and regulations are achieved and the project plans and specifications are completed.

The Brady Canal project area is located within the Bayou Penchant - Lake Penchant watershed in Terrebonne Parish. The 7,653 acre project area contains fresh and intermediate marshes and is bounded by Bayou Penchant, Brady Canal, and Little Carencro Bayou to the north, Bayou DeCade and Turtle Bayou to the south, Superior Canal to the east, and Little Carencro Bayou and Voss Canal to the west.

The project area consists of approximately 4,613 acres of marsh, and 2,660 acres of open water, with the remaining areas classified as "other" habitats (LA Department of Natural Resources, Coastal Restoration Division, unpubl. GIS data). The fresh and intermediate marshes of the project area are typically adapted to an average salinity of 0 to 3 ppt.

The area is subject to an average 31 acres per year rate of wetland loss (Dunbar et al. 1992). The conversion of emergent vegetation to open water is largely attributable to human-induced hydrologic changes, as well as subsidence. Hydrologic changes include increased water levels as a result of relative subsidence; increased inundation related to the prograding delta system to the west; and increased rates of tidal water exchange associated with oil and gas canals. In addition, this area was severely damaged by Hurricane Andrew (1992) which caused land loss and severe damage to the banks of Bayou DeCade, which buffers this area from saltwater. Within the present setting, all of these factors have an adverse effect on the highly organic soils and fresh to intermediate vegetative communities.

A seasonal supply of sediment-laden, fresh water from the Atchafalaya River allows enhancement of freshwater and sediment introduction into the project area. Natural and human-made landforms within the project area allow for management of water introduction and tidal water exchange. In combination, such management can provide for the amelioration of subsidence, erosion by tidal currents, and large, rapid fluctuations of salinity, all of which contribute to marsh loss in the present setting.

The proposed project will improve hydrologic conditions in order to maintain existing marshes in the project area. The project objectives are:

1) Enhance and promote freshwater introduction and sediment retention.
2) Reduce abnormal tidal flux through human-made channels and enlarged natural channels.

Structural components of the project are as follows (see attached map):

1) Fixed crest weir with barge bay
2) Fixed crest weirs with and without boat bays
3) Variable crested weirs
4) Rock plug
5) Stabilized channel cross sections
6) Earthen shoreline embankment.

Benefits from the implementation of this project are as follows:

Primary

- Protect 188 acres of emergent marsh
- Enhance the 7,653-acre project area through increased productivity of emergent and submerged aquatic vegetation
- Stabilize salinity levels within the project area
- Shoreline protection will prevent progressive linkage of existing ponds within the project area with encroaching tidal channels and open water outside of the project area

Secondary

- Improve fish and wildlife habitats
- Increase recreational opportunities for fish and wildlife-related sports

The data clearly shows that marsh deterioration is affecting the overall physical integrity of the Brady Canal Project area. Although no direct land losses due to human activities are now occurring, indirect losses attributable to past activities conducted locally as well as regionally are still occurring in conjunction with losses due to natural processes. The overall marsh deterioration apparent in the project area indicates a need for management practices that control and reduce the losses.

EXHIBIT C

STRUCTURAL COMPONENTS & DIMENSIONS

PTE - 26b - Brady Canal Hydrologic Restoration

Proposed Structural Components

Structure or Site	Structure Type	Sheet Piling	Earth/Rock Fill
ES 1 - Brady Canal	Bulkhead with Weir	8520 Square Feet	100 Cubic Yards
ES 6	Weir With Barge Bay	14,175 Square Feet	***
ES 7	Rock Plug	NA	4375 Cubic Yards
ES 10	Rock Liner	NA	1440 Cubic Yards
ES 14	Weir With V/C Sect.	3500 Square Feet	240 Cubic Yards
ES 20	Rock Liner	NA	1365 Cubic Yards
ES 21	Weir With V/C Sect.	3900 Square Feet	240 Cubic Yards
ES 23	Weir With V/C Sect.	4400 Square Feet	230 Cubic Yards
ES 24	Fixed Crest Weir	7000 Square Feet	240 Cubic Yards
Earthen Embankment	NA	NA	60,300 Cubic Yards

*** Earth Fill For this Structure included in the Earthen Embankment Volume.

BRADY CANAL HYDROLOGIC RESTORATION

STRUCTURAL COMPONENTS

This project will consist of the installation of weirs with boat and barge bays with fixed and variable crest sections, channel section stabilization, a rock plug, bank and shoreline rehabilitation and/or maintenance, and overflow bank maintenance. The installation of these structural components will reduce adverse tidal fluctuations within the project area and manage the available freshwater and nutrients that are presently flushing through the area. The following list of structural components will be installed or maintained within the project area:

ES 1 - This structure will replace an existing timber bulkhead with a boat bay at the head of Brady Canal. This structure will consist of the installation of **8520 square feet of sheet piling** (Estimated quantity may vary after geotechnical investigation). Within the center section of the structure will be a 10′ wide boat bay with the invert elevation set at -5.0 NGVD. On either side of the boat bay will be a 6′ wide variable crest weir section with flap gates on the interior side. These stop logs can be adjusted from -5.0 NGVD to +1.5 NGVD. The flap gates will be constructed such that the gates can be locked in the open position should conditions warrant. Approximately **100 cubic yards of earth fill material** will be required around the ends of the bulkhead.

ES-6 - This fixed crest weir with a barge bay will be placed across a oil field access canal on the north side of Bayou DeCade just west of Jug Lake. This structure will consist of the installation of **14,175 square feet of sheet piling** (Estimated quantity may vary after geotechnical investigation). The barge bay will be 70′ wide with the invert 8.5 ′ below marsh level (BML) or at an elevation of about -7.5 NGVD. A fixed crest with a 145′ will be set at 0.5 BML. On each side of the canal will be a 50′ wide section set at +4.0 NGVD to tie into the embankment. Associated earth fill quantity around the wing walls is included in the Earthen Embankment volume.

ES-7 - This proposed structural component consist of the placing of **approximately 7,000 tons of loose rock rip rap** in the oil field access canal on the north side of Bayou DeCade and west of site 6. This rock will serve as a plug to negate water exchange at this location. The top of the rock will be set at +4.0 NGVD to correspond to the elevation of the earthen embankment on either side of the canal. The volume of earth fill material required is included in the earthen embankment quantity.

ES-10 - This proposed work at this location consists of lining the channel that outlets from the west end of Bay Long into Voss Canal with **2,300 tons of loose rock rip rap.** Armor plating will prevent further erosion of the channel section. The rock liner will be about 3′ thick with a 30′ top width perpendicular to the direction of flow. The volume of earth work at this site is included within the quantity defined by earthen embankment.

ES-14 - The proposed structural measures at this location will consist of replacing an existing fixed crest weir with a fixed crest weir with a variable crest section. This site is located on the east side of Little Carencro Bayou immediately north of Camp Better Livin. This installation will require **3500 square feet of sheet piling** (Estimated quantity may vary after geotechnical investigation). The 36′ section of fixed crest weir will be placed at 1′ BML (approximately 0.0 NGVD) and the 6′ wide variable crest section will allow stop logs to be placed from 1′ BML to 6′ BML. **Approximately 240 cubic yards of earth fill material** will be required to tie the wing walls into the existing bank.

ES-20 - Proposed construction at this site consists of lining the opening at the northwest corner of Jug Lake that connects to the interior marsh with **approximately 2,000 tons of loose rock rip rap.** Armor plating will prevent further erosion of the channel section. The rock liner will be about 3′ thick with a 30′ top width perpendicular to the direction of flow. **Approximately 115 cubic yards of earth fill** will be required to tie the armored section into surrounding normal ground and embankment on Jug Lake.

ES-21 - Proposed measures for this site will include the installation of **3900 square feet of sheet pile** (Estimated quantity may vary after geotechnical investigation) to replace an existing timber weir. This site is located on the north side of Jug Lake. The weir will have 30′ of fixed crest weir set at 1.0′ BML (approximately 0.0 NGVD) and three 6′ wide variable crest sections where the stop logs can be adjusted from 1.0′ BML to 6.0′ BML. **Approximately 240 cubic yards of earth fill material** will be required around the wing walls of the weir.

ES-23 - This proposed work includes the **installation of 4,400 square feet of sheet pile** (estimated quantity may vary after geotechnical investigation) to replace an existing fixed crest weir. This site is located on the east end of Jug Lake. The 46′ length of fixed crest the weir will be placed at 1.0′ BML (approximately 0.0 NGVD) and the two 6′ wide variable sections will allow the stop logs to be adjusted between 1.0′ and 6.0′ BML. **Approximately 230 cubic yards of earth fill material** will be required to around the wing walls.

ES-24 - Proposed improvements at this location include the installation of **7,000 square feet of sheet pile** (estimated quantity may vary after geotechnical investigation) to replace an existing fixed crest weir. This site is located adjacent to the southeast corner of Jug Lake. The weir to be placed will have 30′ of weir crest set at 1.0′ BML and a 50′ length set at 2.5′ BML. **Approximately 240 cubic yards of earth fill material** will be required around the wing walls.

EARTHEN EMBANKMENT - Proposed improvements associated with this item include the placement of **approximately 60,300 cubic yards of earth fill material** to rehabilitate and reconstruct approximately 15,000 of channel bank along Bayou DeCade and Voss Canal. Earth fill material will be borrowed from the adjacent canal area. Where necessary a geotextile cloth will be placed under the embankment.

MAINTENANCE COMPONENTS

SPOIL BANK MAINTENANCE - Proposed work included within this measure will be maintaining approximately 63,000 feet of spoil bank along Superior Canal, Turtle Bayou, Bayou DeCade, Voss Canal, and Jug Lake. Maintenance of the shoreline of Jug Lake is presently permitted. However, it will also be include within the scope of this permit request. This work will involve placing approximately 15,300 cubic yards of earth fill material on a yearly basis in order to maintain the integrity of the spoil banks. Borrow material will be taken from the adjacent water body.

OVERFLOW BANK MAINTENANCE - This proposed work is targeted at maintaining the overflow banks along Bayou Carencro, Little Bayou Carencro, Brady Canal, and Bayou Penchant. It is estimated that **1590 cubic yards of earth fill** per year will be required to maintain weak reaches within the overflow bank areas.

MAUVAIS BOIS RIDGE - It is anticipated that there will be areas within the existing ridge that will require maintenance throughout the 20 year life of the project. The proposed work will require the placement of earth fill material and/or loose rock rip rap. In addition, there is an area where the ridge is breached between CTU 1 and CTU 3 that will be monitored and may require armor plating in the future. Maintenance quantities are estimated at **1200 cubic yards of earth fill material** on an annual cycle and approximately **1000 tons of loose rock rip rap** on a **five year cycle.**

THE LOUISIANA LAND AND EXPLORATION COMPANY

909 POYDRAS STREET

P. O. BOX 60350

NEW ORLEANS, LA 70160

TELEPHONE: 504-566-6500

FAX: 504-566-6516

W. L. BERRY
DIRECTOR OF
WETLANDS MANAGEMENT

P960676

May 20, 1996

Marilyn Forbs
Department of Natural Resources
P. O. Box 44487
Baton Rouge, Louisiana 70804-4487

RE: Brady Canal Area

Dear Ms. Forbs:

Enclosed you will find an executed Affidavit of Notification to Owner of Property dated May 20, 1996. Should you need anything further, please do not hesitate to contact me.

Sincerely,

W. L. Berry

WLB/jmc

Enclosure

cc: Faye Talbot-NRCS
Kermit Coulon-LL&E, Houma, LA

RECEIVED
MAY 2 1 1996
COASTAL MANAGEMENT DIVISION

AFFIDAVIT (NOTIFICATION TO OWNER O PROPERTY

STATE OF LOUISIANA

PARISH OF ORLEANS

I, The Louisiana Land and Exploration Company, (by W. L. Berry) am applying to the Coastal Management Division of the Louisiana Department of Natural Resources for a Coastal Use Permit for the purpose of:

Hydrologic Restoration

This activity is to occur on the following described property:

Brady Canal area, T19S-R14E-R15E-Approximate center of project is Latitude 29° 52' 30" North and Longitude 91° 29' 30" West. (See permit application filed by letter dated May 1, 1996 to Mr. Terry W. Howey-LDNR.)

Further, with regard to ownership of the above described property (check appropriate block):

X I am the owner of the property on which the above described activity is to occur.

OR

____ I have made every reasonable effort to determine the identity and current address of the owner(s) of the land on which the above described use is to occur, which included, if necessary, a search of the public records of the parish. The owner(s) and their address(es) are as follows (use additional sheets of paper as required):

A copy of the application has been distributed to the above listed owner(s).

Signed this 20th day of May, 1996

BY:

APPLICANT

W. L. BERRY

State of Louisiana

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

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

August 21, 1998

Mr. John Reddock
CEMVN-OD-SW
U. S. Army Corps of Engineers
Post Office Box 60267
New Orleans, Louisiana 70160-0267

Re: Brady Canal Permit

Dear John:

Per our conversation this date, enclosed is the original signed version of the Brady Canal permit.

Very truly yours,

Rachel W. Sweeney
Special Projects Coordinator

RWS/lb

Enclosure

cc:(w/enclosures)

Ms. Faye Talbot, Natural Resources Conservation Service
Mr. Clark Allen, Department of Natural Resources

OFFICE OF COASTAL RESTORATION AND MANAGEMENT
P.O. Box 44487 · Baton Rouge, Louisiana 70804-4487 · Telephone (504) 342-1375 · Fax (504) 342-1377

An Equal Opportunity Employer

State of Louisiana

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

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

July 3, 1996

Mr. Donald W. Gohmert, State Conservationist
United States Dept. Of Agriculture
Natural Resources Conservation Service
3737 Government Street
Alexandria, Louisiana 71302

RE: **C960231**, Coastal Zone Consistency
Natural Resources Conservation Service
Direct Federal Action
Brady Canal Hydrolgic Restoration Project and proposed access canal, CWPPRA Project PTE-26b, W of Lake DeCade, **Terrebonne Parish, Louisiana**

Dear Mr. Gohmert:

The above referenced project 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 project, 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 (504)342-7591.

Sincerely,

Terry W. Howey

Terry W. Howey,
Administrator

TWH/JDH/bgm

cc: Fred Dunham, LDWF
James Buchtel, CRD
Frank Cole, CMD/FC
Ron Ventola, COE-NOD
Robert Jones, Terrebonne Parish

COASTAL MANAGEMENT DIVISION P.O. BOX 44487 BATON ROUGE, LOUISIANA 70804-4487
TELEPHONE (504) 342-7591 FAX (504) 342-9439
AN EQUAL OPPORTUNITY EMPLOYER

United States
Department of
Agriculture

Natural Resources
Conservation Service

3470 NE Evangeline Thruway
Lafayette, LA 70507-2554

June 6, 1996

C960215

Brian Marks
Coastal Resource Management Specialist III
Louisiana Department of Natural Resources
Coastal Management Division
P.O. Box 44487
Baton Rouge, Louisiana 70804-4487

Dear Mr. Marks:

Enclosed please find the additional drawing we spoke about for the Brady Canal Hydrologic Restoration Plan. This drawing was omitted in the original permit application. The drawing shows the location, typical section, and cubic yards of the access canal.

The access canal is needed as a result of plugging the location canal at evaluation site 7 for hydrologic restoration.

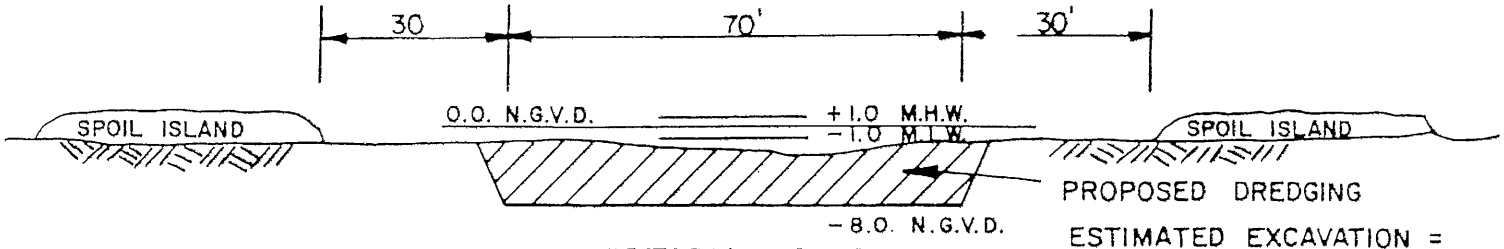
Sincerely,

Faye Talbot
Staff Leader
NRCS

Enclosure

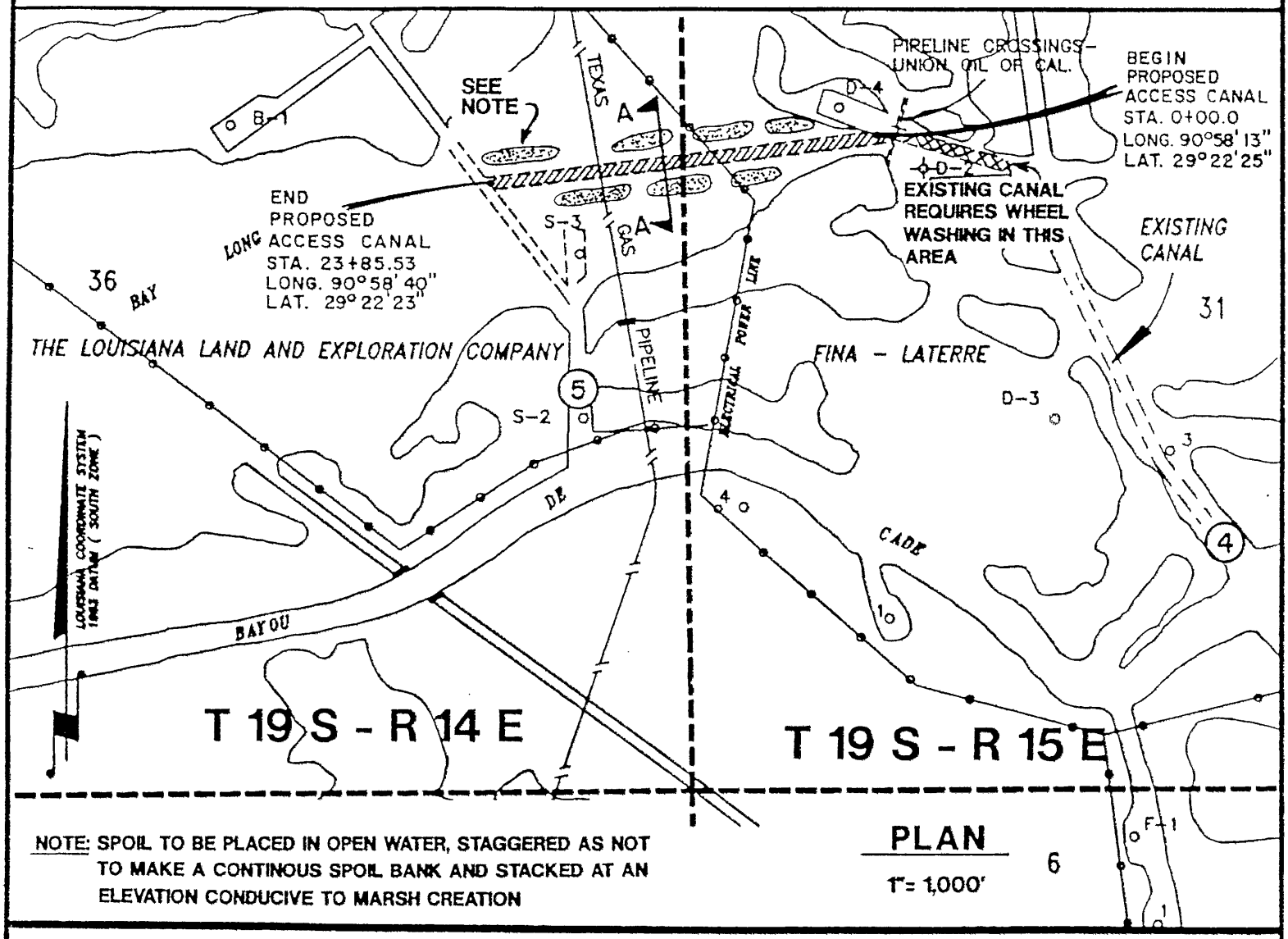
cc: Gary Eldridge, Civil Engineer, NRCS, Alexandria, LA

RECEIVED
JUN 07 1996
COASTAL MANAGEMENT DIVISION



SECTION A-A

N.T.S.



NOTE: SPOIL TO BE PLACED IN OPEN WATER, STAGGERED AS NOT TO MAKE A CONTINOUS SPOIL BANK AND STACKED AT AN ELEVATION CONDUCIVE TO MARSH CREATION

PLAN

1"= 1,000'

6

PROPOSED ACCESS CANAL TO BE DREDGED IN CONJUCTION WITH THE BRADY CANAL HYDROLOGIC RESTORATION PROJECT LOCATED IN SECTION 31, T19S - R15E AND SECTION 36, T19S - R14E, TERREBONNE PARISH, LA.

State of Louisiana

"MIKE" FOSTER, JR.
GOVERNOR

JACK C. CALDWELL
SECRETARY

DEPARTMENT OF NATURAL RESOURCES

MEMORANDUM

June 21, 1996

To: Carroll Clark,
Federal Assistance Section, CRD

Through: Bill Good,
Administrator, DNR-CRD

Through: Terry Howey,
Administrator, DNR-CMD

Through: Greg DuCote,
Program Manager, Interagency Affairs Branch

Through: Jeff Harris,
Section Coordinator, Consistency Section

From: Brian Marcks,
Consistency Analyst (ext. 7939)

Subject: **C960231**, Coastal Zone Consistency Revision
Proposed revision to Brady Canal Hydrologic Restoration
CWPPRA Project PTE-26b, located W of Lake DeCade in
Terrebonne Parish, Louisiana

Coastal Management Division is presently reviewing the above referenced revision for consistency with Louisiana Coastal Resources Program. We would appreciate comments from Coastal Restoration Division as to whether this revision conforms to the CWPPRA Task Force proposal.

Please contact me at 342-7591 if there are any questions or if you require additional information.

Attachments

COASTAL MANAGEMENT DIVISION P.O. BOX 44487 BATON ROUGE, LOUISIANA 70804-4487
TELEPHONE (504) 342-7591 FAX (504) 342-9439
AN EQUAL OPPORTUNITY EMPLOYER

MONITORING PLAN

PROJECT NO. TE-28 BRADY CANAL HYDROLOGIC RESTORATION

ORIGINAL DATE: May 29, 1996
REVISED DATE: July 23, 1998

Preface

Pursuant to a CWPPRA Task Force decision on April 14, 1998, the original plan was reduced in scope due to budgetary constraints. Specifically, vegetation will be monitored in years 2, 4, and 6, then every three years thereafter. SAV will be monitored at year 15 post-construction, rather than years 13 and 17. Two sondes with marsh mat movement recorders were added to monitor duration and frequency of flooding of floating marsh for years 1998-2004. Water level and salinity will be monitored continuously through 2004. Upon collection and evaluation of this data set, the Technical Advisory Group (TAG) will assist in development of a sampling plan based on an approximate 30% reduction of effort, if technically advisable.

Project Description

The Brady Canal Hydrologic Restoration Project consists of 7,653 ac (3,097 ha) located in the Terrebonne Basin, within the Bayou Penchant-Lake Penchant watershed. The project is bounded by Bayou Penchant, Brady Canal, and Little Carencro Bayou to the north, Bayou de Cade and Turtle Bayou to the south, Superior Canal to the east, and Little Carencro Bayou and Voss Canal to the west (figure 1).

Historically, the Atchafalaya River has influenced the establishment of freshwater marsh plant species within the Brady Canal Hydrologic Restoration project area (USDA/NRCS 1995). In 1968 the vegetation in the project area was classified as freshwater, intermediate and brackish marsh (Chabreck et al. 1968) (figure 2). In 1978 the area was classified as intermediate marsh with a small area of brackish marsh in the southern portion of the project along Bayou de Cade (Chabreck and Linscombe 1988).

The Brady Canal Hydrologic Restoration project is bisected by the Mauvais Bois Ridge, resulting in different hydrologic regimes to the north and south of the ridge. The northern section of the project area still receives freshwater and sediments which is provided through overbank flow from Bayou Penchant, Little Carencro Bayou, and Brady Canal (USDA/NRCS 1995). The Mauvais Bois Ridge forms a barrier to reduce the outflow of freshwater. Freshwater and sediment retention has diminished in the southern portion of the project area due to unimpeded throughflow and tidal exchange combined with a decrease in freshwater and sediment (USDA/NRCS 1995).

The project area north of the Mauvais Bois Ridge is dominated by *Sagittaria lancifolia* (bulltongue), *Sacciolepis striata* (bagscale), *Ludwigia leptocarpa* (false loosestrife), *Hydrocotyle sp.* (pennywort) *Eleocharis sp.* (spikerush), and *Sagittaria latifolia* (duck potato). Submerged aquatic vegetation (SAV) in shallow ponds include *Nymphaea odorata* (white waterlily), *Utricularia sp.* (bladderwort),

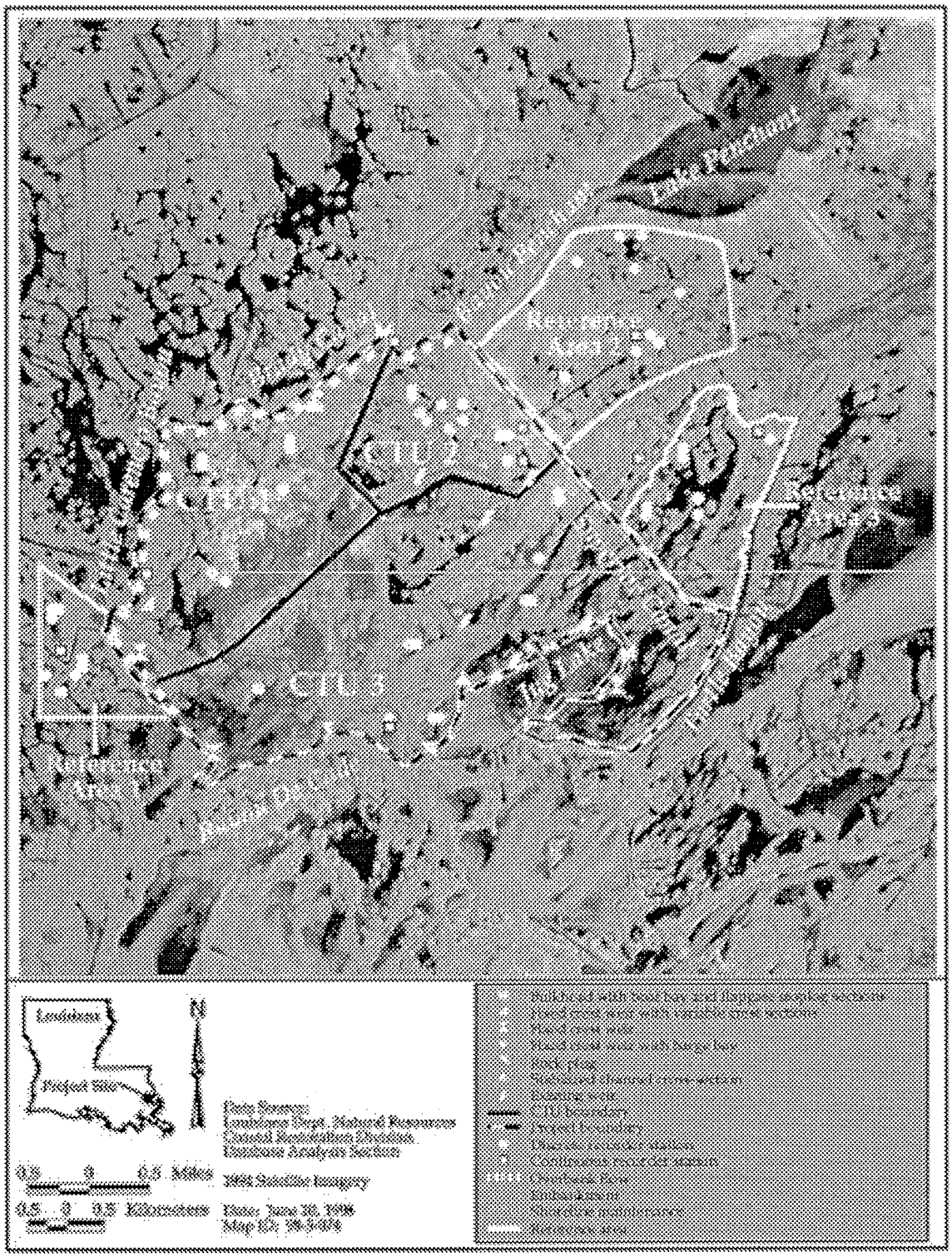


Figure 1. Brady Canal Hydrologic Restoration (TE-28) project boundaries and features.

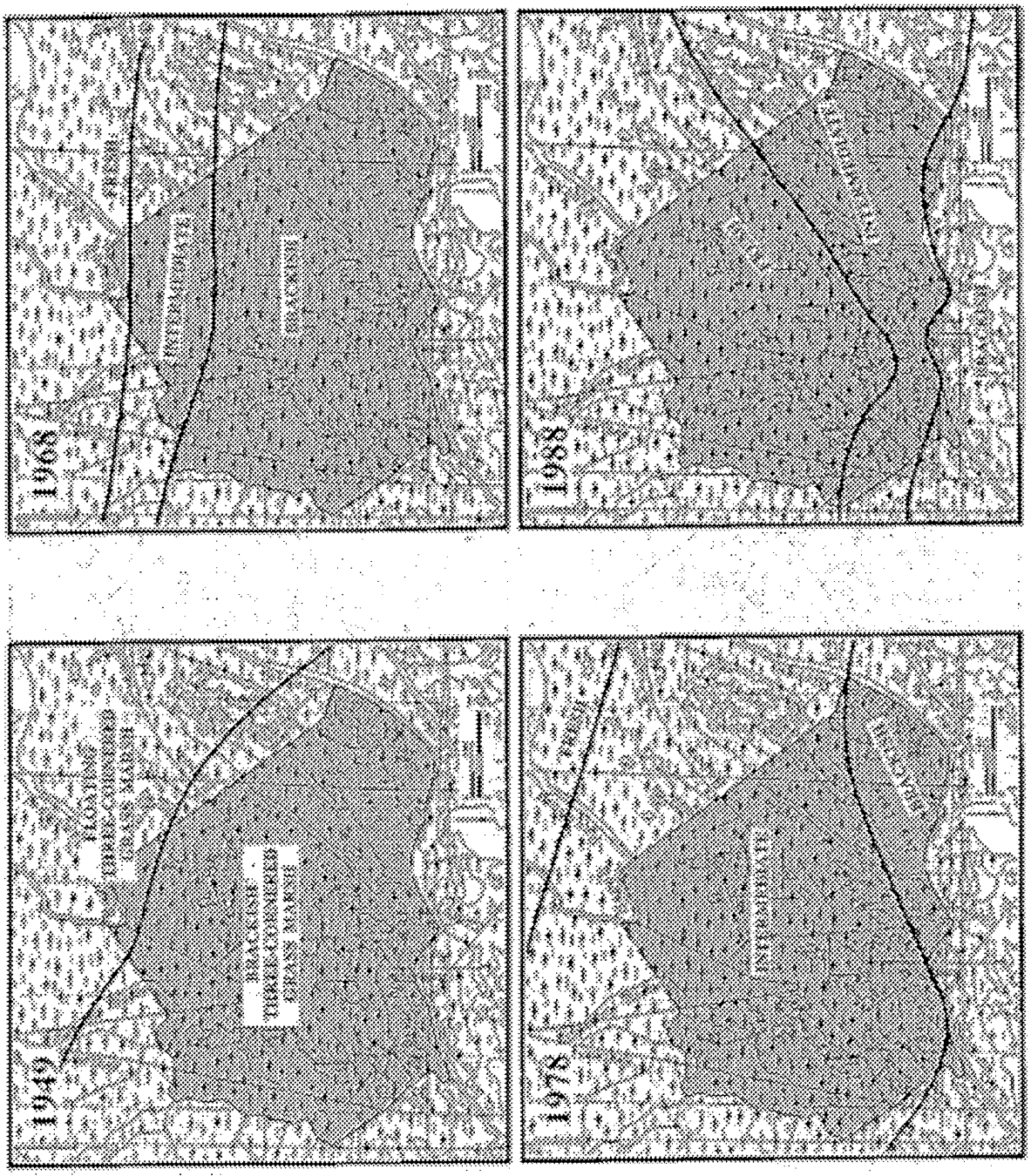


Figure 2. Typical vegetation communities within the project area in A) 1949, B) 1968, C) 1978, and D) 1988 (O'neil 1949, Chabreck and Linscombe 1978, and Chabrack and Linscombe 1988.

Ceratophyllum demersum (coontail), *Lemna sp.*(duckweed) and *Myriophyllum heterophyllum* (Eurasian watermilfoil). Flotant marsh formation is evident in some interior ponds and the abundance of *Eichornia crassipes* (water hyacinth) is providing a substrate for other species to colonize. The southern portion of the project below the Mauvais Bois Ridge is dominated by *Spartina patens* (marshhay cordgrass), *L. leptocarpa*, *S. lancifolia*, and *Scirpus americanus* (olney bulrush). The common SAV species are *C. demersum*, *M. heterophyllum*, and *Heteranthera dubia* (water stargrass) (USDA/NRCS 1995).

Major changes to the hydrology of the Penchant Basin, both natural and human induced, have resulted in a complex hydrologic setting (USDA/NRCS 1995). Under natural hydrologic conditions, the Penchant Basin is confined by natural levee ridges and is open to the west and southwest where it connects with the lower Atchafalaya River, Atchafalaya Bay, and Fourleague Bay. Historically, this hydrologic setting produced an estuarine system created by freshwater introduction in the upper basin and tidal exchange with the bays. Over time hydrologic conditions in the Penchant Basin were altered by the construction of numerous canals, levees, local water management structures, and major public works projects. Some of the major projects that have helped to alter the hydrology in the basin are the Atchafalaya Basin Floodway, the Avoca Island levee along the lower Atchafalaya River, the Gulf Intracoastal Waterway (GIWW), the Bayou Chene, Boeuf, and Black Projects, the rock weir at Wax Lake, and the Houma Navigation Canal (USDA/NRCS 1995).

Historically, the Atchafalaya River provided freshwater and sediments to the Penchant Basin through the diversion of flood waters into Bayou Cocodrie via Bayou Boeuf at Morgan City, and into Bayou Penchant via Bayou Shaefer and Bayou Chene (USDA/NRCS 1995). Freshwater input and sediment retention from the Atchafalaya River diminished after the construction of the Atchafalaya Basin Floodway, the Bayou Boeuf Lock on the GIWW, and the construction of the Avoca Island Levee. Additionally, the dredging of numerous canals in the basin has resulted in the breaching of natural hydrologic barriers allowing for a strong tidal influence. These anthropogenic changes have resulted in an acceleration of tidal exchange between freshwater distribution channels and tidal channels thus reducing freshwater retention, accelerating erosion, and facilitating saltwater intrusion (USDA/NRCS 1995).

The natural levee ridge of Bayou DeCade has eroded to below marsh elevation over several thousand feet along the southern project boundary. This has created a direct hydrological connection between the higher salinity waters from the south and the project area as well as decreasing protection from storm surges and tidal scouring. In addition, oilfield access canals extending from within the project area to the Bayou DeCade levee ridge have also increased tidal exchange and provided direct routes for saltwater intrusion and reduced freshwater and sediment retention (USDA/NRCS 1995).

Land loss data shows that during the period from 1932 to 1990, about 1,818 ac (736 ha) of land were converted to open water in the Brady Canal Hydrologic Restoration project area. Approximately 52% of the loss occurred over a 16 year period between 1958 and 1974. The average loss per year between 1932 and 1958 was approximately 18 ac (7.3 ha) per year. The average loss of 31 ac (12.5 ha) per year from 1983 to 1990 illustrates an increase in land loss rates for the project area (Dunbar

et al. 1992). Land loss data in the project area indicates that losses were greatest in the southwest portion of the project (USDA/NRCS 1995).

The Brady Canal Hydrologic Restoration project involves the installation and maintenance of canal plugs, the repair, construction, and maintenance of levees, and the placement of stabilized channel cross-sections. The structures are designed to reduce adverse tidal effects in the project area as well as to better utilize available freshwater and sediments.

The principle project features include (figure 1):

1. Bulkhead with boat bay and two flapgated variable crest sections (1)
2. Fixed crest weir with barge bay (1)
3. Fixed crest weir with variable crest section(s) (3)
4. Fixed crest weir (1)
5. Rock plug (1) (315 ft)
6. Stabilized channel cross-section (rock) (2)
7. Earthen embankment (15,000 ft)
8. Maintenance of existing overflow bank (21,600 ft)
9. Maintenance of shore and earthen embankment
10. Maintenance of existing structures

Project Objectives

1. Maintain and enhance existing marshes in the project area by reducing the rate of tidal exchange.

2. Improve the retention of introduced freshwater and sediment.

Specific Goals

The following goals will contribute to the evaluation of the above objectives:

1. Decrease the rate of marsh loss.

2. Maintain or increase the abundance of plant species typical of a freshwater and intermediate marsh.

3. Decrease variability in water level within the project area.

4. Decrease variability in salinities in the southern portion of the project.

5. Increase vertical accretion within the project area.

6. Increase the frequency of occurrence of SAV within the project area.

Reference Areas

The importance of using appropriate reference areas cannot be overemphasized. Monitoring on both project and reference areas provides a means to achieve statistically valid comparisons, and is therefore the most effective means of evaluating project success. The evaluation of sites was based on the criteria that both project and reference areas have a similar vegetative community, soil type, and hydrology.

In addition to the above criteria, reference areas were chosen to pair with the three Conservation Treatment Units (CTU) within the project area. Three reference areas were chosen. Reference area 1 is located south of Little Carencro Bayou and west of Voss Canal and is the reference area for CTU 1. The reference area for CTU 2 is located east of Superior Canal and south of Bayou Penchant. The reference area for CTU 3 is located east of Superior Canal and north of Turtle Bayou (figure 1). Both the project area and the reference areas are classified as freshwater marsh to intermediate marsh (Chabreck and Linscombe 1988) and contain mainly the Allemands Muck and Clovelly Muck soils (USDA/NRCS 1995). Reference areas will be used in the evaluation of all monitoring elements. Although the reference areas have many similarities to the project site, we recognize that interpretation of reference data can be limited or confounded by natural or anthropogenic processes.

Monitoring Elements

The following monitoring elements will provide the information necessary to evaluate the specific goals listed above:

1. Habitat Mapping — To document vegetated and non-vegetated areas, color infrared aerial photography (1:12,000 scale with ground controls) will be obtained. The photography will be photointerpreted, scanned, mosaicked, georectified, and analyzed by National Wetlands Research Center (NWRC) personnel according to the standard operating procedure described in Steyer et al. (1995). The photography will be obtained in 1998 (pre-construction), and in 2002, 2008, and 2017 (post-construction).

2. Vegetation — Species richness and relative abundance will be evaluated in the project and reference areas using techniques described in Steyer et al. (1995). More specifically, the Braun-Blanquet method (Mueller-Dombois and Ellenberg 1974) will be utilized. Five stations were chosen within each CTU and reference area and replicate samples will be collected at each station. Relative abundance will be documented in permanent plots to allow revisiting over time. Plot size will be determined after a field investigation. Sites will be sampled once in 1996 (pre-construction) and 1999 (as-built), and in 2002, 2004, 2006, 2009, 2012, and 2015 post-construction.

3. Water Level

To monitor water level variability, one continuous recorder will be located within each CTU and one recorder located in each reference area. One additional recorder will be located outside the project area on Bayou Penchant near the northern most water control structure. Mean daily water level variability and duration and frequency of flooding prior to construction will be compared to mean daily water level variability and duration and frequency of flooding after construction within the project area. Mean daily water level variability and duration and frequency of flooding will also be compared between the project and reference areas. Water level will be monitored in 1996-1998 (pre-construction) and in 1999-2004 (post-construction). Upon collection of this data set, the TAG will assist the CRD Monitoring Manager with evaluation of the data and development of a sampling plan based on an approximate 30% reduction of effort, if technically advisable.

4. Salinity

To monitor salinities one continuous recorder will be located in each CTU and reference area. Descriptive and summary statistics will be used to compare salinities in the project area prior to construction to salinities in the project area after construction. Also, salinities will be compared between the project and reference area. Discrete salinities will be determined monthly at five sites within each CTU and reference area. Salinity will be monitored in 1996-1998 (pre-construction) and in 1999-2004 (post-construction). Upon collection of this data set, the TAG will assist the CRD Monitoring Manager with evaluation of the data and development of a sampling plan based on an approximate 30% reduction of effort, if technically advisable.

5. Accretion

Vertical Accretion will be determined in triplicity at each of the five representative stations within each CTU and reference area using techniques described in Steyer et al. (1995). The location of vertical accretion sites will correspond with the location of vegetation sampling sites. Sites will be sampled twice in 1996 and 1999 (pre-construction), and in 2002, 2004, 2006, 2009, 2012, and 2015 (post-construction).

6. Submersed Aquatic Vegetation

The frequency of occurrence of SAV will be compared between project and reference areas. Within the project (by CTU) and reference areas, 5 ponds will be sampled during Fall (October or November) twice in 1996 and 1999 (pre-construction) and in 2002, 2006, 2012, and 2015 (post-construction). Methods described in Nyman and Chabreck (in press) will be used to determine the

frequency of occurrence of SAV. Within each pond sampled, the presence/absence of SAV will be determined at 25 random points. Frequency of occurrence will be determined for each pond from the number of points at which SAV occurred and the total number of points sampled. When SAV occurs at a point, the species occurring will be listed.

7. Marsh Mat Movement

To monitor marsh mat movement, one continuous recorder will be located within CTU #1 and one recorder located in CTU #1 reference area. Mean daily water level variability and duration and frequency of flooding of floating marshes will be determined by comparison to mean daily water level variability and duration and frequency of flooding after construction within the project area. Mean daily water level variability and duration and frequency of flooding of floating marshes will also be compared between the project and reference areas. Marsh mat movement will be monitored in 1998 (pre-construction) and in 1999, 2000, 2001, 2002, 2003, and 2004 (post-construction).

Anticipated Statistical Tests and Hypotheses

The following hypotheses correspond with the monitoring elements and will be used to evaluate the accomplishment of the project goals.

1. Descriptive and summary statistics on historical data (NBS 1956, 1978, 1988) and data from aerial photography and GIS interpretation collected during post-project implementation will be used to evaluate marsh to open water ratios and marsh loss rates. If sufficient historical information is available, regression analyses will be done to examine changes in slope between pre- and post conditions.

   Goal: Decrease rate of marsh loss.

2. The basic model of a repeated measures ANOVA will be BACI type model (Before-After-Control-Impact). This model will determine if there is a detectable impact (for example, in relative abundance of vegetation) in the project area after construction. Multiple comparisons will be used to compare individual means across different treatment levels. All original data will be analyzed and transformed (if necessary) to meet the assumptions of ANOVA.

   Goal: Increase species richness and relative abundance of plant species typical of a freshwater and intermediate marsh.

Hypothesis A:

H_0: Species richness of vegetation within CTU (a) at time i will not be significantly greater than the species richness of vegetation within reference area (a) at time i.

H_a: Species richness of vegetation within the CTU (a) at time i will be significantly greater than the species richness of vegetation within reference area (a) at time i.

If we fail to reject the null hypothesis, any possible negative effects will be investigated

Hypothesis B:

H_0: After project implementation at time i, species richness of vegetation will not be significantly greater than before project implementation.

H_a: After project implementation at time i, species richness of vegetation will be significantly greater than before project implementation.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis A_1

H_0: Relative abundance of vegetation within CTU (a) at time i will not be significantly greater than the relative abundance of vegetation within reference area (a) at time i.

H_a: Relative abundance of vegetation within CTU (a) at time i will be significantly greater than the relative abundance of vegetation within the reference area (a) at time i.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis B_1:

H_0: After project implementation at time i, relative abundance of vegetation will not be significantly greater than before project implementation.

H_a: After project implementation at time i, relative abundance of vegetation will be significantly greater than before project implementation.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

3. The primary method of analysis will be to determine differences in daily mean water level variability by descriptive and summary statistics between the project and reference area. Ancillary data (i.e., precipitation, historical) will be included as covariables when available. This additional information may be evaluated through analysis such as correlation, trend, multiple comparisons, and interval estimation. In addition, duration and frequency of flooding in relation to marsh elevation will be determined within the project and reference areas. These analyses will allow for the evaluation of goal 2.

Goal: Decrease mean daily water level variability within the project area.

Hypothesis A:

H_0: Mean daily water level variability within CTU (a) will not be significantly less than the mean daily water level variability within reference area (a) at time i.

H_a: Mean daily water level variability within CTU (a) will be significantly less than the mean daily water level variability within reference area (a) at time i.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis B:

H_0: After project implementation at time i, mean daily water level variability Will not be significantly less than before project implementation.

H_a: After project implementation at time i, mean daily water level variability will be significantly less than before project implementation.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

4. The primary method of analysis will be to determine differences in salinity levels using descriptive and summary statistics between the project and reference area. Ancillary data (i.e., precipitation, historical) will be included as covariables when available. This additional

information may be evaluated through analysis such as correlation, trend, multiple comparisons, and interval estimation.

Goal: Decrease mean variability of salinities in the southern portion of the project area.

Hypothesis A:

H_0: Mean variability of salinity within CTU 3 at time i will not be significantly less than the mean variability of salinity within reference area 3 at time i.

H_a: Mean variability of salinity within CTU 3 at time i will be significantly less than the mean variability of salinity within reference area 3 at time i.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis B:

H_0: After project implementation at time i, mean variability of salinity within CTU 3 will not be significantly less than before project implementation.

H_a: After project implementation at time i, mean variability of salinity within CTU 3 will be significantly less than before project implementation.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

5. The primary method of analysis for vertical accretion will be to determine differences in mean vertical accretion rate as evaluated by a repeated measures ANOVA that will consider both spatial and temporal variation and interaction. The basic model of ANOVA will be BACI type model (Before-After-Control-Impact). This model will determine if there is a detectable impact (for example, increase in vertical accretion rate) in the project area after construction. All original data will be analyzed and transformed (if necessary) to meet the assumptions of ANOVA (e.g. normality). This analysis will allow for the evaluation of goal 5.

Goal: Increase vertical accretion rate.

Hypothesis A:

H_0: The mean vertical accretion rate within CTU (a) at time i will not be significantly greater than the mean vertical accretion rate within reference area (a) at time i.

H_a: The mean vertical accretion rate within CTU (a) at time i will be significantly greater than the mean vertical accretion rate within reference area (a) at time i.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis B:

H_0: After project implementation at time i, mean vertical accretion within each CTU will not be significantly greater than before project implementation.

H_a: After project implementation at time i, mean vertical accretion within each CTU will be significantly greater than before project implementation.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

6. The primary method of analysis for SAV occurrence will be to determine the mean frequency of SAV in the project and reference areas as evaluated by a repeated measures ANOVA that will consider both spatial and temporal variation and interaction. The basic model of ANOVA will be the BACI type model (Before-After-Control-Impact). This model will determine if there is a detectable impact (for example, decrease in SAV occurrence) in the project area after construction. Multiple comparisons will be used to compare individual means across different treatment levels. All original data will be analyzed and transformed (if necessary) to meet the assumption of ANOVA (e.g. normality). These analyses will allow for the evaluation of goal 6.

Goal: Increase frequency of occurrence of SAV.

Hypothesis A:

H_0: Mean SAV occurrence in CTU (a) at time i will not be significantly higher than the mean SAV occurrence in reference area (a) at time i.

H_a: Mean SAV occurrence in CTU (a) at time i will be significantly higher than the mean SAV occurrence in reference area (a) at time i.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

Hypothesis B:

H_0: Mean SAV occurrence in each CTU at time i will not be higher than the mean SAV occurrence in each CTU area at preconstruction.

H_a: Mean SAV occurrence in each CTU at time i will be significantly higher than the mean SAV occurrence in each CTU at preconstruction.

If we fail to reject the null hypothesis, any possible negative effects will be investigated.

NOTE: Available ecological data, including both descriptive and quantitative data, will be evaluated in concert with the statistical analysis to aid in determination of overall project success. This includes ancillary data collected in the monitoring project but not used directly in statistical analysis, as well as data available from other sources (USACE, NWRC, DNR, LSU, etc.).

Notes

1.	Implementation:	Start Construction:	February 27, 1998
		End Construction:	June 27, 1999
2.	NRCS Point of Contact	Faye Talbot	(318) 896-8503
3.	DNR Project Manager:	Jim Buchtel	(504) 342-6738
	DNR Monitoring Manager:	Jennifer Young	(504) 447-0991
	DNR DAS Assistant:	Chris Cretini	(504) 342-0277

4. The twenty year monitoring plan development and implementation budget for this project is $1,084,338. Progress reports will be available in June 2001, June 2002, June 2004, June 2005, June 2007, June 2008, June 2010, June 2011, June 2013, June 2014, June 2016, and June 2017, and comprehensive reports will be available in June 2003, June 2006, June 2009, June 2012, June 2015, and June 2019. These reports will describe the status and effectiveness of the project.

5. DNR staff conducted a field investigation of the project area and reference area on December 17,1995.

6. DNR/CRD staff conducted a field trip in March, 1996 with NBS and NRCS personnel to determine location of sampling stations.

7. Specific goals will be analyzed by project area and CTU units.

8. References:

Chabreck, R. H. 1968. Vegetative type map of the Louisiana coastal marshes. Louisiana Department of Wildlife and Fisheries, New Orleans.

Chabreck, R. H., and G. Linscombe 1978. Vegetative type map of the Louisiana coastal marshes. Louisiana Department of Wildlife and Fisheries, New Orleans.

Chabreck, R. H., and G. Linscombe 1988. Vegetative type map of the Louisiana coastal marshes. Louisiana Department of Wildlife and Fisheries, New Orleans.

Dunbar, J. R., L. D. Britsch, and E. B. Kemp III 1992. Land loss rates: Louisiana Coastal Plain. Technical Report GL-90-2 U.S. Army Corps of Engineers.

Knauss, R. M., and D. R. Cahoon 1990. Improved cryogenic coring device for measuring soil accretion and bulk density. Journal of sedimentary Petrology, 60:622-23.

Mueller-Dombois, D., and H. Ellenberg 1974. Aims and Methods of Vegetation Ecology. New York: John Wiley and Sons, Inc. 547 pp.

Nyman, J. A., and R. H. Chabreck n.d. Some effects of 30 years of weir management on coastal marsh aquatic vegetation implications to waterfowl management. Gulf of Mexico Science. (in press)

Steyer, G. D., R. C. Raynie, D.L. Steller, D. Fuller and E. Swenson 1995. Quality management plan for Coastal Wetlands Planning, Protection, and Restoration Act monitoring program. Open-file series no.95-01. Baton Rouge: Louisiana Department of Natural Resources, CRD.

United States Department Of Agriculture Natural Resources Conservation Service 1995. Project Plan and Environmental Assessment for Brady Canal Hydrologic Restoration. Terrebonne Parish, Louisiana.

ATTACHMENT VI

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

OPERATION, MAINTENANCE AND REHABILITATION BUDGET

TE-28 BRADY CANAL

LEAD AGENCY: Natural Resources Conservation Service

PROJECT FEATURES:

- Site 6 - fixed crest weir with barge bay.
- Site 7 - rock plug.
- Site 10 - stabilization rock armored channel liner.
- Site 14 - fixed crest weir with variable crest section.
- Site 20 - stabilization rock armored channel liner.
- Site 21 - fixed crest weir with three (3) variable crest sections.
- Site 23 - fixed crest weir with two (2) variable crest sections.
- Site 24 - fixed crest weir.
- 4405 ft. - Rock armored earthen embankment.
- 3660 ft. - Rock dike
- 8531 ft. - Earthen embankment
- Maintenance of existing overflow bank (21,600 ft.)
- Maintenance of shore and earthen embankment.
- Maintenance of existing structures.

OPERATION AND MAINTENANCE / REHABILITATION ASSUMPTIONS

1. Water control structures will be maintained and operated through LDNR by third party contractor.

2. The plugs/weirs are functional with settlements up to one foot; if greater than one foot settlement occurs, these plugs will require additional capping with 250 lb. Stone.

Year 5	Cap Replacement (18" 250 lb. Stone cap total 2,000 tons of rock), cap replacement of (24" 600 lb. stone at 5,100 tons of rock), and Structure #6 sill maintenance.
Year 10	Cap Replacement (18" 250 lb. stone cap total 2,000 tons of rock) and cap replacement of (24" 600 lb. stone at 3,400 tons of rock.
Year 15	Cap Replacement (18" 250 lb. stone cap total 1,000 tons of rock)

3. Replace Signage at Year 5, 10, and 15: 100% Replacement

OPERATION AND MAINTENANCE COST CONSIDERATIONS:

(Based on a 20 year project life; cost include inflation)

A. ANNUAL INSPECTIONS: **$72,035**
(1 Field day with 3 team members including federal participant, boat and report form Schedule A-1)

B. ANNUAL COST OF OPERATIONS: **$180,382**
($6,500/yr. adjusted for inflation for the life of the project)

C. PREVENTATIVE MAINTENANCE **$423,736**
($15,600/yr. adjusted for inflation for the life of the project)

D. COST FOR MAINTENANCE PROJECT AT YEAR 5 (2004)
(Includes a ten percent construction contingency (cc) and inflation factor of 1.1665.)

1.	Contractor Mobilization/Demobilization ($25,000 x 1.1 cc)	$27,500	
2.	Cap 18" 250 lb. stone on 6 plugs: (2,000 tons x $30/ton x 1.1 cc)	$66,000	
3.	Site 6 Rock Sill installation (200 tons x $30/ton x 1.1 cc)	$6,600	
4.	Cap 24" 600 lb. stone on 9,000 linear ft. of embankment (34,000 tons x 15% x $24/ton x 1.1 cc)	$134,640	
5.	Replace warning signs, two at each plug ($500/sign x 2 each x 6 plugs x 1.1 cc)	$6,600	
	Contractor Subtotal	$241,340	
	Contractor Cost with Inflation ($241,340 x 1.1665)		$281,523
6.	Design Cost/ Administration (2 week project $9,060 x 1.1665 from Schedule D-1		$10,568
7.	Engineering Consultant Design, Survey and Inspection		$29,251
	Basic Services: (9% x 243,028 Contractor Cost)	$21,873	

Survey Supplemental Services: $2,916
(2 days at $1,250/day x 1.1665 from Schedule E-2)

Resident Inspection: $4,462
(5 workday x $765/day x 1.1665 from Schedule E-3)

TOTAL FOR MAINTENANCE YEAR 5: $321,342

E. COST FOR MAINTENANCE PROJECT AT YEAR 10 (2009)
(Includes a ten percent construction contingency (cc) and inflation factor of 1.3262.)

1. Contractor Mobilization/Demobilization $27,500
($25,000 x 1.1 cc)

2. Cap 18" 250 lb. stone on 6 plugs: $66,000
(2,000 tons x $30/ton x 1.1 cc)

3. Cap 24" 600 lb. stone on 9,000 linear ft. of embankment (34,000 tons x 10% x $24/ton x 1.1 cc) $90,209

4. Replace warning signs, two at each plug $6,600
($500/sign x 2 each x 6 plugs x 1.1 cc)

Contractor Subtotal $190,309

Contractor Cost with Inflation ($190,309 x 1.3262) $252,389

6. Design Cost/ Administration
(2 week project $9,060 x 1.3262 from Schedule D-1) $12,016

7. Engineering Consultant Design, Survey and Inspection $29,280

Basic Services: $21,873
(10.5% x 208,034 Contractor Cost)

Survey Supplemental Services: $3316
(2 days at $1,250/day x 1.3262 from Schedule E-2)

Resident Inspection: $4,058
(5 workday x $765/day x 1.3262 from

Schedule E-3)

TOTAL FOR MAINTENANCE YEAR 10: **$293,685**

F. COST FOR MAINTENANCE PROJECT AT YEAR 15 (2014)
(Includes a ten percent construction contingency (cc) and inflation factor of 1.5078.)

1. Contractor Mobilization/Demobilization $27,500
($25,000 x 1.1 cc)

2. Cap 18" 250 lb. stone on 6 plugs: $30,000
(1,000 tons x $30/ton x 1.1 cc)

4. Replace warning signs, two at each plug $6,600
($500/sign x 2 each x 6 plugs x 1.1 cc)

Contractor Subtotal $67,100

Contractor Cost with Inflation ($157,309 x 1.5078) $101,077

6. Design Cost/ Administration
(2 week project $9,060 x 1.5078 from Schedule D-1) $13,661

7. Engineering Consultant Design, Survey and Inspection $18,360

Basic Services: $11,129
(11.0% x 101077 Contractor Cost)

Survey Supplemental Services: $3770
(2 days at $1,250/day x 1.5078 from Schedule E-2)

Resident Inspection: $3,461
(3 workday x $765/day x 1.5078 from Schedule E-3)

TOTAL FOR MAINTENANCE YEAR 15: **$156,720**

Previously Expended Funds (through June 10, 1998) **$ 0**

TOTAL ESTIMATED OPERATION AND MAINTENANCE COST **$1,447,900**

OPERATION AND MAINTENANCE (O&M) BUDGET SUMMARY
TE-28 BRADY CANAL

Original O&M Budget	**$1,267,703**
Revised O&M Budget	**$1,447,900**
Budget (Increase) Decrease	**$ 180,197**

Tim Allen

From: Brian Babin [BrianB@dnr.state.la.us]
Sent: Thursday, April 11, 2002 11:32 AM
To: Tallen@castexenergy.com
Subject: TE-28 Brady Canal Maintenance Project

BradycanalO&Mplanbudget.wpd

Tim,

Attached is the revised cost estimate that you have requested for year 1 of operation and maintenance for the Brady Canal Project. In our recent meeting held at your office with yourself and Mr. Woodard, we discussed a construction cost of approximately $537,000 to complete the project. However, I failed to go over other cost associated with the project such as engineering fees, surveying and construction adminstration and inspection. The attached file includes the estimated construction cost and other cost associated with the project.

The actual total project budget is approximately $631,000. Therefore, the cost breakdown between all parties would be as follows:

NRCS (85% total project budget) (0.85 x 631,000)	$536,350
Castex ($631,000 x .15 x .60)	$56,790
Burlington ($631,000 x .15 x .40)	$37,860

I appoligize for overlooking these additional cost associated with the project during our meeting. Should you have any questions or need additional information, please do not hesitate to contact me at (985) 447-0956.

Thanks,
Brian

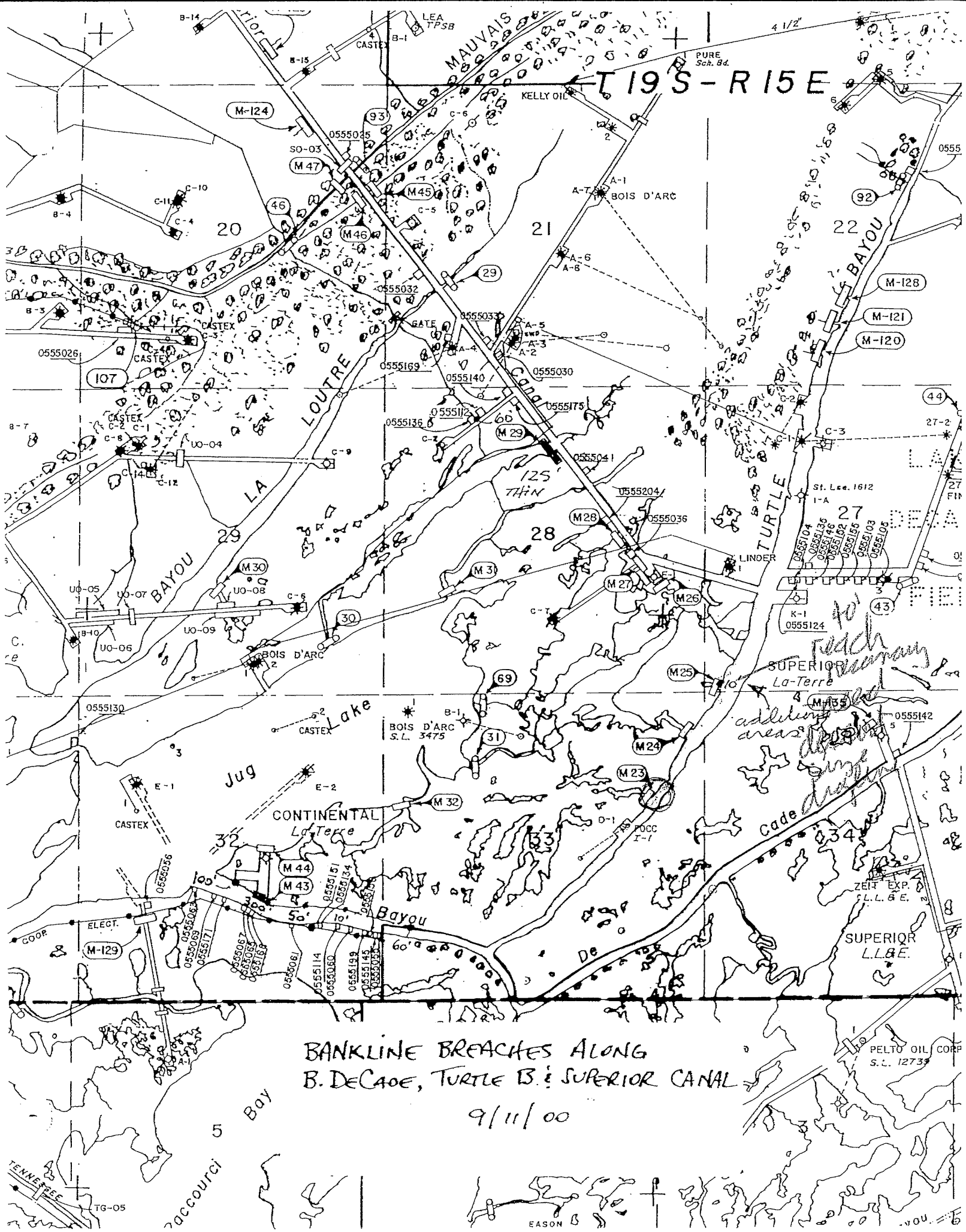
COST FOR ADDITIONAL REPAIRS TO PROJECT AT YEAR 1 (2002)

(Cost has been revised based upon September 2001 annual inspection with NRCS, LDNR and Landowners - Burlington Resources and Castex-Laterre representatives)

Includes a ten percent construction contingency (cc) and inflation factor 1.1.

1.	Contractor Mobilization/Demobilization	$50,000	
2.	Pile Replacement	$5,000	
3.	Broken Stone (Rip-Rap) (6050 tons @ $30.50/ton)	$184,525	
1.	Earthen Embankment Construction (8,160 cu. yds. @ $5.0/cu. yd)	$40,800	
5.	Geotextile Fabric(23,282 s.y. @ $5.0/s.y.)	$116,415	
6.	Seeding & Fertilizing (3.1 acres @ $1,100/acre)	$3,410	
7.	Broken Stone (Rip-Rap) Along Bayou Decade (2,550 tons @ $30.50/ton)	$77,775	
8.	Geotextile Fabric - Bayou Decade (12,000 s.y. @ $5.0/s.y.)	$60,000	
	TOTAL ESTIMATED CONSTRUCTION COST:		**$537,925**
9.	Engineering Consultant Design, Surveying and Inspection:		**$ 93,343**
	Basic Services:	$44,825	
	Survey Supplemental Services:	$19,346	
	Resident Inspection:	$29,172	

TOTAL COST FOR REPAIR AT YEAR 1: $631,268


T19S-R15E
MAUVAIS
LEA TPSB
PURE Sch. Bd.
KELLY OIL
BOIS D'ARC
GATE
CASTEX
LA LOUTRE
BAYOU
TURTLE
BAYOU
Canal
125' THIN
LINDER
St. Lse. 1612
SUPERIOR La-Terre
BOIS D'ARC S.L. 3475
Jug Lake
CONTINENTAL La-Terre
POCC I-1
Cade
De
Bayou
ZEIT EXP. L.L.&E.
SUPERIOR L.L.&E.
PELTO OIL CORP S.L. 12739
Bay
Paccourci
EASON
TENNESSEE
COOP. ELECT.
M-124
M-128
M-121
M-120
M-129
M 47
M 45
M 46
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M 25
M 24
M 23
M 32
M 44
M 43
M 30
M 31
M 32
M 135
20
21
22
27
28
29
32
33
34
5
40' reach necessary
additional areas
BANKLINE BREACHES ALONG
B. DeCADE, TURTLE B. & SUPERIOR CANAL
9/11/00

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
SURVEYING & ENGINEERING SERVICES IN CONNECTION WITH BRADY CANAL
P&O JOB NO. 10-1628

Point No.	Point Type	Northing	Easting	Ground Elevation (feet)	Description	Water Surface Elevation (feet)	Pole Sounding Depth (feet)	Date of Survey
1	Point_generic	329837	3389787		BREACH A			9/18/01
2	Point_generic	329734	3389344		BREACH B			9/18/01
3	Point_generic	329064	3387710		BREACH C			9/18/01
4	Point_generic	322224	3386554		STRUCTURE 14			9/18/01
5	Point_generic	315138	3389611		STRUCTURE 10 (EAST END)			9/18/01
6	Point_generic	315200	3393656		PIPELINE PLUG			9/18/01
7	Point_generic	316094	3394770		STRUCTURE 7			9/18/01
8	Point_generic	314668	3397862		ROCK SETTLEMENT AREA			9/18/01
9	Point_generic	315361	3398906		STRUCTURE 6			9/18/01
10	Point_generic	318211	3400785		STRUCTURE 20			9/18/01
11	Point_generic	320165	3405033		STRUCTURE 21			9/18/01
12	Point_generic	319396	3407710		STRUCTURE 23			9/18/01
13	Point_generic	318097	3407472		STRUCTURE 24			9/18/01
14	Pole Sounding	316050	3403366	-0.3	WESTERLY END OF SITE 1	1.7	2	9/18/01
15	Pole Sounding	315829	3403874	-0.3	EASTERLY END OF SITE 1	1.7	2	9/18/01
16	Pole Sounding	315553	3405772	-3.3	WESTERLY END OF SITE 2 APPROX. 100' WEST OF THIS POINT	1.7	5	9/18/01
17	Pole Sounding	315429	3406097	-0.3	EASTERLY END OF SITE 2	1.7	2	9/18/01
18	Pole Sounding	315386	3406640	-0.3	CENTER OF SITE 3 (100' WIDE)	1.7	2	9/18/01
19	Pole Sounding	315219	3407322	-0.3	CENTER OF SITE 4 (100' WIDE)	1.7	2	9/18/01
20	Pole Sounding	319688	3411829	-0.5	WESTERLY END OF SITE 5	1.7	2.2	9/18/01
21	Pole Sounding	320377	3412248	-0.3	EASTERLY END OF SITE 5	1.7	2	9/18/01
22	Pole Sounding	320685	3412375	-1.3	WESTERLY END SITE 6	1.7	3	9/18/01
23	Pole Sounding	320979	3412401	-1.3	EASTERLY END SITE 6	1.7	3	9/18/01
24	Pole Sounding	324040	3407523	-4.3	CENTER SITE 7 (100 FT. WIDE)	1.7	6	9/18/01
25	Pole Sounding	323908	3408598	-0.3	CENTER SITE 8 (200 FT. WIDE)	1.7	2	9/18/01
26	Pole Sounding	322092	3410042	-0.3	CENTER SITE 9 (100 FT. WIDE)	1.7	2	9/18/01

Site #	Approximate Length of Levee Based on DGPS Observations on 9/18/01
1	554 feet
2	450 feet
3	100 feet
4	100 feet
5	806 feet
6	295 feet
7	100 feet
8	200 feet
9	100 feet
total	2705 feet

ATTACHMENT VII

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

OPERATIONS SCHEDULE & REPORTS

The purpose of this attachment is to define the operation schedule and compile structure operation reports for operable structures throughout the project life. Upon completion of structure adjustments, the contracting party tasked to perform the operations will be required to provide LDNR with a detailed report containing the following information.

