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no. 4
1986

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LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY

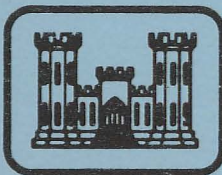
CHALMETTE AREA PLAN

BAYOU DUPRE CONTROL STRUCTURE

PERIODIC INSPECTION REPORT NO. 4

25 JUNE 1986

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LS2K
LMVED-GS (LMKED-DG/1 Dec 86) 3rd End Mr. Cave/ac/5897
SUBJECT: Lake Ponchartrain, Louisiana and Vicinity, Chalmette
Area Plan, Bayou Dupre Control Structure,
Periodic Inspection Report No. 4

DA, Lower Mississippi Valley Division, CE, Vicksburg, MS 39180-0080


19 MAR '87

TO: Commander, New Orleans District, ATTN: LMNED-DG

The disposition of comments presented in the 2nd End is satisfactory. No further action is required on this correspondence chain.

FOR THE COMMANDER:

9 Encl
wd 1 cy encls 2-9


FRED H. BAYLEY III
Chief, Engineering Division

RE Mar 2
SAZ/M...
PIC

LMNED-DG (NOD/1 Dec 86) 2nd End

Mr. Terranova/ncv/2709

SUBJECT: Lake Ponchartrain, Louisiana and Vicinity, Chalmette Area Plan,
Bayou Dupre Control Structure, Periodic Inspection Report No. 4

DA, New Orleans District Corps of Engineers, P. O. Box 60267, New Orleans, LA
70160-0267 10 March 1987

TO: Commander, Lower Mississippi Valley Division, ATTN; LMVED-G

1. The disposition of comments made in the 1st endorsement follows.
Paragraph numbers refer to like numbered paragraphs in the endorsement.

a. Para 4-03 a. and Plates 20 and 21. We concur. Paragraph 4-03 a. has been rewritten to better explain why the amount and rate of settlement of the east concrete sheetpile wall exceeds that of the west concrete sheetpile wall. The new paragraph points out that additional fill was placed near the east wall on two separate occasions; however, our records indicate that the fill was placed in 1978 and 1983, and not 1977 and 1982 as the first endorsement indicates. The dates of the additional fill placements have also been noted on Plates 20 and 21.

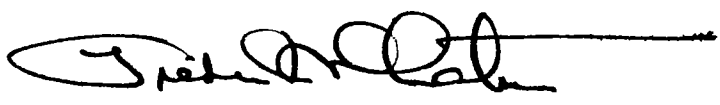
b. Paras 4-03 a and 6-02 a(3)(a). We concur. References to endangering the safety of the structure have been deleted in these paragraphs.

c. Para 5-03 a(3)(b) and Photo No. 3. We concur. Both the caption for Photo No. 3 and Paragraph 5-03 (3)(b) have been revised to indicate that the misalignment of the concrete sheetpile panels occurred during construction. The caption for Photo No. 4 has been revised to indicate that the differential movement shown in the photograph is vertical.

d. Corrections in red on pages IV-1, VI-1 and VI-2 have been noted and addressed.

2. The subject report has been revised as described in paragraphs 1a, 1b, and 1c above. Two copies of revised pages have been enclosed.

FOR THE COMMANDER:



FREDERIC M. CHATRY
Chief, Engineering Division

9 Encl
wd Encl 1
Added 8 Encl (2cys)

SECTION IV - REVIEW OF DESIGN AND ANALYSIS OF INSTRUMENTATION.

4-01 Design Review. The original design of the Bayou Dupre Control Structure was made in accordance with standard engineering practice and with criteria as set forth in engineering manuals for civil work construction published by the Office of the Chief of Engineers. The original design criteria was given in Periodic Inspection Report No. 1; therefore, a detailed review of the design is not required at this time.

4-02 Design Stress. The original design stress criteria as contained in Engineering Manual No. 1110-1-2101, dated November 1963, has not changed.

4-03 Analysis of Instrumentation.

a. Settlement marks. The settlement reference marks located on the gatebays and the east and west floodwalls indicate negligible movement since the last survey taken in October 1984. Typical settlement in these areas is 1/4 inch and less. Settlement reference marks located on the west concrete sheetpile wall indicate settlement ranging from approximately 1/2 to 7/8 inch since the October 1984 survey. Settlement reference marks located on the east concrete sheetpile wall indicate settlement ranging from approximately 1 inch to 1 1/2 inches since the October 1984 survey. Evaluation of settlement data for the east and west sheetpile walls taken since the structure's acceptance since 1974 indicate that the east wall has settled more and at a more accelerated rate than its west counterpart. This is due to additional fill being placed near the east concrete sheetpile wall in 1978 (under contract no. 78-C-0274) and 1983 (under contract no. 83-C-0175). It is presently felt that the settlement of the east concrete sheetpile wall has not reached intolerable magnitude; however, monitoring of this wall and the entire structure will continue.

b. Scour Survey. There have been several changes in the north approach channel bottom at stations 8+50, 9+00, 9+62, and 10+00. These changes are occurring between distances 200 and 320. A review of the survey data from April 1984 indicated that accretion was occurring at station 9+62 and minor scouring at stations 8+50, 9+00, and 10+00. The October 1984 surveys revealed that minor scouring was still occurring at station 8+50, but accretion was now occurring at stations 9+00 and 10+00. Minor scouring was now also evident at station 9+62. The latest survey data taken in July 1986 indicated minor scouring at station 8+00 and minor accretion at stations 8+50, 9+00, 9+62 and 10+00. Variations in the bottoms at these stations does not appear detrimental in any way.

Scouring is continuing at station 17+00 at a section approximately 300 feet from the east bank. Scouring is no longer evident at station 16+00. Although no danger is still anticipated to the control structure (the scour is in the deep portion of the channel away from the banks), this area will require closer monitoring in the future.

c. Joint Movement. No significant joint movement is indicated by the latest survey data.

(3) Concrete I-Walls.

(a) Differential settlement is noticeable among the concrete panels of the I-wall which connects the T-wall to the levee. Each panel has settled differently. The result is that each panel is at a different elevation from its adjacent panel creating a step-like appearance. Instrumentation data indicates that settlement has occurred since the last inspection, but is still within acceptable limits.

(b) Inspection also reveals differential lateral misalignment among members of the concrete I-wall. This misalignment occurred during construction. Although this movement creates a meandering wall appearance, the integrity of the I-wall is not in danger.

(c) Although settlement and differential movement has occurred along the concrete I-wall, the interlocks between the concrete panels are intact and in good condition. Joints are tight and there are no signs of distress.

(d) Photos nos. 3 and 4 of the concrete I-wall are included at the end of this section.

(4) Timber Dolphins and Fenders.

(a) Some damage was noticed on the timber fender system on the west gate leaf. The damage is confined to a 5-foot section of a timber waler (see photo no. 5).

(b) The dolphins on the east side of the structure have been damaged due to impact from tows (see photo no. 6). The dolphins are still capable of providing limited protection.

(c) Navigation lights on the damaged dolphins did not appear to be working.

SECTION VI - CONCLUSIONS AND PROPOSED REMEDIAL ACTIONS

6-01 Conclusions. Periodic Inspection No. 4 of the Bayou Dupre Control Structure revealed that the structure is structurally sound and stable. The operational capability of the structure continues to meet that established in original design criteria.

6-02 Proposed Remedial Actions.

a. The following remedial actions will be taken to correct deficiencies noted during the inspection. The estimated date of action is also given.

(1) Concrete Gatebays and Inverted T-Walls.

(a) The thin sheet of concrete that is starting to separate from the wall of the east site gate bay close to the gate's top hinge recess is presently not serious. The area will be reevaluated during the next periodic inspection.

(b) The desiccated filler material between the gate bay monolith and the inverted T-walls is currently presenting no problem. This area will be monitored during the next inspection.

(c) Form tie rod patches that are starting to separate from the walls of the structure will be also re-examined during the next inspection.

(2) Gates.

(a) Both sector gates will be blasted and painted during the next dewatering period scheduled by the LBBLD for February 1987. Ladders and other metal items damaged by corrosion will be repaired or replaced at the same time.

(3) Concrete I-Walls.

(a) Settlement of the east and west I-walls will be monitored closely to detect any further settlement.

(b) Lateral movement of the individual I-wall panels will be

reevaluated during the next periodic inspection to determine if the plastic interlocks at the joints are being damaged.

(c) A contract for capping the concrete sheet pile I-wall sections is scheduled for award in June 1990.

(4) Timber Dolphins and Fenders.

(a) The damaged timber fender system on the west gate leaf will be repaired during dewatering scheduled for February 1987.

(b) The dolphins on the east side of the Bayou Dupre Control Structure will be repaired during the February 1987 dewatering.

(c) The navigation lights on the damage dolphins that are the subject of the previous paragraph will be replaced while the repair work on the dolphins is taking place.

(5) Landing Dock. The Louisiana Department of Transportation and Development (LDOTD) has requested NOD's consideration in providing two (2) docks on the protected side of the Bayou Dupre Control Structure (see LDOTD letter dated 24 June 1986, in Appendix C). NOD is currently evaluating the relocation of the existing landing dock to a less vulnerable site. The construction of two docks does not seem probable at this time.

(6) Seals and Waterstops. The apparent loss of soil through the expansion joint between the east gate monolith and the wingwall on the MRGO side of the structure will be reevaluated during the next periodic inspection to determine the severity of the problem.

(7) Electrical System.

(a) The tidal current warning system will be repaired prior to the dewatering period scheduled for February 1987.

(b) The disconnect/transfer switch will be properly labeled during the February 1987 dewatering period.



PHOTO NO. 3- Note misalignment of concrete sheetpile panels that occurred during construction.

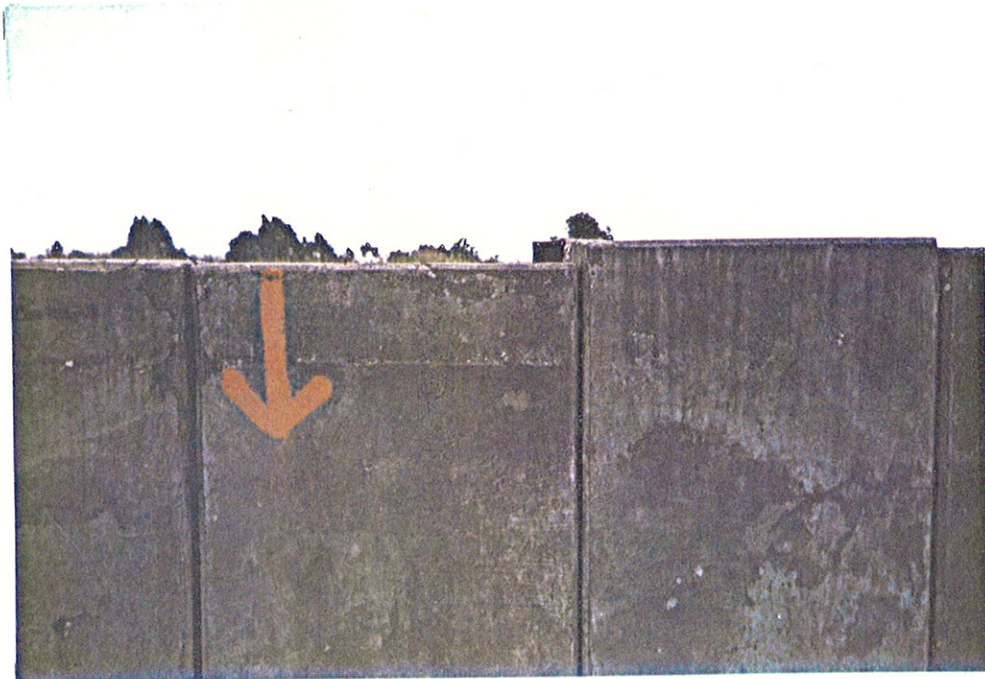
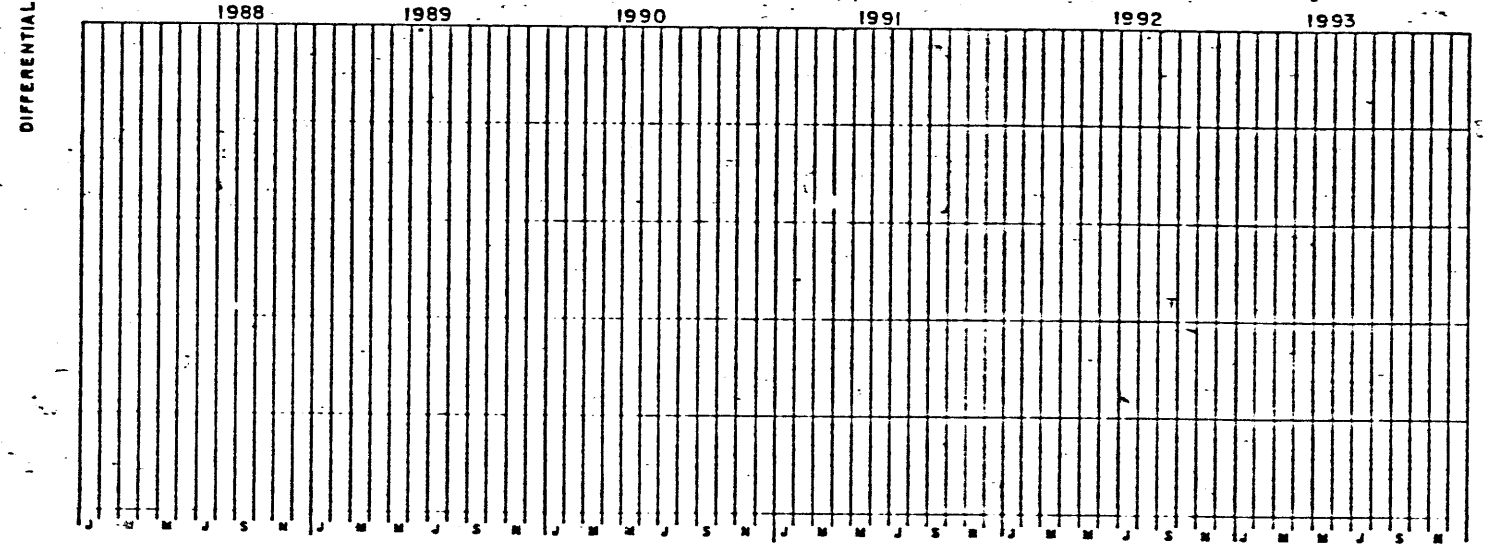
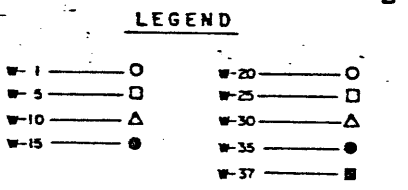
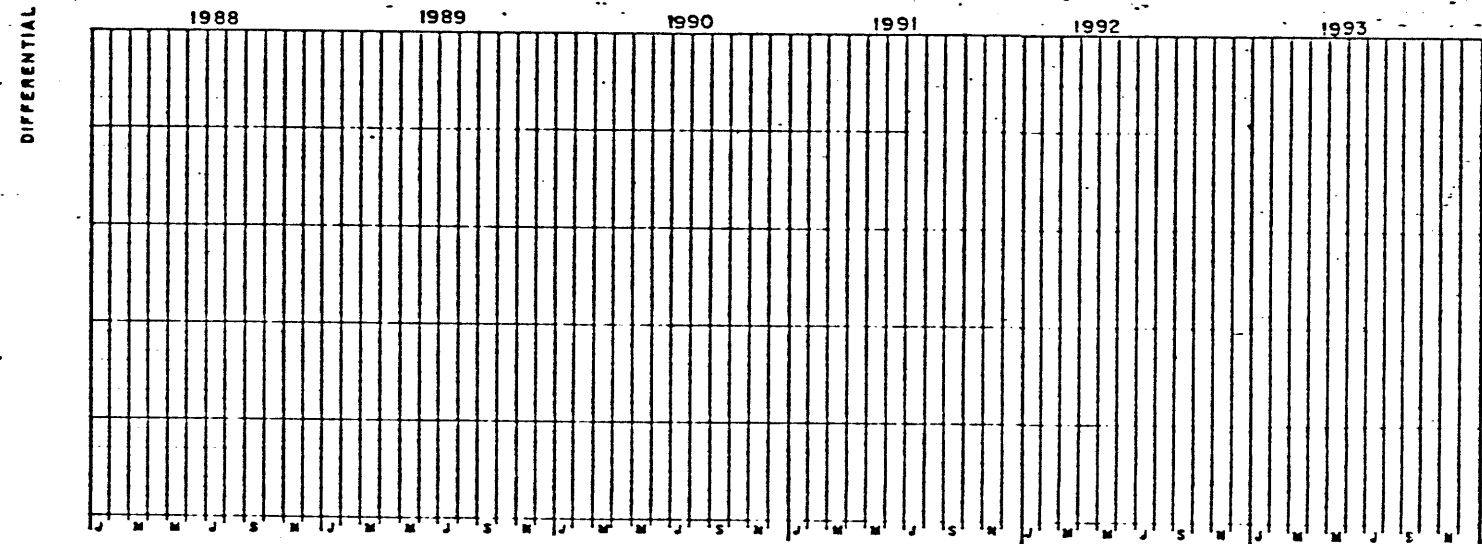
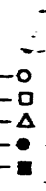
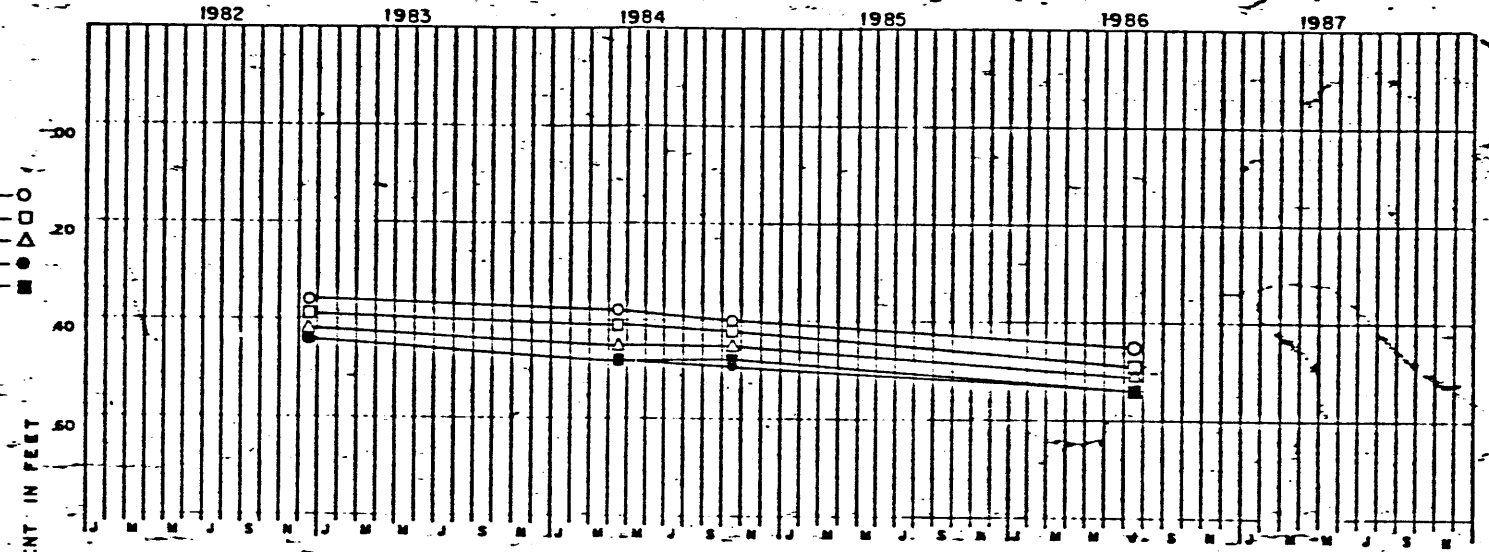
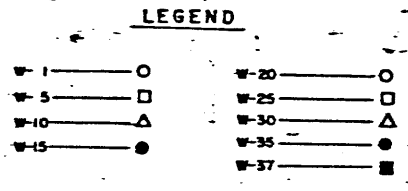
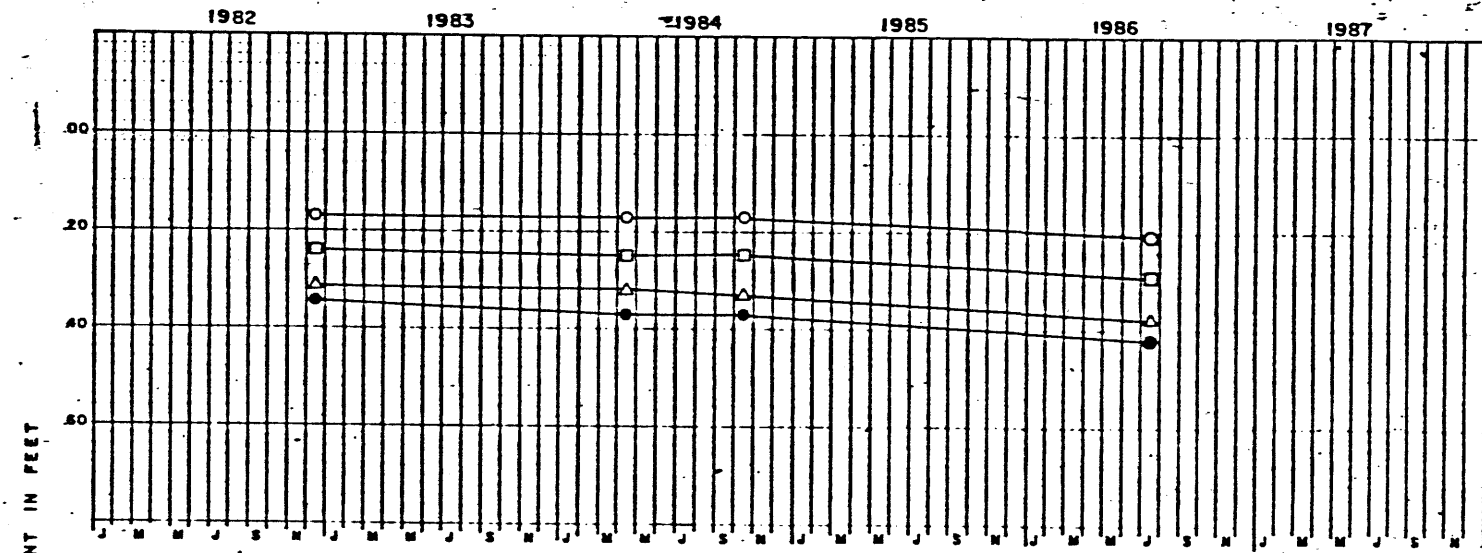


PHOTO NO. 4- Vertical differential movement of concrete sheetpile panels that has occurred over several years.

