LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY

CHALMETTE AREA PLAN

BAYOU DUPRE
CONTROL STRUCTURE

PERIODIC INSPECTION REPORT NO. 2

MARCH 1980

United States Army
Corps of Engineers
...Serving the Army
...Serving the Nation

New Orleans District

LMVED-G (NOD 1 Aug 80) 5th Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Dupre Control Structure, Periodic Inspection Report No. 2, Mar 1980

DA, Lower Mississippi Valley Division, Corps of Engineers, Vicksburg, Miss. 39180

10 APR 81

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

Actions taken in the preceding 4th Ind are satisfactory. No further action is required on this chain of correspondence.

FOR THE DIVISION ENGINEER:

for Robert J Kaufman
R. H. RESTA
Chief, Engineering Division

1 Incl
wd dupe cy Incl 5

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

REPLY TO
ATTENTION OF:

LMNED-DG

1 August 1980

SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Dupre Control Structure, Periodic Inspection Report No. 2, March 1980

Division Engineer, Lower Mississippi Valley
ATTN: LMVED-G

1. Subject report is submitted herewith for your approval.

2. As indicated in paragraph 6-02, Proposed Remedial Actions, the scour/erosion repairs are scheduled for contract award in September 1980. This schedule is dependent upon the granting of permission to advertise for bids concurrent with division review of the plans and specifications as requested in our letter of 25 July 1980.

FOR THE DISTRICT ENGINEER:

FREDERIC M. CHATRY
Chief, Engineering Division

1 Incl (4 cys)
As stated

S - 19 Dec 80

LMVED-G (NOD 1 Aug 80) 1st Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Dupre Control Structure, Periodic Inspection Report No. 2, March 1980

DA, Lower Mississippi Valley Division, Corps of Engineers, Vicksburg, Miss. 39180
10 NOV 80

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

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

a. General. This report should contain an explanation for the 5-yr interval between the first and second periodic inspections. Normally the second periodic inspection is conducted about 1 yr after the initial periodic inspection. The explanation should also have been included in the letter of transmittal.

b. Para 4-03a, page IV-1.

(1) Settlement data on Plate 6 indicate that the east concrete-sheetpile wall has settled from 0.6 to 0.9 ft since it was constructed. The rate and magnitude of settlement and the significance of this settlement should be discussed in para 4-03a. In this regard, time-settlement plots of the reference marks on this wall should also be included in this report.

(2) Settlement of the closure dam and levees as indicated by the data on the Closure Dam and Levee Plan-Profile on Plate 9 should also be discussed in para 4-03a.

c. Para 5-03b(4), page V-2. This paragraph points out what appears to be a serious corrosion problem; however, Section VI does not address this problem and no remedial actions are proposed. Also, to wait until the structure is dewatered to correct the problem will only result in continued worsening of the corrosion. Section VI should be revised to address the above problem and include a schedule for remedial action.

d. Para 5-04e, page V-3. At the end of the third sentence, add the words: "as evidenced by the observed joint separation described in para 5-03a(4)."

e. Para 6-02. Remedial measures to correct the deficiencies cited in para 5-03d should also be addressed in this paragraph.

f. Para 6-02c. In lieu of recommending that the latest settlement survey be checked for settlement of the east side T-wall, this report should contain an evaluation of the settlement of this wall observed in the field by the inspection team and the settlement data for this wall from the latest surveys. Paragraph 6-02c should be deleted, and the evaluation described above should be included in para 4-03, Analysis of Instrumentation.

LMVED-G (NOD 1 Aug 80) 1st Ind 10 NOV 80
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Dupre Control Structure, Periodic Inspection Report No. 2, March 1980

g. Refer to comments in red on pages V-1, V-2, V-3, and Plates 6 and 7.

2. The report should be revised in accordance with the above comments, and revised pages should be resubmitted by 19 Dec 80.

FOR THE DIVISION ENGINEER:

for Robert L Kaufman
R. H. RESTA
Chief, Engineering Division

1 Incl (dupe)
2 cy incl 1 wd

ED-A

LMNED-DG (NOD 1 Aug 80) 2d Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Dupre Control Structure, Periodic Inspection Report No. 2 March 1980

DA, New Orleans District, Corps of Engineers, P.O. Box 60267, New Orleans, Louisiana 70160 30 Dec 80

TO: Division Engineer, Lower Mississippi Valley,
ATTN: LMVED-G

The disposition of comments presented in the 1st Ind follows. Paragraph numbers refer to like numbered paragraphs in the indorsement.

a. General. The second periodic inspection was delayed until the local interest agreed to assume responsibility of the maintenance and operation of the structure.

b. Para. 4-03a, Page IV-1.

(1) A discussion concerning the settlement of the east concrete - sheetpile wall has been included in paragraph 4-03a. See inclosure 2, revised page IV-1. Time - Settlement Plots of the referenced marks are presently being prepared. Copies of these plots will be issued upon completion.

(2) A discussion of the settlement of the Closure Dam and Levee has been included in paragraph 4-03a.

c. Para. 5-03b(4), Page V-2. Section VI has been revised to address the corrosion problem in the area of tidal fluctuation. See inclosure 3, revised page VI-1.

d. Para. 5-04e, Page V-3. The words: "as evidenced by the observed joint separation described in paragraph 5-03a(4)" have been added at the end of the third sentence of the referenced paragraph. See inclosure 4, revised page V-3.

e. Para. 6-02. Concur. See inclosure 3, revised page VI-1.

f. Para. 6-02c. Concur. See revised paragraph 4-03a and 6-02.

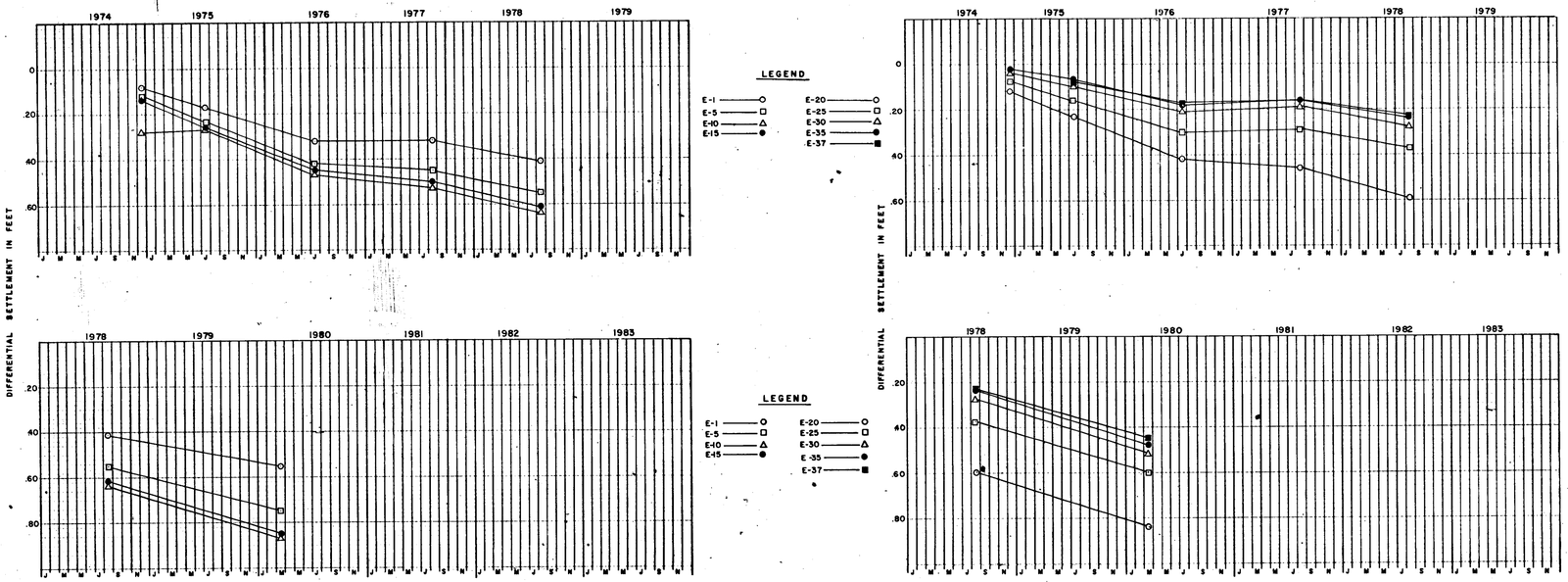
g. Referenced comments have been resolved on pages V-1, V-2, V-3. Plates 6 and 7 will be issued upon completion of revisions. See inclosure 4.

FOR THE DISTRICT ENGINEER:

FREDERIC M. CHATRY
Chief, Engineering Division

3 Incl
wd incl 1
2. Revised Page IV-1
3. Revised Page VI-1
4. Revised Pages V-1, 2, and 3

EAST CONCRETE SHEET PILE WALL



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

PLATE 6A

Incl 5

LMVED-G (NOD 1 Aug 80) 3d Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Dupre Control Structure, Periodic Inspection Report No. 2 March 1980

DA, Lower Mississippi Valley Division, Corps of Engineers, Vicksburg, Miss. 39180 29 JAN 81

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

Disposition of comments presented in the previous 2d Ind is satisfactory. The time-settlements plots referenced in para b of your 2d Ind should be submitted without delay to this office by 4th Ind to this chain of correspondence.

FOR THE DIVISION ENGINEER:

3 Incl
wd dupe cy

for R. H. RESTA
Chief, Engineering Division

LMNED-DG (NOD 1 Aug 80) 4th Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Dupre Control Structure, Periodic Inspection Report No. 2, March 1980

DA, New Orleans District, Corps of Engineers, PO Box 60267, New Orleans, LA 70160 27 Feb 81

TO: Division Engineer, Lower Mississippi Valley, ATTN: LMVED-G

The time settlement plots, referenced in paragraph b of the 2d Ind of this chain of correspondence, are submitted in duplicate for your file copies of the subject inspection report.

FOR THE DISTRICT ENGINEER:

FREDERIC M. CHATRY
Chief, Engineering Division

1 Incl
wd incl 2, 3, and 4
Added 1 incl
5. Revised Plot (Dupe)

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY

CHALMETTE AREA PLAN

BAYOU DUPRE CONTROL STRUCTURE

PERIODIC INSPECTION NO. 2

12 MARCH 1980

U.S. ARMY ENGINEER DISTRICT

CORPS OF ENGINEERS

NEW ORLEANS, LOUISIANA

PHOTO TAKEN 27 SEPTEMBER 1974

BAYOU DUPRE CONTROL STRUCTURE

BAYOU DUPRE CONTROL STRUCTURE

Previous Periodic Inspection Reports:

ITEM	REPORT NO.	DATE	APPROVED
1	1	February 1974	25 June 1974

BAYOU DUPRE CONTROL STRUCTURE

PERIODIC INSPECTION NO. 2

TABLE OF CONTENTS

SECTION I - INTRODUCTION

1-01 Authority. Authority for this report is ER 1110-2-100, dated 26 February 1973, 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 second 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. The description of the structure, 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 is supplementary to the previously numbered report.

SECTION III - CURRENT OPERATION AND MAINTENANCE DATA

3-01 Maintenance and Operating Problem. The N.W. timber guidewall toward the MR-GO has been damaged near the end, but the Lake Borgne Levee Board knows who was responsible and is working on restitution.

Since the previous inspection, considerable cost for maintenance of the navigation lights has been incurred. Repairs performed by the Coast Guard of the navigation lights, lens, batteries, etc., since April 1976 amounted to $8,700. This figure is for material only with no charge included for Coast Guard Labor or equipment.

Work consisting of digging approximately 700 feet of trench with backhoe for running electrical wires to the control house, installing conduits, control panel boxes and other miscellaneous electrical fixtures, was accomplished from 11 thru 22 July 1977. Subject work was authorized by Maintenance Branch Work Directive LMNOD-M-77-94, dated, 11 July 1977.

Repairs were made to the north approach channel under Work Directive LMNOD-M-76-58 during the period 29 Sep 75 thru 30 Oct 75. The work consisted of placing riprap on the west bank extending the entire length of the north approach channel from station 5+00 to station 10+62. Lost derrick stone was replaced from station 10+62 to the structure.

3-02 Actions on Deficiencies from Last Inspection. At the time of Periodic Inspection No. 1, February 1974, the structure was essentially completed except for the concrete sheetpile "I" walls and about 4 feet of earth fill which extends from the west "I" wall to the shell closure across Bayou Dupre. These deficiencies were completed by 1 May 1974.

SECTION IV REVIEW OF DESIGN AND ANALYSIS OF INSTRUMENTATION

4-01 Design Review. The original design has been 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 report No. 1 Section III. 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 Reference Marks. Several erroneous survey readings have been recorded on the "Distance to Reference Marks" chart, as shown on Plate 2. The most outstanding survey errors are Reference Marks D4-D5 and D5-D6 for 25 August 1978, and D13-D14 for 10 August 1977. Settlement data on plate 6 indicates that the east concrete-sheetpile wall has settled from 0.6 to 0.9 ft. since it was contructed. Actual field observation of the wall by the inspection team concurred with the settlement data and indicated this doesn't present any major structural deficiency affecting the functional capabilities of the structure. Further observations will be made in order to monitor the activity of the concrete-sheetpile wall. Data on the Closure Dam and Levee as shown on Plate 9, indicate no significant settlement.