- Condition of water control structures and stop logs with photos.
- Description of structures in need of maintenance.
- Dates and time of structure adjustments and weather conditions.
- Number of stop logs removed or replaced.
- Personnel and equipment used to perform the work.
- Elevations of stop logs before and after adjustments.
- Water levels on either side of structure.
- Person contacted for access to property and copy of access agreement should one be required.

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

STRUCTURE OPERATION SCHEDULE

The basic philosophy for operation of the project structures is to allow fresh water from the north to move into the project area and block southerly water fluctuations by keeping these structures as high as possible. During emergency and storm events the stop logs in the variable weir structures should be removed to allow water out of the project area. Generally, during the fall (September 1) of each year, set all structures to maximum elevations, during the Spring (March15) of each year, lower/remove stop logs to natural channel elevation. This operation may change once the Penchant Project comes on line, and cuts in the southern portion of the project area are repaired. Therefore, operation of the project should be observed and revised as needed.

The Brady Canal Project area is divided into Conservation Treatment Unit (CTU#1), CTU#2 and CTU#3. Operational plans and procedures for CTU#1 are designed to stabilize water level fluctuations. Operational plans and procedures for CTU#2 andCTU#3 are designed to expose mud flats for seed germination and planting. Once vegetative planting are established, operations and procedures for CTU#3 are designed to gradually increase water levels to maintain and enhance vegetative growth.

I. Operation and Water Management Schedule

A. CTU#1 - Water Management Scheme

1. Structure #14: Fall (September 1) of each year, set structures to maximum elevation. Spring (March 15) of each year, lower/remove stop logs to natural channel.

B. CTU#2 - Water Management Scheme

1. No structures to operate in CTU#2

C. CTU#3 - Water Management Scheme

1. Structures #21 and #23: Fall (September 1) of each year, set structure to maximum elevation. Spring (March 15) of each year, lower/remove stop logs to natural channel elevation.

II. Safety Provisions

A. CTU#1 - Special Safety Provisions

1 Storms: Immediately following heavy rain storms or storm tidal surges, all weirs shall be opened, to provide normal gravity

drainage for the area as well as to protect the integrity of the levee system.

B. CTU#2 - Special Safety Provisions

1. No provisions.

C. CTU#3 - Special Safety Provisions

1. Storms: Immediately following heavy rainstorms or tidal surges, all weirs shall be opened, to provide normal gravity drainage for the area as well as to protect the integrity of the levee system.

PYBURN & ODOM MCA
Engineering & Related Services Since 1948

April 25, 2002

Mr. Clark Allen
Coastal Restoration Division
Louisiana Department of Natural Resources
P.O. Box 44027, Capital Station
Baton Rouge, LA 70804-4027

SUBJECT: DNR Contract No. 2503-00-39 – Surveying & Engineering Services
Structure Operation and Inspection
P&O Project Nos. 10-1630, 10-1631, & 10-1632

Dear Mr. Allen:

In accordance with your letter and scope of work dated March 1, 2002 and subsequent verbal instructions, our field party inspected and operated the following listed navigation lights, flap gates and weirs:

PROJECT	ITEM OF WORK
TE-28 Brady Canal	Inspected the condition of variable crest weirs at Sites 14,21 & 23. Removed stoplogs at Sites 14, 21 & 23. Inspected condition of navigation lights at Site 6.
BA-23 Barataria Waterway	Inspected the condition of the crest weir and removed the stoplogs at Site 1.
Ba-02 GIWW / Clovelly Farms	Inspected & cleaned flap gate at Site 91. Inspected The variable crest weir and installed stoplogs at Site 35. Inspected navigation lights at Site 14A.

Enclosed please find three (3) bound reports showing the results and photographs of our inspection and operation of the above listed structures.

8178 G.S.R.I. Avenue • Baton Rouge, Louisiana 70820 • Telephone (225) 766-6330 • FAX (225) 769-7680
www.pyodom-mca.com • email: info@pyodom-mca.com

We appreciate having the opportunity of providing these services to DNR. Please contact us if you have any questions or require additional information.

Very truly yours,
PYBURN & ODOM MCA

Michael P. Maillet, P.L.S.
Chief Surveyor

cc. w/encl. Mr. Brian Babin
DNR/CRD
Nicholls State University
P.O. Box 2079
Thibodaux, LA 70310

I:Projects/10-1630/Letters/02C113

2001 ANNUAL INSPECTION
BRADY CANAL HYDROLOGIC RESTORATION
STRUCTURE LOCATIONS
BRADY CANAL
BAYOU PENCHANT
SUPERIOR CANAL
CARENCRO BAYOU
STRU_11
STRU_21
STRU_23
STRU_24
STRU_20
JUG LAKE
TURTLE BAYOU
BAYOU DE CADE
BAY LONG
STRU_7
STRU_6
STRU_10
BAYOU DE CADE
TOSS CANAL

SITES 6 & 14

FIELD TRIP REPORT

PROJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Inspect the four (4) navigation lights at Site 6, and operate and adjust the variable crest weir structure at Site 14.

PARTICIPANTS: Mike Maillet, Brian Miller and Joey Laville

DATES: April 11, 2002

CONDITIONS: Cloudy / Mild / Breezy

Mike Maillet, Brian Miller, and Joey Laville arrived at the Falgoust Canal Landing at approximately 11:00 a.m. Permission to gain access to the property was obtained from Mr. Timothy J. Allen, PLS of Castex Laterre on April 1, 2002. The Field Data Report and field notes may be found in Appendix A.

NAVIGATION LIGHTS (SITE 6):

On April 1, 2002, 12:30 p.m., we inspected the four (4) navigation lights at Site 6, located on Bayou de Cade at a north-south running canal near the southwestern end of Jug Lake. All four navigation lights were dirty, with dirt dauber nests between the clear and colored glass light covers. The solar panels had bird droppings on them. We suggest that this is due to a flaw in the design of the navigation lights. At this Site, the solar panels are set on top of the lights and offer a flat surface for birds to perch on. The lights at Site 14a at the GIWW/Clovelly project, on the contrary, have sharp spines on top, and solar panels mounted on the side with four prongs sticking up, making it difficult for birds to perch.

The center pile of the southwest blue light is broken. The solar panel of the northwest blue light has been knocked over. The southeast red light is blinking on every two seconds. The northeast red light appeared to be in good condition. Photos of the navigation lights are shown in Appendix B.

VARIABLE CREST WEIR (SITE 14):

We arrived at the Site 14 variable crest weir structure located on the east side of Little Carencro Bayou north of camp "Better Livin" at 1:30 p.m. The weir structure appeared to be in fairly good condition, but covered with bird droppings. Using a top of sheet pile elevation of 4 feet, we determined the water surface elevation at the Site to be 1.55 feet. The sounding on the marsh side of the weir stoplogs was 5.0 feet for a ground elevation of –3.4 feet, and the sounding on the canal side was 6.3 feet for a ground elevation of –4.7 feet.

It was determined that in order to lower the sill elevation of the structure to the level of the natural channel bottom that eight (8) stoplogs would have to be removed. Eight stoplogs accounts for approximately 4 feet. The sounding on top of the stoplogs prior to our adjustment was 1.6 feet, for an elevation of 0 feet, and after 5.7 feet, for an elevation of –4.1 feet. The stoplogs removed from this structure were marked with yellow flagging. The Field Equipment Checklist and Operation Procedure can be found in Appendix C. Photos of the variable crest weir structure are shown in Appendix D.

PREPARED BY: Joey Laville, Pyburn & Odom MCA

EDITED BY: Harry Rayner, Pyburn & Odom MCA
Mike Maillet, Pyburn & Odom MCA
Brian Miller, Pyburn & Odom MCA

DISTRIBUTION: Clark Allen, DNR, CRD (3 Copies)
Brian Babin, DNR, CRD (1 Copy)

APPENDIX A

FIELD DATA REPORT

Project (No. & Name TE-28 Brady Canal Hydrologic Restoration Project

Loc: 1: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit Inspect the four (4) navigation lights at Site 6, and operate and adjust the variable crest weir structure at Site 14.

Date: 1-Apr-02

Participants: Mike Maillet, Joey Laville, and Brian Miller

Weather Conditions: Cloudy / Mild / Breezy

Persons Contacted for Acce Mr. Timothy J. Allen, PLS of Castex Laterre

Site No.: 14 & 6

Structure Condition			
		Maintenance/Repair	
Item	Condition	*Yes	No
Timber Pile	Good @ Site 14 Damaged @ Site 6	X	X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		X
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		X
Stop Logs	Good, 4 have crooked lag eyes		X
Master Locks	Weathered, but in good condition		X
			X

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Structure is covered with bird droppings.
Site 6 - Damaged center pile on Southwest Dolphin

Stop Log Adjustment **Date/Time** April 1, 2002 1:30 p.m.
- **Number of Logs Removed/Replaced:** 8 (Eight) removed
- **Elevation:** Elevation based on top of sheet pile @ 4.0', See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: Yellow flagging

PAGE NO.

LOCATION DATE WEATHER

STATION	ANGLE B.S.	C.C. H.I.	M.C. F.S.	FENCES & ROADS ANGLE INT.	M.C. ELEVATION

800-0047 IPL-5691 PAGE NO.

NAME OF AFE:

CLINATION

BRADY CANAL

HYDROLOGIC RESTORATION

PROJECT (TE-28)

STRUCTURE 14

EXXON PIPELINE COMPANY, HOUSTON, TEXAS

PAGE NO.

LOCATION STW 14 DATE 4/1/02 WEATHER PC WARM

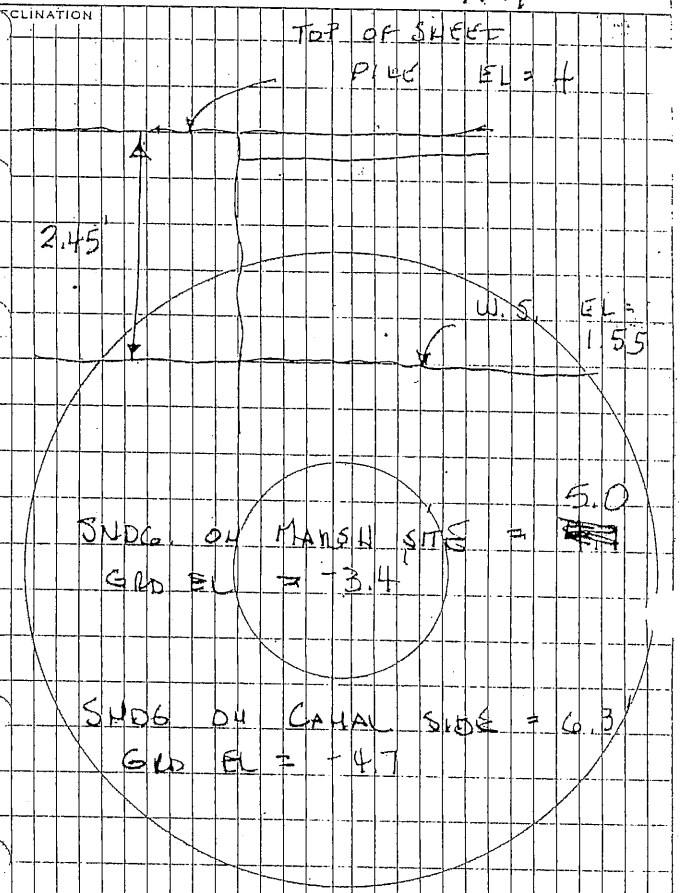
STATION	ANGLE B.S.	C.C. H.I.	M.C.	FENCES & ROADS ANGLE INT.	M.C. ELEVATION
3-9-10					
4.00					
2.45					
1.55					

800-0047 (PL-569) PAGE NO.

NAME OF AFE: LA. DNR JOB # 10-1632

STW. 14 4/1/02

CLINATION



SNDG ON STOP LOGS

		ELEV.
BEFORE =	1.6	0
AFTER =	5.7	-4.1

APPENDIX B

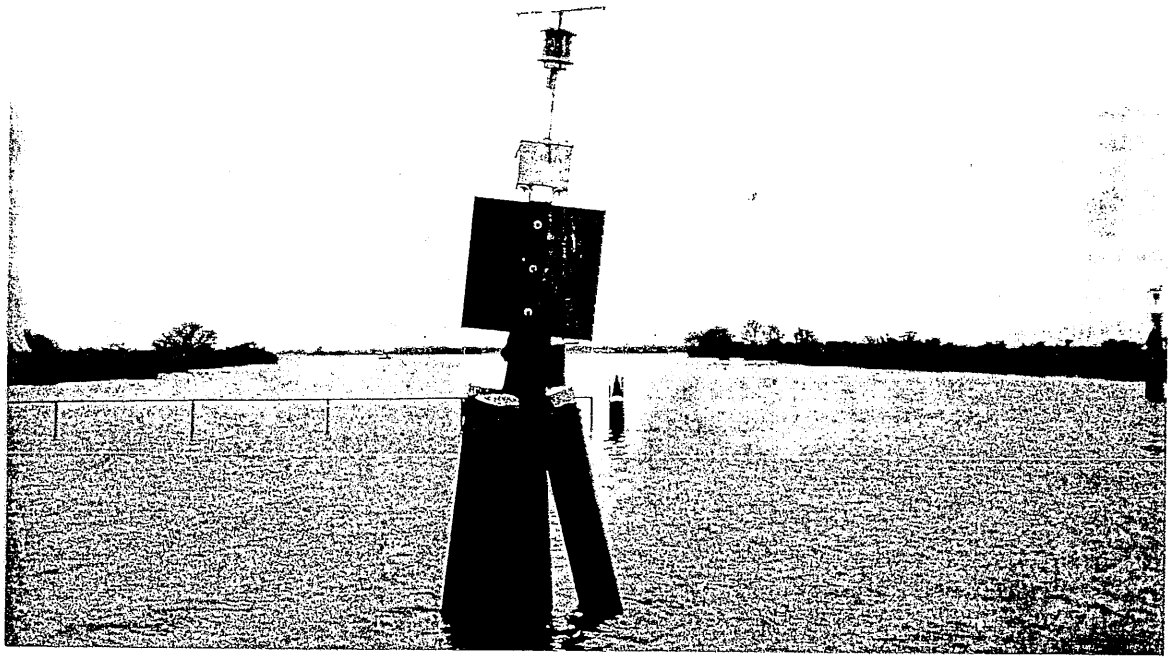


Photo 1 – Southwest Navigation Light (Site 6), center pile is broken.

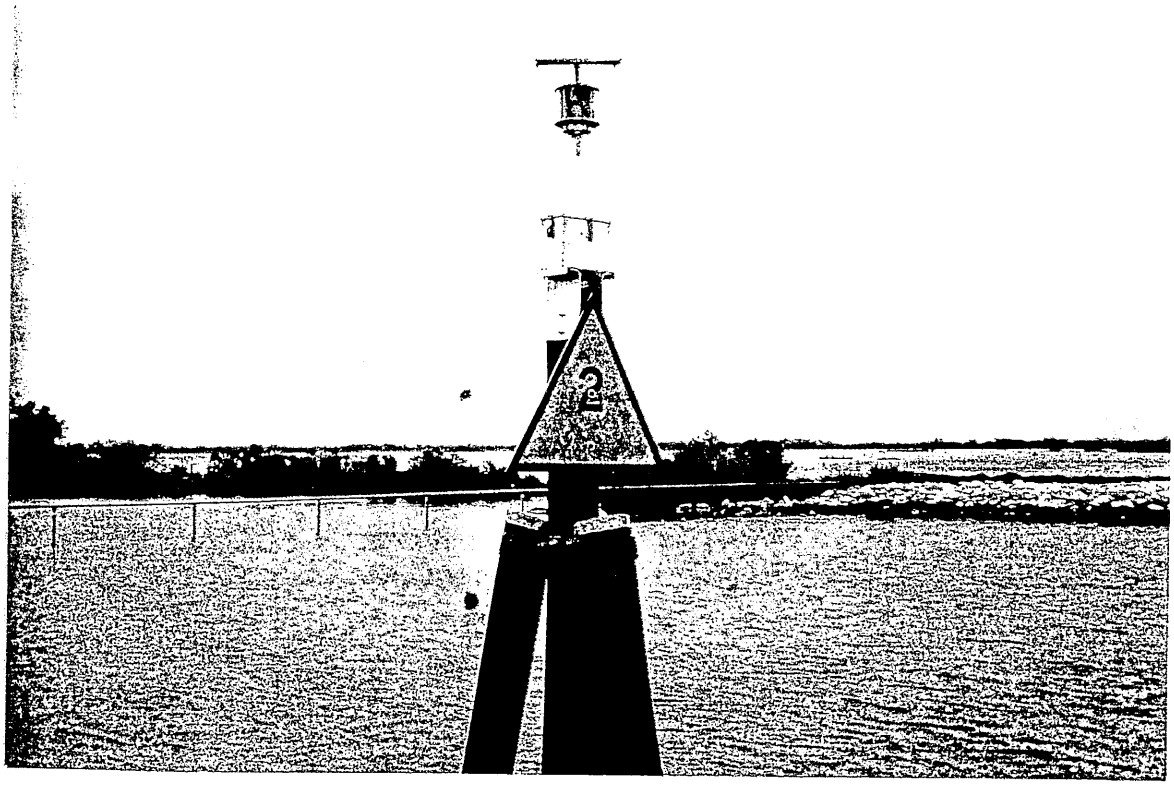


Photo 2 – Southeast Navigation Light (Site 6), light blinks on every 2 seconds.

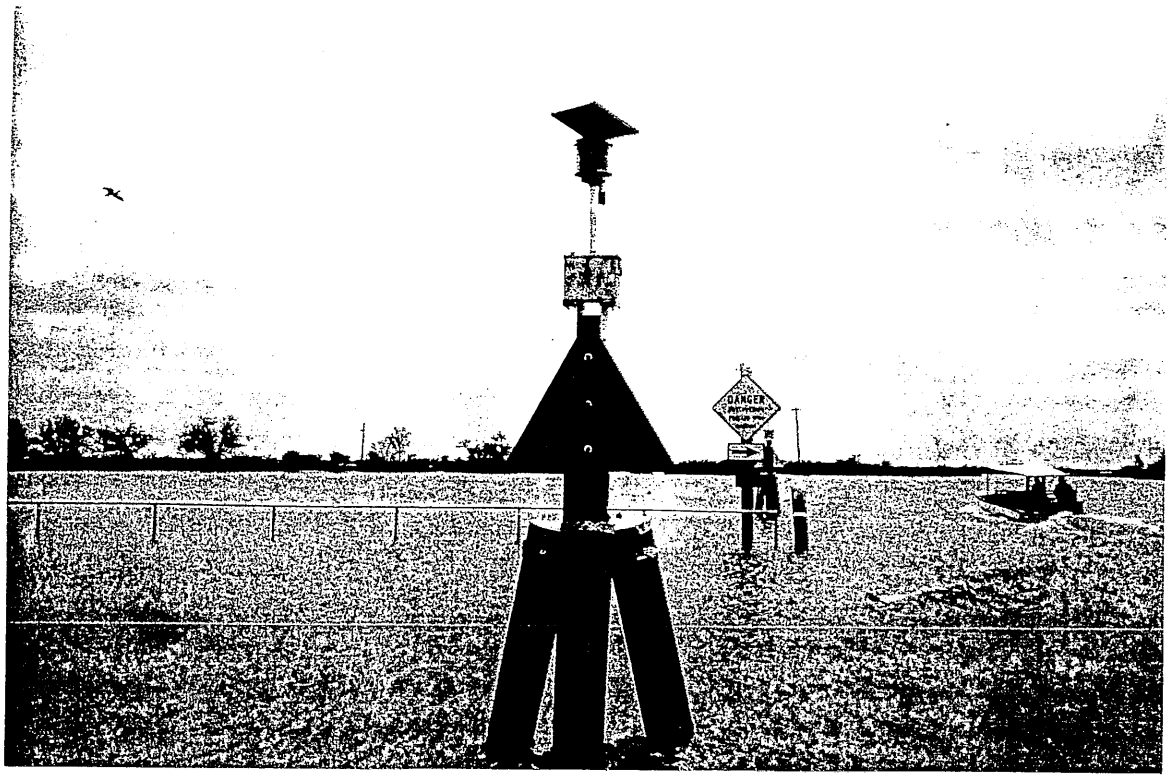


Photo 3 – Northeast Navigation Light (Site 6).

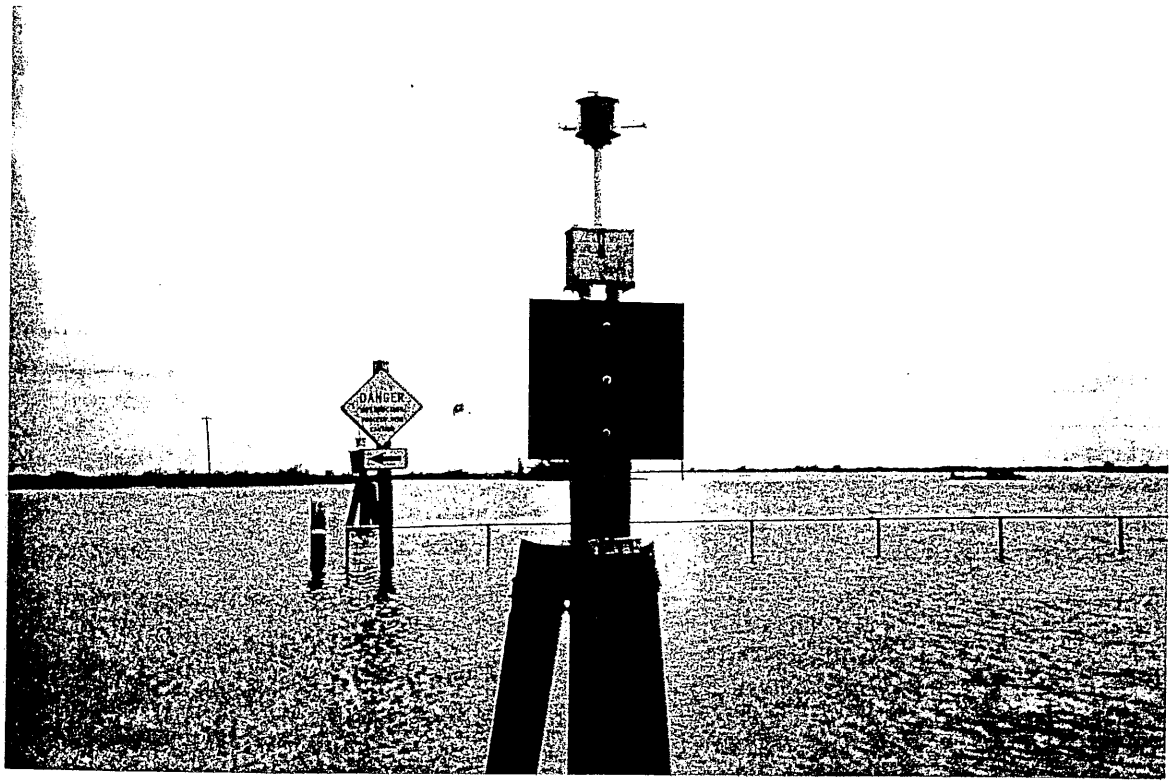


Photo 4 – Northwest Navigation Light (Site 6),
solar panel top has been knocked over.

APPENDIX C

FIELD EQUIPMENT CHECKLIST AND OPERATION PROCEDURE

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

VARIABLE CREST WEIR

_____ 1. 1-TON CHAIN HOIST

_____ 2. STAINLESS STEEL LIFTING RODS

_____ 3. KEYS FOR STOPLOG MECHANISM

_____ 4. GLOVES

_____ 5. HARD HATS

GENERAL NOTES:

Structures #14, #21, #23 – During the fall (September 1) of each year, all stoplogs in each bay shall be installed to their maximum elevations to impede high water level from the south. During the spring (March 15) of each year, stoplogs in each bay shall be removed to elevation of the natural channel bottom.

OPERATION PROCEDURE:

1. Install chain hoist on elevated lag eyes above the structure.
2. Unlock and remove locking mechanism and channel guides from structure.
3. Hook stainless steel lifting rods to ring on chain hoist.
4. Hook other end of stainless steel lifting rods to lag eyes on the stoplogs.
5. Lift stoplogs vertically using chain hoist.

APPENDIX D

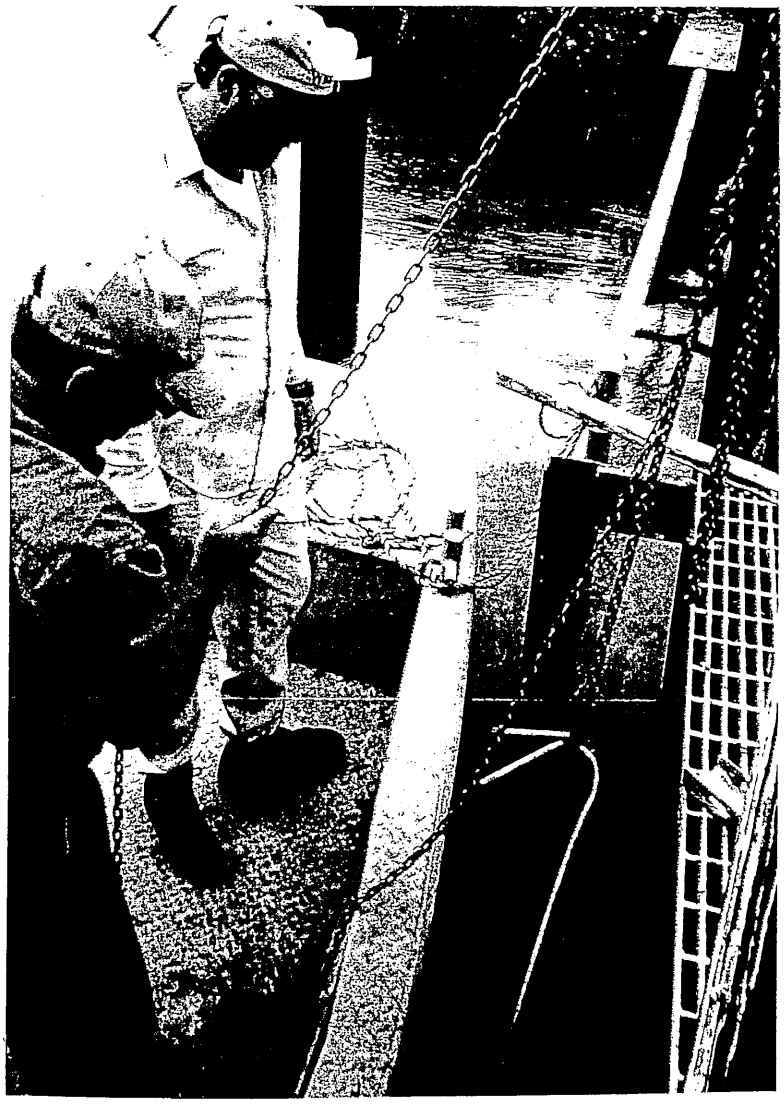


Photo 5 – Variable Crest Weir (Site 14), view of stoplogs being removed.

Photo 6 – Variable Crest Weir (Site 14), weir has been adjusted.

Photo 7 – Variable Crest Weir (Site 14).

Photo 8 – Variable Crest Weir (Site 14).

SITE 21

FIELD TRIP REPORT

PROJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weir structure at Site 21; inspect the breach in the levee southwest of Site 21 on Jug Lake.

PARTICIPANTS: Mike Maillet, Brian Miller and Joey Laville

DATES: April 2, 2002

CONDITIONS: Cloudy / Warm

Mike Maillet, Brian Miller, and Joey Laville arrived at the Falgoust Canal Landing at approximately 10:30 a.m. Permission to gain access to the property was obtained from Mr. Jeff W. Deblieux, PLS of Burlington Resources on April 2, 2002. The Field Data Report and field notes may be found in Appendix A.

VARIABLE CREST WEIR (SITE 21):

We arrived at the Site 21 variable crest weir structure at 11:00 a.m. The weir structure appeared to be in good condition. There are three (3) stoplog bays at the Site, which we shall refer to as bays 1, 2, and 3, in order from east to west. Using a top of rail and sheet pile elevation of 4.0 feet, we determined the water surface elevation at the site to be 1.6 feet.

It was determined that in order to lower the sill elevation of bay 1 to the level of the natural channel bottom that seven (7) stoplogs would have to be removed. The elevation to the top of logs before removal was +0.3 feet, and –3.4 feet after. Bay 2 would require that ten (10) stoplogs be removed to alter the sill elevation from +0.25 feet to –5.0 feet. Bay 3 would require that five (5) logs be removed to alter the sill elevation from +0.2 feet to –2.5 feet. A total of 22 logs were removed from the structure during this adjustment. For mudline levels and other data, please refer to the field notes in Appendix A. The stoplogs removed from this structure were marked with blue flagging. The Field Equipment Checklist and Operation Procedure can be found in Appendix B. Photos of the variable crest weir structure are shown in Appendix C.

In addition to the subject work, we were requested to investigate a breach in the levee around Jug Lake, approximately 2000 feet southwest of Site 21. The breach was approximately 10 to 15 feet wide and approximately 3 feet deep (See Appendix D for photos).

PREPARED BY: Joey Laville, Pyburn & Odom MCA

EDITED BY: Harry Rayner, Pyburn & Odom MCA
Mike Maillet, Pyburn & Odom MCA
Brian Miller, Pyburn & Odom MCA

DISTRIBUTION: Clark Allen, DNR, CRD (3 Copies)
Brian Babin, DNR, CRD (1 Copy)

APPENDIX A

FIELD DATA REPORT

roject (No. & Name TE-28 Brady Canal Hydrologic Restoration Project

ocati Jug Lake, Terrebonne Basin, Terrebonne Parish

urpose of Site Visit Operate and adjust the variable crest weir structure at Site 21; inspect the breach in the levee southwest of Site 21 on Jug Lake.

ate: April 2, 2002

articipants: Mike Maillet, Joey Laville, and Brian Miller

Veather Conditions: Cloudy / Warm

ersons Contacted for Acce Mr. Jeff W. Deblieux, PLS, of Burlington Resources

ite No.: 21

Structure Condition			
		Maintenance/Repair	
Item	Condition	*Yes	No
imber Pile	Good		X
imber Hoist/Lag Eyes	Good		X
ile Caps	Good		X
orrugated Aluminum	N/A		
rating/Metal Components	Good		X
/oo cess Ramp	N/A		
top gs	Good, coated with barnacles		X

Levee Condition	
Item	Condition
rosion	None apparent
egetation	Good

Description of Maintenance/Repair Required: * Breach in the levee approximately 2000 feet west of Site 21. Breach is approximately 10 to 15 feet wide.

NOTE: Elevations given below are based on top of rail/sheet pile @ EL. +4'

top Log Adjustment Date/Time April 2, 2002 11:00 am - 1:00 pm

- Number of Logs Removed/Replaced: 22 removed
- Elevation: Bay 1: -3.4'; Bay 2: -5; Bay 3: -2.5
- Mudline Levels: See Field Notes
- Water Levels: EL. 1.6'

ag Description: Blue flagging

PAGE NO.

LOCATION DATE WEATHER

800-0047 (PL-569) PAGE NO.

NAME OF AFE:

STATION	ANGLE / B.S.	C.C. / H.I.	M.C. / F.S.	FENCES & ROADS ANGLE / INT.	M.C. / ELEVATION	CLINATION

BRADY CANAL

HYDROLOGIC RESTORATION

PROJECT (TE-28)

STRUCTURE 21

EXXON PIPELINE COMPANY, HOUSTON, TEXAS

PAGE NO.

LOCATION STRU. 21 DATE 4/2/02 WEATHER PC & WARM

STATION	ANGLE B.S.	C.C. H.I.	M.C. F.S.	FENCES & ROADS ANGLE INT.	FENCES & ROADS M.C. ELEVATION
					EL.
BEFORE:		BAY 1 →		1.3'	+0.3'
SNDG		BAY 2 →		1.35'	+0.25'
TO TOP of LOGS		BAY 3 →		1.4'	+0.2'
MEASURE DOWN TO WS = 2.4' FROM TOP OF RAIL					
					ELEV.
AFTER		BAY 1 →		5.0'	-3.4
SNDG		BAY 2 →		6.6'	-5.0
TO TOP of LOG		BAY 3 →		4.1	-2.5

BAY 1 → 7 LOGS REMOVED

BAY 2 → 10 LOGS REMOVED

BAY 3 → 5 LOGS REMOVED

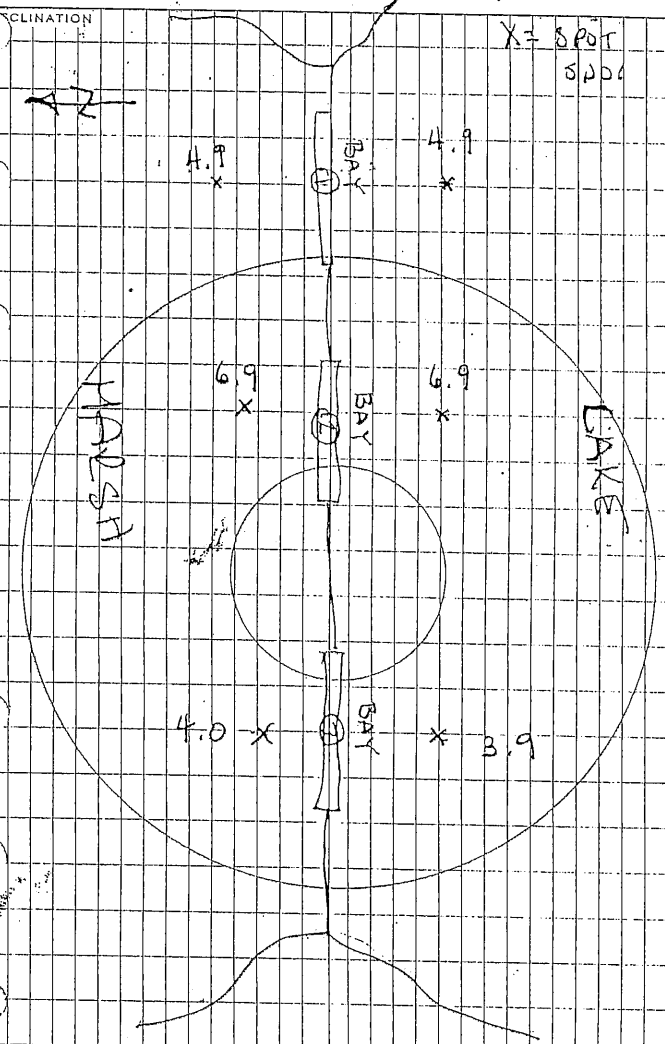
TOP of RAIL EL = 4.0'

WS EL = 1.6'

800-0047 (PL-569) PAGE NO.

NAME OF AFE: LA. DNR Job # 10-1632

STRU. 21 4/2/02



EXXON PIPELINE COMPANY HOUSTON, TEXAS

APPENDIX B

FIELD EQUIPMENT CHECKLIST AND OPERATION PROCEDURE

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

VARIABLE CREST WEIR

_____ 1. 1-TON CHAIN HOIST

_____ 2. STAINLESS STEEL LIFTING RODS

_____ 3. KEYS FOR STOPLOG MECHANISM

_____ 4. GLOVES

_____ 5. HARD HATS

GENERAL NOTES:

Structures #14, #21, #23 – During the fall (September 1) of each year, all stoplogs in each bay shall be installed to their maximum elevations to impede high water levels from the south. During the spring (March 15) of each year, stoplogs in each bay shall be removed to elevation of the natural channel bottom.

OPERATION PROCEDURE:

1. Install chain hoist on elevated lag eyes above the structure.
2. Unlock and remove locking mechanism and channel guides from structure.
3. Hook stainless steel lifting rods to ring on chain hoist.
4. Hook other end of stainless steel lifting rods to lag eyes on the stoplogs.
5. Lift stoplogs vertically using chain hoist.

APPENDIX C

Photo 1 – Variable Crest Weir (Site 21), view of the western side of the structure after stoplogs have been removed.

Photo 2 – Variable Crest Weir (Site 21), looking north at the structure.

APPENDIX D

Photo 3 – Breach in the levee southwest of Site 21, on Jug Lake looking north.

Photo 4 – Breach in the levee southwest of Site 21, on Jug Lake looking north.

SITE 23

FIELD TRIP REPORT

PROJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Jug Lake, Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weir structure at Site 23.

PARTICIPANTS: Mike Maillet, Brian Miller and Joey Laville

DATES: April 16 and 17, 2002

CONDITIONS: Partly Cloudy / Warm

Mike Maillet, Brian Miller, and Joey Laville arrived at the Falgoust Canal Landing at approximately 10:30 a.m. on April 16 and 9:20 a.m. on April 17. Permission to gain access to the property was obtained from Mr. Jeff W. Deblieux, PLS of Burlington Resources on April 2, 2002. The Field Data Report and field notes may be found in Appendix A.

VARIABLE CREST WEIR (SITE 23):

We arrived at the Site 23 variable crest weir structure at 11:15 a.m. on April 16th. The weir structure appeared to be in good condition. There are two (2) stoplog bays at the Site, which we shall refer to as the north and south bays. Using a top of rail and sheet pile elevation of 4.0 feet, we determined the water surface elevation at the Site to be 1.7 feet.

It was determined that in order to lower the sill elevation of the north bay to the level of the natural channel bottom, all ten (10) stoplogs would have to be removed. The elevation to the top of logs before removal was +0.1 feet, and –4.9 feet after. The north bay channels were put back into place and locked in position. At the time of our departure, water was flowing eastward, or from Jug Lake into the marsh. For mudline levels and other data, please refer to the field notes in Appendix A. The stoplogs removed from the structure were marked with white flagging and transported to the DNR storage facility in Thibodaux.

On April 17, we returned to the Site 23 variable crest weir structure to complete our work. In order to lower the sill elevation of the south bay to the level of the natural channel bottom, all ten (10) stoplogs would have to be removed. The elevation to the top of the logs before removal was +0.1 feet, and –5.0 feet after. The south bay channels were put back into place and locked in position. The stoplogs from the south bay were also marked with white flagging. The Field

Equipment Checklist and Operation Procedure can be found in Appendix B. Photos of our adjustment of the variable crest weir structure are shown in Appendix C.

PREPARED BY: Joey Laville, Pyburn & Odom MCA

EDITED BY: Harry Rayner, Pyburn & Odom MCA
Mike Maillet, Pyburn & Odom MCA
Brian Miller, Pyburn & Odom MCA

DISTRIBUTION: Clark Allen, DNR, CRD (3 Copies)
Brian Babin, DNR, CRD (1 Copy)

APPENDIX A

FIELD DATA REPORT

Project (No. & Name TE-28 Brady Canal Hydrologic Restoration Project

ation: Jug Lake, Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit Operate and adjust the variable crest weir structure at Site 23.

Date: April 16, 2002 and April 17, 2002

Participants: Mike Maillet, Joey Laville, and Brian Miller

Weather Conditions: Partly cloudy / Warm

Persons Contacted for Acce Mr. Jeff W. Deblieux, PLS, of Burlington Resources

Site No.: 23

Structure Condition			
		Maintenance/Repair	
Item	Condition	*Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
od Access Ramp	N/A		
p Logs	Good		X
Master Locks	Good		X

Levee Condition	
Item	Condition
Erosion	None apparent
Vegetation	Good

* Removed 10 logs from the north bay on April 16, 2002. Removed 10 logs from the south bay on April 17, 2002

*Description of Maintenance/Repair Required:

Stop Log Adjustment Date/Time April 16, 2002 11:15 am April 17, 2002 1:00 p.m.

- Number of Logs Removed/Replaced: 10 logs removed from north bay, 10 logs from south bay
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Tag Description: White flagging

LA. DNR #10-1632

PC & WARM
Job # 10-1632

TR.MK. REG. U.S. PAT. OFF.

STRUCTURE 23

4/16/02
POLE SNDG. ON TOP OF NORTH BAY BEFORE LOG REMOVAL = 1.6'

POLE SNDG ON TOP OF NORTH BAY AFTER LOG REMOVAL = 6.6

10 LOGS REMOVED

POLE SNDG. ON TOP OF SOUTH BAY BEFORE LOG REMOVAL = 1.6'

POLE SNDG. ON TOP OF SOUTH BAY AFTER LOG REMOVAL = 6.7

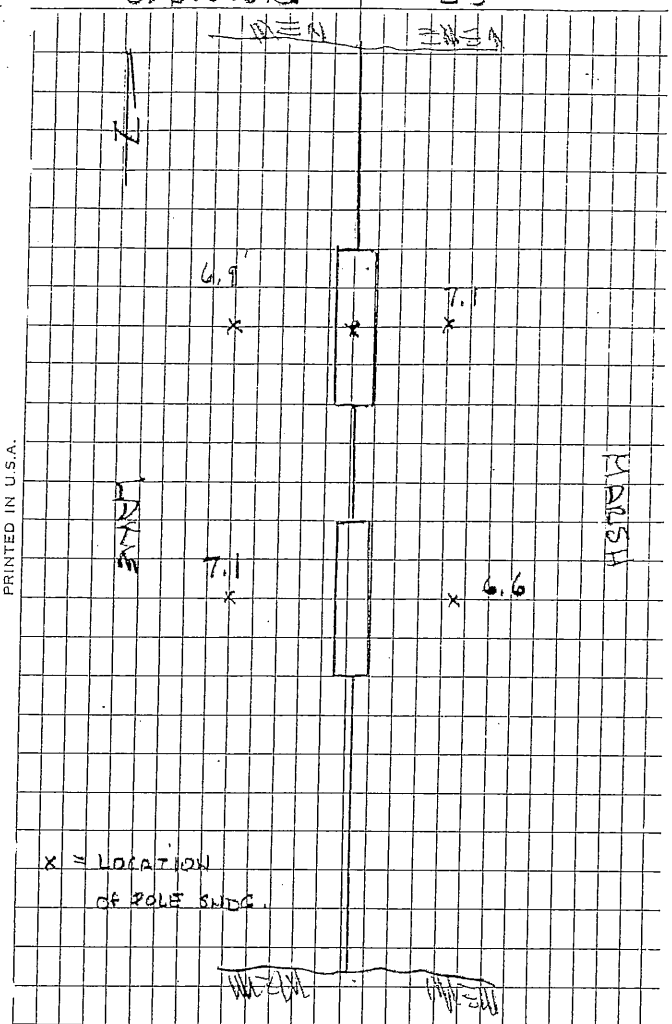
10 LOGS REMOVED

MEASURE DOWN TO WATER SURFACE FROM TOP OF SHEET PILE = 2.3' 4/16/02

TOP OF SHEET PILE +4.0'

2.5' 4/17/02 10 AM

2.35 4/17/02 12:45 PM



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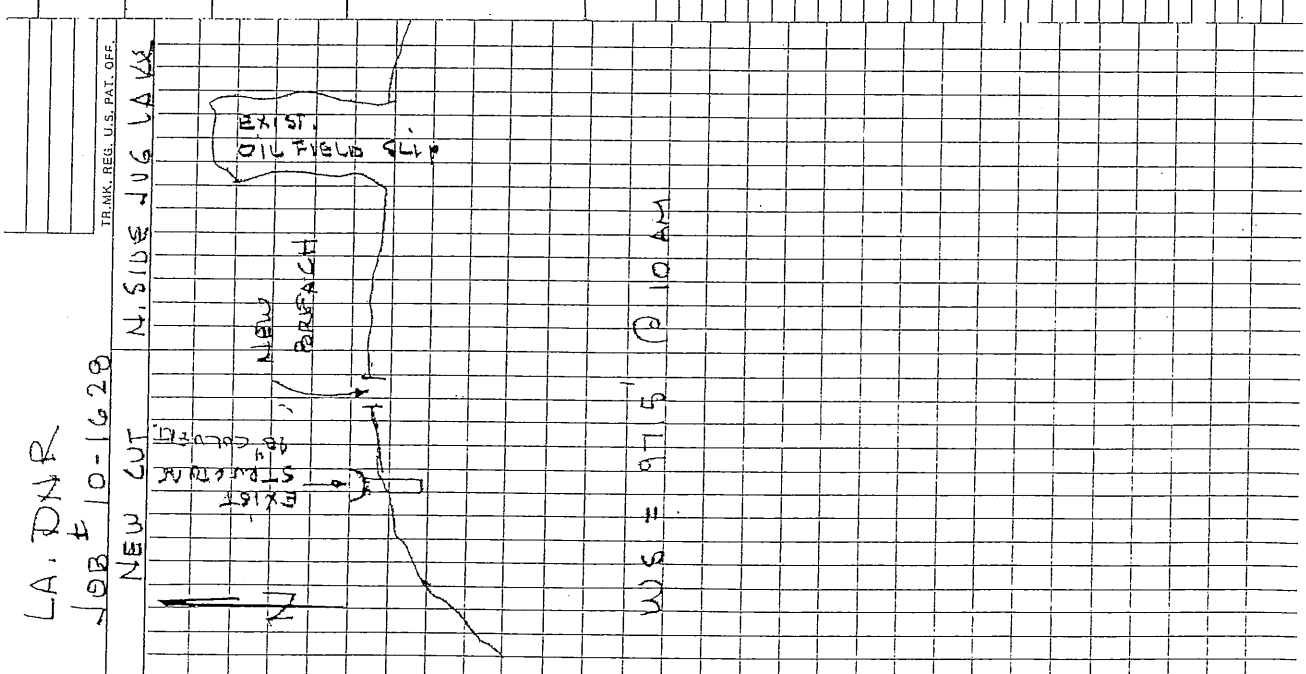

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16

APPENDIX B

FIELD EQUIPMENT CHECKLIST AND OPERATION PROCEDURE

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

VARIABLE CREST WEIR

_____ 1. 1-TON CHAIN HOIST

_____ 2. STAINLESS STEEL LIFTING RODS

_____ 3. KEYS FOR STOPLOG MECHANISM

_____ 4. GLOVES

_____ 5. HARD HATS

GENERAL NOTES:

Structures #14, #21, #23 – During the fall (September 1) of each year, all stoplogs in each bay shall be installed to their maximum elevations to impede high water levels from the south. During the spring (March 15) of each year, stoplogs in each bay shall be removed to elevation of the natural channel bottom.

OPERATION PROCEDURE:

1. Install chain hoist on elevated lag eyes above the structure.
2. Unlock and remove locking mechanism and channel guides from structure.
3. Hook stainless steel lifting rods to ring on chain hoist.
4. Hook other end of stainless steel lifting rods to lag eyes on the stoplogs.
5. Lift stoplogs vertically using chain hoist.

APPENDIX C

Photo 1 – Variable Crest Weir (Site 23), removing stoplogs
from the north stoplog bay.

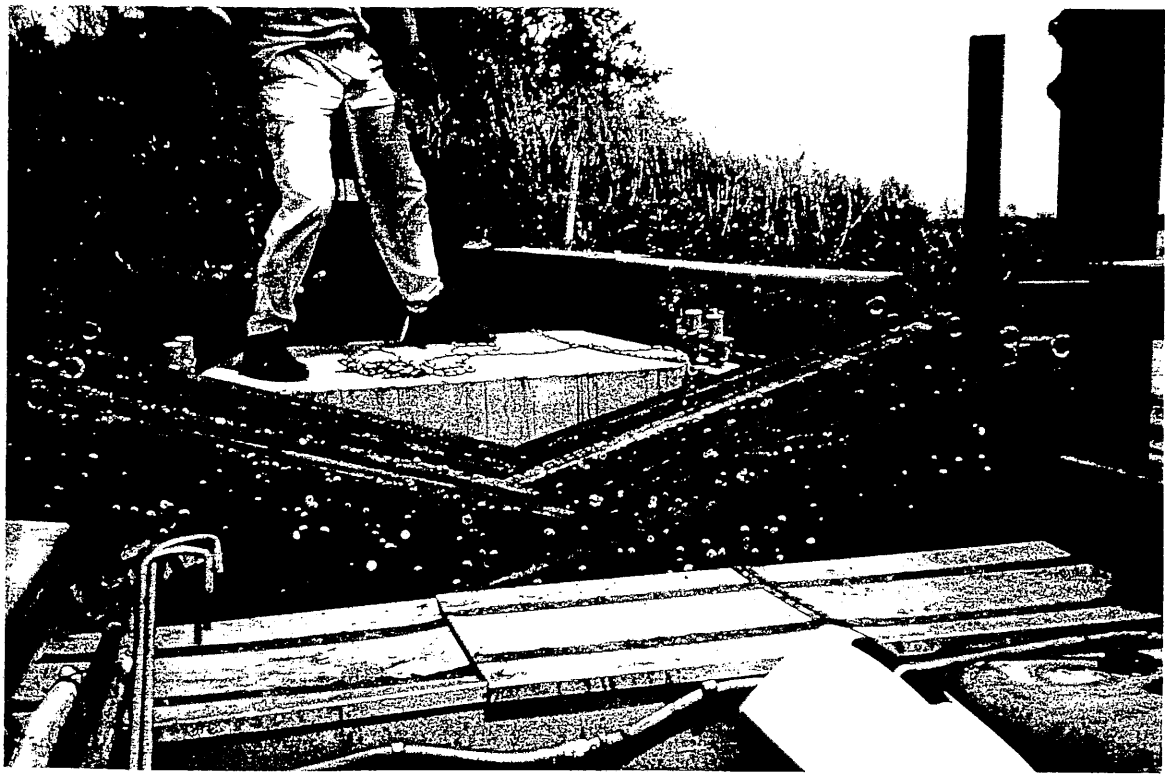


Photo 2 – Variable Crest Weir (Site 23),
ten stoplogs loaded into the boat for transport.

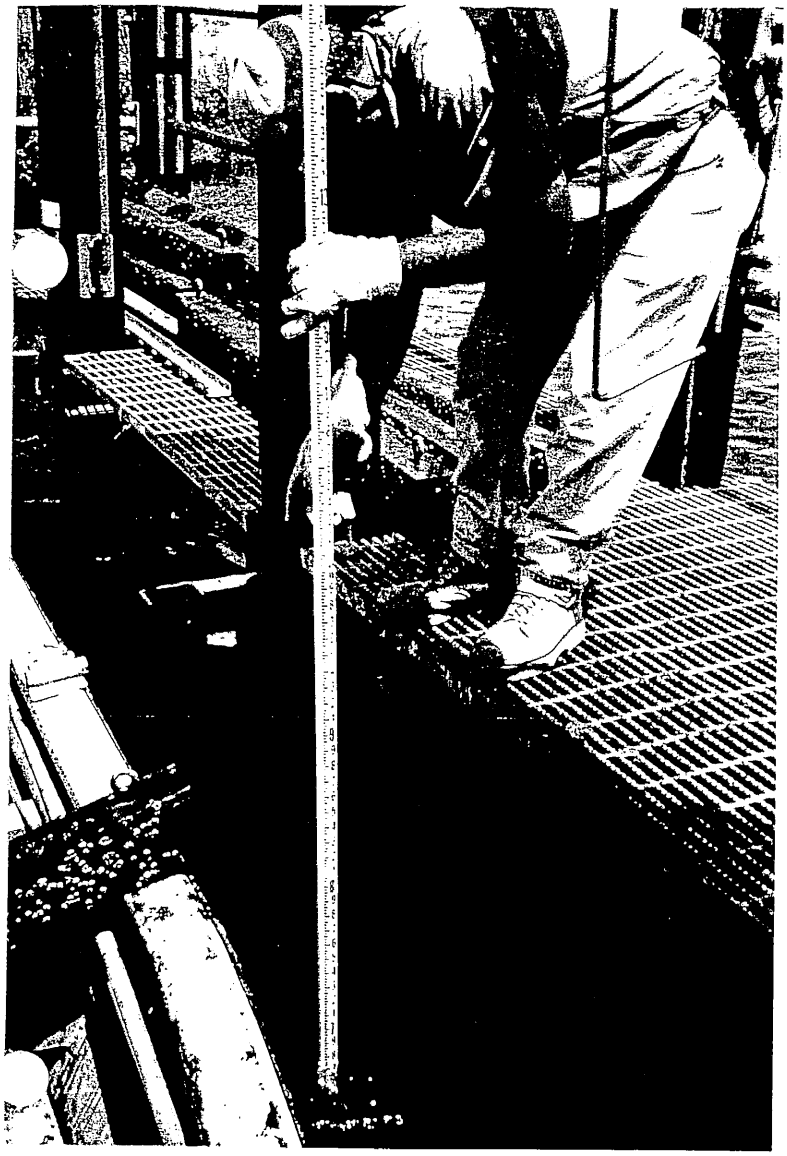


Photo 3 – Variable Crest Weir (Site 23), determining elevations at the south stoplog bay.

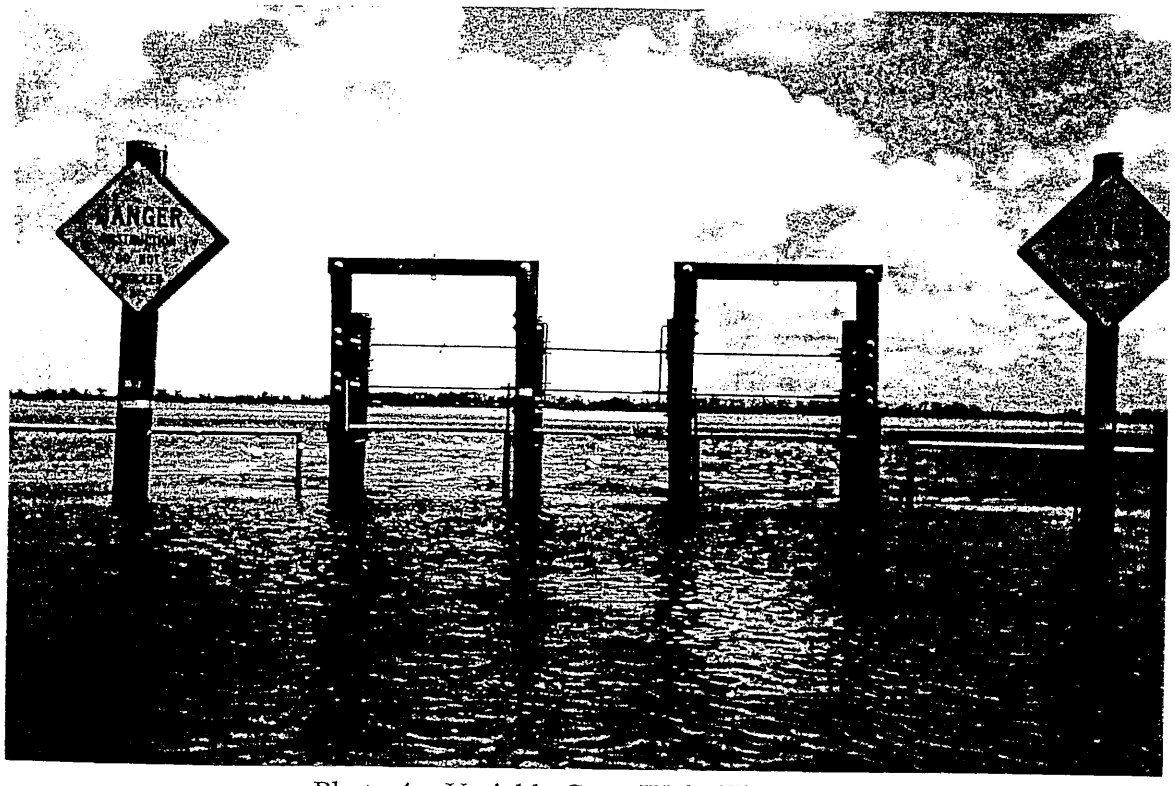


Photo 4 – Variable Crest Weir (Site 23), looking east at the adjusted weir structure.

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

DNR CONTRACT NO. 2503-01-30
CEEC PROJECT NO. 2033

OPERATION AND INSPECTION REPORT

Site Nos. 14, 21 and 23

AUGUST 2002

Prepared For:
Louisiana Department of Natural Resources

Prepared By:
Coastal Engineering and Environmental Consultants, Inc.
197 Elysian Drive
Houma, Louisiana 70363

Site No. 14

Fixed Crest Weir with one (1) Variable Crest Section

Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weir at Site No. 14

PARTICIPANTS: Brian Brunet and Kevin Giles

DATES: August 28, 2002

CONDITIONS: Partly cloudy and Hot (92°)

Permission to gain access to Site No. 14 was obtained from Mr. John Woodard of Castex Laterre on August 26, 2002.

The weir structure is located on the east side of Little Carencro Bayou, North of camp "Better Livin". The weir structure appeared to be in good condition. The TBM used for this site in the determination of elevation was the tope of a hex head bolt (elevation 3.51 NAVD88) on the top face and North side of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.05 feet. The ground elevation on the marsh side of the weir was -5.50 feet and the ground elevation on the canal side was -5.75 feet.

It was determined through coordination with Louisiana Department of Natural Resources personnel and research of the previous report that the required elevation of the stop logs would be approximately 0 feet. This would require the placement of eight (8) stop logs. The elevation of the stop logs prior to placement was -5.56 feet and elevation -0.57 after placement. The field data report, photographs and field notes are attached.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 14.

Date: August 27, 2002

Participants: Brian A. Brunet and Kevin Giles

Weather Conditions: Partly cloudy and Hot (92°)

Persons Contacted for Access: Mr. John Woodard, at Castex Laterre

Site No.: 14

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	One Damaged		1
Master Locks	Good		X

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Top stop log damaged while trying to install in Bay. Still very usable except for small chip on one side.

Stop Log Adjustment **Date/Time:** August 27, 2002 (3:30 p.m.)

- **Number of Logs Removed/Replaced:** 8 replaced
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

JOB # 2033

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
STOP LOG PLACEMENT ON WATER CONTROL STRUCTURES
TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

SITE 14

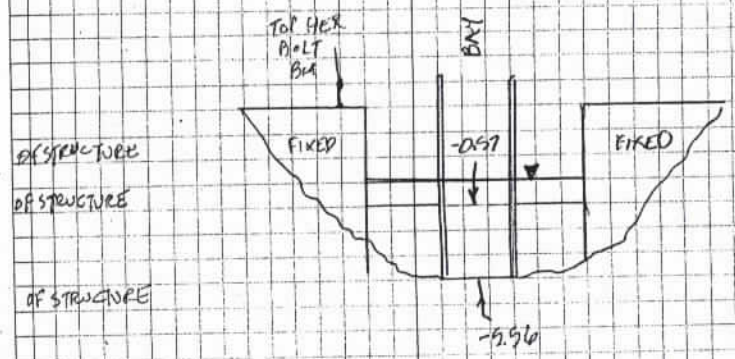
\\	+	H.I.	−	NAVD 88 ELEV.	REMARKS
	5.05	8.62		3.57	TOP HEX BOLT NORTH SIDE
WATER			7.58	1.04	TOP WATER BOTH SIDES
MARSH			14.12	-5.50	NAT. BOTTOM MARSH SIDE
STOP LOG			14.18	-5.56	TOP EXISTING STOP LOG
CANAL			14.09	-5.47	NAT. BOTTOM CANAL SIDE
TOP STOP LOG			9.19	-0.57	TOP STOP LOG AFTER
			5.05	3.57	CK BM
			7.57	1.05	TOP WATER @ 3:30 P.M.

SAME

P.C. & HOT 92°F

139

08/28/02



OF STRUCTURE
OF STRUCTURE
OF STRUCTURE
OF STRUCTURE
INSTALLATION

Site No. 21

Fixed Crest Weir with three (3) Variable Crest Section

Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Brian Brunet and Kevin Giles

DATES: August 27, 2002 and August 28, 2002

CONDITIONS: Partly cloudy to clear and Hot (90°)

Permission to gain access to Site No. 21 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on August 26, 2002.

The weir structure appeared to be in good condition. There are three stop log bays at the site, which we shall refer to as Bays 1, 2 and 3 in order from east to west. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.72 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.2 feet. It was determined that in order to raise the sill elevation of Bay 1 to the proper elevation, seven (7) stop logs would be required. The elevation before stop log placement was -3.72 feet and -0.23 feet after stop log placement. Bay 2 would require that ten (10) stop logs be placed to acquire the proper elevation. The elevation before stop log placement was -5.30 feet and -0.26 feet after stop log placement. Bay 3 would require that five (5) stop logs be placed to acquire the proper elevation. The elevation before stop log placement was -2.75 and -0.24 feet after stop log placement. For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 21.

Date: August 27, 2002 and August 28, 2002

Participants: Brian A. Brunet and Kevin Giles

Weather Conditions: Partly cloudy to clear and Hot (90°)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S., at Burlington Resources

Site No.: 21

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good but Tight Fit on East Bay		X
Master Locks	Good		X

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Slight silt buildup on East Bay. Was able to remove by use of aluminum hooks provided by D.N.R. easterly channel on East Bay bent - difficult to get latch in.

Stop Log Adjustment **Date/Time:** Aug. 28, 2002 (11:00 a.m.)

- **Number of Logs Removed/Replaced:** 22 total replaced, East Bay 1=7, Center Bay 2=10, West Bay 3=5
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

JOB#2033

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
STOP LOG PLACEMENT ON WATER CONTROL STRUCTURES
TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

SITE 21

	+	H.I.	−	NAVD 88 ELEV	REMARKS
08/27/02	5.00	8.72		3.72	TOP HEX BOLT WEST SIDE
WATER LEVEL			7.74	0.98	TOP WATER @ 4:00 P.M.
WEST BAY			11.97	-3.25	NAT BOTTOM MARSH SIDE
WEST BAY			11.47	-2.75	TOP EXISTING STOP LOG
WEST BAY			11.95	-3.23	NAT BOTTOM LAKE SIDE
CENTER BAY			14.32	-5.60	NAT BOTTOM MARSH SIDE
CENTER BAY			14.02	-5.30	TOP EXISTING STOP LOG
CENTER BAY			14.25	-5.53	NAT BOTTOM LAKE SIDE
EAST BAY			13.05	-4.33	NAT. BOTTOM MARSH SIDE
EAST BAY			12.44	-3.72	TOP EXISTING STOP LOG
EAST BAY			12.65	-3.93	NAT BOTTOM LAKE SIDE
08/28/02	5.00	8.72		3.72	
TOP WEST BAY			8.96	-0.24	TOP STOP LOGS AFTER INSTALLATION
TOP CENTER BAY			8.98	-0.26	" "
TOP EAST BAY			8.95	-0.23	" "
08/28/02			7.52	1.20	TOP WATER

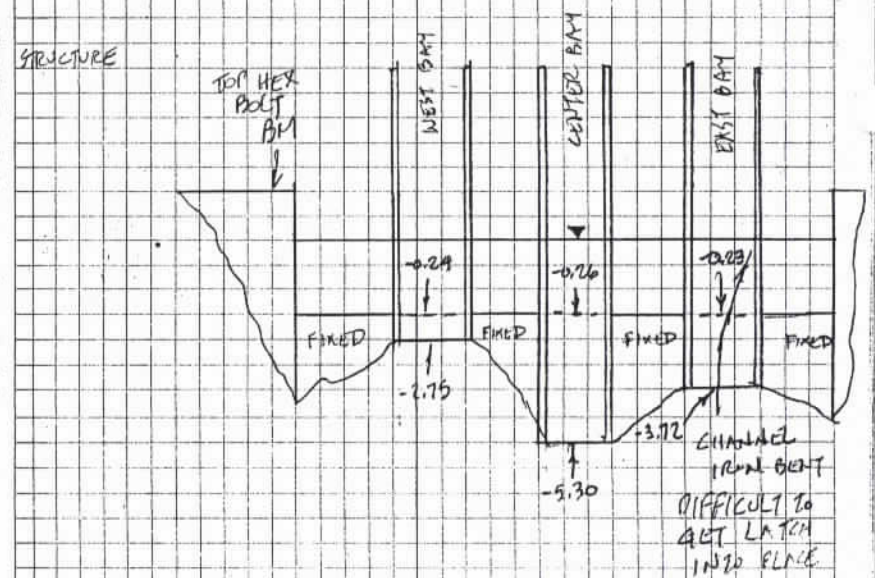
SAME

P.C.P. CLEAR & HOT 90°F

139

(54)

08/27/02
08/28/02



@ 11:00 AM

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Brian Brunet and Kevin Giles

DATES: August 27, 2002

CONDITIONS: Partly cloudy to clear and Hot (89°)

Permission to gain access to Site No. 23 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on August 26, 2002.

The weir structure appeared to be in good condition. There are two stop log bays at the site, which we shall refer to as the North Bay and south Bay. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.51 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.85 feet. It was determined that in order to raise the sill elevation of the North Bay to the proper elevation, ten (10) stop logs would be required. The elevation before stop log placement was -5.50 feet and -0.42 feet after stop log placement. The south Bay would require that ten (10) stop logs be placed to acquire the proper elevation. The elevation before stop log placement was -5.51 feet and -0.58 feet after stop log placement. For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir at Site 23.

Date: August 27, 2002

Participants: Brian A. Brunet and Kevin Giles

Weather Conditions: Partly cloudy to clear and Hot (89°)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S., at Burlington Resources

Site No.: 23

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good but Tight Fit on South Bay		X
Master Locks	Good		X

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Grass build-up around structure, especially at South Bay. Removed grass lying over Bay with hooks provided by D.N.R.

Stop Log Adjustment **Date/Time:** August 27, 2002 (3:30 p.m.)

- **Number of Logs Removed/Replaced:** 10 logs replaced on North Bay, 10 logs replaced on South Bay
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

JOB # 2033

LOUISIANA DEPARTMENT OF NATURAL RESOURSES

STOP LOG PLACEMENT ON WATER CONTROL STRUCTURES

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

SITE 23

	+	H.I.	−	NAVD 88 ELEV.	REMARKS
	4.43	7.94		3.51	TOP HEX BOLT NORTH END OF
WATER LEVEL			7.12	0.82	TOP WATER ON BOTH SIDES OF
NORTH BAY			14.05	-6.11	NAT BOTTOM MARSH SIDE
NORTH BAY			13.44	-5.50	TOP EXISTING STOP LOG
NORTH BAY			13.93	-5.99	NAT BOTTOM LAKE SIDE
SOUTH BAY			13.46	-5.52	NAT BOTTOM MARSH SIDE
SOUTH BAY			13.45	-5.51	TOP EXISTING STOPLOG
SOUTH BAY			13.85	-5.91	NAT BOTTOM LAKE SIDE
TOP NORTH BAY			8.36	-0.42	TOP STOP LOG AFTER
TOP SOUTH BAY			8.42	-0.58	TOP STOP LOG AFTER
			4.43	3.51	CK. B.M.
			7.09	0.85	TOP WATER @ 3:30 P.M.