WEST CONCRETE SHEET PILE WALL



FILL PLACEMENTS NEAR WEST SIDE OF STRUCTURE

<u>STATIONS</u>	<u>CONTRACT NO.</u>	<u>DATES OF WORK</u>
360+70-899+00	80-C-0343	SEP 80 TO MAY 81

NOTE:
For location and tabulation of settlement reference marks see plate

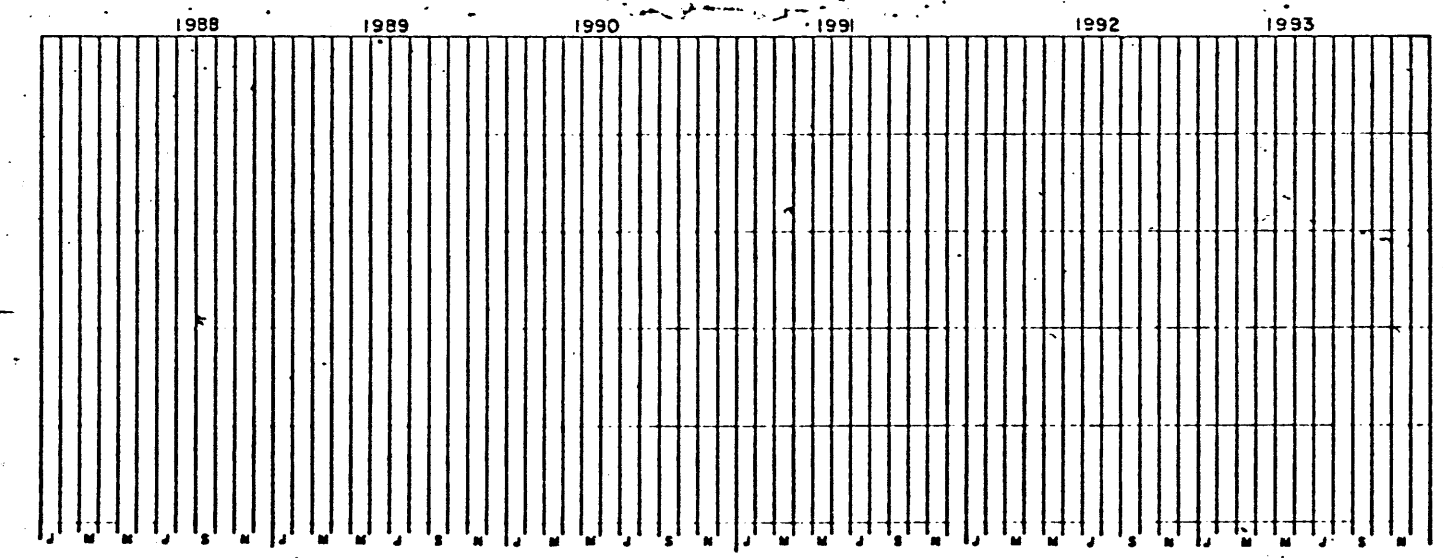
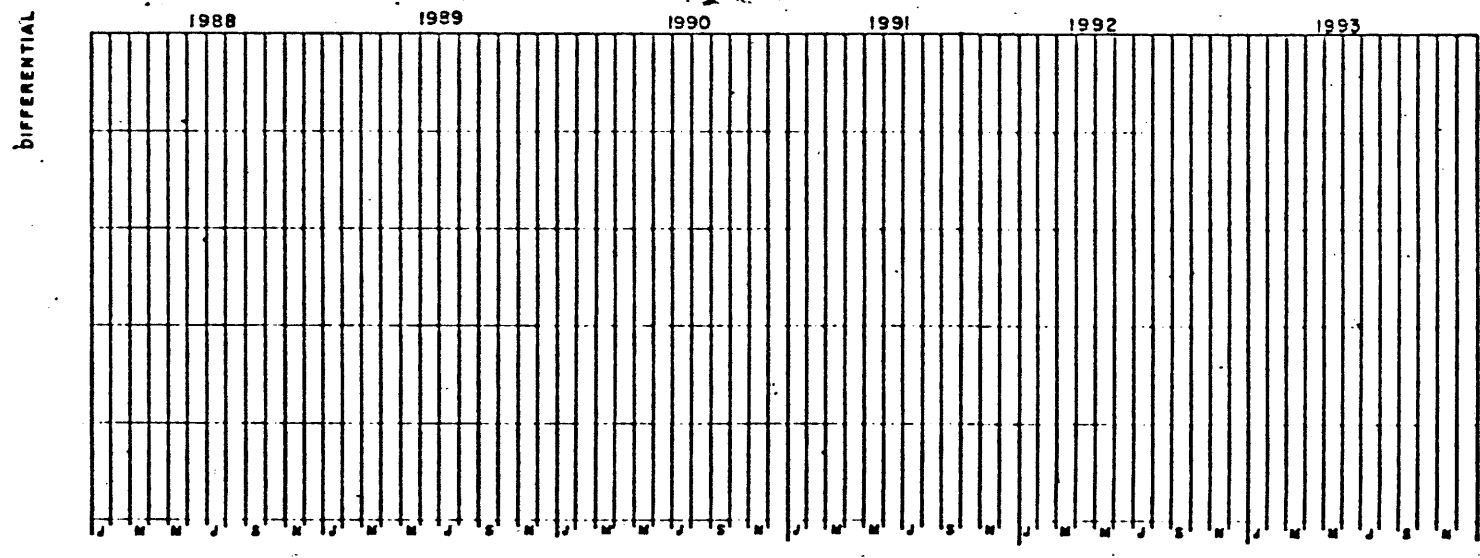
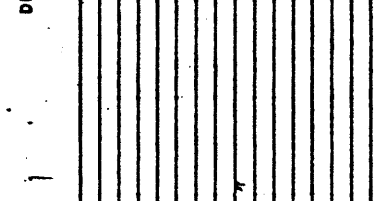
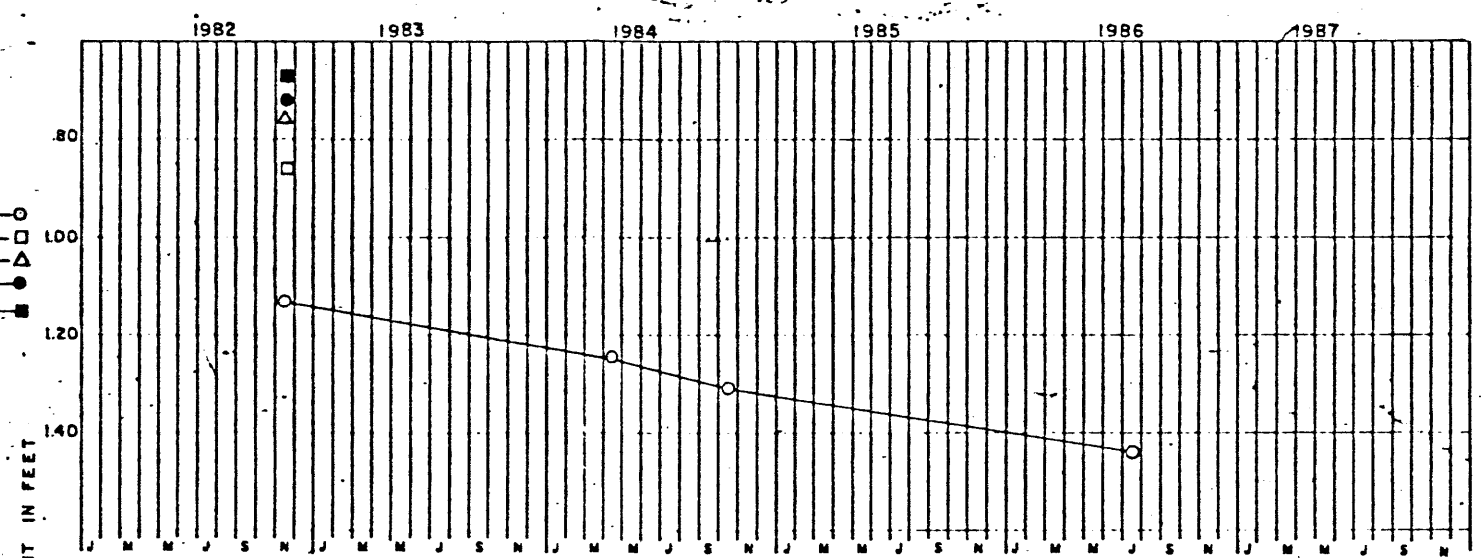
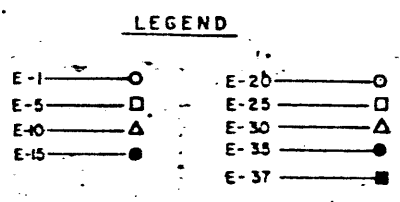
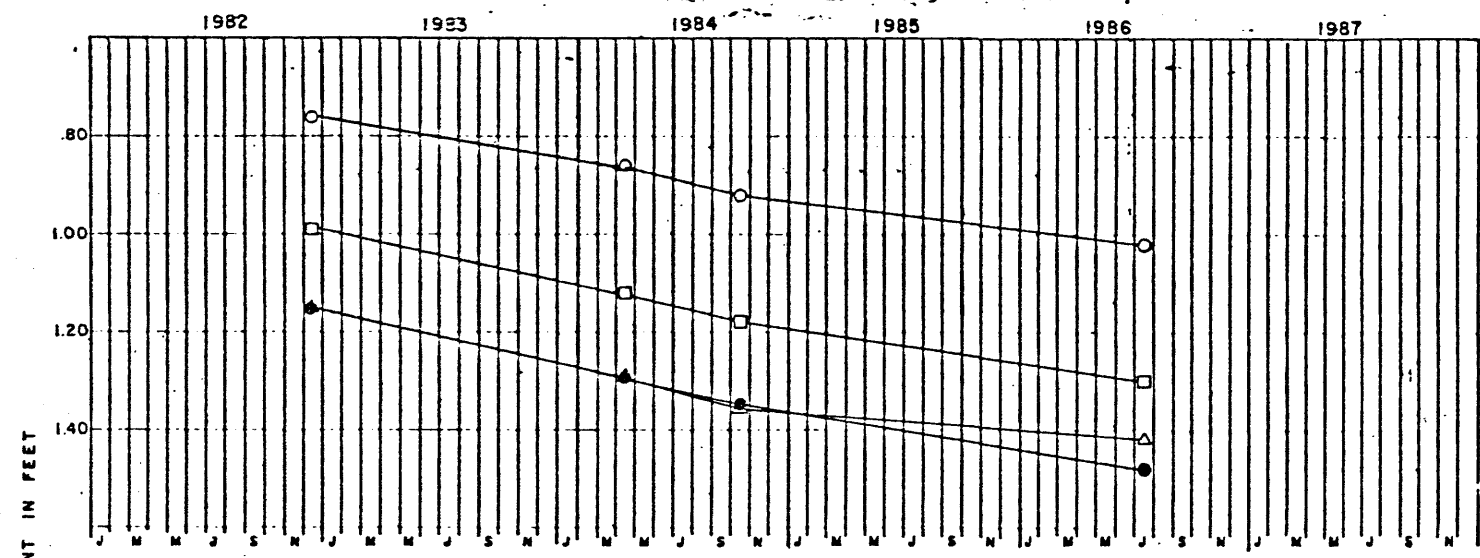
LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION

SETTLEMENT REFERENCE MARKS
DIFFERENTIAL SETTLEMENT CHART

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

FILE NO. H-4-26857

EAST CONCRETE SHEET PILE-WALL



FILL PLACEMENTS NEAR EAST SIDE OF STRUCTURE		
STATIONS	CONTRACT NO	DATES OF WORK
705+95-945+85	78-C-0274	JUL 78 TO JUL 79
708+00-945+00	83-C-0175	JUN 83 TO NOV 83

NOTE:
For location and tabulation of settlement reference marks see plate

LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION

**SETTLEMENT REFERENCE MARKS
DIFFERENTIAL SETTLEMENT CHART**

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

FILE NO. H-4-26857

S-27 Mar 87

LMVED-G (LMNED-DG/1 Dec 86) 1st End Trahan/ac/5527
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette
Area Plan, Bayou Dupre Control Structure, Periodic
Inspection Report No. 4

DA, Lower Mississippi Valley Division, CE, Vicksburg, MS 39180-0080

12 FEB'87

TO: Commander, New Orleans District, ATTN: LMNED-DG

1. The enclosed periodic inspection report is approved subject to the following comments:

a. Para 4-03 a. and Plates 20 and 21. This paragraph should give a better explanation of the observed settlement. It should be noted that more fill has been placed in levee adjacent to the east sheetpile wall than the levee adjacent to the west sheetpile wall which explains the difference in total settlement between these two walls. The paragraph should point out that additional fill was placed near the east sheetpile wall in 1977 and 1982, and this additional fill placement caused additional settlement of the wall. Without these explanations, the reader gets the misleading impression that the same amount of fill placement has caused more settlement and a faster rate of settlement of the east wall than the west wall. It would be beneficial if the dates of the additional fill placements were noted on the plates.

b. Paras 4-03 a and 6-02 a (3) (a). References to endangering the safety of the structure should be deleted. Excess settlement of the walls may cause maintenance problems but would not endanger the structure. It is agreed that the walls should continue to be monitored.

c. Para 5-03 a (3) (b) and Photo No. 3. The caption for Photo No. 3 should be changed to read, "Note misalignment of concrete sheet pile panels that occurred during construction." The caption as presently written could be misleading concerning the lateral stability of the wall. Photograph No. 4 correctly describes the vertical differential movement that has occurred over several years at this structure. Paragraph 5-03d(3)(b) of the report text should also be revised to be consistent with the caption.

d. Corrections in red on pages IV-1, VI-1 and VI-2 should be made in your file copies of the report.


LMVED-G

12 FEB 87

SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette
Area Plan, Bayou Dupre Control Structure,
Periodic Inspection Report No. 4

2. The subject report should be revised in accordance with the
comments in paras 1a, 1b and 1c above and revised pages of the
report should be submitted to this office by 27 Mar 87.

FOR THE COMMANDER:


FRED H. BAYLEY III
Chief, Engineering Division

1 Encl (6 cys)
w/d 2 cy

R 11 Dec 1986
SA 10 JMF



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

REPLY TO
ATTENTION OF:

Recd 11 Dec

LMNED-DG

1 December 1986

SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan,
Bayou Dupre Control Structure, Periodic Inspection Report No. 4,
25 June 1986

Commander, Lower Mississippi Valley Division
ATTN: LMVED-G

Subject report is submitted herewith for your approval.

FOR THE COMMANDER:

A handwritten signature in black ink, appearing to read "Frederic M. Chatry", with a long horizontal line extending to the right.

1 Encl (6 cys)

FREDERIC M. CHATRY
Chief, Engineering Division

31489330

TC550.5.N48
L363B38
no. 4
1986

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY

CHALMETTE AREA PLAN

BAYOU DUPRE CONTROL STRUCTURE

PERIODIC INSPECTION NO. 4

25 JUNE 1986

U.S. ARMY ENGINEER DISTRICT DISTRICT

CORPS OF ENGINEERS

NEW ORLEANS, LOUISIANA

SUMMARY

Periodic Inspection No. 4 of the Bayou Dupre Control Structure was held on 25 June 1986. Participants in the inspection consisted of representatives of New Orleans District (NOD), Lower Mississippi Valley Division (LMVD), Lake Borgne Basin Levee District (LBBLD), and the Louisiana Department of Transportation and Development (LDOTD). The structure was determined to be structurally sound and adequately fulfilling original design criteria.

Previous Reports

<u>Report No.</u>	<u>Title</u>	<u>Date of Inspection</u>	<u>Approval Date</u>
1	Periodic Inspection Report No. 1	22 Feb 74	25 Jun 74
2	Periodic Inspection Report No. 2	12 Mar 80	10 Nov 80
3	Periodic Inspection Report No. 3	1 Dec 83	6 Apr 84

BAYOU DUPRE CONTROL STRUCTURE

PERIODIC INSPECTION NO. 3

TABLE OF CONTENTS

<u>Para No.</u>	<u>Description</u>	<u>Page No.</u>
<u>SECTION 1 - INTRODUCTION</u>		
1-01	Authority	I-1
1-02	Purpose and Scope	I-1
1-03	Datum Plane	I-1
<u>SECTION II - PROJECT DESCRIPTION AND BACKGROUND</u>		
2-01	General	II-1
<u>SECTION III - CURRENT OPERATION AND MAINTENANCE DATA</u>		
3-01	Maintenance and Operating Problems	III-1
3-02	Actions on Deficiencies from Last Inspection	III-2
<u>SECTION IV - REVIEW OF DESIGN AND ANALYSIS OF INSTRUMENTATION</u>		
4-01	Design Review	IV-1
4-02	Design Stress	IV-1
4-03	Analysis of Instrumentation	IV-1
<u>SECTION V - INSPECTION</u>		
5-01	Inspection Team	V-1
5-02	Orientation	V-2
5-03	Observations	V-3
<u>SECTION VI - CONCLUSIONS AND REMEDIAL ACTIONS</u>		
6-01	Conclusions	VI-1
6-02	Proposed Remedial Actions	VI-1
6-03	Next Inspection	VI-3
<u>APPENDICES</u>		
Appendix A - LMVD Trip Report		
Appendix B - Instrumentation Drawings		
Appendix C - LDOTD Letter Requesting Two Landing Docks in the Vicinity of the Bayou Dupre Control Structure		

SECTION I - INTRODUCTION

1-01 Authority. Authority for this report is ER 1110-2-100, dated 28 February 1983, subject "Periodic Inspection and Continuing Evaluation of Completed Civil Works Structures."

1-02 Purpose and Scope. This report presents the results and conclusions of the fourth inspection of the Bayou Dupre Control Structure conducted under the above referenced ER. The inspection was limited to surfaces above water.

1-03 Datum Plane. All elevations in connection with the control structure, unless otherwise specified, are in feet and refer to the National Geodetic Vertical Datum (N.G.V.D.), formerly mean sea level (M.S.L.).

SECTION II - PROJECT DESCRIPTION AND BACKGROUND

2-01 General. A description of the structure and historical and other general background information are included in Report No. 1, which also contains selected construction drawings illustrating typical sections and details. This report and others issued subsequently to Report No. 1 are considered supplementary to that report.

SECTION III - CURRENT OPERATION AND MAINTENANCE DATA

3-01 Maintenance and Operating Problems.

a. The local assuring agency, the Lake Borgne Basin Levee District (LBBLD), performs semiannual inspections of the Bayou Dupre Control Structure for which reports are submitted to NOD by 30 June and 31 December of each calendar year. Since the last periodic inspection in December 1983, no major operational or maintenance problems have severely hampered the operational capability of the structure.

b. Two minor operation and maintenance problems have continued to plague the control structure. The first of these problems involves the damage that is continually being done on the dolphins, guidewall fenders, and service wharf. All of these items are constructed from timber and are either struck by marine traffic or utilized in such an irresponsible way that damage occurs. (It is interesting to note that similar damage does not occur at the Bayou Bienvenue Control Structure because this structure is not used by commercial barge traffic.) Repairs are made by the LBBLD.

c. The other minor operation and maintenance problem involves the tidal indication system. This system was designed to alert marine traffic as to the severity of the tidal flow through the structure by means of indicating lights activated by the flow. The system has never operated correctly for extended periods of time. Maintenance is provided by the company that designed and installed the system.

d. Dewatering of the Bayou Dupre Control Structure is scheduled by the LBBLD for February 1987. During this period, the sector gates will be blasted and painted, and general repairs will be done on the entire structure.

3-02 Actions on Deficiencies from the Last Inspection.

a. The following remedial actions were taken for deficiencies found during the last periodic inspection (Periodic Inspection No. 3):

(1) The service wharf was repaired by local interests as a result of observations made in Periodic Inspection Report No. 3. Unfortunately, the wharf has been damaged again since the repairs were made. This continuing problem was discussed in detail during this inspection (No 4). The IBBLD recommends that the wharf be rebuilt in a location that would make it less susceptible to damage incurred from collisions with marine traffic using the structure. The service wharf question is discussed in more detail in Section VI, "Conclusions and Remedial Actions."

(2) Local interests have completed repairs to the northwest guidewall.

(3) Review of FY 86 survey data indicates that settlement of the east floodwall continues in a uniform manner at a relatively fast rate. Findings concerning this subject are discussed in Section V, "Inspection."

(4) Local interests are lubricating the entire running wire rope transmission for the sector gates on a monthly basis.

(5) The hole behind the riprap on the east bank of the north channel approach was evaluated again during this periodic inspection. Findings are discussed in Section V, "Inspection."

SECTION IV - REVIEW OF DESIGN AND ANALYSIS OF INSTRUMENTATION.

4-01 Design Review. The original design of the Bayou Dupre Control Structure was made in accordance with standard engineering practice and with criteria as set forth in engineering manuals for civil work construction published by the Office of the Chief of Engineers. The original design criteria was given in Periodic Inspection Report No. 1; therefore, a detailed review of the design is not required at this time.

4-02 Design Stress. The original design stress criteria as contained in Engineering Manual No. 1110-1-2101, dated November 1963, has not changed.

4-03 Analysis of Instrumentation.

a. Settlement marks. The settlement reference marks for the floodwall and concrete sheetpile wall on the east side of the control structure shows some settlement as expected. Although the settlement is occurring at a relatively fast rate, it is presently felt that the settlement of the east floodwall has not reached significant magnitude; however, it will be monitored very closely to detect any possible future settlement that could endanger the safety of the structure.

b. Scour Survey. There have been several changes in the north approach channel bottom at stations 8+50, 9+00, 9+62, and 10+00. These changes are occurring between distances 200 and 320. A review of the survey data from April 1984 indicated that accretion was occurring at station 9+62 and minor scouring at stations 8+50, 9+00, and 10+00. The October 1984 surveys revealed that minor scouring was still occurring at station 8+50, but accretion was now occurring at stations 9+00 and 10+00. Minor scouring was now also evident at station 9+62.

The latest survey data taken in July 1986 indicated minor scouring at station 8+00 and minor accretion at stations 8+50, 9+00, 9+62 and 10+00. Variations in the bottoms at these stations does not appear detrimental in any way.

Scouring is continuing at station 17+00 at a section approximately 300 feet from the east bank. Scouring is no longer evident at station 16+00. Although no danger is still anticipated to the control structure (the scour is in the deep portion of the channel away from the banks), this area will require closer monitoring in the future.

c. Joint Movement. No significant joint movement is indicated by the latest survey data.

SECTION V - INSPECTION

5-01 Inspection Team. The following individuals participated in Periodic Inspection No. 4 of Bayou Dupre Control Structure, which was held on 25 June 1986:

NOD

<u>Name</u>	<u>Location</u>
Jake A. Terranova	LMNED-DG (Inspection Coordinator)
Aiden P. Andry	LMNED-DG
Dennis C. Strecker	LMNED-DG (Mechanical)
Daniel F. Bradley	LMNED-DG (Electrical)
Charles A. Laborde	LMNED-DD
Jose Lizarribar	LMNED-FD
Roberto Estrada	LMNED-FS
Charles J. Rome	LMNED-FM
Lawrence E. Dement	LMNED-HC
Richard F. Baldini, Jr.	LMNOD-OP
Brian Keller	LMNOD-OP

LMVD

<u>Name</u>	<u>Location</u>
Charles C. Trahan	LMVED-G
Frank Johnson	LMVED-TS

LDOTD

Name
Charlene Pinner
Larry Langenstein
Craig Vidrine

LBBLD

Name
Dan Caluda
Mike Dew
George Lopez

5-02 Orientation

a. A pre-inspection briefing was held for NOD participants of Periodic Inspection No. 4 on 23 June 1986. At this briefing NOD participants were familiarized with the design criteria of the structure as well as current operation and maintenance problems. The briefing concluded with final instructions concerning the inspection schedule and itinerary.

b. A pre-inspection briefing was conducted by the inspection participants from NOD to familiarize participants from LMVD, LBBLD, and LDOTD with the structure. Current operation and maintenance problems were explained by

Mr. Richard Baldini of IMNOD and Mr. Dan Caluda of the IBBLD.

5-03 Observations.

a. The following observations were made by the inspection team during Periodic Inspection No. 4.

(1) Concrete Gatebays and Inverted T-Walls.

(a) No structural cracks or other major adverse conditions were noticed during this inspection.

(b) A thin sheet of concrete is starting to separate from the wall of the east side sector gate bay, close to the gate's top hinge recess. No danger is presented by this occurrence.

(c) It was noticed during the inspection that the filler material between the gate bay monolith and the inverted T-walls is desiccated on both sides of the structure.

(d) Form tie rod patches made on the walls of the structure are starting to separate from the walls.

(e) Some walls of the structure are covered with a white substance believed to be curing compound. This is not detrimental to the functional operation of the structure and will weather off.

(2) Gates.

(a) The sector gates operated with no difficulty and appear to seal well. No structural distress was noticed.