Incl #2

Incl 2

c. Scour Survey The 1980 survey of Bayou Dupre Control Structure indicates that extensive scouring continues over and above that shown in the 1978 survey. The scouring action shows no sign of stability. This scouring action is extremely severe in the west bank between range stations 5+00 and 9+62 on the north approach channel. The deep part of the scour hole has moved 50 feet closer to the structure (from range station 7+50 to 8+00) between 1978 and 1980. Based on the theoretical channel section, a 25 foot scour hole has developed approximately 30 feet from the original top bank. (Plates 10 thru 18) It is also noted that between range stations 14+00 and 17+00 on the south approach channel scour is continuing to take place, however, not nearly as severe as in the north approach channel.

BAYOU DUPRE CONTROL STRUCTURE

INSTRUMENTATION DRAWINGS

Plate No.	TITLE	File No.
1	Location Map	H-2-26856
2	Instrumentation Location	
3	Settlement Reference Marks Plan and Profile	H-4-26855
4	Settlement Reference Marks Differential Settlement Chart	H-4-26855
5	Settlement Reference Marks Differential Settlement Chart	H-4-26857
6	Settlement Reference Marks Plan and Profile Concrete-Sheet Pile	H-4-26855
7	Alinement	H-4-26855
8	Approach Channels Plan and Profile	H-4-26855
9	Closure Dam and Levee Plan, Profile	H-4-26851
10	Scour Survey (74-80)	
11	Scour Survey (74-80)	
12	Scour Survey (74-80)	
13	Scour Survey (74-80)	
14	Scour Survey (74-80)	
15	Scour Survey (74-80)	
16	Scour Survey (74-80)	
17	Scour Survey (74-80)	
18	Scour Survey (74-80)	
19	Cross Section Survey (74-80)	
20	Cross Section Survey (74-80)	
21	Cross Section Survey (74-80)	
22	Cross Section Survey (74-80)	
23	Cross Section Survey (74-80)	
24	Cross Section Survey (74-80)	
25	Cross Section Survey (74-80)	
26	Cross Section Survey (74-80)	
27	Cross Section Survey (74-80)	
28	Cross Section Survey (74-80)	
29	Cross Section Survey (74-80)	

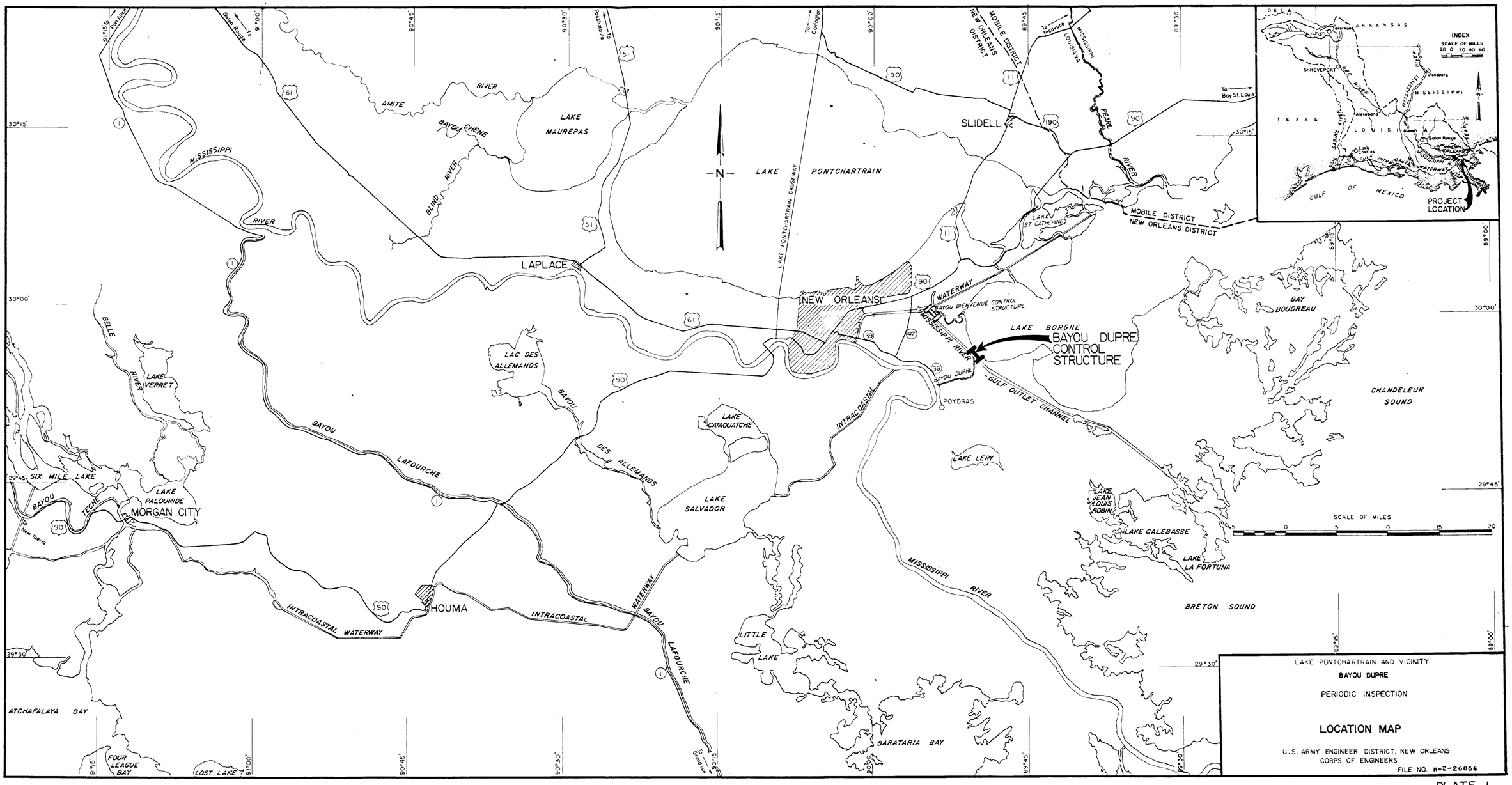
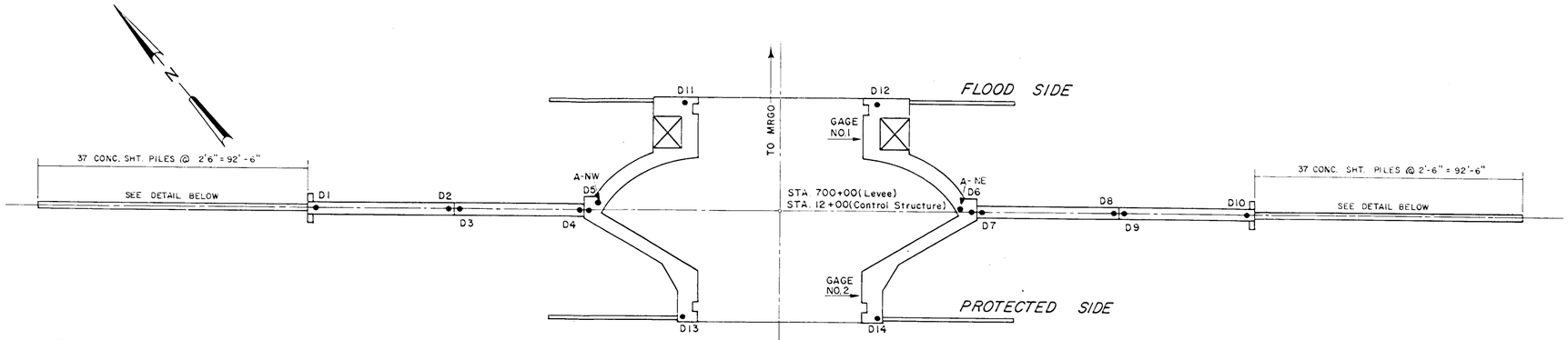
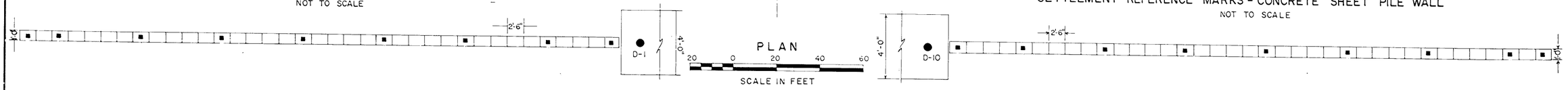

LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION
LOCATION MAP
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
FILE NO. H-2-26856
PROJECT LOCATION
INDEX
SCALE OF MILES
NEW ORLEANS
LAPLACE
SLIDELL
HOUMA
MORGAN CITY
POYDRAS
LAKE PONTCHARTRAIN
LAKE MAUREPAS
LAKE VERRET
LAKE PALOURIDE
LAKE SALVADOR
LAKE CATAOUATCHE
LAC DES ALLEMANDS
LAKE BORGNE
BAYOU DUPRE CONTROL STRUCTURE
BAYOU BIENVENUE CONTROL STRUCTURE
GULF OUTLET CHANNEL
MISSISSIPPI RIVER
INTRACOASTAL WATERWAY
LAKE CALEBASSE
LAKE LA FORTUNA
LAKE LERY
BAY BOUDREAU
CHANDELEUR SOUND
BRETON SOUND
BARATARIA BAY
ATCHAFALAYA BAY
FOUR LEAGUE BAY
LOST LAKE
LITTLE LAKE
SCALE OF MILES

PLATE 1



SETTLEMENT REFERENCE MARKS - CONCRETE SHEET PILE WALL
NOT TO SCALE



SETTLEMENT REFERENCE MARKS - CONCRETE SHEET PILE WALL
NOT TO SCALE

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	64.08
DATE OF OBSERVATIONS	9 DECEMBER 1974	4.02	4.06	**129.98**	4.02	4.01	64.15	64.03
	9 JULY 1975	4.01	4.06	**129.94**	4.00	4.02	64.13	64.02
	22 JULY 1976	4.00	4.06	**129.92**	4.00	4.00	64.14	64.03
	10 AUGUST 1977	4.01	4.05	**129.95**	4.01	4.01	64.15	64.13
	25 AUGUST 1978	4.01	4.12	131.89	4.02	4.01	64.17	64.06
	19 MARCH 1980	4.01	4.03	—	4.02	4.02	—	—

PBM TED Elevation m.s.l.
Galvanized pipe, 1½ inches in diameter, was set in bore hole at a depth of 95 feet. The 1½ 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 1½-inch pipe is protected by 3-inch diameter galvanized pipe with cap and three 1½-inch guard posts painted yellow.

PBM BD-2 Elevation m.s.l.
Galvanized pipe, 1½ inches in diameter, was set in bore hole at 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 1½-inch pipe is protected by 3-inch diameter galvanized pipe with cap and three 1½-inch guard post painted 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 mean sea level.

PBM BD-3 Elevation m.s.l.
Galvanized pipe, 1½ inches in diameter was set in bore hole at 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 1½-inch diameter pipe is protected by 3-inch diameter galvanized pipe with cap and three 1½-inch guard posts painted 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

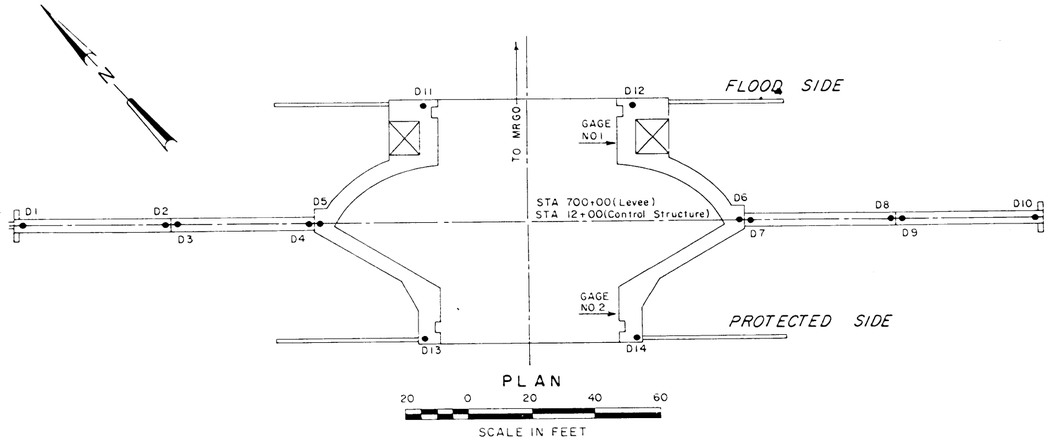
LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION

INSTRUMENTATION LOCATION

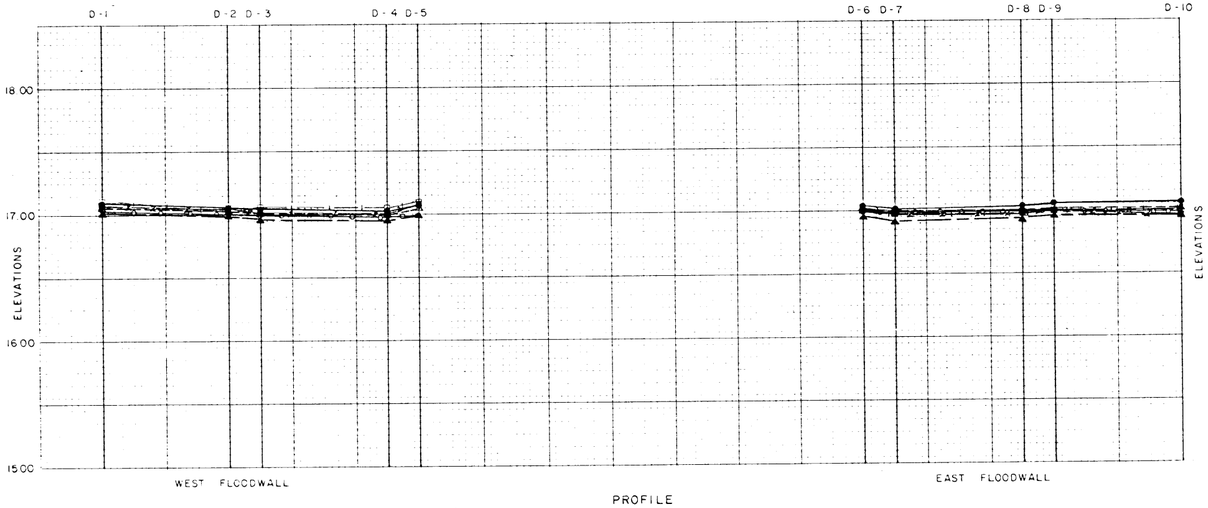
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

FILE NO.