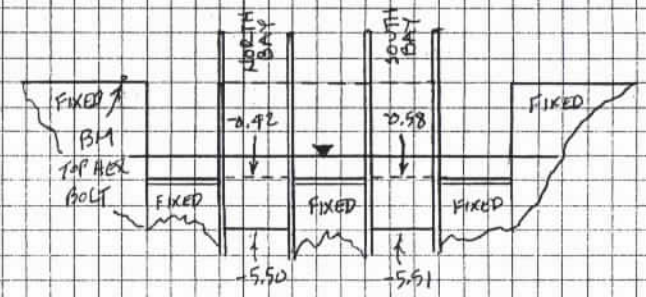
B.A. BRUNET
K. GILES

P.C. TO CLEAR & HOT 89°F

139

(53)

08/27/02



STRUCTURE

STRUCTURE @ 11:30 AM

OF NORTH BAY

OF NORTH BAY

OF NORTH BAY

OF SOUTH BAY

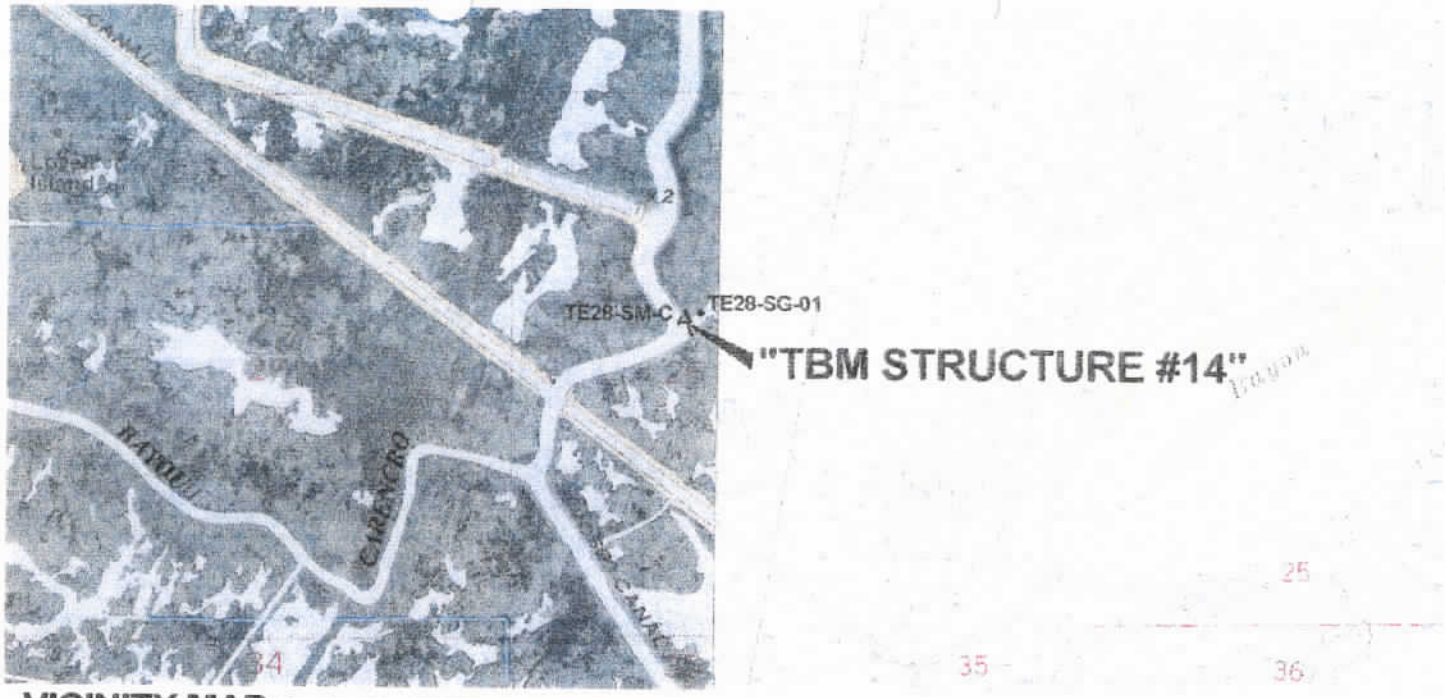
OF SOUTH BAY

OF SOUTH BAY

INSTALLATION

INSTALLATION

Benchmarks - Data Sheets



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

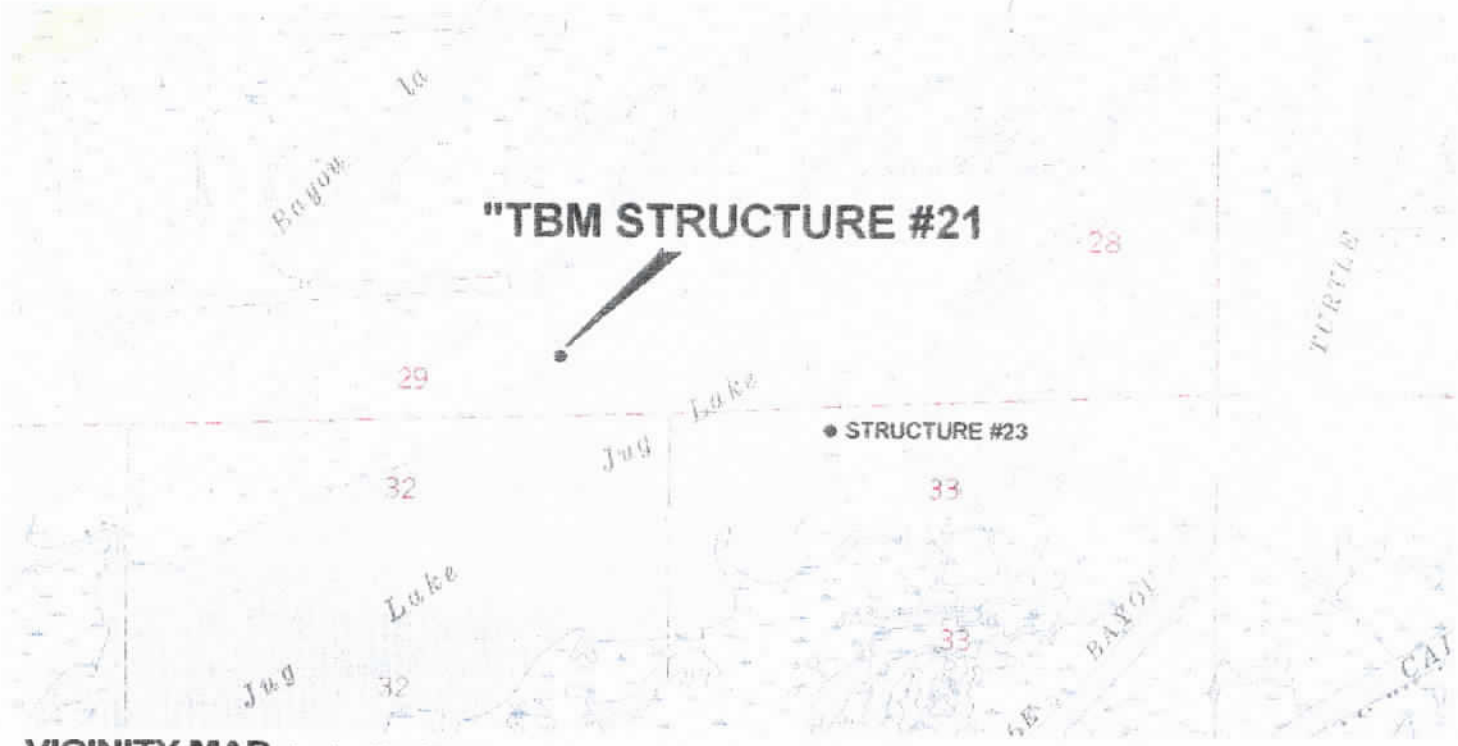
TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

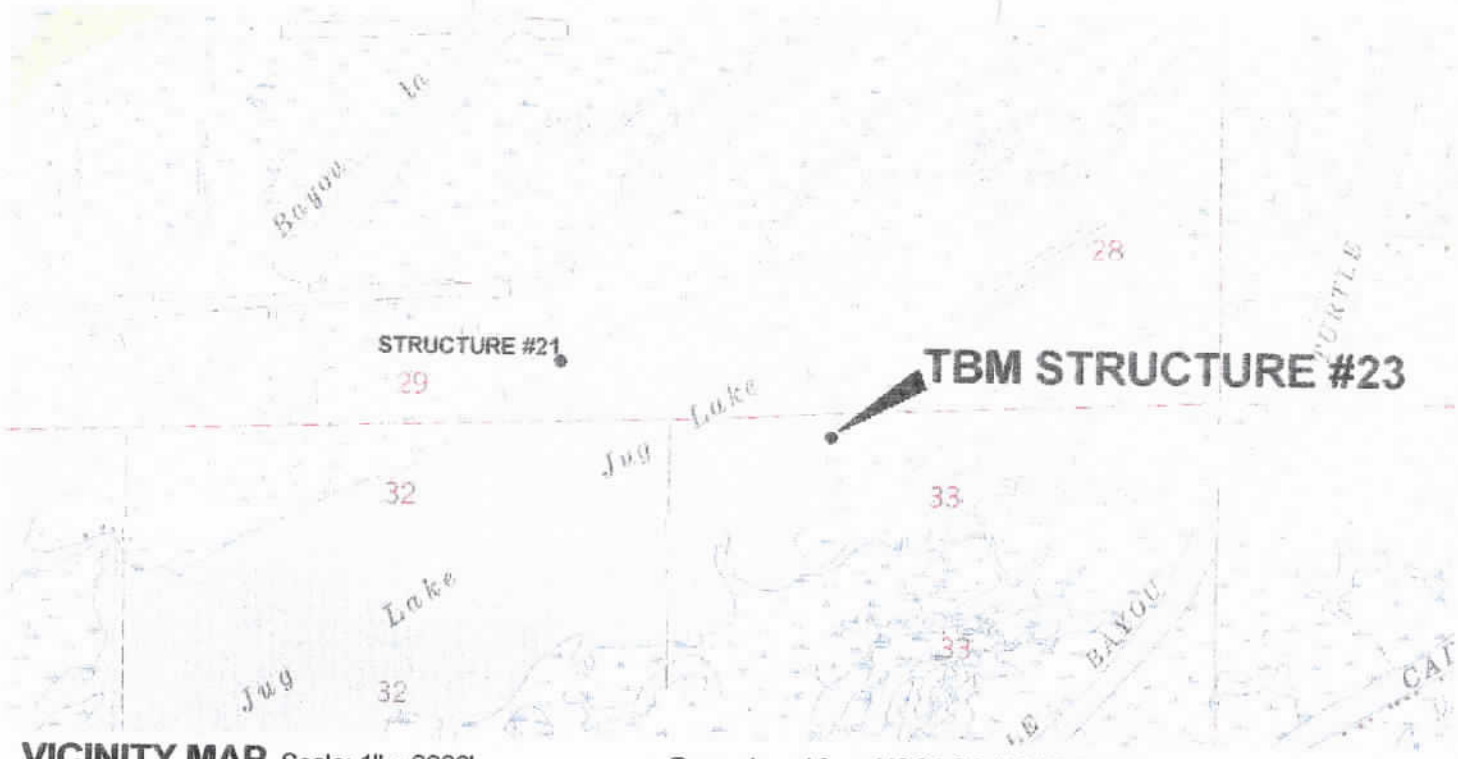
TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

DNR CONTRACT NO. 2503-03-21
CEEC PROJECT NO. 2144

OPERATION AND INSPECTION REPORT

Site Nos. 14, 21 and 23

APRIL 2003

Prepared For:
Louisiana Department of Natural Resources

Prepared By:
Coastal Engineering and Environmental Consultants, Inc.
197 Elysian Drive
Houma, Louisiana 70363

Site No. 14

Fixed Crest Weir with one (1) Variable Crest Section

Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weir at Site No. 14

PARTICIPANTS: Brian Brunet, Kevin Giles, Willie Radau IV, and Jesse Bonvillain

DATES: March 18, 2003

CONDITIONS: Cloudy and Mild (75°)

Permission to gain access to Site No. 14 was obtained from Mr. Jeff Deblieux of Burlington Resources on March 13, 2003 and Mr. Timothy J. Allen, P.L.S. of Castex Laterre on March 14, 2003.

The weir structure is located on the east side of Little Carencro Bayou, North of camp "Better Livin". The weir structure appeared to be in good condition. The TBM used for this site in the determination of elevation was the top of a hex head bolt (elevation 3.57 NAVD88) on the top face and North side of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.60 feet. The ground elevation on the marsh side of the weir was -5.40 feet and the ground elevation on the canal side was -6.38 feet.

It was determined through coordination with Louisiana Department of Natural Resources personnel and research of the previous report that the required elevation of the stop logs would be approximately -5.89 feet. This would need removal of nine (9) stop logs. The elevation of the stop logs prior to removal was -0.63 and after removal is -5.55. The field data report, photographs and field notes are attached.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 14.

Date: March 18, 2003

Participants: Brian A. Brunet, Kevin Giles, Willie Radau IV, Jesse Bonvillain

Weather Conditions: Cloudy and Mile (75° F)

Persons Contacted for Access: Mr. Jeff Deblieux, Burlington Resources and Mr. Timothy J. Allen, P.L.S. at Castex Laterre

Site No.: 14

Structure Condition			
		Maintenance/Repair	
Item	Condition	Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	One chipped on one side		X
Master Locks	Good		X

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required:

Stop Log Adjustment **Date/Time:** March 18, 2003 (11:30 A.M.)

- **Number of Logs Removed/Replaced:** 9 Removed
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: Orange

JOB # 2144

LOUISIANA DEPARTMENT OF NATURAL RESOURCES

TE-28 BRADY CANAL RESTORATION PROJECT

REMOVAL OF STOP LOGS - SITE NO. 14

+	H.I.	−	ELEV	REMARKS
4.95	8.52		3.57	TOP HEX BOLT NORTH SIDE
		6.92	1.60	EAST & WEST TOP WATER
		13.92	−5.40	NAT. BOTTOM MARSH SIDE
		14.90	−6.38	NAT. BOTTOM CANAL SIDE
		9.15	−0.63	PRE STOP LOG REMOVAL ELEV.
		14.07	−5.55	STOP LOG ELEV. AFTER REMOVAL
		6.91	1.61	CK. TOP WATER
		4.95 -	3.57	CK. TBM

B.A. BRUNET
K. GILES
W. RADAU
J. BONVILLAIN

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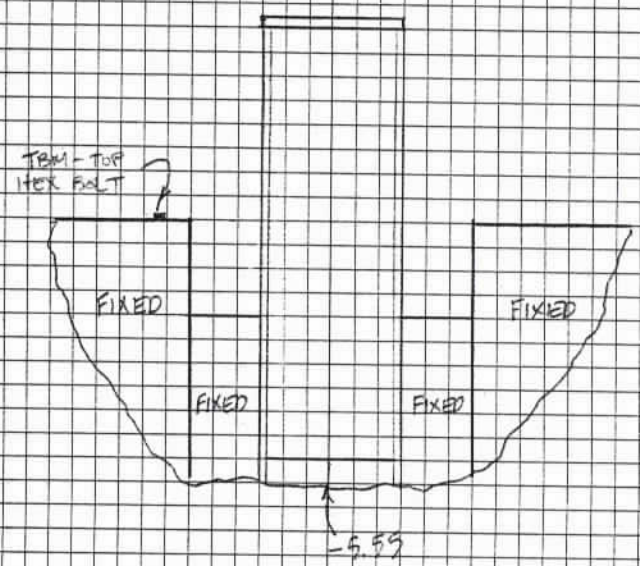
03/18/03

(64)



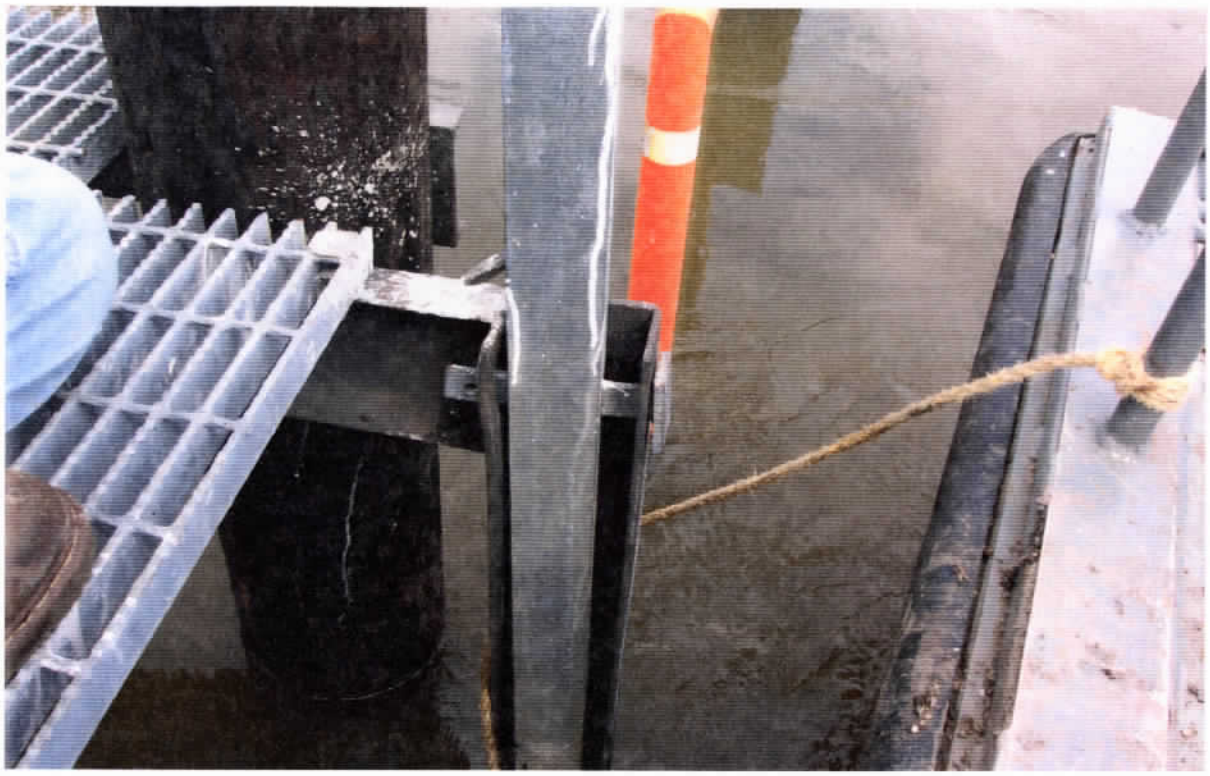
(9) STOP LOGS REMOVED

Site No. 21

Fixed Crest Weir with three (3) Variable Crest Section

Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

Site No. 21
Eastern Most Pin Slot Bent at Lock Connection



FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Brian Brunet, Kevin Giles, Willie Radau IV, and Jesse Bonvillain

DATES: March 18, 2003

CONDITIONS: Cloudy and Mild (75°)

Permission to gain access to Site No. 21 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on March 13, 2003 and Mr. Timothy Allen, P.L.S. of Castex Latterre on March 14, 2003.

The weir structure appeared to be in good condition. There are three stop log bays at the site, which we shall refer to as Bays 1, 2 and 3 in order from east to west. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.72 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.39 feet on the north side and 1.35 feet on the south side.

East Bay (Bay 1)

Desired elevation at Bay 1 would be approximately -3.56. In order to achieve this elevation, seven (7) stop logs were removed. Elevation of stop logs before removal -0.21 and after removal -3.68.

Center Bay (Bay 2)

Desired elevation at Bay 2 would be approximately -4.65. Ten (10) stop logs were removed to achieve this elevation. Elevation of stop log before removal was -0.21 and after removal is -5.31.

West Bay (Bay 3)

Desired elevation at Bay 3 would be approximately -1.69. Five (5) stop logs were removed to achieve elevation. Elevation of stop log before removal -0.22 and after removal -2.78.

For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 21.

Date: March 17, 2003 and March 18, 2003

Participants: Brian A. Brunet, Kevin Giles, Willie Radau IV, and Jesse Bonvillain

Weather Conditions: Partly Cloudy and Mild (72° F)

Persons Contacted for Access: Mr. Jeff Deblieux, Burlington Resources and Mr. Timothy J. Allen, P.L.S. at Castex Laterre

Site No.: 21

Structure Condition			
		Maintenance/Repair	
Item	Condition	Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Eastern most pin slot bent at lock connection	X	
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good		X

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Debris on structure needs to be removed.

Stop Log Adjustment **Date/Time:** March 17, 2003 (4:00 P.M.) and March 18, 2003 (9:00 A.M.)

- **Number of Logs Removed/Replaced:** 22 stop logs removed - 7 on bay 1 (east), 10 on bay 2 (center), 5 on bay 3 (west)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: Blue

JOB# 2144

LOUISIANA DEPARTMENT OF NATURAL RESOURCES
TE-28 BRADY CANAL RESTORATION PROJECT

REMOVAL OF STOP LOGS - SITE NO. 21

LOCATION	+	H.I.	-	ELEV.	REMARKS
	4.82	8.54		3.72	TOP HEX BOLT WEST SIDE
NORTH SIDE			7.15	1.39	12:05 P.M. TOP WATER
SOUTH SIDE			7.19	1.35	TOP WATER
WEST BAY		8.54	10.04	-1.50	NAT. BOTTOM MARSH SIDE
WEST BAY			10.42	-1.88	NAT. BOTTOM LAKE SIDE
WEST BAY			8.76	-0.22	PRE STOP LOG REMOVAL ELEV.
WEST BAY		8.75	11.48	-2.73	STOP LOG ELEV. AFTER REMOVAL
CENTER BAY			13.33	-4.79	NAT. BOTTOM MARSH SIDE
CENTER BAY			13.06	-4.52	NAT. BOTTOM LAKE SIDE
CENTER BAY		8.54	8.75	-0.21	PRE STOP LOG REMOVAL ELEV.
CENTER BAY			13.85	-5.31	STOP LOG ELEV. AFTER REMOVAL
EAST BAY			12.18	-3.64	NAT. BOTTOM MARSH SIDE
EAST BAY			12.02	-3.48	NAT. BOTTOM LAKE SIDE
EAST BAY		8.54	8.75	-0.21	PRE STOP LOG REMOVAL ELEV
EAST BAY			12.22	-3.68	STOP LOG ELEV. AFTER REMOVAL
			4.82	3.72	CK. TBM 03/17/03
03/18/03	5.03	8.75		3.72	TOP HEX BOLT
			7.02	1.73	NORTH & SOUTH TOP WATER

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W. RADAU
J. BONVILLAIN

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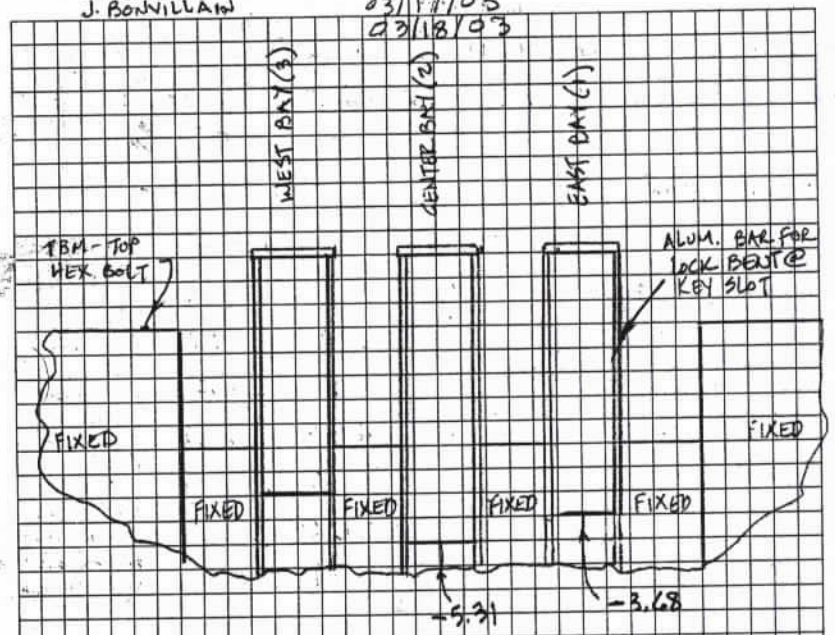
(63)

03/17/03
03/18/03



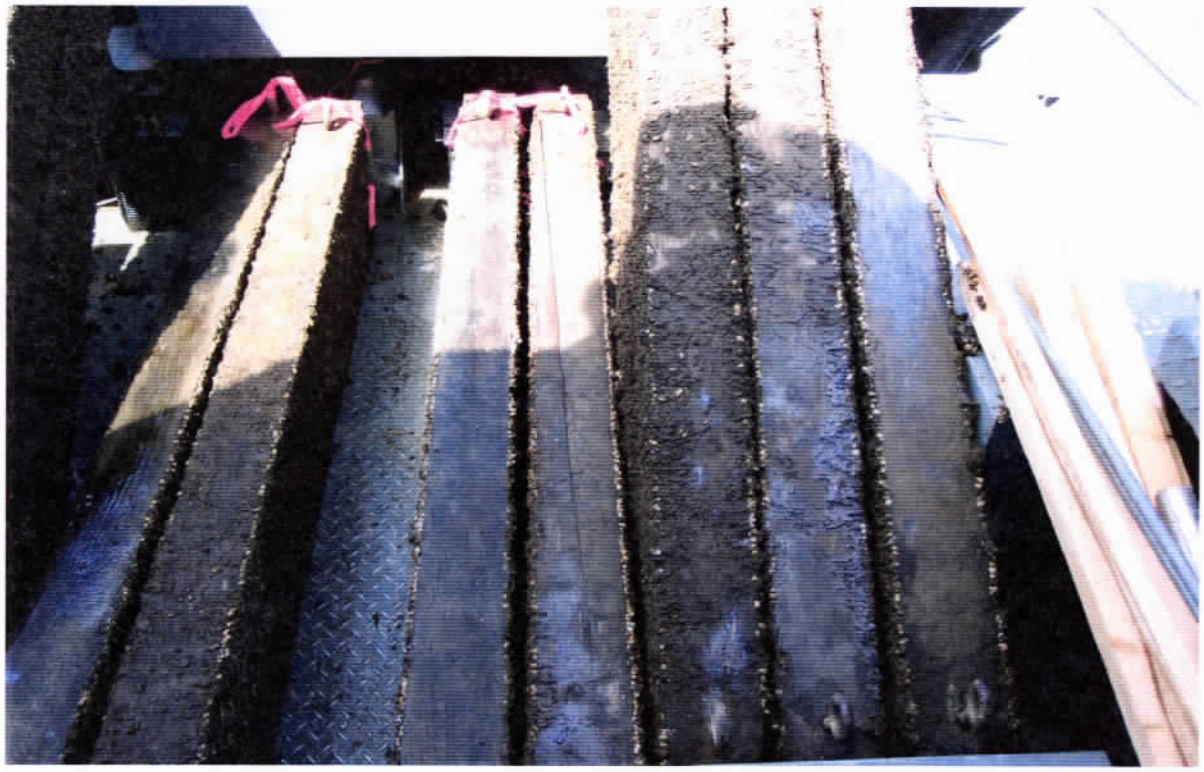
EAST AND CENTER STOP LOGS WERE REMOVED ON 03/17/03
WEST STOP LOGS WERE REMOVED ON 03/18/03

(5) STOP LOGS REMOVED FROM WEST BAY
(10) STOP LOGS REMOVED FROM CENTER BAY
(7) STOP LOGS REMOVED FROM EAST BAY

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Site No. 23
Two Stop Logs With Large Split



Site No. 23
Chipped Stop Log on End by Padeye

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Brian Brunet, Kevin Giles, Willie Radau, IV, and Jesse Bonvillain

DATES: March 17, 2003

CONDITIONS: Partly cloudy and Mild (72° F)

Permission to gain access to Site No. 23 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources and Mr. Timothy J. Allen, P.L.S. of Castex Laterre on March 13, 2003.

The weir structure appeared to be in good condition. There are two stop log bays at the site, which we shall refer to as the North Bay and South Bay. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.51 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.31 feet. Desired elevation at both bays would be approximately -5.78. Ten (10) stop logs were removed from each bay to achieve the desired elevation. The stop log elevation at the North Bay before stop log removal was -0.49 and after removal is -5.50. The stop log elevation at the North Bay before stop log removal was -0.47 and after removal is -5.53. For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir at Site 23.

Date: March 17, 2003

Participants: Brian A. Brunet, Kevin Giles, Willie Radau IV, and Jesse Bonvillain

Weather Conditions: Partly cloudy and Mild (72° F)

Persons Contacted for Access: Mr. Jeff Deblieux, Burlington Resources and Mr. Timothy J. Allen, P.L.S. at Castex Laterre

Site No.: 23

Structure Condition			
		Maintenance/Repair	
Item	Condition	Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Two stop logs have a large split and one chipped on end by padeye	X	
Master Locks	Good		X

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: One stop log needs to be replaced and all have heavy baracle buildup.

Stop Log Adjustment **Date/Time:** March 17, 2003 (11:30 A.M.)

- **Number of Logs Removed/Replaced:** 10 stop logs removed from north bay and 10 removed from south bay.
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: Pink

JOB#2144

LOUISIANA DEPARTMENT OF NATURAL RESOURSES

TE-28 BRADY CANAL RESTORATION PROJECT

REMOVAL OF STOP LOGS

SITE 23

LOCATION	+	H.I.	−	ELEV.	REMARKS
	5.55	9.06		3.51	TOP HEX BOLT ON NORTH END
NORTH BAY WATER LEVEL			7.75	1.31	TOP WATER ON MARSH SIDE
" "			7.75	1.31	TOP WATER ON CANAL SIDE
NORTH BAY			14.85	-5.79	NAT. BOTTOM MARSH SIDE
NORTH BAY			14.77	-5.71	NAT. BOTTOM LAKE SIDE
NORTH BAY			9.55	-0.49	PRE STOP LOG ELEV
NORTH BAY			14.56	-5.50	POST STOP LOG ELEV
SOUTH BAY			14.83	-5.77	NAT. BOTTOM MARSH SIDE
SOUTH BAY			15.19	-6.13	NAT. BOTTOM LAKE SIDE
SOUTH BAY			9.53	-0.47	PRE STOP LOG ELEV.
SOUTH BAY			14.59	-5.53	POST STOP LOG ELEV.
			5.55	3.51	CK TO TBM
			7.76	1.30	TOP WATER @ 11:30 AM

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W. RADAU
J. BONVILLAIN

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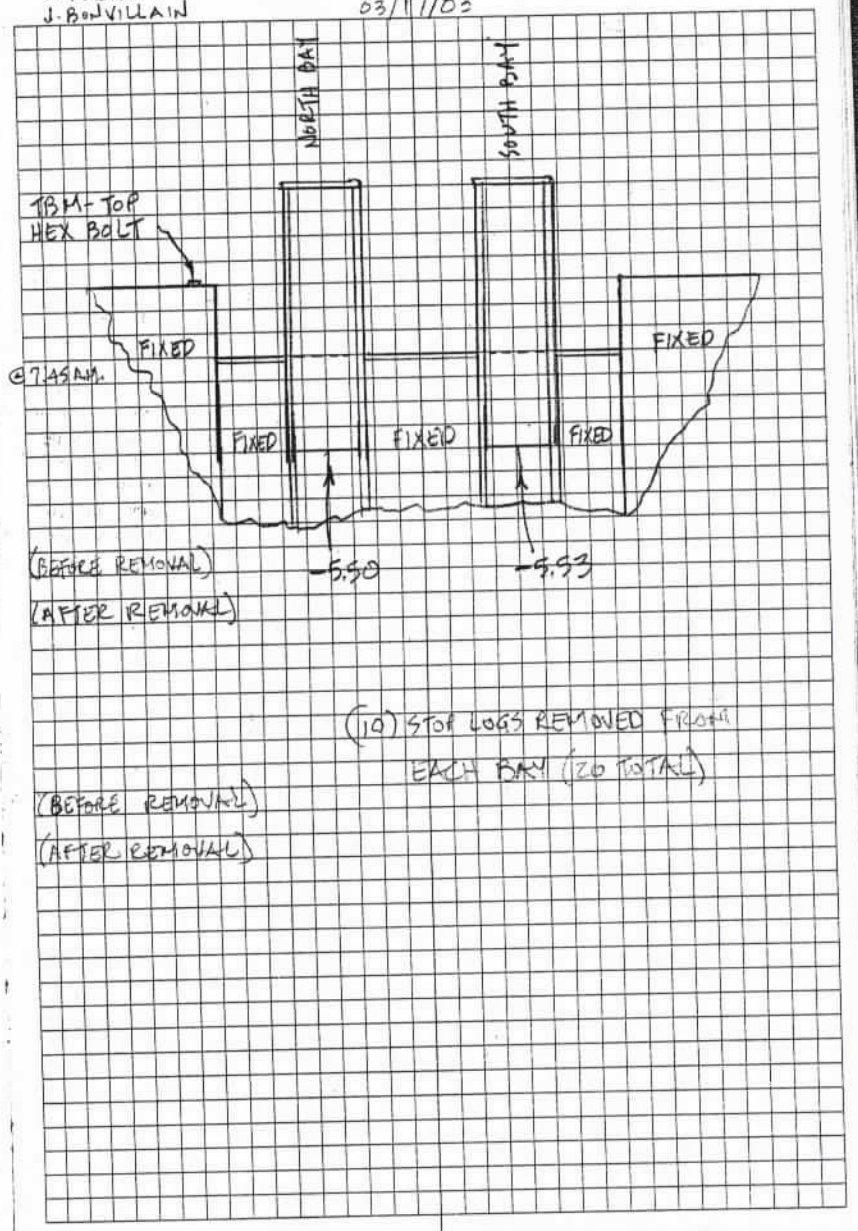
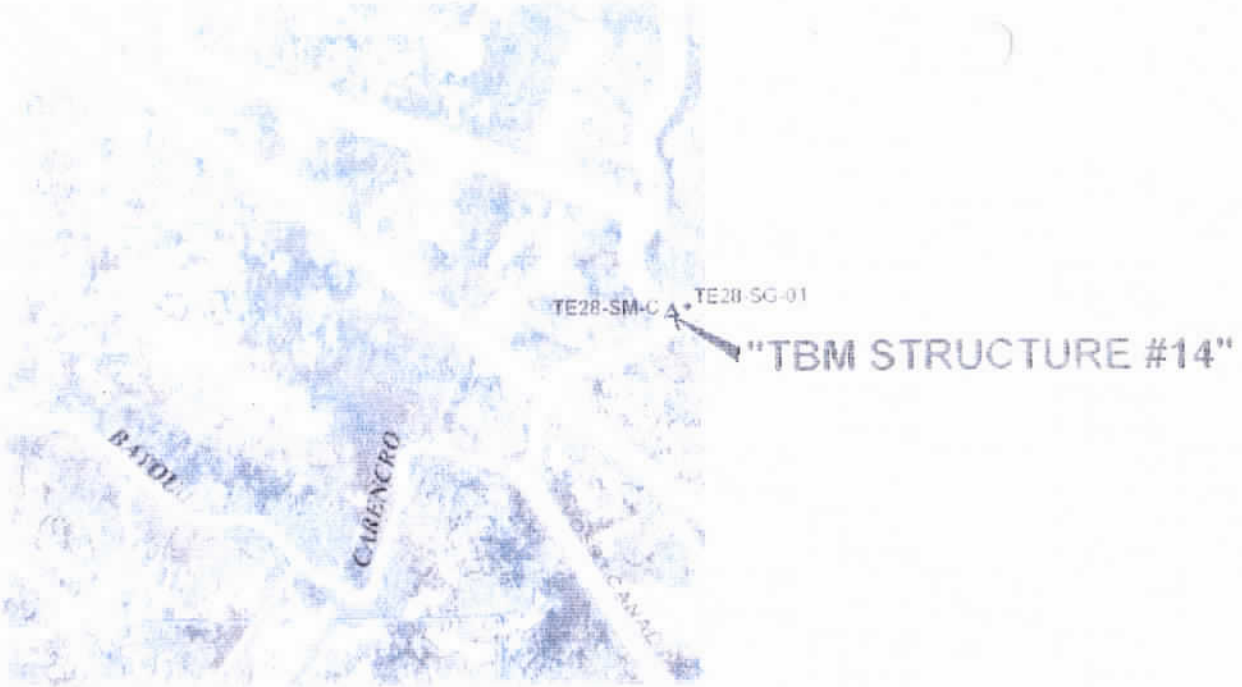
03/17/03

P.C. & MILD
70°F



Benchmarks - Data Sheets



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

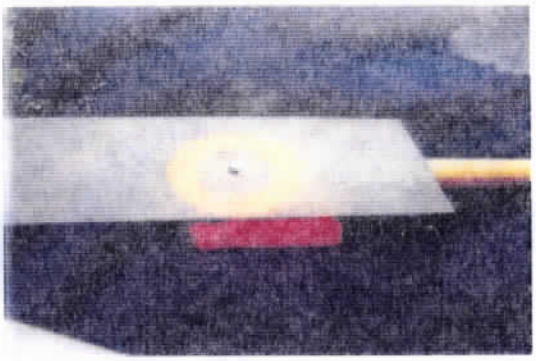
Date of Survey: June 4, 2002

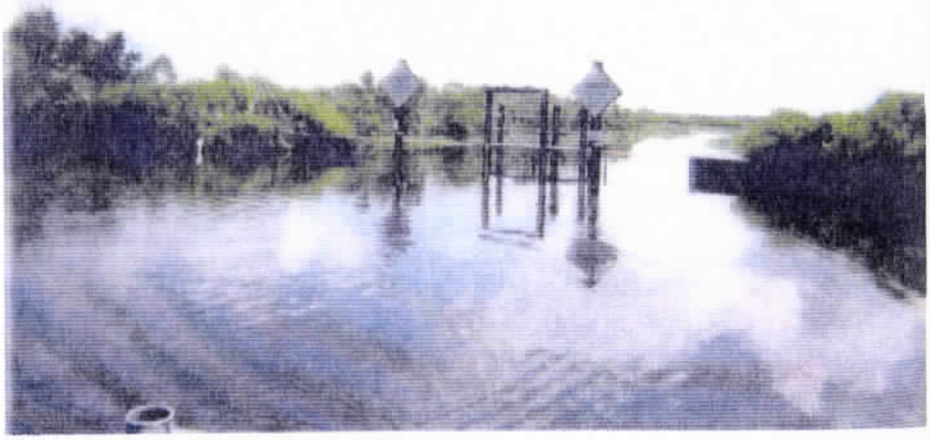
TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

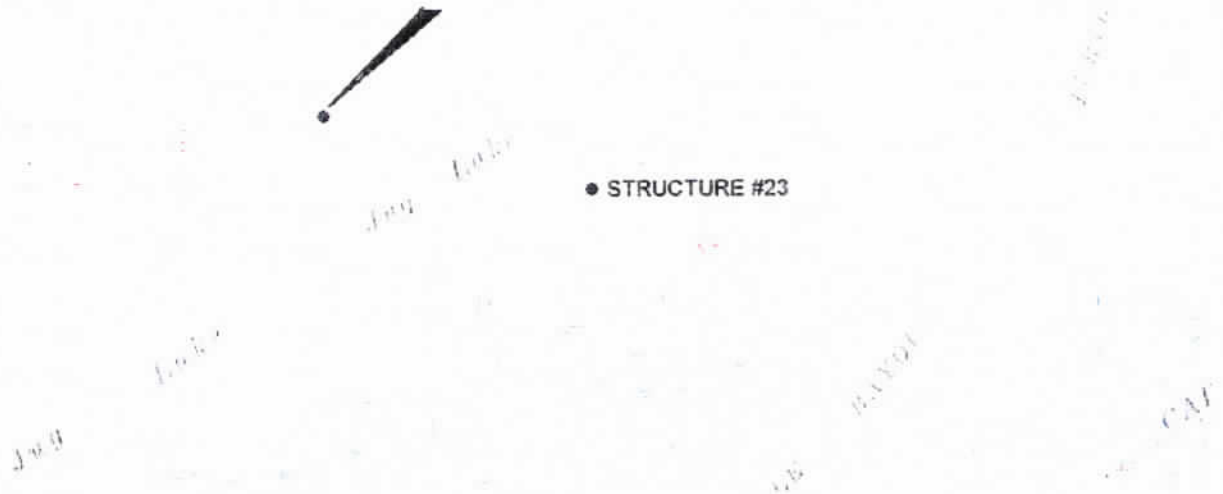
NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)





"TBM STRUCTURE #21



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

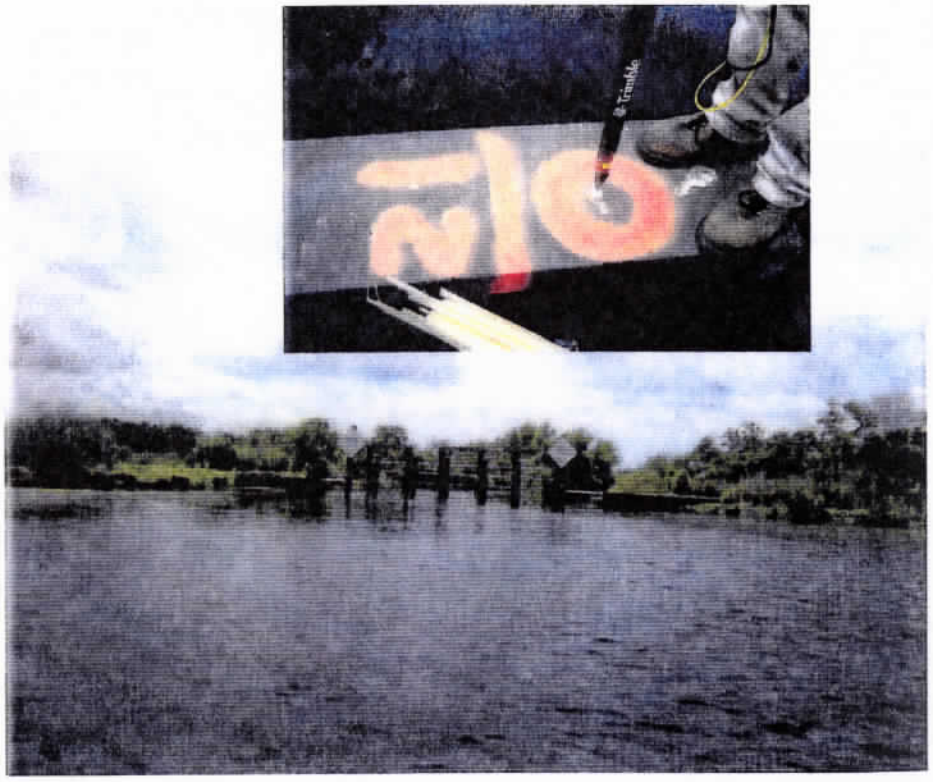
Date of Survey: June 6, 2002

TBM Structure 21

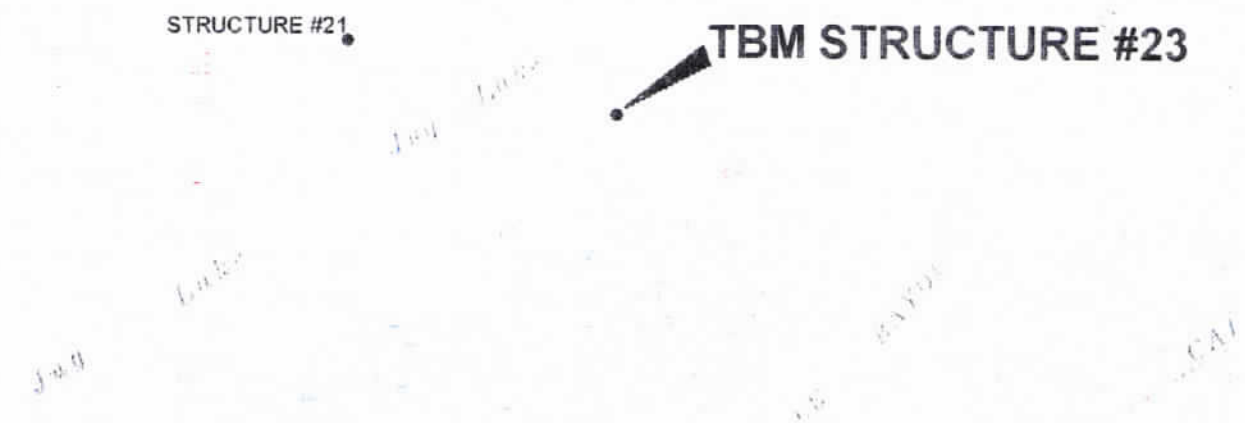
NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)



Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

Prepared By

TBS T. BAKER SMITH
PROFESSIONAL CONSULTANTS SINCE 1913

March 2005

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

DNR CONTRACT NO. 2503-03-21
CEEC PROJECT NO. 2221

OPERATION AND INSPECTION REPORT

Site Nos. 14, 21 and 23

SEPTEMBER 2003

Prepared For:
Louisiana Department of Natural Resources

Prepared By:
Coastal Engineering and Environmental Consultants, Inc.
197 Elysian Drive
Houma, Louisiana 70363

Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Adjust the variable crest weir at Site No. 14

PARTICIPANTS: Brian Brunet, Matt Sevier, Willie Radau

DATES: September 10, 2003

CONDITIONS: Partly Cloudy and Hot (90°)

Permission to gain access to Site No. 14 was obtained from Mr. Vance Adams of Burlington Resources on September 9, 2003 and Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 9, 2003.

The weir structure is located on the east side of Little Carencro Bayou, North of camp "Better Livin". The weir structure appeared to be in good condition. The TBM used for this site in the determination of elevation was the top of a hex head bolt (elevation 3.57 NAVD88) on the top face and North side of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.70 feet. The channel bottom elevation on the marsh side of the weir was -6.74 feet and the channel bottom elevation on the canal side was -6.79 feet.

During the Fall (September 1) of each year, all stop logs in each bay shall be installed to its maximum elevation to prevent southerly water fluctuations. The installation of nine (9) stop logs was required. The elevation of the stop logs prior to installation was -5.57 and after installation is -1.01. The field data report, photographs and field notes are attached.

Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

Site No. 14
Stop Log With Large Split

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 14.

Date: September 10, 2003

Participants: Brian A. Brunet, Matt Sevier, Willie Radau

Weather Conditions: Partly Cloudy and Hot (90° F)

Persons Contacted for Access: Mr. Vance Adams, Burlington Resources & Mr. Timothy J. Allen, P.L.S. of Apache Corp.

Site No.: 14

Structure Condition			
		Maintenance/Repair	
Item	Condition	Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	2 Stop Logs Had Surface Cracks/Chips		X
Master Locks	Fair		X

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Two stop logs had surface cracks/chips, but are still usable.

Stop Log Adjustment **Date/Time:** September 10, 2003 (3:00 p.m.)

- **Number of Logs Removed/Replaced:** 9 Replaced
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description:

JOB #2221

LA. DEPARTMENT OF NATURAL RESOURCES
TE-28 BRADY CANAL RESTORATION PROJECT

REPLACEMENT OF STOP LOGS
SITE NO. 14

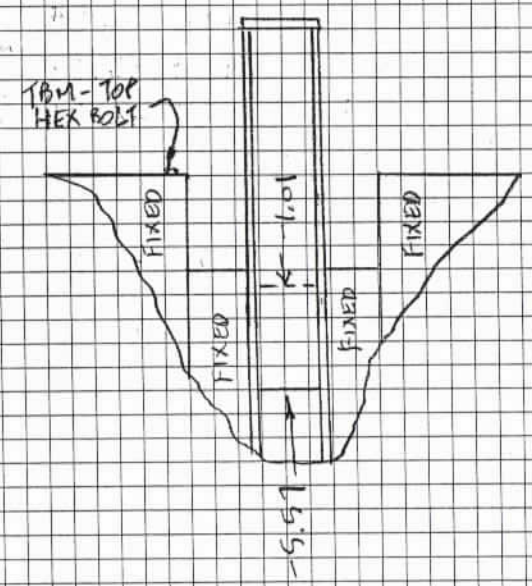
+	H.I.	−	ELEV.	REMARKS
			3.57	TOP HEX BOLT ON NORTH SIDE
4.93	8.50			-
		6.80	1.70	TOP WATER @ CENTER
		15.24	-6.74	NAT. BOTTOM MARSH SIDE
		15.29	-6.79	NAT. BOTTOM CANAL SIDE
		14.07	-5.57	PRE STOP LOG ELEV.
		9.51	-1.01	POST STOP LOG ELEV.
		4.93	3.57	CK TBM

ELEVATIONS INDICATE AN ADDITIONAL STOP LOG IS REQUIRED TO POSITION STOP LOGS 1' BELOW MARSH LEVEL

B. A. BRUNET
M. SEVIER
W. RADAU IV

188 P.C. & HOT 90°F
09/09/03

76



NOTE: A LARGE TREE WAS REMOVED FROM THE STRUCTURE SILL ON THIS DATE. THE TREE WAS APPROX. 4" TO 6" IN DIA. AND 15' LONG RESTING ON APPROX. 50% OF BAY OPENING.

Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Brian Brunet, Matt Sevier, John Helm

DATES: September 11, 2003

CONDITIONS: Partly Cloudy with Rain and Hot (90°)

Permission to gain access to Site No. 21 was obtained from Mr. Vance Adams of Burlington Resources on September 9, 2003 and Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 9, 2003.

The weir structure is located on the North side of Jug Lake. The weir structure appeared to be in good condition. There are three stop log bays at the site, which we shall refer to as Bays 1, 2 and 3 in order from east to west. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.72 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.68 feet.

During the Fall (September 1) of each year, all stop logs in each bay shall be installed to its maximum elevation to prevent southerly water fluctuations.

East Bay (Bay 1)

Bay 1 required the installation of seven (7) stop logs. The elevation of the stop logs prior to installation was -3.73 and after installation is -0.21.

Center Bay (Bay 2)

Bay 2 required the installation of ten (10) stop logs. The elevation of the stop logs prior to installation was -5.29 and after installation is -0.25.

West Bay (Bay 3)

Bay 3 required the installation of five (5) stop logs. The elevation of the stop logs prior to installation was -2.73 and after installation is -0.2.

The field data report, photographs, and field notes are attached.

Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 21.

Date: September 11, 2003

Participants: Brian A. Brunet, Matt Sevier, John Helm

Weather Conditions: Partly Cloudy with Rain and Hot (90° F)

Persons Contacted for Access: Mr. Vance Adams, Burlington Resources & Mr. Timothy J. Allen, P.L.S. of Apache Corp.

Site No.: 21

Structure Condition			
		Maintenance/Repair	
Item	Condition	Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Eastern most pin slot bent at lock connection	X	
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good		X

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Eastern most channel iron needs to be repaired or bigger slot hole cut in lock side.

Stop Log Adjustment **Date/Time:** September 11, 2003 (2:30 p.m.)

- **Number of Logs Removed/Replaced:** 22 Total Replaced (7 on East Bay) (10 on Center Bay) (5 on West Bay)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description:

B. A. BRUNET
M. SEVIER
J. HELM

188
09/11/03

P.C. & HOT
(90°F

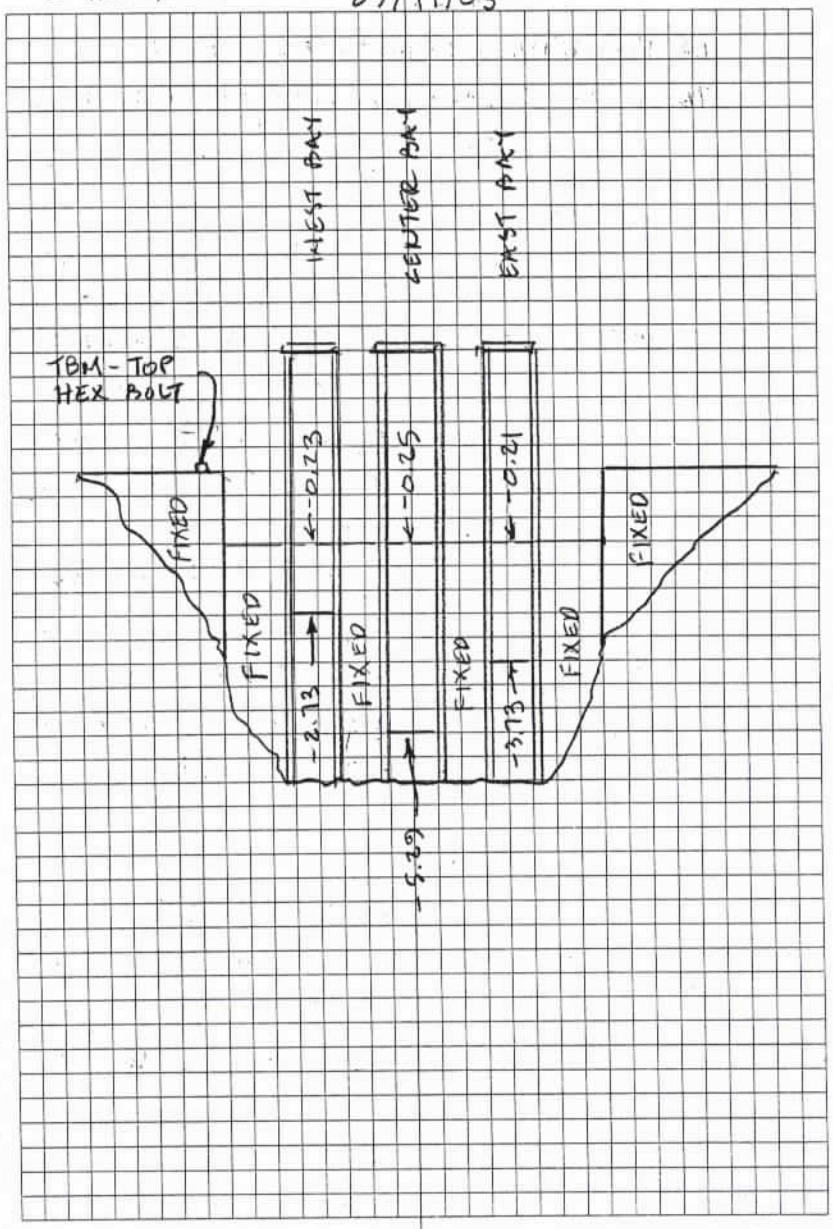
(77)

JOB #2221

LA DEPARTMENT OF NATURAL RESOURCES
TE-28 BRADY CANAL RESTORATION PROJECT

REPLACEMENT OF STOP LOGS
SITE NO. 21

LOCATION	+	H.I.	—	ELEV.	REMARKS
	4.90	8.62		3.72	TOP HEX BOLT ON WEST SIDE
TOP WATER			6.94	1.68	@ CENTER OF BAYS
WEST BAY			11.56	-2.94	NAT. BOTTOM MARSH SIDE
" "			11.83	-3.21	NAT. BOTTOM LAKE SIDE
" "			11.35	-2.73	PRE-STOP LOG ELEV.
WEST BAY			8.85	-0.23	POST STOP LOG ELEV.
CENTER BAY			13.93	-5.31	NAT. BOTTOM MARSH SIDE
" "			14.38	-5.76	NAT. BOTTOM LAKE SIDE
" "			13.91	-5.29	PRE-STOP LOG ELEV.
CENTER BAY			8.87	-0.25	POST STOP LOG ELEV.
EAST BAY			13.18	-4.56	NAT. BOTTOM MARSH SIDE
" "			13.37	-4.75	NAT. BOTTOM LAKE SIDE
" "			12.35	-3.73	PRE STOP LOG ELEV.
EAST BAY			8.83	-0.21	POST STOP LOG ELEV.
			6.91	1.71	CK TOP H_2O
			4.90	3.72	CK TBM



Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Brian Brunet, Matt Sevier, Willie Radau

DATES: September 10, 2003

CONDITIONS: Partly cloudy and Hot (90° F)

Permission to gain access to Site No. 23 was obtained from Mr. Vance Adams of Burlington Resources on September 9, 2003 and Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 9, 2003.

The structure is located on the East side of Jug Lake. The weir structure appeared to be in good condition. There are two stop log bays at the site, which we shall refer to as the North Bay and South Bay. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.51 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 1.51 feet.

During the Fall (September 1) of each year, all stop logs in each bay shall be installed to its maximum elevation to prevent southerly water fluctuations.

North Bay

North bay required the installation of ten (10) stop logs, the elevation of the stop logs prior to installation was -5.46 and after installation is -0.46.

South Bay

South bay required the installation of ten (10) stop logs, the elevation of the stop logs prior to installation was -5.47 and after installation is -0.46.

The field data, photographs, and field notes are attached.

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Site No. 23
Stop Log With Chips

Site No. 23
Stop Log With Splits and Chips

Site No. 23
Stop Log With Splits

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir at Site 23.

Date: September 10, 2003

Participants: Brian A. Brunet, Matt Sevier, Willie Radau

Weather Conditions: Partly Cloudy and Hot (90° F)

Persons Contacted for Access: Mr. Vance Adams, Burlington Resources and Mr. Timothy J. Allen, P.L.S., of Apache Corp.

Site No.: 23

Structure Condition			
		Maintenance/Repair	
Item	Condition	Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	3 Stop Logs Had Surface Cracks/Chips		X
Master Locks	Fair		X

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Three stop logs had surface cracks/chips, but are still usable.

Stop Log Adjustment **Date/Time:** September 10, 2003 (1:00 p.m.)

- **Number of Logs Removed/Replaced:** 10 Stop Logs Replaced in North Bay and 10 Replaced in South Bay
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description:

B. A. BRUNET
M. SEVIER
W. RADAN III

188
09/10/03

P.C. & HOT
90°F

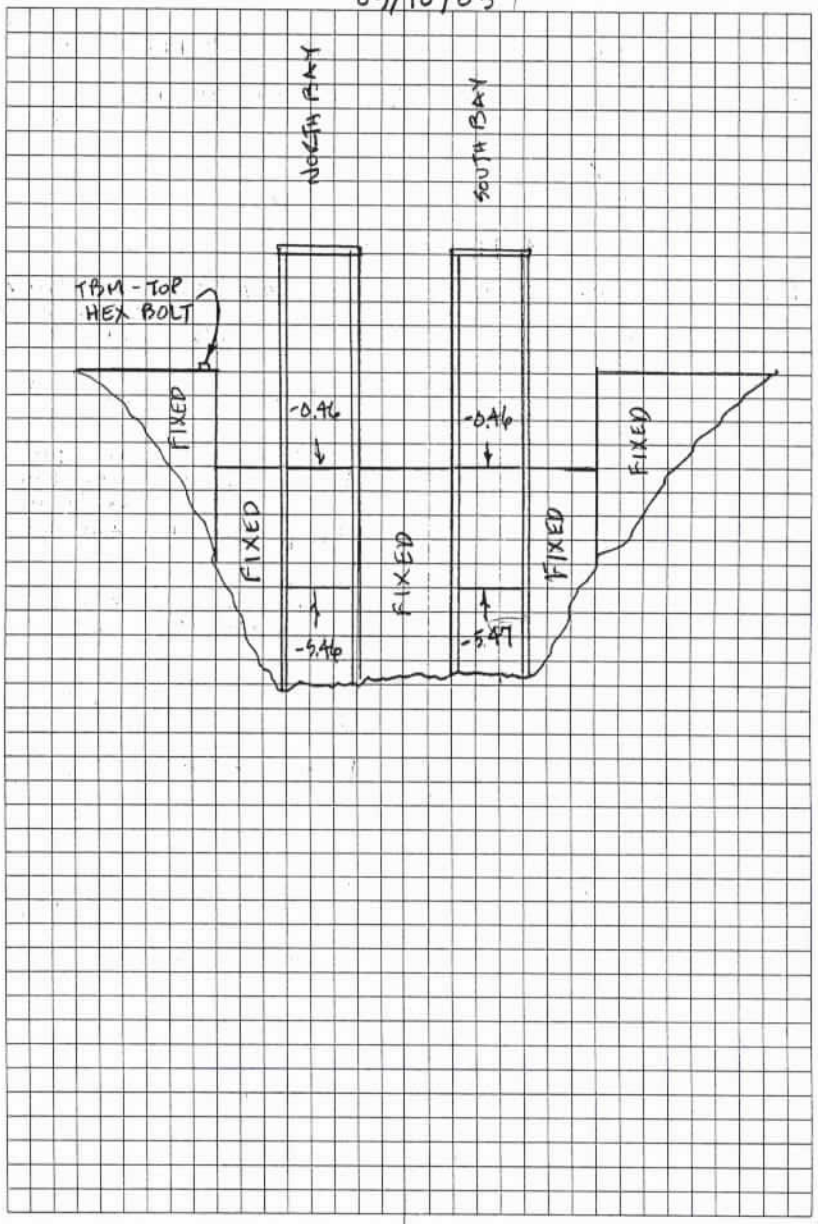
(75)

JOB #2221

LA DEPARTMENT OF NATURAL RESOURCES
TE-28 BRADY CANAL RESTORATION PROJECT

REPLACEMENT OF STOP LOGS
SITE NO 23

LOCATION	+	H.I.	−	ELEV.	REMARKS
	5.64	9.15		3.51	TOP HEX BOLT ON NORTH SIDE
TOP WATER			7.64	1.51	@ CENTER OF STRUCTURE
NORTH BAY			15.96	-6.81	NAT. BOTTOM MARSH SIDE
" "			15.11	-5.96	NAT. BOTTOM LAKE SIDE
" "			14.61	-5.46	PRE STOP LOG ELEV.
NORTH BAY			9.61	-0.46	POST STOP LOG ELEV.
SOUTH BAY			15.57	-6.42	NAT. BOTTOM MARSH SIDE
" "			15.55	-6.40	NAT. BOTTOM LAKE SIDE
" "			14.62	-5.47	PRE STOP LOG ELEV.
SOUTH BAY			9.61	-0.46	POST STOP LOG ELEV.
			7.62	1.53	CK TOP H_2O
			5.64	3.51	CK. TBM.



Structure No. 06
Condition of Four (4) Navigational Aids

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Condition of four (4) navigational aids for Structure No. 6

PARTICIPANTS: Brian Brunet, Matt Sevier, Willie Radau

DATES: September 11, 2003

CONDITIONS: Partly cloudy with Rain and Hot (90° F)

The structure is located along Bayou Decade West of Jug Lake. The navigational lights appear to be in fair condition. The use of black electrical tape to cover the photocell of the navigation lights identified that the two (2) red navigation lights and the green navigation light opposite Bayou Decade are not in working condition. The Bayou Decade red navigation light's outer lens cover (clear) is in need of replacement. The photocell on the Bayou Decade side green navigation light's casing is broken and in need of replacement.

The field data, photographs, and field notes are attached.

Structure No. 6
Red Light With Broken Lens

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Inspection of Navigational Aids

Date: September 11, 2003

Participants: Brian A. Brunet, Matt Sevier, Willie Radau

Weather Conditions: Partly Cloudy with Rain and Hot (90° F)

Persons Contacted for Access:

Site No.: Structure No. 6

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Navigation Lights	Poor	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: The two (2) red lights and one (1) green light not working, one (1) red light needs outer clear lens replacement. The sensor switch on the green light on Bayou Decade is broken off and needs to be replaced.

Stop Log Adjustment **Date/Time:**

- **Number of Logs Removed/Replaced:**
- **Elevation:**
- **Mudline Levels:**
- **Water Levels:**

Flag Description:

SAME

09/11/03

(78)

JOB #2224

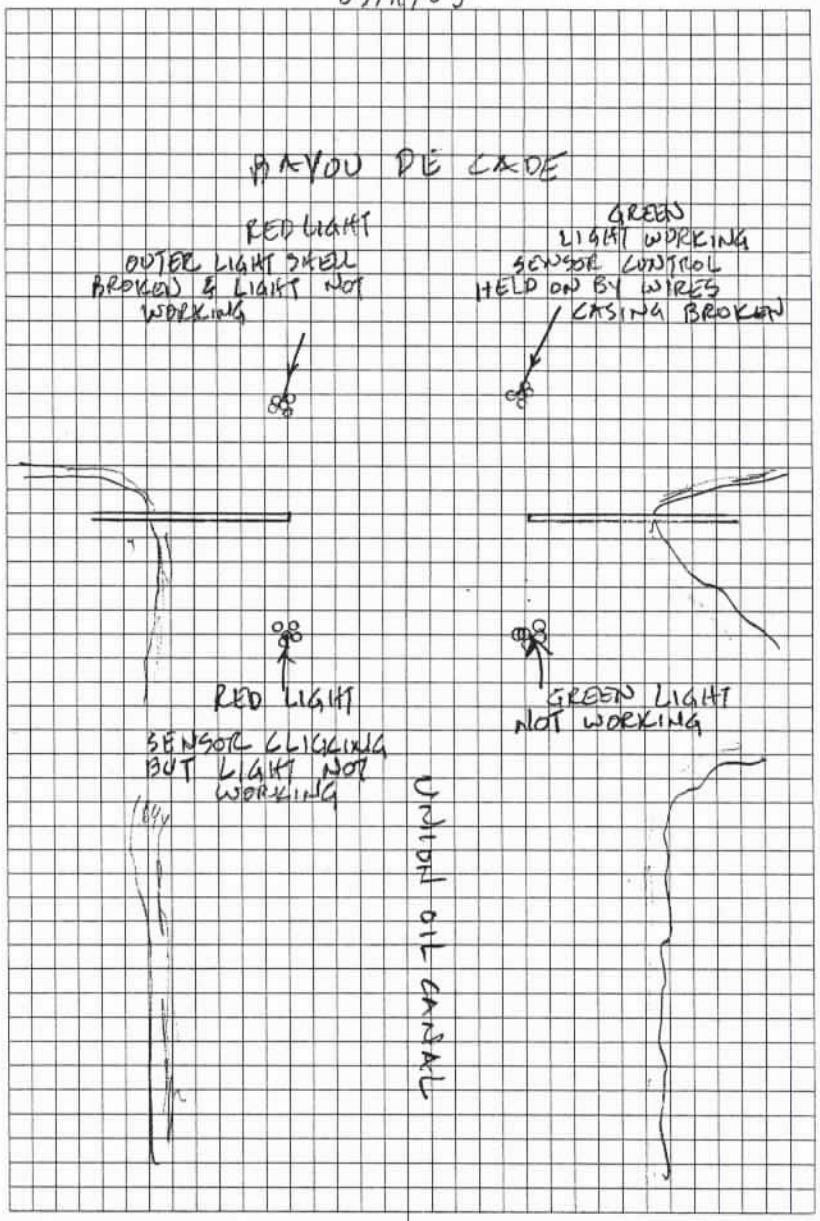
LA DEPARTMENT OF NATURAL RESOURCES

TE-28 BRADY CANAL RESTORATION PROJECT

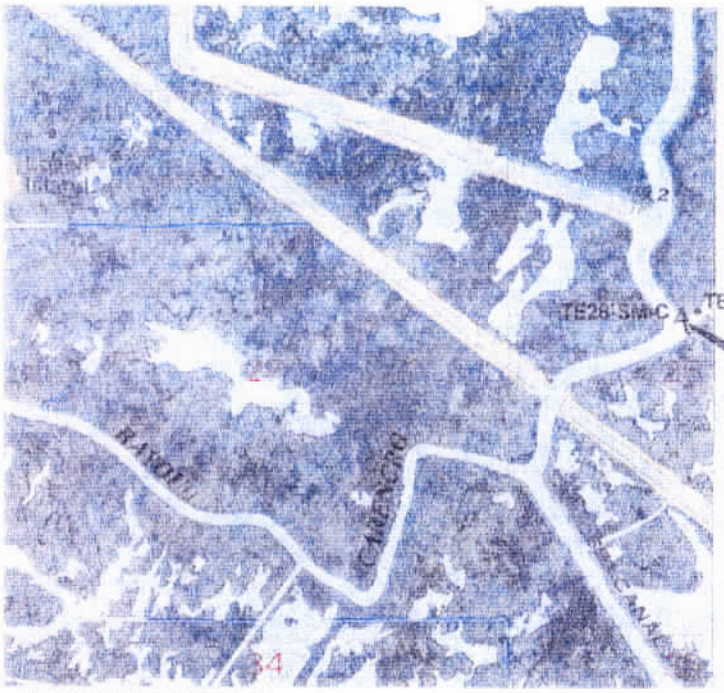
NOTE: THE TWO (2) RED LIGHTS DID NOT OPERATE AND ONE (1) GREEN LIGHT DID NOT OPERATE ALSO.

THE OUTER (CLEAR) SHIELD ON THE RED LIGHT LOCATED ON BAYOU DECADE WAS COMPLETELY SHATTERED AND NEEDS REPLACEMENT.

THE SENSOR SWITCH ON THE GREEN LIGHT LOCATED ON BAYOU DECADE WAS BROKEN OFF AND IS BEING HELD ON BY THE LIGHT SWITCH WIRES.