(b) The steel members of the sector gates that are located in the tidal fluctuation zones are noticeably corroded (see photos nos. 1 and 2). Other imbedded materials located in this area are also corroded. All other painted surfaces on the sector gates are in good condition.

(3) Concrete I-Walls.

(a) Differential settlement is noticeable among the concrete panels of the I-wall which connects the T-wall to the levee. Each panel has settled differently. The result is that each panel is at a different elevation from its adjacent panel creating a step-like appearance. Instrumentation data indicates that settlement has occurred since the last inspection, but is still within acceptable limits.

(b) Inspection also reveals differential lateral movement among members of the concrete I-wall. Although this movement creates a meandering wall appearance, the integrity of the I-wall is not in danger.

(c) Although settlement and differential movement has occurred along the concrete I-wall, the interlocks between the concrete panels are intact and in good condition. Joints are tight and there are no signs of distress.

(d) Photos nos. 3 and 4 of the concrete I-wall are included at the end of this section.

(4) Timber Dolphins and Fenders.

(a) Some damage was noticed on the timber fender system on the west gate leaf. The damage is confined to a 5-foot section of a timber waler (see photo no. 5).

(b) The dolphins on the east side of the structure have been damaged due to impact from tows (see photo no. 6). The dolphins are still capable of providing limited protection.

(c) Navigation lights on the damaged dolphins did not appear to be working.

(5) Landing Dock. The small wooden landing dock located on the west bank of the structure's south approach channel has again been damaged by barge impact and is not usable. This problem has occurred in the past and continues to occur due to the location of the dock in the main channel.

(6) Embankments. In Periodic Inspection Report No. 3, it was noted that "a hole approximately 10 feet wide by 30 feet long by 5 feet deep was observed behind the riprap revetment on the east bank of the north channel approach." The area was visited during this inspection by members of the inspection team, who found what appeared to be the remnants of a natural drainage channel. The mouth of this channel had been closed by a small stone dike that tied into the riprap located on the east bank of the approach channel. The hole poses no threat to the stability of the structure or the riprap along the bank.

(7) Seals and Waterstops.

(a) In general, the seals and waterstops appear to be in good condition.

(b) A small amount of soil is being washed away through the expansion joint between the east gate monolith and the wing wall on the MRGO side of the structure. This appears to be caused by the L-shape waterstop and filler material separating from the monolith's wall. The problem is not serious but will be reevaluated during the next periodic inspection.

(8) Electrical System.

(a) The tidal current warning light system is not functioning as designed. Located on the structure are written signs explaining the meaning of each warning light. Use of the signs in conjunction with a faulty light indication may lead to a misinterpretation of the tidal current status.

(b) The Bayou Dupre Control Structure has the capability of operating 12 lighting circuits from commercial power or from emergency generator power through the use of a disconnect/transfer switch. This transfer switch, which is to be used in an emergency situation, is not clearly marked to indicate the purpose of the switch and the position status. The switch currently has no labeling and caused the operator some confusion during the inspection.

(9) Miscellaneous.

(a) It was noted during the inspection that a large pile of debris had been burned near the northwest side of the west T-wall. No damage to the structure resulted from this occurrence.

(b) The staff gages at the control structure are corroded at the tidal fluctuation zone and are in need of replacement.

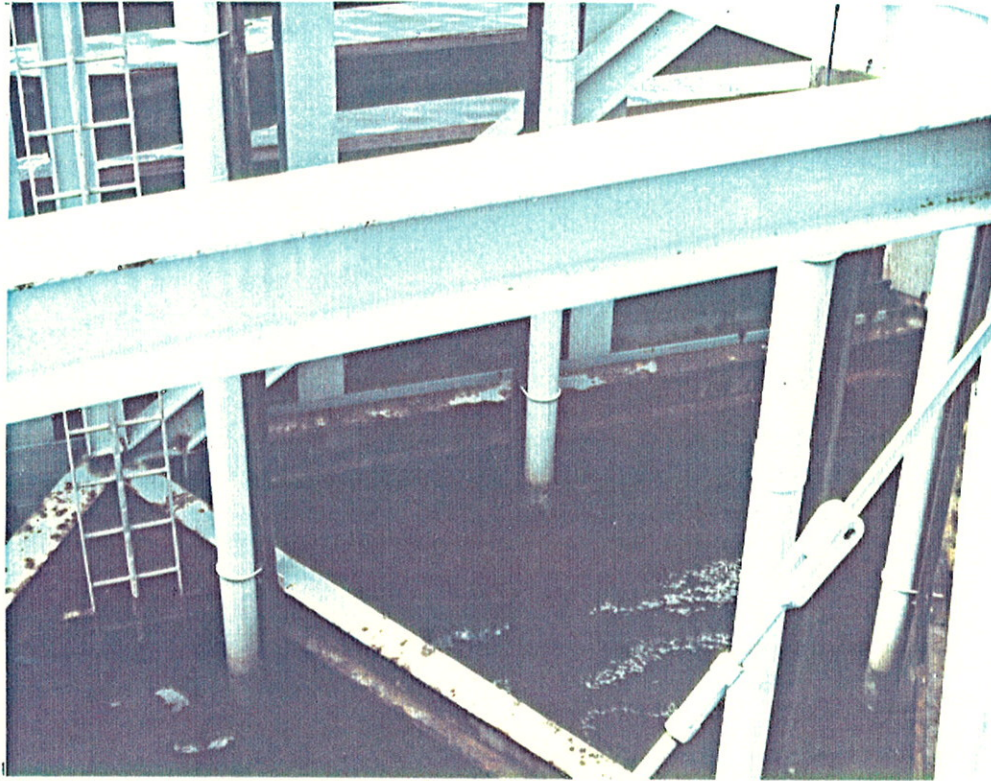


PHOTO NO. 1 - Corrosion on structural members of a sector gate.

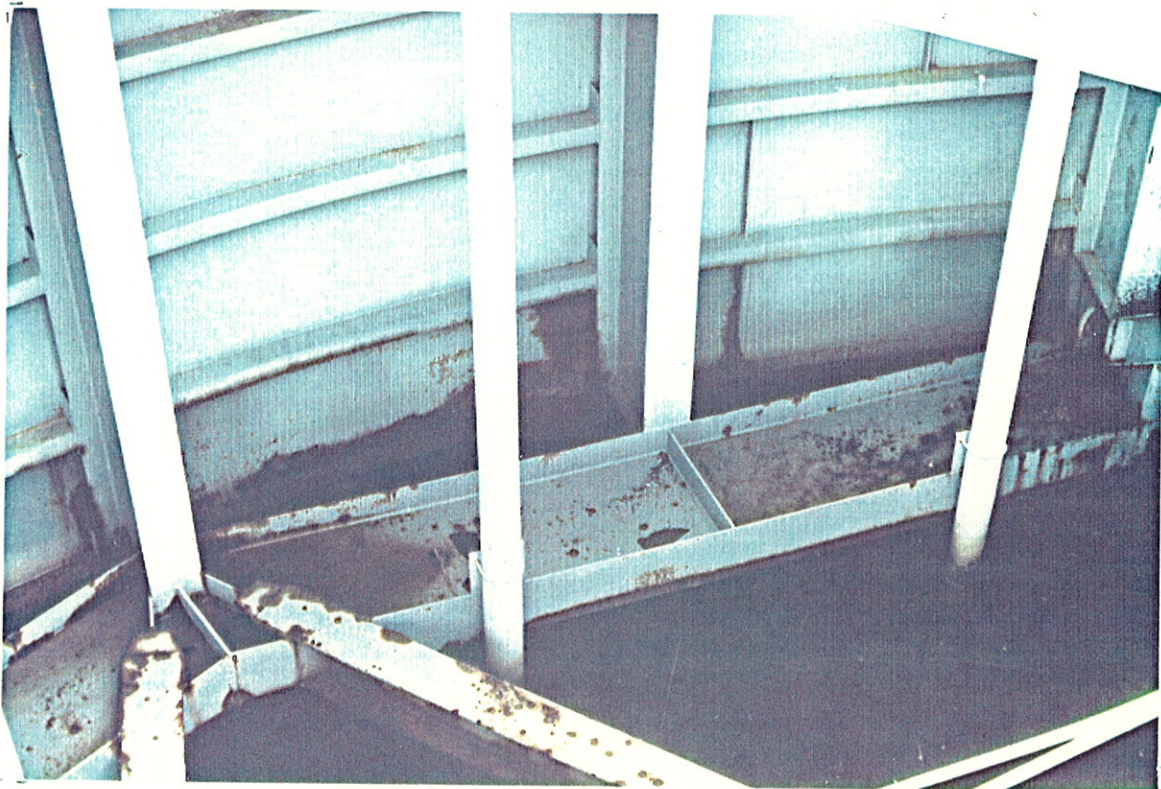
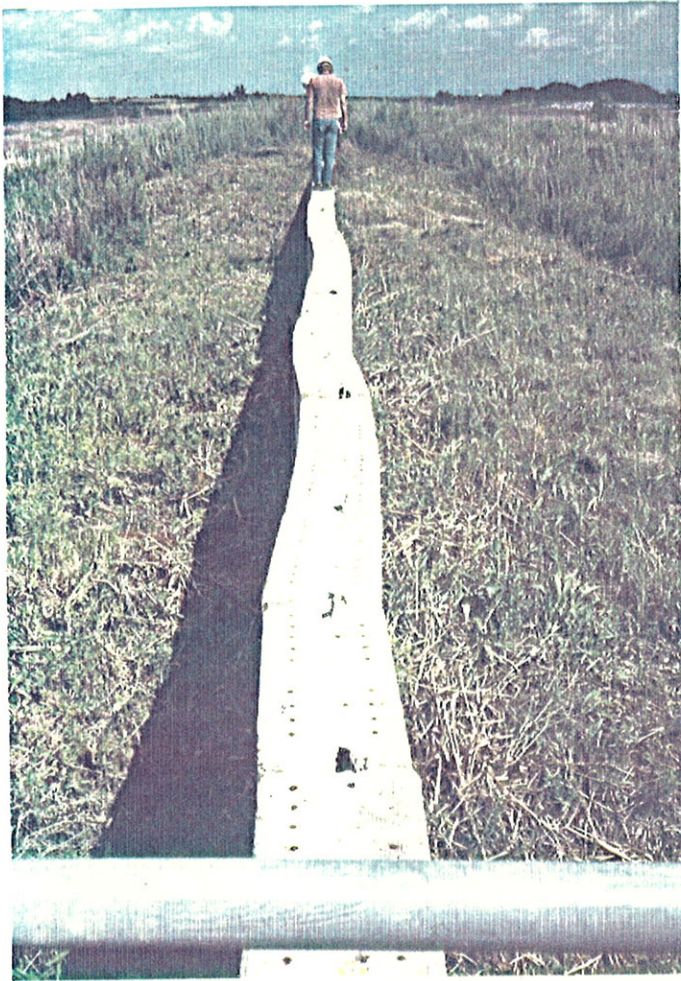


PHOTO NO. 2 - Corrosion on structural members of a sector gate.

PHOTO NO. 3



REVISED

PHOTO NO. 3 - Differential movement
along concrete floodwall.

PHOTO NO. 4 - Differential
settlement among members
of concrete floodwall.

REVISED



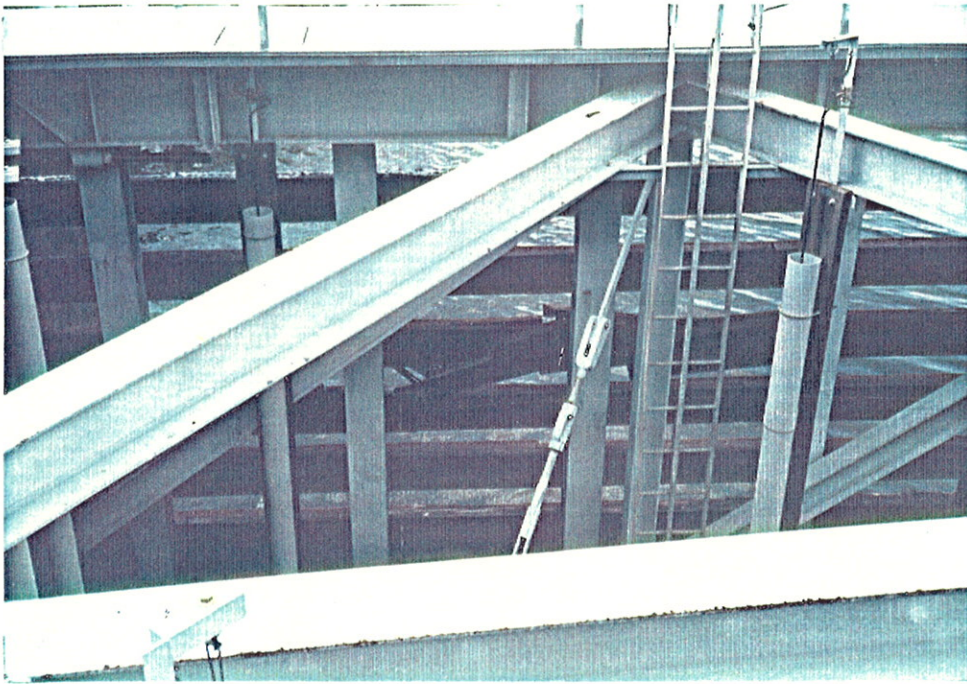


PHOTO NO. 5 - Damaged member of a timber fender on a sector gate.



PHOTO NO. 6 - Damaged timber dolphin.

SECTION VI - CONCLUSIONS AND PROPOSED REMEDIAL ACTIONS

6-01 Conclusions. Periodic Inspection No. 4 of the Bayou Dupre Control Structure revealed that the structure is structurally sound and stable. The operational capability of the structure continues to meet that established in original design criteria.

6-02 Proposed Remedial Actions.

a. The following remedial actions will be taken to correct deficiencies noted during the inspection. The estimated date of action is also given.

(1) Concrete Gatebays and Inverted T-Walls.

(a) The thin sheet of concrete that is starting to separate from the wall of the east site gate bay close to the gate's top hinge recess is presently not serious. The area will be reevaluated during the next periodic inspection.

(b) The desiccated filler material between the gate bay monolith and the inverted T-walls is currently presenting no problem. This area will be monitored during the next inspection.

(c) Form tie rod patches that are starting to separate from the walls of the structure will be also re-examined during the next inspection.

(2) Gates.

(a) Both sector gates will be blasted and painted during the next dewatering period scheduled by the LBBLD for February 1987. Ladders and other metal items damaged by corrosion will be repaired or replaced at the same time.

(3) Concrete I-Walls.

(a) Settlement of the east and west I-walls will be monitored closely to detect any further settlement that may endanger the safety of the structure.

(b) Lateral movement of the individual I-wall panels will be

reevaluated during the next periodic inspection to determine if the rubber waterstops at the joints are being damaged.

(c) A contract for capping the concrete sheet pile I-wall sections is scheduled for award in June 1990.

(4) Timber Dolphins and Fenders.

(a) The damaged timber fender system on the west gate leaf will be repaired during dewatering scheduled for February 1987.

(b) The dolphins on the east side of the Bayou Dupre Control Structure will be repaired during the February 1987 dewatering.

(c) The navigation lights on the damaged dolphins that are the subject of the previous paragraph will be replaced while the repair work on the dolphins is taking place.

(5) Landing Dock. The Louisiana Department of Transportation and Development (LDOTD) has requested NOD's consideration in providing two (2) docks on the protected side of the Bayou Dupre Control Structure (see LDOTD letter dated 24 June 1986, in Appendix C). NOD is currently evaluating the relocation of the existing landing dock to a less vulnerable site. The construction of two docks does not seem probable at this time.

(6) Seals and Waterstops. The apparent loss of soil through the expansion joint between the east gate monolith and the wingwall on the MRGO side of the structure will be reevaluated during the next periodic inspection to determine the severity of the problem.

(7) Electrical System.

(a) The tidal current warning system will be repaired prior to the dewatering period scheduled for February 1987.

(b) The disconnect/transfer switch will be properly labeled during the February 1987 dewatering period.

(8) Miscellaneous.

(a) The LBBLD will be advised to conduct trash burning away from the structure to prevent damage due to intense heat.

(b) Staff gages will be replaced during the February 1987 dewatering.

6-03 Next Inspection. Periodic Inspection No. 5 of the Bayou Dupre Control Structure will take place during the dewatering of the structure scheduled by the LBBLD for February 1987.

APPENDIX A

LMVD TRIP REPORT

DISPOSITION FORM

For use of this form, see AR 340-15; the proponent agency is TAGO.

REFERENCE OR OFFICE SYMBOL	SUBJECT
LMVED-GS	Periodic Inspection No. 4, Bayou Dupre Control Structure, 25 Jun 86

TO	THRU	LMVED-G <i>[Signature]</i>	FROM	Messrs. Trahan & Johnson	DATE	10 Jul 86	CMT 1
		LMVED-T					Trahan/Johnson/bj/5525
		LMVED-W					CCT
		LMVCO					
		LMVED-A					
		LMVED					

TO MAIN FILES

1. On 25 Jun 86 the undersigned participated in the fourth periodic inspection of Bayou Dupre Control Structure with representatives of the New Orleans District, the Lake Borgne Basin Levee District, and the New Orleans Office of Public Works. Personnel participating in the inspection are listed in Encl 1. The structure was not underwatered at the time of the inspection, therefore, only the structural members above water were inspected.

2. Background. Bayou Dupre control structure is a feature of the Chalmette Area Plan, hurricane protection project. It is located in the hurricane protection levee adjacent to the Mississippi River Gulf Outlet (MRGO) at the confluence of Bayou Dupre and the MRGO in St. Bernard Parish just southeast of New Orleans, LA. The structure provides protection from hurricane tidal overflows and allows water traffic and normal drainage from Bayou Dupre to the MRGO.

3. Description. The structure consists of a reinforced concrete sector gate supported on untreated timber piles. The gatebay is connected to the adjacent levees with pile supported "T" walls and concrete sheet pile "I" walls. The gatebay is 75 ft long and has a channel width of 56 ft. A more detailed description of the structure is presented in Periodic Inspection Report No. 1, Feb 74.

4. Observation. In general, the structure is structurally sound, well maintained and is in good operating condition. Observations made during the inspection are listed below.

a. The I-walls which connect the pile-founded T-wall to the levee consist of prestressed concrete panels with full length tongue-and-groove with plastic interlocks. It was anticipated in design that these walls may settle as much as 1 ft, therefore, the walls were initially constructed 1 ft higher than the adjacent T-walls, i.e., to el 18.0 ft NGVD. Instrumentation data indicate that the top of west I-wall varies from about el 17.8 to el 17.6 and the top of the east I-wall varies from about el 16.6 to el 17.1. Visual inspection of the I-walls indicate that the top of the walls are "stair-stepped", i.e., each panel is at a slightly different elevation from adjacent panels. In spite of the apparent differential settlements, the interlocks between panels are all intact, the joints are tight and there are no signs of distress at the joints.

b. In the previous periodic inspection (1 Dec 83) it was reported that "a hole approximately 10 ft wide by 30 ft long by 5 ft deep was observed behind the riprap revetment on the east bank of the north channel approach." An investigation of this area by geotechnical personnel revealed what appeared to be the remnants of a natural drainage channel, the mouth of which had been closed by a small stone dike which tied into the riprap placed on the bank of the approach channel. It was concluded that the "hole" poses no-threat to the stability of the stone protection on the channel bank.

LMVED-GS

10 Jul 86

SUBJECT: Periodic Inspection No. 4, Bayou Dupre Control Structure, 25 Jun 86

c. The Northeast and Southeast timber pile dolphins have been damaged by barge impact. Although the dolphins still provide some degree of protection to the two guidewalls, local interests should be encouraged to make repairs as soon as possible.

d. The boat dock which is located on the west bank of the South Approach Channel has been destroyed by barge impact several times over the years and is presently in an unusable condition. The Lake Borgne Levee District has recommended that the dock not be reconstructed at the present site but that a new dock be constructed at a more protected location.

e. Severe corrosion was noted on all steel members of the sector gate and all embedded metals at the splash zone. All other painted surfaces were in satisfactory condition. The corroded members will be sandblasted and painted in Feb 87 when the structure is scheduled to be dewatered.


f. It was noted that the Lake Borgne Levee District maintenance crews had recently burned a large pile of debris near the northwest side of the west T-wall. The levee board representative was cautioned to make sure that all burning of debris should take place well away from the concrete surfaces to prevent spalling of the concrete from the heat.

g. The sector gates were operated with no problems. The engine generator started with no problems. The sector gates are operated from this power source. The structure now has commercial power, but only for the lights in the control house.

4. Next Inspection. The inspection team was informed by the local interest representative that the structure would be dewatered for major maintenance in Feb 87. The undersigned suggested that NOD conduct a supplemental inspection during the time the structure is unwatered.

5. Actions Required. New Orleans District will prepare a periodic inspection report and submit to LMVD for review and approval by 25 Nov 86.