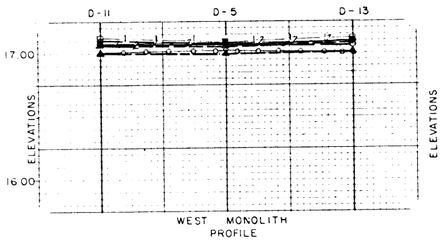
PLATE 2



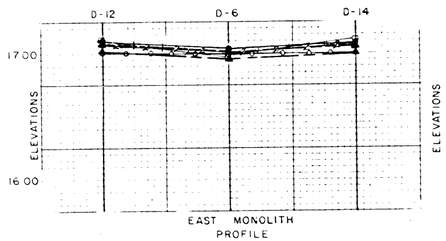
SETTLEMENT REFERENCE MARKS																	
NO OF REFERENCE MARKS	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D9	D-10	D-11	D-12	D-13	D-14	TEMP	GAGE 1	GAGE 2
INITIAL DATE	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	7-20-74	91°	1.6	1.6
ORIGINAL READINGS	17.07	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			
DATE OF OBSERVATIONS 9 DEC. 1974	17.08	17.05	17.04	17.03	17.07	17.03	17.01	17.02	17.04	17.04	17.09	17.09	17.07	17.08	43°F	0.2	0.2
10 JUL. 1975	17.05	17.03	17.02	17.01	17.05	17.02	16.99	17.00	17.02	17.02	17.07	17.08	17.08	17.06	82°F	0.5	0.5
2 JUL. 1976	17.01	16.98	16.96	16.95	16.99	16.95	16.92	16.93	16.95	16.94	17.00	17.02	17.01	17.00	84°F	0.8	0.8
11 AUG 1977	17.10	17.07	17.06	17.05	17.09	17.04	17.00	17.01	17.03	17.00	17.09	17.11	17.12	17.09	86°	2.0	2.0
25 AUG 1978	17.08	17.05	17.03	17.02	17.07	17.01	16.97	16.97	16.99	16.96	17.07	17.08	17.09	17.06	88°F	1.5	1.5
19 MAR 1980	17.04	17.01	17.00	16.98	17.02	16.96	16.92	16.91	16.93	16.89	17.02	17.04	17.05	17.02	61°F	1.3	1.3



Survey of JULY & DEC 1974 same position



Survey of JULY & DEC. 1974 same position



LEGEND

- 20 JUL. 1974
- 9 DEC. 1974
- 10 JUL. 1975
- 2 JUL. 1976
- 1 — 11 AUG. 1977
- 2 — 25 AUG. 1978
- 19 MAR. 1980

LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION

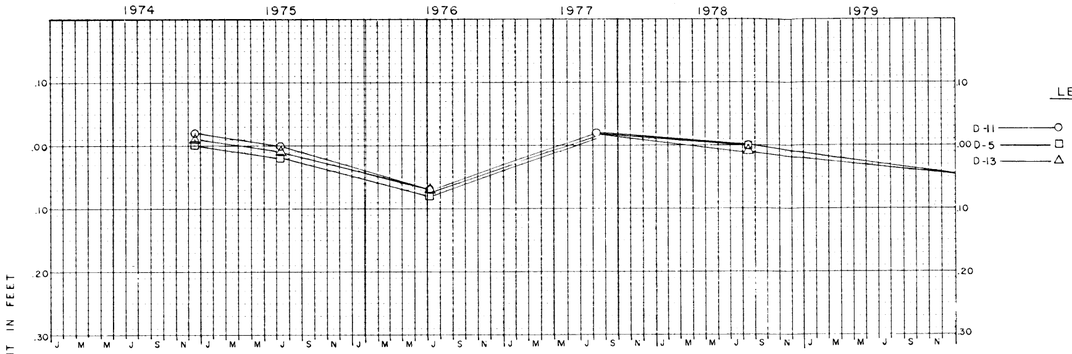
SETTLEMENT REFERENCE MARKS PLAN AND PROFILE