Benchmarks - Data Sheets



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

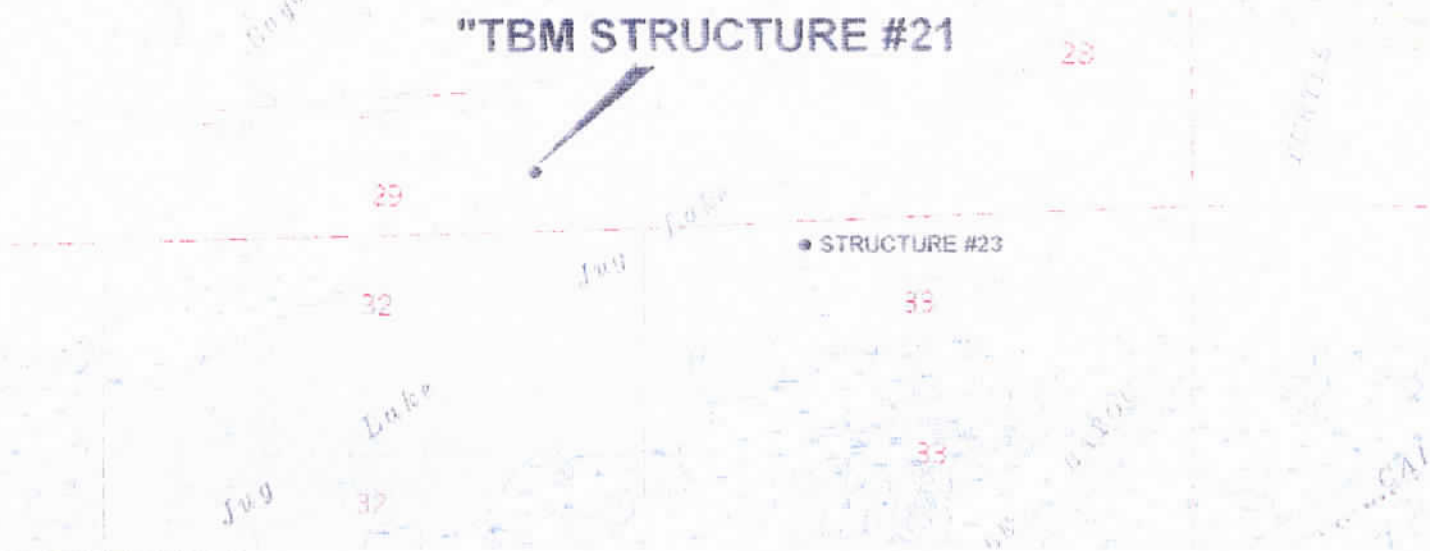
TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

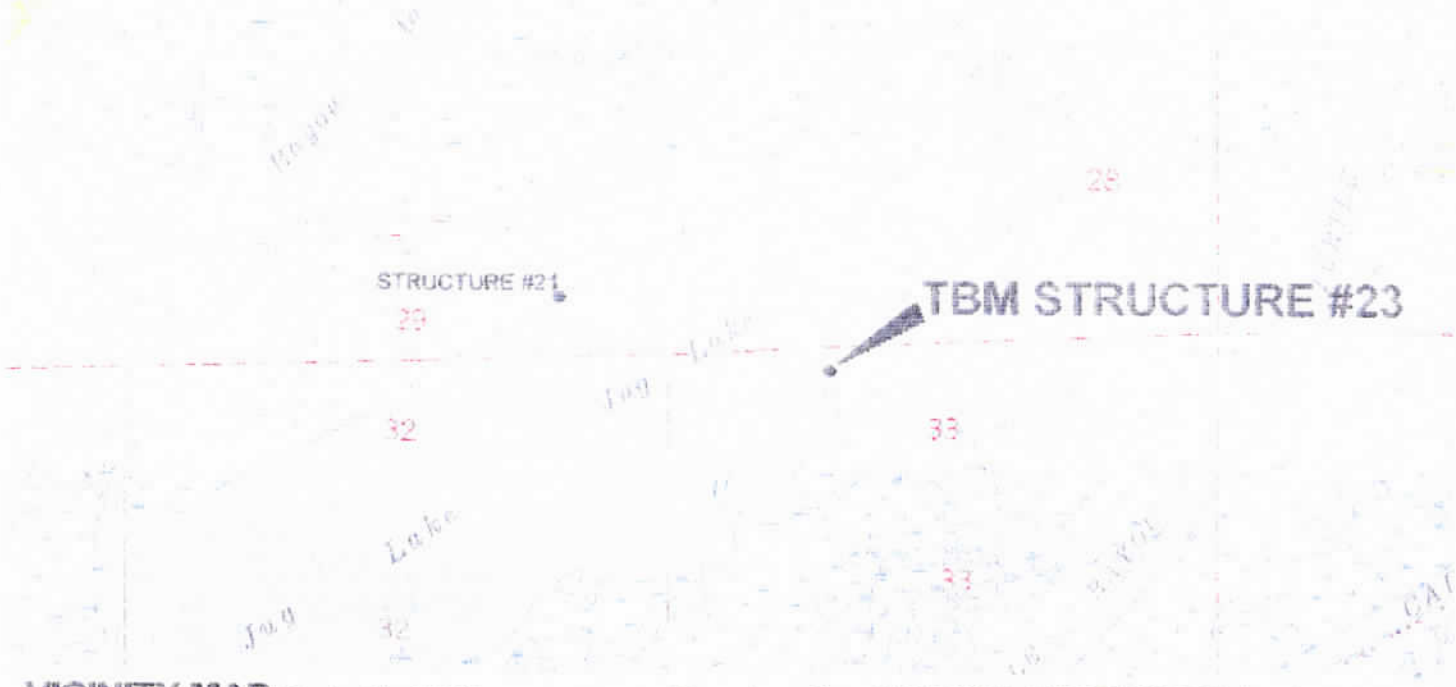
TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LDNR CONTRACT NO. 2503-03-21
SCI PROJECT NO. 2273

OPERATION AND INSPECTION REPORT

Site Nos. 14, 21 and 23

MARCH 2004

Prepared For:
Louisiana Department of Natural Resources

Prepared By:
Shaw Coastal, Inc.
197 Elysian Drive
Houma, Louisiana 70363

MAR 2 6 2004

Site No. 14

Fixed Crest Weir with one (1) Variable Crest Section

Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

Pre-Log Removal

Pre-Log Removal

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.

Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

Post-Log Removal with Lock Replaced

Post-Log Removal

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.

Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

Chipped Log

Chipped Log

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weir at Site No. 14

PARTICIPANTS: Brian Brunet, Peter Williams

DATES: March 9, 2004

CONDITIONS: Clear and Mild (68°)

Permission to gain access to Site No. 14 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 9, 2004.

The weir structure is located on the east side of Little Carencro Bayou, North of camp "Better Livin". The weir structure appeared to be in good condition. The stop logs have chips/splits or cracks; but are still usable. The TBM used for this site in the determination of elevation was the top of a hex head bolt (elevation 3.57 NAVD88) on the top face and North side of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.60 feet on both sides of the structure.

It was determined through coordination with Louisiana Department of Natural Resources personnel and research of the previous report that the required elevation of the stop logs would be approximately -5.89 feet. This would need removal of nine (9) stop logs. The elevation of the stop logs prior to removal was -1.0 and after removal is -5.60. There are no navigation lights installed at this site. The field data report, photographs and field notes are attached.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 14.

Date: March 9, 2004

Participants: Brian Brunet, Peter Williams

Weather Conditions: Clear and Mild (68° F)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corp.

Site No.: 14

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	2 Have splits/chipped out/cracked		X
Master Locks	New		X

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Two of the stop logs have chips/splits or cracks, but are still usable. The locks were replaced on this date (as requested by LDNR).

Stop Log Adjustment **Date/Time:** March 9, 2004 (11:00 A.M.)

- **Number of Logs Removed/Replaced:** 9 Logs were removed
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

JOB # 2273

LA DEPARTMENT OF NATURAL RESOURCES

TE-28 BRADY CANAL RESTORATION PROJECT

REMOVAL OF STOP LOGS

SITE NO. 14

LOCATION	+	H.I.	−	ELEV.	REMARKS
	4.50	8.07		3.57	TOP HEX BOLT ON NORTH
TOP WATER			7.47	0.60	TOP HEX SAME ON BOTH
BOTTOM			15.89	-7.82	BOTTOM ON CANAL
BOTTOM			13.45	-5.38	BOTTOM ON MARSH
PRE-LOG			9.07	-1.00	PRE-LOG REMOVAL
POST-LOG			13.67	-5.60	POST-LOG REMOVAL
			4.50	3.57	CK TBM

9 STOP LOGS WERE REMOVED ON THIS DATE.

START ELEV = -1.00

END ELEV. = -5.60

NOTE: SILT BEGINNING TO BUILD UP ON MARSH SIDE OF STRUCTURE

ALSO, AT THE REQUEST OF MR. BRIAN BABIN W/ D.N.R. THE OLD LOCKS (5401) WERE REMOVED & REPLACED W/ NEW LOCKS (5404)

B.A. BRUNET
P. WILLIAMS

200

CLEAR & MILD
70°F

(37)

03/09/04

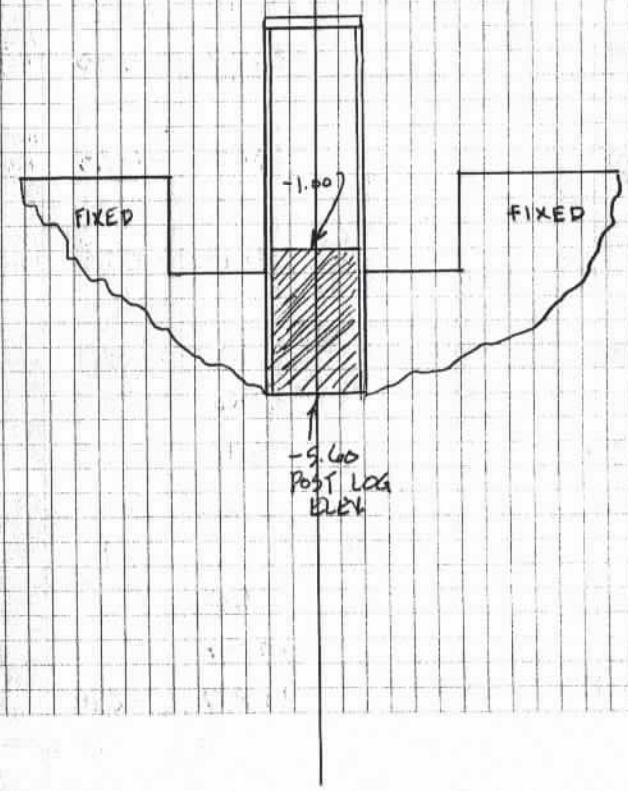
T.B.M. DATUM AS SUPPLIED BY LA D.N.R.

SIDE OF STRUCTURE

SIDES OF STRUCTURE

SIDE

SIDE



Site No. 21

Fixed Crest Weir with three (3) Variable Crest Section

Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

Pre-Log Removal

East Bay - Post-Log Removal with New Lock

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.

Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

East Bay - Post-Log Removal

Pre-Log Removal Center and West Bays

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.

Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

Post-Log Removal Center and West Bays

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Brian Brunet, Peter Williams, John Helm

DATES: March 10, 2004

CONDITIONS: Clear and Mild (70°) - March 9, 2004; Clear and Cool (60°) - March 10, 2004

Permission to gain access to Site No. 21 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on March 9, 2004.

The weir structure appeared to be in good condition. There are three stop log bays at the site, which we shall refer to as Bays 1, 2 and 3 in order from east to west. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.72 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.68 feet on the north side and 0.68 feet on the south side.

East Bay (Bay 1)

Desired elevation at Bay 1 would be approximately -3.56. In order to achieve this elevation, seven (7) stop logs were removed. Elevation of stop logs before removal -0.21 and after removal -3.73.

Center Bay (Bay 2)

Desired elevation at Bay 2 would be approximately -4.65. Ten (10) stop logs were removed to achieve this elevation. Elevation of stop log before removal was -0.24 and after removal is -5.31.

West Bay (Bay 3)

Desired elevation at Bay 3 would be approximately -1.69. Five (5) stop logs were removed to achieve elevation. Elevation of stop log before removal -0.23 and after removal -2.75.

There are no navigation lights installed at this site.

For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 21.

Date: March 9, 2004 (East Bay) March 10, 2004 (Center and West Bays)

Participants: Brian Brunet, Peter Williams, John Helm

Weather Conditions: Clear and Mild (70° F) - March 9, 2004, Clear and Cool (60° F) - March 10, 2004

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: 21

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	New		X

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Locks were replaced on this date (as requested by LDNR).

Stop Log Adjustment **Date/Time:** March 9, 2004 (2:30 p.m. on East Bay), March 10, 2004 (11:00 a.m. on Center Bay and 2:00 p.m. on West Bay)

- **Number of Logs Removed/Replaced:** 7 from East Bay, 10 from Center Bay, and 5 from East Bay (22 total)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: East Bay (Blue), Center Bay (Yellow), West Bay (Pink)

JOB# 2273

LA DEPARTMENT OF NATURAL RESOURCES

TE-28 BRADY CANAL RESTORATION PROJECT

REMOVAL OF STOP LOGS

SITE NO. 21

LOCATION	+	H.I.	—	ELEV	REMARKS
	4.77	8.49		3.72	TOP HEX BOLT ON WEST HDD ON BOTH SIDES OF
03/09/04 TOP WATER			7.81	0.68	BOTTOM ON MARSH SIDE
EAST BAY			12.55	-4.06	BOTTOM ON LAKE SIDE
" "			11.76	-3.27	PRE-STOP LOG REMOVAL
" "			8.70	-0.21	POST STOP LOG REMOVAL
EAST BAY			12.22	-3.73	
CENTER BAY			14.68	-6.19	BOTTOM ON MARSH SIDE
" "			13.94	-5.45	BOTTOM ON LAKE SIDE
CENTER BAY			8.73	-0.24	PRE-STOP LOG REMOVAL
WEST BAY			10.79	-2.30	BOTTOM ON MARSH SIDE
" "			9.56	-1.07	BOTTOM ON LAKE SIDE
WEST BAY			8.72	-0.23	PRE-STOP LOG REMOVAL
				3.72	CK. TBM
				3.72	TOP HEX BOLT
	5.03	8.75			
03/10/04 TOP WATER			8.50	0.25	TOP H2O BTH SIDES
CENTER BAY			14.06	-5.31	POST STOP LOG REMOVAL
WEST BAY			11.50	-2.75	POST STOP LOG REMOVAL
			5.03	3.72	CK TBM

B.A. BRUNET
P. WILLIAMS

200 CLEAR & MILD 70°F

03/09/04

B.A. BRUNET
P. WILLIAMS
J. HELM

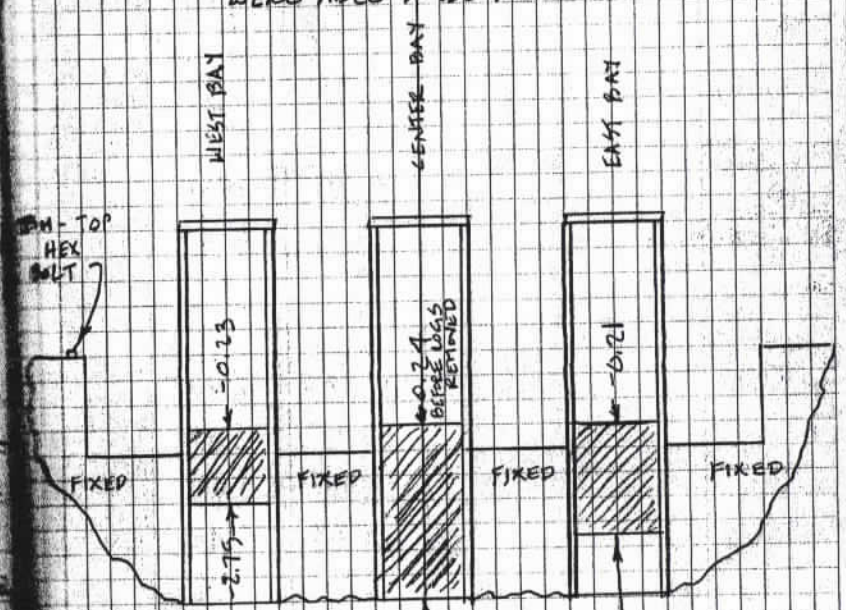
03/10/04 CLEAR & COOL 60°F

T.B.M. DATA AS SUPPLIED BY LA D.N.R.

NOTE: SILT BUILDING UP @ EAST AND WEST BAYS AS SHOWN BY THE ELEVATIONS AND AS INDICATED IN FIELD. NOTIFIED D.N.R. PERSONNEL (MR. BRIAN BABIN IN THIBODAUX OFFICE) OF SUCH. MR BABIN INSTRUCTED US TO REMOVE ALL LOGS PREVIOUSLY INSTALLED, IF POSSIBLE, BECAUSE OF PERMIT REQUIREMENTS. WITH SOME DIFFICULTY ALL BOARDS PREVIOUSLY INSTALLED WERE ABLE TO BE REMOVED.

SIDE STRUCTURE

STRUCTURE



5 STOP LOGS REMOVED FROM WEST BAY

10 STOP LOGS REMOVED FROM CENTER BAY

7 STOP LOGS REMOVED FROM EAST BAY

NOTE: ALSO, AS REQUESTED BY MR. BABIN, THE OLD LOCKS (S401) WERE REPLACED W/NEW LOCKS (S404) ON ALL 3 BAYS.

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

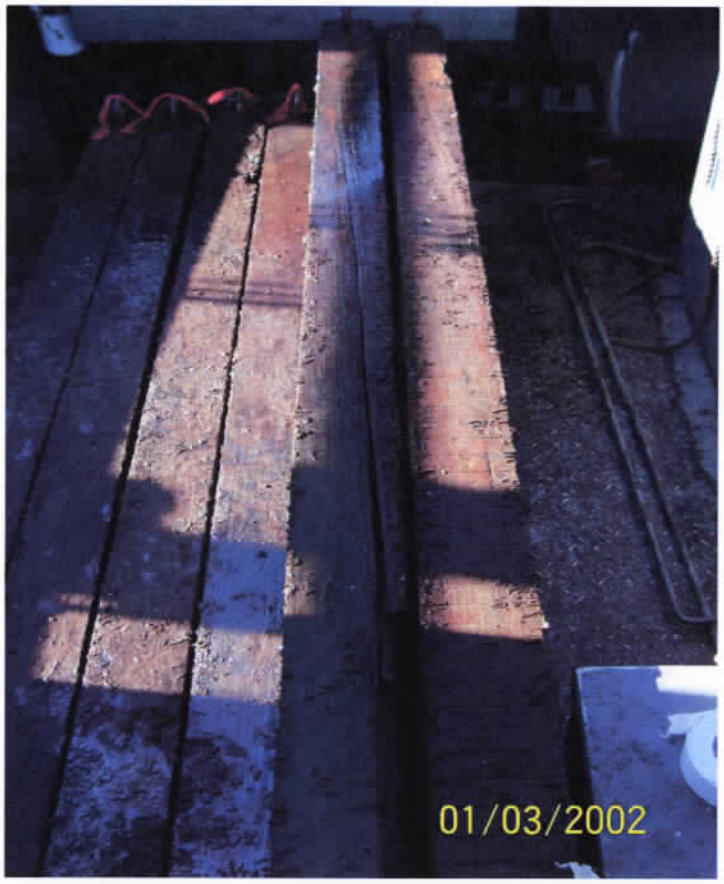
Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Pre-Log Removal

Pre-Log Removal

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section



Split Log

New Lock Installed

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

New Lock Installed

Post-Log Removal

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Chipped Log

Note: Date on Photo Incorrect; Photo Taken on Date of Operation.

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Brian Brunet, John Helm, Peter Williams

DATES: March 11, 2004

CONDITIONS: Clear and Mild (62° F)

Permission to gain access to Site No. 23 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on March 9, 2004.

The weir structure appeared to be in good condition. There are two stop log bays at the site, which we shall refer to as the North Bay and South Bay. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.51 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.17 feet. Desired elevation at both bays would be approximately -5.78. Ten (10) stop logs were removed from each bay to achieve the desired elevation. The stop log elevation at the North Bay before stop log removal was -0.51 and after removal is -5.47. The stop log elevation at the North Bay before stop log removal was -0.45 and after removal is -5.44. There are no navigation lights installed at this site. For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 23.

Date: March 11, 2004

Participants: Brian Brunet, John Helm, Peter Williams

Weather Conditions: Clear and Mild (62° F)

Persons Contacted for Access: Mr. Jeff Deblieux, P.L.S. of Burlington Resources

Site No.: 23

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	One stop log was split on top and two cracked on sides		X
Master Locks	New		X

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Locks were replaced on this date (as requested by LDNR).

Stop Log Adjustment **Date/Time:** March 11, 2004 (10:00 a.m.)

- **Number of Logs Removed/Replaced:** 10 from 2 bays (20 total)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: Red on North Bay and White on South Bay.

JOB# 2213

LA DEPARTMENT OF NATURAL RESOURCES

TE-28 BRADY CANAL RESTORATION PROJECT

REMOVAL OF STOP LOGS

SITE NO. 23

LOCATION	+	H.I.	–	ELEV.	REMARKS
				3.51	TOP HEX BOLT ON NORTH
	1.33	4.84			TOP H2O ON BOTH SIDES
TOP WATER			4.67	0.17	
					BOTTOM ON
			11.38	-6.34	MARSH SIDE
NORTH BAY					BOTTOM ON
" "			10.82	-5.98	LAKE SIDE
					PRE STOP LOG
" "			5.35	-0.51	REMOVAL
					POST STOP LOG
			10.31	-5.47	REMOVAL
NORTH BAY					
					BOTTOM ON
			11.08	-6.24	MARSH SIDE
SOUTH BAY					BOTTOM ON
" "			11.09	-6.25	LAKE SIDE
					PRE STOP LOG
" "			5.29	-0.45	REMOVAL
					POST STOP LOG
			10.28	-5.44	REMOVAL
SOUTH BAY					
			1.33	3.51	CK. TBM

B.A. BRUNET
J. HELM
P. WILLIAMS

200 CLEAR & COOL 65°F

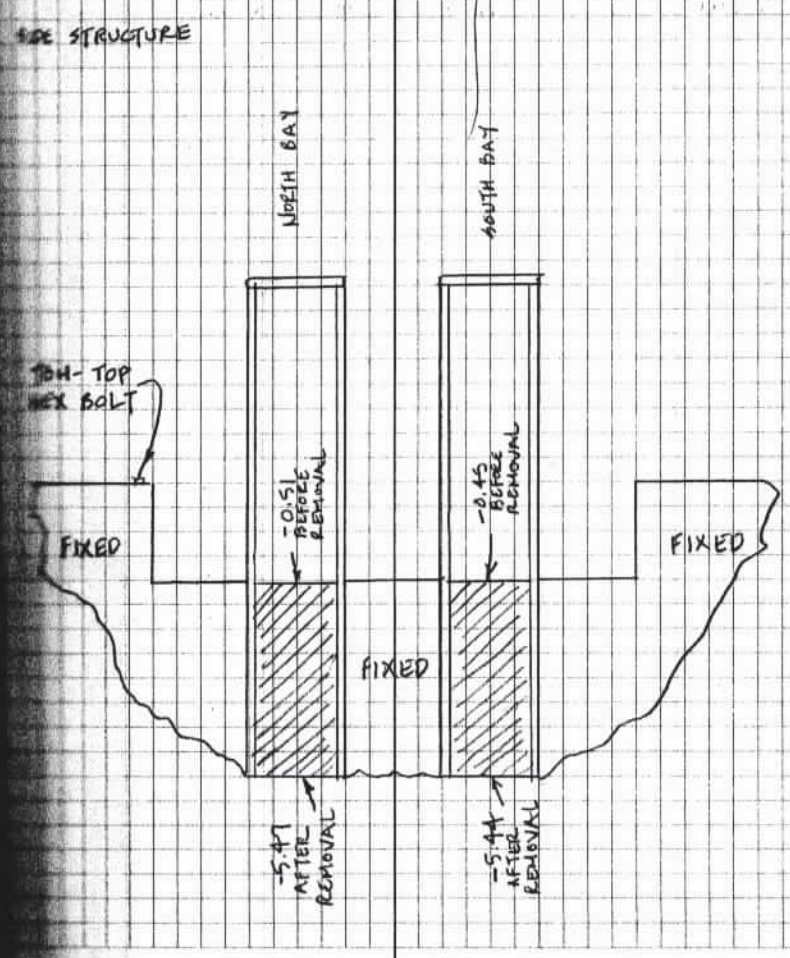
(39)

03/11/04

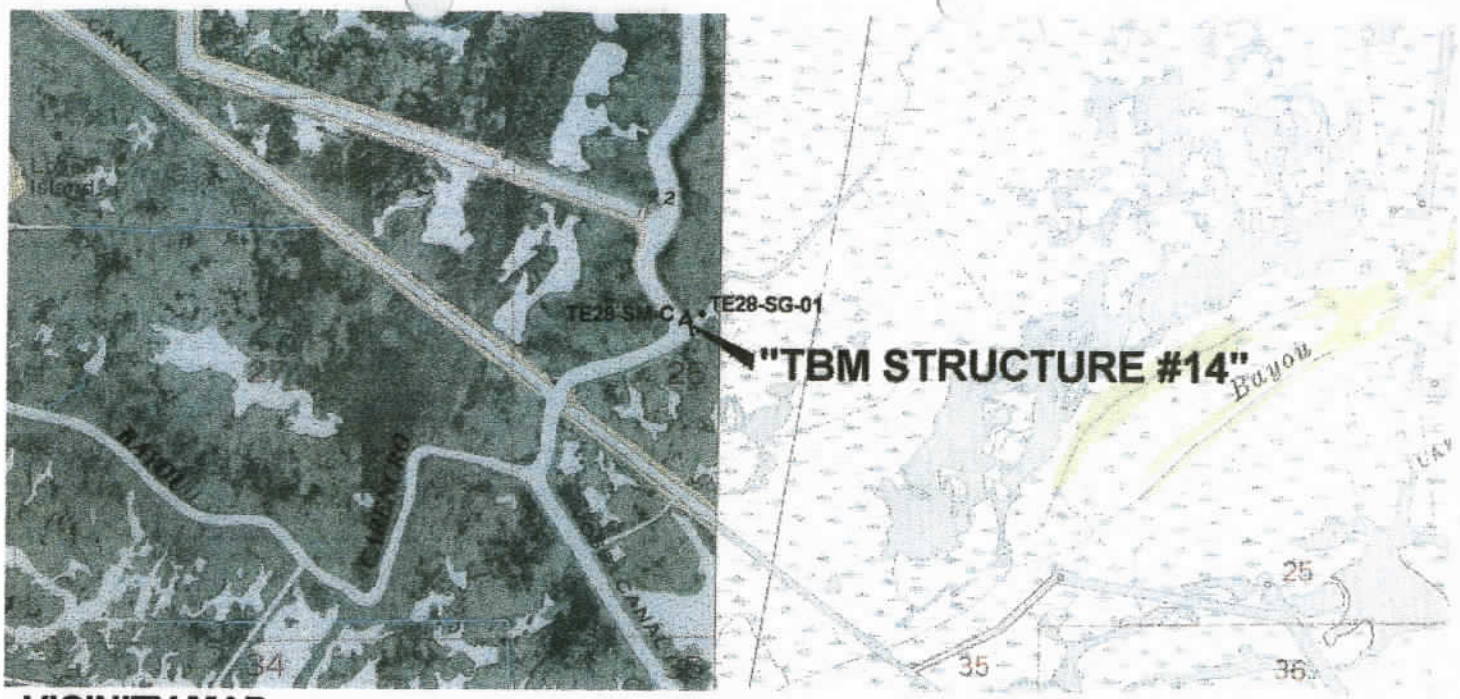
T.B.M. AS SUPPLIED BY LA D.N.R.

NOTE: (1) ONE OF THE STOP LOGS WAS SPLIT ON ONE SIDE BUT STILL USABLE AS WERE (2) TWO OTHERS W/ SPLITS ON ENDS
AS REQUESTED BY MR. BRIAN BABIN W/ D.N.R. THE OLD LOCKS (5401) WERE REPLACED WITH NEW LOCKS (5404) ON BOTH BAYS

SIDE STRUCTURE



Benchmarks - Data Sheets



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

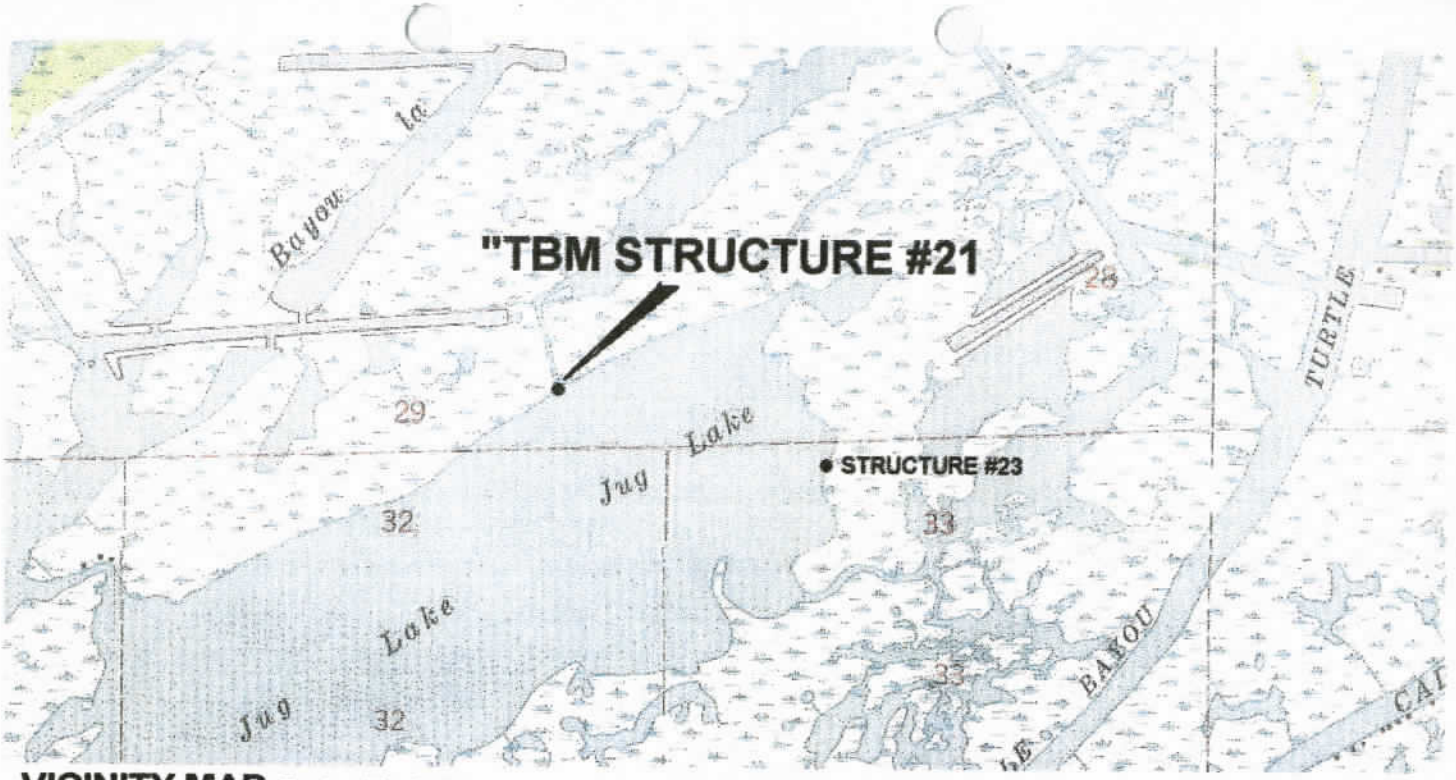
TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

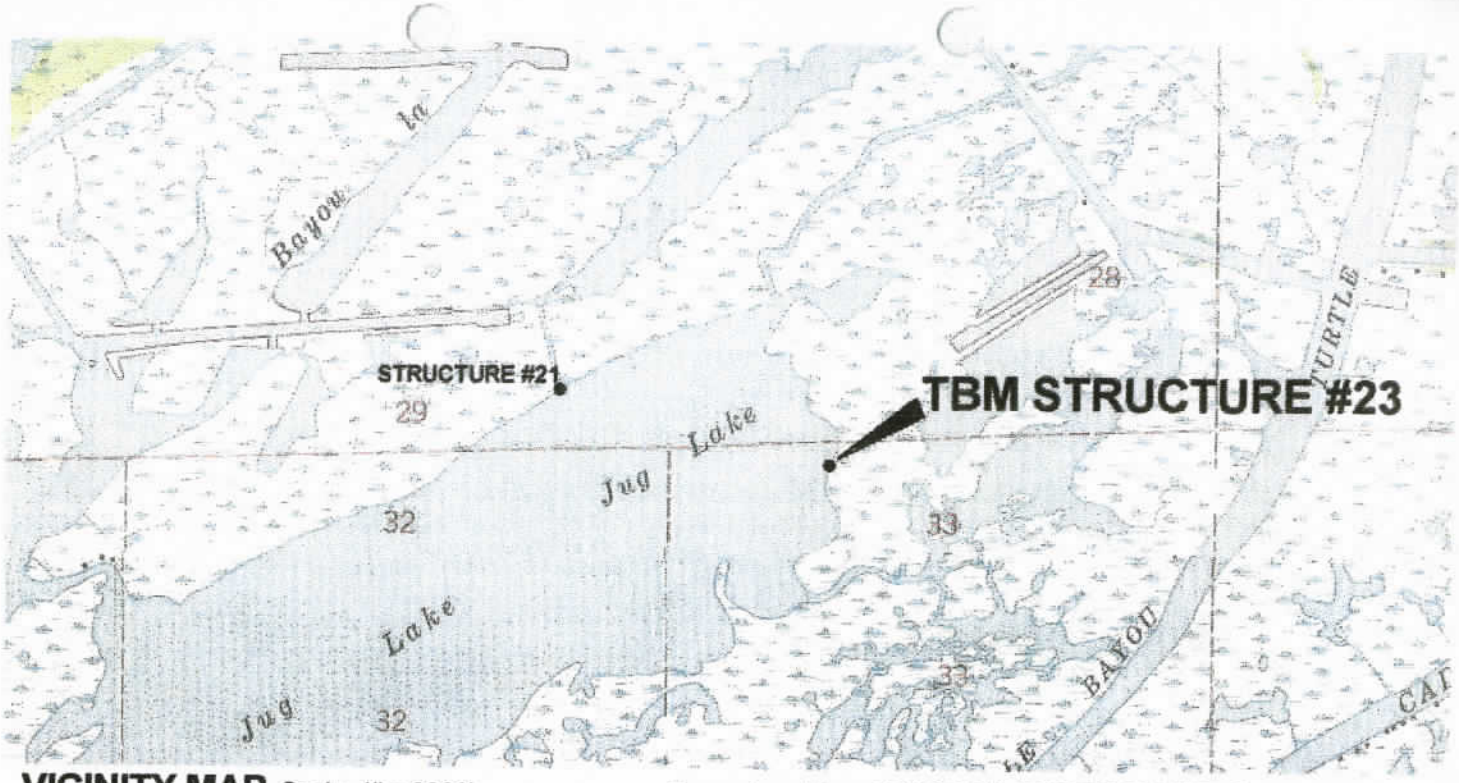
TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT

LDNR CONTRACT NO. 2503-03-21
SCI PROJECT NO. 2319

OPERATION AND INSPECTION REPORT

Site Nos. 14, 21, 23 and 06 (Navigational Aid)

OCTOBER 2004

Prepared For:
Louisiana Department of Natural Resources

Prepared By:
Shaw Coastal, Inc.
197 Elysian Drive
Houma, Louisiana 70363

RECEIVED
OCT 0 4 2004
CLD

Site No. 14

Fixed Crest Weir with one (1) Variable Crest Section

Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

Pre Log Installation

Post Log Installation

Site No. 14
Fixed Crest Weir with one (1) Variable Crest Section

TBM EL. 3.57 NAVD 88

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weir at Site No. 14

PARTICIPANTS: Roy Samperi, Patrick Flanagan, Shane Parfait

DATES: September 7, 2004

CONDITIONS: Breezy (85°)

Permission to gain access to Site No. 14 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 3, 2004.

The weir structure is located on the east side of Little Carencro Bayou, North of camp "Better Livin". The weir structure appeared to be in good condition. The stop logs have chips/splits or cracks; but are still usable. One stop log was lost during installation and was replaced. The TBM used for this site in the determination of elevation was the top of a hex head bolt (elevation 3.57 NAVD88) on the top face and North side of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.90 feet on both sides of the structure.

It was determined through coordination with Louisiana Department of Natural Resources personnel and research of the previous report that the required elevation of the stop logs would be approximately -1.00 feet. This would need installation of nine (9) stop logs. The elevation of the stop logs prior to installation was -5.56 and after installation is -1.05. There are no navigation lights installed at this site. The field data report, photographs and field notes are attached.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 14.

Date: September 7, 2004

Participants: Roy Samperi, Pat Flanagan, and Shane Parfait

Weather Conditions: Clear, Breezy (85° F)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corp.

Site No.: 14

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	1 Has a Split		X
Master Locks	Good	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: One stop log has a split. It will be replaced next time as per Brian Babin. Oiled pad locks.

Stop Log Adjustment **Date/Time:** September 7, 2004;

- **Number of Logs Removed/Replaced:** 9 logs installed
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

JOB # 2319

LA D.N.R

TE-28 BRADY CANAL RESTORATION PROJECT

REMARKS	BS	HI	FS	EL.	DESC
TBM				3.57	TOP OF BOLT
	3.87	7.44			
BOTH SIDES ARE SAME			6.54	0.90	TOP OF WATER
			15.23	-7.79	BOTTOM CANAL
			14.36	-6.92	BOTTOM MARSH
BEFORE LOG INSTALLMENT			13.00	-5.56	TOP OF LOG DAM
POST LOG INSTALLMENT			8.49	-1.05	TOP OF LOG DAM

ROY
PAT
SHANE

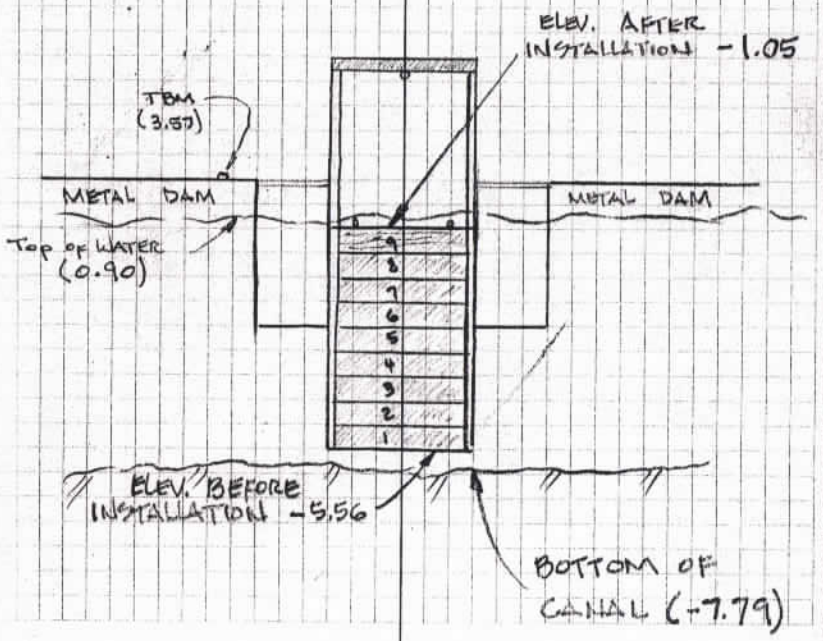
200

9/7/04 BREEZY 85°

(44)

STRUCTURE # 14

NOTE: INSTALLED 9 STOP LOGS LOST 1 STOP LOG IN THE WATER; LOGS WERE IN GOOD CONDITION SPRAYED WITH WD-40 AS PREVENTIVE MEASURE



Site No. 21

Fixed Crest Weir with three (3) Variable Crest Section

Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

Pre Log Installation

Post Log Installation

Site No. 21
Fixed Crest Weir with three (3) Variable Crest Section

Chipped Log

TBM EL. 3.72 NAVD 88

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Roy Samperi, Pat Flanagan, and Shane Parfait

DATES: September 8, 2004

CONDITIONS: Clear (84°)

Permission to gain access to Site No. 21 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on September 3, 2004.

The weir structure appeared to be in good condition. Two of the stop logs have splits in them. There are three stop log bays at the site, which we shall refer to as Bays 1, 2 and 3 in order from east to west. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.72 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.80 feet on the north side and 0.80 feet on the south side.

East Bay (Bay 1)

Desired elevation at Bay 1 would be approximately -0.21. In order to achieve this elevation, seven (7) stop logs were installed. Elevation of stop logs before installation was -3.73 and after installation was -0.22.

Center Bay (Bay 2)

Desired elevation at Bay 2 would be approximately -0.24. Ten (10) stop logs were installed to achieve this elevation. Elevation of stop log before installation was -5.29 and after installation is -0.23.

West Bay (Bay 3)

Desired elevation at Bay 3 would be approximately -0.23. Five (5) stop logs were installed to achieve this elevation. Elevation of stop log before installation was -2.74 and after installation was -0.21.

There are no navigation lights installed at this site.

For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 21.

Date: September 8, 2004

Participants: Roy Samperi, Pat Flanagan, and Shane Parfait

Weather Conditions: Clear, Light Wind (84° F)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: 21

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Two with Splits (will be replaced next time)		X
Master Locks	Good (oiled and cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned lock cylinder and sprayed with WD-40.

Stop Log Adjustment **Date/Time:** September 8, 2004; 11:00 a.m. West, 12:00 p.m. Center, 1:30 p.m. East)

- **Number of Logs Removed/Replaced:** 7 East, 10 Center, 5 West (22 total)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

Job # 2319

LA DNR

#21 TE-28 BRADY CANAL RESTORATION

REMARK	BS	HI	FS	ELEV	DESC.
TBM				3.72	Top of Bolt
	6.09	9.81			
BOTH SIDES ARE THE SAME			9.01	0.80	Top of Water
WEST			13.18	-3.37	Bottom of Canal
WEST			12.93	-3.12	Bottom of Lake
WEST PRE INSTALLATION			12.55	-2.74	Top of Dam
CENTER			15.23	-5.42	Bottom of Canal
CENTER			15.07	-5.26	Bottom of Lake
CENTER PRE INSTALLATION			15.10	-5.29	Top of Dam
EAST			14.58	-4.77	Bottom of Canal
EAST			14.19	-4.38	Bottom of Lake
EAST PRE INSTALLATION			13.54	-3.73	Top of Dam
WEST Post Installation			10.02	-0.21	Top of Dam
CENTER Post Installation			10.04	-0.23	Top of Dam
EAST Post Installation			10.03	-0.22	Top of Dam

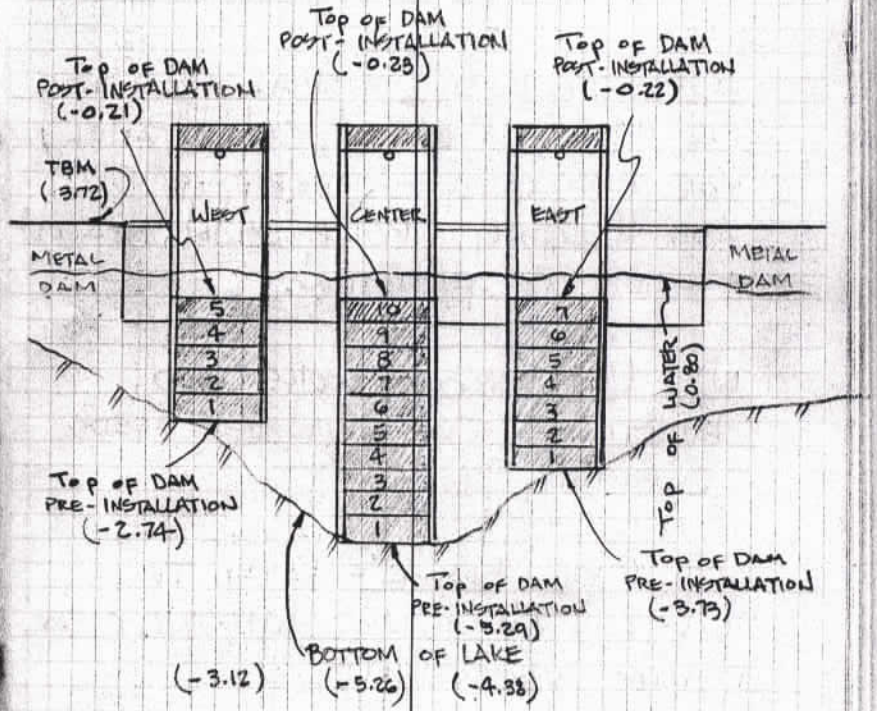
E. SAMPERI
P. FLANAGAN
S. PARFAIT

200

9/8/04 clear 84°

(45)

STRUCTURE #21



Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Post Installation

Pre Installation

Site No. 23
Fixed Crest Weir with two (2) Variable Crest Section

Post Installation

TBM EL. 3.51 NAVD 88

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Roy Samperi, Pat Flanagan, and Shane Parfait

DATES: September 9, 2004

CONDITIONS: Clear (80° F)

Permission to gain access to Site No. 23 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on September 3, 2004.

The weir structure appeared to be in good condition. Two of the stop logs have splits in them. There are two stop log bays at the site, which we shall refer to as the North Bay and South Bay. The TBM used for this site in the determination of elevations was the top of a hex bolt (elevation 3.51 feet NAVD88) on the top face of the control structure (see attached Benchmark Data Sheets). The water surface elevation at the site was determined to be 0.75 feet. Desired elevation at both bays would be approximately -0.50. Ten (10) stop logs were installed in each bay to achieve the desired elevation. The stop log elevation at the North Bay before stop log installation was -5.46 and after installation is -0.43. The stop log elevation at the South Bay before stop log installation was -5.47 and after installation is -0.36. There are no navigation lights installed at this site. For ground elevations please refer to the attached field notes. Also attached is the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust the variable crest weir structure at Site 23.

Date: September 9, 2004

Participants: Roy Samperi, Pat Flanagan, and Shane Parfait

Weather Conditions: Clear (84° F)

Persons Contacted for Access: Mr. Jeff Deblieux, P.L.S. of Burlington Resources

Site No.: 23

Structure Condition			
		Maintenance/Repair	
Item	Condition	Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Two split logs (will be replaced next time)		X
Master Locks	Good (oiled)	X	

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned and sprayed with WD-40.

Stop Log Adjustment **Date/Time:** September 9, 2004; _____

- **Number of Logs Removed/Replaced:** 10 from 2 bays (20 total)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

Job # 2319

LA. D.N.R.

TE-28 BRADY CANAL RESTORATION PROJECT

STRUCTURE # 23

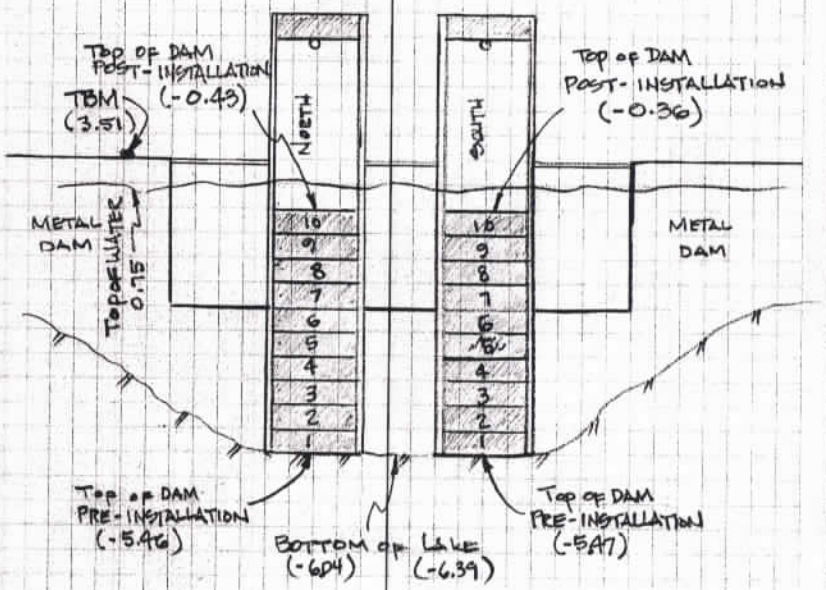
Remarks	BS	HI	FS	EL	Desc.
TBM				3.51	Top of Bolt
	5.37	8.88			
Both sides same			8.13	0.75	Top of Water
North			14.92	-6.04	Bottom of Lake
North			15.41	-6.53	Bottom of Marsh
North Pre-Installation			14.34	-5.46	Top of Dam
South			15.27	-6.39	Bottom of Lake
South			14.70	-5.82	Bottom of Marsh
South Pre-Installation			14.35	-5.47	Top of Dam
North Post-Installation			9.31	-0.43	Top of Dam
South Post-Installation			9.24	-0.36	Top of Dam

R. SAMPERI
P. FLANAGAN
S. PARFAIT

200

9/9/04 CLEAR 80°

STRUCTURE # 23



Structure No. 06
Inspection of Navigational Aids

Site No. 06
Inspection of Navigationl Aids

Structure No. 06

Northwest Green Beacon

Site No. 06
Inspection of Navigationl Aids

Northeast Red Beacon

Southwest Green Beacon

Site No. 06
Inspection of Navigationl Aids

Southeast Red Beacon

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Inspection of Navigational Aids

PARTICIPANTS: Roy Samperi, Patrick Flanagan, Shane Parfait

DATES: September 8, 2004

CONDITIONS: Clear (84° F)

The structure is located along Bayou Decade West of Jug Lake. Visual inspection was performed using black electrical tape to cover the photo cells to simulate darkness. The location of the navigational aids with respect to Structure No. 06 is shown in the attached field notes. The following are the findings at Structure No. 06:

- The southwest green beacon functioned adequately, but was in need of cleaning.
- The southeast red beacon failed to function. The clear protective shield is broken and the solar panel for charging the battery is broken and hanging in an inverted position.
- The northeast red beacon functioned adequately, but was in need of cleaning.
- The northwest green beacon failed to function and is missing the clear protective shield.

The field data, photographs, and field notes are attached.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Inspection of Navigational Aids

Date: September 8, 2004

Participants: Roy Samperi, Patrick Flanagan, Shane Parfait

Weather Conditions: Clear (84° F)

Persons Contacted for Access: N/A

Site No.: Structure No. 6

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Navigation Lights	SW Grean Beacon - Functioned Fine, Needs Cleaning	X	
	SE Red Beacon - Clear Protective Shield is Broken, Solar Panel is	X	
	Broken, Beacon Failed to Function		
	NE Red Beacon - Looks Good, Functions Fine, Needs Cleaning	X	
	NW Grean Beacon - Failed to Function, Missing Clear Protective	X	
	Shield		

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: SW Grean Beacon and NE Grean Beacon need cleaning. The SE Red Beacon is not working and needs replacement of protective shield and solar panel. The NW Green Beacon is not working and needs replacement of protective sheild.

Stop Log Adjustment **Date/Time:**

- **Number of Logs Removed/Replaced:**
- **Elevation:**
- **Mudline Levels:**
- **Water Levels:**

Flag Description:

JOB # 2319

LA DNR

6 TE-28 BRADY CANAL RESTORATION PROJECT

NAVIGATIONAL AIDS INSPECTION

STRUCTURE No. 6

SW GREEN BEACON - FUNCTIONED FINE, HOWEVER NEEDS CLEANING

SE RED BEACON - CLEAR PROTECTIVE SHIELD IS BROKEN, SOLAR PANEL FOR CHARGING BATTERY IS BROKEN, AND HANGING UPSIDE DOWN, BEACON FAILED TO FUNCTION.

NE RED BEACON - LOOKS GOOD, FUNCTIONED FINE, HOWEVER NEEDS CLEANING

NW GREEN BEACON - FAILED TO FUNCTION AND IS ALSO MISSING CLEAR PROTECTIVE SHIELD

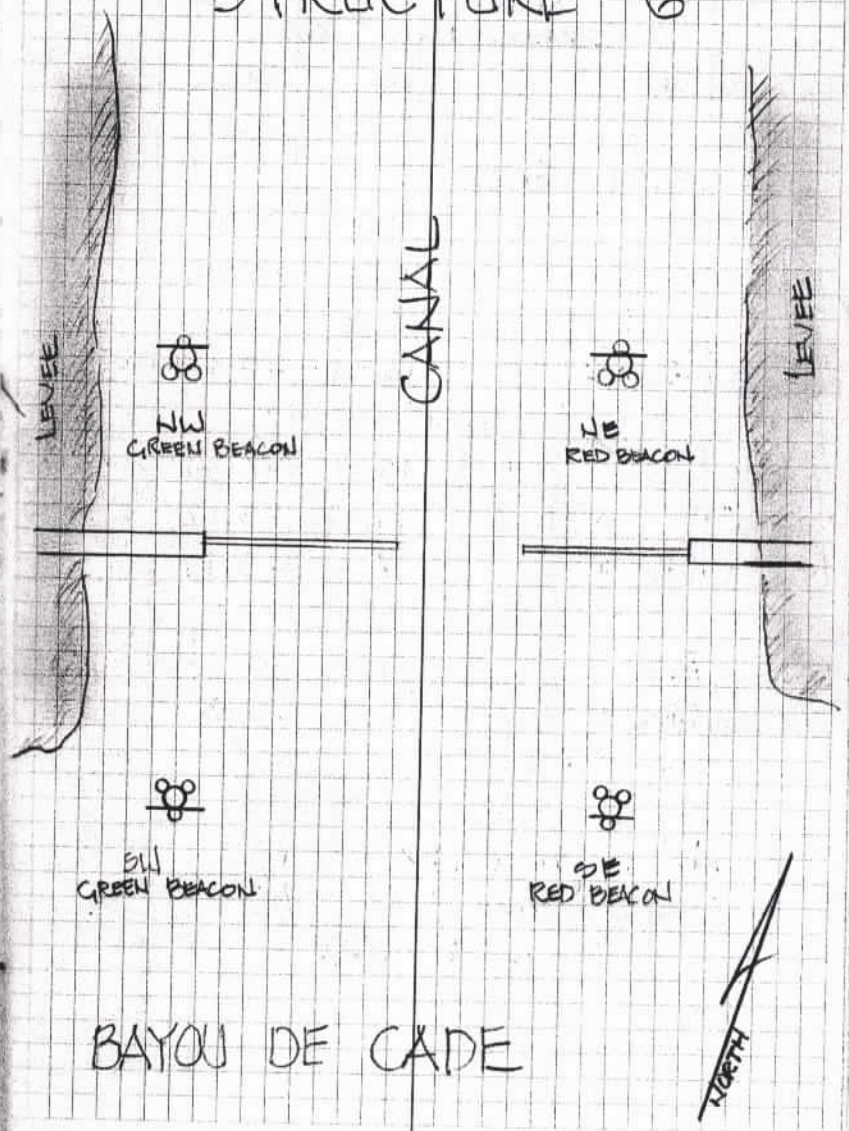
B. SAMPERI
P. FLANAGAN
S. PARFAIT

200

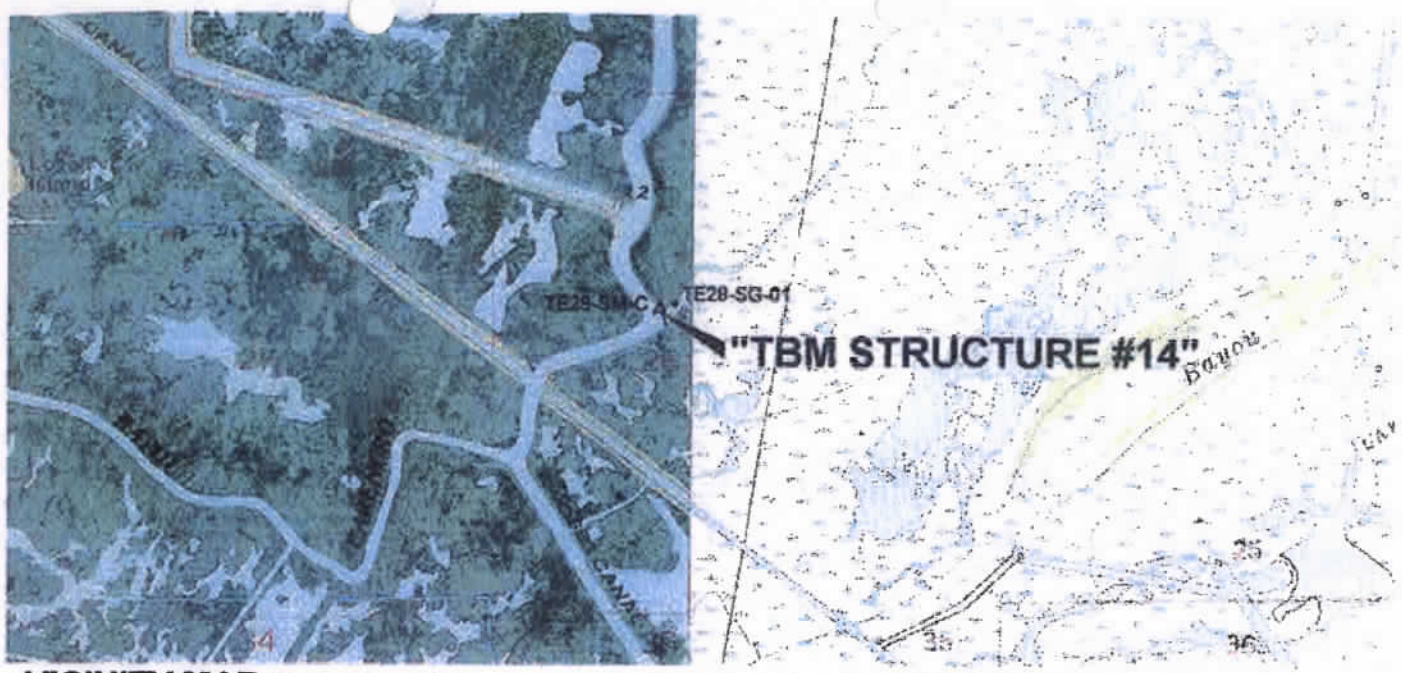
9/8/04 CLEAR 84°

(46)

STRUCTURE # 6



Benchmarks - Data Sheets



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

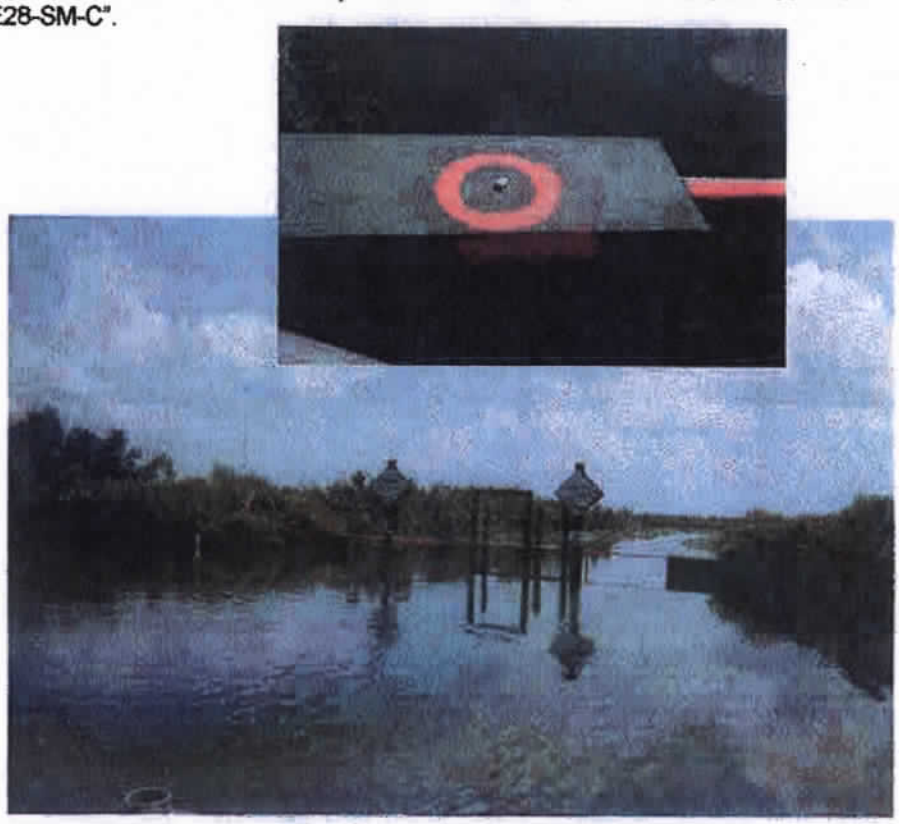
Date of Survey: June 4, 2002

TBM Structure 14

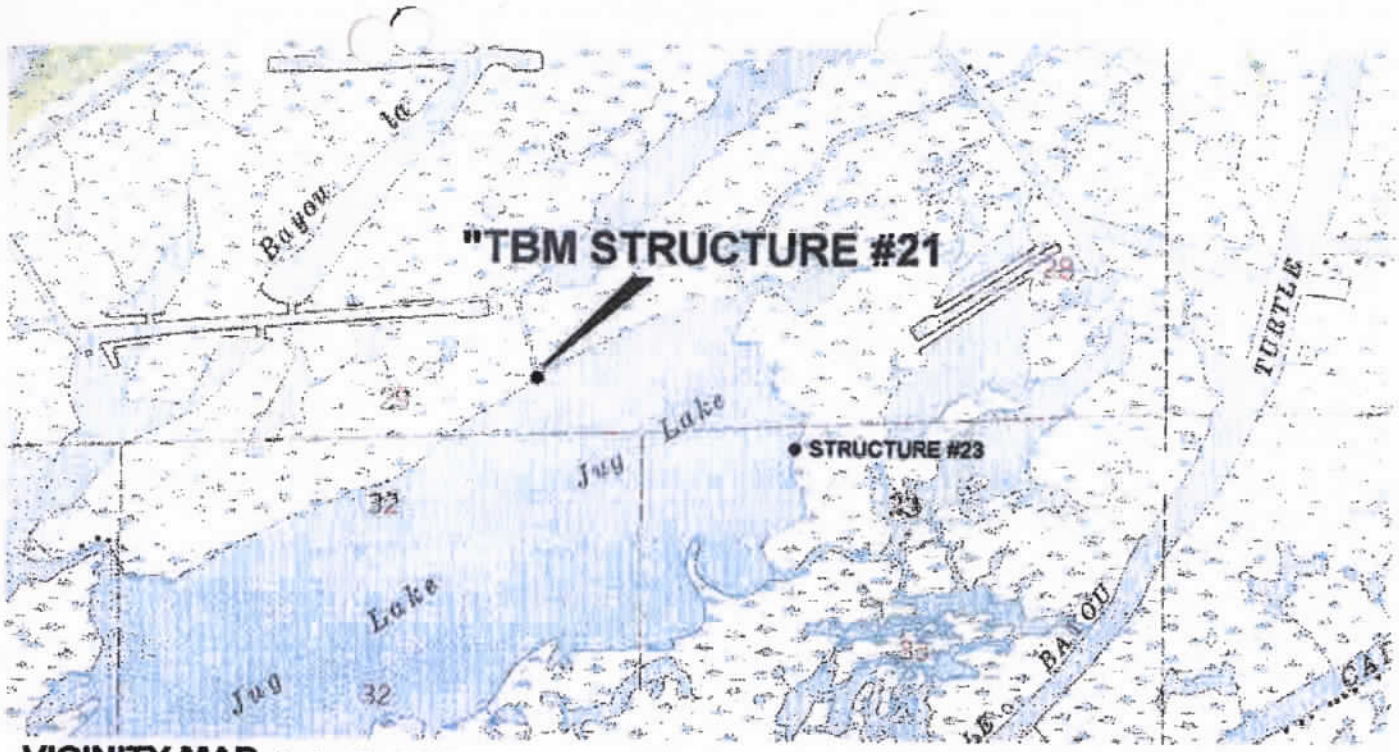
NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)



Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

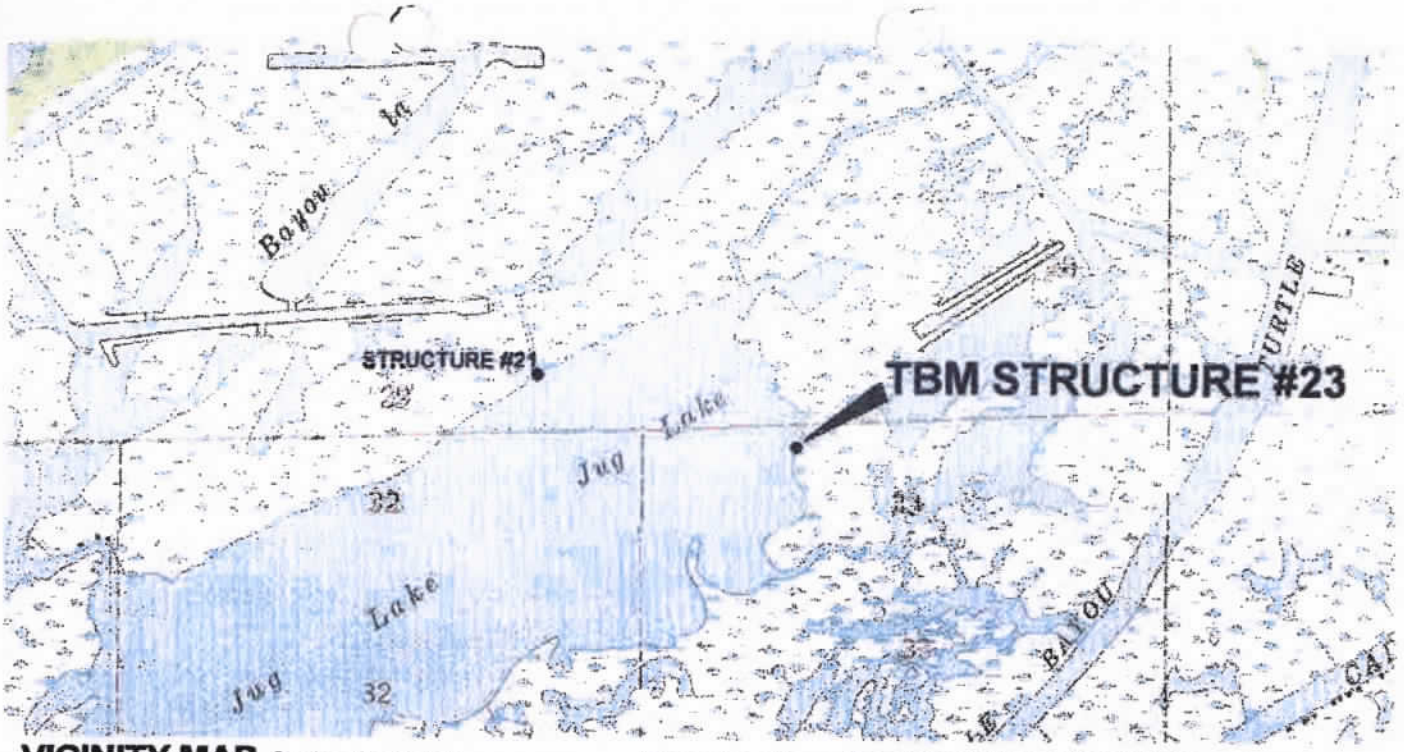
TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

Prepared By

TBS T. BAKER SMITH
PROFESSIONAL CONSULTANTS SINCE 1913

March 2005

LIST OF ATTACHMENTS

No.	Description	Page
1	Site No. 06	A-1
2	Site No. 14	A-2
3	Site No. 21	A-3
4	Site No. 23	A-4
5	Benchmarks – Data Sheets	A-5

ATTACHMENT NO. 1

Site No. 06

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Inspection of Navigational Aids at Site No. 06

PARTICIPANTS: Jody Ledet, Quentin Hebert, Joe Boquet

DATES: March 22, 2005

CONDITIONS: Cloudy (77°)

The structure is located along north bank of Bayou Decade West of Jug Lake. Visual inspection was performed using black electrical tape to cover the photo cells to simulate darkness. The location of the navigational aids with respect to Structure No. 06 is shown with the attached field notes. The following are the findings at Structure No. 06:

- The southwest green beacon failed to function. Photo cell was damaged.
- The southeast red beacon functioned but light failed. The clear protective shield was missing.
- The northeast red beacon failed to function.
- The northwest green beacon failed to function. The clear protective shield was missing.