C. C. TRAHAN


F. N. JOHNSON

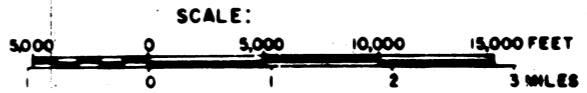
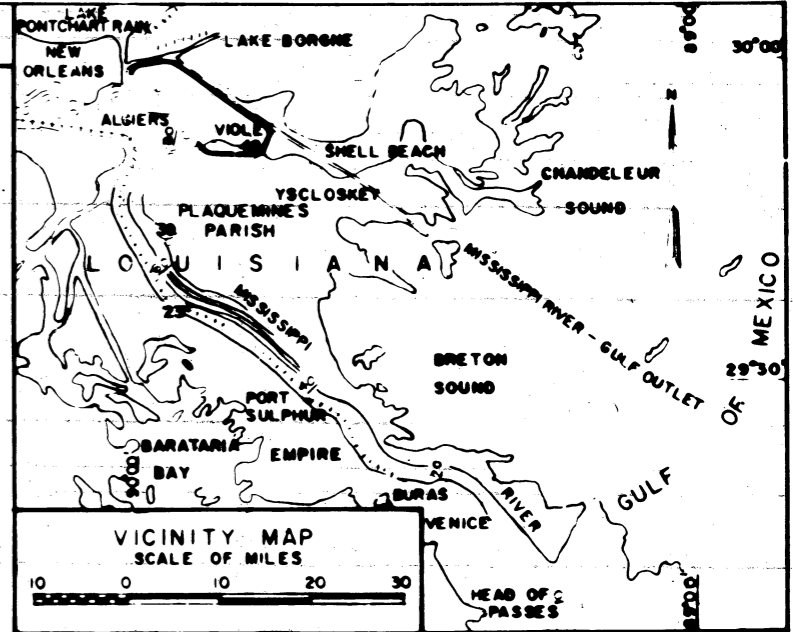
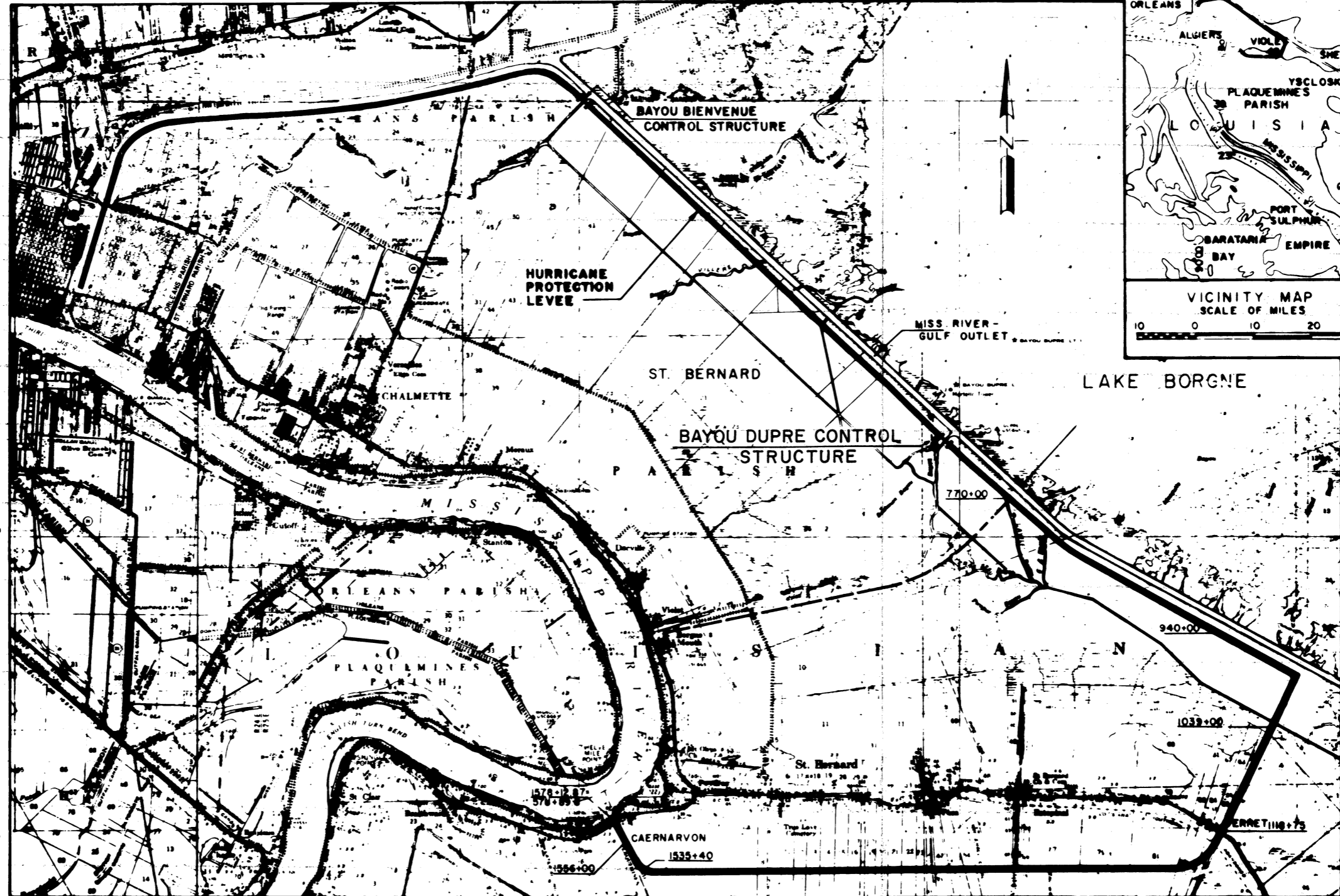
CF:
LMNED-DG (Mr. Terranova)

APPENDIX B

INSTRUMENTATION DRAWINGS

BAYOU DUPRE CONTROL STRUCTURE
INDEX OF INSTRUMENTATION PLATES

<u>Plate No.</u>	<u>Title</u>
1	Location Plan and Vicinity Map
2	Scour and Overbank Survey Locations
3	Profile Survey
4	Scour Survey - Stations 5+00, 5+50, 6+00, 6+50
5	Scour Survey - Stations 7+00, 7+50, 8+00
6	Scour Survey - Stations 8+50, 9+00, 9+62
7	Scour Survey - Stations 10+00, 10+62, 11+12, 11+62
8	Scour Survey - Stations 12+38, 12+88, 13+38
9	Scour Survey - Stations 13+88, 14+50, 15+00, 15+50
10	Scour Survey - Stations 16+00, 17+00, 18+00
11	Scour Survey - Stations 19+00, 19+01, 19+02
12	Wingwall Range Layout
13	Wingwall Scour - N. W. 1+00, 2+00, 3+00
14	Wingwall Scour - N. E. 1+00, 2+00, 3+00
15	Wingwall Scour - S. W. 1+00, 2+00, 3+00
16	Wingwall Scour - S. E. 1+00, 2+00, 3+00
17	Instrumentation Location
18	Settlement Reference Marks Plans and Profile
19	Settlement Reference Marks Plan and Profile - Concrete Sheetpile
20	Settlement Reference Marks Differential Settlement Chart
21	Settlement Reference Marks Differential Settlement Chart
22	Settlement Reference Marks Differential Settlement Chart

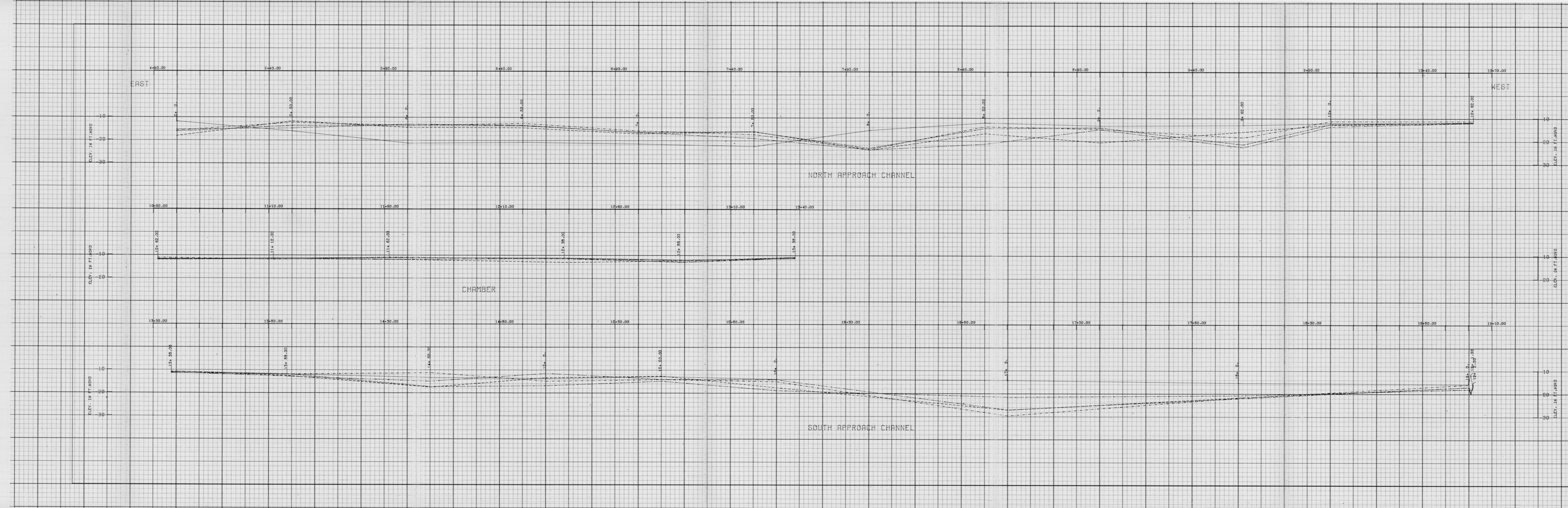


LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
 HURRICANE PROTECTION SYSTEM
 CHALMETTE AREA PLAN

**BAYOU DUPRE CONTROL STRUCTURE
 LOCATION PLAN AND VICINITY MAP**

U.S. ARMY ENGINEERS DISTRICT, NEW ORLEANS, LA.
 CORPS OF ENGINEERS

SHEET OF SHEETS FILE NO. W-2-26327

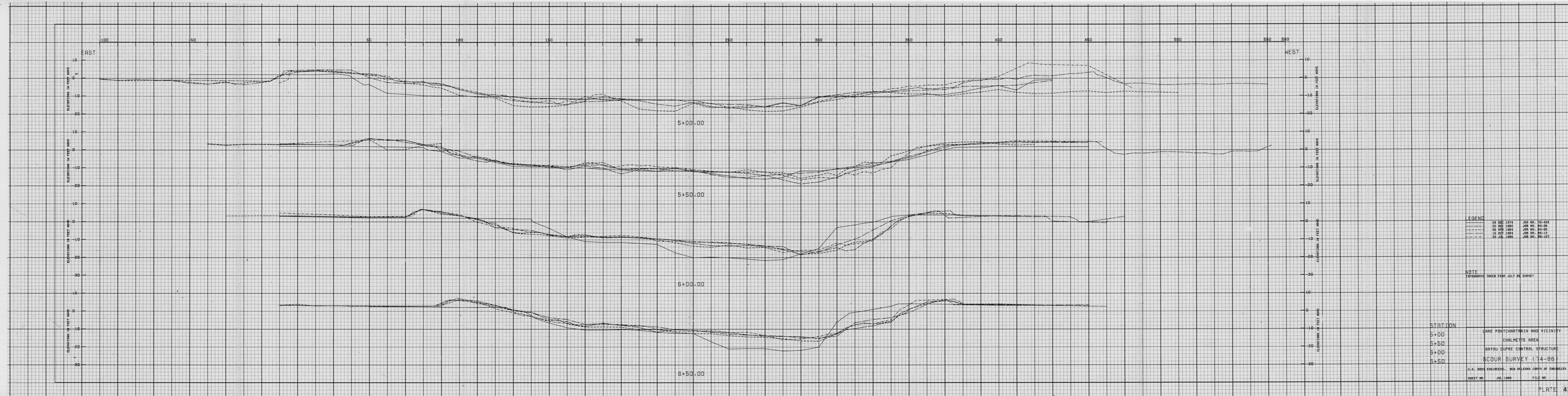


LEGEND

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20 DEC 1982	JOB NO. 83-28
05 APR 1984	JOB NO. 84-50
15 OCT 1984	JOB NO. 85-13
20 JUL 1986	JOB NO. 86-107

NOTE

LAKE PONTCHARTRAIN AND VICINITY
 BAYOU DUPRE CONTROL STRUCTURE
 PERIODIC INSPECTION
 COMPARATIVE PROFILE (FY 86)
 U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
 SHEET OF JUL 1986 FILE NO.



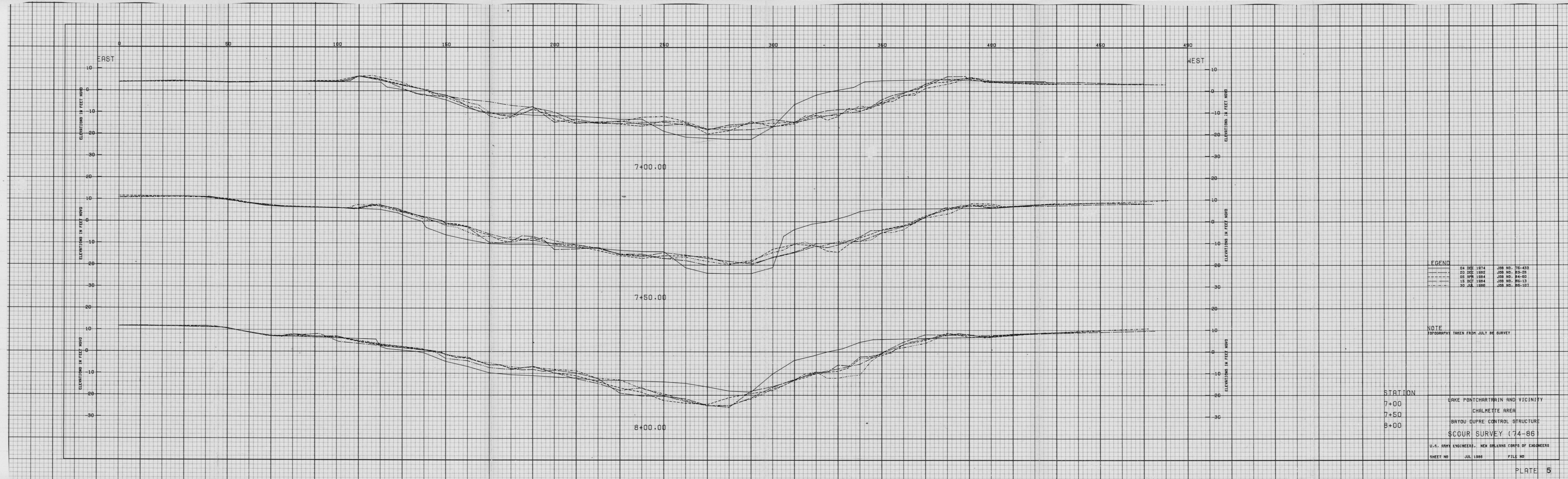
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30 JUL 1986	JOB NO. 86-107

NOTE
TOPOGRAPHY TAKEN FROM JULY 86 SURVEY

STATION	LAKE PONTCHARTRAIN AND VICINITY
5+00	CHALMETTE AREA
5+50	BAYOU DUPE CONTROL STRUCTURE
6+00	SCOUR SURVEY (74-86)
6+50	

U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS
SHEET NO. JUL 1988 FILE NO.



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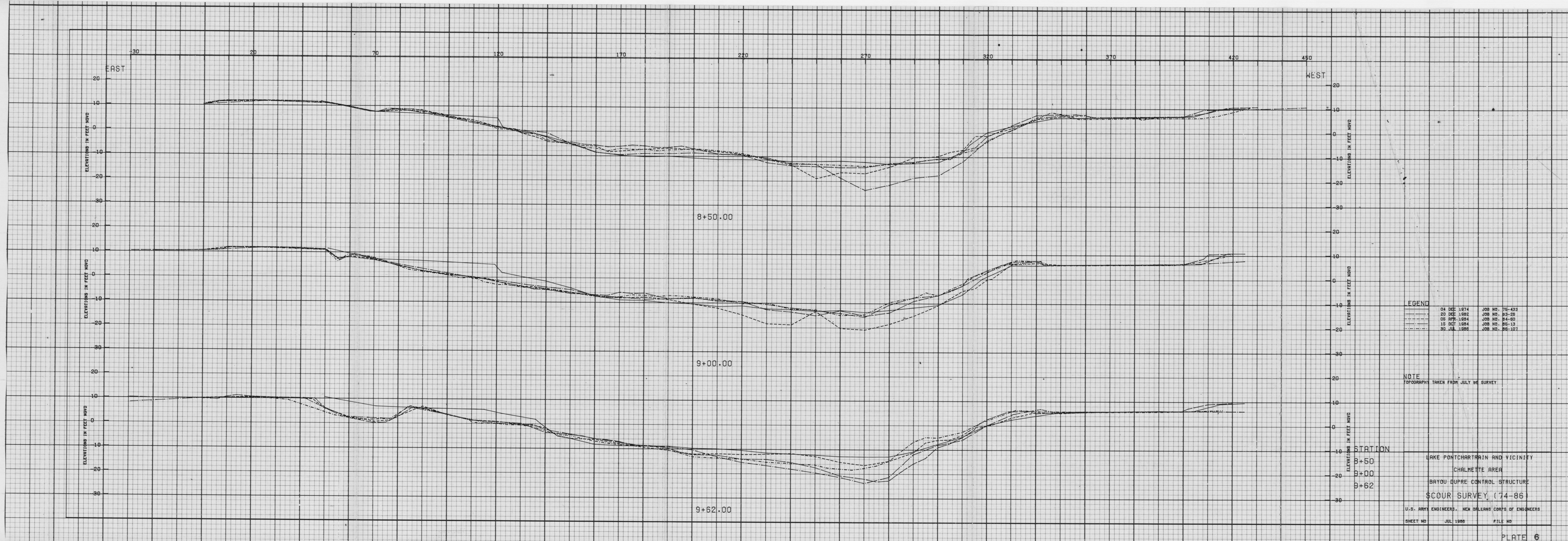
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30 JUL 1986	JOB NO. 86-107

NOTE
 TOPOGRAPHY TAKEN FROM JULY 86 SURVEY

STATION

7+00	LAKE PONTCHARTRAIN AND VICINITY
7+50	CHALMETTE AREA
8+00	BAYOU DUPEL CONTROL STRUCTURE
	SCOUR SURVEY (74-86)

U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS
 SHEET NO. JUL 1986 FILE NO.



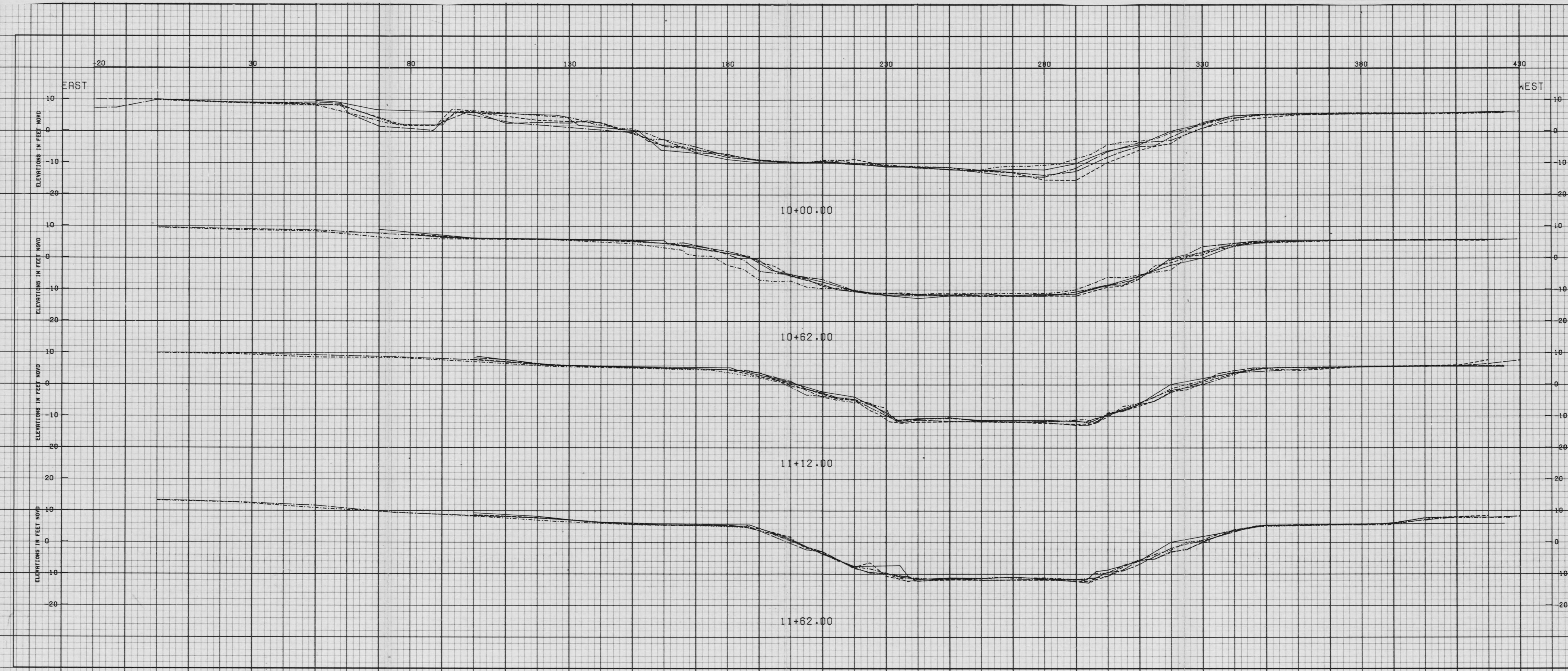
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- · - · -	30 JUL 1988	JOB NO. 88-107

NOTE
 TOPOGRAPHY TAKEN FROM JULY 86 SURVEY

STATION
 8+50 LAKE PONTCHARTRAIN AND VICINITY
 9+00 CHALMETTE AREA
 9+62 BAYOU EUFRE CONTROL STRUCTURE
 SCOUR SURVEY (74-86)

U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS
 SHEET NO. JUL 1988 FILE NO.



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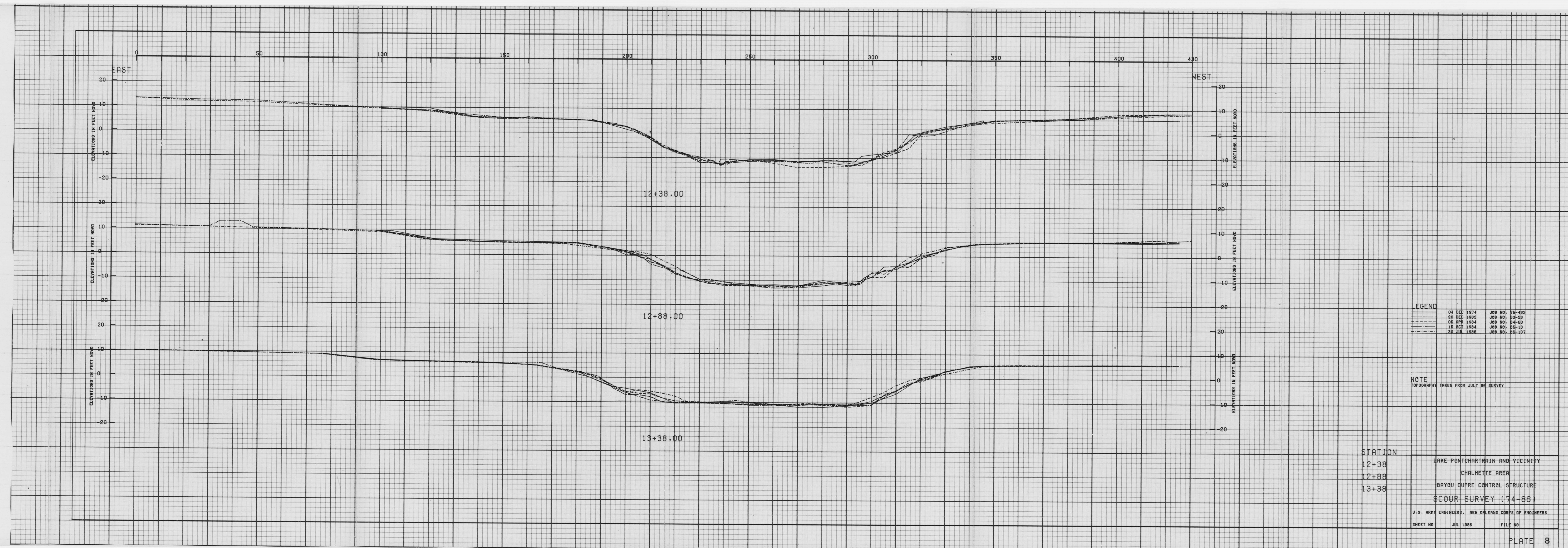
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30 JUL 1986	JOB NO. 86-107

NOTE
TOPOGRAPHY TAKEN FROM JULY 86 SURVEY

STATION

10+00	LAKE PONTCHARTRAIN AND VICINITY
10+62	CHALMETTE AREA
11+12	BAYOU DUPRE CONTROL STRUCTURE
11+62	SCOUR SURVEY (74-86)

U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS
SHEET NO. JUL 1986 FILE NO.