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

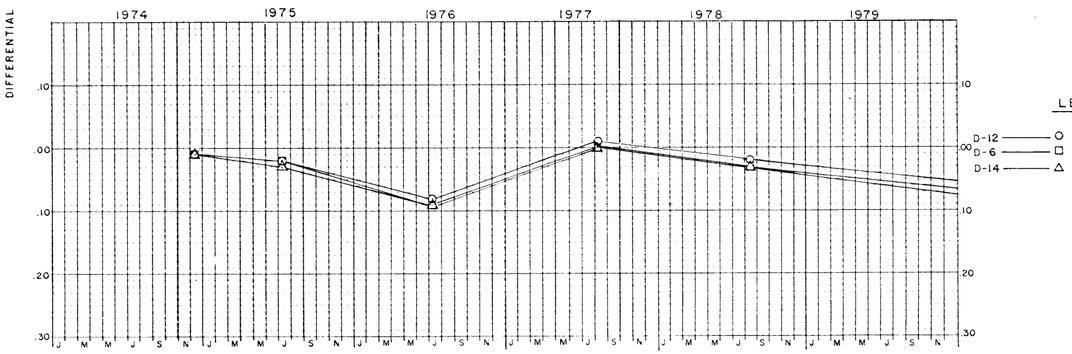
FILE NO. H-4-26855

PLATE 3

WEST MONOLITH



EAST MONOLITH



DIFFERENTIAL SETTLEMENT IN FEET

LEGEND

D-11 ○
D-5 □
D-13 △

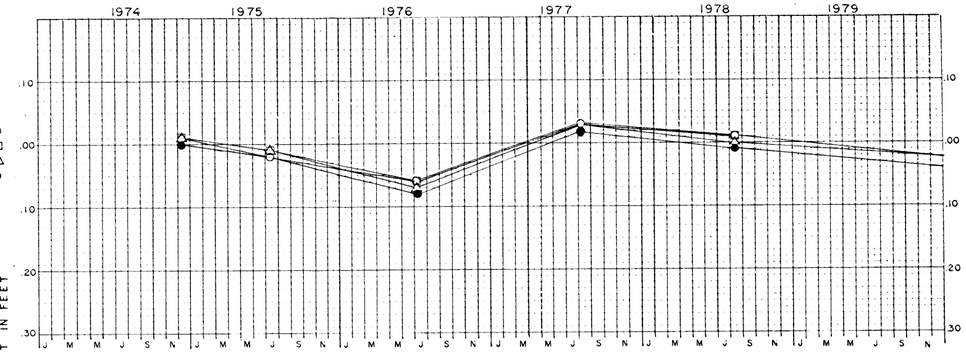
D-1 ○
D-2 □
D-3 △
D-4 ●

LEGEND

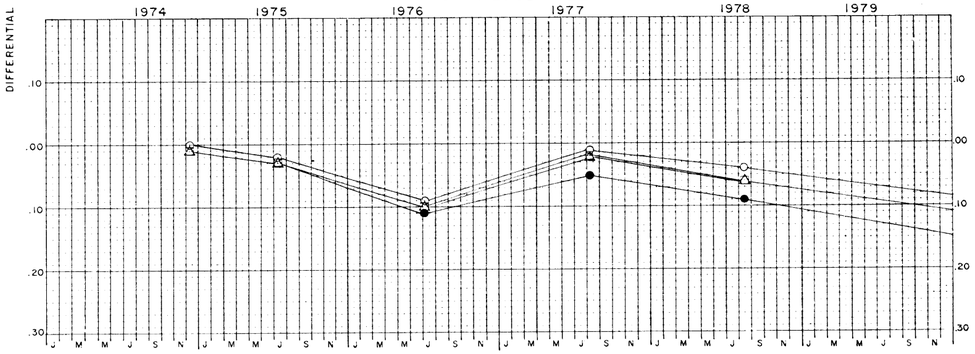
D-12 ○
D-6 □
D-14 △

D-7 ○
D-8 □
D-9 △
D-10 ●

WEST FLOODWALL



EAST FLOODWALL



DIFFERENTIAL SETTLEMENT IN FEET

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

LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION

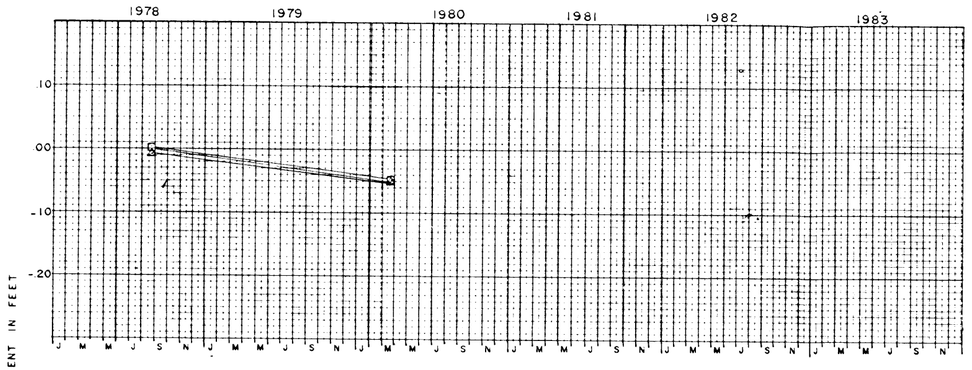
SETTLEMENT REFERENCE MARKS DIFFERENTIAL SETTLEMENT CHART

U S ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

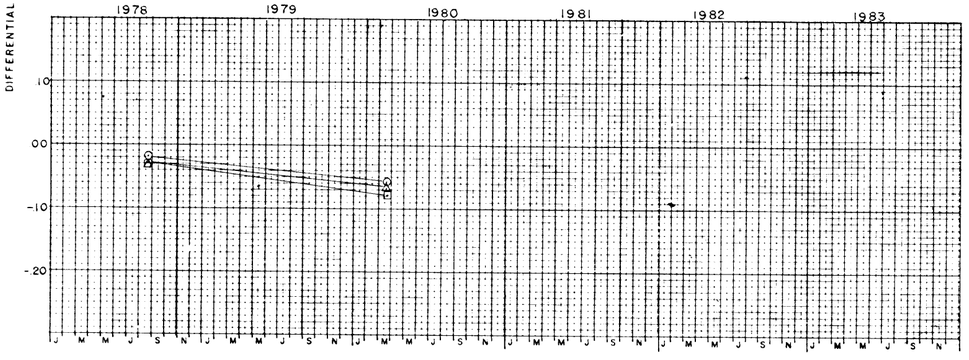
FILE NO. H-4-26855

PLATE 4

WEST MONOLITH



EAST MONOLITH



DIFFERENTIAL SETTLEMENT IN FEET

LEGEND

D-11 ——○
D-5 ——□
D-13 ——△

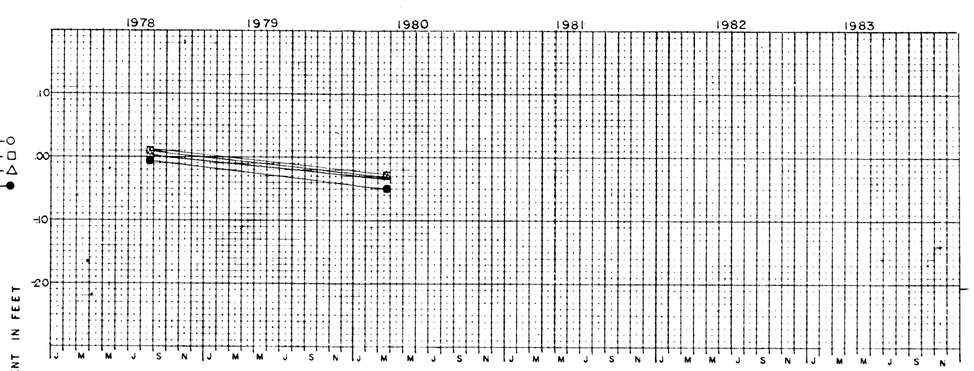
D-1 ——○
D-2 ——□
D-3 ——△
D-4 ——●

LEGEND

D-12 ——○
D-6 ——□
D-14 ——△

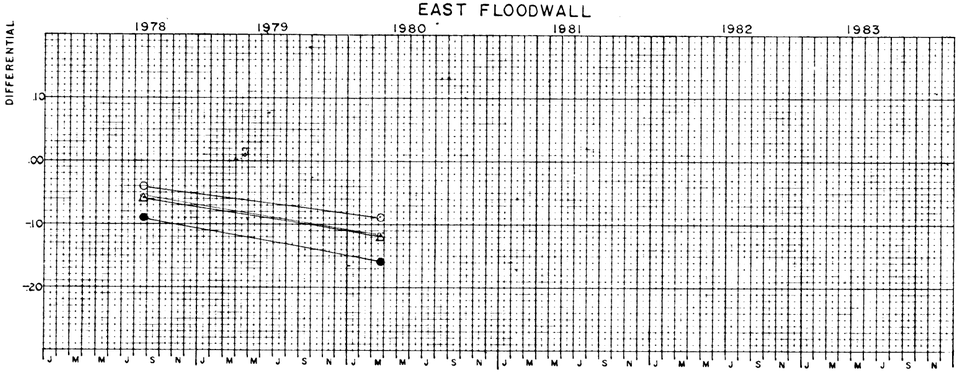
D-7 ——○
D-8 ——□
D-9 ——△
D-10 ——●

WEST FLOODWALL



DIFFERENTIAL SETTLEMENT IN FEET

EAST FLOODWALL



NOTE:
For location and tabulation of settlement reference marks see plate 3

LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION

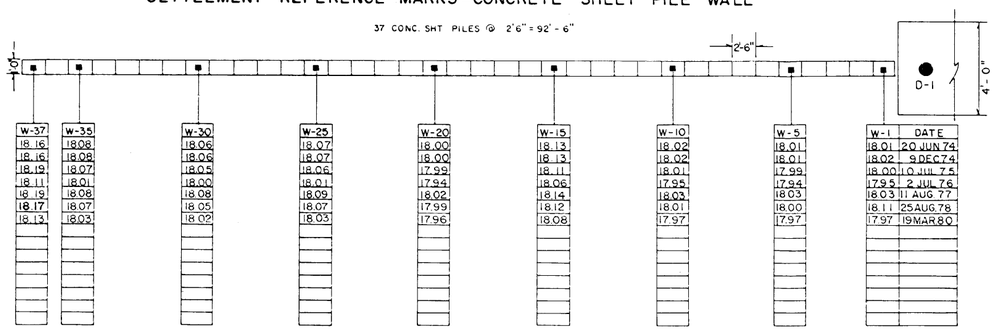
SETTLEMENT REFERENCE MARKS
DIFFERENTIAL SETTLEMENT CHART

U S ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

FILE NO. H-4-26857

PLATE 5

SETTLEMENT REFERENCE MARKS - CONCRETE SHEET PILE WALL

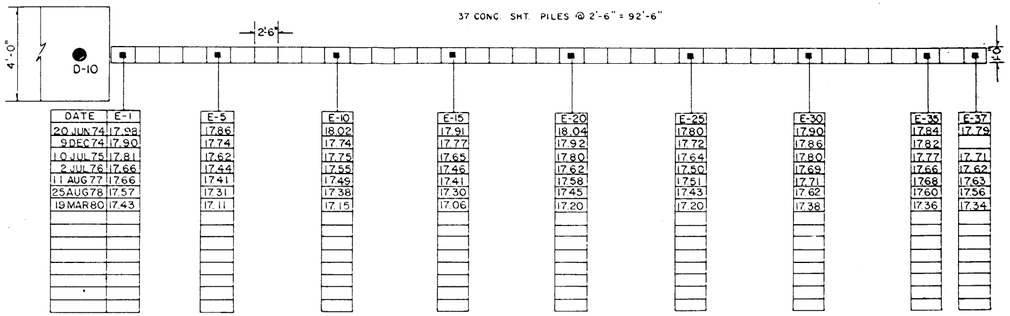


W-37	W-35	W-30	W-25	W-20	W-15	W-10	W-5	W-1	DATE
18.16	18.08	18.06	18.07	18.00	18.13	18.02	18.01	18.01	20 JUN 74
18.16	18.08	18.06	18.07	18.00	18.13	18.02	18.01	18.02	9 DEC 74
18.19	18.07	18.05	18.06	17.99	18.11	18.01	17.99	18.00	10 JUL 75
18.11	18.01	18.00	18.01	17.94	18.06	17.95	17.94	17.95	2 JUL 76
18.19	18.08	18.08	18.09	18.02	18.14	18.03	18.03	18.03	11 AUG 77
18.17	18.07	18.05	18.07	17.99	18.12	18.01	18.00	18.11	25 AUG 78
18.13	18.03	18.02	18.03	17.96	18.08	17.97	17.97	17.97	19 MAR 80

PLAN

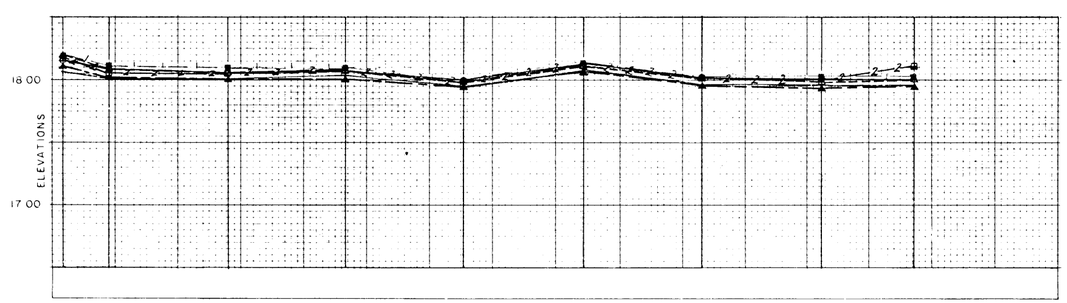
NOT TO SCALE

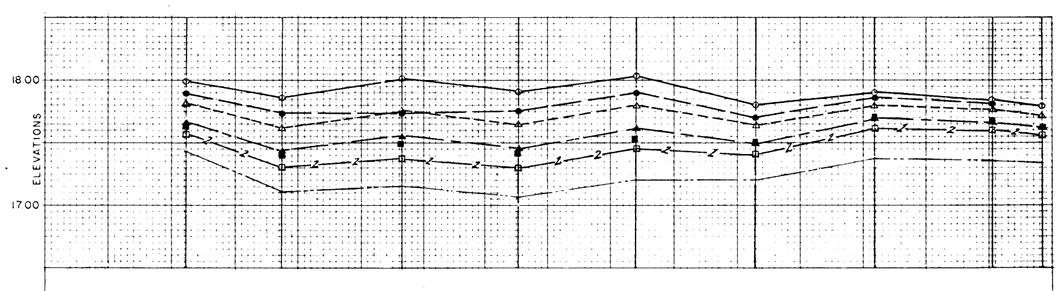
SETTLEMENT REFERENCE MARKS - CONCRETE SHEET PILE WALL



DATE	E-1	E-5	E-10	E-15	E-20	E-25	E-30	E-35	E-37
20 JUN 74	17.98	17.86	18.02	17.91	18.04	17.80	17.90	17.84	17.79
9 DEC 74	17.90	17.74	17.74	17.77	18.02	17.72	17.86	17.82	
10 JUL 75	17.81	17.62	17.75	17.65	17.80	17.64	17.80	17.77	17.71
2 JUL 76	17.66	17.44	17.55	17.46	17.62	17.50	17.69	17.66	17.62
11 AUG 77	17.66	17.41	17.49	17.41	17.58	17.51	17.71	17.68	17.63
25 AUG 78	17.57	17.31	17.38	17.30	17.45	17.43	17.62	17.60	17.56
19 MAR 80	17.43	17.11	17.15	17.06	17.20	17.20	17.38	17.36	17.34

Survey of Dec. & Jun. 74 same point





LEGEND

- 20 JUN 1974
- 9 DEC 1974
- 10 JUL 1975
- 2 JUL 1976
- 11 AUG 1977
- 25 AUG 1978
- 19 MAR 1980

LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION

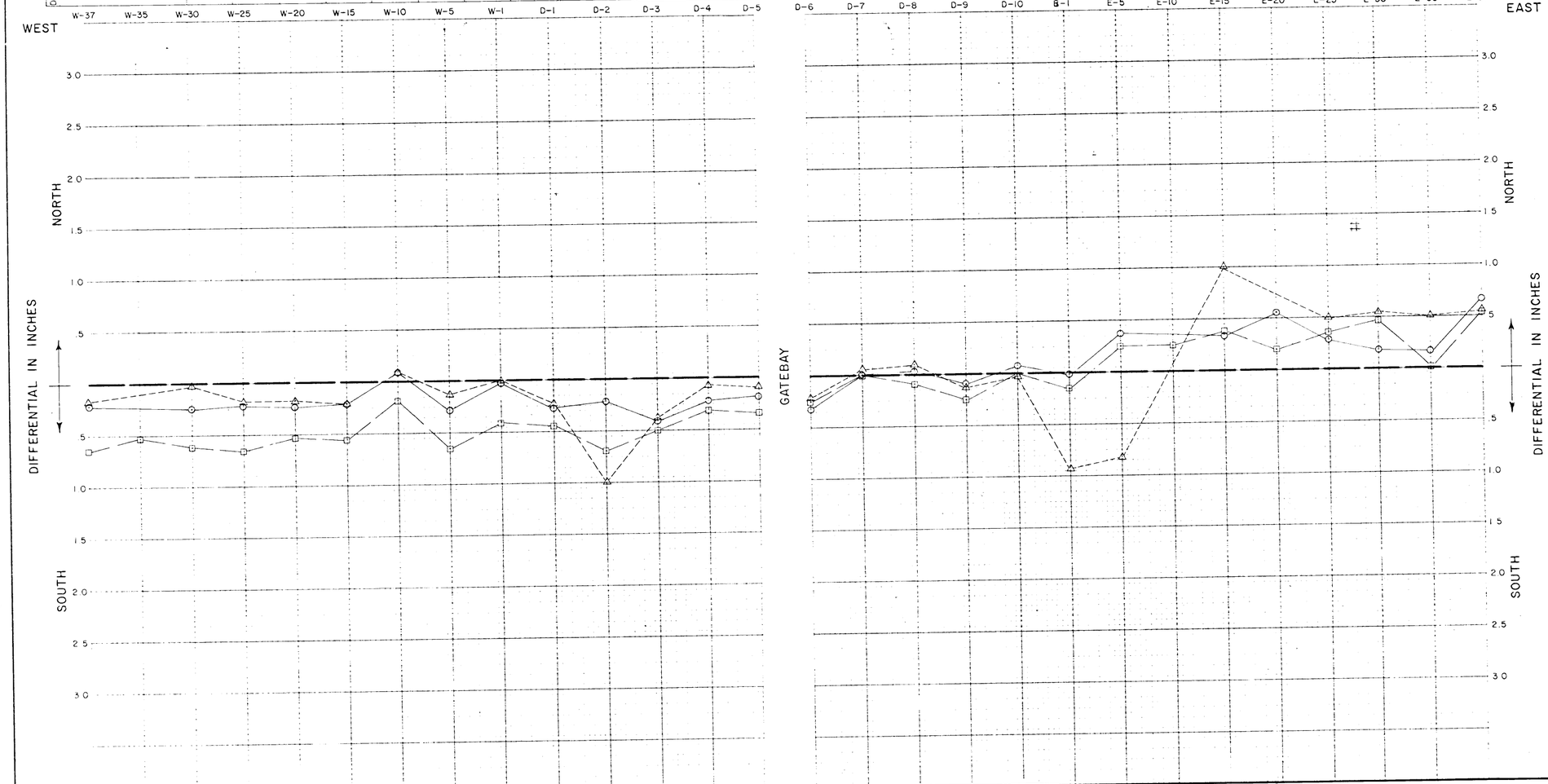
SETTLEMENT REFERENCE MARKS PLAN AND PROFILE CONCRETE-SHEET PILE

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

FILE NO. H-

PLATE 6

NO. OF REFERENCE MARK	W-37	W-35	W-30	W-25	W-20	W-15	W-10	W-5	W-1	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9	D-10	E-1	E-5	E-10	E-15	E-20	E-25	E-30	E-35	E-37	TEMP
DATE INSTALLED	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	7-23-76	
ORIGINAL READINGS	3.875 S	4.312 S	3.688 S	3.625 S	3.625 S	3.562 S	4.062 S	3.500S	3.438S	3.875S	3.812S	4.000S	3.438S	3.000S	3.000S	3.375S	3.812 S	3.750S	3.750 S	3.031S	2.875 S	2.812 S	2.031S	2.188 S	1.562 S	1.781 S	2.250 S	3.812 S	102°F
DATE OF OBSERVATIONS: AUGUST 11 1977	4.093 S	——	3.937 S	3.843 S	3.906 S	3.781 S	3.968 S	3.781 S	3.468	4.156 S	4.031 S	4.406 S	3.656 S	3.187 S	3.343 S	3.375 S	3.781 S	3.843 S	3.687 S	3.062 S	2.500 S	——	1.687 S	1.625 S	1.281 S	1.593 S	2.093 S	3.156 S	93°F
AUGUST 25 1978	4.031 S	——	3.718 S	3.812 S	3.812 S	3.781 S	4.000 S	3.625 S	3.437 S	4.093 S	4.781 S	4.375 S	3.500 S	3.093 S	3.218 S	3.312 S	3.718 S	3.875 S	3.781 S	3.968 S	3.656 S	——	1.031 S	——	1.062 S	1.250 S	1.750 S	3.281 S	94°F
MARCH 19 1980	4 531 S	4.843 S	4.312 S	4.281 S	4.156 S	4.125 S	4.250 S	4.156 S	3.843 S	4.312 S	4.500 S	4.500 S	3.750 S	3.343 S	3.250 S	3.375	3.906 S	4.000 S	3.750 S	3.187 S	2.625 S	2.562S	1.656 S	2.000 S	1.187 S	1.312 S	2.250 S	3.281 S	66°F