The field data, photographs, and field notes are attached.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Inspection of Navigational Aids

Date: Tuesday, March 22, 2005

Participants: Jody Ledet, Quentin Hebert, Joe Boquet

Weather Conditions: Cloudy (77°)

Persons Contacted for Access: N/A

Site No.: Structure No. 6

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Navigation Lights	SW Green Beacon - Failed to Function, Photo Cell was Damaged	X	
	SE Red Beacon - Beacon Functions, Light Failed to Function, Clear	X	
	Protective Shield was Missing.		
	NE Red Beacon - Beacon Failed to Function.	X	
	NW Green Beacon - Beacon Failed to Function, Clear Protective	X	
	Shield was Missing.		

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: SW Green Beacon, NE Red Beacon & NW Green Beacon are not working. SE Red Beacon & NW Green Beacon need clear protective shields. SW Red Beacon Photo Cell Plastic Connection is Broken and Needs Repair. SE Red Beacon Functions but Light is Out needs Replacement.

Stop Log Adjustment **Date/Time:** N/A

- **Number of Logs Removed/Replaced:** N/A
- **Elevation:** N/A
- **Mudline Levels:** N/A
- **Water Levels:** N/A

Flag Description: N/A

JOB # 2005.1134

LA DEPARTMENT OF NATURAL RESOURCES

TE-28 BRADY CANAL RESTORATION PROJECT

NAVIGATIONAL AIDS INSPECTION

SITE NO. 6

SW GREEN BEACON - LIGHT SENSOR IS DAMAGED. BEACON FAILED TO FUNCTION. CLEAR PROTECTIVE SHIELD IS IN GOOD CONDITION.

SE RED BEACON - BEACON FUNCTIONS BUT LIGHT FAILED. CLEAR PROTECTIVE SHIELD IS MISSING.

NE RED BEACON - BEACON FAILED TO FUNCTION. CLEAR PROTECTIVE SHIELD IS IN GOOD CONDITION.

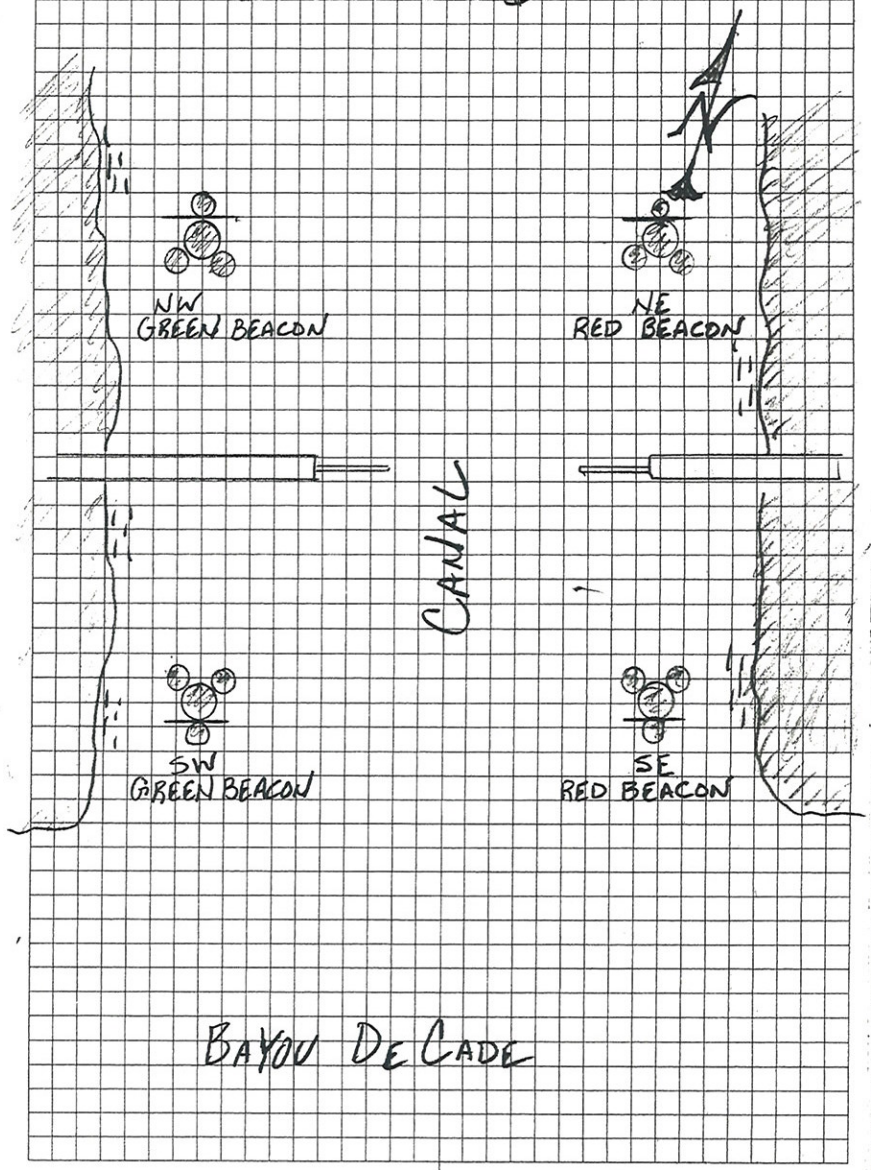
NW GREEN BEACON - BEACON FAILED TO FUNCTION. CLEAR PROTECTIVE SHIELD IS MISSING

JLEDET
GHEBERT
JBOQUET

3/22/05

CLOUDY, 77°

STRUCTURE #6



STRUCTURE NO. 06

General over view of Structure #6 – looking north (3/22/05)

General navigational light structure – southwest green beacon (3/22/05)

STRUCTURE NO. 06

General over view of structure #6, looking south – southwest & northwest green beacons (3/22/05)

General over view of structure #6, looking north – northeast & southeast green beacons (3/22/05)

ATTACHMENT NO. 2

Site No. 14

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Jody Ledet, Quentin Hebert, Joe Boquet

DATES: March 21, 2005

CONDITIONS: Clear (78°)

Permission to gain access to Site No. 14 was obtained verbally from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 17, 2005.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stop log bays at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.83 feet on both sides of the weir. The stop logs have splits, cracks & barnacles but are still in good condition. Stop logs were marked with orange flags.

We removed the planned 9 stop logs that were installed on September 7, 2004. Pre stop log removal elevation was -1.07 feet and Post stop log removal was -5.59 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site14.

Date: Monday, March 21, 2005

Participants: Jody Ledet, Quentin Hebert, Joe Boquet

Weather Conditions: Clear (78°)

Persons Contacted for Access: Mr.Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 14

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** March 21, 2005; 1:00 p.m.

- **Number of Logs Removed/Replaced:** Removed 9 Logs
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: Flagged removed stop logs with orange flags.

Job # 2005.1134

LA DEPARTMENT OF NATURAL RESOURCES

TE-28 BRADY CANAL RESTORATION PROJECT

REMOVAL OF STOP LOGS

SITE NO. 14

LOCATION	+	H.I.	−	ELEV.	REMARKS
	5.30	8.87		3.57	TOP OF HEX BOLT ON NORTH
TOP OF WATER			8.04	0.83	WATER HEIGTH ON BOTH SIDES
BOTTOM			15.91	-7.04	BOTTOM ON CANAL SIDE
BOTTOM			14.81	-5.94	BOTTOM ON LAKE SIDE
PRE-LOG			9.94	-1.07	PRE-LOG REMOVAL
POST-LOG			14.46	-5.59	POST-LOG REMOVAL
CHECK BM			5.30	3.57	CHECK TO BM

JLEDET
QHEBERT
JBORDET

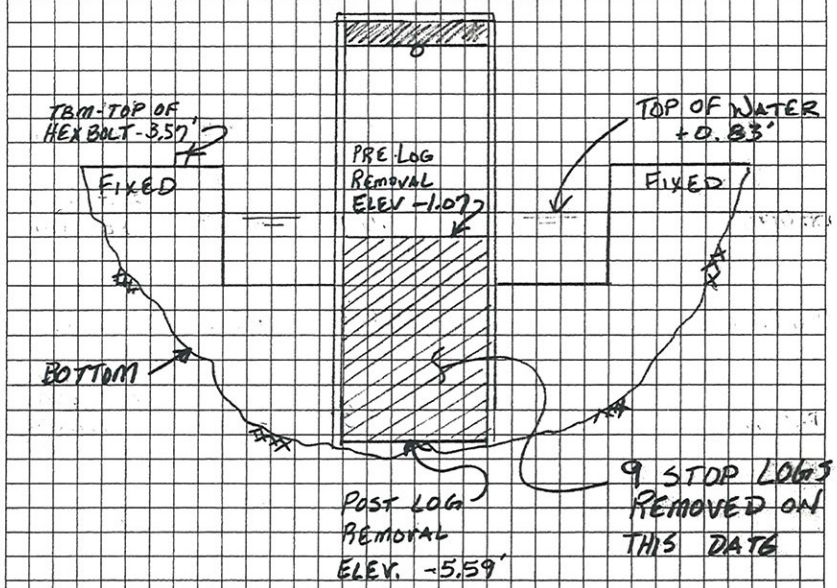
3/21/05

CLEAR, 78°

STRUCTURE # 14

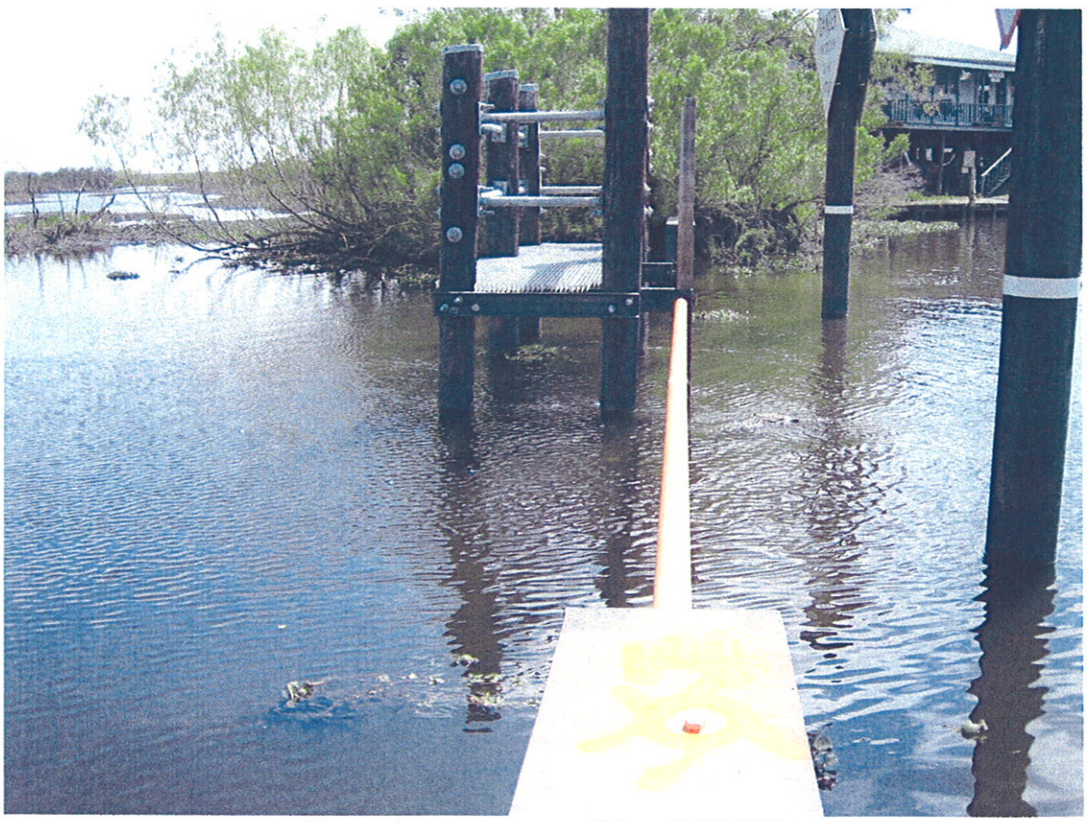
TBM = 3.57' SUPPLIED BY LADNR

NOTE: REMOVED 9 STOP LOGS IN GOOD CONDITION. LOCKS WERE IN GOOD CONDITION. FLAGGED LOGS WITH ORANGE FLAGGING.



STRUCTURE NO. 14

General structure condition (3/21/05)



General structure condition (3/21/05)

STRUCTURE NO. 14

General structure condition (3/21/05)

General locking mechanism (3/21/05)

ATTACHMENT NO. 3

Site No. 21

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Jody Ledet, Quentin Hebert, Joe Boquet

DATES: March 22, 2005

CONDITIONS: Cloudy (76°)

Permission to gain access to Site No. 21 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on March 18, 2005.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.38 feet on both sides of the weir. Stop logs were marked with green flags.

East Bay
We removed the planned 7 stop logs that were installed on September 8, 2004. Pre stop log removal elevation was -0.20 feet and Post stop log removal was -3.73 feet.

Center Bay
We removed the planned 10 stop logs that were installed on September 8, 2004. Pre stop log removal elevation was -0.22 feet and Post stop log removal was -5.29 feet.

West Bay
We removed 2 of the planned 5 stop logs that were installed on September 8, 2004. Pre stop log removal elevation was -0.19 feet and Post stop log removal was -1.25 feet. Due to silt building, only 2 stop logs were removed as per LADNR request.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 21.

Date: Tuesday, March 22, 2005

Participants: Jody Ledet, Quentin Hebert, Joe Boquet

Weather Conditions: Cloudy (76°)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 21

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Eye lost on one log (logs in good condition)		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40. Dropped pin for master lock on east bay and was unable to recover. Used rope to tie channel beam and contacted LADNR.

Stop Log Adjustment **Date/Time:** March 22, 2005; East 9:00 a.m., Center 9:45 a.m., West 11:15 a.m.

- **Number of Logs Removed/Replaced:** Removed 19 Logs (7 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: Flagged removed stop logs with green flags.

JOB # 2005-1134

LA DEPARTMENT OF NATURAL RESOURCES

TE-28 BRADY CANAL RESTORATION PROJECT

REMOVAL OF STOP LOGS

SITE NO. 21

LOCATION	+	H.I.	–	ELEV	REMARKS
	5.94	9.66		3.72	TOP OF HEX BOLT
TOP OF WATER			8.28	1.38	WATER HEIGTH ON BOTH SIDES
WEST BOTTOM			11.64	-1.98	BOTTOM OF CANAL SIDE
BOTTOM			10.55	-0.89	BOTTOM OF LAKE SIDE
PRE LOG			9.85	-0.19	PRE-LOG REMOVAL
POST LOG			10.91	-1.25	POST-LOG REMOVAL
CENTER BOTTOM			14.89	-5.23	BOTTOM OF CANAL SIDE
BOTTOM			11.82	-2.16	BOTTOM OF LAKE SIDE
PRE-LOG			9.88	-0.22	PRE-LOG REMOVAL
POST-LOG			14.95	-5.29	POST-LOG REMOVAL
EAST BOTTOM			12.58	-2.92	BOTTOM OF CANAL SIDE
BOTTOM			11.58	-1.92	BOTTOM OF LAKE SIDE
PRE-LOG			9.86	-0.20	PRE-LOG REMOVAL
POST-LOG			13.39	-3.73	POST LOG REMOVAL
CHECK			5.94	3.72	BM CHECK

JLEDET
QHEBERT
JBOQUET

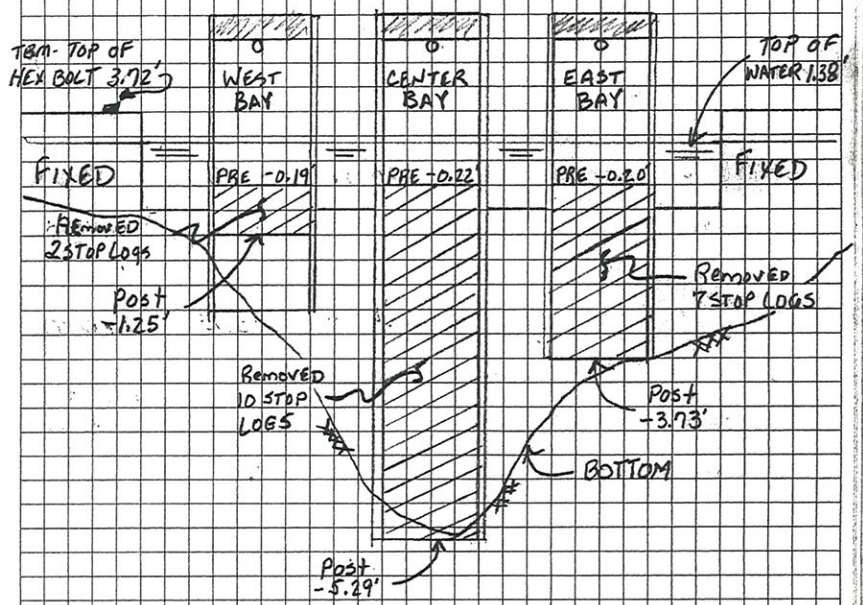
3/22/05 cloudy, 76°

21

STRUCTURE # 21

TBM = 3.72' SUPPLIED BY LADNR

NOTE: SILT BUILDING UP @ WEST AND CENTER BAYS. REMOVED 2 STOP LOGS @ WEST BAY DUE TO SILT.
REMOVED 10 LOGS @ CENTER BAY IN GOOD CONDITION EXCEPT EYE LOST ON BOTTOM LOG.
REMOVED 7 LOGS @ EAST BAY IN GOOD CONDITION. LOST PAD LOCK PIN IN WATER.
USED ROPE TO LOCK CHANNEL & GAVE LOCK TO BRYAN BABIN (DNR).
PAD LOCKS IN GOOD CONDITION & PLACED GREEN FLAGS ON ALL STOP LOGS.



NOTE: AS REQUESTED BY MR BABIN, WE ONLY REMOVED 2 STOP LOGS ON WEST DUE TO SILT

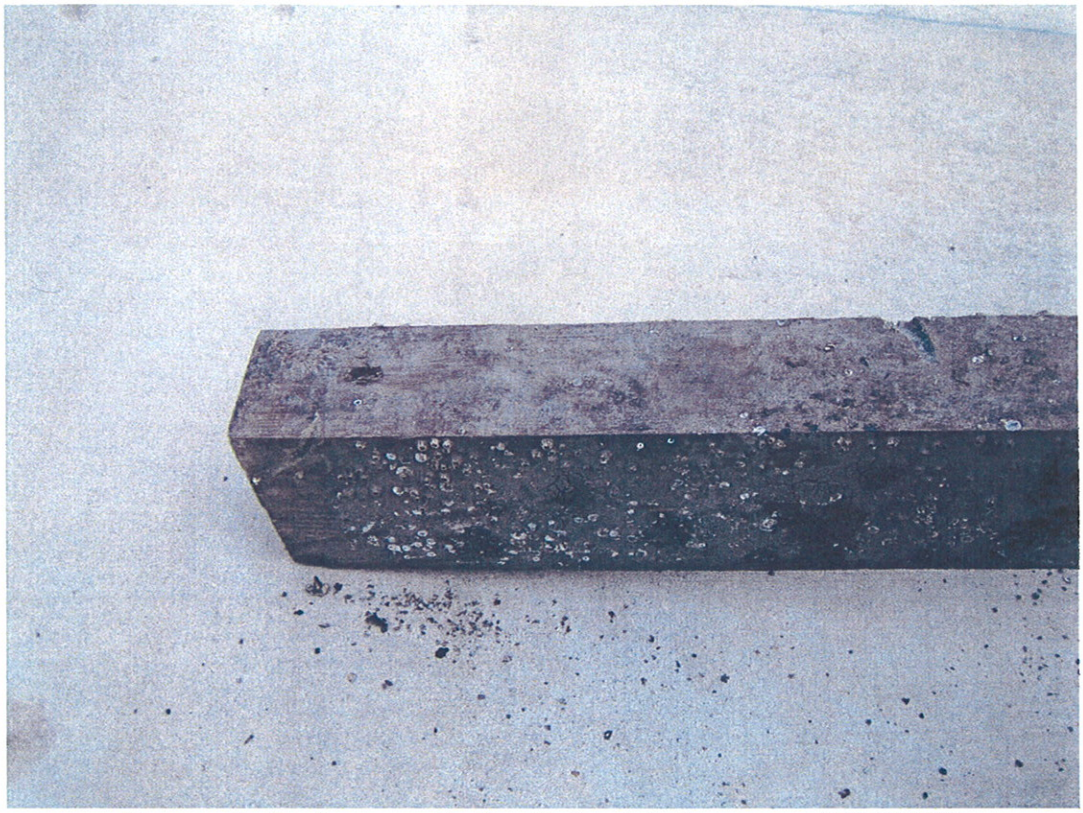
3381

STRUCTURE NO. 21

General structure condition (3/22/05)

General structure condition (3/22/05)

STRUCTURE NO. 21



Damaged stop log – eye bolt pulled out during removal (3/22/05)

Pin lost during removal (3/22/05)

ATTACHMENT NO. 4

Site No. 23

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Jody Ledet, Quentin Hebert, Joe Boquet

DATES: March 21, 2005

CONDITIONS: Clear (77°)

Permission to gain access to Site No. 23 was obtained from Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources on March 18, 2005.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.79 feet on both sides of the weir. Stop logs were marked with pink flags on North Bay and pink & yellow flags on South Bay.

North Bay

We removed the planned 10 stop logs that were installed on September 9, 2004. Pre stop log removal elevation was -0.41 feet and Post stop log removal was -5.46 feet.

South Bay

We removed 10 (2 logs were lost during removal) of the planned 10 stop logs that were installed on September 8, 2004. Used chain hoist to remove first two stop logs, damaged first stop log in process and will be replaced. Pre stop log removal elevation was -0.43 feet and Post stop log removal was -5.46 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Monday, March 21, 2005

Participants: Jody Ledet, Quentin Hebert, Joe Boquet

Weather Conditions: Cloudy (77°)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 23

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Damaged one log with chain hoist & lost two logs during removal		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** March 21, 2005; North 9:00 a.m. & South 10:30 a.m.

- Number of Logs Removed/Replaced: Removed 20 Logs (10 Logs North Bay, 10 Logs Center Bay (lost 2 logs))
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: Flagged North Bay logs with Pink Flags and South Bay logs with Pink & Yellow flags.

Job # 2005. 1134

LA DEPARTMENT OF NATURAL RESOURCES

TE-28 BRADY CANAL RESTORATION PROJECT

Removal of STOP LOGS

Site No. 23

LOCATION	+	H.I.	−	ELEV.	REMARKS
	5.42	8.93		3.51	TOP OF HEX BOLT ON North
TOP OF WATER			8.14	0.79	WATER LEVEL
North Bay			15.40	-6.47	BOTTOM ON MARSH SIDE
" "			14.83	-5.90	BOTTOM ON LAKE SIDE
" "			9.34	-0.41	PRE STOP Log Removal
North Bay			14.39	-5.46	POST STOP Log Removal
South Bay			15.08	-6.15	Bottom on MARSH SIDE
" "			14.71	-5.78	Bottom on LAKE SIDE
" "			9.36	-0.43	PRE STOP Log Removal
South Bay			14.39	-5.46	POST STOP Log Removal
CHECK			5.42	3.51	Check TO TBM

JLEDET
Q HEBERT
J BOQUET

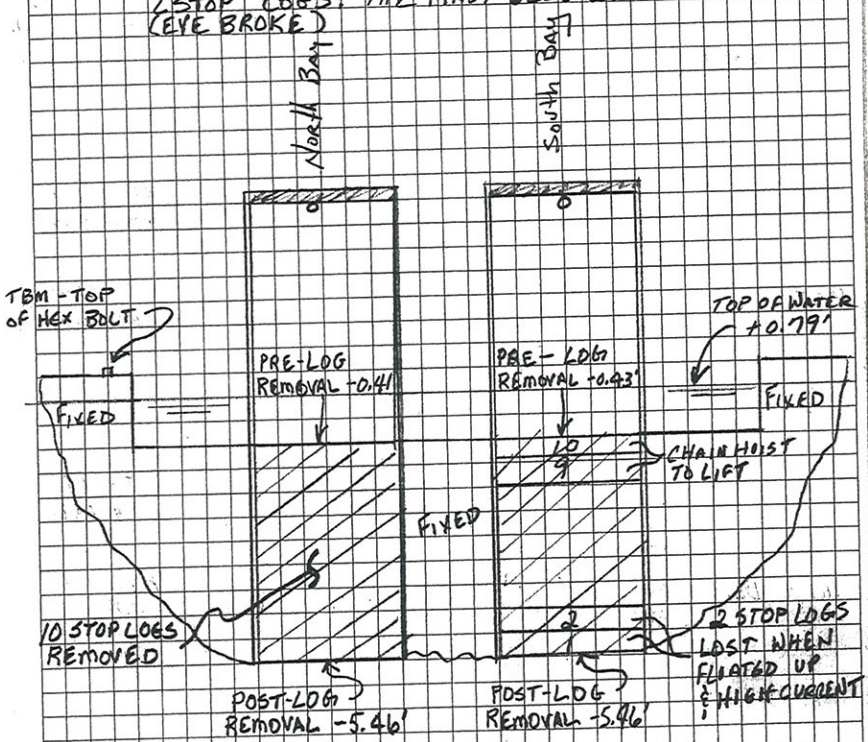
3/21/05

CLEAR, TP

STRUCTURE #23

T.B.M. = 3.51' Supplied By LA DNR

NOTE: NORTH BAY 10 STOP LOGS WERE REMOVED & IN GOOD CONDITION. PAD LOCKS IN GOOD CONDITION ON BOTH STRUCTURES.
SOUTH BAY 8 STOP LOGS WERE REMOVED & BOTTOM 2 STOP LOGS WERE LOST IN HIGH CURRENT. A CHAIN HOIST WAS USED TO LIFT THE FIRST 2 STOP LOGS. THE FIRST LOG WAS DAMAGED (EYE BROKE)



NOTE: FLAGGED NORTH BAY STOP LOGS WITH PINK FLAGS & SOUTH BAY STOP LOGS WITH PINK AND YELLOW FLAGS.

STRUCTURE NO. 23

General structure condition (3/21/05)

General structure condition (3/21/05)

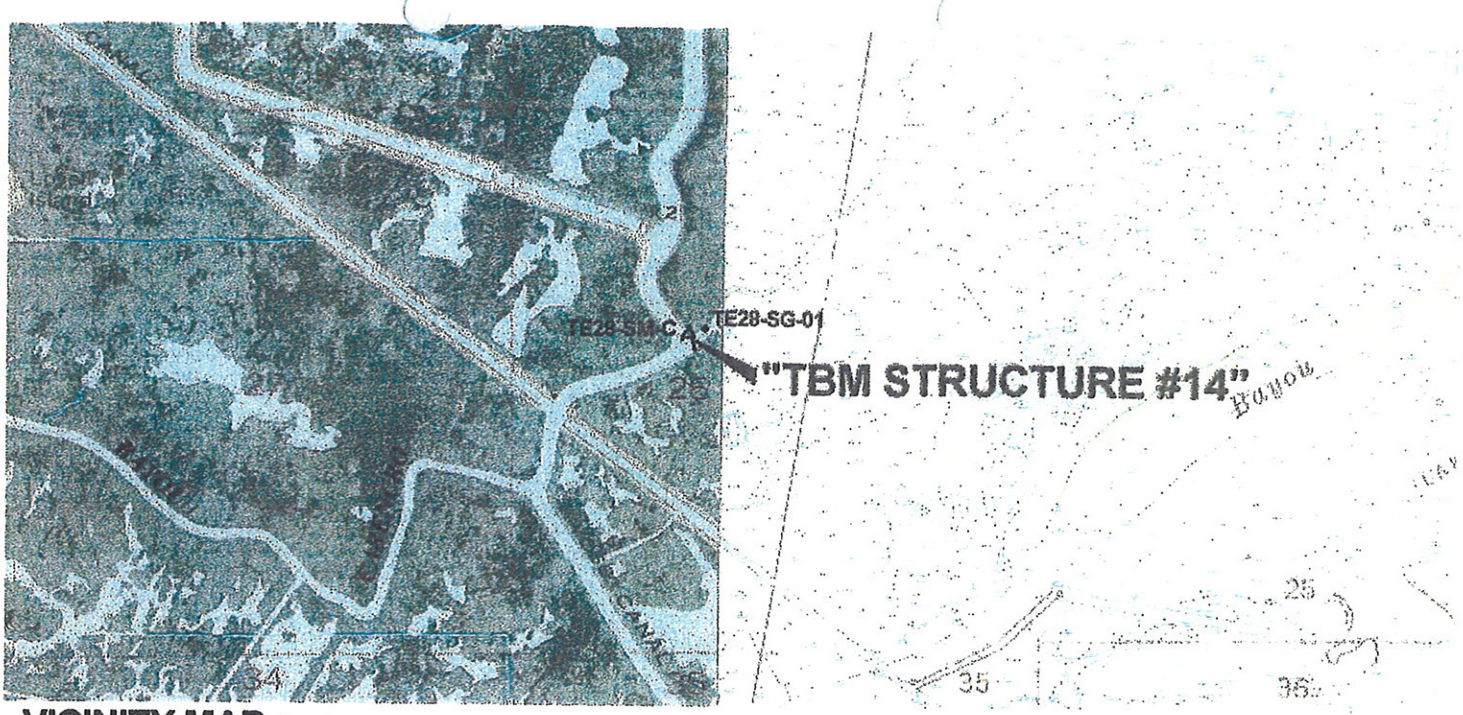
STRUCTURE NO. 23

Damaged stop log – eye bolt pulled out during removal (3/21/05)

General view of locking mechanism (3/21/05)

ATTACHMENT NO. 5

Benchmarks – Data Sheets



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

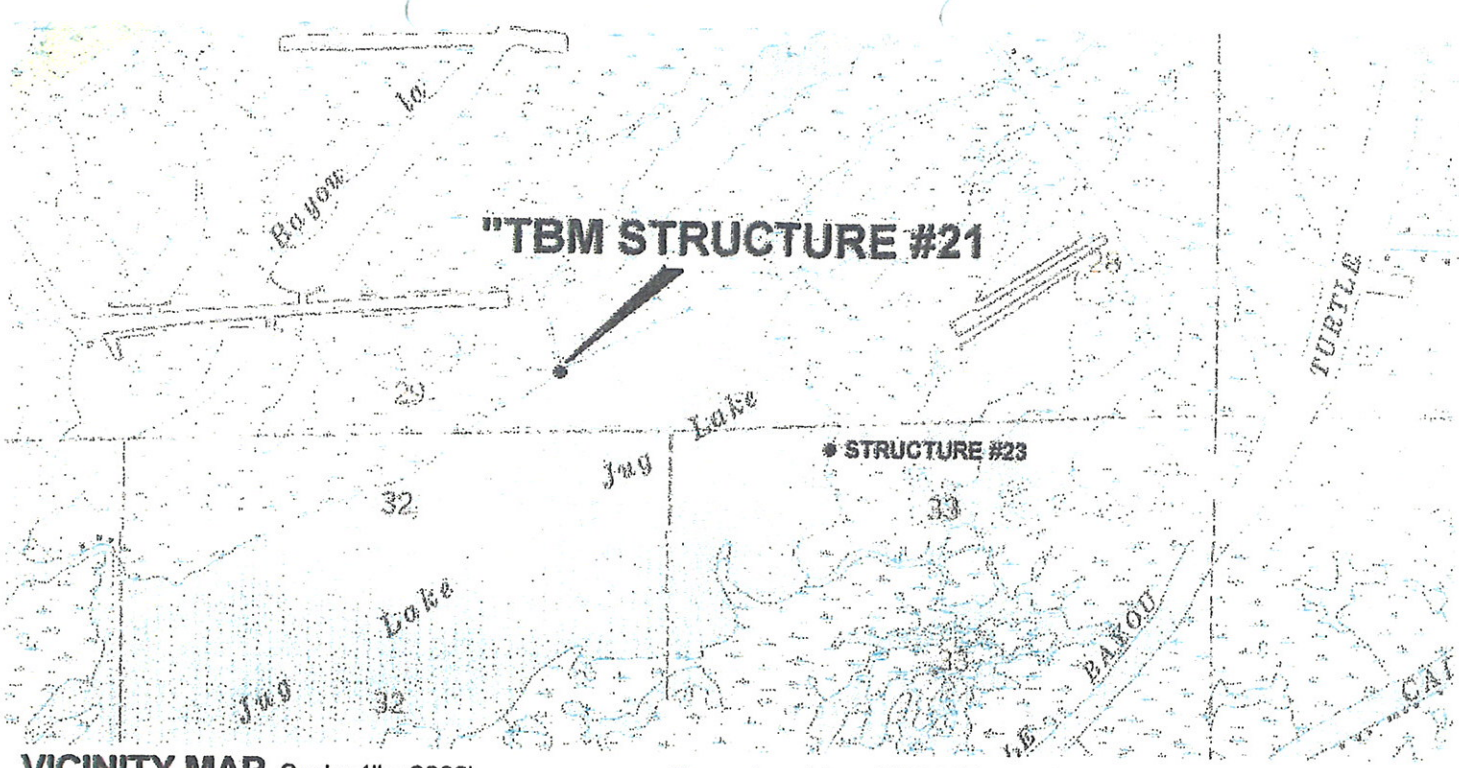
TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

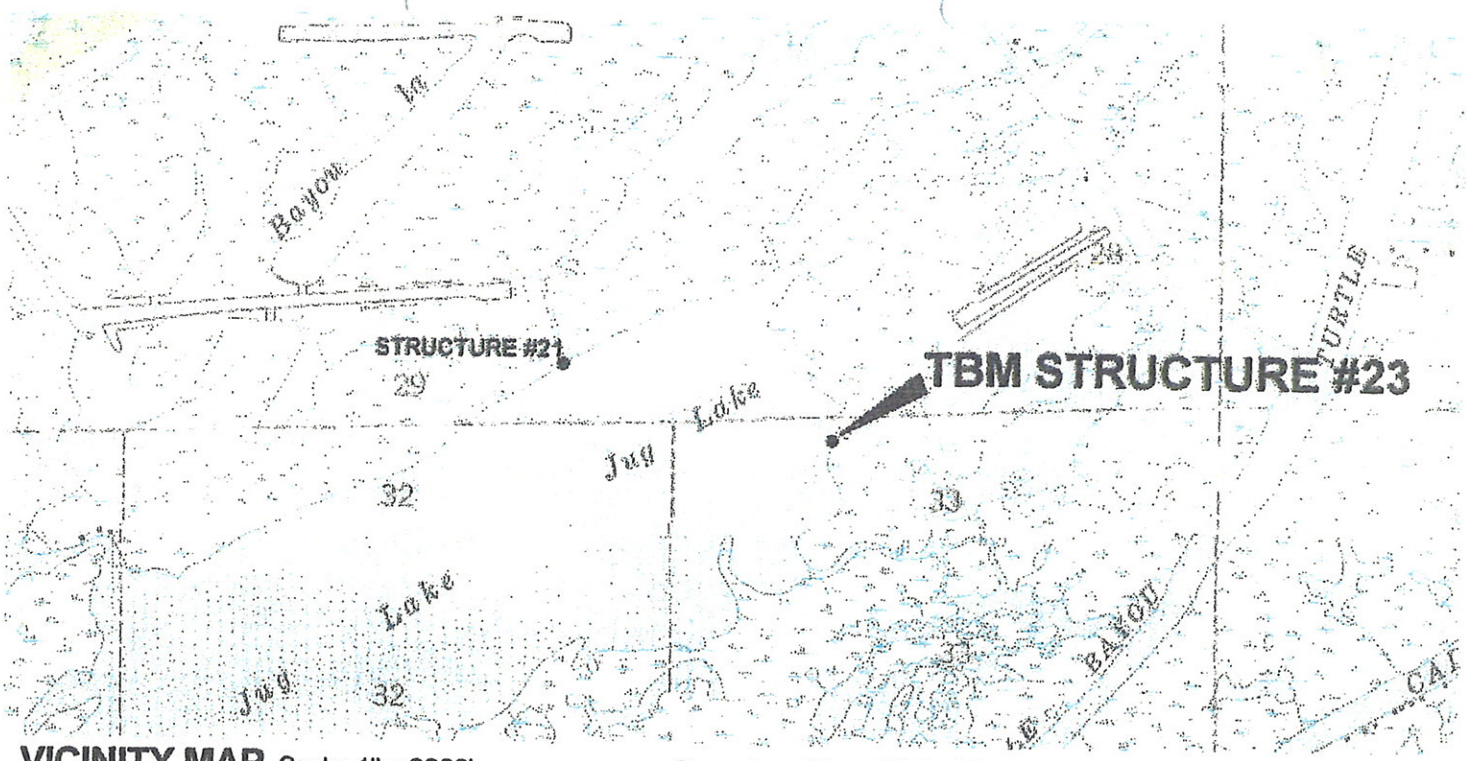
TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

October 2005

Prepared By

TBS T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

Houma, LA Lafayette, LA Baton Rouge, LA Thibodaux, LA Houston, TX
1 (866) 357-1050 www.tbsmith.com

LIST OF ATTACHMENTS

No.	Description	Page
1	Site No. 06	A-1
2	Site No. 14	A-2
3	Site No. 21	A-3
4	Site No. 23	A-4
5	Benchmarks – Data Sheets	A-5

ATTACHMENT NO. 1

Site No. 06

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Inspection of Navigational Aids at Site No. 06

PARTICIPANTS: Jody Ledet, Ronnie Duke, Jr., Joe Boquet, Anthony Naquin

DATES: September 21, 2005

CONDITIONS: Sunny (92°)

The structure is located along north bank of Bayou Decade West of Jug Lake. Visual inspection was performed using black electrical tape to cover the photo cells to simulate darkness. The location of the navigational aids with respect to Structure No. 06 is shown with the attached field notes. The following are the findings at Structure No. 06:

- The southwest green beacon failed to function. The clear protective shield was dirty.
- The southeast red beacon failed to function. The clear protective shield was missing.
- The northeast red beacon failed to function. The clear protective shield was dirty.
- The northwest green beacon failed to function. The clear protective shield was missing.

The field data, photographs, and field notes are attached.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Inspection of Navigational Aids

Date: Wednesday, September 21, 2005

Participants: Jody Ledet, Ronnie Duke, Jr., Joe Boquet, Anthony Naquin

Weather Conditions: Sunny (92°)

Persons Contacted for Access: N/A

Site No.: Structure No. 6

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Navigation Lights	SW Green Beacon - Failed to Function, Dirty Protective Shield	X	
	SE Red Beacon - Failed to Function, Clear Protective Shield was	X	
	Missing.		
	NE Red Beacon - Failed to Function, Dirty Protective Shield	X	
	NW Green Beacon - Failed to Function, Clear Protective Shield was	X	
	Missing.		

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: SW Green Beacon, SE Red Beacon, NE Red Beacon & NW Green Beacon are not working. SE Red Beacon & NW Green Beacon need clear protective shields.

Stop Log Adjustment **Date/Time:** N/A

- **Number of Logs Removed/Replaced:** N/A
- **Elevation:** N/A
- **Mudline Levels:** N/A
- **Water Levels:** N/A

Flag Description: N/A

Job # 2005. 1632

LADNR

TE-28 BRADY CANAL RESTORATION

NAVIGATIONAL AIDS INSPECTION
SITE No. 6

SW GREEN BEACON - BEACON FAILED TO FUNCTION. CLEAR PROTECTIVE SHIELD IS GOOD BUT DIRTY. SENSOR IN GOOD CONDITION.

SE RED BEACON - BEACON FAILED TO FUNCTION. CLEAR PROTECTIVE SHIELD IS MISSING. SENSOR IN GOOD CONDITION.

NE RED BEACON - BEACON FAILED TO FUNCTION. CLEAR PROTECTIVE SHIELD IS GOOD BUT DIRTY. SENSOR IN GOOD CONDITION.

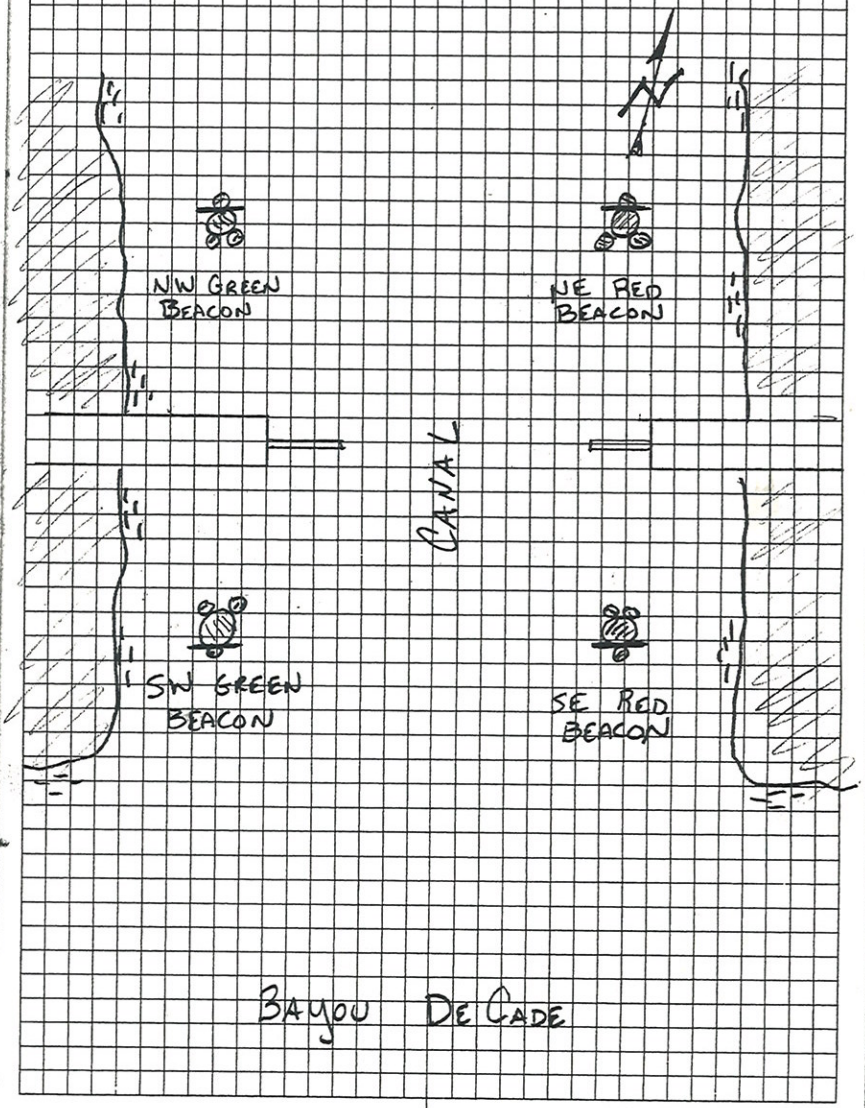
NW GREEN BEACON - BEACON FAILED TO FUNCTION. CLEAR PROTECTIVE SHIELD IS MISSING. SENSOR IN GOOD CONDITION

JLEDET
JBOQUET
R DUKE

9/21/05

Sunny, 92°
WINDY

STRUCTURE # 6



No. 2829

STRUCTURE NO. 06

General over view of Structure #6 – looking north (9/21/05)

General navigational light structure, looking north
– southeast & northeast red beacons (9/21/05)

STRUCTURE NO. 06

General over view of structure #6, looking north –
southwest & northwest green beacons (9/21/05)

General over view of structure #6, looking south –
northeast red beacon (9/21/05)

ATTACHMENT NO. 2

Site No. 14

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Jody Ledet, Ronnie Duke, Jr., Joe Boquet, Anthony Naquin

DATES: September 21, 2005

CONDITIONS: Sunny (92°)

Permission to gain access to Site No. 14 was obtained verbally from Mr. Jeff W Deblieux, P.L.S. of Burlington on September 20, 2005.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be +1.18 (NAVD88) feet on both sides of the weir.

We installed the planned 9 stop logs that were removed on March 21, 2005. Pre stop log installation elevation was -5.57 (NAVD88) feet and Post stop log installation was -1.00 feet (NAVD88).

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site14.

Date: Wednesday, September 21, 2005

Participants: Jody Ledet, Ronnie Duke, Jr., Joe Boquet, Anthony Naquin

Weather Conditions: Sunny (92°)

Persons Contacted for Access: Mr.Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** September 21, 2005; 1:00 p.m.

- **Number of Logs Removed/Replaced:** Installed 9 Logs
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

Job # 2005.1632

LADNR

TE -28 BRADY CANAL RESTORATION

	BS	HI	FS	ELEV	DESC.
TBM	3.56	7.13		3.57	TOP OF BOLT
H_2O			5.95	1.18	TOP OF WATER
PRE-Installation			12.70	-5.57	TOP OF DAM-PRE
Bottom-CANAL			14.65	-7.52	BOTTOM OF CANAL
Bottom-MARSH			13.20	-6.07	BOTTOM OF MARSH
Post-Installation			8.13	-1.00	TOP OF DAM-POST
CHECK TBM			3.56	3.57	TBM CHECK

J LEDET
J BOQUET
R DUKE

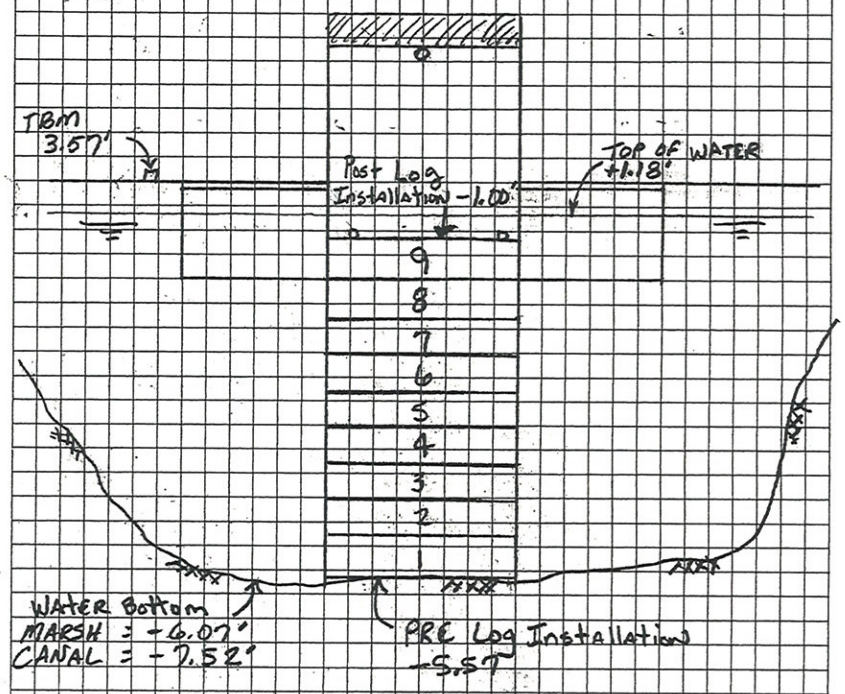
9/21/05

SUNNY, 92°

STRUCTURE #14

NOTES: Installed 9 STOP Logs. PAD Locks In Good Condition.

TBM - TOP OF BOLT = 3.57' SUPPLIED BY LADNR



STRUCTURE NO. 14

General structure condition (9/21/05)

General structure condition (9/21/05)

STRUCTURE NO. 14

General structure condition (9/21/05)

General locking mechanism (9/21/05)

ATTACHMENT NO. 3

Site No. 21

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Jody Ledet, Ronnie Duke, Jr., Joe Boquet & Anthony Naquin

DATES: September 21, 2005

CONDITIONS: Sunny (92°)

Permission to gain access to Site No. 21 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 20, 2005.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.36(NAVD88) feet on both sides of the weir.

East Bay
We installed the planned 7 stop logs that were removed on March 22, 2005. Pre stop log installation elevation was -3.73 (NAVD88) feet and Post stop log installation was -0.22 (NAVD88) feet.

Center Bay
We installed the planned 10 stop logs that were removed on March 22, 2005. Pre stop log installation elevation was -5.29 (NAVD88) feet and Post stop log installation was -0.10 (NAVD88) feet.

West Bay
We installed the planned 2 stop logs that were removed on March 22, 2005. Pre stop log installation elevation was –1.04 (NAVD88) feet and Post stop log installation was -0.25 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 21.

Date: Wednesday, September 21, 2005

Participants: Jody Ledet, Ronnie Duke, Jr., Joe Boquet, Anthony Naquin

Weather Conditions: Sunny (92°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 21

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned), Replaced lock on East Dam	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40. Replaced damaged lock on East Dam

Stop Log Adjustment **Date/Time:** September 21, 2005; West 10:30 a.m., Center 11:00 a.m., East 11:30 a.m.

- Number of Logs Installed: Installed 19 Logs (7 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A

Job # 2005.1632

LA DNR

TE-28 Brady Canal Restoration

	BS	HI	FS	ELEV	DESC.
TBM	5.22	8.94'		3.72'	TOP OF BOLT
H_2O			7.58	1.36'	TOP OF WATER
WEST PRE-Installation			9.98	-1.04	TOP OF DAM- PRE
Bottom-CANAL			13.21	-4.27	BOTTOM OF CANAL
Bottom-LAKE			11.62	-2.68	BOTTOM OF LAKE
WEST Post-Installation			9.19	-0.25	TOP OF DAM -POST
CENTER-PRE-Installation			14.23	-5.29	TOP OF DAM - PRE
Bottom-CANAL			14.54	-5.60	BOTTOM OF CANAL
Bottom-LAKE			14.48	-5.54	BOTTOM OF CANAL
CENTER Post-Installation			9.04	-0.10	TOP OF DAM -POST
EAST PRE-Installation			12.67	-3.73	TOP OF DAM - PRE
Bottom - CANAL			13.78	-4.84	BOTTOM OF CANAL
Bottom - LAKE			13.23	-4.29	BOTTOM OF CANAL
EAST Post-Installation			9.16	-0.22	TOP OF DAM - POST
CHECK TBM			5.22	3.72	TBM CHECK

J LEDET
J BOQUET
R DUKE

9/21/05

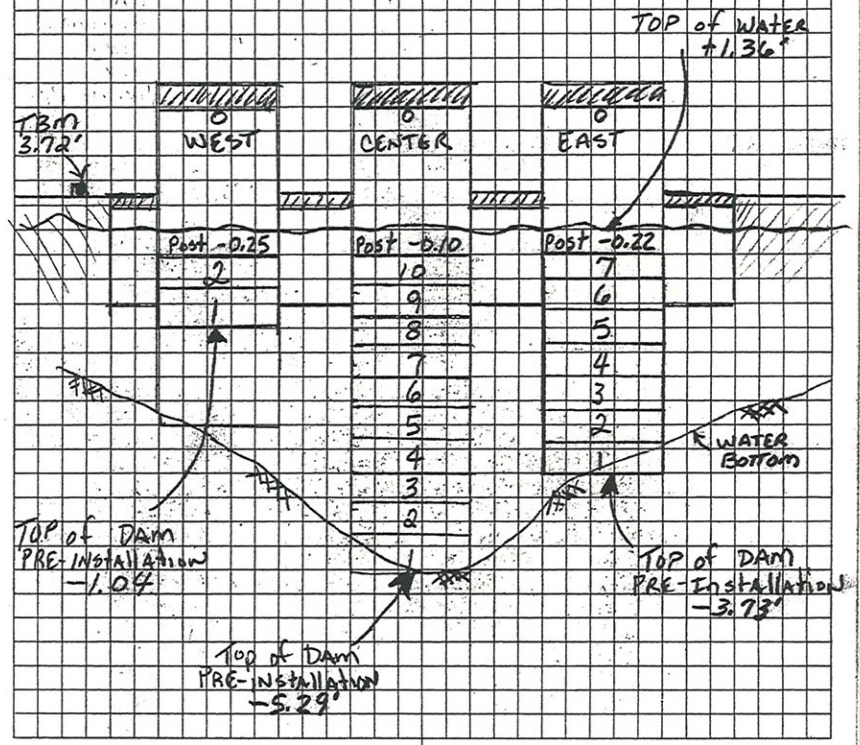
Sunny, 92°

STRUCTURE #21

TBM - Top of Bolt = 3.72' supplied by LADNR

NOTE: Pad Locks on West & Center Bays in Good Condition. Changed left padlock on East Bay.

West - installed 2 Stop Logs
Center - installed 10 Stop Logs
East - installed 7 Stop Logs



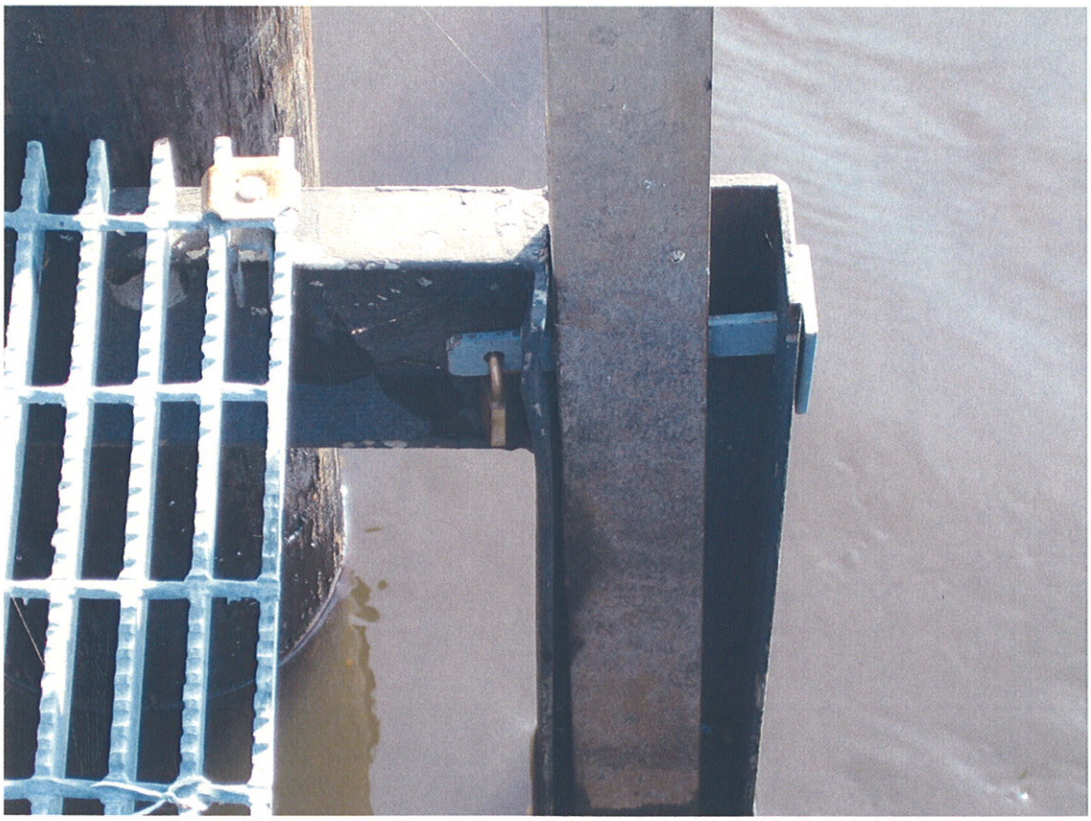
STRUCTURE NO. 21

General structure condition (9/21/05)

General structure condition (9/21/05)

STRUCTURE NO. 21

General Structure Condition-West Dam (9/21/05)



General Structure Condition-New Pad Lock Added (9/21/05)

ATTACHMENT NO. 4

Site No. 23

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Jody Ledet & Ronnie Duke

DATES: October 5, 2005

CONDITIONS: Sunny (88°)

Permission to gain access to Site No. 23 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on September 20, 2005.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.69 (NAVD88) feet on both sides of the weir.

North Bay
We installed the planned 10 stop logs that were removed on March 21, 2005. Pre stop log installation elevation was -5.53 (NAVD88) feet and Post stop log installation was –0.43 (NAVD88) feet.

South Bay
We installed the planned 10 stop logs that were removed on March 21, 2005. Pre stop log installation elevation was –5.49 (NAVD88) feet and Post stop log installation was –0.44 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Wednesday, October 05, 2005

Participants: Jody Ledet & Ronnie Duke

Weather Conditions: Sunny (88°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 23

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	Noticed Erosion at Ends of Structure
Vegetation	Vegitation on Levee is Dead/Stressed Following Hurricanes Katrina and Rita

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** October 5, 2005; North 11:00 a.m. & South 11:45 a.m.

- Number of Logs Removed/Replaced: Installed 20 Logs (10 Logs North Bay, 10 Logs Center Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description:

JOB # 2005.1632

LADNR

TE-28 BRADY CANAL RESTORATION

	BS	HI	FS	ELEV	DESC.
TBM	5.20	8.71		3.51	TOP OF BOLT
H_2O			7.02	1.69	TOP OF WATER
North Bay					
PRE-Installation			14.24	-5.53	TOP OF DAM-PRE
LAKE			15.07	-6.36	BOTTOM OF LAKE
MARSH			15.26	-6.55	BOTTOM OF MARSH
Post-Installation			9.14	-0.43	TOP OF DAM-POST
South Bay					
PRE-Installation			14.20	-5.49	TOP OF DAM-PRE
LAKE			15.27	-6.56	BOTTOM OF LAKE
MARSH			14.76	-6.05	BOTTOM OF MARSH
Post-Installation			9.15	-0.44	TOP OF DAM-POST
CHECK			5.20	3.51	TBM

JLEDET
RDUKE

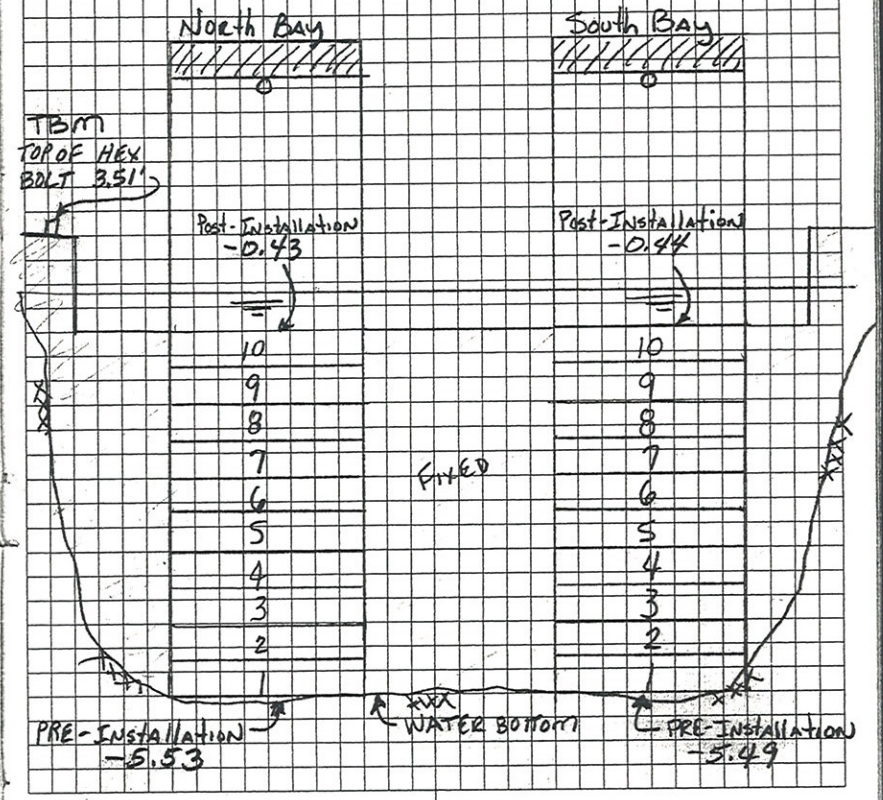
10/05/05

SUNNY, 88°

Structure #23

TBM = 3.51' Supplied by LADNR

NOTE: South Bay Log installation was a very 'snug' fit & will be very hard to remove.
Both structures were in very good condition. Pad locks were sprayed with WD40.