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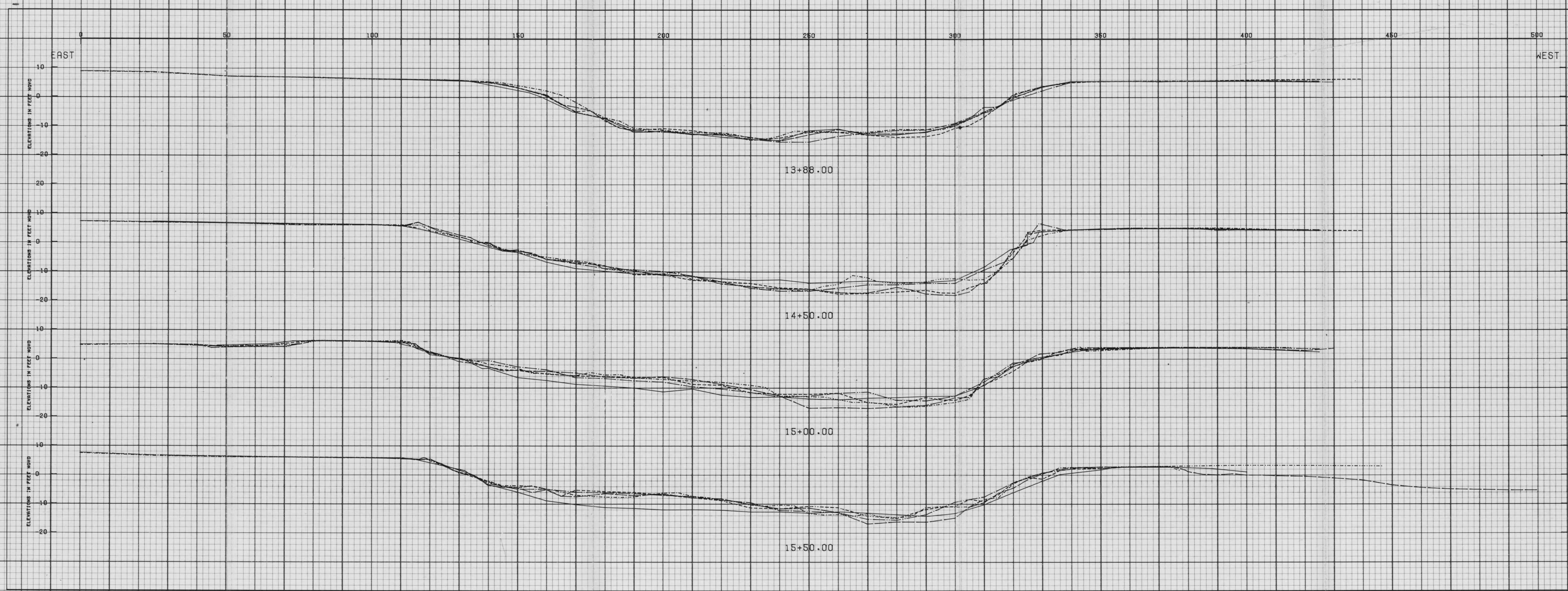
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NOTE
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STATION

12+38	LAKE PONTCHARTRAIN AND VICINITY
12+88	CHALMETTE AREA
13+38	BAYOU CUPRE CONTROL STRUCTURE
	SCOUR SURVEY (74-86)

U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS
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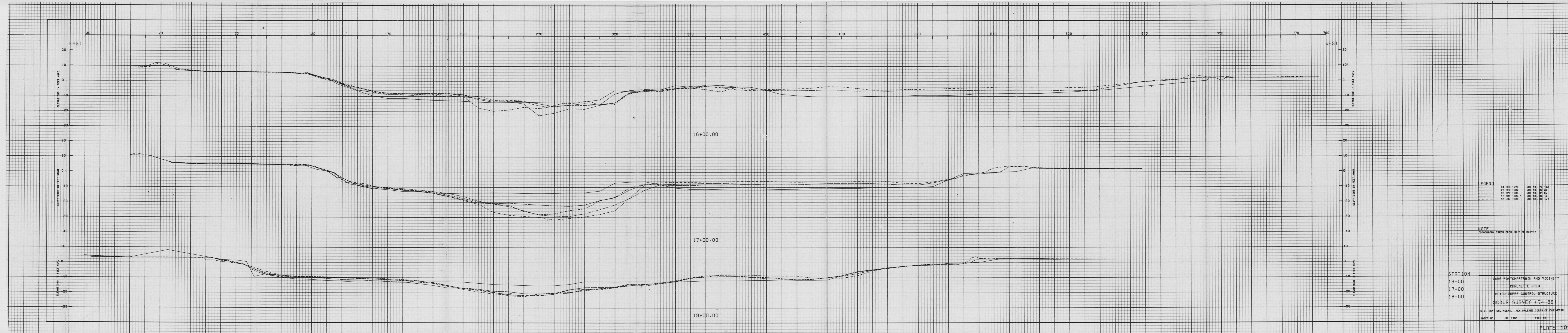
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30 JUL 1986	JOB NO. 86-107

NOTE
TOPOGRAPHY TAKEN FROM JULY 86 SURVEY.

STATION	DESCRIPTION
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14+50	CHALMETTE AREA
15+00	BAYOU DUPRE CONTROL STRUCTURE
15+50	SCOUR SURVEY (74-86)

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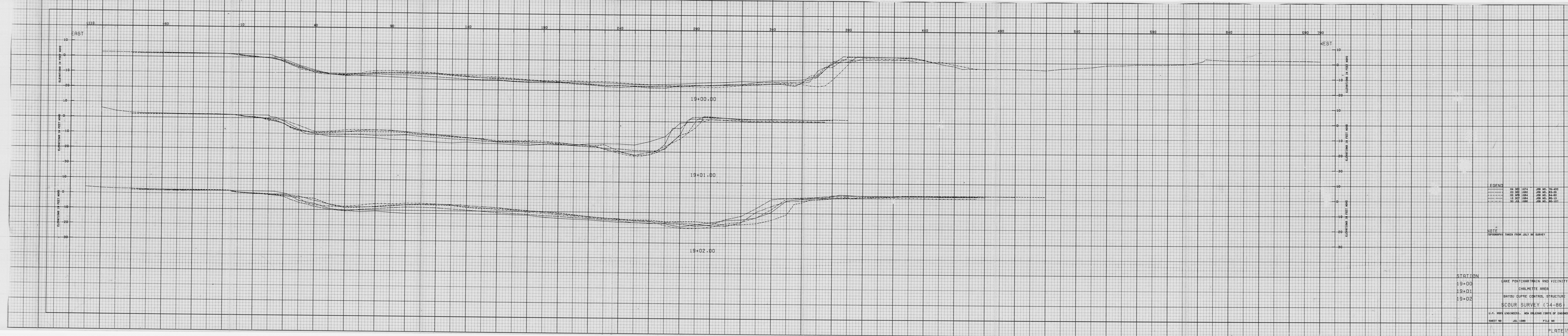
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06 APR 1984	JOB NO. 84-60
16 OCT 1984	JOB NO. 85-13
30 JUL 1986	JOB NO. 86-107

NOTE
 TOPOGRAPHY TAKEN FROM JULY 86 SURVEY

STATION
 16+00 LAKE PONTCHARTRAIN AND VICINITY
 17+00 CHALMETTE AREA
 18+00 BAYOU DUPRE CONTROL STRUCTURE
 SCOUR SURVEY (74-86)

U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS
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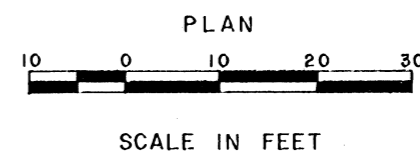
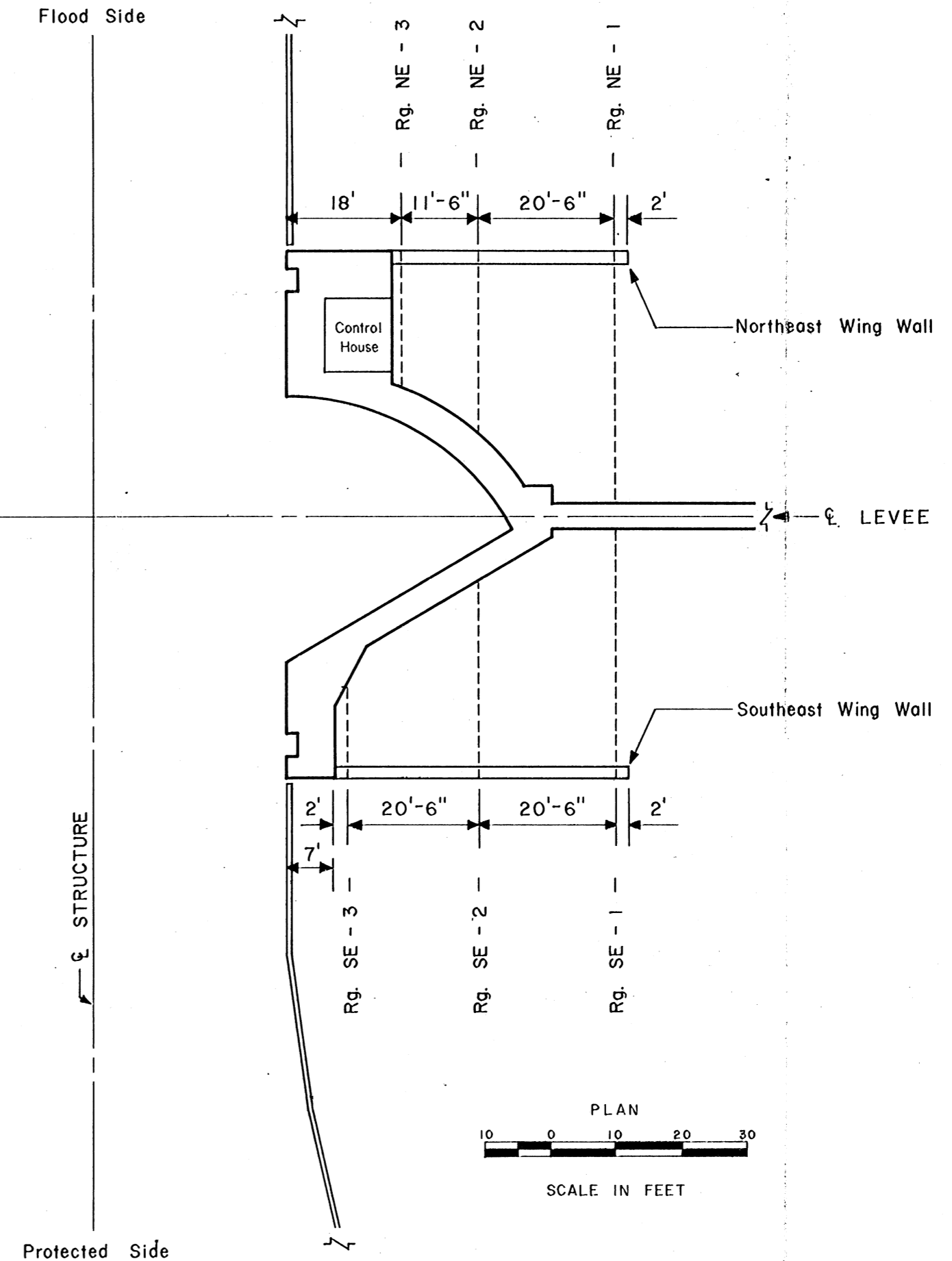
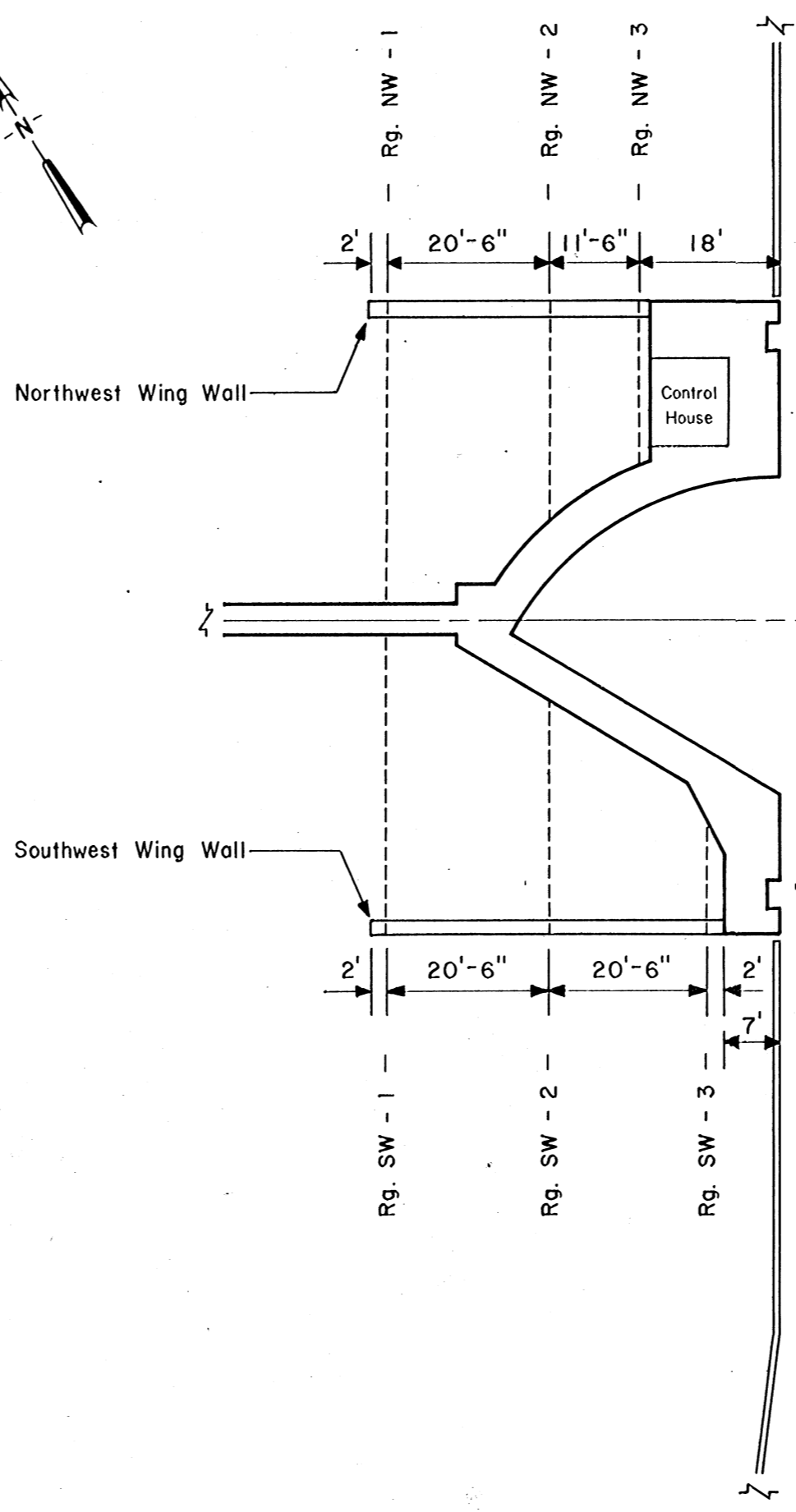
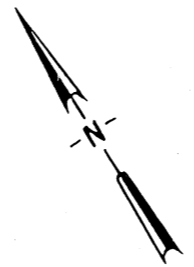


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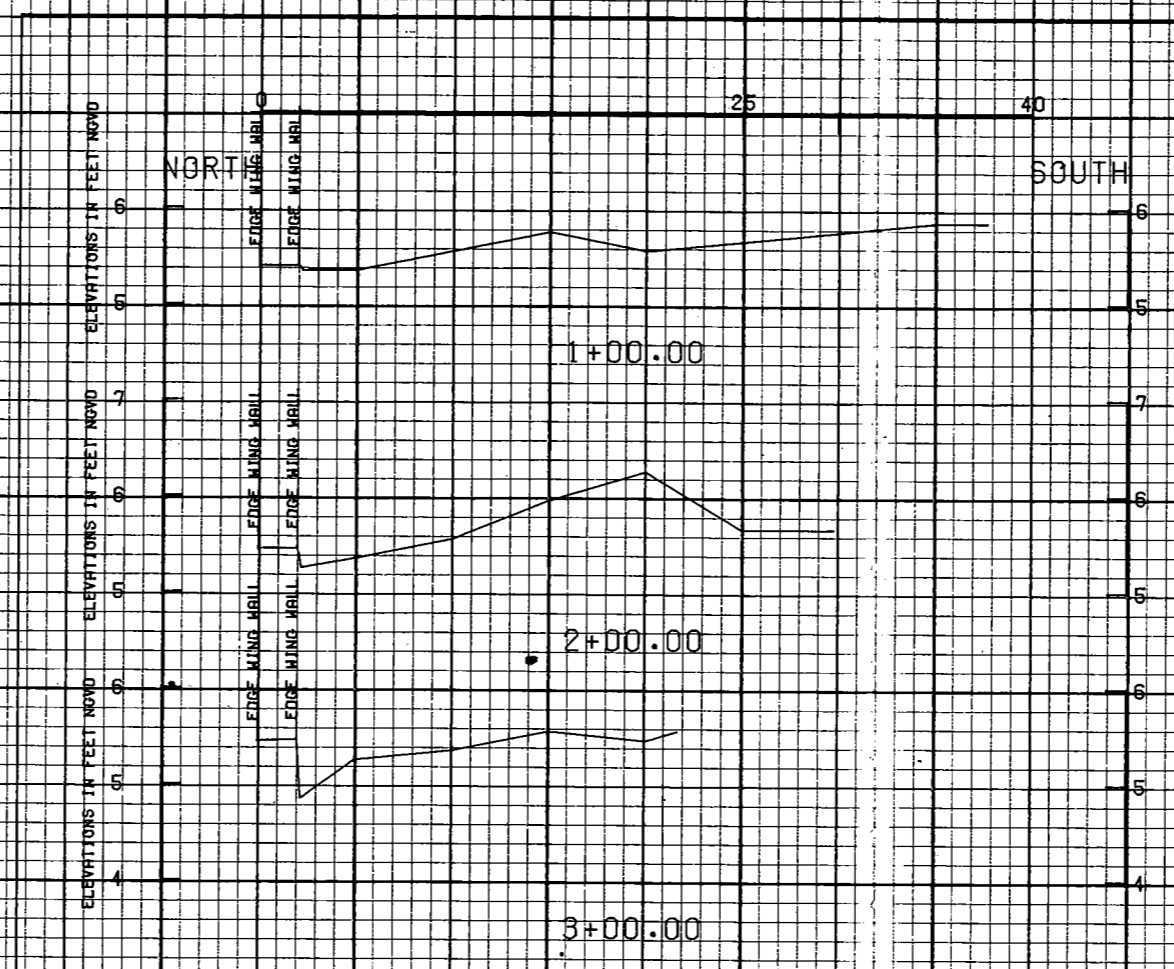
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- · - · -	30 JUL 1986	JOB NO. 86-107

NOTE
 TOPOGRAPHY TAKEN FROM JULY 86 SURVEY

STATION
 19+00 LAKE PONTCHARTRAIN AND VICINITY
 19+01 CHALMETTE AREA
 19+02 BAYOU DUPRE CONTROL STRUCTURE
 SCOUR SURVEY (74-86)
 U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS
 SHEET NO. JUL 1986 FILE NO.



LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION
**WING WALL
RANGE LAYOUT**
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
FILE NO.



LEGEND



30 JUL 1986 JOB NO. 86-107

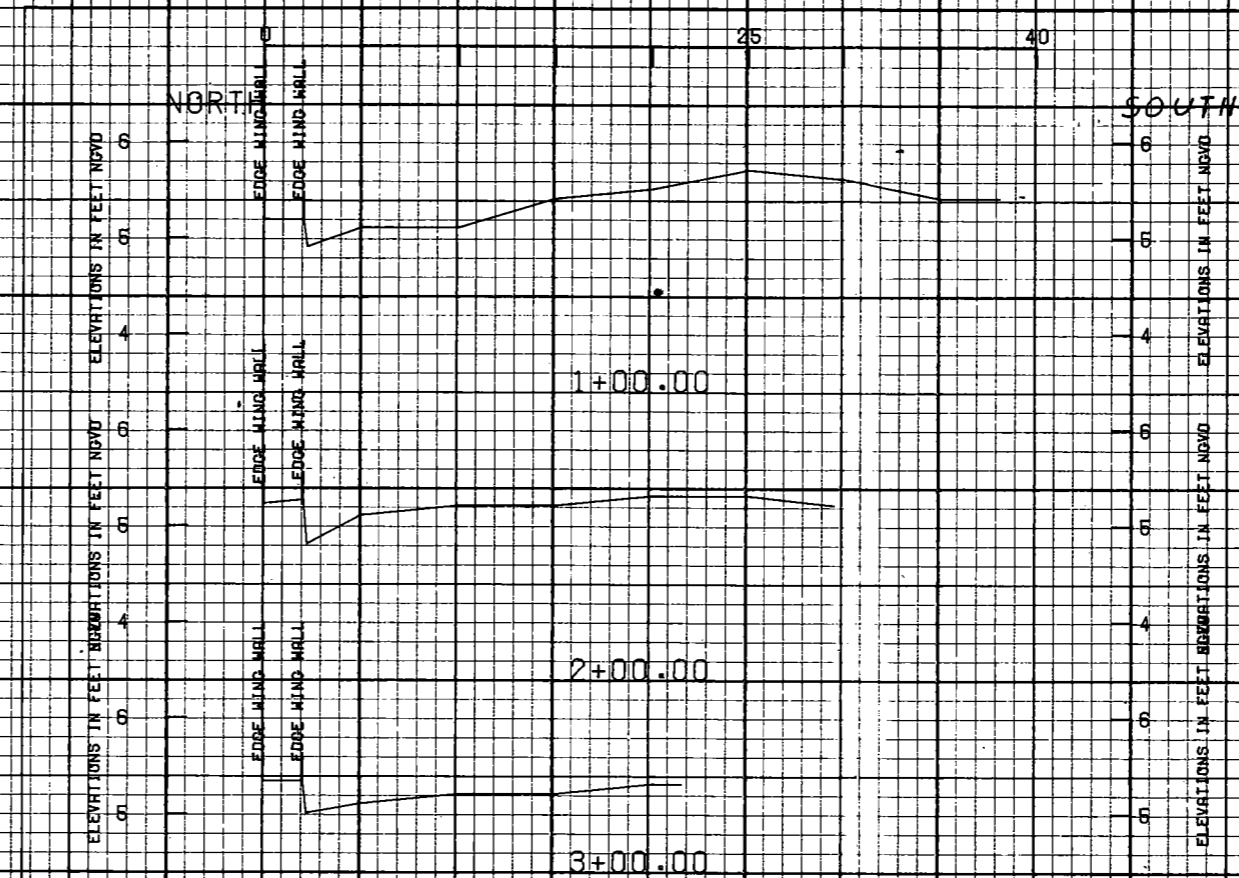
NOTE

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STATION	
1+00	LAKE PONTCHARTRAIN AND VICINITY
2+00	CHALMETTE AREA
3+00	BAYOU DUPRE CONTROL STRUCTURE
	NORTHWEST WING WALL

U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

SHEET NO. JUL 1986 FILE NO.