LEGEND

- 11 AUG 1977
- 25 AUG 1978
- 19 MAR 1980

NOTE:
For location of points see Plate

NORTH
A-NW LINE OF SIGHT A-NE
ALL MARKS ARE SOUTH OF L O S

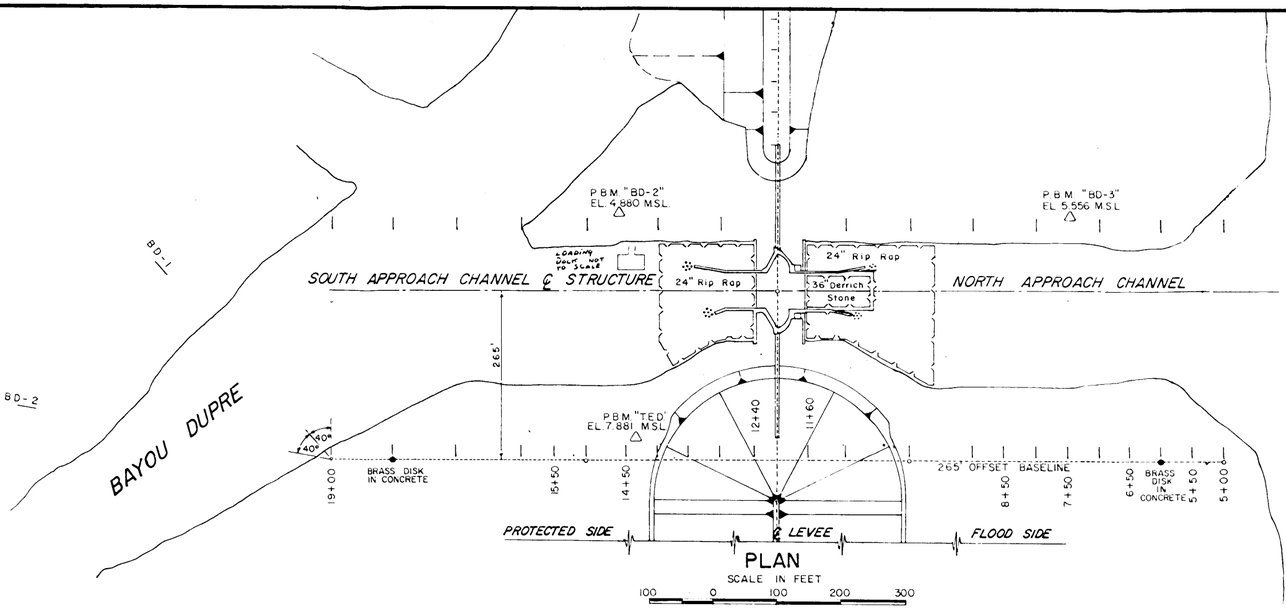
LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION

ALINEMENT

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

FILE NO. H-4-26855

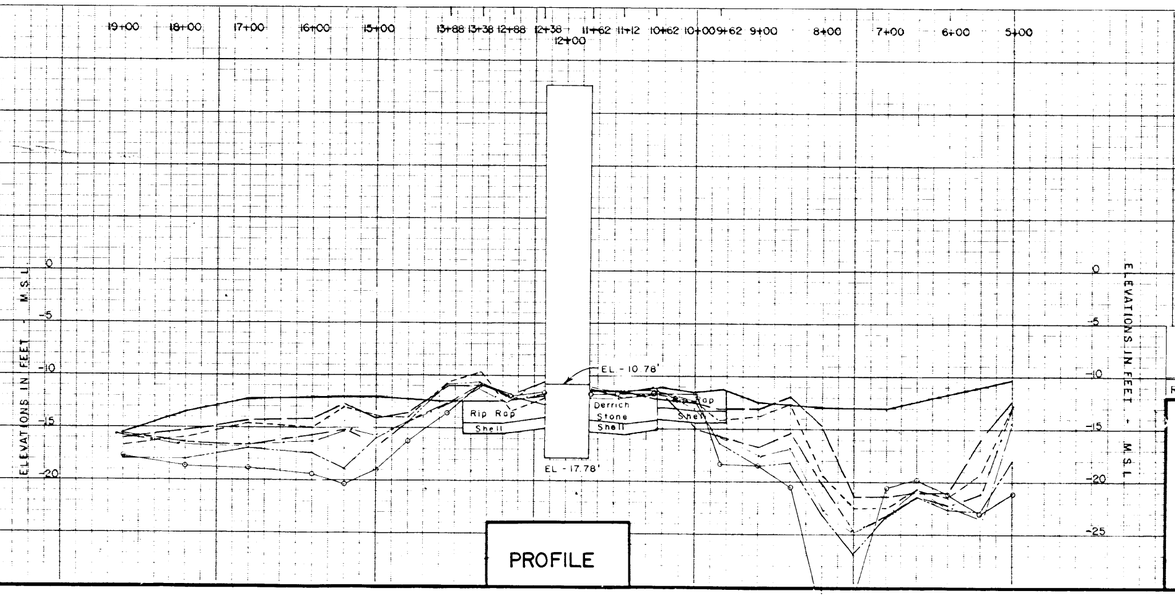
PLATE 7



PLAN

SCALE IN FEET

100 0 100 200 300



PROFILE

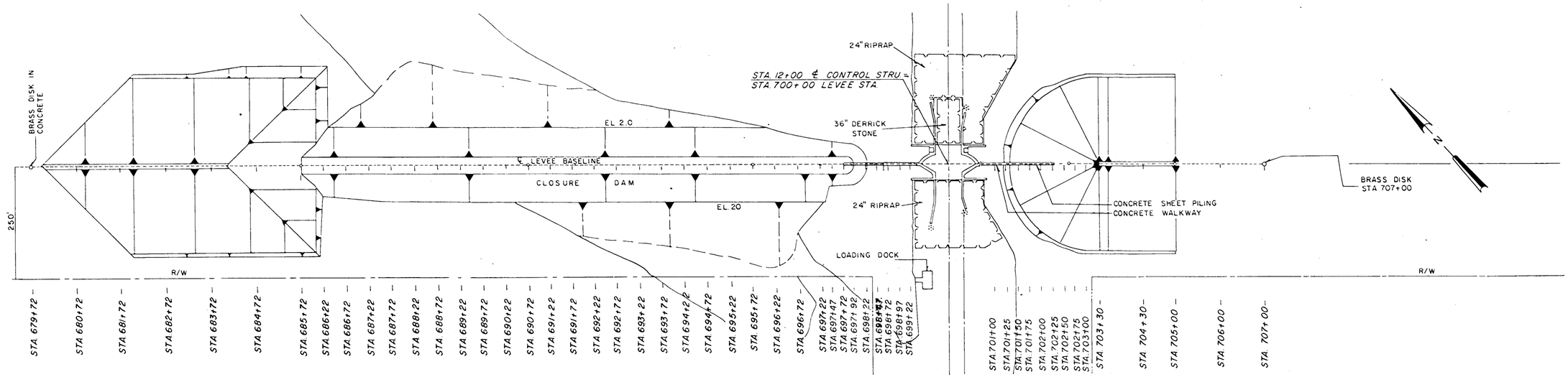
REVISION	DATE	DESCRIPTION	BY
1	8-6-75	Added June 15, 1974 Survey Job No. 74-1105	M H

LAKE PONTCHARTRAIN, LA. AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CONTROL STRUCTURE
PERIODIC INSPECTION

APPROACH CHANNELS PLAN AND PROFILE

U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
FILE NO. H-4-26855

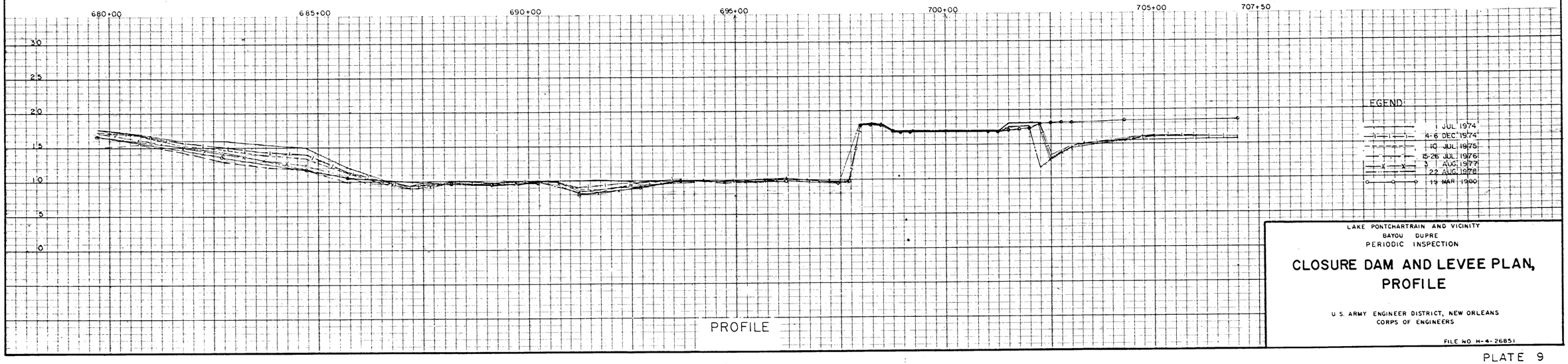
PLATE 8



PLAN

SCALE 1" = 100'

100 0 100 200 300



PROFILE

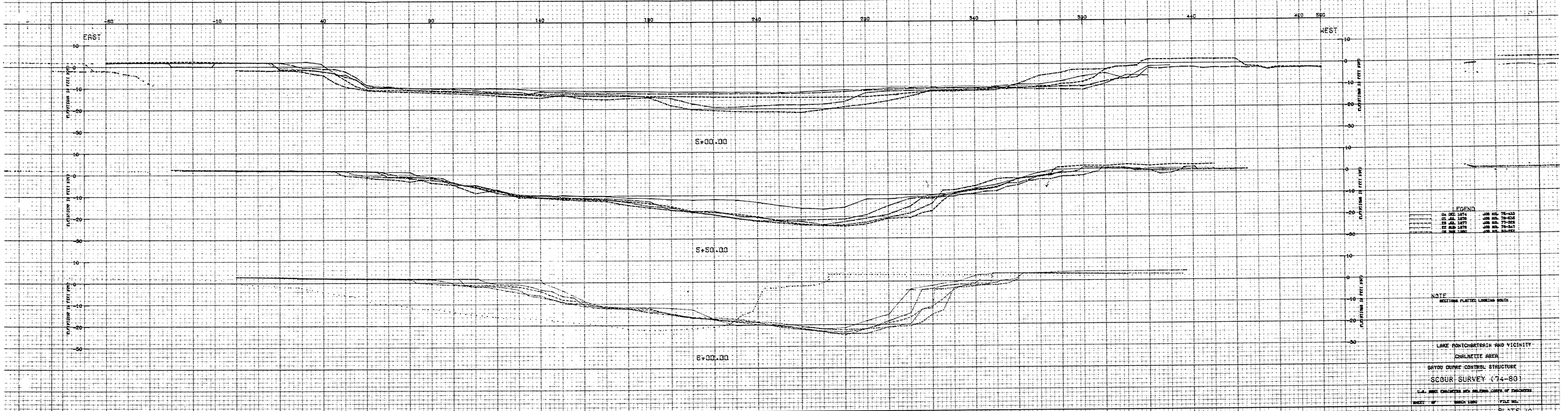
LAKE PONTCHARTRAIN AND VICINITY
BAYOU DUPRE
PERIODIC INSPECTION

CLOSURE DAM AND LEVEE PLAN, PROFILE

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

FILE NO. H-4-26851

PLATE 9



LAKE PONTCHARTRAIN AND VICINITY

CHALMETTE AREA

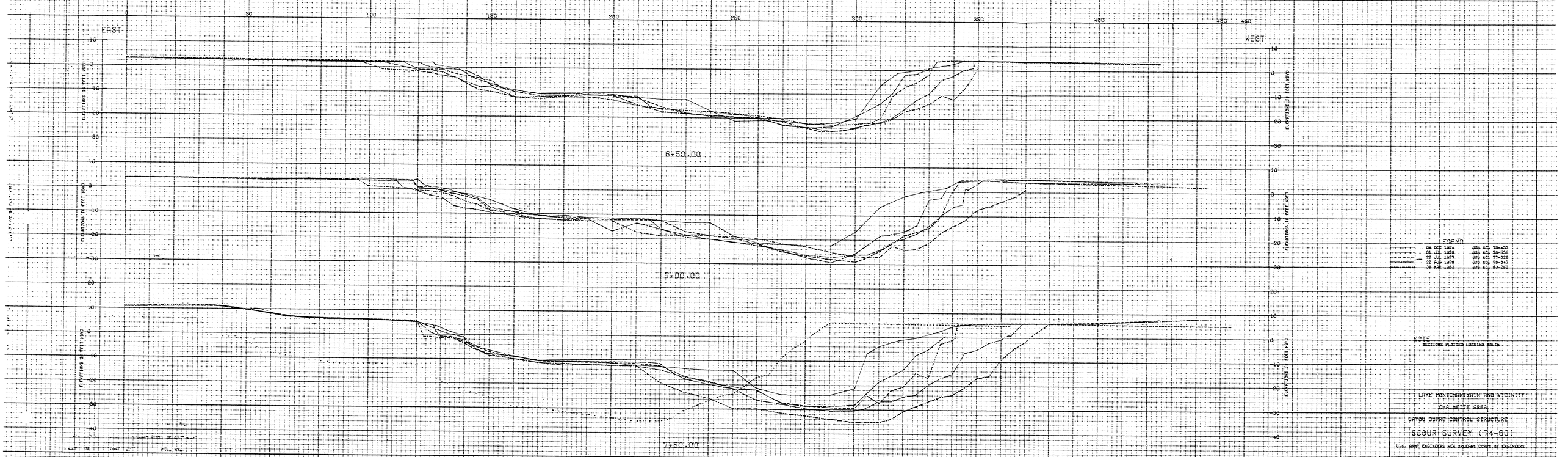
BAYOU DUPRE CONTROL STRUCTURE

SCOUR SURVEY (74-80)

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

SHEET OF MARCH 1980 FILE NO.