STRUCTURE NO. 23

General structure condition (10/05/05)

General structure condition (10/05/05)

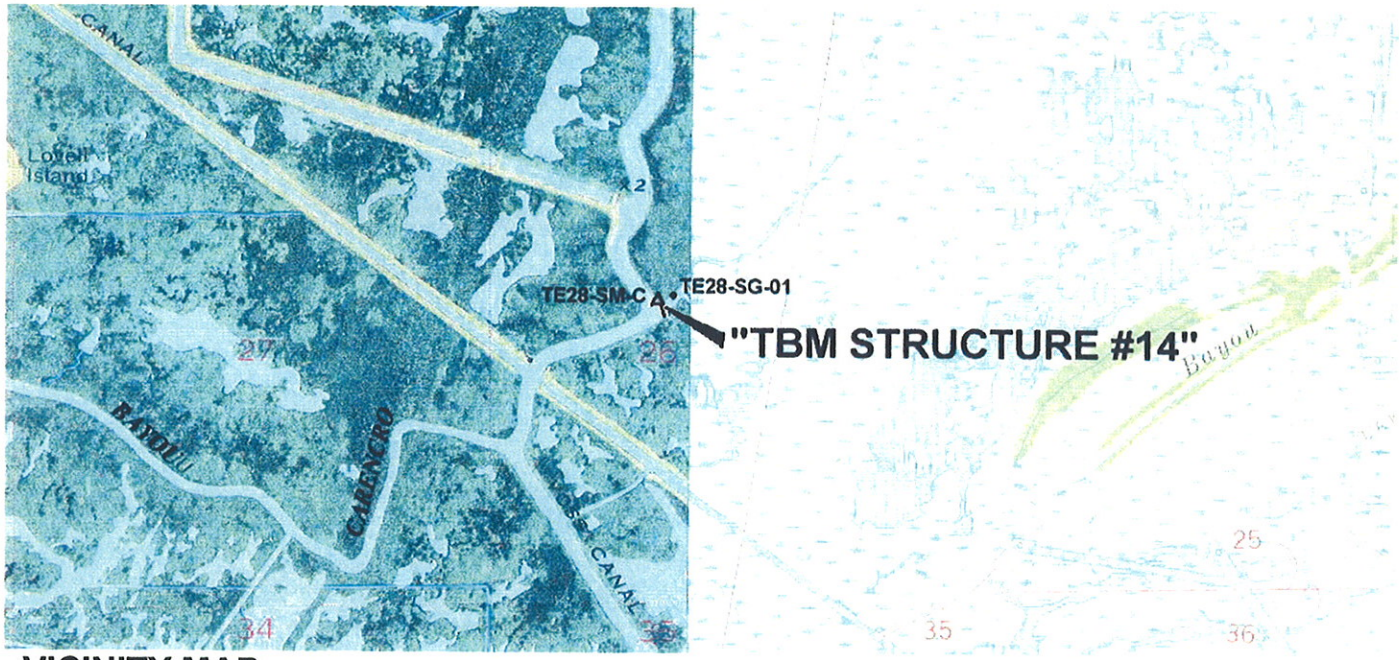
STRUCTURE NO. 23

General Structure Condition-Erosion Damage (10/05/05)

General Structure Condition-Erosion Damage (10/05/05)

ATTACHMENT NO. 5

Benchmarks – Data Sheets



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

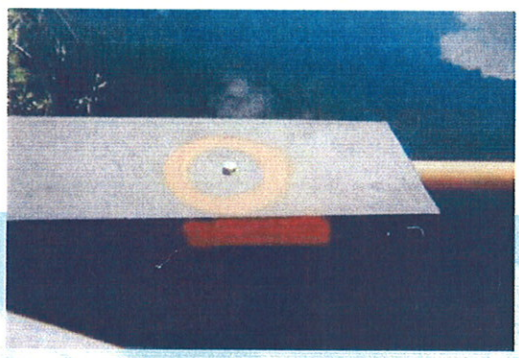
Date of Survey: June 4, 2002

TBM Structure 14

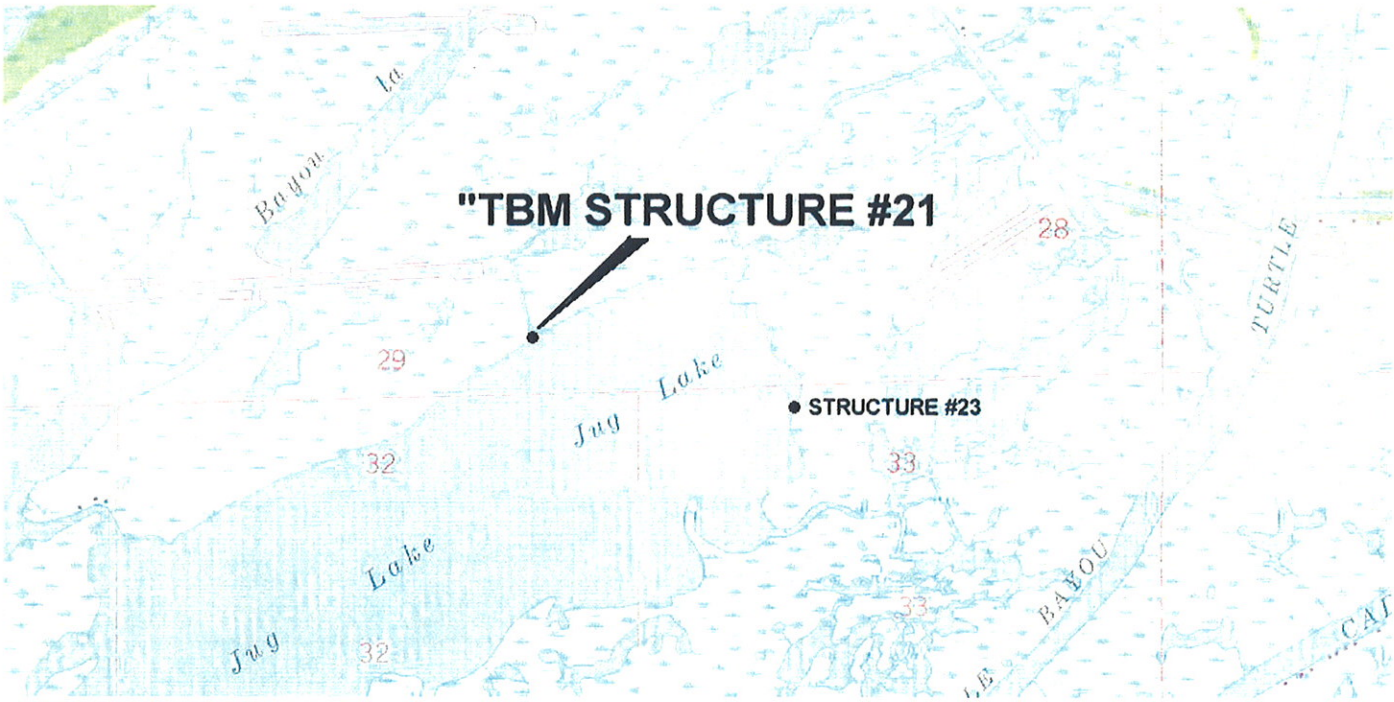
NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)



Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

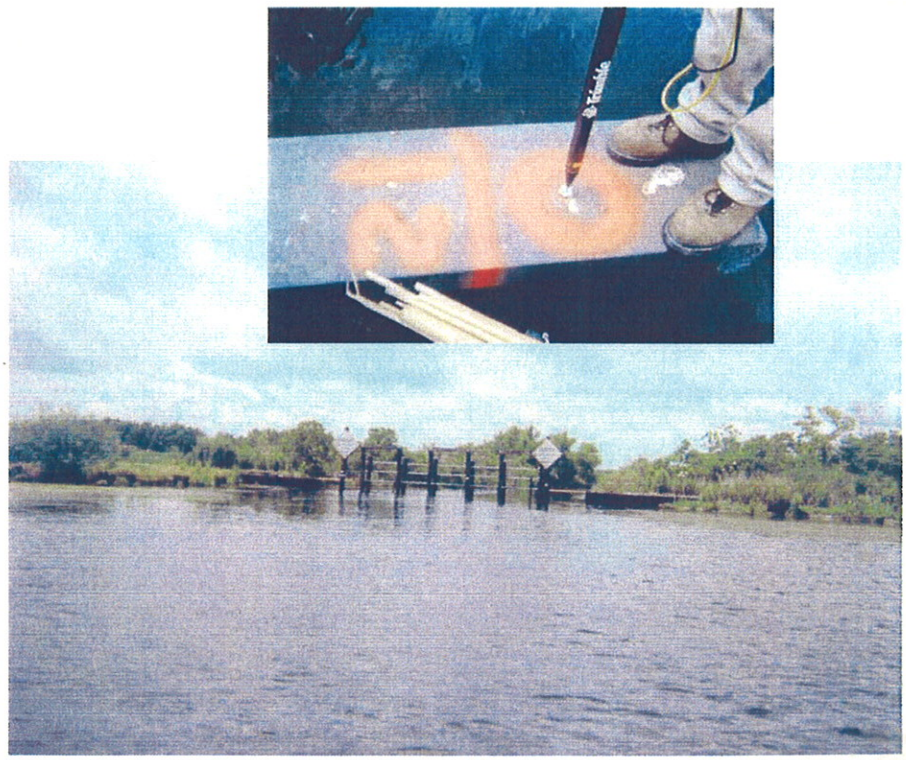
Date of Survey: June 6, 2002

TBM Structure 21

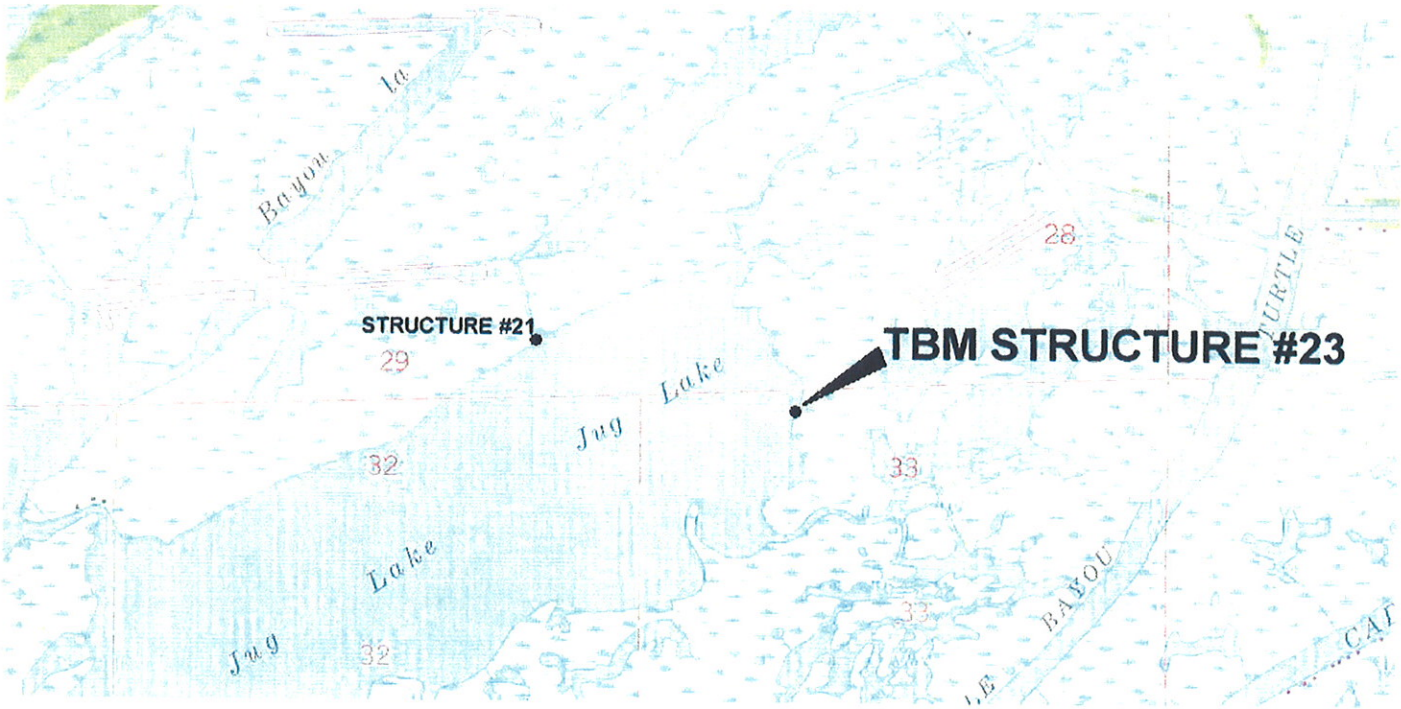
NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)



Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

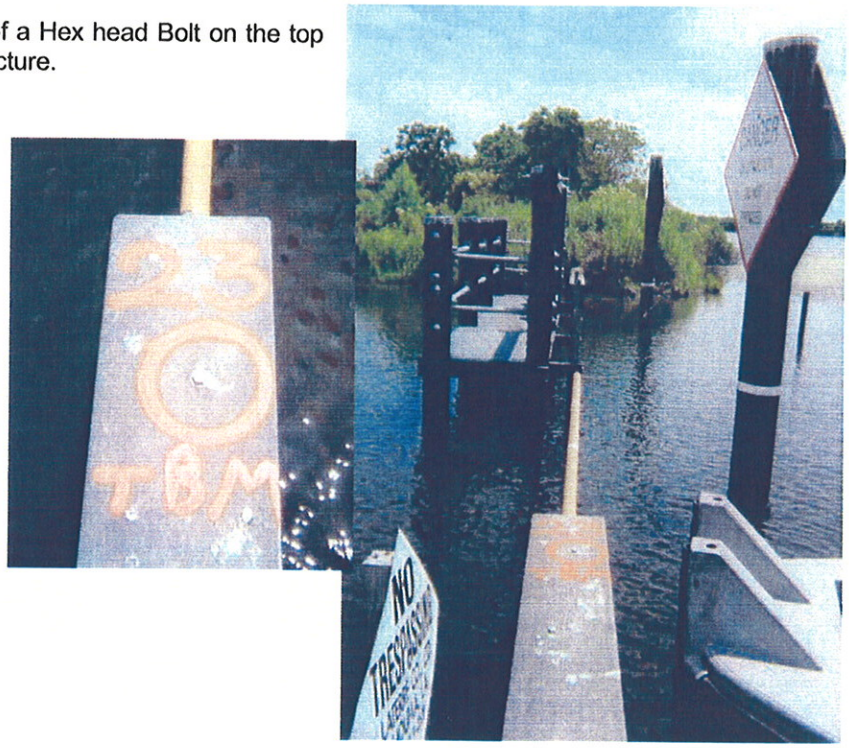
Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)



Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division

FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

Prepared By

TBS T. BAKER SMITH
PROFESSIONAL CONSULTANTS SINCE 1913

March 2006

FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
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March 2006

LIST OF ATTACHMENTS

No.	Description	Page
1	Site No. 06	A-1
2	Site No. 14	A-2
3	Site No. 21	A-3
4	Site No. 23	A-4
5	Benchmarks – Data Sheets	A-5

ATTACHMENT NO. 1

Site No. 06

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Inspection of Navigational Aids at Site No. 06

PARTICIPANTS: Kodi Babin, Jody Ledet

DATES: March 17, 2006

CONDITIONS: Cloudy (82°)

The structure is located along north bank of Bayou Decade West of Jug Lake. Visual inspection was performed using black electrical tape to cover the photo cells to simulate darkness. The location of the navigational aids with respect to Structure No. 06 is shown with the attached field notes. The following are the findings at Structure No. 06:

- The southwest green beacon light sensor is damaged, but working. Beacon light is working. Clear protective shield is dirty.
- The southeast red beacon solar panel is missing. Beacon did not work. Clear protective shield is missing.
- The northeast red beacon light is working. Clear protective shield and light sensor in good condition.
- The northwest green beacon light is working. Clear protective shield is missing. Light sensor in good condition.

The field data, photographs, and field notes are attached.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Inspection of Navigational Aids

Date: Friday, March 17, 2006

Participants: Jody Ledet, Kodi Babin

Weather Conditions: Cloudy (82°)

Persons Contacted for Access: N/A

Site No.: Structure No. 6

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Navigation Lights	SW Green Beacon - Light Sensor damaged, but working.	X	
	Beacon working. Protective shield dirty.		
	SE Red Beacon - Solar Panel missing. Beacon not working.	X	
	Protective Shield was Missing.		
	NE Red Beacon - Beacon light working. Protector Shield		X
	and light sensor in good condition.		
	NW Green Beacon - Beacon is working. Protective shield	X	
	was missing. Light sensor in good condition.		

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: SW Green Beacon - light sensor damamged and need repair.
SE Red Beacon - light not working. SE Red Beacon & NW Green Beacon - protective shield missing.
SE Red Beacon - solar panel missing.

Stop Log Adjustment **Date/Time:** N/A

- Number of Logs Removed/Replaced: N/A
- Elevation: N/A
- Mudline Levels: N/A
- Water Levels: N/A

Flag Description: N/A

TBS Job # 2006.1225
LADNR
TE-28 Brady Canal Restoration Project

Navigational Aids Inspection
Site No. 6

SW Green Beacon - Light sensor is damaged but working. Beacon light is working. Clear protective shield is dirty.

SE Red Beacon - solar panel missing. Beacon not working. Clear protective shield is missing.

NE Red Beacon - Beacon light is working. Clear Protective shield & Light sensor in good condition

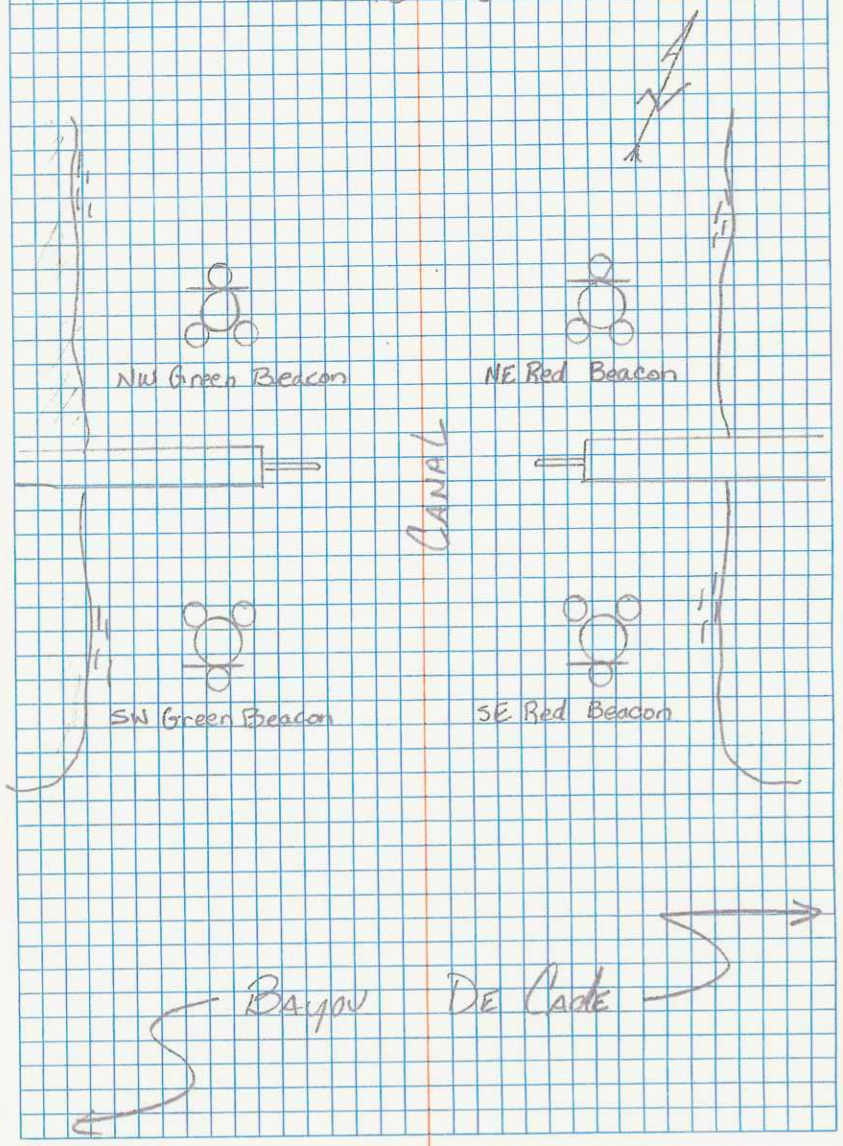
NW Green Beacon - Beacon Light is working. Clear protective shield is missing. Light sensor in good condition.

3/17/06

J LEDET
K BABIN

Cloudy, 82°

Structure #6



STRUCTURE 6

General Overview of Structure (Facing North) (3/17/2006)

General Overview of Structure (Facing South) (3/17/2006)

STRUCTURE 6

General Navigational Structure – SW Green Beacon – Damaged but operational light sensor – Protective shield dirty (3/17/2006)

General Navigational Structure – SE Red Beacon – Solar Panel Missing – Beacon not functional – Clear Protective Shield Missing (3/17/2006)

ATTACHMENT NO. 2

Site No. 14

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Kodi Babin, Jody Ledet

DATES: March 17, 2006

CONDITIONS: Cloudy (82°)

Permission to gain access to Site No. 14 was obtained verbally from Mr. Jeff W Deblieux, P.L.S. of Burlington on March 13, 2006.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.91 feet on both sides of the weir. The stop logs are in good condition.

We removed the planned 9 stop logs that were installed on September 21, 2005. Pre stop log removal elevation was -0.95 feet and Post stop log removal was -5.56 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site14.

Date: Friday, March 17, 2006

Participants: Jody Ledet, Kodi Babin

Weather Conditions: Cloudy (82°)

Persons Contacted for Access: Mr.Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

Structure Condition			
		Maintenance/Repair	
Item	Condition	Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** March 17, 2006; 8:30 a.m.

- **Number of Logs Removed/Replaced:** Removed 9 Logs
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

TBS Job# 2006.1225

LADNR

TE-28 Brady Canal Restoration Project

Removal of Stop Logs

Site No. 14

LOCATION	+	HI	-	ELEV	REMARKS
Bm 14	2.29	5.86		3.57	TOP OF HEX BOLT
WATER			4.95	0.91	H_2O @ 8:30 AM
Bottom			13.73	-7.87	CANAL
Bottom			11.46	-5.60	LAKE
Pre-Log			6.81	-0.95	PRE-Log Removal
Post-Log			11.42	-5.56	Post-Log Removal
Check			2.29	3.57	Bm Check

3/17/06

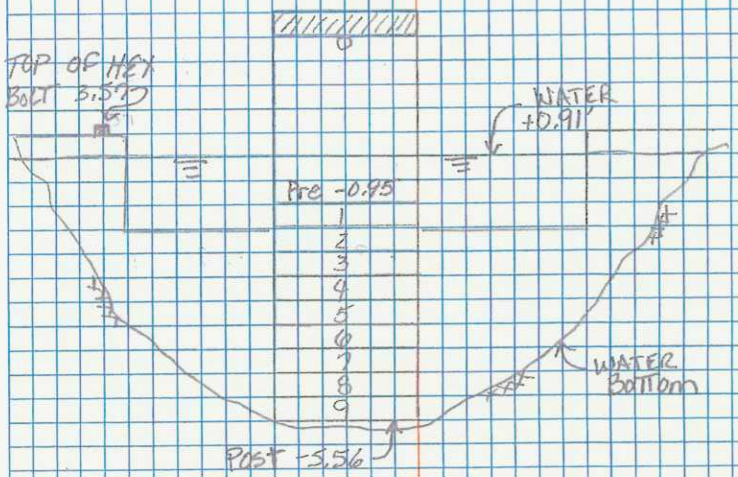
J LEDET
K BABIN

Cloudy, 82°

Structure # 14

TBm 14 Supplied by LADNR

BAY - Removed 9 stop logs in good condition



Notes: Pad locks in good condition
WD40 all pad locks

STRUCTURE 14

General Structure Condition (3/17/2006)

General Locking Mechanism (3/17/2006)

STRUCTURE 14

General Structure Condition (3/17/2006)

General Structure Condition (3/17/2006)

ATTACHMENT NO. 3

Site No. 21

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Jody Ledet, Kenny King, Jude LeDoux

DATES: March 14, 2006

CONDITIONS: Sunny (80°)

Permission to gain access to Site No. 21 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 13, 2006.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.03 feet on both sides of the weir.

East Bay
We removed 5 of the planned 7 stop logs that were installed on September 21, 2005. Pre stop log removal elevation was -0.17 feet and Post stop log removal was -2.71 feet. Replaced 1 padlock.

Center Bay
We removed the planned 10 stop logs that were installed on September 21, 2005. Pre stop log removal elevation was 0.06 feet and Post stop log removal was -4.97 feet. Replaced 1 padlock.

West Bay
We removed the planned 2 stop logs that were installed on September 21, 2005. Pre stop log removal elevation was -0.18 feet and Post stop log removal was -1.24 feet. Due to silt building, only 2 stop logs were removed as per LADNR request. Replaced 2 padlocks.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 21.

Date: Tuesday, March 14, 2006

Participants: Jody Ledet, Kenny King, Jude LeDoux

Weather Conditions: Sunny (80°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 21

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	2 pile caps are damaged		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40. Replaced a total of 4 padlocks.

Stop Log Adjustment **Date/Time:** March 14, 2006; East 11:00 a.m., Center 9:50 a.m., West 9:30 a.m.

- **Number of Logs Removed/Replaced:** Removed 17 Logs (5 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

TBS Job # 2006.1225

LADNR

TE-28 Brady Canal Restoration Project

Removal of Stop Logs

Site No. 21

Location	+	HI	−	ELEV	REMARKS
Bm21	3.77	7.49		3.72	TOP OF HEX Bolt
WATER			6.46	1.03	H_2O @ 9:30Am
West Bottom			8.53	-1.04	CANAL
Bottom			8.65	-1.16	LAKE
Pre-Log			7.67	-0.18	Pre-Log removal
Post-Log			8.73	-1.24	Post-Log Removal
Center Bottom			13.56	-6.07	CANAL
Bottom			13.20	-5.71	LAKE
Pre-Log			7.43	0.06	Pre-Log Removal
Post-Log			12.46	-4.97	Post Log Removal
East Bottom			10.18	-2.69	CANAL
Bottom			10.25	-2.76	LAKE
Pre-Log			7.66	-0.17	Pre-Log Removal
Post-Log			10.20	-2.71	Post-Log Removal
Check			3.77	3.72	Bm Check

3/14/06

Sunny, 80°

JLEDET
K King
J Ledoux

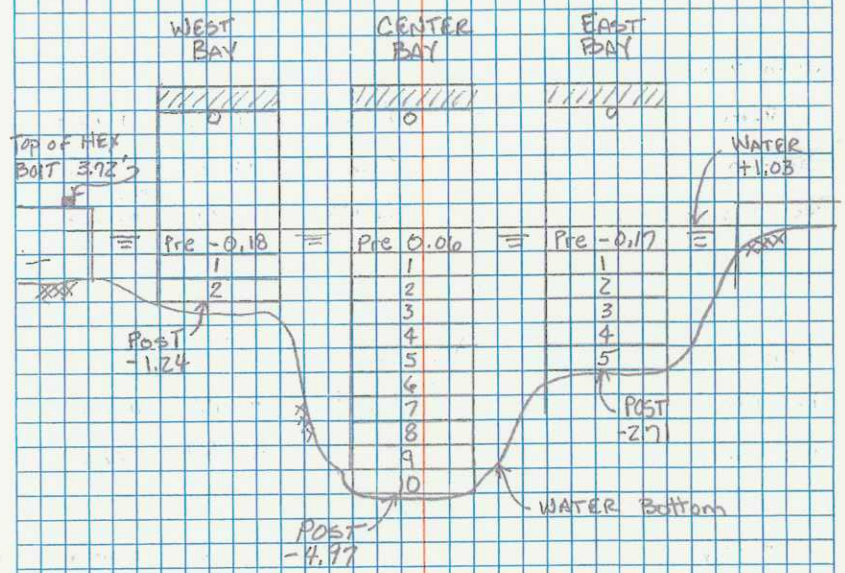
Structure #21

Bm 21 - Supplied by LADNR

WEST BAY - Removed 2 STOP Logs, Replaced 2 Pad Lock's

CENTER BAY - Removed 10 STOP Logs, Replaced 1 Pad Lock

EAST BAY - Removed 5 STOP Logs, Replaced 1 Pad Lock



Notes:
- 2 pile caps are damaged
- WD40 all Pad Locks
- Replaced 4 Pad Locks

STRUCTURE 21

General Structure Condition (3/14/2006)

General Structure Condition (3/14/2006)

STRUCTURE 21

Damaged Pile Caps (3/14/2006)

Stop Logs in Good Condition (3/14/2006)

ATTACHMENT NO. 4

Site No. 23

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Jody Ledet, Kenny King, Jude LeDoux

DATES: March 14, 2006

CONDITIONS: Sunny (80°)

Permission to gain access to Site No. 23 was obtained from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 13, 2006.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.01 feet on both sides of the weir.

North Bay
We removed the planned 10 stop logs that were installed on October 5, 2005. Pre stop log removal elevation was -0.51 feet and Post stop log removal was -5.47 feet.

South Bay
We removed the planned 10 stop logs that were installed on October 5, 2005. Used chain hoist to remove first stop log. Pre-stop log removal elevation was -0.47 feet and Post stop log removal was -5.46 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Tuesday, March 14, 2006

Participants: Jody Ledet, Kenny King, Jude LeDoux

Weather Conditions: Sunny (80°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 23

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** March 14, 2006; North 1:00 p.m. & South 2:15 p.m.

- **Number of Logs Removed/Replaced:** Removed 20 Logs (10 Logs North Bay, 10 Logs Center Bay)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

TBS Job # 2006.1225
LADNR
TE-28 Brady Canal Restoration Project

Removal of Stop Logs
Site No. 23

Location	+	HI	-	ELEV	Remarks
Bm 23	3.96	7.47		3.51	TOP OF HEX Bolt
WATER			6.46	1.01	H_2O @ 1:00pm
North Bay					
Bottom			14.00	-6.53	marsh
Bottom			13.50	-6.03	LAKE
PRE-Log			7.98	-0.51	Pre-Log removal
Post-Log			12.94	-5.47	Post-Log removal
South Bay					
Bottom			13.57	-6.10	marsh
Bottom			13.77	-6.30	LAKE
Pre-Log			7.94	-0.47	Pre-Log removal
Post-Log			12.93	-5.46	Post-Log removal
Check			3.96	3.51	Bm Check

3/14/06

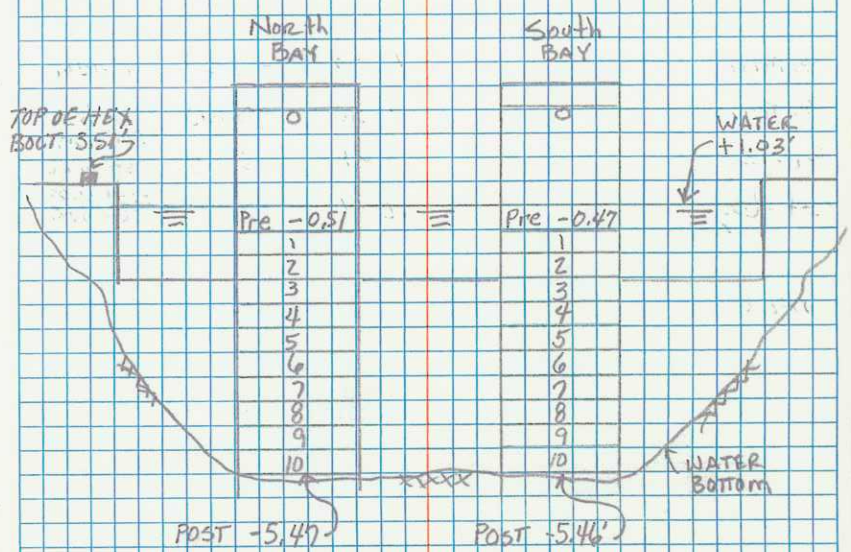
J LEDET
R KING
J LEDOUX

Sunny, 80°

Structure # 23

Bm 23 supplied by LADNR

North Bay - Removed 10 stop logs in good condition
South Bay - Removed 10 stop logs in good condition



Notes:
- WD40 all Padlocks
- Locks in good Condition

No. 2829

STRUCTURE 23

General Structure Condition (3/14/2006)

General Locking Mechanism (3/14/2006)

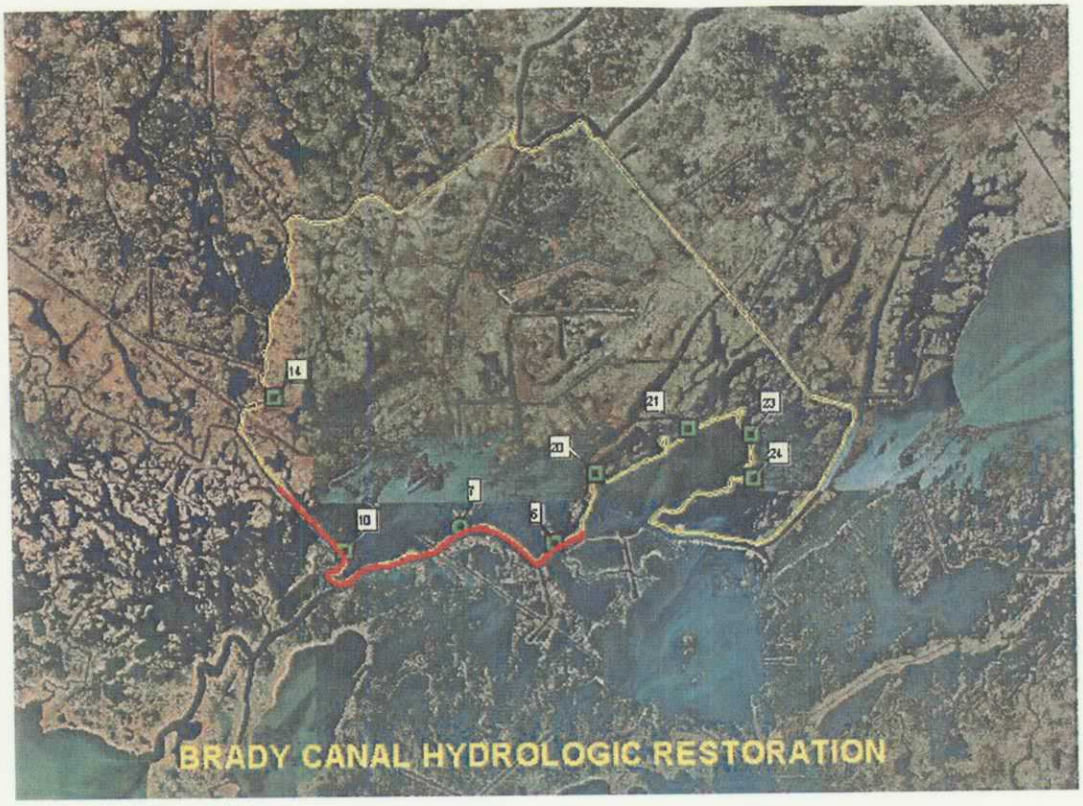
STRUCTURE 23

General Structure Condition (3/14/2006)

General Structure Condition (3/14/2006)

ATTACHMENT NO. 5

Benchmarks – Data Sheets



Data Source:
La. Dept. of Natural Resources
Coastal Restoration Division
Feild Engineering Section
Thibodaux Field Office

1998 DOQQ's

Date: July 22, 2002
Map ID: 2002-TFO-086

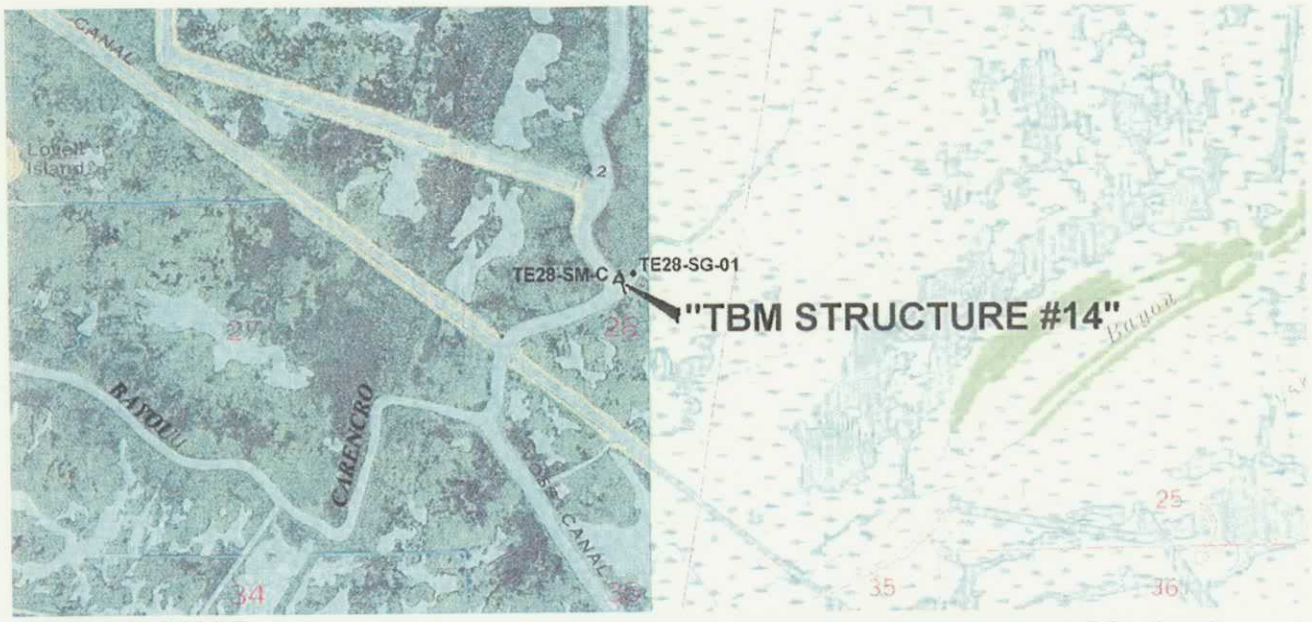
N
W E
S

1 0 1 2 Miles

5000 0 5000 10000 Feet

LEGEND:

- Project Boundary
- Shoreline Protection
- Weir Structure
- Plug Structure



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

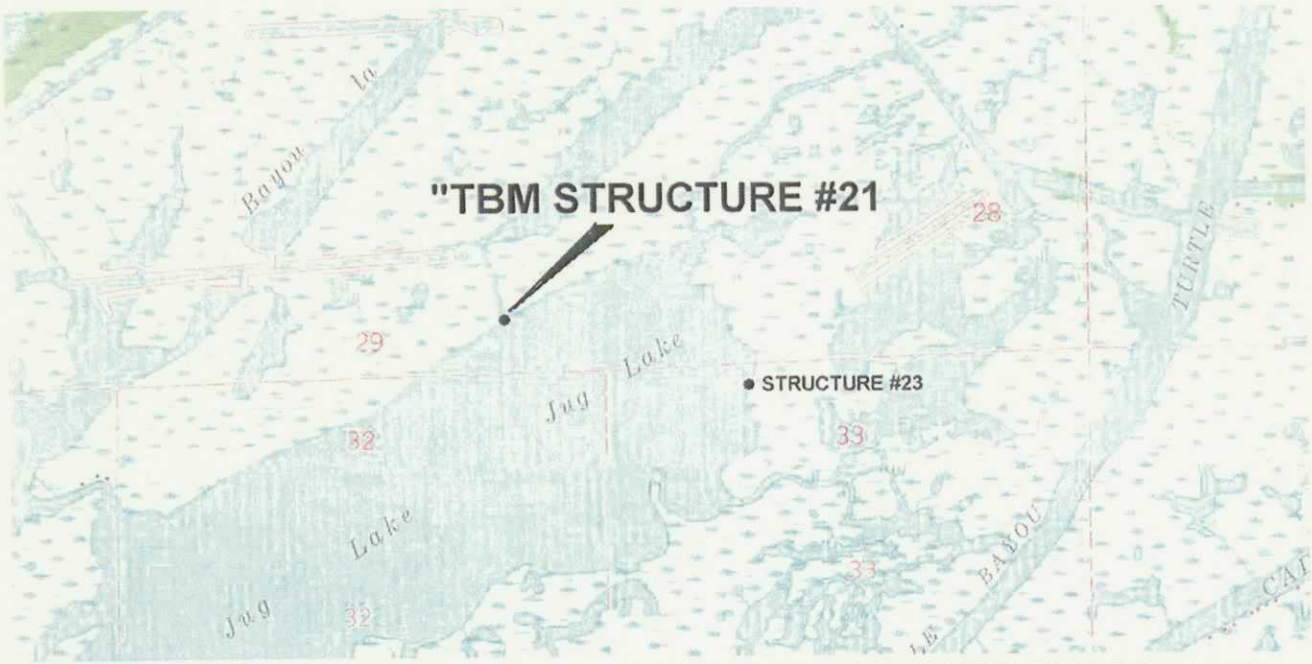
TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument ?TE28-SM-C?
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

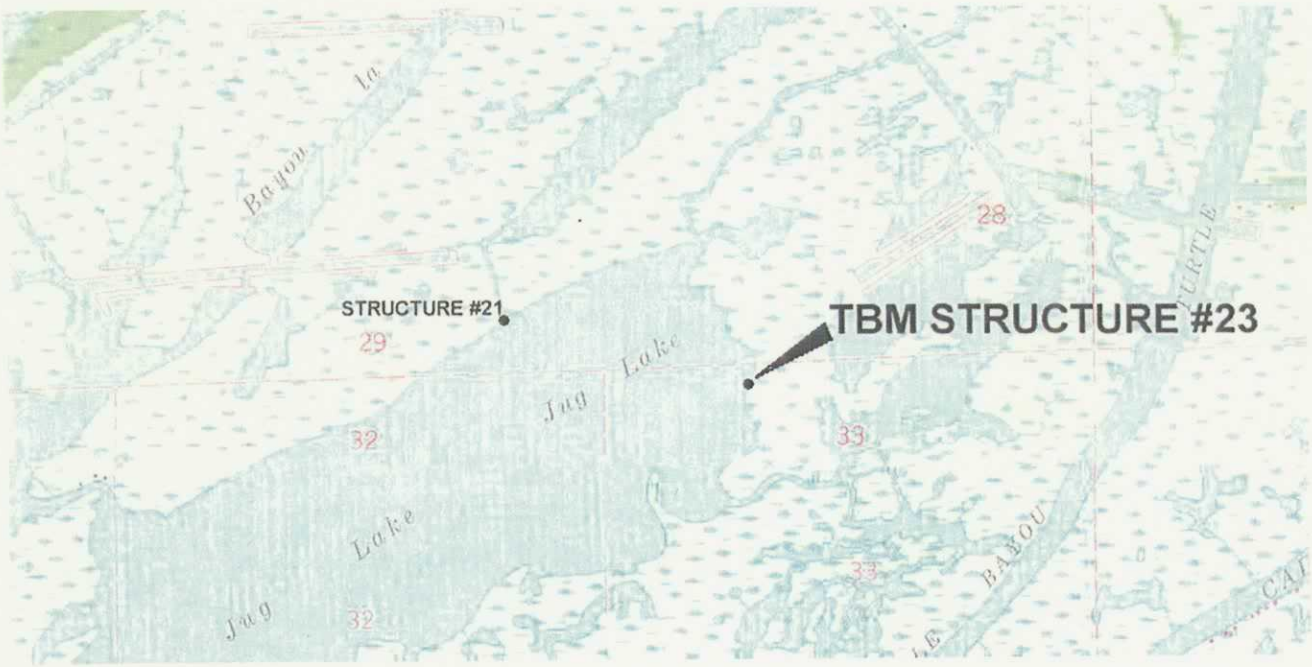
TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument ?TE28-SM-A?
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument ?TE28-SM-A?
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

412 South Van Avenue Houma, Louisiana 70363 • Post Office Box 2266 Houma, Louisiana 70361
Main Line: (985) 868-1050 • Toll Free: 1 (866) 357-1050 • Fax: (985) 868-5843 • Online: www.tbsmith.com

September 14, 2006

Hand Delivered

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

Re: Field Trip Report
Brady Canal Hydrologic Restoration Project (TE-28) – Fall 2006
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Dear Mr. Babin:

Enclosed are four copies of the Field Trip Report for work performed on the above referenced project. This report includes findings, field notes, data and photographs as required in the contract.

Thank you for the opportunity of working with you on this project. For comments or questions, I can be reached at 985-223-9288 or email kodib@tbsmith.com.

Sincerely,

T. BAKER SMITH, INC.

Kodi J. Babin

Kodi J. Babin, Project Manager
Environmental Business Unit

KJB/esh

061713 t01 B. Babin.doc

FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

September 2006

Prepared By

TBS T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

Houma, LA Lafayette, LA Baton Rouge, LA Thibodaux, LA Houston, TX
1 (866) 357-1050 www.tbsmith.com

LIST OF ATTACHMENTS

No.	Description	Page
1	Site No. 06	A-1
2	Site No. 14	A-2
3	Site No. 21	A-3
4	Site No. 23	A-4
5	Benchmarks – Data Sheets	A-5

ATTACHMENT NO. 1

Site No. 06

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Inspection of Navigational Aids at Site No. 06

PARTICIPANTS: Kodi Babin, Ronnie Duke, Jr.

DATES: September 5, 2006

CONDITIONS: Sunny (90°)

The structure is located along north bank of Bayou Decade West of Jug Lake. Visual inspection was performed using black electrical tape to cover the photo cells to simulate darkness. The location of the navigational aids with respect to Structure No. 06 is shown with the attached field notes. The following are the findings at Structure No. 06:

- The southwest green beacon failed to function. The clear protective shield was dirty. The sensor appeared to be in good condition.
- The southeast red beacon functioned properly. The clear protective shield and sensor appeared to be in good condition.
- The northeast red beacon functioned properly. The clear protective shield was dirty. The sensor appeared to be in good condition.
- The northwest green beacon functioned properly. The clear protective shield was missing. The sensor appeared to be in good condition.

The field data, photographs, and field notes are attached.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Inspection of Navigational Aids

Date: Tuesday, September 05, 2006

Participants: Kodi Babin, Ronnie Duke, Jr.

Weather Conditions: Sunny (90°)

Persons Contacted for Access: N/A

Site No.: Structure No. 6

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Navigation Lights	SW Green Beacon - Failed to Function, Dirty Protective Shield	X	
	SE Red Beacon - Functioned properly		X
	NE Red Beacon - Functioned properly, Dirty Protective Shield	X	
	NW Green Beacon - Functioned properly, Clear Protective Shield was	X	
	Missing.		

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: SW Green Beacon is not working. SW Green Beacon and NE Red Beacon need to be cleaned. NW Green Beacon needs clear protective shield.

Stop Log Adjustment **Date/Time:** N/A

- Number of Logs Removed/Replaced: N/A
- Elevation: N/A
- Mudline Levels: N/A
- Water Levels: N/A

Flag Description: N/A

Job # 2006.1713

LADNR

TE-28 Brady Canal Restoration

Navigational Aids Inspection

Site No. 6

SW Green Beacon - Beacon failed to function. Protective shield is good but dirty. Sensor is in good condition.

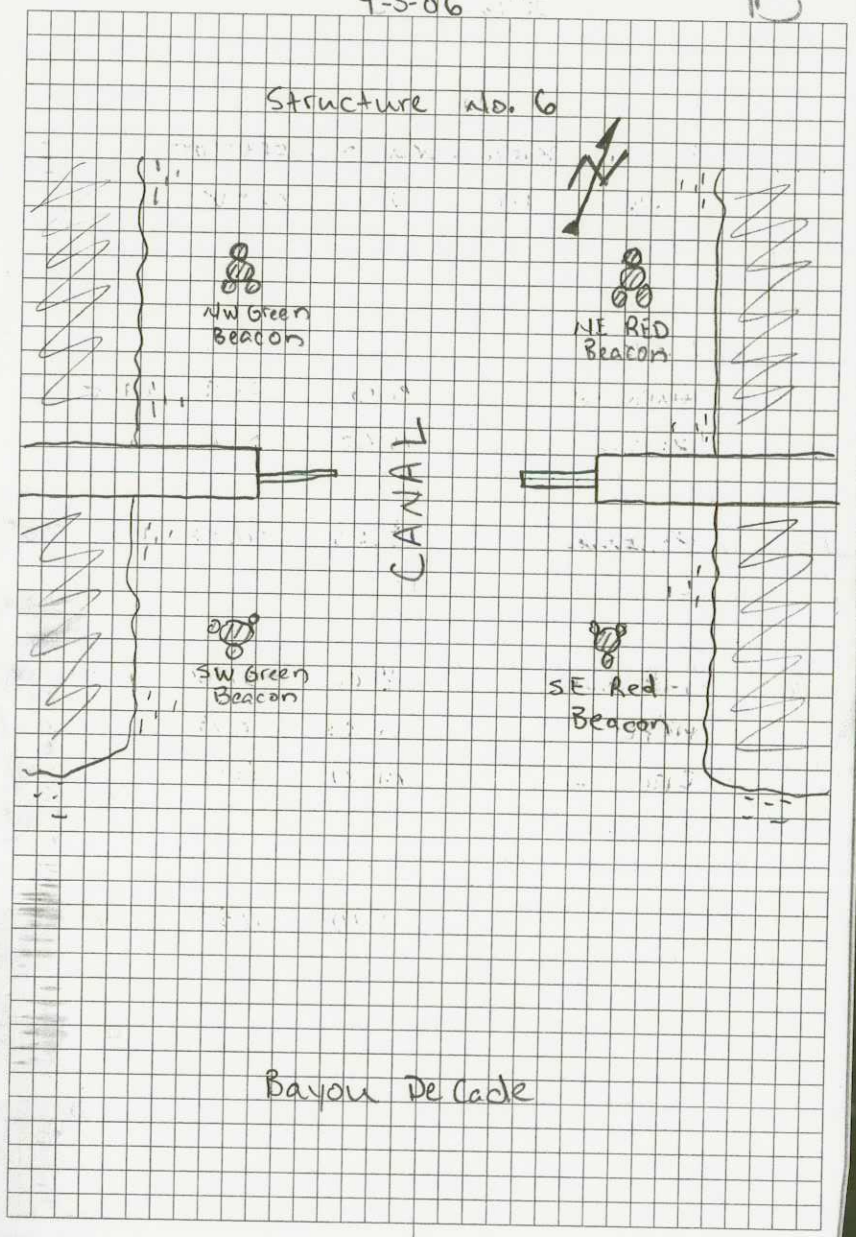
SE Red Beacon - Beacon functioned properly. Sensor is in good condition.

NE Red Beacon - Beacon functioned properly. Sensor is in good condition. Clear protective shield is dirty

NW Green Beacon - Beacon functioned properly. Sensor is in good condition. Clear protective shield is missing

K. Babin
R. Duke

9-5-06



STRUCTURE NO. 06

General structure conditions #6 – looking north (9/05/06)

General navigation light structure #6 – southwest green beacon (9/05/06)

STRUCTURE NO. 06

General navigation light structure #6 – southeast red beacon (9/05/06)

General structure conditions #6 – looking south (9/05/06)

STRUCTURE NO. 06

General navigation light structure #6 – northeast red beacon (9/05/06

General navigation light structure #6 – northwest green beacon (9/05/06)

ATTACHMENT NO. 2

Site No. 14

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Kodi Babin, Jody Ledet, Ronnie Duke, Jr.

DATES: September 6, 2006

CONDITIONS: Cloudy (86°)

Permission to gain access to Site No. 14 was obtained via email from Mr. Jeff W Deblieux, P.L.S. of Burlington on September 5, 2006.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be +0.70 (NAVD88) feet on both sides of the weir.

We installed the planned 9 stop logs that were removed on March 17, 2006. Pre stop log installation elevation was -5.80 (NAVD88) feet and Post stop log installation was -1.26 feet (NAVD88).

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site14.

Date: Wednesday, September 06, 2006

Participants: Kodi Babin, Jody Ledet, Ronnie Duke, Jr.

Weather Conditions: Cloudy (86°)

Persons Contacted for Access: Mr.Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** September 6, 2006; 1:00 p.m.

- **Number of Logs Removed/Replaced:** Installed 9 Logs
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

Job # 20060.1613

LADNR

TE-28 BRADY CANAL RESTORATION

	BS	HI	FS	ELEV	DESC
TBM	2.13	5.70		3.57	TOP OF BOLT
H_2O			5.00	0.70	TOP OF WATER
PRE - Installation			11.50	-5.80	TOP OF DAM PRE
Bottom - CANAL			13.85	-8.15	BOTTOM OF CANAL
Bottom - Marsh			12.78	-7.08	BOTTOM OF MARSH
Post - Installation			6.96	-1.26	TOP OF DAM - POST
CHECK					
Post	8.25	6.99		-1.26	
TBM			3.67	3.32	
	3.81	7.38		3.57	
			8.40	-1.02	

JLEDET
K BABIN
R DUKE

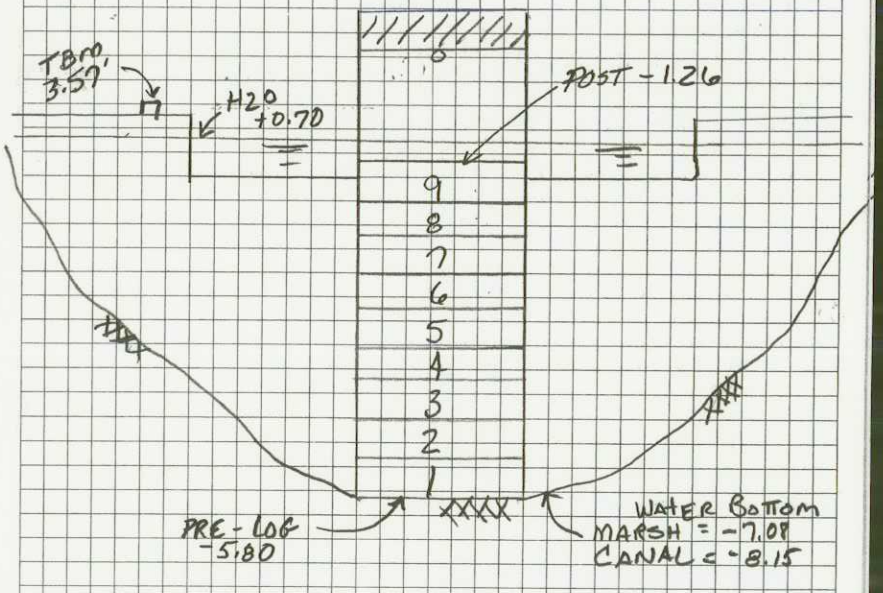
9/6/06

CLOUDY, 86°

STRUCTURE #14

NOTES: INSTALLED 9 STOP LOGS. PADLOCKS IN GOOD CONDITION. WD40 WAS APPLIED

TBM = 3.57' - TOP OF BOLT SUPPLIED BY LADNR



STRUCTURE NO. 14

General overview of structure #14 (9/06/06)

General overview of structure #14 (9/06/06)

STRUCTURE NO. 14

General structure conditions #14 (9/06/06)

General structure conditions #14 (9/06/06)

ATTACHMENT NO. 3

Site No. 21

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Kodi Babin, Ronnie Duke, Jr.

DATES: September 5, 2006

CONDITIONS: Sunny (90°)

Permission to gain access to Site No. 21 was obtained from Mr. Francis Fields, P.L.S. of Apache Corporation on September 4, 2006.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 1.22 (NAVD88) feet on both sides of the weir.

East Bay
We installed the planned 5 stop logs that were removed on March 14, 2006. Pre stop log installation elevation was -2.68 (NAVD88) feet and Post stop log installation was -0.23 (NAVD88) feet.

Center Bay
We installed the planned 10 stop logs that were removed on March 14, 2006. Pre stop log installation elevation was -5.26 (NAVD88) feet and Post stop log installation was +0.09 (NAVD88) feet.

West Bay
We installed the planned 2 stop logs that were removed on March 14, 2006. Pre stop log installation elevation was –1.20 (NAVD88) feet and Post stop log installation was -0.26 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 21.

Date: Tuesday, September 05, 2006

Participants: Kodi Babin, Ronnie Duke, Jr.

Weather Conditions: Sunny (90°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 21

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** September 5, 2006; West 9:30 a.m., Center 11:30 a.m., East 1:30 p.m.

- Number of Logs Installed: Installed 17 Logs (5 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description: N/A

Job# 2006.1713

LA DNR

TE 28 Brady Canal Restoration

	BS	HI	FS	Elev	Desc.
TBM	4.22'	7.94'		3.72'	Top of Bolt
H_2O			6.72'	1.22'	Top of Water
West Pre-Installation			9.14'	-1.20'	Top of Dam Pre
Bottom-Canal			10.91'	-2.97'	Bottom of Canal
Bottom-Lake			9.51'	-1.57'	Bottom of Lake
West Post-Installation			8.20'	-0.26'	Top of Dam Post
Center Pre-Installation			13.20'	-5.26'	Top of Dam Pre
Bottom-Canal			14.02'	-6.08	Bottom of Canal
Bottom-Lake			13.51'	-5.57	Bottom of Lake
Center Post-Installation			7.85'	0.09'	Top of Dam Post
East Pre-Installation			10.62'	-2.68'	Top of Dam Pre
Bottom-Canal			12.40'	-4.46'	Bottom of Canal
Bottom-Lake			11.30'	-3.36'	Bottom of Lake
East Post-Installation			8.17'	-0.23'	Top of Dam Post
Check TBM				4.22'	TBM check

K. Babin
R. Duke

9-5-06

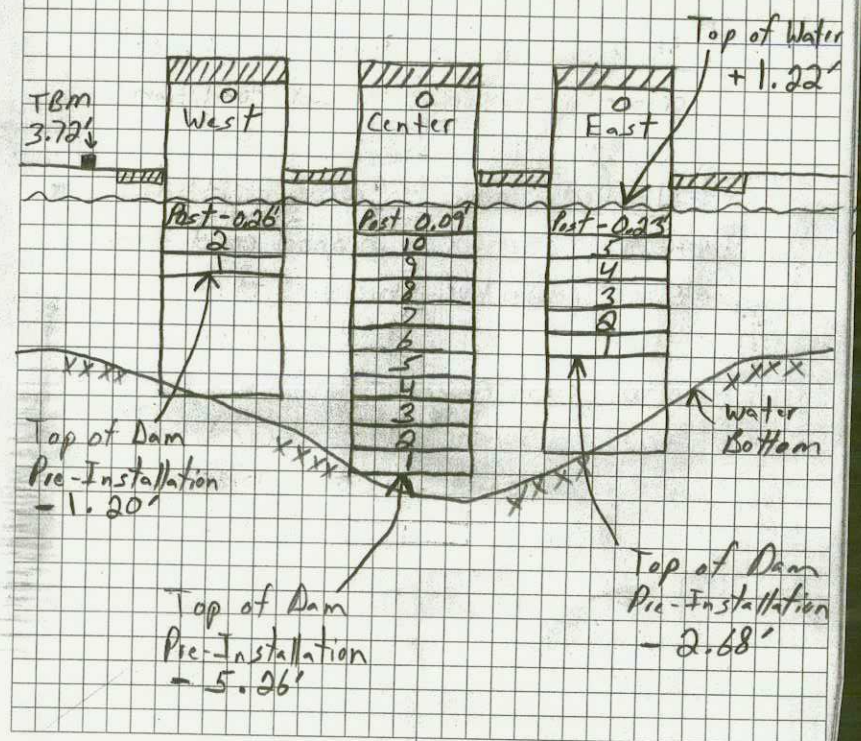
Sunny, 90°
Calm

Structure # 21

TBM - Top of Bolt 3.72' Supplied by LADNR

Note: Pad Locks on west, center, and east bays in good condition.

West - installed 2 stop logs
Center - installed 10 stop logs
East - installed 5 stop logs



3466

STRUCTURE NO. 21

General overview of structure #21 (9/06/06)

General overview of structure #21 (9/06/06)

STRUCTURE NO. 21

General overview of structure #21 (9/06/06)

General overview of structure #21 (9/06/06)

ATTACHMENT NO. 4

Site No. 23

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Kodi Babin, Jody Ledet, Ronnie Duke, Jr.

DATES: September 6, 2006

CONDITIONS: Cloudy (86°)

Permission to gain access to Site No. 23 was obtained from Mr. Francis Fields, P.L.S. of Apache Corporation on September 4, 2006.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.59 (NAVD88) feet on both sides of the weir.

North Bay
We installed the planned 10 stop logs that were removed on March 14, 2006. Pre stop log installation elevation was -5.44 (NAVD88) feet and Post stop log installation was –0.34 (NAVD88) feet.

South Bay
We installed the planned 10 stop logs that were removed on March 14, 2006. Pre stop log installation elevation was –5.50 (NAVD88) feet and Post stop log installation was –0.45 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Wednesday, September 06, 2006

Participants: Kodi Babin, Jody Ledet, Ronnie Duke, Jr.

Weather Conditions: Cloudy (86°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 23

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	Noticed Erosion at Ends of Structure
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** September 6, 2006; North 09:30 a.m. & South 11:00 a.m.

- Number of Logs Removed/Replaced: Installed 20 Logs (10 Logs North Bay, 10 Logs Center Bay)
- Elevation: See Field Notes
- Mudline Levels: See Field Notes
- Water Levels: See Field Notes

Flag Description:

2006, 1713

LADNR

TE-28 BRADY CANAL RESTORATION

	BS	HI	FS	ELEV	
TBM	5.18	8.69		3.51	TOP OF BOLT
NORTH BAY					
PRE-Installation			14.13	-5.44	TOP OF DAM-PRE
LAKE			14.62	-5.93	WATER Bottom
MARSH			16.35	-7.66	WATER BOTTOM
POST-Installation			9.03	-0.34	TOP OF DAM-POST
SOUTH BAY					
PRE-Installation			14.19	-5.50	TOP OF DAM-PRE
MARSH			15.43	-6.74	WATER BOTTOM
LAKE			14.81	-6.12	WATER BOTTOM
Post-Installation			9.14	-0.45	TOP OF DAM-POST
H_2O			8.10	0.59	WATER
North Post	9.10	8.76		-0.34	
TBM			5.22	3.54	

JLEDET
KBabin
R DUKE

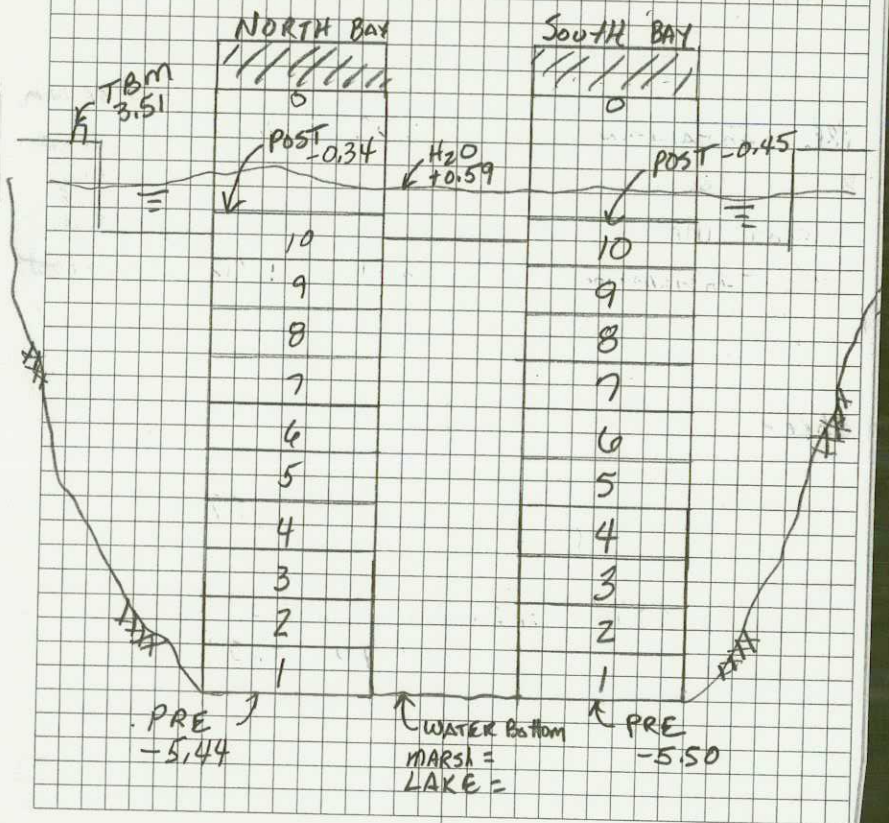
9/6/06

Cloudy, 86°

STRUCTURE #23

TBM = 3.51' Supplied by LADNR

NOTES: Installed 10 stop logs in each bay. Pad locks in good condition. WD 40 was applied.



STRUCTURE NO. 23

General overview of structure #23 (9/06/06)

General overview of structure #23 (9/06/06)

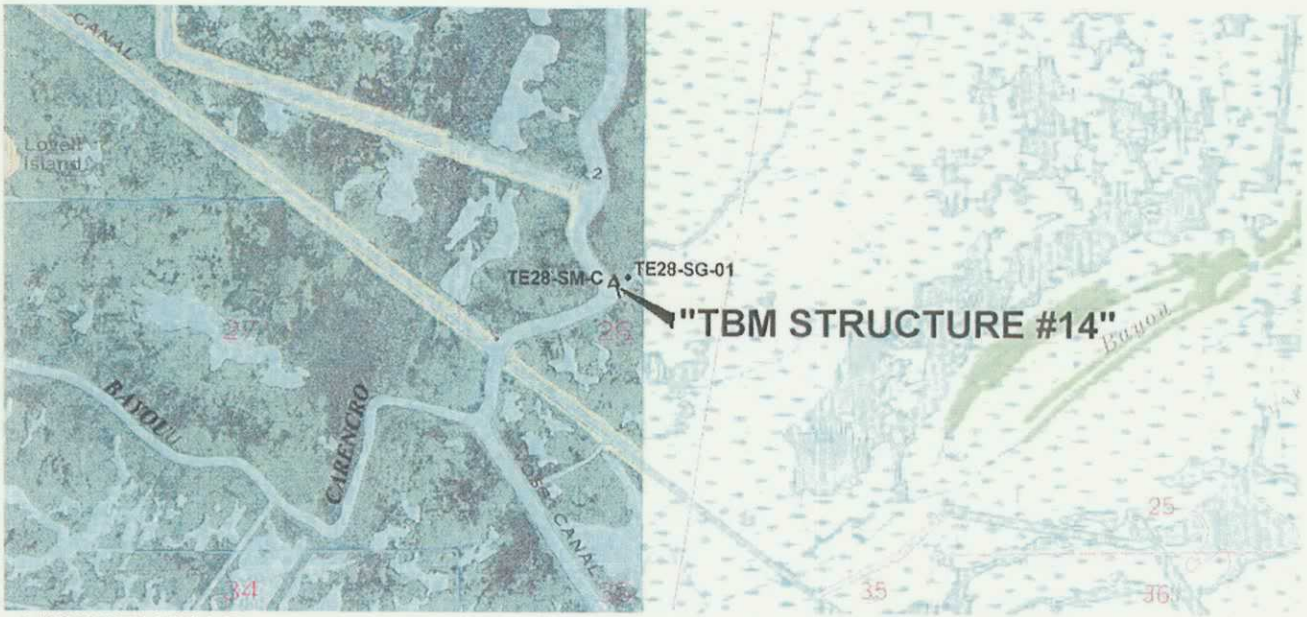
STRUCTURE NO. 23

General structure conditions #23 (9/06/06)

General overview of structure #23 (9/06/06)

ATTACHMENT NO. 5

Benchmarks – Data Sheets



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

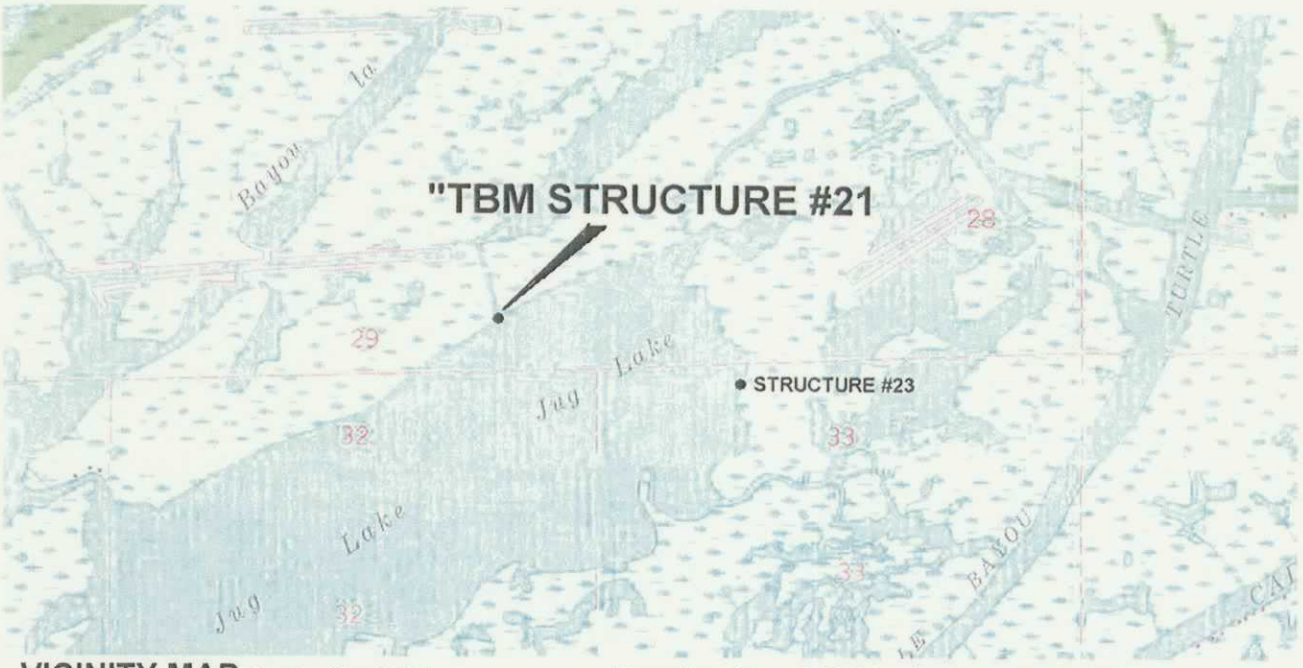
TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument ?TE28-SM-C?
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

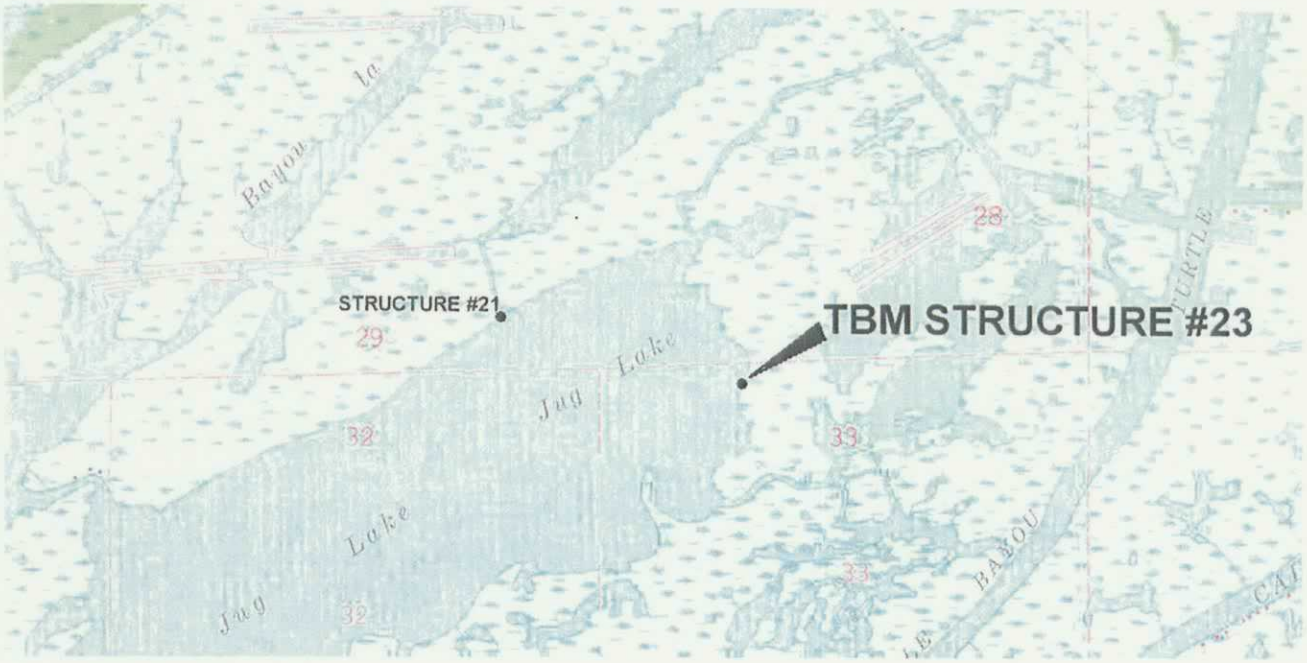
TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument ?TE28-SM-A?
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument ?TE28-SM-A?
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

412 South Van Avenue Houma, Louisiana 70363 • Post Office Box 2266 Houma, Louisiana 70361
Main Line: (985) 868-1050 • Toll Free: 1 (866) 357-1050 • Fax: (985) 868-5843 • Online: www.tbsmith.com

March 21, 2007

Hand Delivered

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

RE: Field Trip Report
Brady Canal Hydrologic Restoration Project (TE-28) – Fall 2006
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Dear Mr. Babin:

Enclosed are four copies of the Field Trip Report for work performed on the above referenced project. This report includes findings, field notes, data and photographs as required in the contract.

Thank you for the opportunity of working with you on this project. For comments or questions, I can be reached at 985-223-9288 or email kodib@tbsmith.com.

Sincerely,

T. BAKER SMITH, INC.

Kodi J. Babin

Kodi J. Babin, Project Manager
Environmental Discipline

KJB/tlp
Enclosure(s)

071163 t01 Brian Babin

FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-05-28

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

March 2007

Prepared By

TBS T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

Houma, LA Lafayette, LA Baton Rouge, LA Thibodaux, LA Houston, TX
1 (866) 357-1050 www.tbsmith.com

LIST OF ATTACHMENTS

No.	Description	Page
1	Site No. 14	A-1
2	Site No. 21	A-2
3	Site No. 23	A-3
4	Benchmarks – Data Sheets	A-4

ATTACHMENT NO. 1

Site No. 14

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Richard Fontenot, Jody Ledet, Kodi Babin, Ronnie Duke, Jr.

DATES: March 16, 2007

CONDITIONS: Sunny (70°)

Permission to gain access to Site No. 14 was obtained via e-mail from Mr. Jeff W Deblieux, P.L.S. of Burlington on March 13, 2007.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.66 feet on both sides of the weir. The stop logs are in good condition.

We removed the planned 9 stop logs that were installed on September 6, 2006. Pre stop log removal elevation was -1.07 feet, and Post stop log removal was -5.57 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 14.

Date: Friday, March 16, 2007

Participants: Richard Fontenot, Jody Ledet, Kodi Babin, Ronnie Duke, Jr.

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** March 16, 2007; 2:30 p.m.