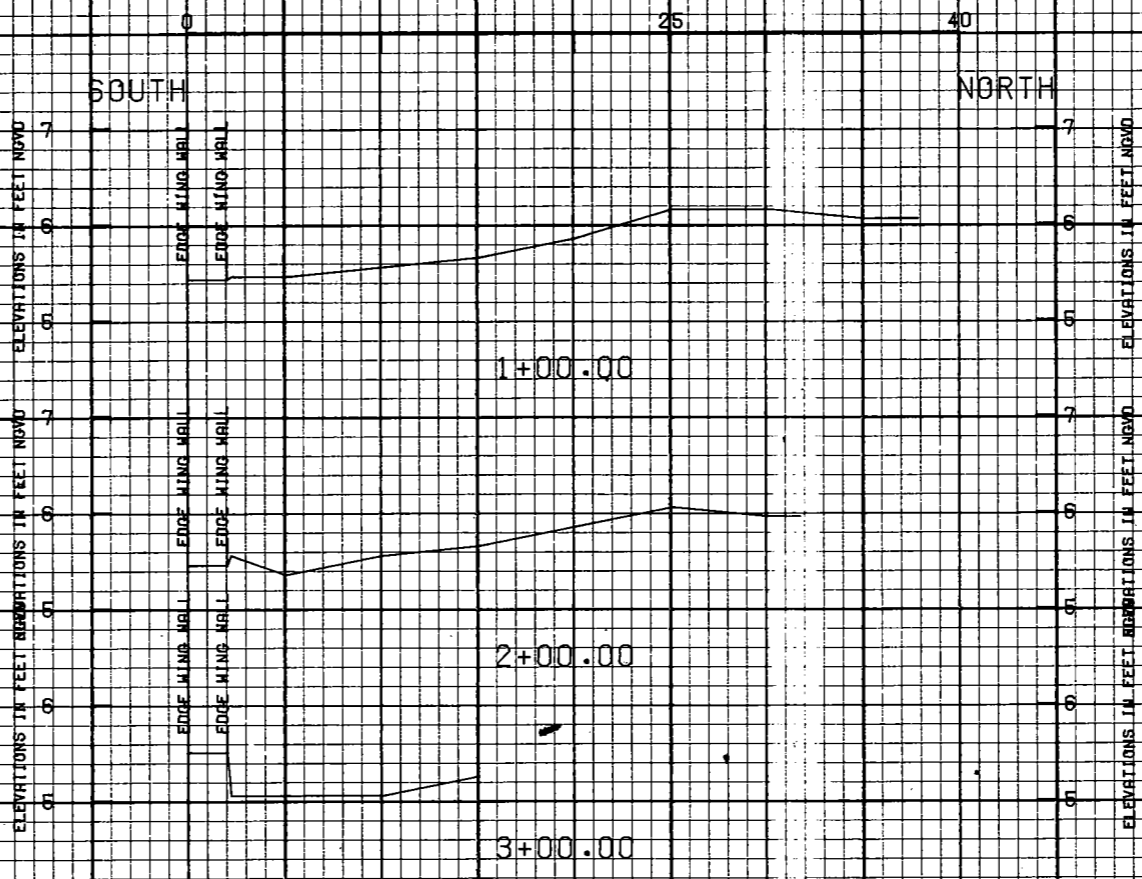
LEGEND
 30 JUL 1986

NOTE
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STATION
 2+00
 3+00

LAKE PONTCHARTRAIN AND VICINITY
 CHALMETTE AREA
 BAYOU DUPRE CONTROL STRUCTURE
 NORTHEAST WING WALL

U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS
 SHEET NO JUL 1986 FILE NO



LEGEND

30 JUL 1986 JOB NO. 86-107

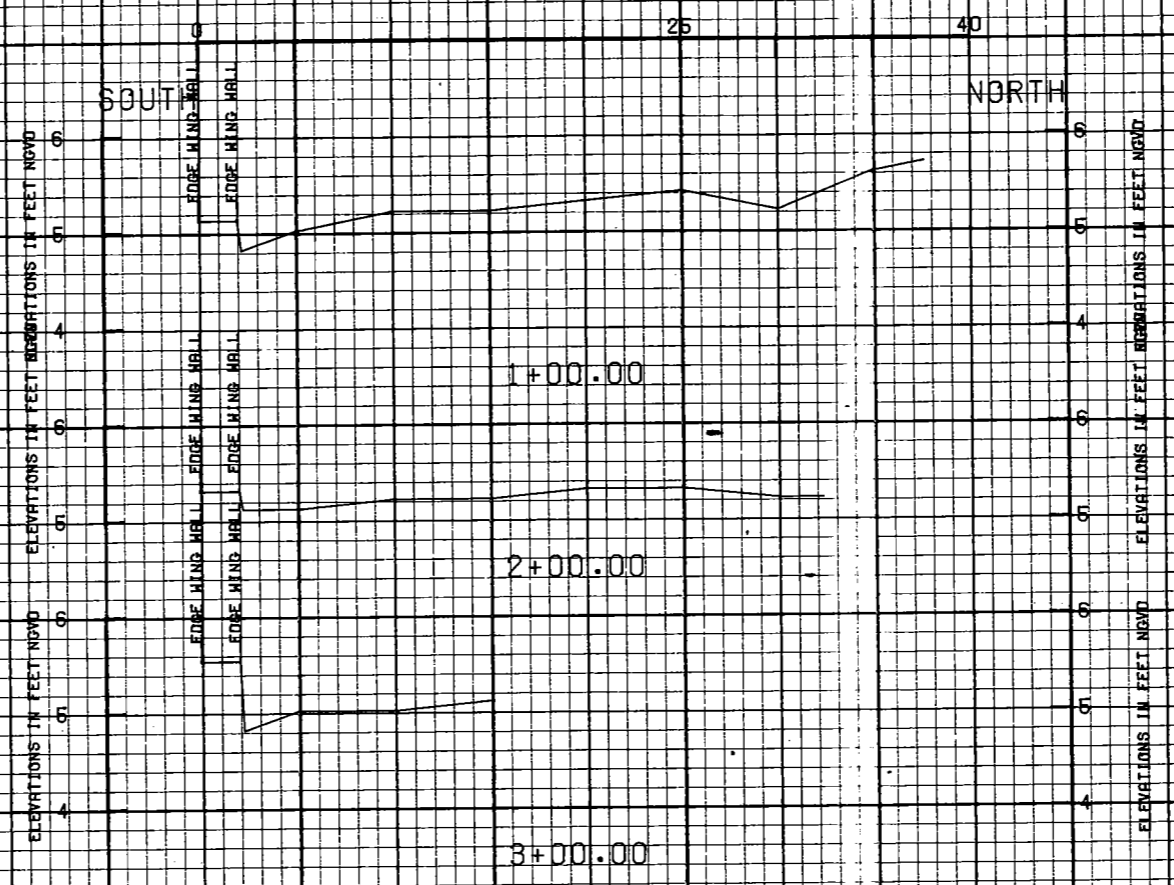
NOTE

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2+00	CHALMETTE AREA
3+00	BAYOU DUPRE CONTROL STRUCTURE
	SOUTHWEST WING WALL

U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

SHEET NO JUL 1986 FILE NO



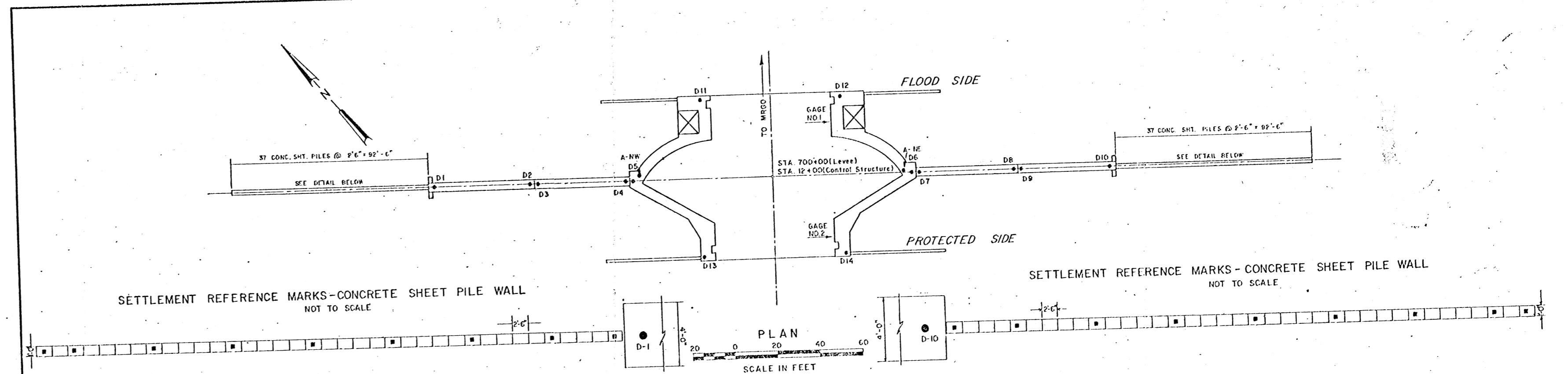
END 30 JUL 86 JOB NO. 86-107

NOTE TOPOGRAPHY TAKEN FROM JULY 86 SURVEY

STATION	
1+00	LAKE PONTCHARTRAIN AND VICINITY
2+00	CHARMETTE AREA
3+00	BRYOU SUPRE CONTROL STRUCTURE
	SOUTHEAST WING WALL

U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

SHEET NO JUL 1986 FILE NO



		DISTANCE TO REFERENCE MARKS							
NO OF REFERENCE MARKS		D2-D3	D4-D5	D5-D6	D6-D7	D8-D9	D11-D12	D13-D14	
INITIAL DATE		6-7-74	6-7-74	6-7-74	6-7-74	6-7-74	6-7-74	6-7-74	
ORIGINAL READINGS		4.00	4.05	129.96	4.00	4.00	64.17	64.06	
DATE OF OBSERVATION	2 APRIL 1984	4.04	4.08	---	4.04	4.04	---	---	
	10 OCTOBER 1984	4.02	4.08	---	4.04	4.02	---	---	
	28 JULY 1986	4.03	4.08	---	4.03	4.03	---	---	

PBM TED Elevation N.G.V.D.
Galvanized pipe, 1 1/2 inches in diameter, was set in bore hole of a depth of 95 feet. The 1/2-inch diameter pipe was then driven an additional 10.5 feet into strata. PBM is on the east side of Bayou Dupre, south side of the structure, 105 feet from Bayou Dupre and 282 feet from the wall of the structure. The 1/2-inch pipe is protected by 3-inch diameter galvanized pipe with cap and three 1/2-inch guard posts pointed yellow.

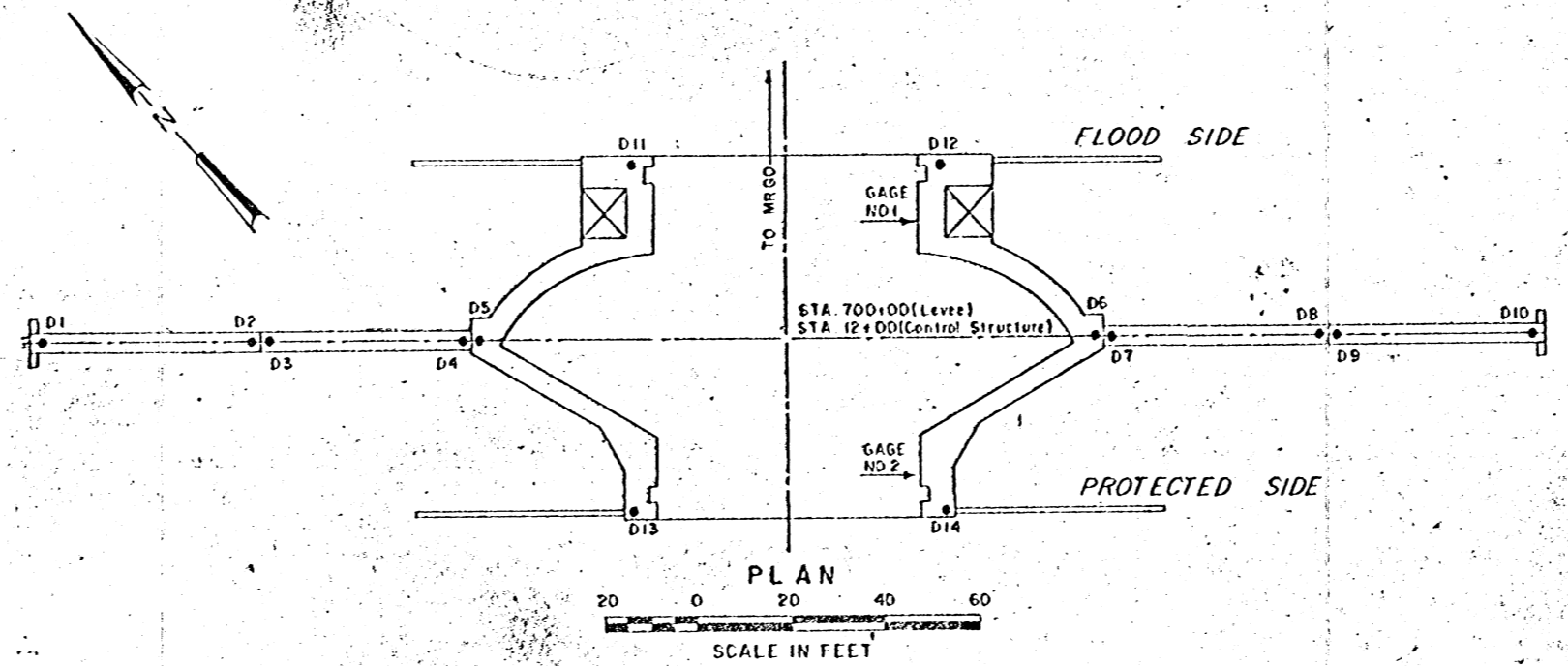
PBM BD-2 Elevation N.G.V.D.
Galvanized pipe, 1 1/2 inches in diameter, was set in bore hole of 95 feet, then driven an additional 10.5 feet into strata. PBM is on the west side of Bayou Dupre and on the south side of the structure, 67 feet from Bayou Dupre and 291 feet from the wall of the structure. The 1/2-inch pipe is protected by 3-inch diameter galvanized pipe with cap and three 1/2-inch guard posts pointed yellow.

NOTE:
Bench marks set and vertical control established during the months of May and June 1974 by the Survey Branch. All elevations are expressed in feet and refer to N.G.V.D.

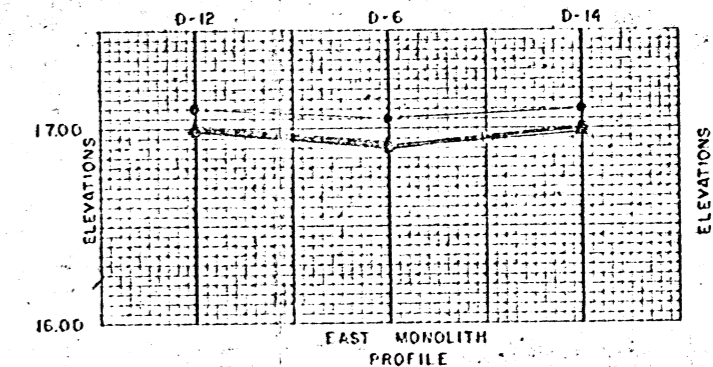
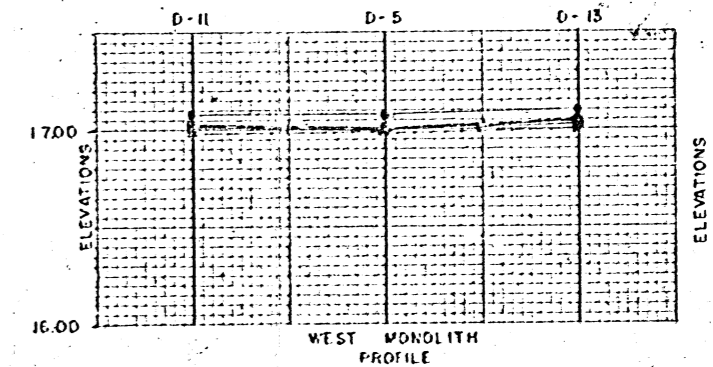
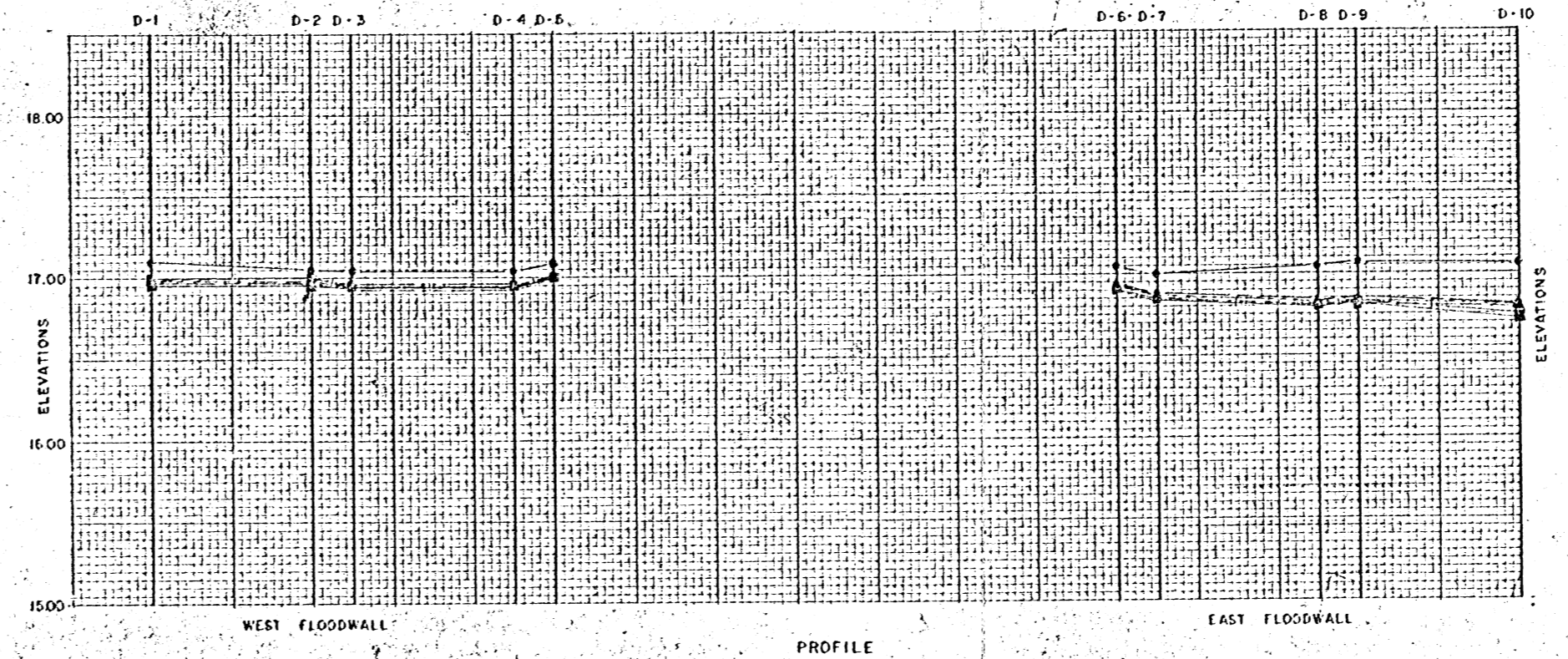
PBM BD-3 Elevation N.G.V.D.
Galvanized pipe, 1 1/2 inches in diameter was set in bore hole of a depth 95 feet then driven an additional 10.5 feet into strata. PBM is on the west side of Bayou Dupre and 128 feet west of Bayou Dupre and 483 feet from the wall of the structure. The 1/2-inch diameter pipe is protected by 3-inch diameter galvanized pipe with cap and three 1/2-inch guard posts pointed yellow.

* This gage may be in error as 3 new PBMs were set during May and June 1974. The present gage was set by general contractor earlier.

REVISION	DATE	DESCRIPTION	BY
		LAKE FORTCHERTRAIN AND VICINITY BOUYO DUPRE PERIODIC INSPECTION INSTRUMENTATION LOCATION	
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS CORPS OF ENGINEERS			FILE NO



SETTLEMENT REFERENCE MARKS														TEMP	GAGE 1	GAGE 2		
NO OF REFERENCE MARKS	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	D-11	D-12	D-13				D-14	
INITIAL DATE	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	91*	1.6	1.6
ORIGINAL READINGS	17.07	17.04	17.03	17.03	17.07	17.04	17.01	17.03	17.05	17.05	17.07	17.10	17.10	17.09				
17 JUNE 1982	16.98	16.98	16.96	16.95	17.00	16.92	16.88	16.86	16.87	16.81	17.01	17.05	17.00	16.98	85*	0.7	0.6	
17 DECEMBER 1982	16.97	16.96	16.95	16.94	16.99	16.90	16.85	16.83	16.84	16.79	16.99	17.01	16.99	16.98	82*	1.2	1.4	
2 APRIL 1984	16.99	16.96	16.96	16.94	17.01	16.91	16.87	16.84	16.85	16.78	17.01	17.00	17.04	16.99	60*	-0.4		
10 OCTOBER 1984	16.98	16.98	16.96	16.96	17.01	16.90	16.85	16.82	16.83	16.75	17.01	16.98	17.04	16.99	76*	1.4	1.4	
29 JULY 1986	16.96	16.96	16.94	16.94	16.99	16.89	16.84	16.80	16.81	16.72	17.00	16.99	17.02	16.98	87*	1.1	1.1	

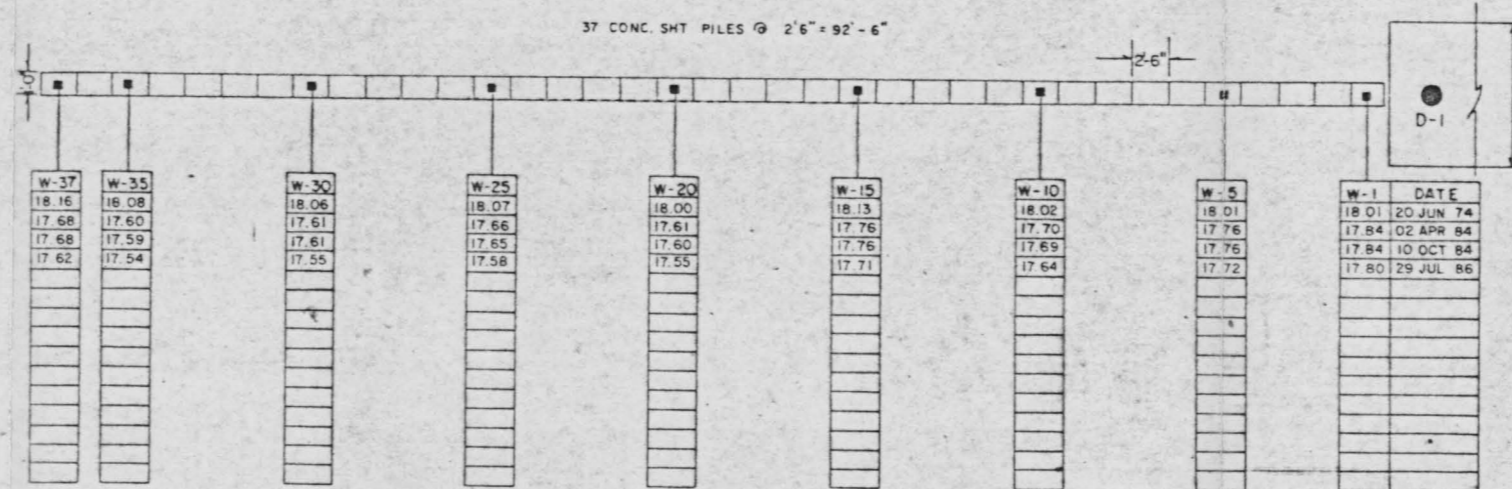


- LEGEND
- ——— 20 July 1974
 - ——— 17 June 1982
 - △ ——— 17 Dec 1982
 - ▲ ——— 2 Apr 1984
 - ——— 10 Oct 1984
 - ——— 29 July 1986

LAKE PONTCHARTRAIN AND VICINITY
 BAYOU DUPRE
 PERIODIC INSPECTION
SETTLEMENT REFERENCE MARKS
PLAN AND PROFILE
 U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
 CORPS OF ENGINEERS
 FILE NO.