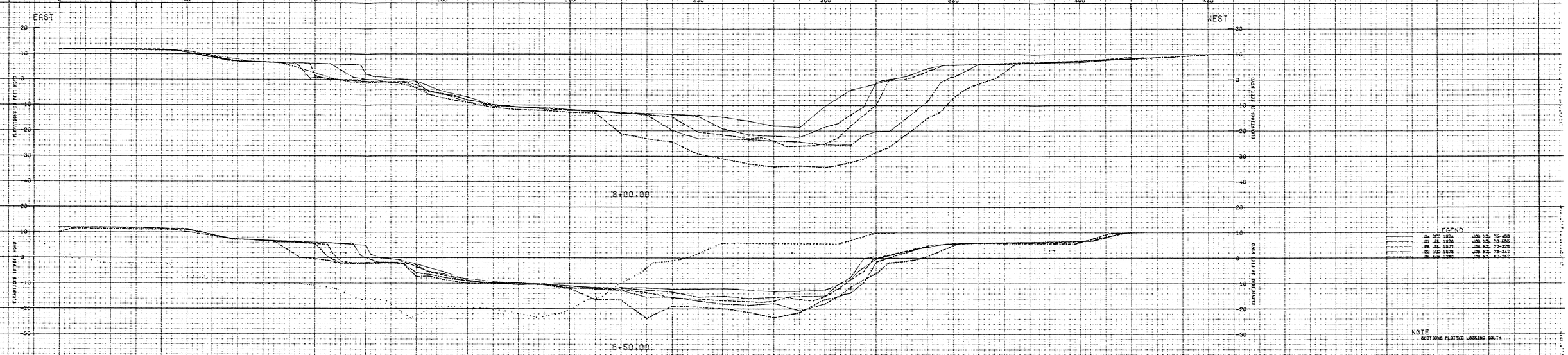
PLATE 10



NOTE
SECTIONS PLOTTED LOOKING SOUTH

LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CONTROL STRUCTURE
SCOUR SURVEY (74-80)
U.S. ARMY ENGINEER NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MARCH 1980 FILE NO.

PLATE 11

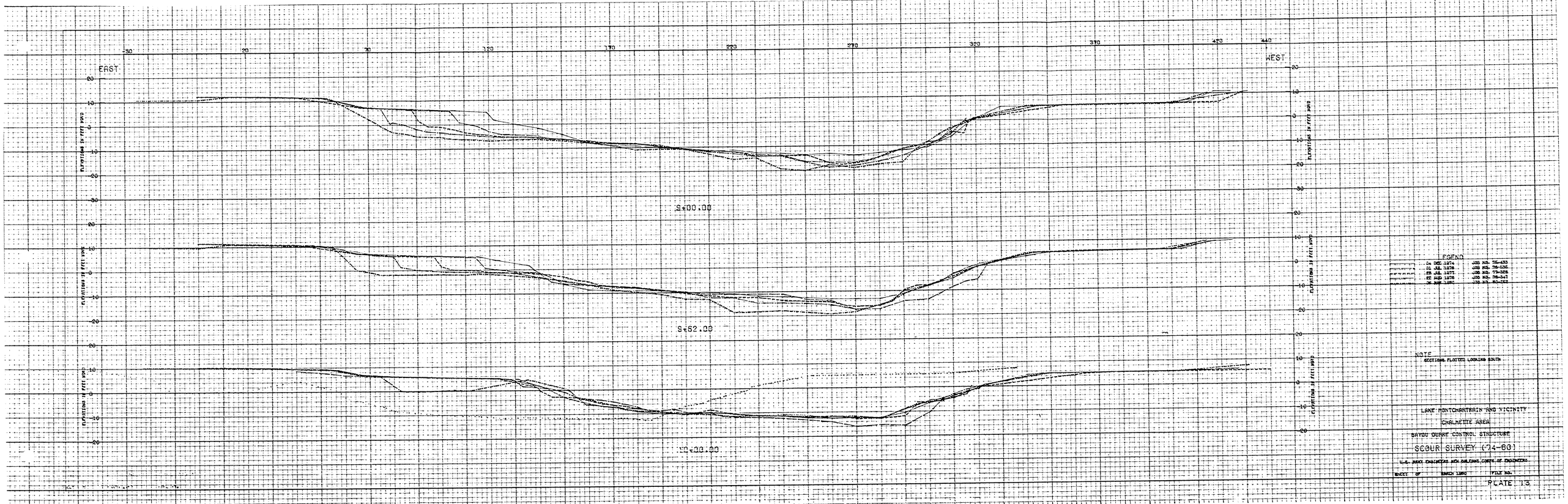


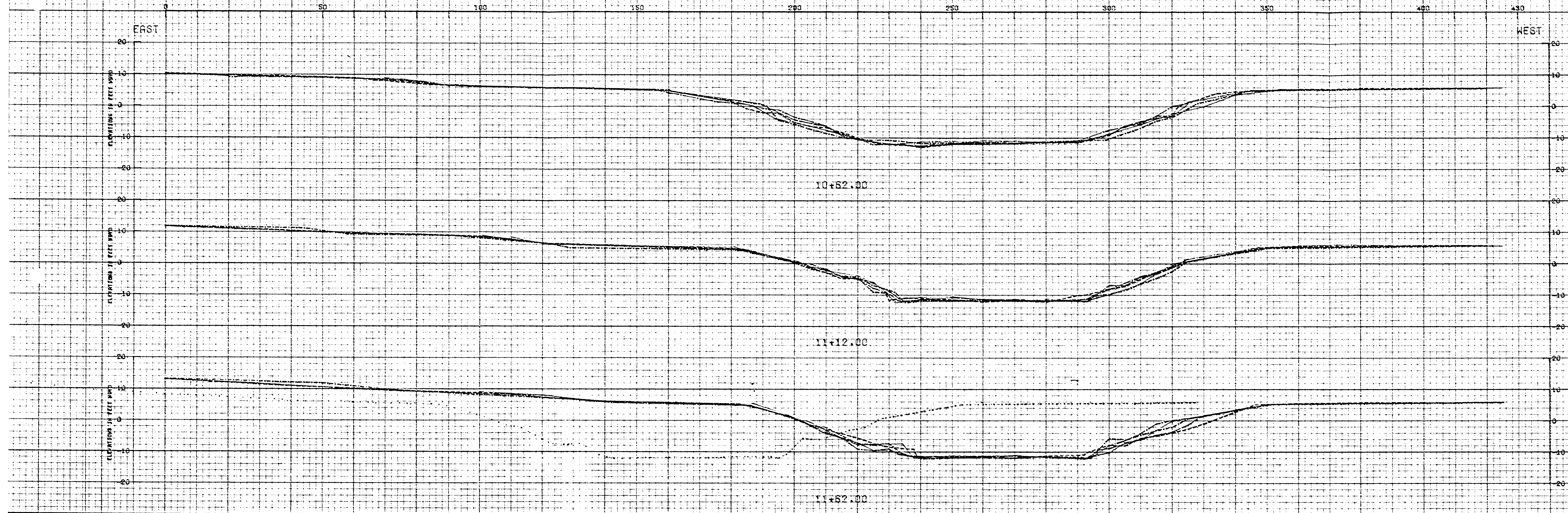
NOTE
SECTIONS PLOTTED LOOKING SOUTH

LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CONTROL STRUCTURE
SCOUR SURVEY (74-80)

U.S. ARMY ENGINEER DIV ORLEANS CORPS OF ENGINEERS
SHEET OF MARCH 1980 FILE NO.

PLATE 12


EAST
WEST
-30
20
70
120
170
220
270
320
370
420
440
ELEVATIONS IN FEET NGVD
9+00.00
9+62.00
10+00.00
LEGEND
NOTE
SECTIONS PLOTTED LOOKING SOUTH
LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CONTROL STRUCTURE
SCOUR SURVEY (74-80)
U.S. ARMY CHALMETTE AREA OFFICE
SHEET OF SHEETS
FILE NO.
PLATE 13



LEGEND

———	04 DEC 1974	JOB NO. 75-433
— — —	01 JUL 1976	JOB NO. 76-538
- - - -	28 JUL 1977	JOB NO. 77-328
—·—·—	22 AUG 1978	JOB NO. 78-347
········	08 MAR 1980	JOB NO. 80-262

NOTE
SECTIONS PLOTTED LOOKING SOUTH

LAKE PONTCHARTRAIN AND VICINITY

CHALMETTE AREA

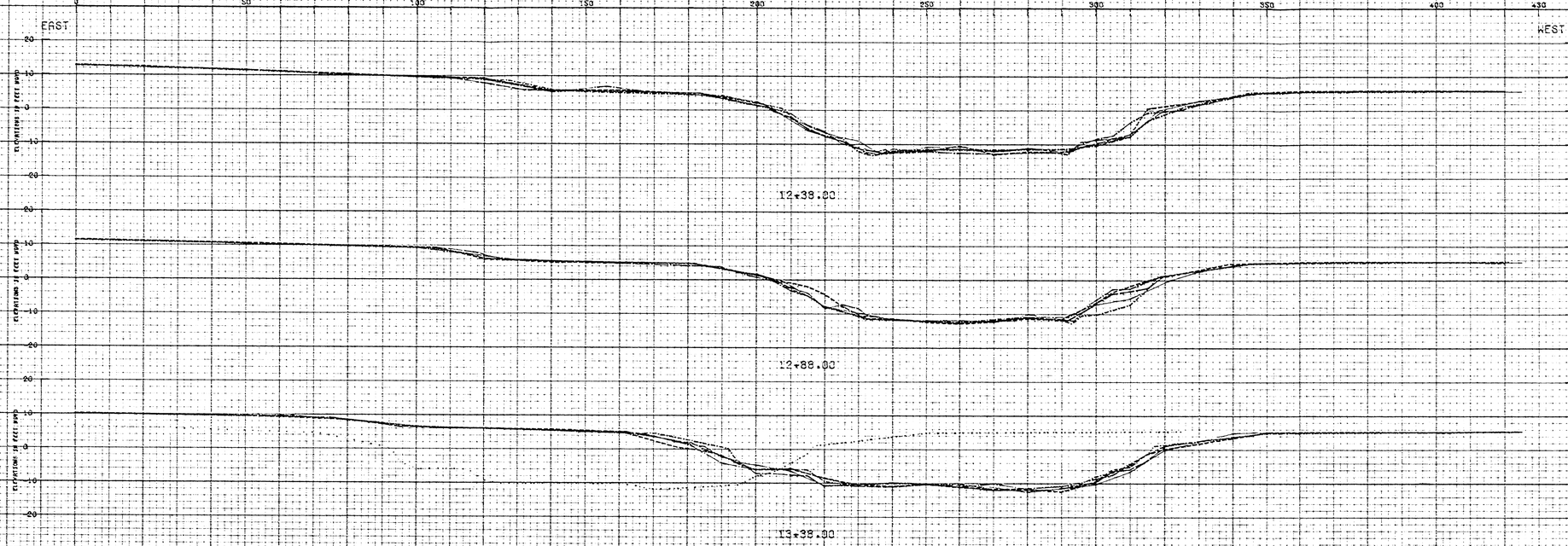
BAYOU DUPRE CONTROL STRUCTURE

SCOUR SURVEY (74-80)

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

SHEET OF MARCH 1980 FILE NO.