- **Number of Logs Removed/Replaced:** Removed 9 Logs
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

TBS Job # 2007.1163

LDNR

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

(TE-28)

REMOVAL of STOP LOGS (SITE NO 14)

LOCATION	+	HI	-	ELEV	REMARKS
Bm14	3.91	7.48		3.57	TOP OF HEX BOLT
WATER			6.82	0.66	H_2O @ 2:00pm
Bottom			15.64	-8.16	CANAL
Bottom			13.90	-6.42	LAKE
PRE-LOG			8.55	-1.07	PRE-LOG REMOVAL
Post-Log			13.05	-5.57	POST-LOG REMOVAL
CHECK			3.91	3.57	Bm

STRUCTURE 14

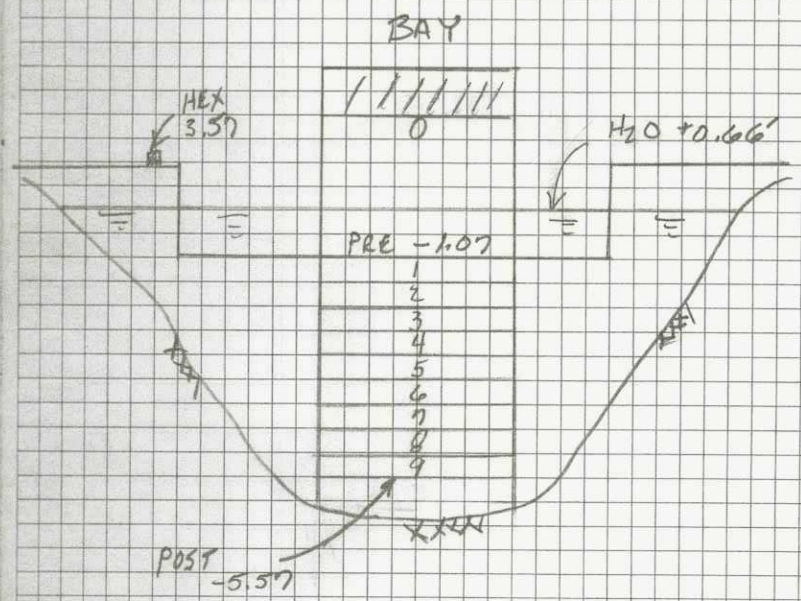
3/16/07
Sunny, Windy

Bm14 SUPPLIED by LDNR

J LEDET
K Babin
R DUKE, Jr
R Fontenot

BAY - REMOVED 9 STOP LOGS

NOTES: WD40 ALL PAD LOCKS
PAD LOCKS IN GOOD CONDITION
GRATING & PILES IN GOOD CONDITION



STRUCTURE 14

General Structure Condition (3/16/2007)

General Structure Condition (3/16/2007)

STRUCTURE 14

General Structure Condition (3/16/2007)

General Structure Condition (3/16/2007)

ATTACHMENT NO. 2

Site No. 21

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Richard Fontenot, Jody Ledet, Kodi Babin, Ronnie Duke, Jr.

DATES: March 16, 2007

CONDITIONS: Sunny (70°)

Permission to gain access to Site No. 21 was obtained via e-mail from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 13, 2006.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.92 feet on both sides of the weir.

East Bay
We removed the planned 5 stop logs that were installed on September 5, 2006 Pre stop log removal elevation was -0.23 feet, and Post stop log removal was -2.64 feet.

Center Bay
We removed the planned 10 stop logs that were installed on September 5, 2006. Pre stop log removal elevation was -0.21 feet, and Post stop log removal was -5.27 feet.

West Bay
We removed the planned 2 stop logs that were installed on September 5, 2006. Pre stop log removal elevation was -0.22 feet, and Post stop log removal was -1.17 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 21.

Date: Friday, March 16, 2007

Participants: Richard Fontenot, Jody Ledet, Kodi Babin, Ronnie Duke, Jr.

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 21

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** March 16, 2007; 11:30 a.m.

- **Number of Logs Removed/Replaced:** Removed 17 Logs (5 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

TBS JOB # 2007.1163

LDNR

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

(TE-28)

REMOVAL OF STOP LOGS (SITE NO. 21)

LOCATION	+	HI	-	ELEV	REMARKS
BM21	4.20	7.92		3.72	TOP OF #EX BOLT
H_2O			7.00	0.92	H_2O @ NOON
WEST Bottom			10.13	-2.21	MARSH
Bottom			8.60	-0.68	LAKE
PRE-LOG			8.14	-0.22	Pre-Log Removal
POST-LOG			9.09	-1.17	Post Log Removal
CENTER Bottom			14.60	-6.68	MARSH
Bottom			14.02	-6.10	LAKE
PRE-LOG			8.03	-0.21	Pre Log Removal
POST-LOG			13.19	-5.27	POST LOG REMOVAL
EAST Bottom			11.32	-3.40	MARSH
Bottom			11.08	-3.16	LAKE
PRE-LOG			8.15	-0.23	Pre Log Removal
Post-LOG			10.56	-2.64	Post Log Removal
CHECK			4.20	3.72	BM

STRUCTURE 21

3/16/07
Sunny, WINDY

BM 21 Supplied BY LDNR

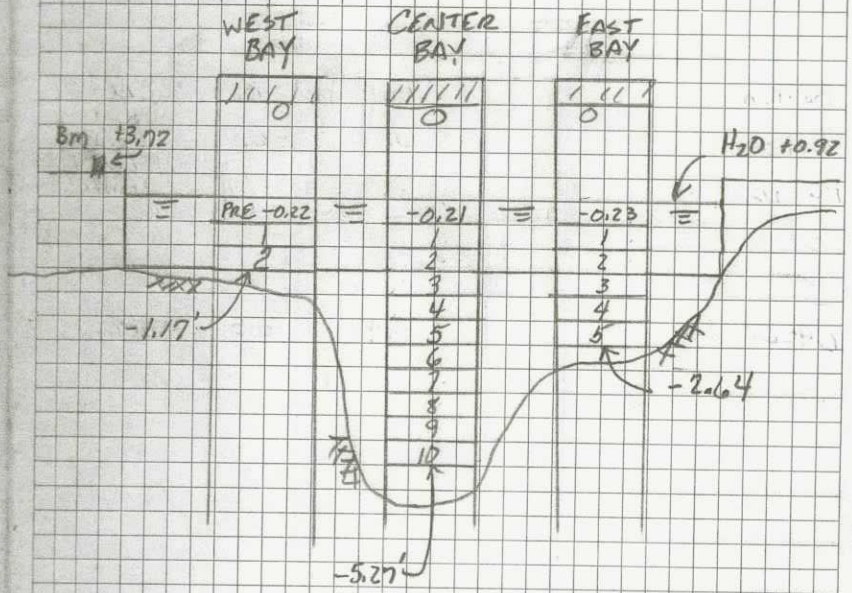
JLEDET
K Babin
R DUKE, Jr.
R FONTENOT

WEST BAY - REMOVED 2 STOP LOGS

CENTER BAY - REMOVED 10 STOP LOGS, LOST 2 of 10

EAST BAY - REMOVED 5 STOP LOGS

NOTES: WD40 All PAD LOCKS
PADLOCKS IN GOOD CONDITION
GRATING & PILES IN GOOD CONDITION



STRUCTURE 21

General Structure Condition (3/16/2007)

General Structure Condition (3/16/2007)

STRUCTURE 21

East Bank (3/16/2007)

West Bank (3/16/2007)

ATTACHMENT NO. 3

Site No. 23

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Richard Fontenot, Jody Ledet, Kodi Babin, Ronnie Duke, Jr.

DATES: March 16, 2007

CONDITIONS: Sunny (70°)

Permission to gain access to Site No. 23 was obtained via e-mail from Mr. Timothy J. Allen, P.L.S. of Apache Corporation on March 13, 2007.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.86 feet on both sides of the weir.

North Bay
We removed the planned 10 stop logs that were installed on September 6, 2006. Pre stop log removal elevation was -0.21 feet, and Post stop log removal was -5.49 feet.

South Bay
We removed the planned 10 stop logs that were installed on September 6, 2006. Pre-stop log removal elevation was -0.48 feet, and Post stop log removal was -5.45 feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Friday, March 16, 2007

Participants: Richard Fontenot, Jody Ledet, Kodi Babin, Ronnie Duke, Jr.

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Timothy J. Allen, P.L.S. of Apache Corporation

Site No.: Structure No. 23

Structure Condition			
		Maintenance/Repair	
Item	Condition	Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** March 16, 2007; 8:30 a.m.

- **Number of Logs Removed/Replaced:** Removed 20 Logs (10 Logs North Bay, 10 Logs Center Bay)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

TBS JOB # 2007.1163

LDNR

BRADY CANAL HYDROLOGIC RESTORATION PROJECT

(TE-28)

REMOVAL OF STOP LOGS (SITE NO. 23)

LOCATION	+	HI	-	ELEV	REMARKS
Bm 23	4.32	7.83		3.51	TOP OF HEX BOLT
H_2O			6.97	0.86	
NORTH BAY					
BOTTOM			14.98	-7.15	MARSH
BOTTOM			14.04	-6.21	LAKE
PRE-LOG			8.04	-0.21	PRE-LOG REMOVAL
POST-LOG			13.32	-5.49	POST-LOG REMOVAL
SOUTH BAY					
BOTTOM			13.80	-5.97	MARSH
BOTTOM			13.84	-6.01	LAKE
PRE-LOG			8.31	-0.48	PRE-LOG REMOVAL
POST-LOG			13.28	-5.45	POST LOG REMOVAL
CHECK			4.32	3.51	BM CHECK

STRUCTURE 23

3/16/07

SUNNY, WINDY

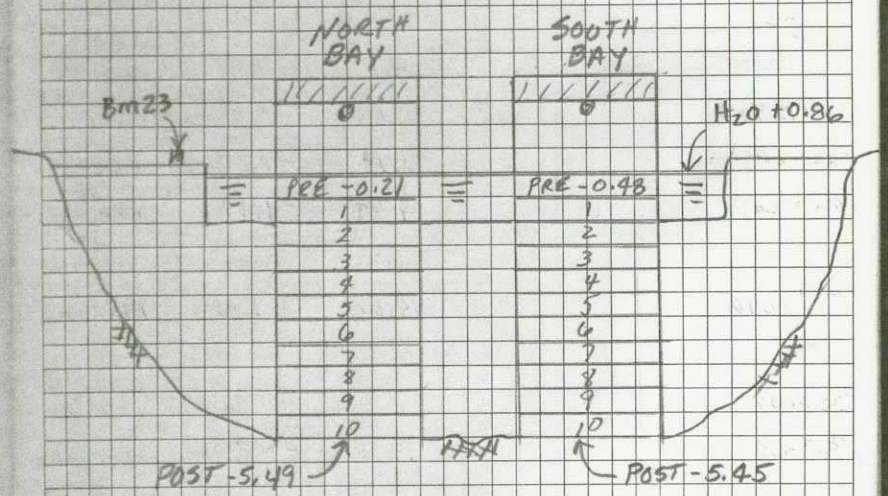
JLEDET
K BABIN
R DUKE, JR
R FONTENOT

Bm 23 supplied by LDNR

NORTH BAY - REMOVED 10 STOP LOGS

SOUTH BAY - REMOVED 10 STOP LOGS

NOTES: WD 40 ALL PADLOCKS
LOCKS IN GOOD CONDITION
EROSION ON NORTH SIDE
GRATING & PILES IN GOOD CONDITION



STRUCTURE 23

General Structure Condition (3/16/2007)

General Structure Condition (3/16/2007)

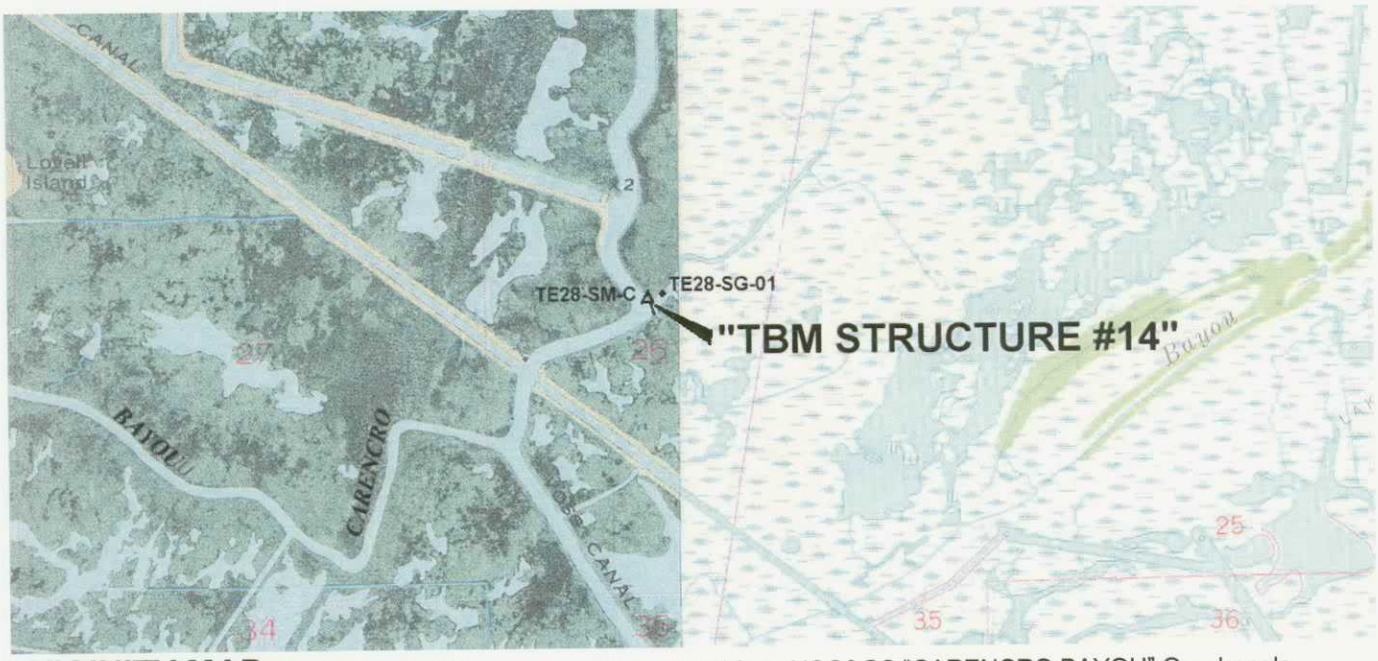
STRUCTURE 23

South Bank (3/16/2007)

North Bank (3/16/2007)

ATTACHMENT NO. 4

Benchmarks – Data Sheets



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

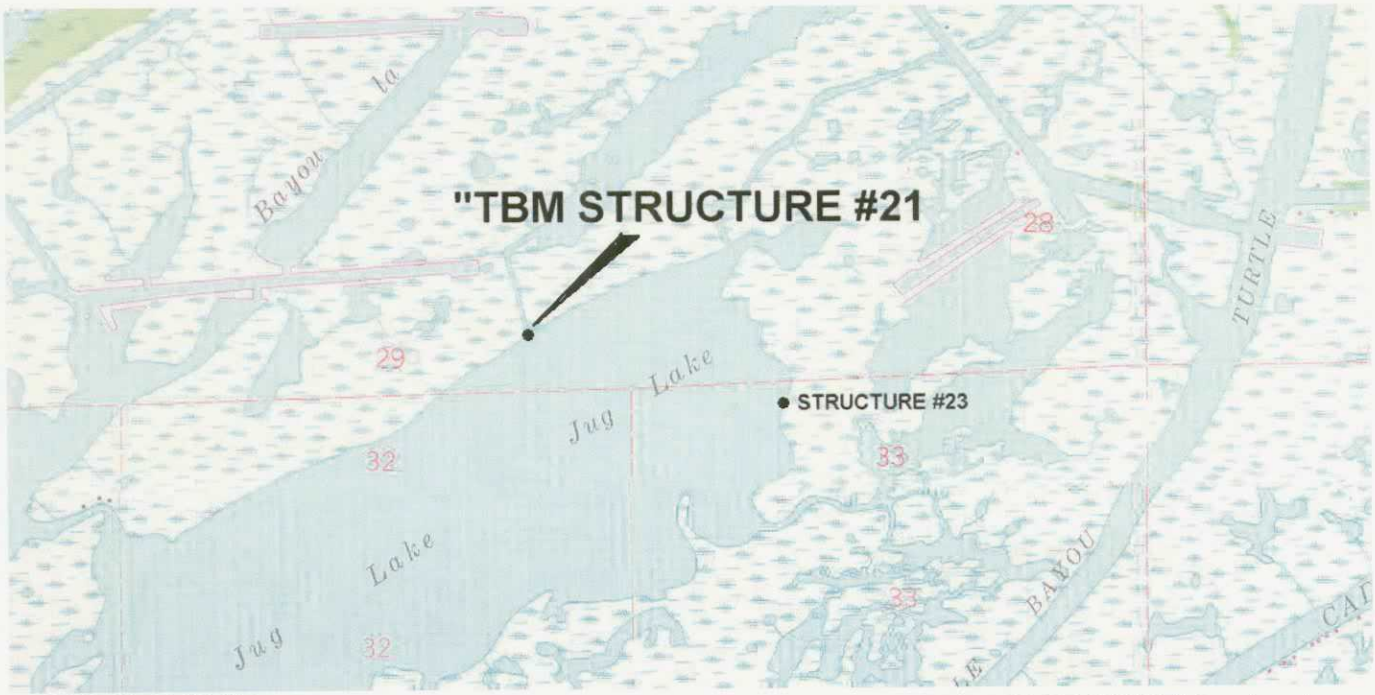
TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
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Elevation at Top of Hex Bolt
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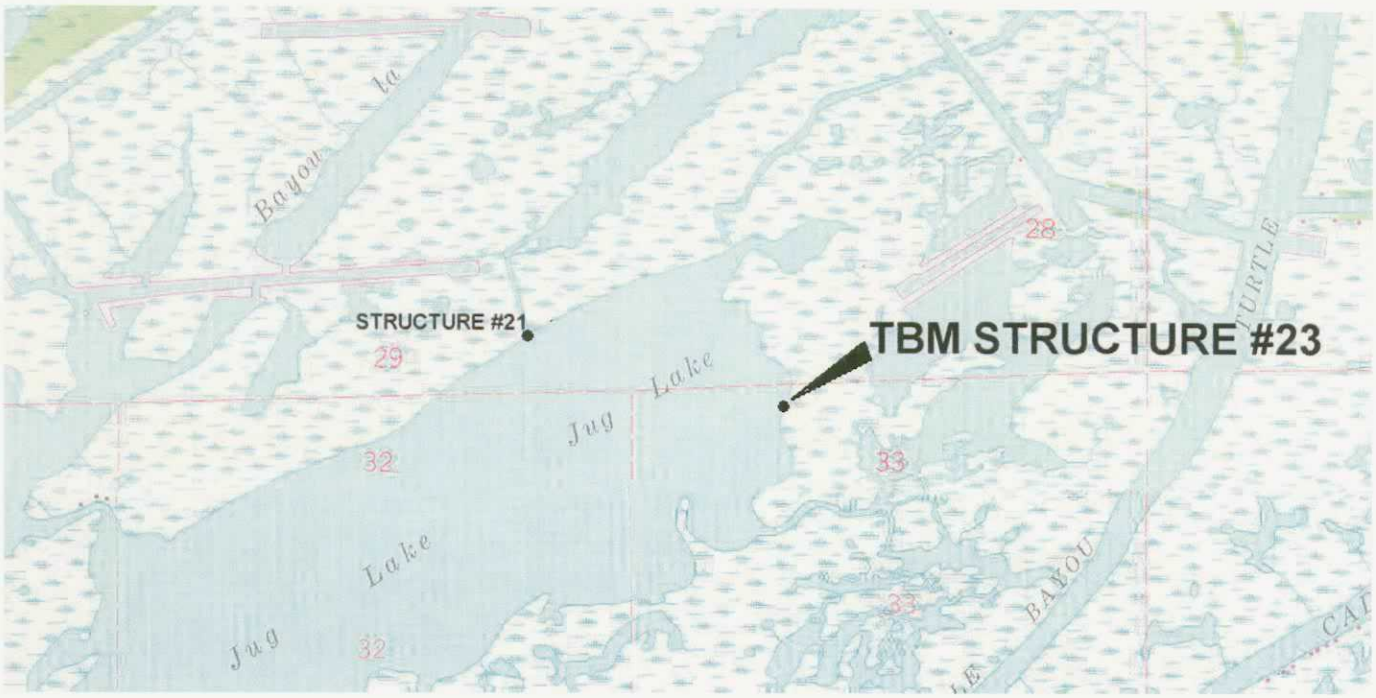

VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

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TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
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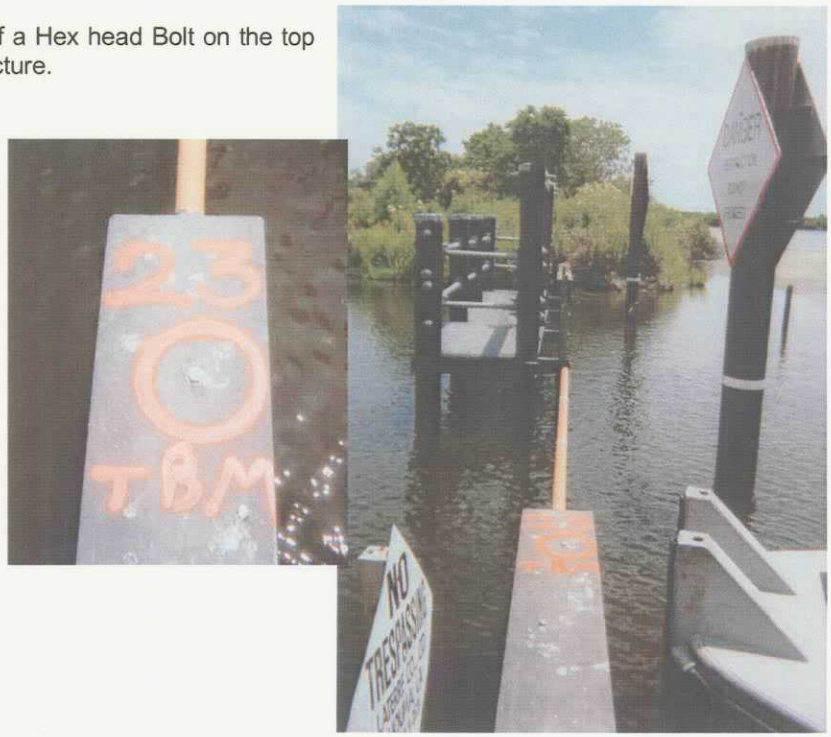

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

412 South Van Avenue Houma, Louisiana 70363 • Post Office Box 2266 Houma, Louisiana 70361
Main Line: (985) 868-1050 • Toll Free: 1 (866) 357-1050 • Fax: (985) 868-5843 • Online: www.tbsmith.com

October 4, 2007

Hand Delivered

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

RE: Field Trip Report
Brady Canal Hydrologic Restoration Project (TE-28) – Fall 2007
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-08-13

Dear Mr. Babin:

Enclosed are four copies of the Field Trip Report for work performed on the above referenced project. This report includes findings, field notes, data and photographs as required in the contract.

Thank you for the opportunity of working with you on this project. For comments or questions, I can be reached at 985-223-9288 or email kodib@tbsmith.com.

Sincerely,

T. BAKER SMITH, INC.

Kodi J. Babin

Kodi J. Babin, Project Manager
Environmental Discipline

KJB/jpc
Enclosure(s)

07-1708 Brian Babin deliv.

FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-08-13

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

September 2007

Prepared By

TBS T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

Houma, LA Lafayette, LA Baton Rouge, LA Thibodaux, LA Houston, TX
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ATTACHMENT NO. 1

Site No. 14

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Richard Fontenot, Jude Chenier

DATES: September 27, 2007

CONDITIONS: Cloudy (91°)

Permission to gain access to Site No. 14 was obtained via email from Mr. Jeff W Deblieux, P.L.S. of Burlington on September 25, 2007.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be +1.62 (NAVD88) feet on both sides of the weir.

We installed the planned 9 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was -5.56 (NAVD88) feet and Post stop log installation was -1.09 feet (NAVD88).

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 14.

Date: Thursday, September 27, 2007

Participants: Richard Fontenot, Jude Chenier

Weather Conditions: Cloudy (91 °)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	Good		X
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	Large amount of water hyacinth surrounding structure.

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** September 27, 2007, 2:30 p.m.

- **Number of Logs Removed/Replaced:** Installed 9 logs
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

2007.1708

LADNR

TE-28 Brady Canal Restoration

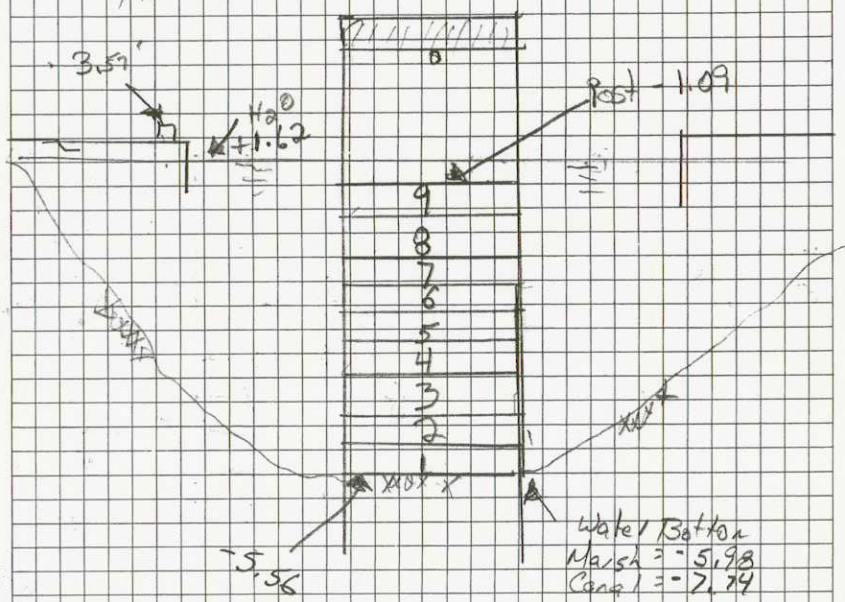
BS	HI	FS	Elev	Desc
3.50	7.07		3.57	TBM
Pre-Install		12.63	-5.56	
Canal		14.81	-7.74	
Marsh		13.05	-5.98	
Post Install		8.16	-1.09	
H_2O		5.45	1.62	

B.L. Hle
J. Scott
F. Little
M. Garcia

Structure #14

Note: Installed 9 Stop Logs
Padlocks In Good Cond. WD40 was Applied

TBM: 3.57' - Top of Bolt Supplied By Date



Structure 14

General Structure Condition (9/27/07)

General Structure Condition (9/27/07)

Structure 14

North Bank (9/27/07)

South Bank (9/27/07)

ATTACHMENT NO. 2

Site No. 21

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Richard Fontenot, Jude Chenier

DATES: September 27, 2007

CONDITIONS: Partly Cloudy (91°)

Permission to gain access to Site No. 21 was obtained from Mr. Francis Fields, P.L.S. of Apache Corporation on September 25, 2007.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be +1.94 (NAVD88) feet on both sides of the weir.

East Bay
We installed the planned 5 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was -2.63 (NAVD88) feet and Post stop log installation was -0.16 (NAVD88) feet.

Center Bay
We installed the planned 10 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was -5.24 (NAVD88) feet and Post stop log installation was +0.60 (NAVD88) feet.

West Bay
We installed the planned 2 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was –1.15 (NAVD88) feet and Post stop log installation was -0.17 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 21.

Date: Thursday, September 27, 2007

Participants: Richard Fontenot, Jude Chenier

Weather Conditions: Partly Cloudy (91°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 21

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum			
Grating/Metal Components	Good		X
Wood Access Ramp			
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** 9:30 a.m. September 27, 2007

- **Number of Logs Removed/Replaced:** Installed 17 logs (2 logs West bay, 10 logs Center bay, 5 logs East bay)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

20071708

LDNR

Brady Canal Hydrologic Restoration Project

	BS	HI	FS	Elev	Desc.
TBM 21	5.44	9.16		3.72	Top of Bolt
H20			7.22	1.94	
West Pre Install			10.31	-1.15	
Bottom Canal			12.50	-3.34	
Bottom-Lake			11.17	-2.01	
West Post Install			9.33	-0.17	
Center Pre-Install			14.40	-5.24	
Bottom-Canal			15.46	-6.3	
Botton-LAKE			14.89	-5.73	
West Post Install			8.56	0.60	
East Pre-Install			11.79	-2.63	
Bottom Canal			13.29	-4.13	
Bottom Lake			12.47	-3.31	
East Post Install			9.32	-0.16	

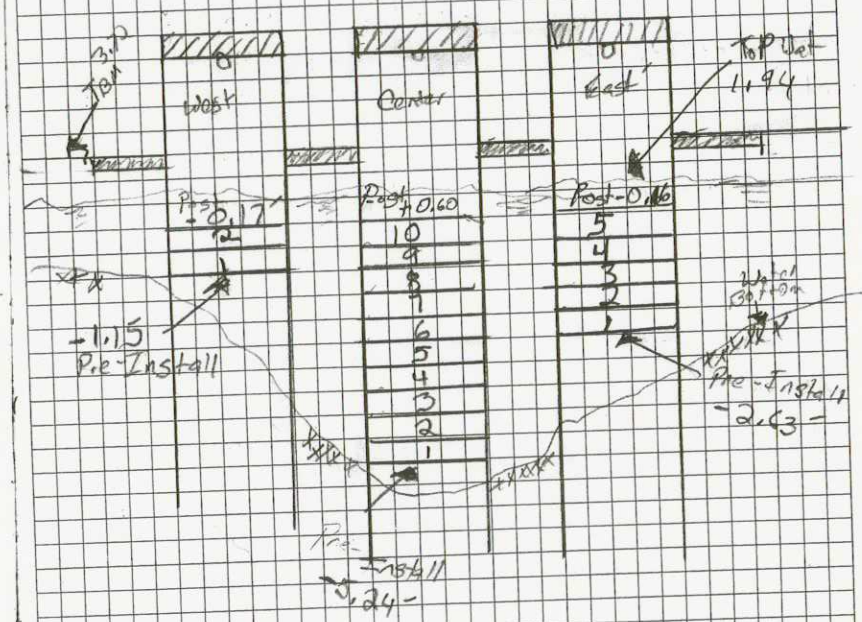
9-27-07

R Fontenot
J. Chenier
S. Parfait
C. Bonvillain

Structure #21

TBM = Top of Bolt 3.72' supplied by LADNR
Note: Pad Locks in Good cond. WD40 was applied

West - installed 2 stop Logs
Center - installed 10 Stop Logs
East - installed 5 stop Logs



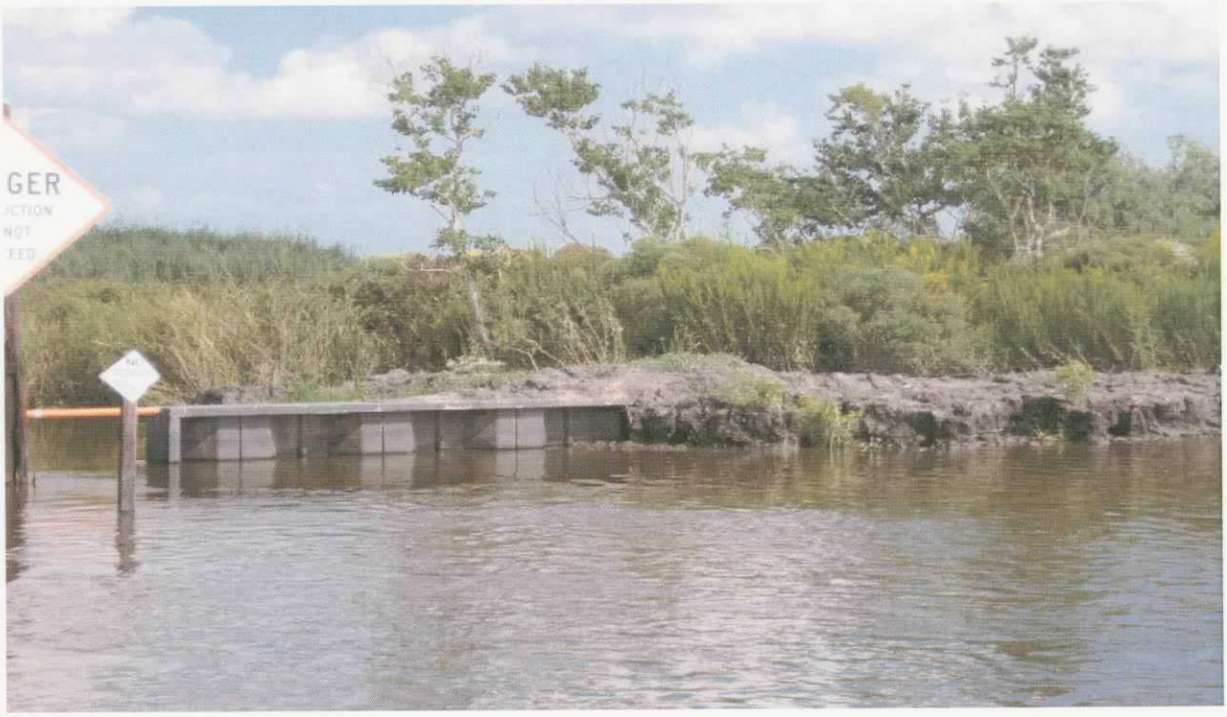
Structure 21

General Structure condition (9/27/07)

General Structure Condition (9/27/07)

Structure 21

West Bank (9/27/07)



East Bank (9/27/07)

ATTACHMENT NO. 3

Site No. 23

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Richard Fontenot, Jude Chenier

DATES: September 27, 2007

CONDITIONS: Cloudy (90°)

Permission to gain access to Site No. 23 was obtained from Mr. Francis Fields, P.L.S. of Apache Corporation on September 25, 2007.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be +1.57 (NAVD88) feet on both sides of the weir.

North Bay
We installed the planned 10 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was -5.44 (NAVD88) feet and Post stop log installation was –0.43 (NAVD88) feet.

South Bay
We installed the planned 10 stop logs that were removed on March 16, 2007. Pre stop log installation elevation was –5.47 (NAVD88) feet and Post stop log installation was –0.61 (NAVD88) feet.

There are no navigation lights at this site.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (install stop logs) the variable crest weir structure at Site 23.

Date: Thursday, September 27, 2007

Participants: Richard Fontenot, Jude Chenier

Weather Conditions: Cloudy (90°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 23

Structure Condition			
		Maintenance/Repair	
Item	Condition	Yes	No
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	Condition
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** 11:45 a.m., September 27, 2007

- **Number of Logs Removed/Replaced:** Installed 20 logs (10 logs North bay, 10 logs South bay)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

2007.1208 LADNR

Brady Canal Restoration Project

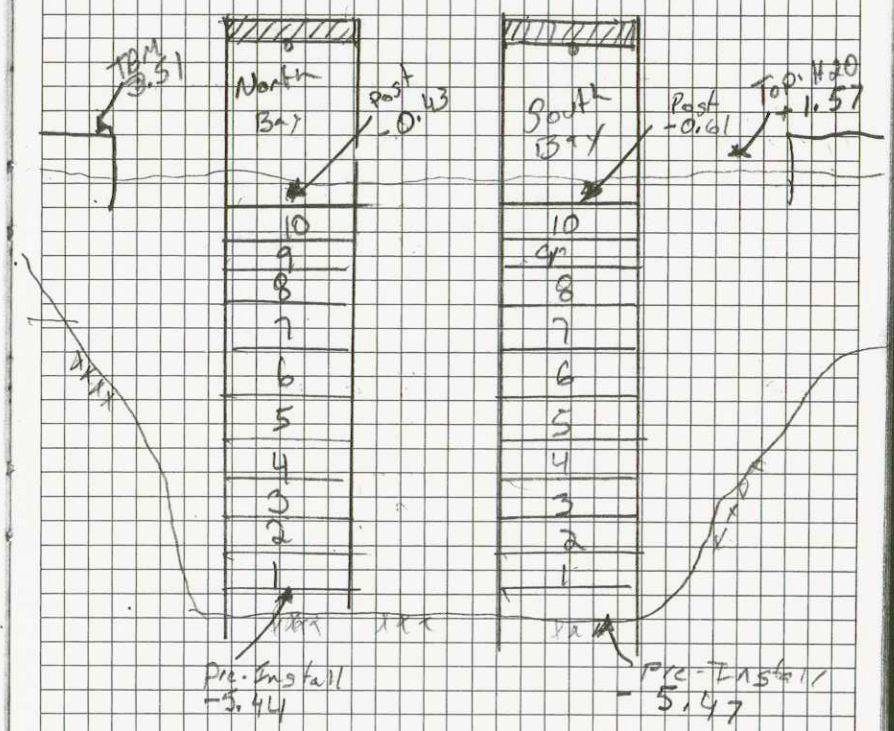
	BS	HI	FS	Elev	Desc
TBM	5.31	8.82		3.51	
H^2O			7.25	1.57	
North Bay Pre-Install			14.26	-5.44	
Marsh			16.29	-7.47	Water Bottom
Lake			14.97	-6.15	Water Bottom
Post Install			9.25	-0.43	
South Bay Pre-Install			14.29	-5.47	
Marsh			15.68	-6.86	Water Bottom
Lake			14.91	-6.09	Water Bottom
Post Install			9.43	-0.61	

B. Little
Apply

9-27-07

TBM = 3.51' Supplied by LADNR

Note: Installed 10 Stop Logs in Each bay, Padlocks in Good Cond. WD 40 was Applied



Structure 23

General Structure Condition (927/07)

General Structure Condition (9/27/07)

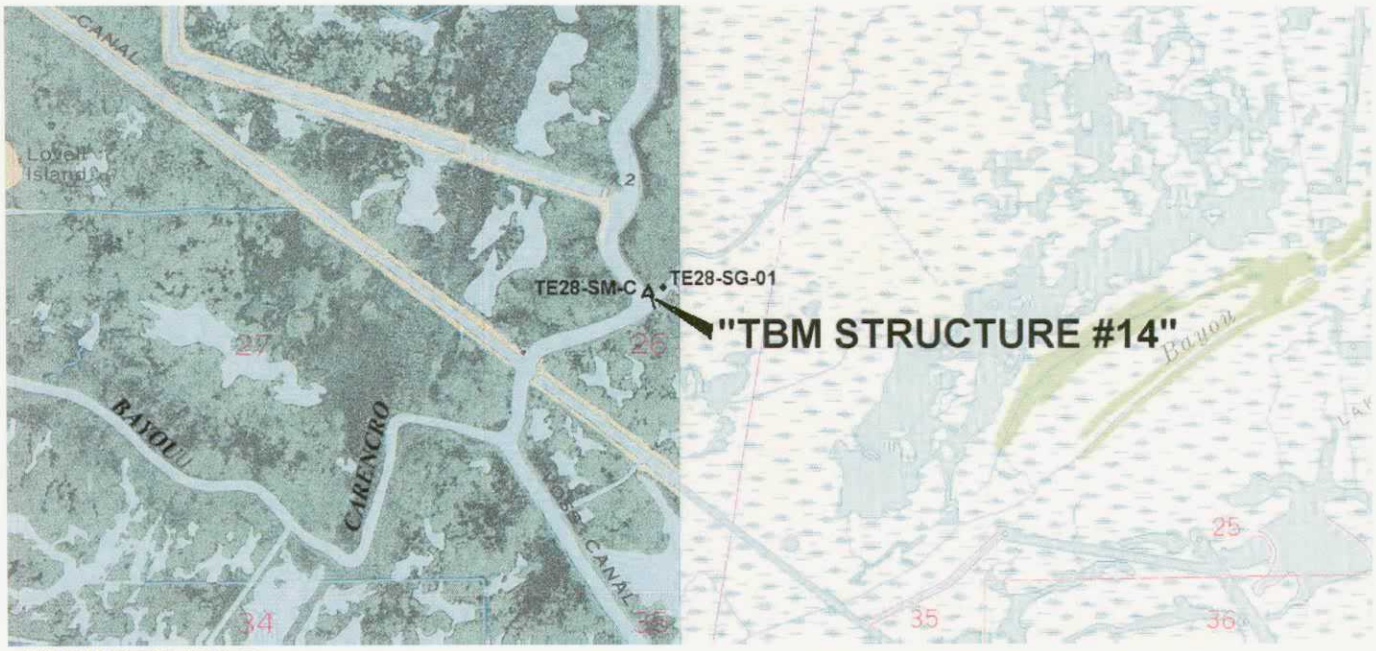
Structure 23

North Bank (9/27/07)

South Bank (9/27/07)

ATTACHMENT NO. 4

Benchmarks – Data Sheets



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

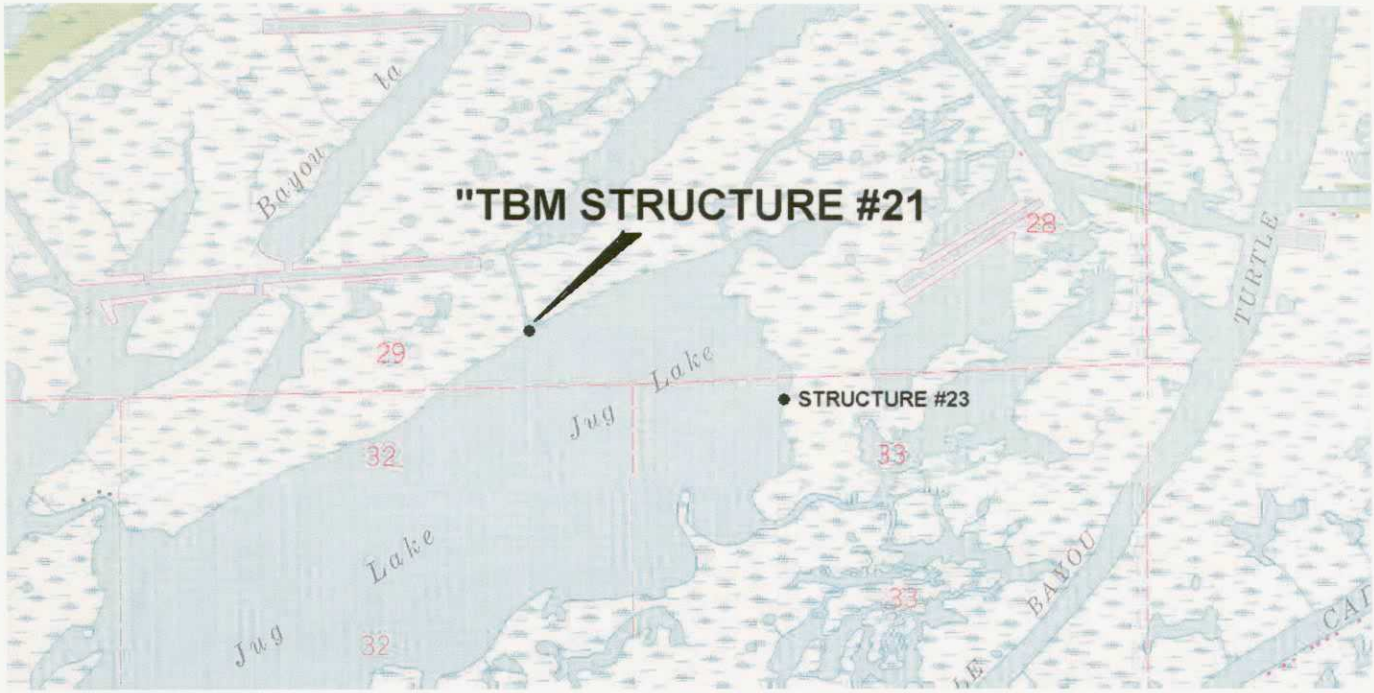
TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

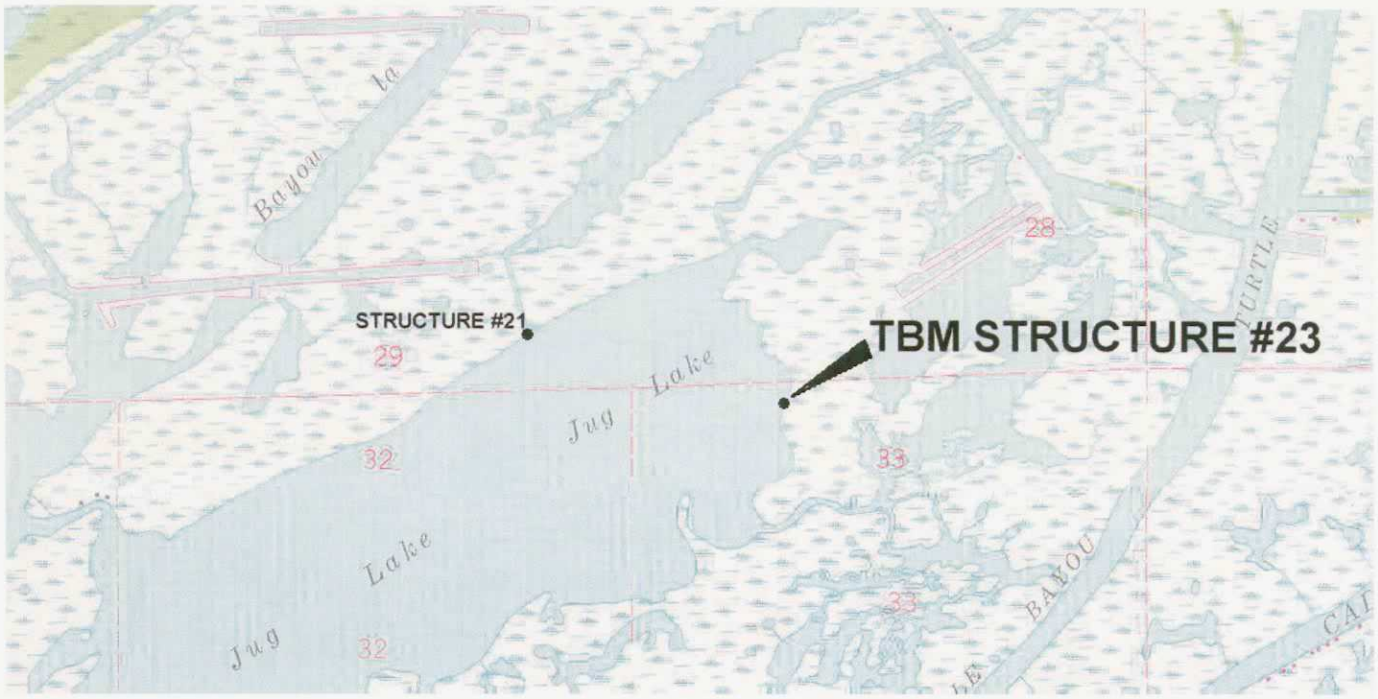
TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

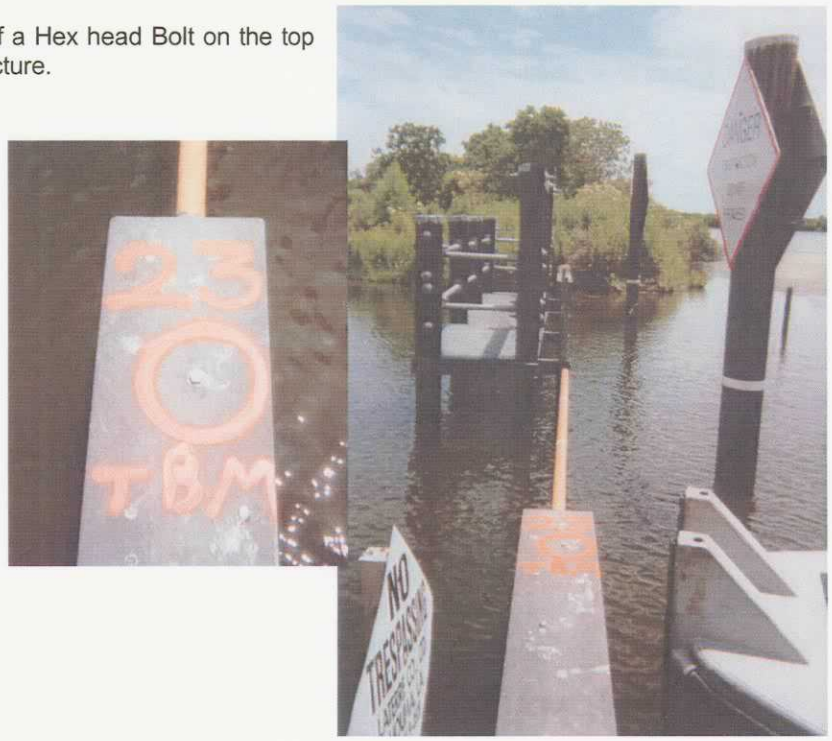
Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)



Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

412 South Van Avenue Houma, Louisiana 70363 • Post Office Box 2266 Houma, Louisiana 70361
Main Line: 985.868.1050 • Toll Free: 1.866.357.1050 • Fax: 985.868.5843 • Online: www.tbsmith.com

April 8, 2008

Hand Delivered

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

RE: Field Trip Report
Brady Canal Hydrologic Restoration Project (TE-28) – Spring 2008
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-08-13

Dear Mr. Babin:

Enclosed are four copies of the Field Trip Report for work performed on the above referenced project. This report includes findings, field notes, data and photographs as required in the contract.

Thank you for the opportunity of working with you on this project. For comments or questions, I can be reached at 985-223-9288 or email kodib@tbsmith.com.

Sincerely,

T. BAKER SMITH, INC.

Kodi J. Babin

Kodi J. Babin, Project Manager
Environmental Discipline

KJB/tlp
Enclosure(s)

081232 t001 Brian Babin deliv.

FIELD TRIP REPORT

For

Brady Canal Hydrologic Restoration Project (TE-28)
Operation of Variable Crest Weir Structures
DNR Contract No. 2503-08-13

Prepared For

Mr. Brian J. Babin, P.E.
La. Dept. of Natural Resources
1440 Tiger Drive, Suite B
Thibodaux, LA 70301

March 2008

Prepared By

T. BAKER SMITH, INC.
PROFESSIONAL CONSULTANTS SINCE 1913

Houma, LA Lafayette, LA Baton Rouge, LA Thibodaux, LA Houston, TX
1 (866) 357-1050 www.tbsmith.com

LIST OF ATTACHMENTS

No.	Description	Page
1	Site No. 14	A-1
2	Site No. 21	A-2
3	Site No. 23	A-3
4	Benchmarks – Data Sheets	A-4

ATTACHMENT NO. 1

Site No. 14

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 14

PARTICIPANTS: Kodi Babin, Ronnie Duke and Kiley Cressionie

DATES: March 28, 2008

CONDITIONS: Sunny & Clear (70°)

Permission to gain access to Site No. 14 was obtained via e-mail from Mr. Jeff W Deblieux, P.L.S. of Burlington on March 27, 2008.

The weir structure is located on the east bank of Little Carencro Bayou, North of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stop log bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.86 feet on both sides of the weir. The stop logs are in good condition.

We removed the planned 9 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was -1.04 feet, and Post stop log removal was -5.58 feet.

There are no navigation lights at this site.

Pad locks are in good condition and were treated with WD40. Grating and piles are in good condition.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 14.

Date: Friday, March 28, 2008

Participants: Kodi Babin, Ronnie Duke and Kiley Cressionie

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Jeff W. Deblieux, P.L.S. of Burlington Resources

Site No.: Structure No. 14

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** March 28, 2008; 2:00 p.m.

- **Number of Logs Removed/Replaced:** Removed 9 Logs
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

TBS Job # 2008.1232 3-28-08

LDNR

Brady Canal Hydrologic Restoration Project

(TE-28)

Removal of Stop Logs (Site No. 14)

Location	+	HI	-	Elev.	Remarks
BM14	3.36	6.93		+3.57	Tip Hex Bolt
H_2O			6.07	+0.86	Water
Center					
Bottom			14.80	-7.87	Canal
Bottom			13.22	-6.29	Marsh
Pre-Log			7.97	-1.04	Pre-Log Removal
Post-Log			12.51	-5.58	Post-Log Removal

Structure 14

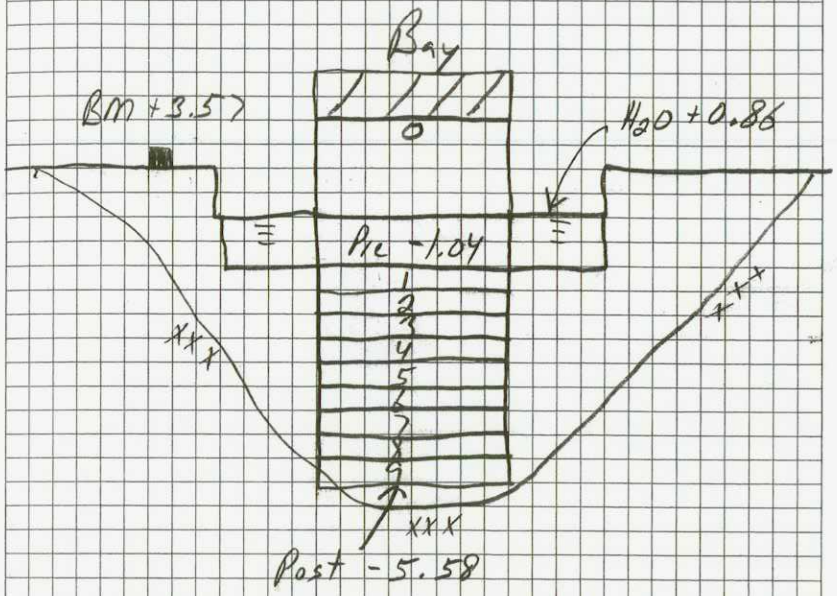
3-28-08
Sunny + Clear

K. Babin
R. Duke
C. Giessionic

BM 14 Supplied by LDNR

Bay - Removed 9 Stop Logs

Notes: WD 40 All Pad Locks
Pad Locks in Good Condition
Grating and Piles in Good Condition



STRUCTURE 14

General Structure Condition (3/28/2008)

General Structure Condition (3/28/2008)

STRUCTURE 14

North Bank Condition (3/28/2008)

South Bank Condition (3/28/2008)

ATTACHMENT NO. 2

Site No. 21

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 21

PARTICIPANTS: Kodi Babin, Ronnie Duke and Kiley Cressionie

DATES: March 28, 2008

CONDITIONS: Sunny & Clear (70°)

Permission to gain access to Site No. 21 was obtained via e-mail from Mr. Francis J. Fields, P.L.S. of Apache Corporation on March 27, 2008.

The structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three stop log bays at this site which we refer in the field notes as West Bay, Center Bay & East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.77 feet on both sides of the weir.

East Bay
We removed the planned 5 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was -0.58 feet, and Post stop log removal was -2.48 feet.

Center Bay
We removed the planned 10 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was +0.22 feet, and Post stop log removal was -5.23 feet.

West Bay
We removed the planned 2 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was -0.09 feet, and Post stop log removal was -1.18 feet.

There are no navigation lights at this site.

Pad locks are in good condition and were treated with WD40. Grating and piles are in good condition.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 21.

Date: Friday, March 28, 2008

Participants: Kodi Babin, Ronnie Duke and Kiley Cressionie

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 21

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** March 28, 2008; 8:00 a.m.

- **Number of Logs Removed/Replaced:** Removed 17 Logs (5 Logs East Bay, 10 Logs Center Bay, 2 Logs West Bay)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

TBS Job # 2008.1232 3-28-08

LDNR

Brady Canal Hydrologic Restoration Project

(TE-28)

Removal of Stop Logs (Site No. 21)

Location	+	HI	−	Elev.	Remarks
Bm21	3.25	6.97		+3.72	Top of Hex Bolt
H_2O			6.20	+0.77	Water
West Bottom			9.47	-2.50	Marsh
Bottom			8.33	-1.36	Lake
Pre-Log			7.06	-0.09	Pre-Log Removal
Post-Log			8.15	-1.18	Post-Log Removal
Center Bottom			13.51	-6.54	Marsh
Bottom			13.08	-6.11	Lake
Pre-Log			6.75	+0.22	Pre-Log Removal
Post-Log			12.20	-5.23	Post-Log Removal
East Bottom			11.10	-4.13	Marsh
Bottom			10.17	-3.20	Lake
Pre-Log			7.55	-0.58	Pre-Log Removal
Post-Log			9.45	-2.48	Post-Log Removal

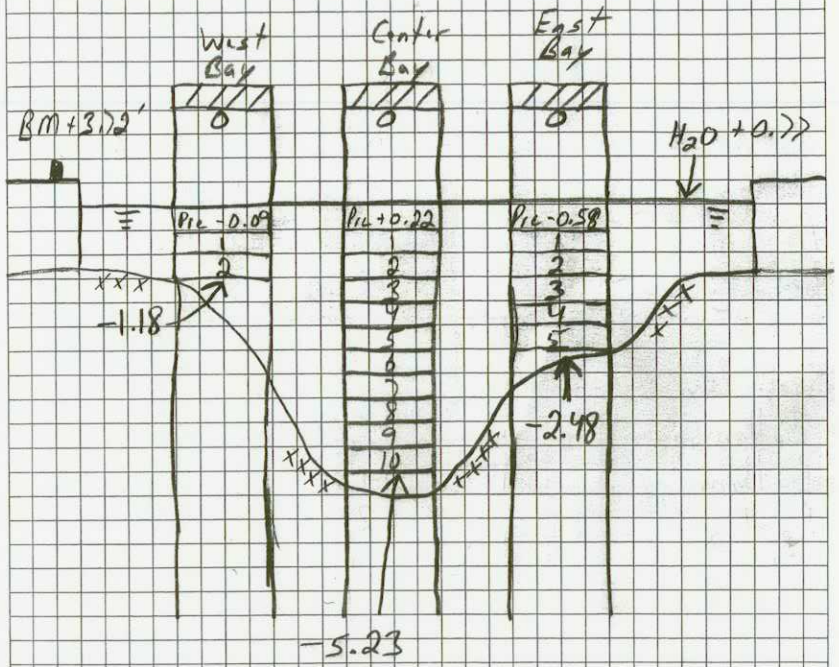
Structure 21 3-28-08

Sunny + Clear

Bm 21 Supplied by LDNR

K. Babin
R. Duke
C. Chessmire

West Bay - Removed 2 Stop Logs
Center Bay - Removed 10 Stop Logs
East Bay - Removed 5 Stop Logs
Notes: WD40 All Pad Locks
Padlocks in Good Condition
Grating + Piles in Good Condition



STRUCTURE 21

General Structure Condition (3/28/2008)

General Structure Condition (3/28/2008)

STRUCTURE 21

East Bank (3/28/2008)

West Bank (3/28/2008)

ATTACHMENT NO. 3

Site No. 23

FIELD TRIP REPORT

SUBJECT: TE-28 Brady Canal Hydrologic Restoration Project

LOCATION: Terrebonne Basin, Terrebonne Parish

PURPOSE: Operate and adjust the variable crest weirs at Site No. 23

PARTICIPANTS: Kodi Babin, Ronnie Duke and Kiley Cressionie

DATES: March 28, 2008

CONDITIONS: Sunny & Clear (70°)

Permission to gain access to Site No. 21 was obtained via e-mail from Mr. Francis J. Fields, P.L.S. of Apache Corporation on March 27, 2008.

The structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two stop log bays at this site which we refer in the field notes as North Bay & South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51' (NAVD88) supplied to us by LADNR. The water surface elevation at the site was determined to be 0.54 feet on both sides of the weir.

North Bay
We removed the planned 10 stop logs that were installed on September 27, 2007. Pre stop log removal elevation was -0.46 feet, and Post stop log removal was -5.46 feet.

South Bay
We removed the planned 10 stop logs that were installed on September 27, 2007. Pre-stop log removal elevation was -0.51 feet, and Post stop log removal was -5.48 feet.

There are no navigation lights at this site.

Pad locks are in good condition and were treated with WD40. Grating and piles are in good condition.

Erosion was noted on the North side.

For marsh & lake ground elevation please refer to the attached field notes. Also attached are the field data report and photographs.

FIELD DATA REPORT

Project (No. & Name): TE-28 Brady Canal Hydrologic Restoration Project

Location: Terrebonne Basin, Terrebonne Parish

Purpose of Site Visit: Adjust (remove stop logs) the variable crest weir structure at Site 23.

Date: Friday, March 28, 2008

Participants: Kodi Babin, Ronnie Duke and Kiley Cressionie

Weather Conditions: Sunny (70°)

Persons Contacted for Access: Mr. Francis Fields, P.L.S. of Apache Corporation

Site No.: Structure No. 23

Structure Condition			
		Maintenance/Repair	
Item	**Condition**	**Yes**	**No**
Timber Pile	Good		X
Timber Hoist/Lag Eyes	Good		X
Pile Caps	Good		X
Corrugated Aluminum	N/A		
Grating/Metal Components	Good		X
Wood Access Ramp	N/A		
Stop Logs	Good		X
Master Locks	Good (cleaned)	X	

Levee Condition	
Item	**Condition**
Erosion	N/A
Vegetation	N/A

Description of Maintenance/Repair Required: Cleaned master locks with WD-40.

Stop Log Adjustment **Date/Time:** March 28, 2008; 11:30 a.m.

- **Number of Logs Removed/Replaced:** Removed 20 Logs (10 Logs North Bay, 10 Logs Center Bay)
- **Elevation:** See Field Notes
- **Mudline Levels:** See Field Notes
- **Water Levels:** See Field Notes

Flag Description: N/A

TBS Job # 2008.1232 3-28-08

LDNR

Brady Canal Hydrologic Restoration Project

(TE-28)

Removal of Stop Logs (Site No. 23)

Location	+	HI	−	Elev.	Remarks
Bm 23	4.93	8.44		+3.51	Top of Hex Bit
H_2O			7.90	+0.54	Water
North Bay					
Bottom			15.78	-7.34	Marsh
Bottom			14.32	-5.88	Lake
Pre-Log			8.90	-0.46	Pre-Log Removal
Post-Log			13.90	-5.46	Post-Log Removal
South Bay					
Bottom			15.00	-6.56	Marsh
Bottom			14.05	-5.61	Lake
Pre-Log			8.95	-0.51	Pre-Log Removal
Post-Log			13.92	-5.48	Post-Log Removal

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Structure 23

3-28-08

Sunny + Clear

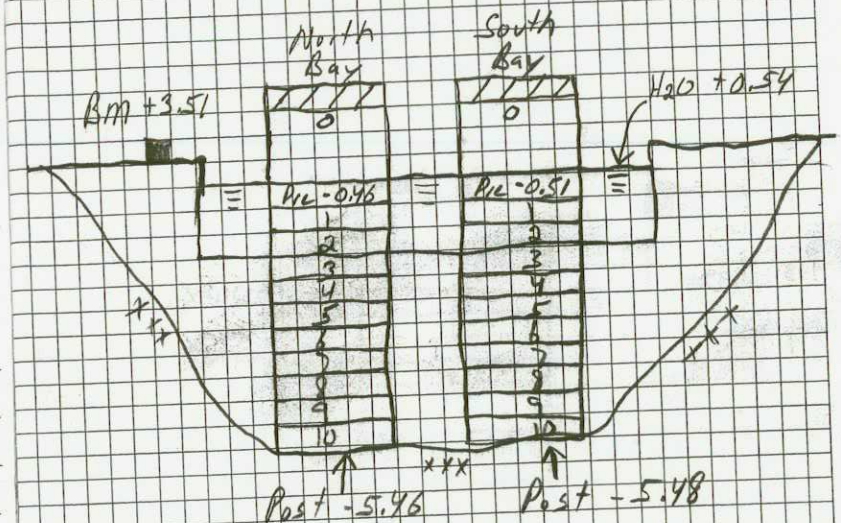
K. Babin
R. Duke
C. Cressionie

BM 23 Supplied by LDNR

North Bay - Removed 10 stop Logs, Lost 1 of 10

South Bay - Removed 10 Stop Logs

Notes: WD 40 All Pad Locks
Locks in Good Condition
Erosion on North Side
Grating + Piles in Good Condition



STRUCTURE 23

General Structure Condition (3/28/2008)

General Structure Condition (3/28/2008)

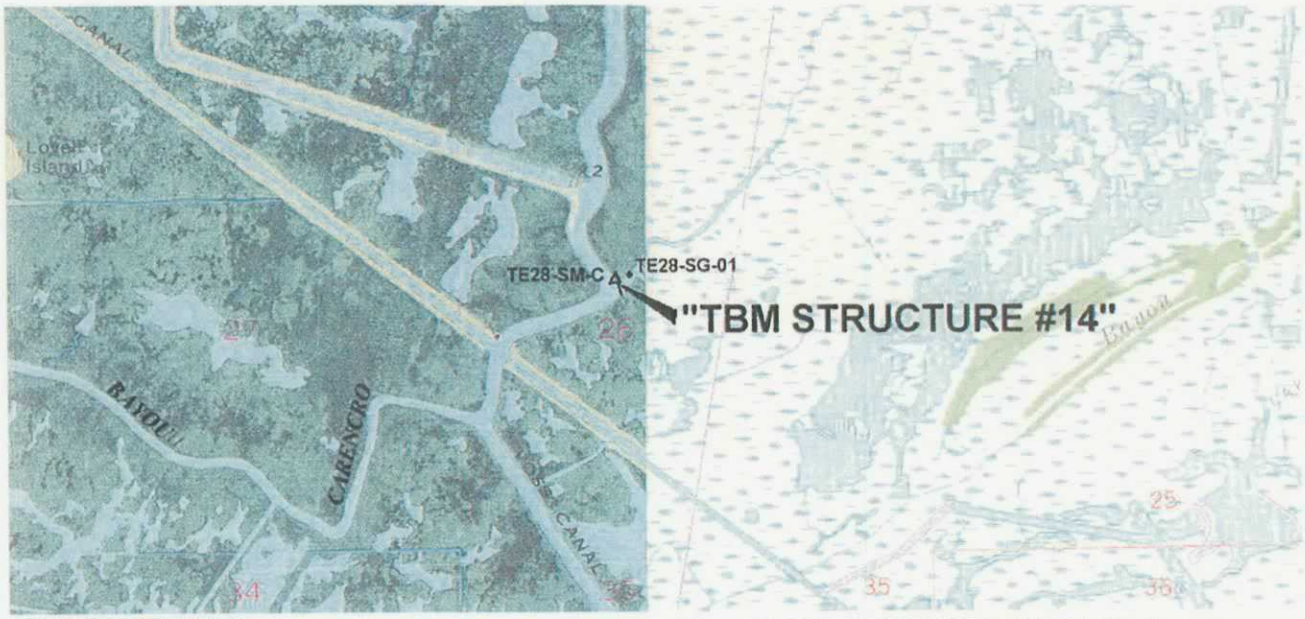
STRUCTURE 23

South Bank (3/28/2008)

North Bank (3/28/2008)

ATTACHMENT NO. 4

Benchmarks – Data Sheets



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

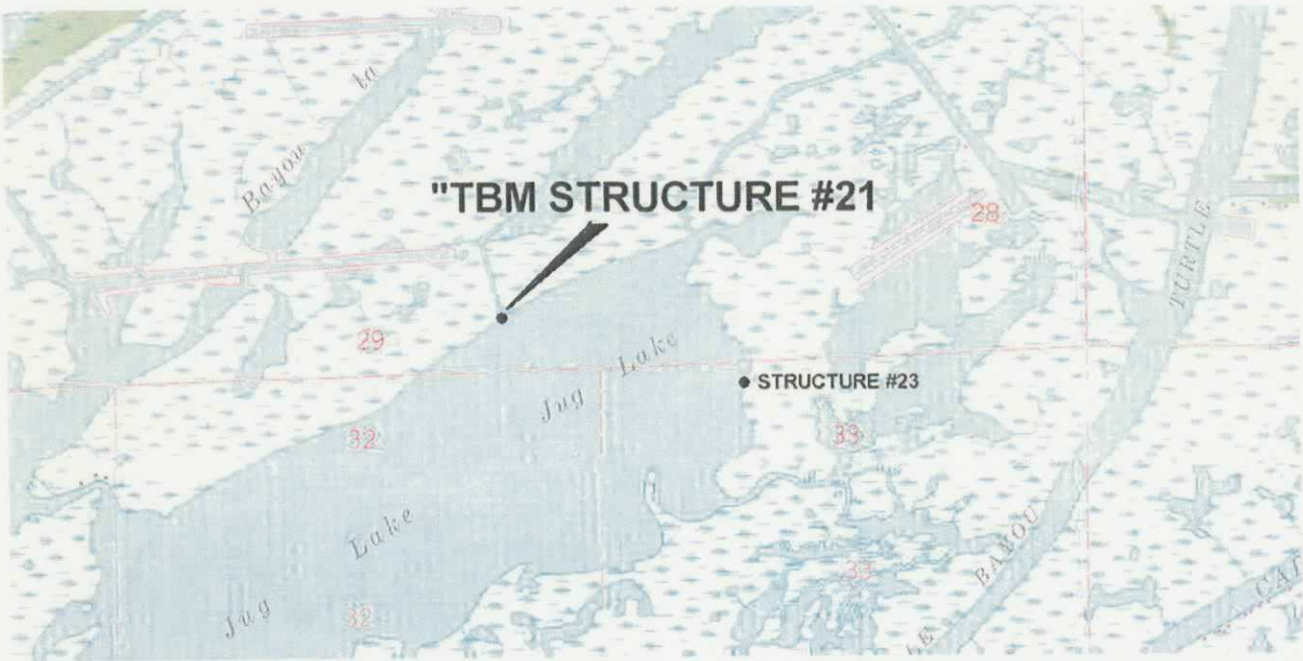
TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

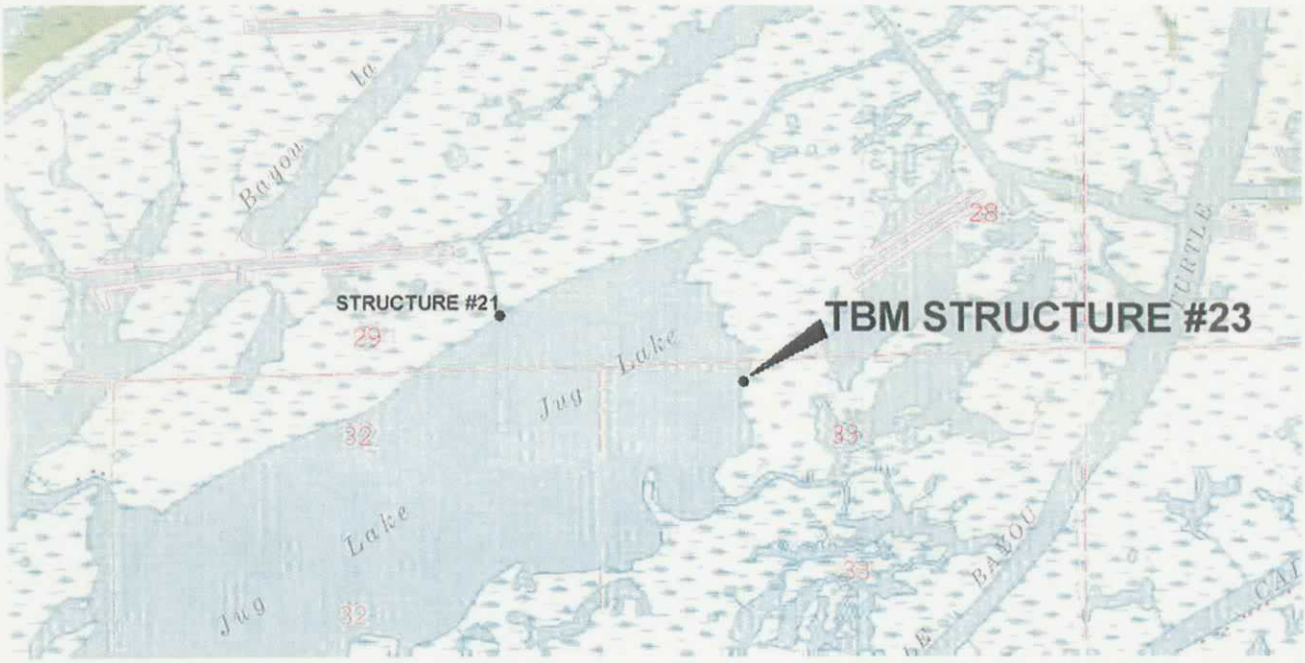
TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division

FIELD TRIP REPORT

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)
OPERATION OF VARIABLE CREST WEIR STRUCTURES
DNR CONTRACT No. 2511-09-01

OCTOBER 2008

PREPARED FOR:

MR. BRIAN J. BABIN, P.E.
LA DEPT OF NATURAL RESOURCES
1440 TIGER DRIVE, STE B
THIBODAUX, LA 70301

PREPARED AND SUBMITTED BY:

APACHE LOUISIANA MINERALS, INC.
POST OFFICE BOX 206
HOUMA, LA 70361-0206
(985) 879-3528

RECEIVED
NOV 12 2008
CCD

FIELD TRIP REPORT

SUBJECT:	TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION:	TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE:	OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.:	14
PARTICIPANTS:	BILLY WURZLOW, DANNY LEBOEUF, FRANCIS FIELDS, ARCHIE DOMANGUE, DEME NAQUIN, JEREMY BOURG
DATE:	OCTOBER 28, 2008
CONDITIONS:	CLEAR AND COLD

Permission to gain access to Site #14 was obtained via email from Mr. Jeff DeBlieux with ConocoPhillips.