SETTLEMENT REFERENCE MARKS-CONCRETE SHEET PILE WALL

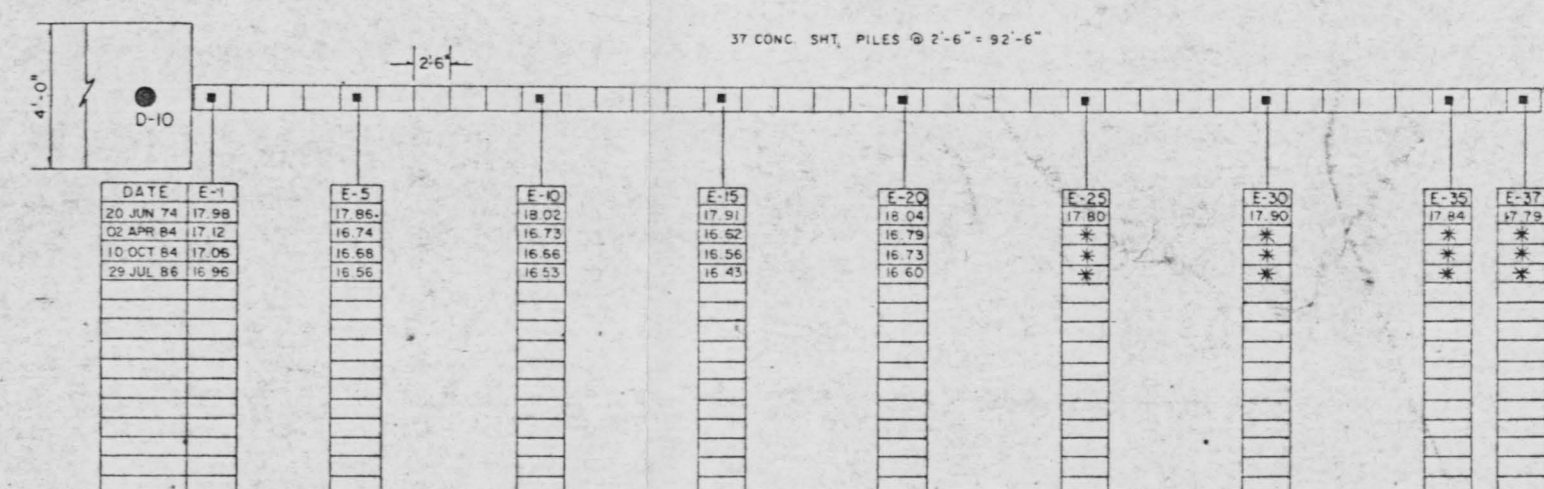
37 CONC. SH. PILES @ 2'-6" = 92'-6"



MARK	DATE	ELEVATION
W-37	18.16	18.08
	17.68	17.60
	17.62	17.54
W-35	18.06	18.06
	17.61	17.61
	17.55	17.55
W-30	18.07	18.07
	17.66	17.66
	17.58	17.58
W-25	18.00	18.00
	17.61	17.61
	17.55	17.55
W-20	18.13	18.13
	17.76	17.76
	17.71	17.71
W-15	18.02	18.02
	17.70	17.70
	17.64	17.64
W-10	18.01	18.01
	17.76	17.76
	17.72	17.72
W-5	18.01	18.01
	17.84	102 APR 84
	17.80	29 JUL 86
W-1	18.01	20 JUN 74
	17.84	102 APR 84
	17.80	29 JUL 86

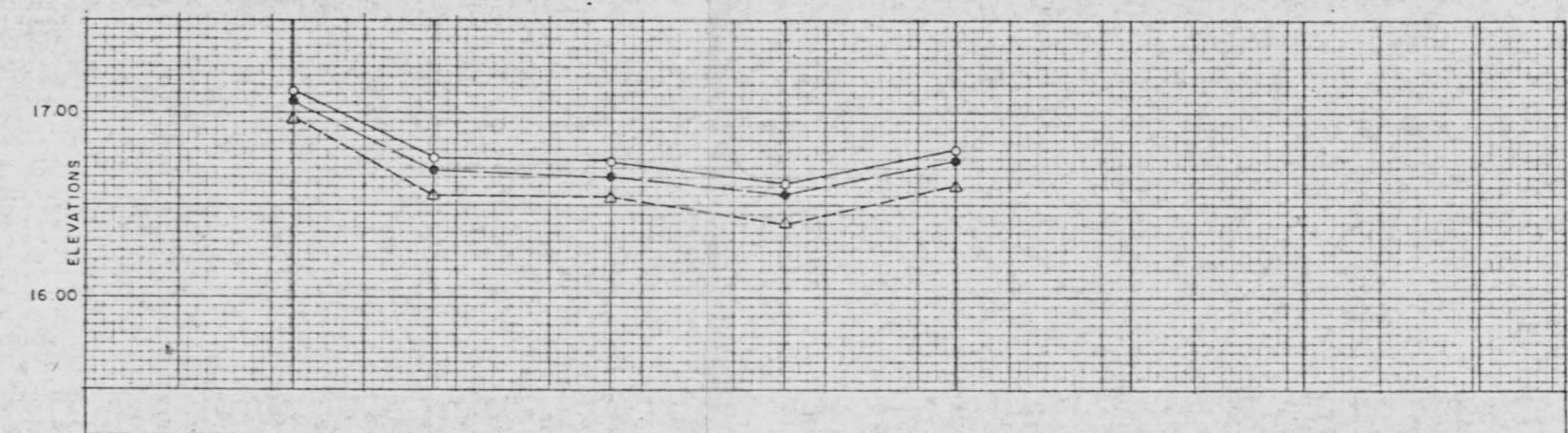
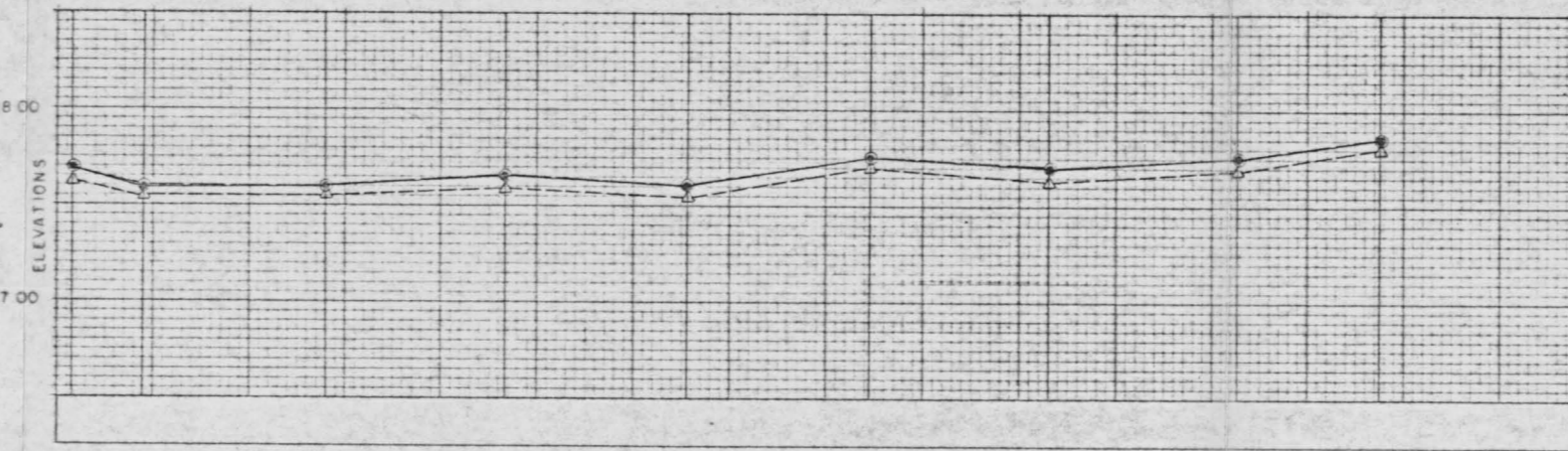
SETTLEMENT REFERENCE MARKS-CONCRETE SHEET PILE WALL

37 CONC. SH. PILES @ 2'-6" = 92'-6"



MARK	DATE	ELEVATION
E-1	17.86	17.86
	16.74	16.74
	16.68	16.68
E-5	17.86	17.86
	16.74	16.74
	16.56	16.56
E-10	18.02	18.02
	16.73	16.73
	16.53	16.53
E-15	17.91	17.91
	16.52	16.52
	16.43	16.43
E-20	18.04	18.04
	16.73	16.73
	16.60	16.60
E-25	17.80	17.80
	*	*
	*	*
E-30	17.90	17.90
	*	*
	*	*
E-35	17.84	17.84
	*	*
	*	*
E-37	17.79	17.79
	*	*
	*	*

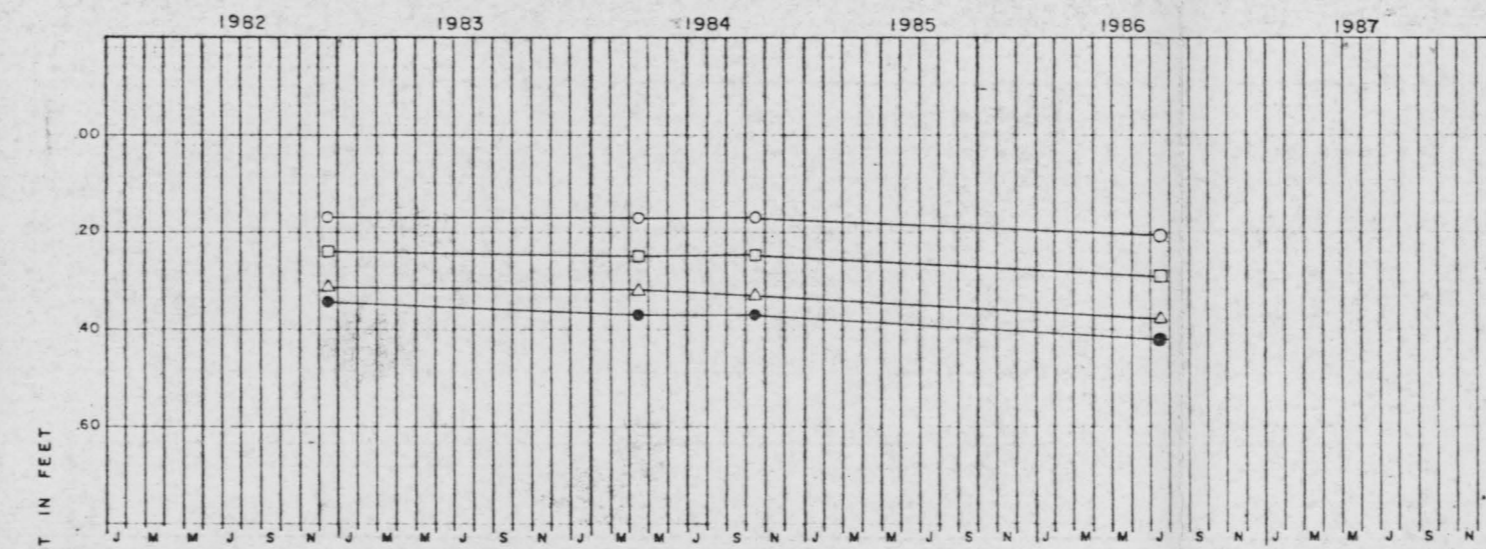
NOTE:
* Covered by Levee



LEGEND
 ○ 02 APR 84
 △ 10 OCT 84
 □ 29 JUL 86
 ■ I
 D

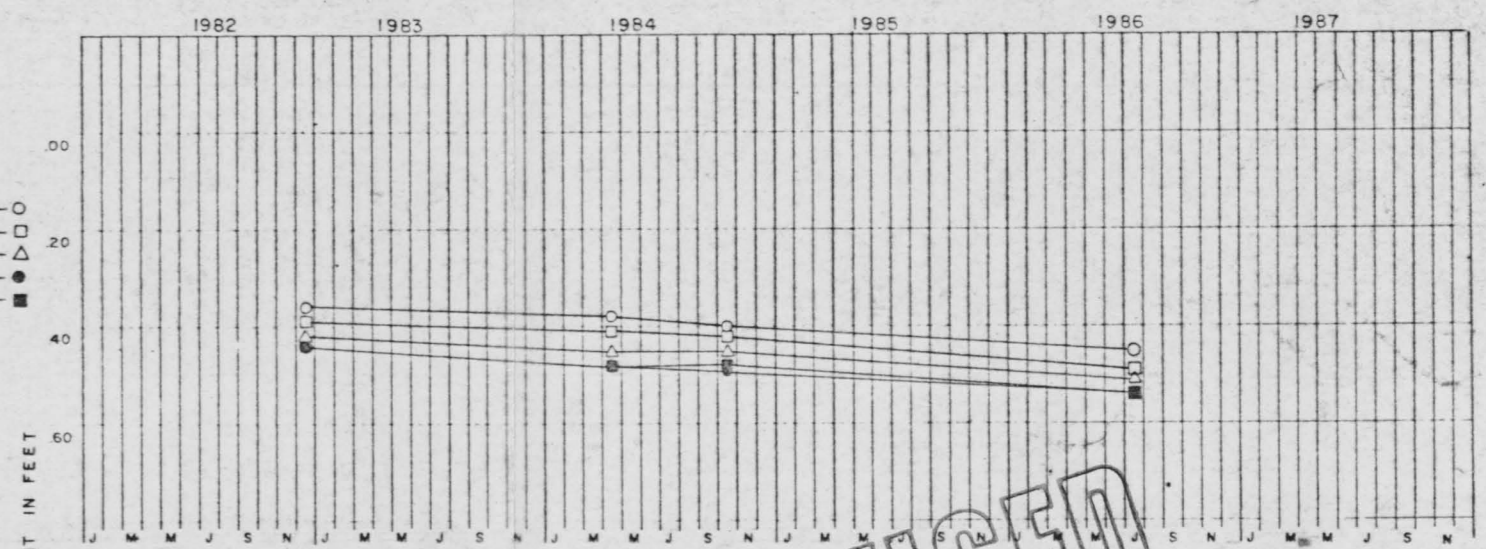
LAKE PONTCHARTRAIN AND VICINITY
 BAYOU DUPRE
 PERIODIC INSPECTION
**SETTLEMENT REFERENCE MARKS
 PLAN AND PROFILE
 CONCRETE-SHEET PILE**
 U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
 CORPS OF ENGINEERS
 FILE NO. H-

WEST CONCRETE SHEET PILE WALL

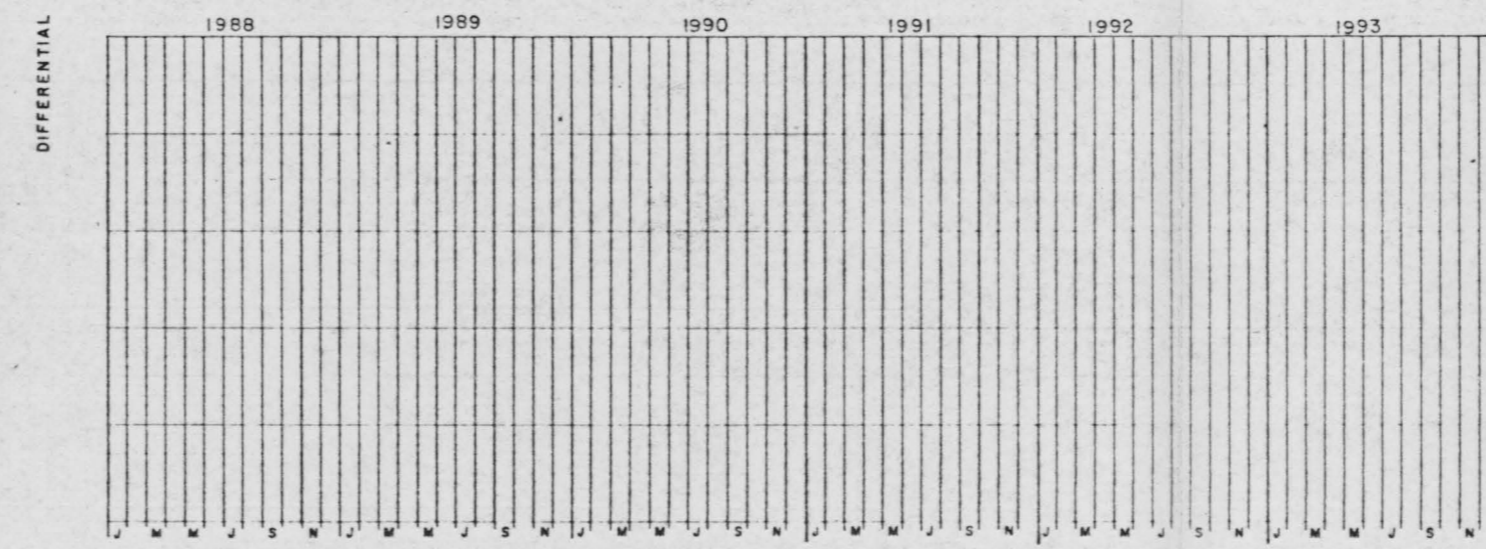


LEGEND

- W-1 ○
- W-5 □
- W-10 △
- W-15 ●

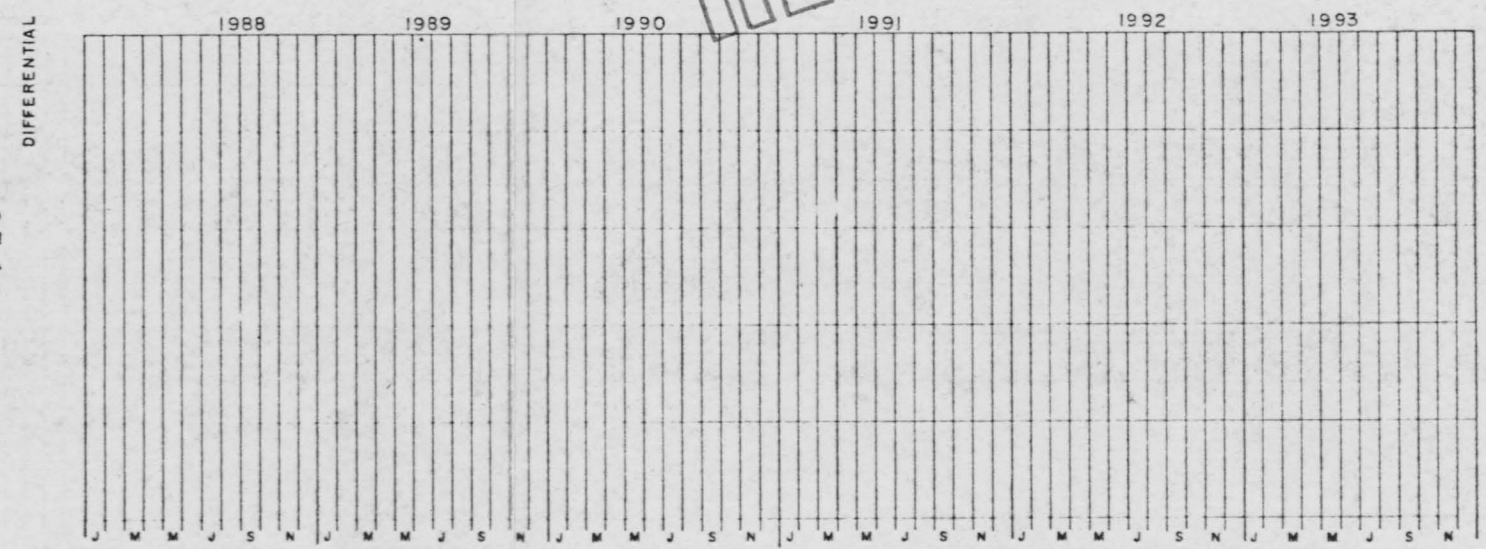


REVISED



LEGEND

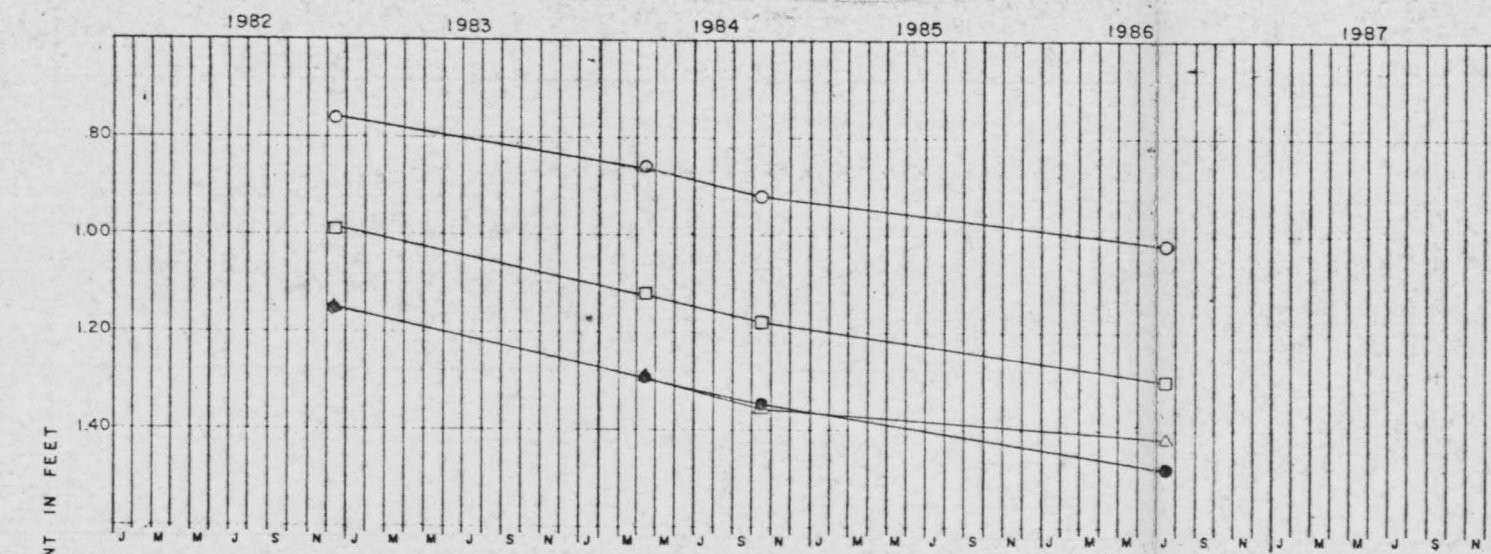
- W-1 ○
- W-5 □
- W-10 △
- W-15 ●



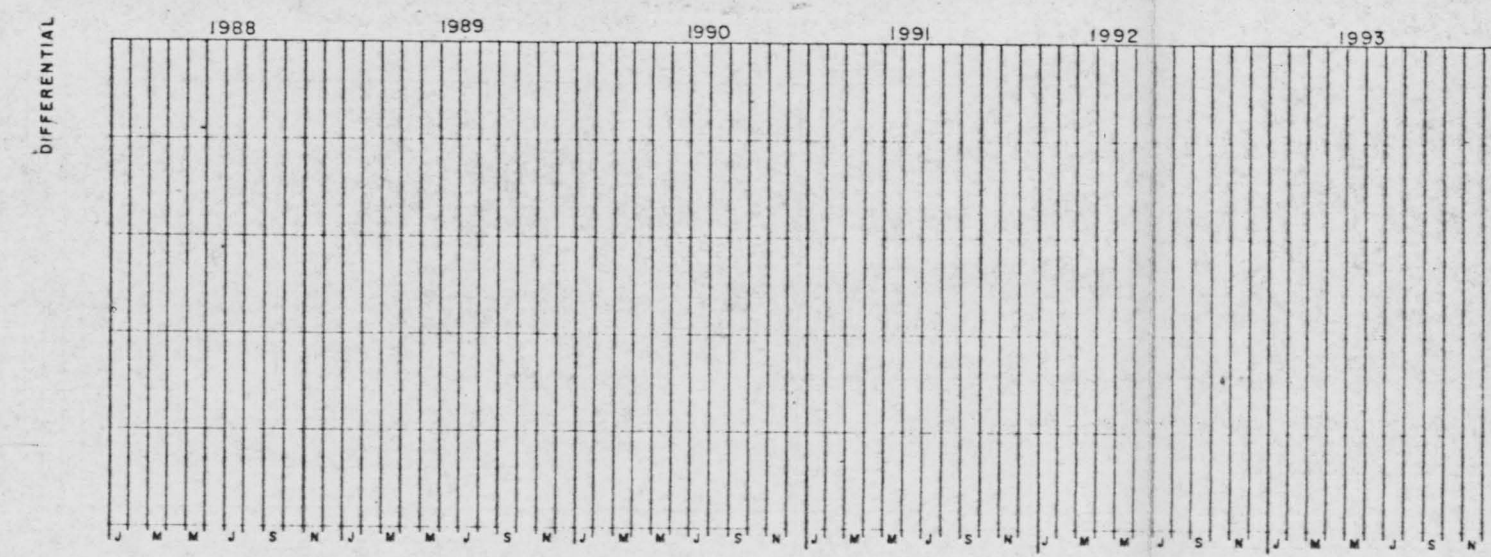
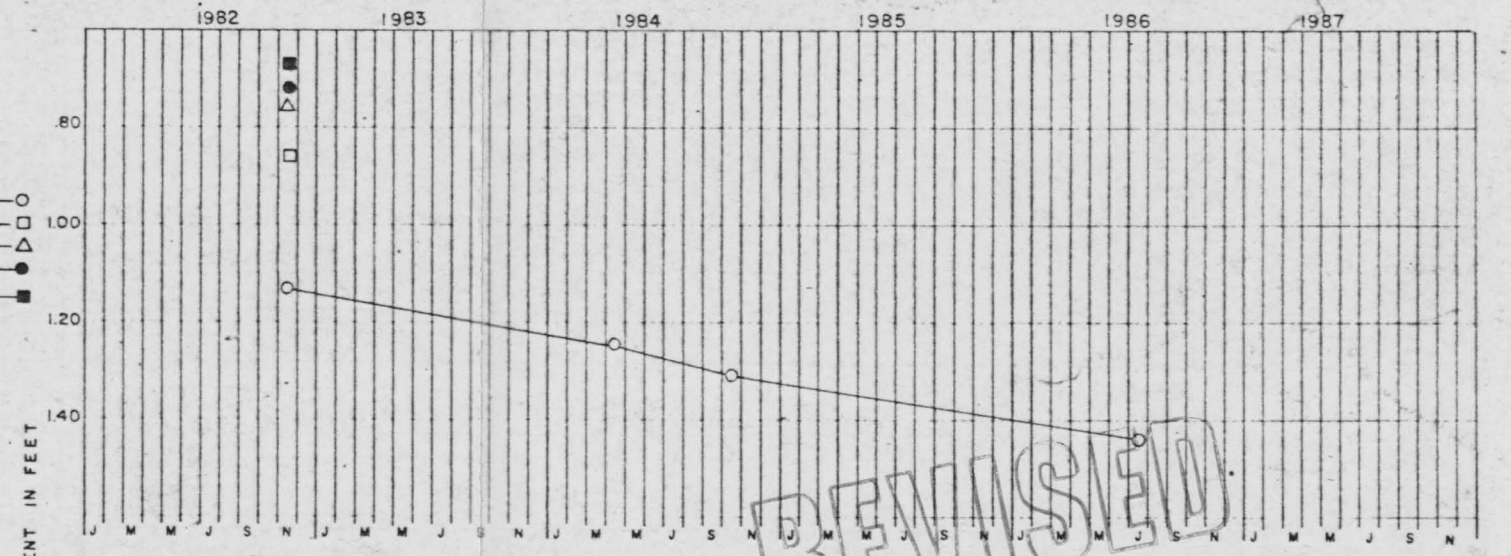
NOTE:
For location and tabulation of
settlement reference marks see
plate

LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION
SETTLEMENT REFERENCE MARKS
DIFFERENTIAL SETTLEMENT CHART
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
FILE NO. H-4-26857

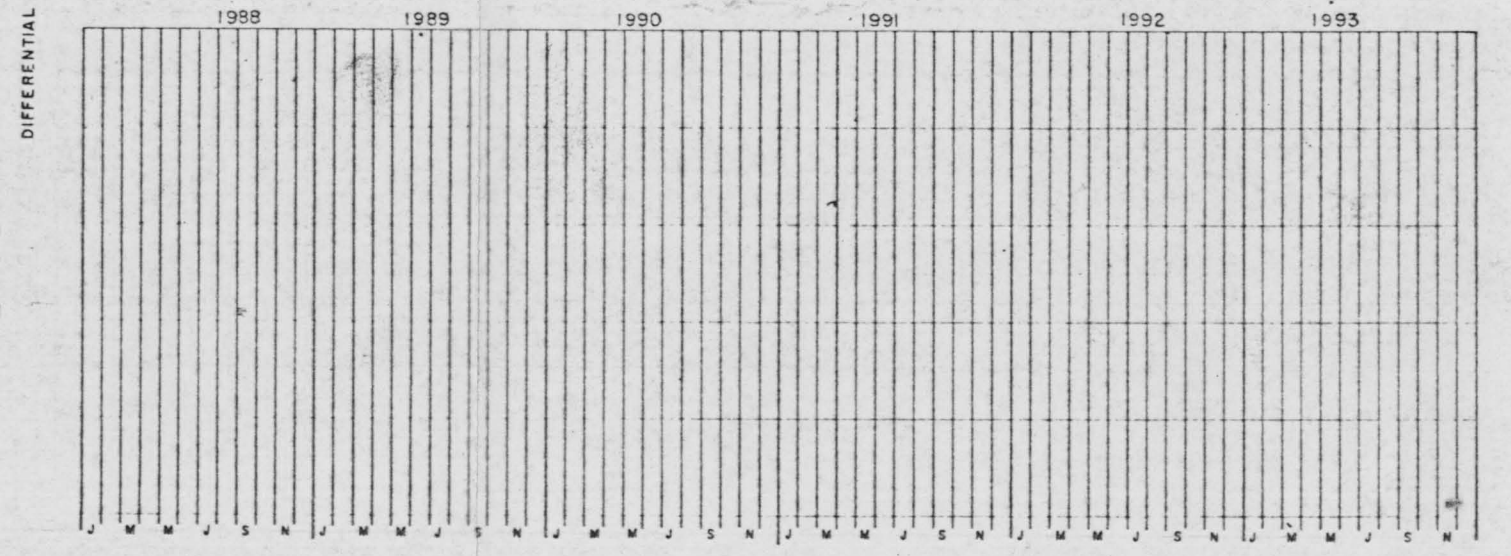
EAST CONCRETE SHEET PILE WALL



LEGEND
 E-1 ○
 E-5 □
 E-10 △
 E-15 ●
 E-20 ○
 E-25 □
 E-30 △
 E-35 ●
 E-37 ■



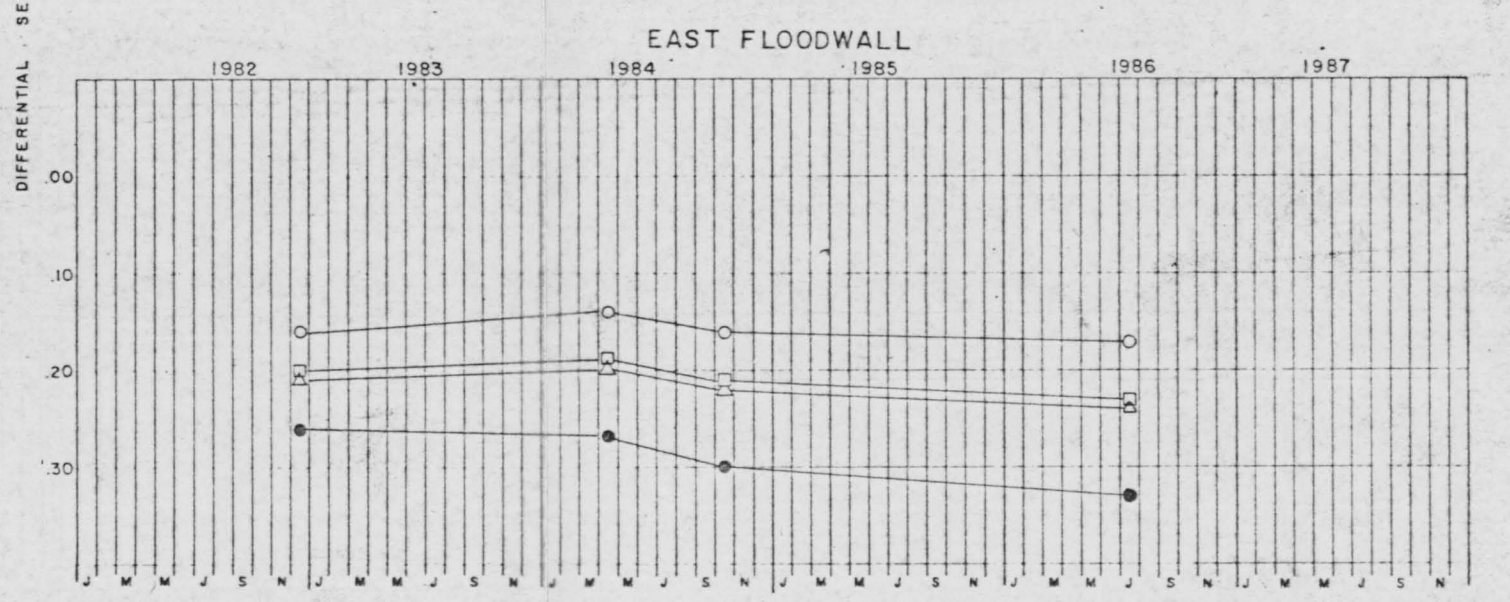
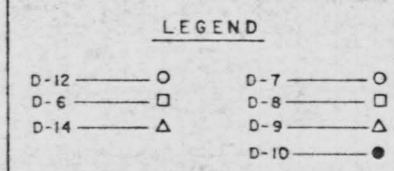
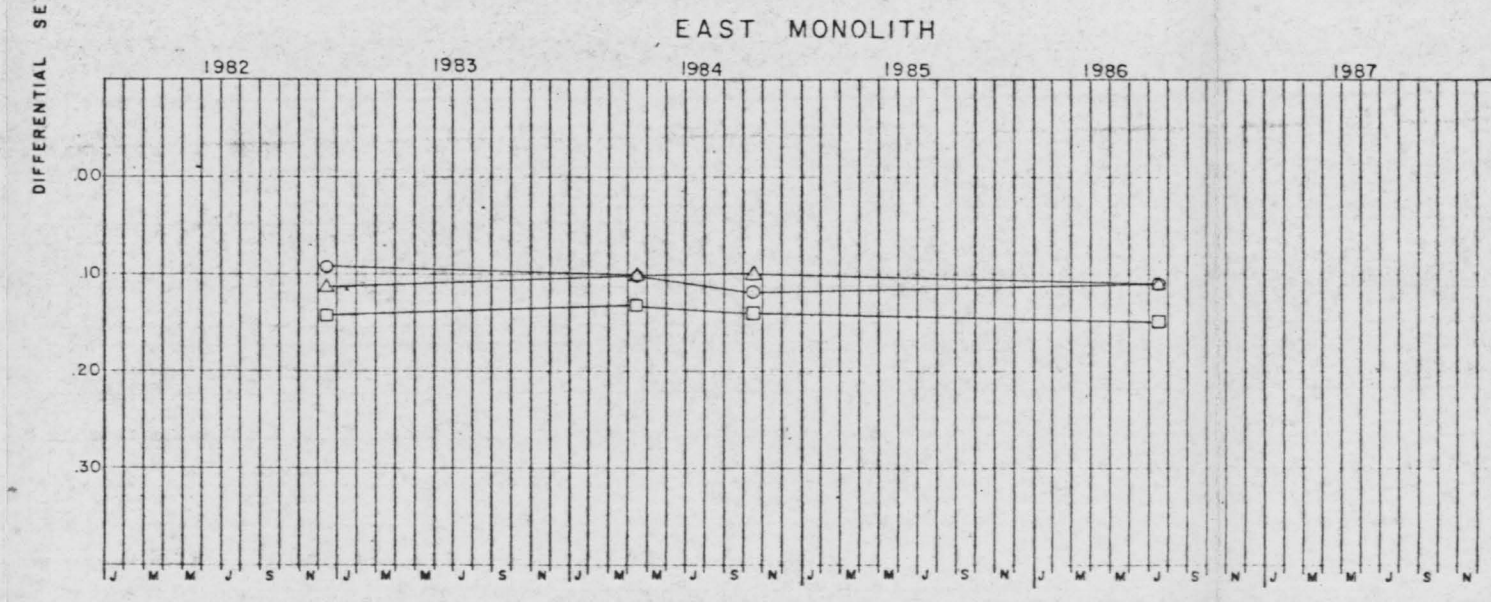
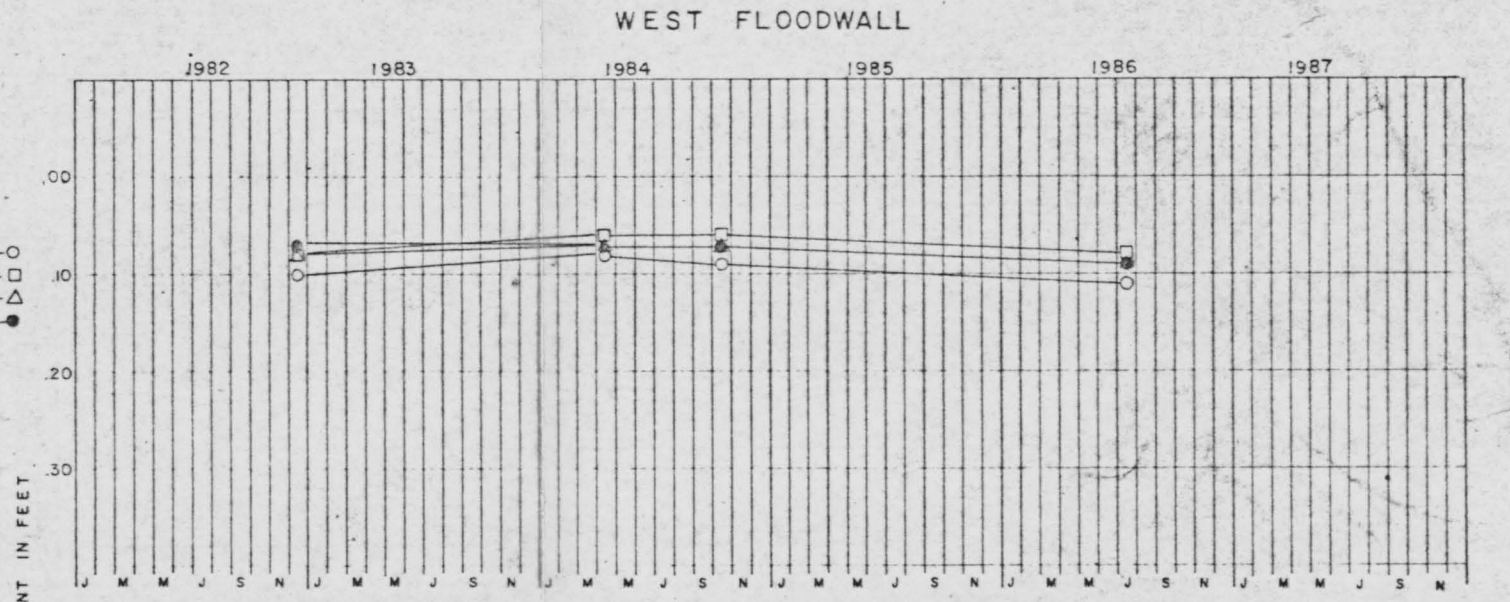
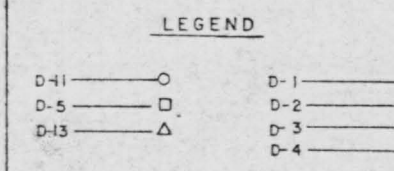
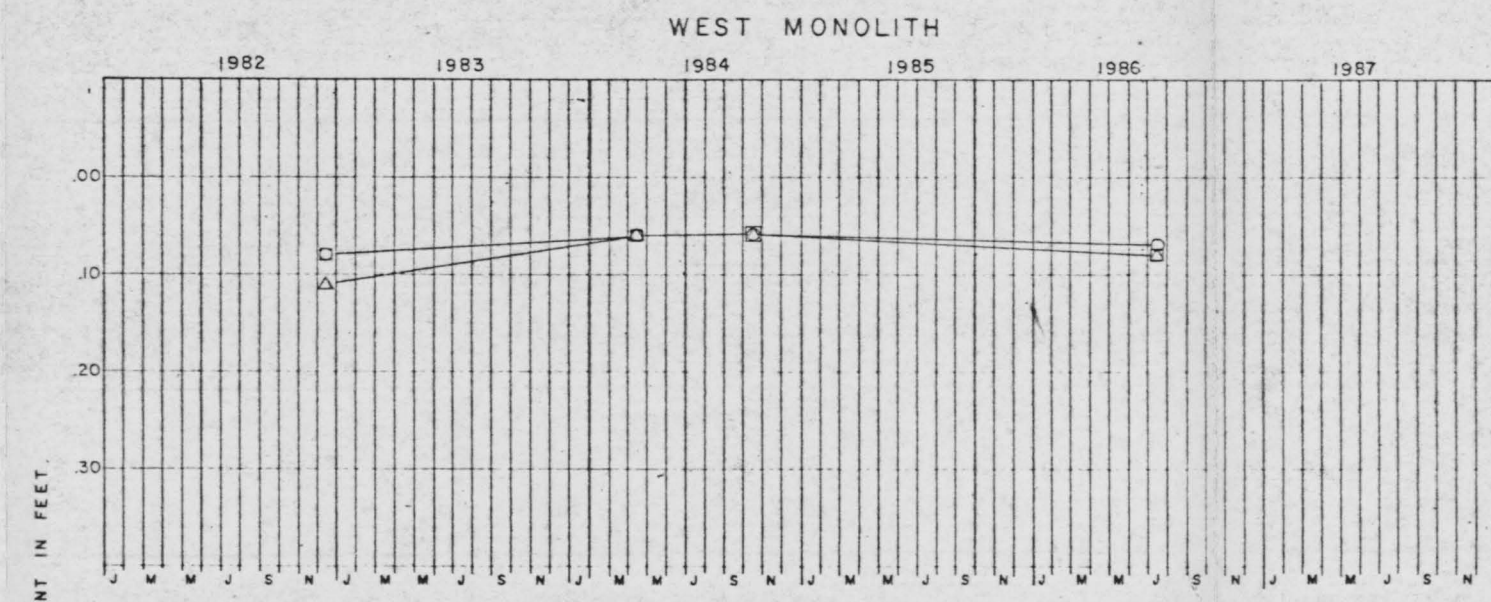
LEGEND
 E-1 ○
 E-5 □
 E-10 △
 E-15 ●
 E-20 ○
 E-25 □
 E-30 △
 E-35 ●
 E-37 ■



NOTE:
 For location and tabulation of settlement reference marks see plate

LAKE PONCHARTRAIN AND VICINITY
 BAYOU DUPRE
 PERIODIC INSPECTION
 SETTLEMENT REFERENCE MARKS
 DIFFERENTIAL SETTLEMENT CHART
 U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
 CORPS OF ENGINEERS
 FILE NO. H-4-26857

REVISED



LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION

**SETTLEMENT REFERENCE MARKS
DIFFERENTIAL SETTLEMENT CHART**

U S ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

FILE NO. N-4-26857

APPENDIX C

LDOTD LETTER REQUESTING TWO LANDING DOCKS IN THE
VICINITY OF THE BAYOU DUPRE CONTROL STRUCTURE

Colonel Eugene S. Witherspoon
District Engineer
June 24, 1986

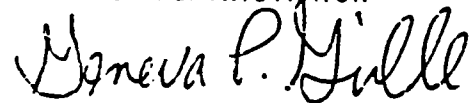
Page 2

The docks need to be sufficiently wide to accommodate loading and unloading of maintenance equipment, i.e., dozers, small draglines, mowers, etc. They should be positioned outside the structure's channel, if possible, to provide protection from tidal surges and marine. The docks need to accommodate internal water levels ranging from 0.0' NGVD to +2.5' NGVD.

Enclosed please find two (2) copies of an aerial photograph showing the existing structure and dock for your use and information. If I can be of any assistance, please do not hesitate to contact me.

Very truly yours,

JOHN EVANCO, P.E.
DISTRICT ADMINISTRATOR

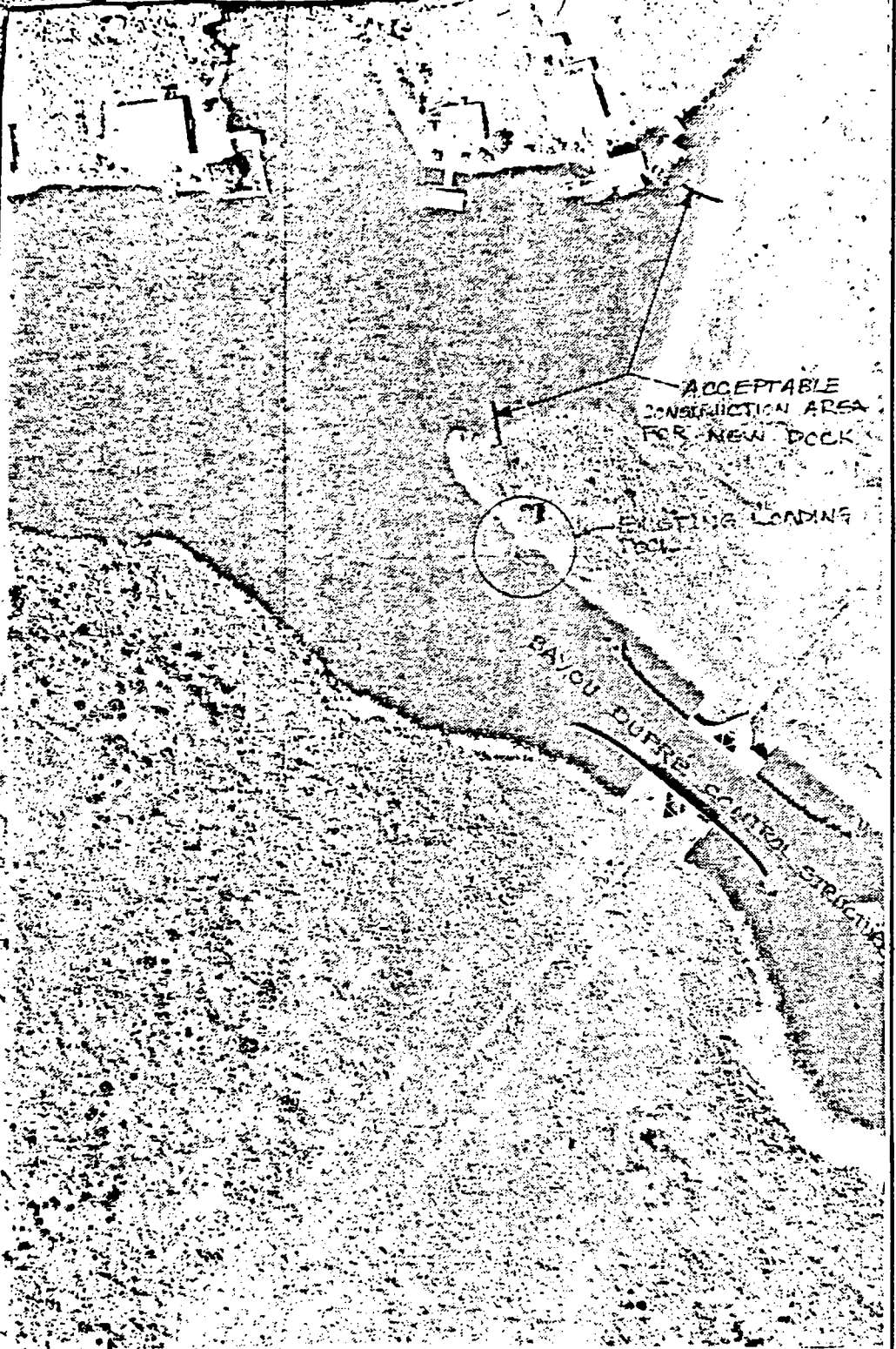


GENEVA P. GRILLE, P.E.
DISTRICT DESIGN, WATER RESOURCES
& DEVELOPMENT ENGINEER

GG/sbn

Enclosure

xc: Mr. Daniel S. Caluda
Mr. Arthur Theis
Mr. E. F. Schilling, Jr.
Mr. Larry Langenstein
Files



DRIFT DISTRICT DESIGN OFFICE
 2000 LAKE SHORE DRIVE
 NEW ORLEANS, LA 70124-1191

DATED _____ 19__

STATE OF LOUISIANA
 DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT

DESIGNED	DETAILED	TRACED
CHECKED	CHECKED	CHECKED

ON _____ BY _____
 IS _____