PLATE 14



LEGEND

	04 DEC 1974	USE NO. 75-433
	01 JA 1976	USE NO. 76-536
	28 JA 1977	USE NO. 77-378
	27 MAR 1978	USE NO. 78-347
	26 SEP 1980	USE NO. 80-747

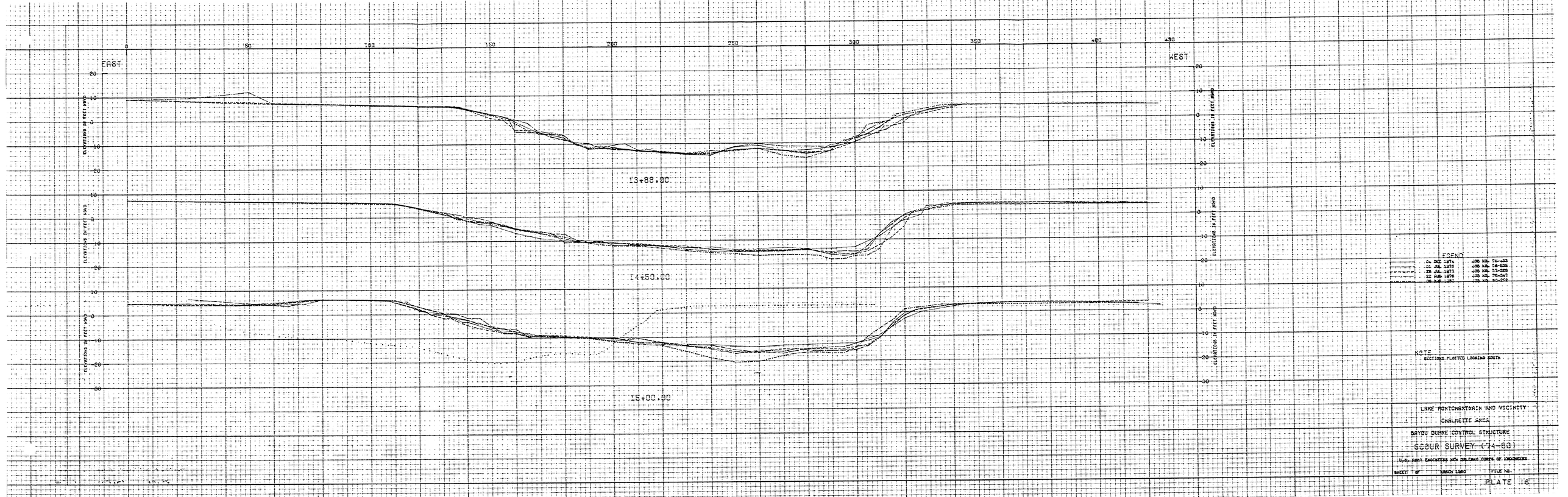
NOTE
SECTIONS PLOTTED LOOKING SOUTH

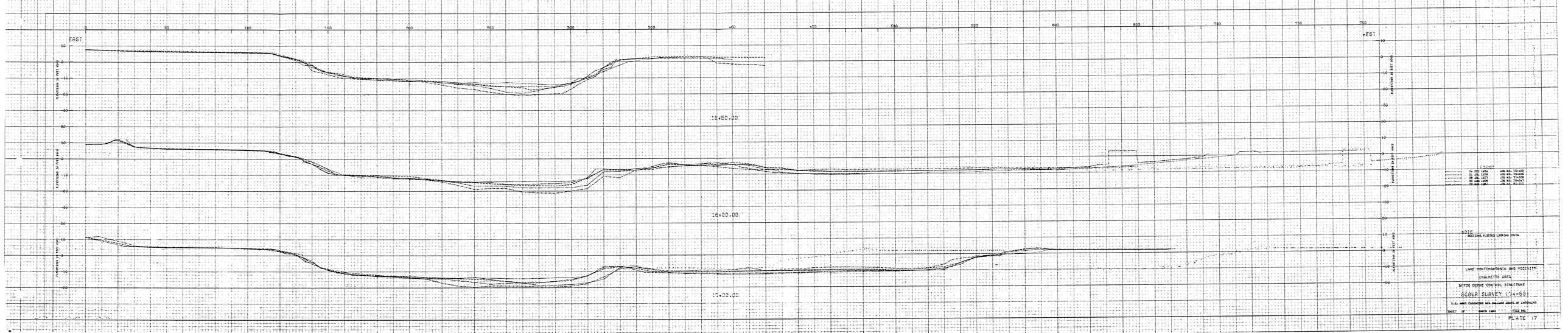
LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CONTROL STRUCTURE
SCOUR SURVEY (74-80)

U.S. ARMY ENGINEER DIV. NEW ORLEANS CORPS OF ENGINEERS

SHEET OF SHEETS MARCH 1980 FILE NO.

PLATE 15


EAST
WEST
0
50
100
150
200
250
300
350
400
450
ELEVATIONS IN FEET NGVD
13+88.00
14+50.00
15+00.00
LEGEND
04 DEC 1974
01 JUL 1975
25 JUL 1975
22 AUG 1975
28 JAN 1976
JOB NO. 76-333
JOB NO. 76-335
JOB NO. 76-336
JOB NO. 76-347
JOB NO. 76-354
NOTE
SECTIONS PLOTTED LOOKING SOUTH
LAKE PONTCHARTRAIN AND VICINITY
CALCASIEU AREA
BAYOU DUARTE CONTROL STRUCTURE
SCOUR SURVEY (74-80)
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS, CORPS OF ENGINEERS
SHEET OF
MARCH 1980
TITLE NO.
PLATE 16


EAST
WEST
0
50
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
ELEVATIONS IN FEET MSL
16+50.00
16+00.00
17+00.00
LEGEND
24 DEC 1974
19 JUL 1977
22 AUG 1978
NOTE
SECTIONS PLOTTED LOOKING SOUTH
LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CONTROL STRUCTURE
SCOUR SURVEY (74-80)
PLATE 17

LEGEND

	24 DEC 1974	JOB NO. 75-433
	01 JUL 1976	JOB NO. 76-535
	28 JUL 1977	JOB NO. 77-328
	22 AUG 1978	JOB NO. 78-347
	[illegible]	JOB NO. 80-[illegible]

NOTE
SECTIONS PLOTTED LOOKING SOUTH

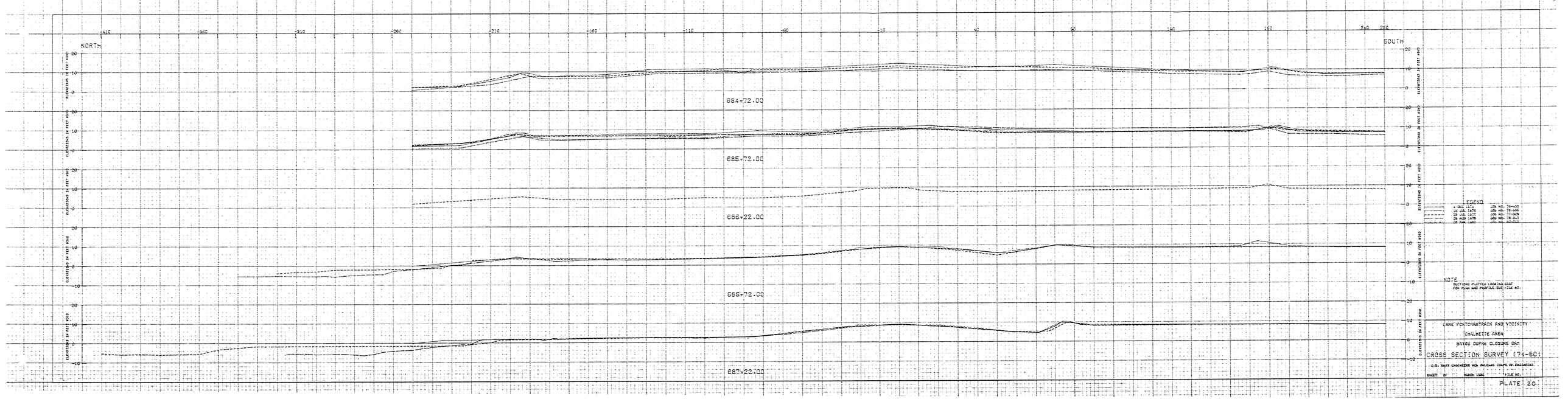
LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CONTROL STRUCTURE
SCOUR SURVEY (74-80)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MARCH 1980 FILE NO.
PLATE 18

LEGEND

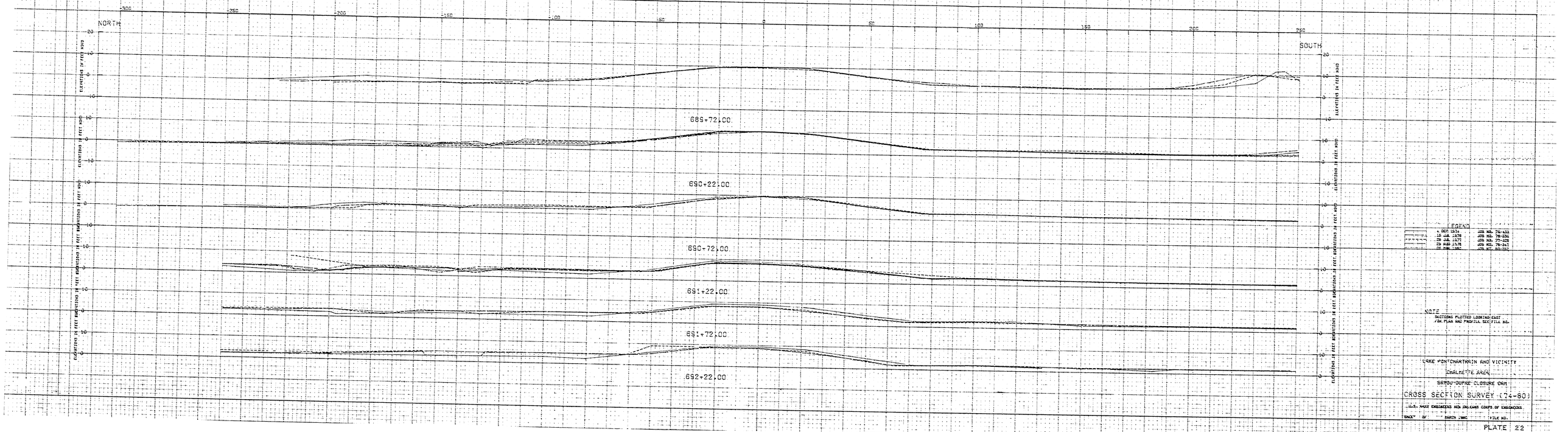
————	4 DEC 1974	JOB NO. 75-433
— — —	15 JUL 1976	JOB NO. 76-333
- - - - -	28 JUL 1977	JOB NO. 77-328
—·—·—	25 AUG 1978	JOB NO. 78-347
— - — -	[illegible]	[illegible]

NOTE
SECTIONS PLOTTED LOOKING EAST
FOR PLAN AND PROFILE SEE FILE NO.

LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CLOSURE DAM
CROSS SECTION SURVEY (74-80)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MARCH 1980 FILE NO.
PLATE 19


NORTH
SOUTH
-410
-360
-310
-260
-210
-160
-110
-60
-10
40
90
140
190
240
290
684+72.00
685+72.00
686+22.00
686+72.00
687+22.00
ELEVATIONS IN FEET (NGVD)
LEGEND
NOTE
SECTIONS PLOTTED LOOKING EAST
FOR PLAN AND PROFILE SEE FILE NO.
LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CLOSURE DAM
CROSS SECTION SURVEY (74-60)
U.S. ARMY ENGINEER DIV. NEW ORLEANS CORPS OF ENGINEERS
SHEET OF
MARCH 1980
FILE NO.
PLATE 20


NORTH
SOUTH
-330
-280
-230
-180
-130
-80
-30
20
70
120
170
220
250
ELEVATIONS IN FEET NGVD
687+72.00
688+22.00
688+72.00
689+22.00
LEGEND
4 DEC 1974 JOB NO. 75-433
15 JUL 1976 JOB NO. 76-536
28 JUL 1977 JOB NO. 77-328
29 AUG 1978 JOB NO. 78-347
NOTE
SECTIONS PLOTTED LOOKING EAST
FOR PLAN AND PROFILE SEE FILE NO.
LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CLOSURE DAM
CROSS SECTION SURVEY (74-80)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MARCH 1980 FILE NO.
PLATE 21



LAKE PONTCHARTRAIN AND VICINITY

CHALMETTE AREA

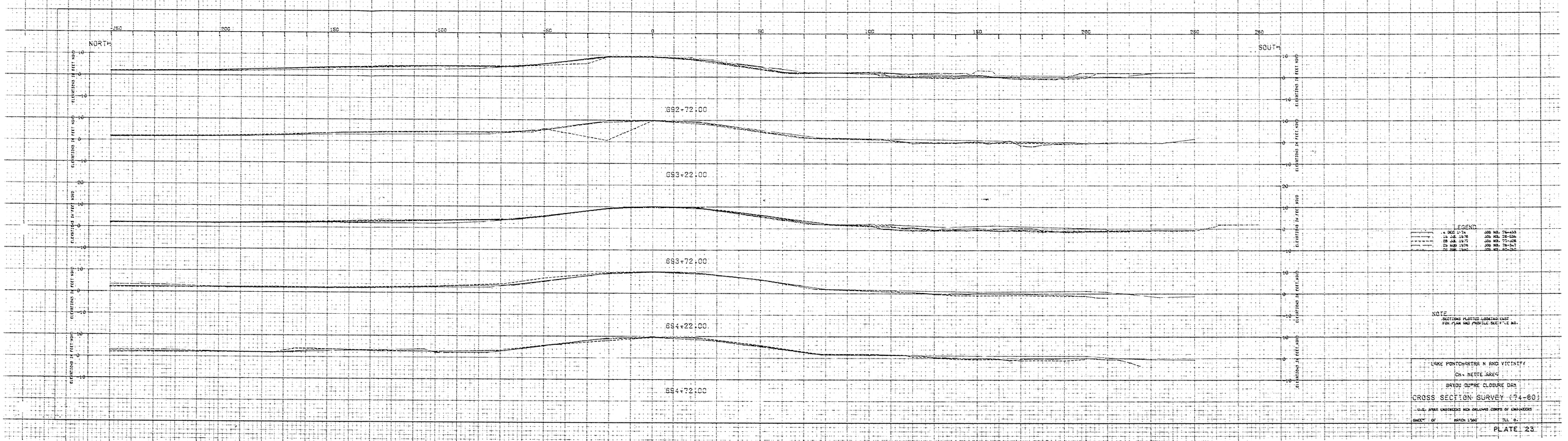
SAVOU-DUPRE CLOSURE CAN

CROSS SECTION SURVEY (74-80)

U.S. ARMY ENGINEER DIV. ORLEANS CORPS OF ENGINEERS

SHEET OF MARCH 1980 FILE NO.