The weir structure is located on the east bank of Little Carencro Bayou, north of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stoplog bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72' supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.28' on both sides of the weir.

Crew installed ten (10) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -5.57'. Post-stoplog installation elevation was -0.51'.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: THIS IS THE INITIAL VISIT BY APACHE LOUISIANA MINERALS, INC. FIELD CREW OPERATING UNDER ABOVE CONTRACT NO.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

FIELD DATA REPORT

Project (No. & Name): **TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT**

Location: **TERREBONNE BASIN, TERREBONNE PARISH, LA**

Purpose of Site Visit: **OPERATE STRUCTURE - INSTALL STOP LOGS**

Date: **Tuesday, October 28, 2008**

Participants: **WURZLOW; LEBOEUF; FIELDS; DOMANGUE; NAQUIN; BOURG**

Weather Conditions: **CLEAR & COLD**

Persons Contacted for Access: **JEFF DEBLIEUX - CONOCOPHILLIPS, VIA EMAIL**

Site No.: **14**

STRUCTURE CONDITION

Item	Condition	Maintenance/Repair Yes	Maintenance/Repair No
Timber Pile	GOOD	☐	☒
Timber Hoist / Lag Eyes	GOOD	☐	☒
Pile Caps	GOOD	☐	☒
Corrugated Aluminum	N/A	☐	☐
Grating / Metal Components	GOOD	☐	☒
Wood Access Ramp	N/A	☐	☐
Stop Logs	GOOD	☐	☒
Master Locks	GOOD - LUBED	☒	☐

LEVEE CONDITION

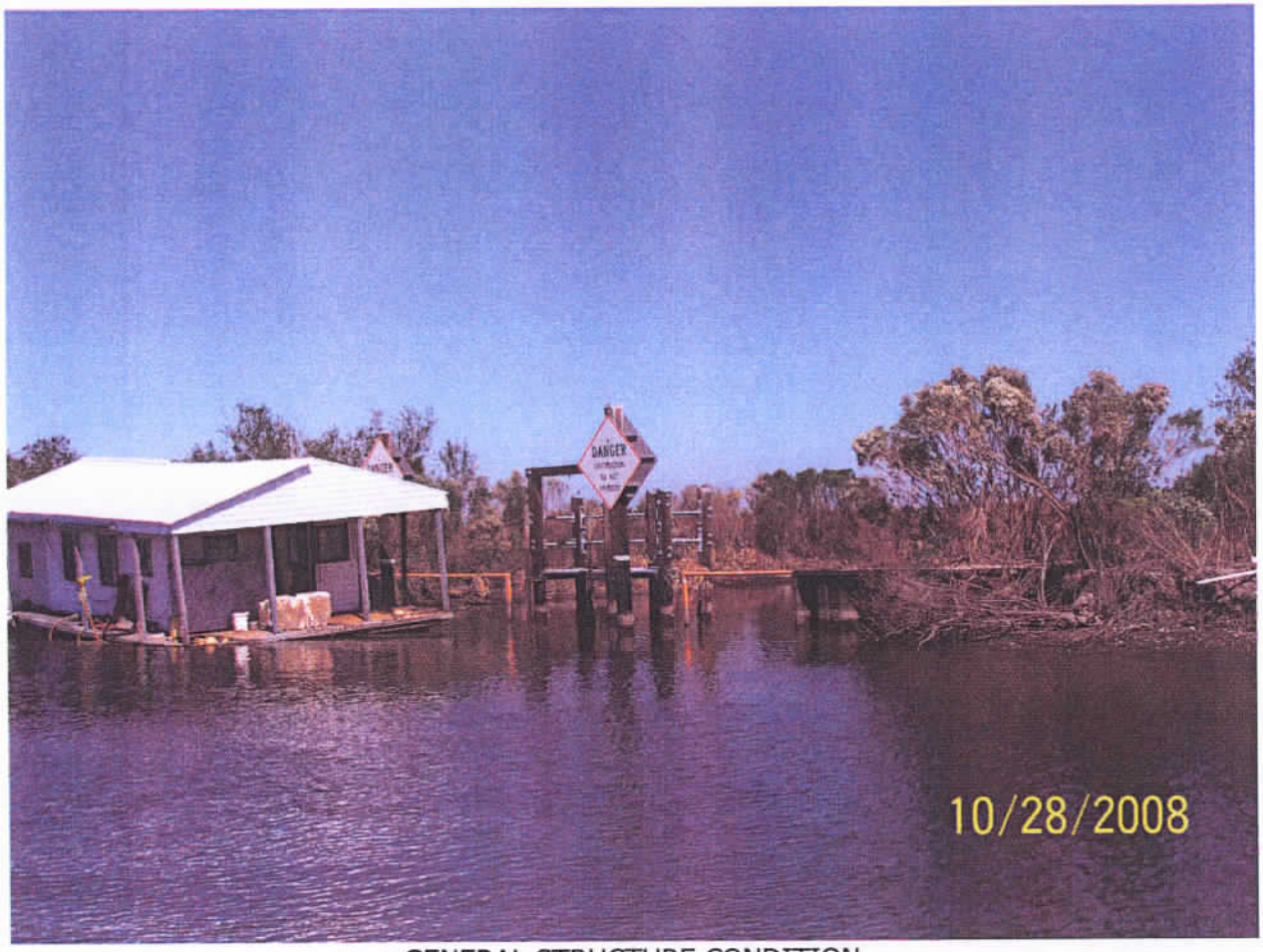
Item	Condition
Erosion	_____
Vegetation	N/A

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT

Stop Log Adjustment	Date/Time	10/28/2008 1:00 PM
Number of Logs Removed/Replaced		10 LOGS INSTALLED
Elevation		SEE FIELD NOTES
Mudline Levels		SEE FIELD NOTES
Water Levels		SEE FIELD NOTES

Flag Description: N/A

STRUCTURE #14



GENERAL STRUCTURE CONDITION

STRUCTURE #14

SOUTH WING

NORTH WING

VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

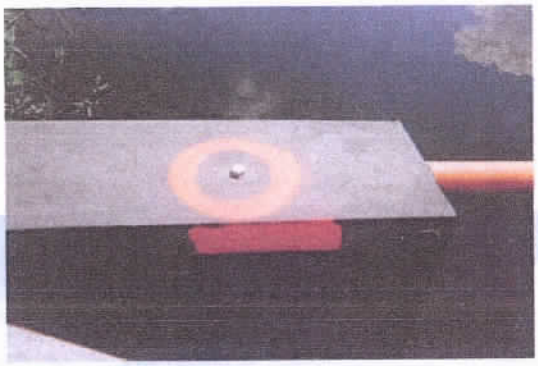
Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)



Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-C"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division

Site #14

STA.	BS	H.I	F.S.	Elev.	Remarks
	5.42	8.99		3.57	TBm 14
H_2O			8.71	0.28	
Pre-Install			14.56	-5.57	
Bottom outside			16.42	-7.43	
" inside			15.12	-6.13	
Post Install			9.50	-0.51	

NOTE: Added 10 Boards

FIELD TRIP REPORT

SUBJECT:	TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION:	TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE:	OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.:	21
PARTICIPANTS:	BILLY WURZLOW, DANNY LEBOEUF, FRANCIS FIELDS, ARCHIE DOMANGUE, DEME NAQUIN, JEREMY BOURG
DATE:	OCTOBER 28, 2008
CONDITIONS:	CLEAR AND COLD

Permission to gain access to Site #21 was obtained from Mr. Tim Allen, General Manager of Apache Louisiana Minerals, Inc.

The weir structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three (3) stoplog bays at this site, which are referred to as West Bay, Center Bay and East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72′ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.45′ marsh side and +0.42′ outside of the weir.

EAST BAY
Crew installed six (6) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -3.22′. Post-stoplog installation elevation was -0.26′. *NOTE: April 2008 operation report indicates that five (5) stoplogs were removed.*

CENTER BAY
Crew installed ten (10) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -5.28′. Post-stoplog installation elevation was -0.23′.

WEST BAY
Crew installed two (2) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -1.21′. Post-stoplog installation elevation was -0.23′.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: THIS IS THE INITIAL VISIT BY APACHE LOUISIANA MINERALS, INC. FIELD CREW OPERATING UNDER ABOVE CONTRACT NO.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

FIELD DATA REPORT

Project (No. & Name): **TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT**

Location: **TERREBONNE BASIN, TERREBONNE PARISH, LA**

Purpose of Site Visit: **OPERATE STRUCTURE - INSTALL STOP LOGS**

Date: **Tuesday, October 28, 2008**

Participants: **WURZLOW; LEBOEUF; FIELDS; DOMANGUE; NAQUIN; BOURG**

Weather Conditions: **CLEAR & COLD**

Persons Contacted for Access: **TIM ALLEN - ALMI**

Site No.: **21**

STRUCTURE CONDITION

Item	Condition	Maintenance/Repair Yes	Maintenance/Repair No
Timber Pile	GOOD	☐	☒
Timber Hoist / Lag Eyes	GOOD	☐	☒
Pile Caps	BENT UP ON 2 PILES	☒	☐
Corrugated Aluminum	N/A	☐	☐
Grating / Metal Components	GOOD	☒	☐
Wood Access Ramp	N/A	☐	☐
Stop Logs	GOOD	☐	☒
Master Locks	GOOD - LUBED	☒	☐

LEVEE CONDITION

Item	Condition
Erosion	SOME EROSION ON WINGS - STILL TIED TO LEVEE
Vegetation	N/A

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. EDGES OF 2 PILE CAPS BENT AND NAILED INTO PLACE. GRATING UNCLIPPED IN 2 AREAS - REFASTENED TO STRUCTURE. NEED DIRT WORK ON WINGS.

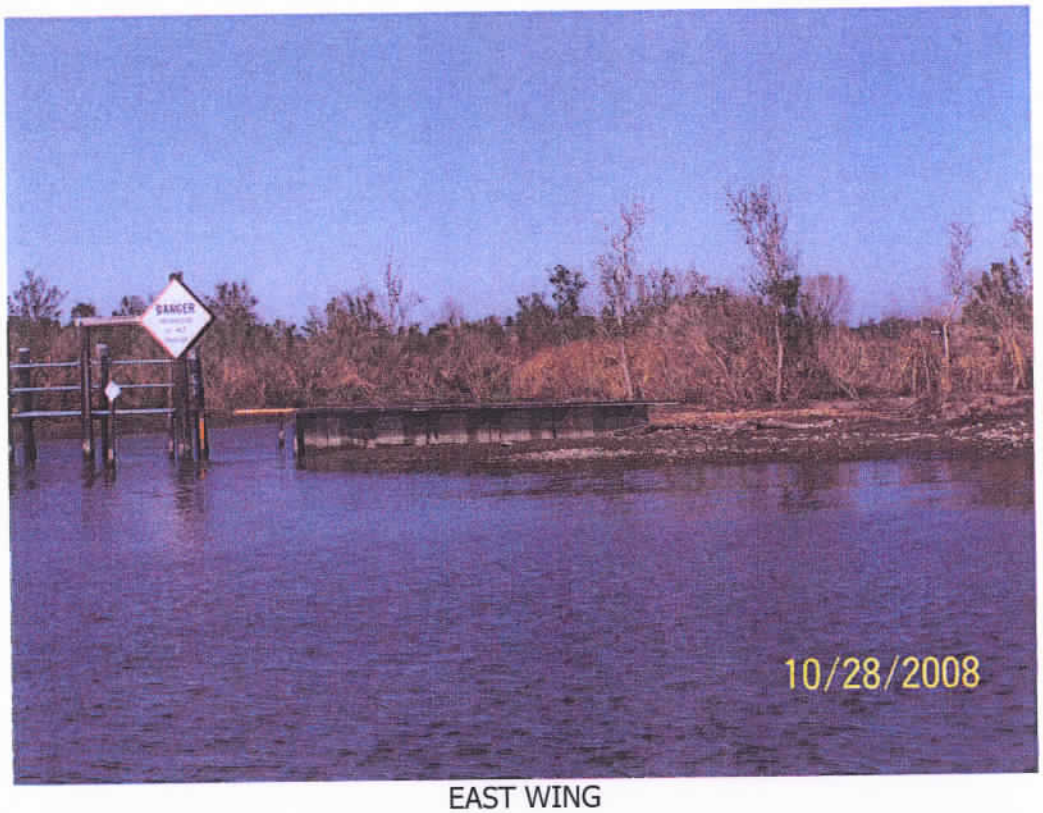
Stop Log Adjustment	Date/Time	10/28/2008 10:30 AM
Number of Logs Removed/Replaced		2 WEST, 10 MIDDLE, 6 EAST INSTALLED
Elevation		SEE FIELD NOTES
Mudline Levels		SEE FIELD NOTES
Water Levels		SEE FIELD NOTES

Flag Description: N/A

STRUCTURE #21

GENERAL STRUCTURE CONDITION – LOOKING NORTHWEST

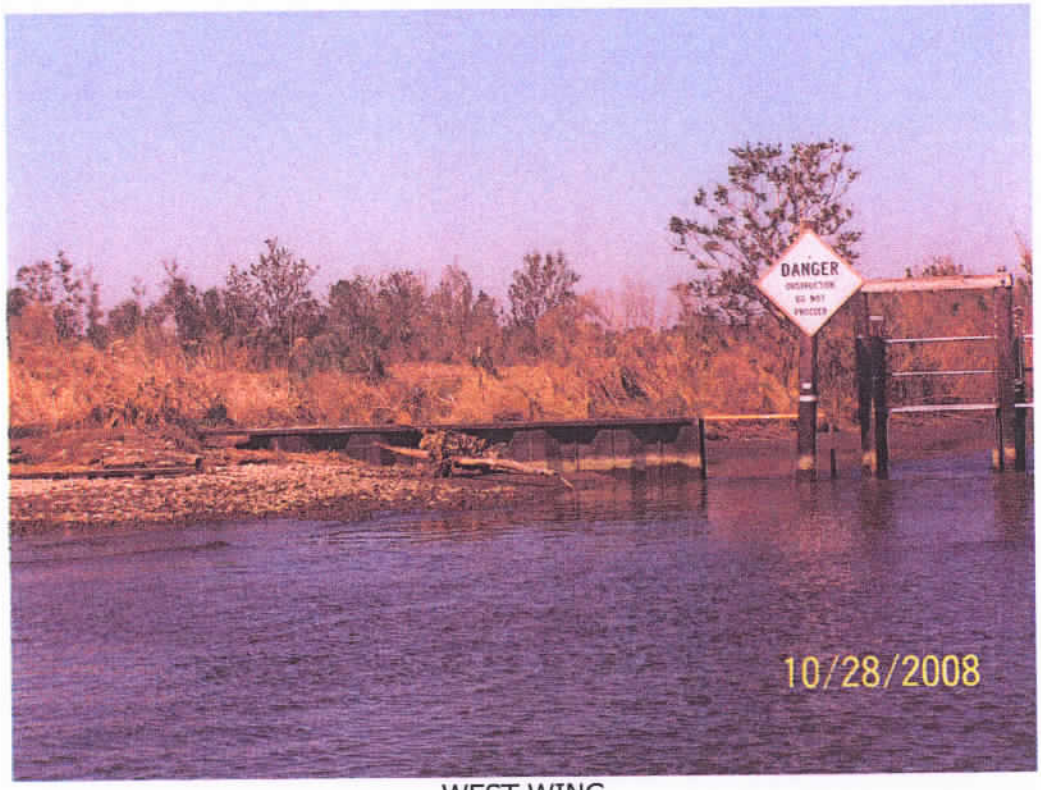
STRUCTURE #21



EAST WING

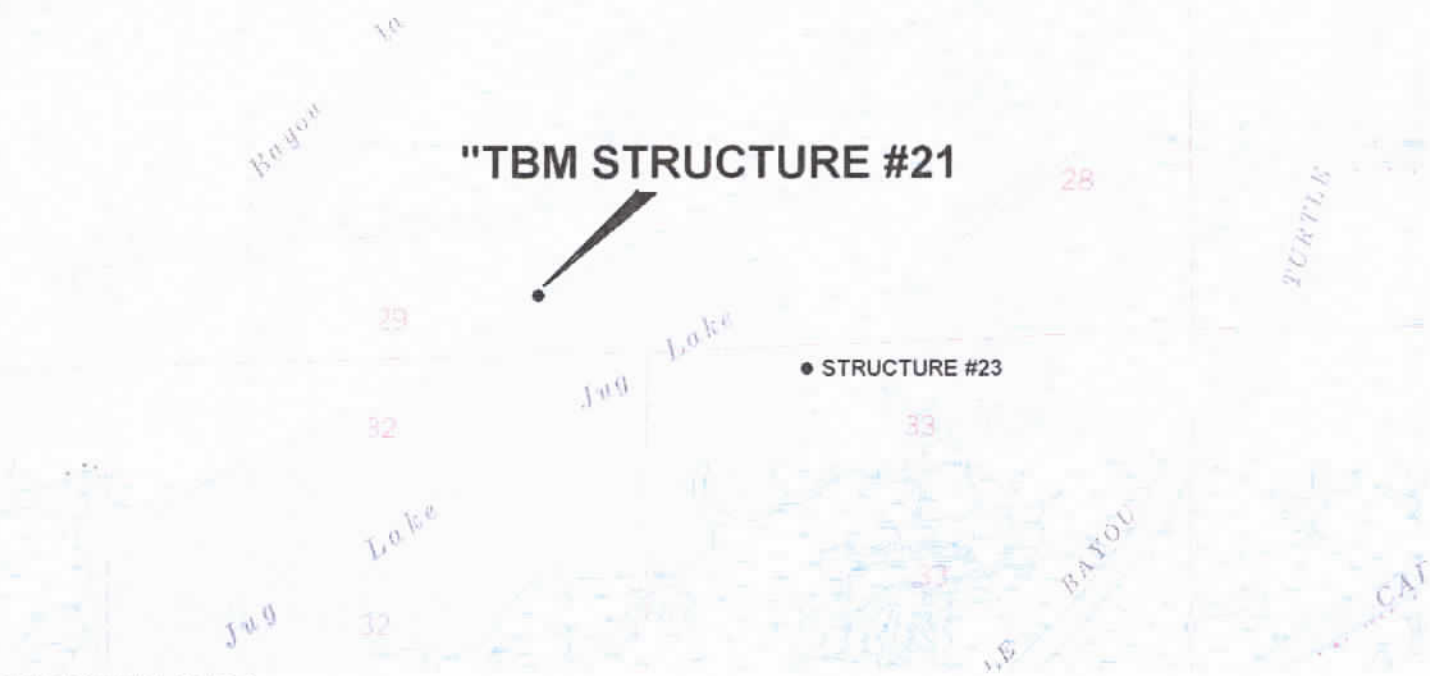
EAST WING

STRUCTURE #21



WEST WING

WEST WING



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

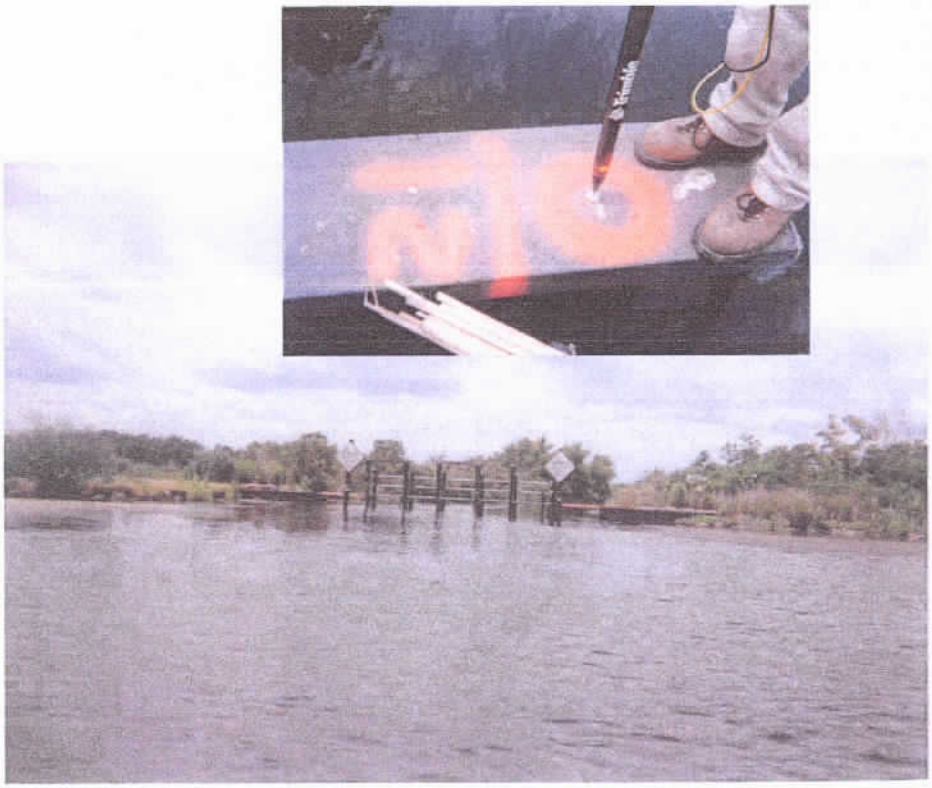
Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)



Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division

Brady Canal Hydrologic
Restoratio Project
Site #21

STA.	B.S.	H.I.	F.S.	Elev.	Remarks
	4.56	8.28		3.72	TBM 21
H2O inside			7.83	0.45	
" outside			7.86	0.42	
west Bay pre-install			9.49	-1.21	
Bottom Lk.			10.22	-1.94	
" inside			10.96	-2.68	
west post install			8.51	-0.23	
middle Bay pre-install			13.56	-5.28	
Bottom Lk.			13.87	-5.59	
" inside			15.23	-6.95	
middle post install			8.51	-0.23	
East Bay pre-install			11.50	-3.22	
Bottom Lk.			11.84	-3.56	
" inside			12.36	-4.08	
East post install			8.54	-0.26	

NOTE: Added 2 on west
" 10 in middle
" 6 on East

B. WURZLOW
F. FIELDS
A. DOMINGUE
D. LEBOEUF
D. NAQUIN
J. DOURO

10/28/08

FB 145

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FIELD TRIP REPORT

SUBJECT:	TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION:	TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE:	OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.:	23
PARTICIPANTS:	BILLY WURZLOW, DANNY LEBOEUF, FRANCIS FIELDS, ARCHIE DOMANGUE, DEME NAQUIN, JEREMY BOURG
DATE:	OCTOBER 28, 2008
CONDITIONS:	CLEAR AND COLD

Permission to gain access to Site #23 was obtained from Mr. Tim Allen, General Manager of Apache Louisiana Minerals, Inc.

The weir structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two (2) stoplog bays at this site, which are referred to as North Bay and South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51′ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.15′ marsh side and +0.10′ outside of the weir.

NORTH BAY
Crew installed the planned ten (10) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -5.47′. Post-stoplog installation elevation was -0.47′.

SOUTH BAY
Crew installed the planned ten (10) stoplogs that were removed on last visit by others under separate contract. Pre-stoplog installation elevation was -5.51′. Post-stoplog installation elevation was -0.44′.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: THIS IS THE INITIAL VISIT BY APACHE LOUISIANA MINERALS, INC. FIELD CREW OPERATING UNDER ABOVE CONTRACT NO.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

FIELD DATA REPORT

Project (No. & Name): **TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT**

Location: **TERREBONNE BASIN, TERREBONNE PARISH, LA**

Purpose of Site Visit: **OPERATE STRUCTURE - INSTALL STOP LOGS**

Date: **Tuesday, October 28, 2008**

Participants: **WURZLOW; LEBOEUF; FIELDS; DOMANGUE; NAQUIN; BOURG**

Weather Conditions: **CLEAR & COLD**

Persons Contacted for Access: **TIM ALLEN - ALMI**

Site No.: **23**

STRUCTURE CONDITION

Item	Condition	Maintenance/Repair Yes	Maintenance/Repair No
Timber Pile	GOOD	☐	☒
Timber Hoist / Lag Eyes	GOOD	☐	☒
Pile Caps	GOOD	☐	☒
Corrugated Aluminum	N/A	☐	☐
Grating / Metal Components	GOOD	☐	☒
Wood Access Ramp	N/A	☐	☐
Stop Logs	GOOD	☐	☒
Master Locks	GOOD - LUBED	☒	☐

LEVEE CONDITION

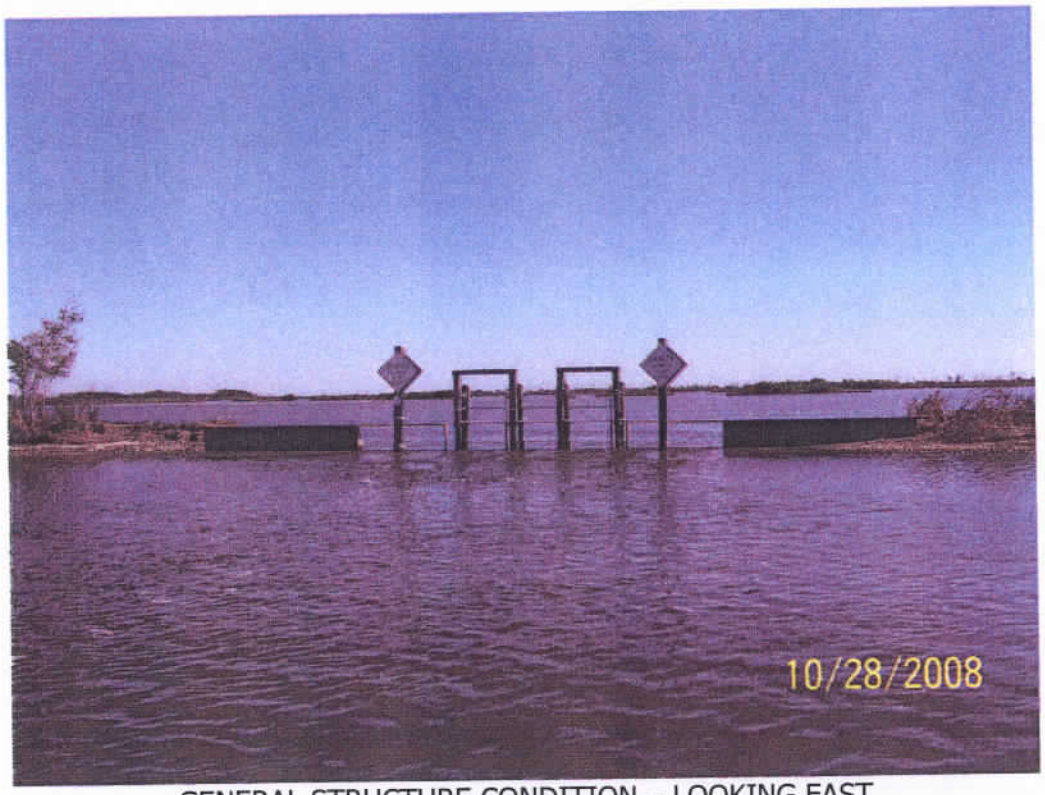
Item	Condition
Erosion	WASHOUT AROUND NORTH WING 5' WIDE
Vegetation	N/A

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. DIRT FILL NEEDED AT BOTH WINGS TO TIE INTO LEVEE. WASHOUT AROUND NORTH WING 5' WIDE AND APPROX. 0.0' ELEVATION

Stop Log Adjustment	Date/Time	10/28/2008 12:00 PM
Number of Logs Removed/Replaced		10 LOGS REPLACED IN EACH BAY
Elevation		SEE FIELD NOTES
Mudline Levels		SEE FIELD NOTES
Water Levels		SEE FIELD NOTES

Flag Description: N/A

STRUCTURE #23



GENERAL STRUCTURE CONDITION – LOOKING EAST

GENERAL STRUCTURE CONDITION – LOOKING SOUTH

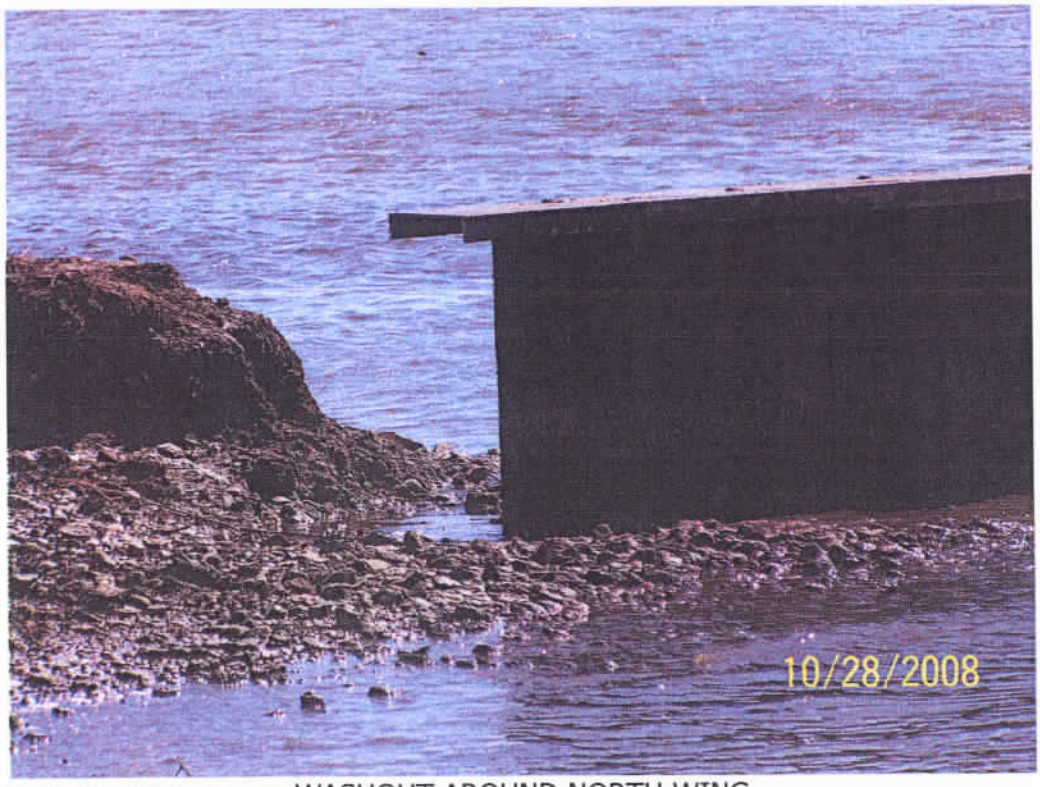
STRUCTURE #23

NORTH WING

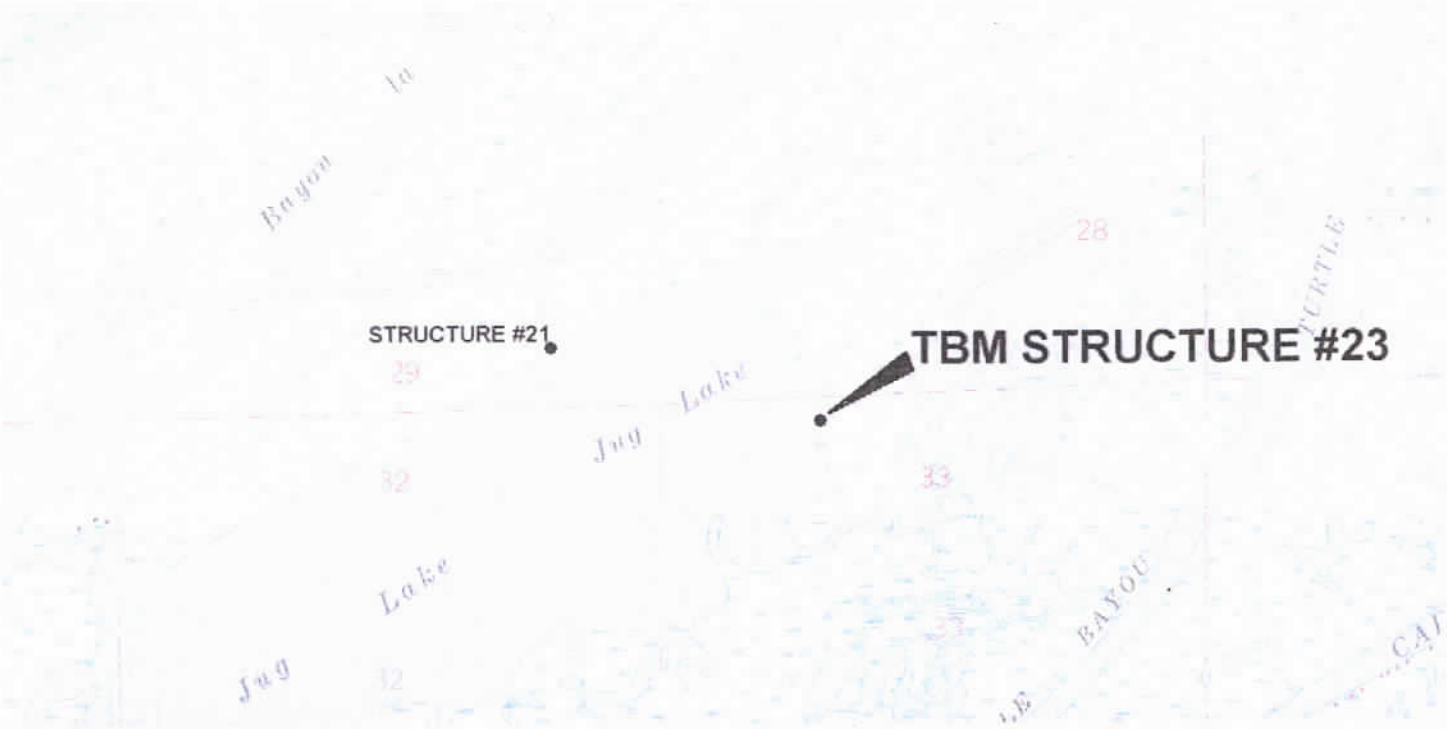
SOUTH WING

STRUCTURE #23

WASHOUT AROUND NORTH WING



WASHOUT AROUND NORTH WING



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

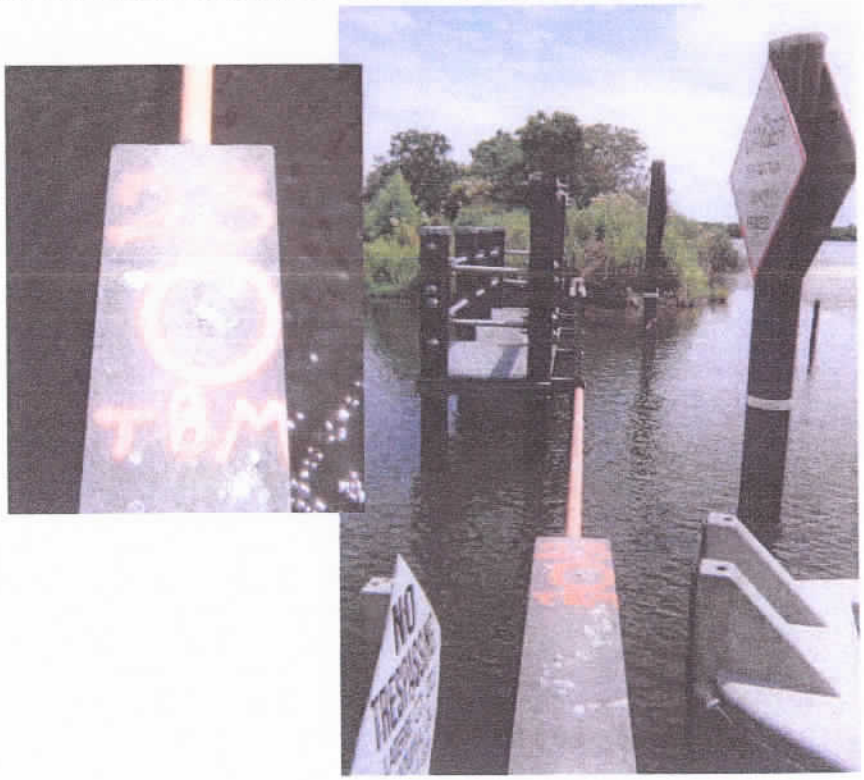
Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)



Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"
Position established by John Chance Land Surveys, Inc. for the Louisiana Department of Natural Resources, Coastal Restoration Division

SAME CREW 10/28/08 FB 145

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Site #23

STA	B.S.	HI	F.S.	Elev.	Remarks
	2.28	5.79		3.51	TBm23
H_2O inside			5.64	0.15	
" outside			5.69	0.10	
North Bay Pre Install			11.26	-5.47	
Bottom Lk.			12.08	-6.29	
" Inside			13.70	-7.91	
North Bay post install			6.26	-0.47	
South Bay Pre-Install			11.30	-5.51	
Bottom Lk.			12.02	-6.23	
" Inside			12.94	-7.15	
South Bay post Install			6.23	-0.44	

NOTE: Added 10 Boards in Each Side

FIELD TRIP REPORT

BRADY CANAL HYDROLOGIC RESTORATION PROJECT (TE-28)
OPERATION OF VARIABLE CREST WEIR STRUCTURES
DNR CONTRACT No. 2511-09-01

MARCH 2009

PREPARED FOR:

MR. BRIAN J. BABIN, P.E.
LA DEPT OF NATURAL RESOURCES
1440 TIGER DRIVE, STE B
THIBODAUX, LA 70301

PREPARED AND SUBMITTED BY:

APACHE LOUISIANA MINERALS, INC.
POST OFFICE BOX 206
HOUMA, LA 70361-0206
(985) 879-3528

RECEIVED
APR 06 2009
CED

FIELD TRIP REPORT

SUBJECT:	TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION:	TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE:	OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.:	14
PARTICIPANTS:	BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE:	MARCH 18, 2009
CONDITIONS:	CLEAR AND MILD

Permission to gain access to Site #14 was obtained verbally from Mr. Jeff DeBlieux with ConocoPhillips.

The weir structure is located on the east bank of Little Carencro Bayou, north of camp "Better Livin". The existing weir structure appeared to be in good condition. There is one stoplog bay at this site. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.57′ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.87′ on both sides of the weir.

Crew removed six (6) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.55′. Post-stoplog removal elevation was -3.59″. All grating clips were removed from structure and found on bank. The crew refastened the deck grating to the structure.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

FIELD DATA REPORT

Project (No. & Name): **TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT**

Location: **TERREBONNE BASIN, TERREBONNE PARISH, LA**

Purpose of Site Visit: **OPERATE STRUCTURE - REMOVE STOP LOGS**

Date: **Wednesday, March 18, 2009**

Participants: **BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG**

Weather Conditions: **CLEAR & MILD**

Persons Contacted for Access: **JEFF DEBLIEUX - CONOCOPHILLIPS**

Site No.: **14**

STRUCTURE CONDITION

Item	Condition	Maintenance/Repair Yes	Maintenance/Repair No
Timber Pile	GOOD	☐	☒
Timber Hoist / Lag Eyes	GOOD	☐	☒
Pile Caps	GOOD	☐	☒
Corrugated Aluminum	N/A	☐	☐
Grating / Metal Components	GOOD - REPLACED GRATING CLIPS	☒	☐
Wood Access Ramp	N/A	☐	☐
Stop Logs	GOOD	☐	☒
Master Locks	GOOD - LUBED	☒	☐

LEVEE CONDITION

Item	Condition
Erosion	INSIDE GOOD, COULD USE SOME SPOIL OUTSIDE OF WINGS
Vegetation	N/A

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. NATURAL BOTTOM INSIDE OF WEIR VERY SOFT.

Stop Log Adjustment	Date/Time	3/18/2009 1:30 PM
Number of Logs Removed/Replaced		6 LOGS REMOVED
Elevation		SEE FIELD NOTES
Mudline Levels		SEE FIELD NOTES
Water Levels		SEE FIELD NOTES

Flag Description: N/A

STRUCTURE #14

GENERAL STRUCTURE CONDITION

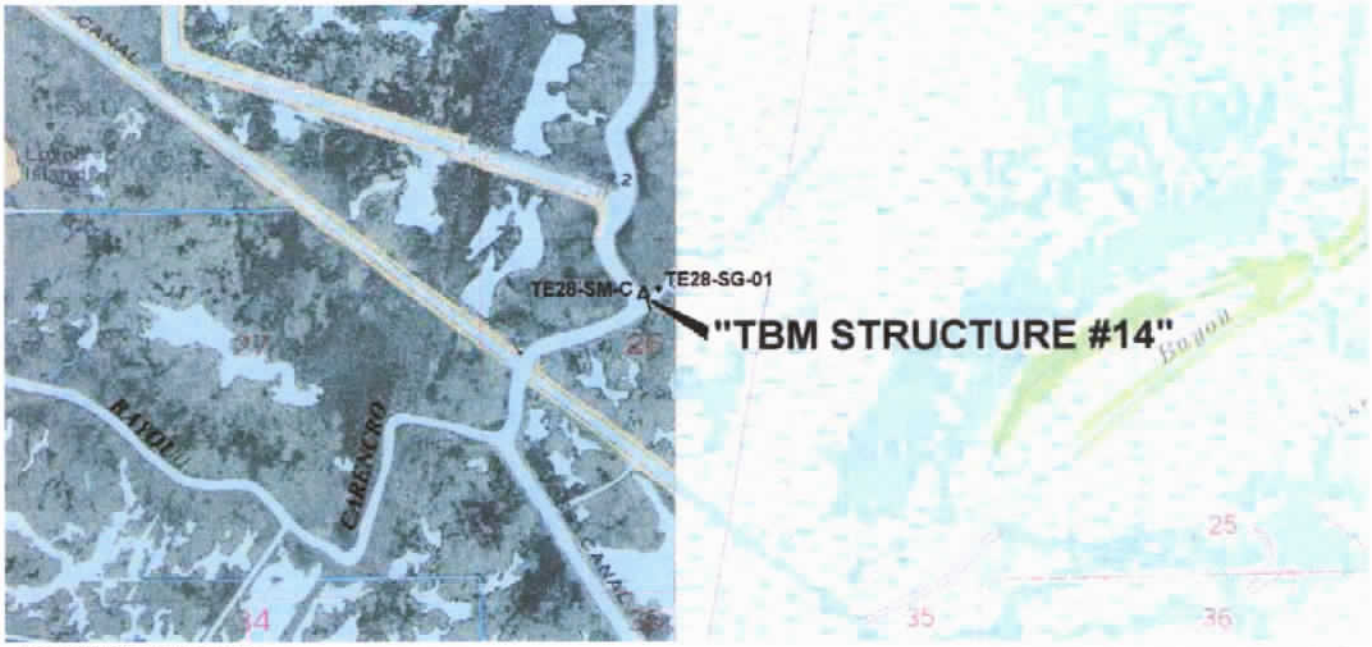
Structure #14

STA	BS	HI	F.S.	Elevation
	5.01	8.58		3.57
			7.71	0.87
			7.71	0.87
			9.13	-0.55
			14.32	-5.74
			12.25	-3.67
			12.17	-3.59

Removed 6 Boards
Silt on in side very soft
will check a later date
to see if it has washed
out any

Remarks

TBM #14
Top Water Bayou Carrion Crow
" " Inside
Top of Boards in Bay
Bottom of Carrion Crow Bayou
Bottom on Inside Very Soft
Top of Boards left in Bay



VICINITY MAP Scale: 1" = 2000' Reproduced from USC&GS "CARENCRO BAYOU" Quadrangle

Name: "TBM Structure #14"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Voss Canal on right, proceed northwesterly in Voss Canal to Carencro Bayou. Turn right in Carencro Bayou and proceed northeasterly, crossing a pipeline canal, to the Control Structure #14 and TBM at right.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north side of the Control Structure approximately 17 feet south of GPS "TE28-SM-C".

Date of Survey: June 4, 2002

TBM Structure 14

NAD 83 (1993) Geodetic Position:
Lat. 29°23'08.43740" N
Long. 91°00'04.87931" W

NAD 83 Datum LSZ (1702) Feet:
N= 322,246.13
E= 3,386,562.02

Elevation at Top of Hex Bolt
3.57 feet (NAVD 88)

FIELD TRIP REPORT

SUBJECT:	TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION:	TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE:	OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.:	21
PARTICIPANTS:	BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE:	MARCH 18, 2009
CONDITIONS:	CLEAR AND MILD

Permission to gain access to Site #21 was obtained from Mr. Tim Allen, General Manager of Apache Louisiana Minerals LLC.

The weir structure is located on the north bank of Jug Lake. The existing weir structure appeared to be in good condition. There are three (3) stoplog bays at this site, which are referred to as West Bay, Center Bay and East Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.72′ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.86′ marsh side and +0.77′ outside of the weir.

EAST BAY
Crew removed six (6) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.20′. Post-stoplog removal elevation was -3.24′.

CENTER BAY
Crew removed nine (9) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.22′. Post-stoplog removal elevation was -4.76′.

WEST BAY
Crew removed two (2) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.18′. Post-stoplog removal elevation was -1.27′.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

FIELD DATA REPORT

Project (No. & Name): **TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT**

Location: **TERREBONNE BASIN, TERREBONNE PARISH, LA**

Purpose of Site Visit: **OPERATE STRUCTURE - REMOVE STOP LOGS**

Date: **Wednesday, March 18, 2009**

Participants: **BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG**

Weather Conditions: **CLEAR & MILD**

Persons Contacted for Access: **TIM ALLEN - ALM**

Site No.: **21**

STRUCTURE CONDITION

Item	Condition	Maintenance/Repair Yes	Maintenance/Repair No
Timber Pile	GOOD	☐	☒
Timber Hoist / Lag Eyes	GOOD	☐	☒
Pile Caps	GOOD	☐	☒
Corrugated Aluminum	N/A	☐	☐
Grating / Metal Components	GOOD - 1 GRATING CLIP MISSING	☐	☒
Wood Access Ramp	N/A	☐	☐
Stop Logs	GOOD	☐	☒
Master Locks	GOOD - LUBED	☒	☐

LEVEE CONDITION

Item	Condition
Erosion	NEED SPOIL ON WINGS
Vegetation	N/A

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. DIRT FILL NEEDED ON BOTH WINGS. NEED 1 GRADING CLIP ON DECKING.

Stop Log Adjustment	Date/Time	3/18/2009 2:30 PM
Number of Logs Removed/Replaced		2 WEST, 9 MIDDLE, 6 EAST REMOVED
Elevation		SEE FIELD NOTES
Mudline Levels		SEE FIELD NOTES
Water Levels		SEE FIELD NOTES

Flag Description: N/A

STRUCTURE #21

GENERAL STRUCTURE CONDITION – LOOKING NORTHWEST

Brady Canal Hydralogic
Restoration Project
Structure # 21 Jug Lk.

STA	B.S.	H.I.	F.S.	Elevation
	5.12	8.84		3.72
			8.07	0.77
			7.98	0.86
West Bay			9.02	-0.18
"			11.04	-2.2
"			9.85	-1.01
middle Bay			9.06	-0.22
"			15.80	-6.96
"			14.17	-5.33
East Bay			9.04	-0.20
"			13.27	-4.43
"			12.93	-4.09

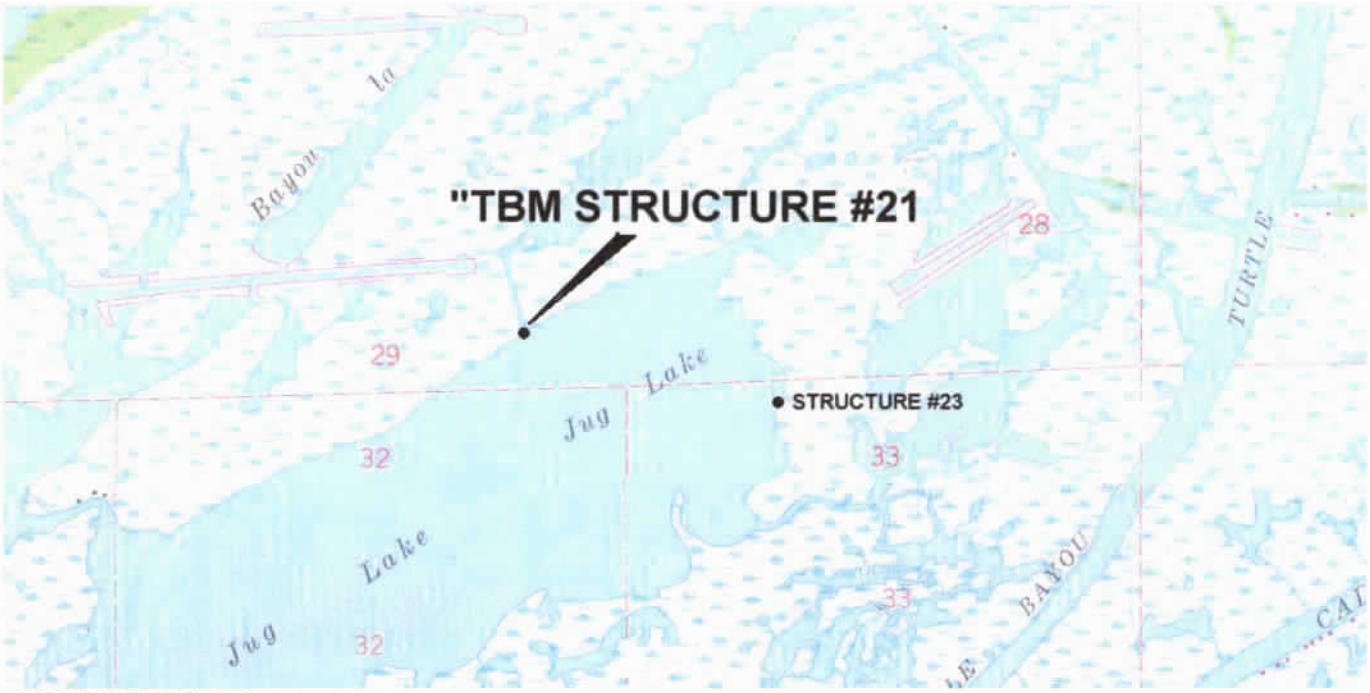
Removed 2 Boards West Bay
" 9 Boards middle "
" 6 " East "

West			10.11	-1.27
middle			13.60	-4.76
East			12.08	-3.24

B. Wurzlow 3/18/09 13
J. Bourg
D. Naquin

Remarks
TBM 21
Top Water in Lk.
Top Water on inside
Top of Boards west Bay
Bottom inside " "
Bottom Lk. side " "
Top Boards middle Bay
Bottom inside " "
Bottom Lk. side " "
Top Boards East Bay
Bottom inside " "
Bottom Lk. side " "

Top of Boards west Bay
" " " middle "
" " " East "



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #21"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed northeasterly in Jug Lake to the Control Structure #21 and TBM on the north shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 21

NAD 83 (1993) Geodetic Position:
Lat. 29°22'47.25280" N
Long. 90°56'36.35631" W

NAD 83 Datum LSZ (1702) Feet:
N= 320,164.32
E= 3,405,016.63

Elevation at Top of Hex Bolt
3.72 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"

FIELD TRIP REPORT

SUBJECT:	TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT
LOCATION:	TERREBONNE BASIN, TERREBONNE PARISH, LA
PURPOSE:	OPERATE AND ADJUST VARIABLE CREST WEIR
SITE No.:	23
PARTICIPANTS:	BILLY WURZLOW, DEME NAQUIN, JEREMY BOURG
DATE:	MARCH 18, 2009
CONDITIONS:	CLEAR AND MILD

Permission to gain access to Site #23 was obtained from Mr. Tim Allen, General Manager of Apache Louisiana Minerals LLC.

The weir structure is located on the east bank of Jug Lake. The existing weir structure appeared to be in good condition. There are two (2) stoplog bays at this site, which are referred to as North Bay and South Bay. The vertical TBM used for this site in the determination of elevations was the top of a hex bolt set at 3.51′ supplied to us by DNR.

There are no navigation lights at this site.

The water surface elevation at the site was determined to be +0.54′ marsh side and +0.54′ outside of the weir.

NORTH BAY
Crew removed ten (10) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.58′. Post-stoplog removal elevation was -5.52′.

SOUTH BAY
Crew removed ten (10) stoplogs that were installed on last visit October 2008. Pre-stoplog removal elevation was -0.53′. Post-stoplog removal elevation was -5.52′.

Attached are the corresponding field data report, crew's field notes and photographs of the subject structure.

NOTE: ALL ELEVATIONS AND DEPTHS REFERENCED TO VERTICAL DATUM (NAVD88)

FIELD DATA REPORT

Project (No. & Name): **TE-28 BRADY CANAL HYDROLOGIC RESTORATION PROJECT**

Location: **TERREBONNE BASIN, TERREBONNE PARISH, LA**

Purpose of Site Visit: **OPERATE STRUCTURE - REMOVE STOP LOGS**

Date: **Wednesday, March 18, 2009**

Participants: **BILLY WURZLOW; DEME NAQUIN; JEREMY BOURG**

Weather Conditions: **CLEAR & MILD**

Persons Contacted for Access: **TIM ALLEN - ALM**

Site No.: **23**

STRUCTURE CONDITION

Item	Condition	Maintenance/Repair Yes	Maintenance/Repair No
Timber Pile	GOOD	☐	☒
Timber Hoist / Lag Eyes	GOOD	☐	☒
Pile Caps	GOOD	☐	☒
Corrugated Aluminum	N/A	☐	☐
Grating / Metal Components	GOOD	☐	☒
Wood Access Ramp	N/A	☐	☐
Stop Logs	GOOD	☐	☒
Master Locks	GOOD - LUBED	☒	☐

LEVEE CONDITION

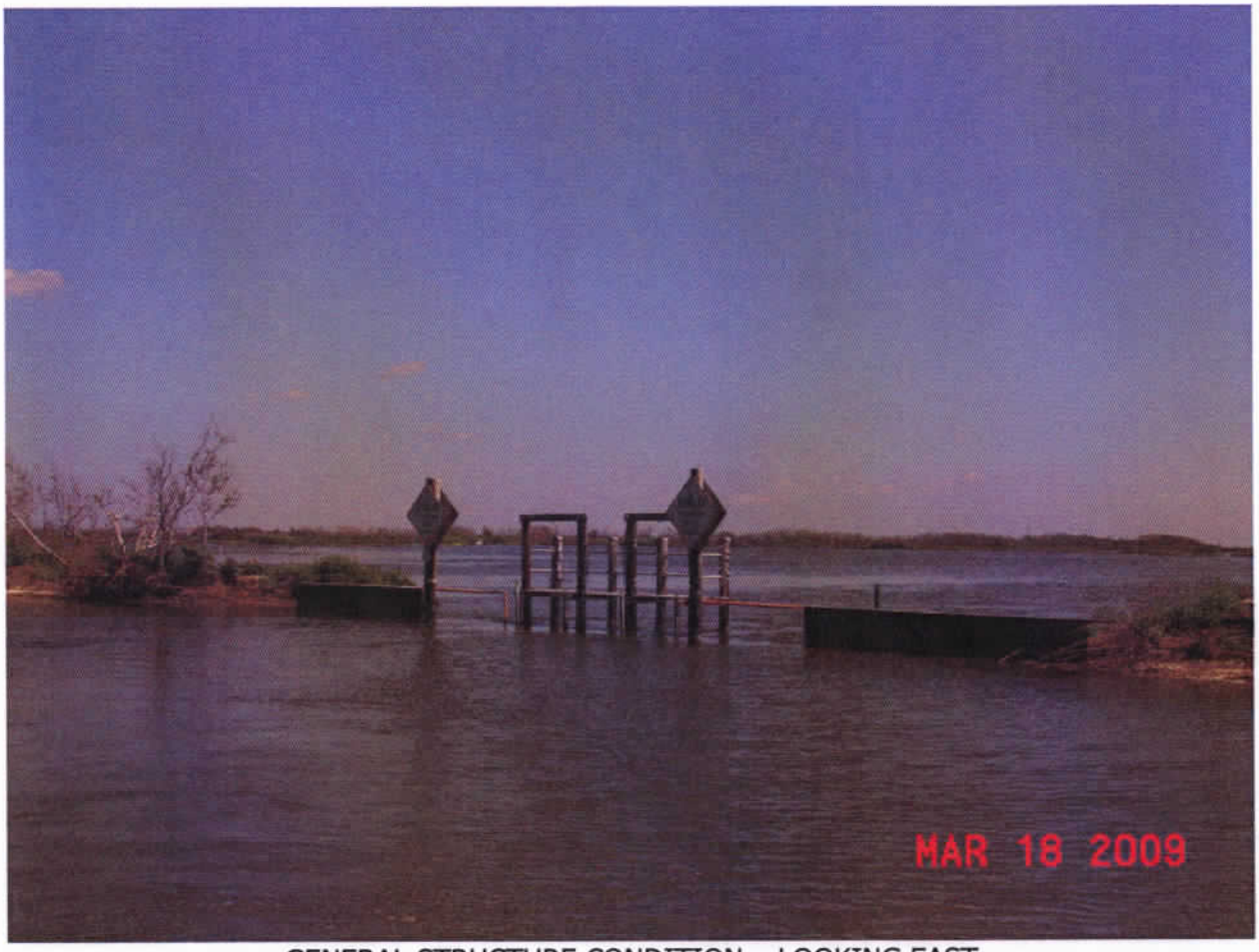
Item	Condition
Erosion	WASHOUT AROUND NORTH WING 6' WIDE
Vegetation	N/A

Description of Maintenance / Repair Required: LOCKS SPRAYED WITH LUBRICANT. DIRT FILL NEEDED AT BOTH WINGS TO TIE INTO LEVEE. WASHOUT AROUND NORTH WING 6' WIDE.

Stop Log Adjustment	Date/Time	3/18/2009 12:30 PM
Number of Logs Removed/Replaced		10 LOGS REMOVED FROM EACH BAY
Elevation		SEE FIELD NOTES
Mudline Levels		SEE FIELD NOTES
Water Levels		SEE FIELD NOTES

Flag Description: N/A

STRUCTURE #23



GENERAL STRUCTURE CONDITION – LOOKING EAST

STRUCTURE #23

SOUTH WING

STRUCTURE #23

WASHOUT AROUND NORTH WING

Structure # 23 Jug Lk.

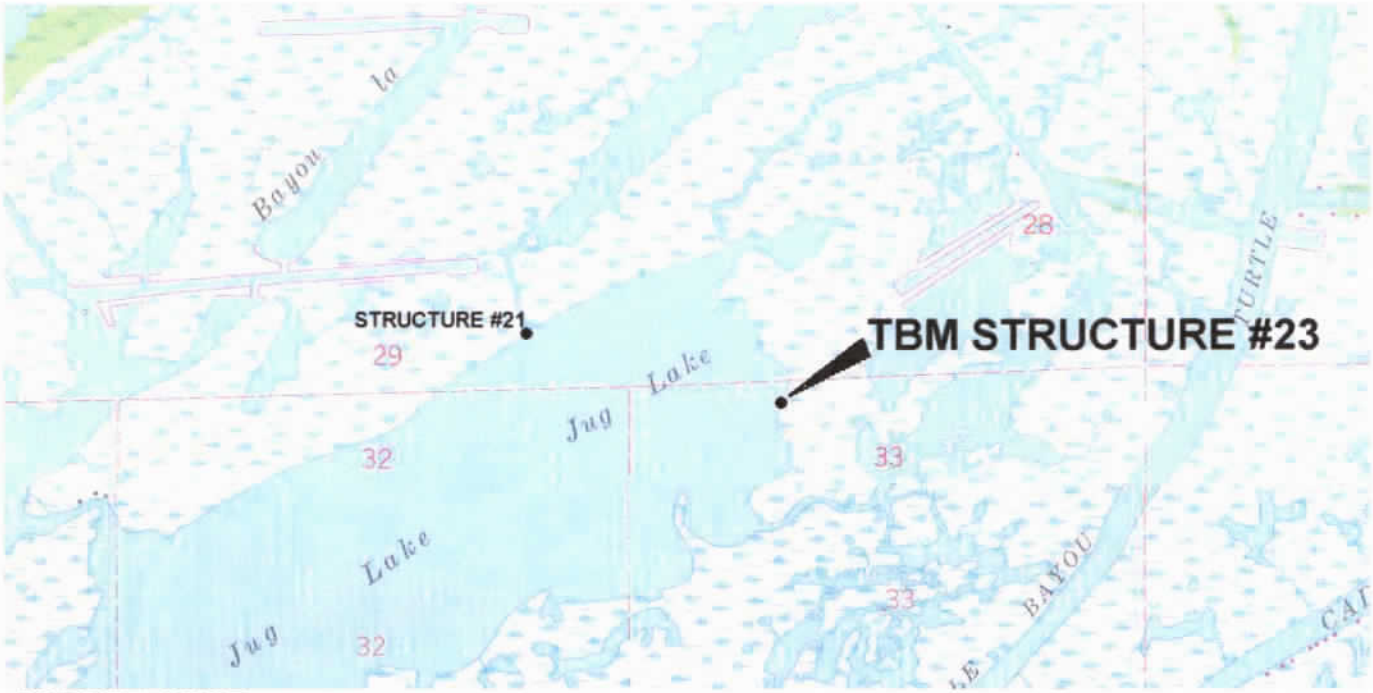
STA	B.S.	HI	F.S.	Elevation
	2.88	6.39		3.51
			5.85	0.54
			5.85	0.54
North Bay			6.97	-0.58
"			13.02	-6.63
"			14.25	-7.86
South Bay			6.92	-0.53
"			12.65	-6.26
"			13.41	-7.02
North Bay			11.91	-5.52
South Bay			11.91	-5.52

Removed 10 Boards from North & South Bays.

SameCrew 3/18/09

Remarks

TBM #23
Top Water in Lk.
Top Water inside
Top Boards North Bay
Bottom Lk Side
Bottom Inside
Top of Boards South Bay
Bottom Lk.
Bottom Inside
Bottom of North Bay
" " South "



VICINITY MAP Scale: 1" = 2000'

Reproduced from USC&GS "LAKE PENCHANT" Quadrangle

Name: "TBM Structure #23"

Location: From the boat launch on Falgout Canal in Theriot, Louisiana, by boat, proceed westerly and west-southwesterly in Falgout Canal to Lake De Cade, then in Lake De Cade west-southwesterly to Bayou De Cade, then in Bayou De Cade westerly to Jug Lake on right, turn right and proceed easterly in Jug Lake to the Control Structure #21 and TBM on the east shoreline of Jug Lake.

TBM Description: The TBM is the top of a Hex head Bolt on the top face and north end of the Control Structure.

Date of Survey: June 6, 2002

TBM Structure 23

NAD 83 (1993) Geodetic Position:
Lat. 29°22'39.70615" N
Long. 90°56'05.89376" W

NAD 83 Datum LSZ (1702) Feet:
N= 319,411.28
E= 3,407,714.35

Elevation at Top of Hex Bolt
3.51 feet (NAVD 88)

Position determined by using Real-time Kinematic (RTK) survey from Secondary GPS Monument "TE28-SM-A"