PLATE 22


NORTH
SOUTH
250
200
150
100
50
0
50
100
150
200
250
ELEVATIONS IN FEET NGVD
10
0
-10
-20
GS2+72.00
GS3+22.00
GS3+72.00
GS4+22.00
GS4+72.00
LEGEND
4 DEC 1974
15 JUL 1975
29 JUL 1975
23 MAR 1976
20 MAR 1980
JOB NO. 76-433
JOB NO. 76-434
JOB NO. 77-436
JOB NO. 78-347
JOB NO. 80-347
NOTE
SECTIONS PLOTTED LOOKING EAST
FOR PLAN AND PROFILE SHEET LE NO.
LAKE PONTCHARTRAIN AND VICINITY
CHEF MENTEUR AREA
BAYOU DUPRE CLOSURE DAM
CROSS SECTION SURVEY (74-80)
U.S. ARMY ENGINEER NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MARCH 1980 ILL O.
PLATE 23

LEGEND

———	4 DEC 1974	JOB NO. 75-433
— · —	15 JUL 1976	JOB NO. 76-535
- - - -	28 JUL 1977	JOB NO. 77-328
———	23 AUG 1978	JOB NO. 78-347

NOTE
SECTIONS PLOTTED LOOKING EAST
FOR PLAN AND PROFILE SEE FILE NO.

LAKE PONTCHARTRAIN AND VICINITY

CHALMETTE AREA

BAYOU DUPRE CLOSURE DAM

CROSS SECTION SURVEY (74-80)

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

SHEET OF MARCH 1980 FILE NO.

PLATE 24


NORTH
SOUTH
ELEVATIONS IN FEET NGVD
-250
-200
-150
-100
-50
0
50
100
150
200
250
300
350
400
697+47.00
697+72.00
697+97.00
698+22.00
698+47.00
LEGEND
4 DEC 1974 JOB NO. 76-433
28 JUL 1977 JOB NO. 77-328
NOTE
SECTIONS PLOTTED LOOKING EAST
FOR PLAN AND PROFILE SEE FILE NO.
LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CLOSURE DAM
CROSS SECTION SURVEY (74-80)
SHEET OF
FILE NO.
PLATE 25

LAKE PONTCHARTRAIN AND VICINITY

CHALMETTE AREA

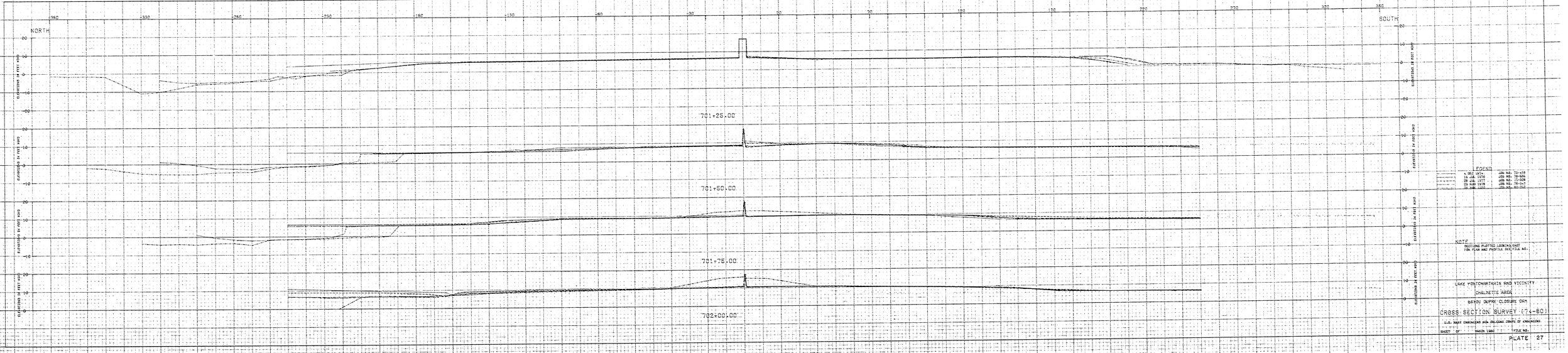
BAYOU DUPRE CLOSURE DAM

CROSS SECTION SURVEY (74-80)

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

SHEET OF MARCH 1980 FILE NO.

PLATE 26


NORTH
SOUTH
ELEVATION IN FEET (NGVD)
701+25.00
701+50.00
701+75.00
702+00.00
LEGEND
NOTE
SECTIONS PLOTTED LOOKING EAST
FOR PLAN AND PROFILE SEE FILE NO.
LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CLOSURE DAM
CROSS SECTION SURVEY (74-80)
U.S. ARMY ENGINEERS NEW ORLEANS DISTRICT CORPS OF ENGINEERS
SHEET OF MARCH 1980 FILE NO.
PLATE 27

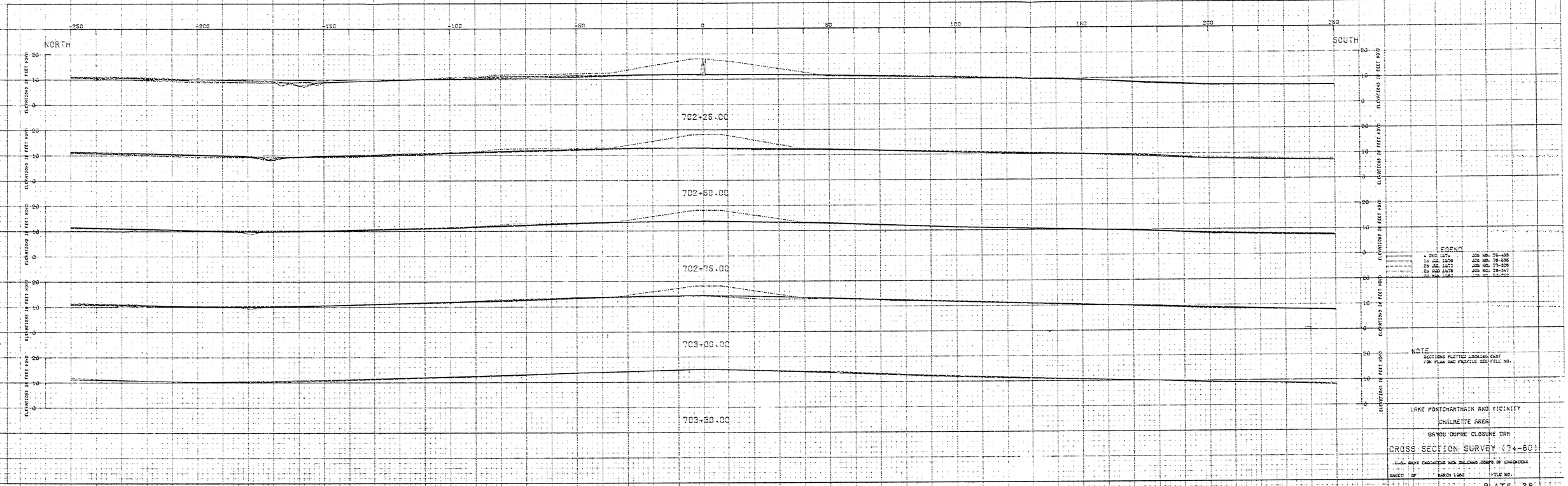
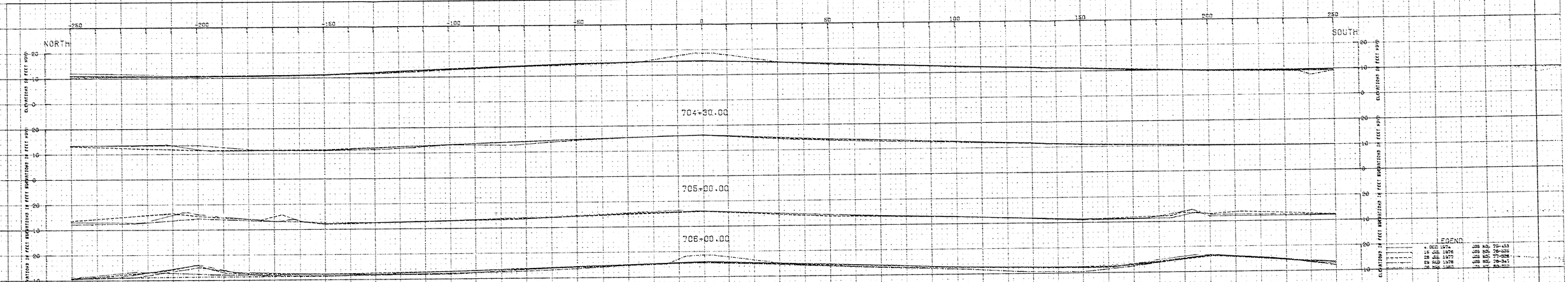

-250
-200
-150
-100
-50
0
50
100
150
200
250
NORTH
SOUTH
ELEVATIONS IN FEET NGVD
20
10
0
702+25.00
702+50.00
702+75.00
703+00.00
703+50.00
LEGEND
4 DEC 1974
JOB NO. 76-435
19 DEC 1975
JOB NO. 76-535
29 DEC 1977
JOB NO. 79-309
29 AUG 1978
JOB NO. 78-247
NOTE
SECTIONS PLOTTED LOOKING EAST
FOR PLAN AND PROFILE SEE FILE NO.
LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CLOSURE DAM
CROSS SECTION SURVEY (74-80)
U.S. ARMY ENGINEER DIS. NEW ORLEANS CORPS OF ENGINEERS
SHEET OF
MARCH 1980
FILE NO.

PLATE 28



NOTE
SECTIONS PLOTTED LOOKING EAST
FOR PLAN AND PROFILE SEE FILE NO.

LAKE PONTCHARTRAIN AND VICINITY
CHALMETTE AREA
BAYOU DUPRE CLOSURE DAM
CROSS SECTION SURVEY (74-60)
U.S. ARMY ENGINEER NOA ORLEANS CORPS OF ENGINEERS
SHEET OF MARCH 1983 FILE NO.

PLATE 29

4. Condition of Horizontal and Vertical Joints. Vertical joint between T-Wall monoliths on the east side shows separation tapering from approximately 0.25 inch at the top of wall to 0 at the bottom. All other joints were found in good condition.

5. Visual Check of Horizontal and Vertical Alinement of Walls. Good alinement throughout the structure with the exception of the previously reported misalinement of the concrete sheet pile walls.

6. Evidence of Structure Damage. None found.

b. Gates.

1. Evidence of Difficulty in Opening and Closing. None, the gates were operated without any difficulty within the allowable time limits.

2. Evidence of Damage to Skin Plate, Ribs, Girders, Framing, Walkway, Handrails. None found.

3. Condition of Paint. Good, only the area of tidal fluctuation is heavily corroded.

4. Corrosion. Severe corrosion was found in the area of tidal fluctuation. All exposed metal surfaces are corroded. This condition is normal to marine structures since no effective cathodic protection can be provided to this area (See Photo 1).

c. Guide Walls and Fenders General Condition of Timber and Connections. The first two pile bents on the N.W. guide wall are damaged above the waterline (Photo 2). Damage was caused by barge collision (The Lake Borgne Levee Board is fully aware of this problem).

d. Mechanical. The machinery and equipment was in good condition except for the following:

1. The alternator belt was loose on the diesel engine for the generator.

SECTION V - INSPECTION

5-01 Inspection Team. The inspection of the structure was conducted on 12 March 1980 by the following personnel:

NOD

Theodore F. Mehrtens	General Engineering Section
Johnny B. Drummond	General Engineering Section
Jorge A. Romero	Structural Design Section
James H. Richardson	F&M Branch
Roger Young	F&M Branch
Lawrence E. Dement	H&H Branch
Philip Ziegler	General Engineering Section
Henry R. Varner	General Engineering Section
Richard F. Baldini, Jr.	Operations Division

LAKE BORGNE BASIN LEVEE DISTRICT

Patrick Pescay	Vice-President, Board of Commissioners
Norman Vaughan	Operator

STATE OF LOUISIANA, DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
OFFICE OF PUBLIC WORKS

Joseph Kopfler	Area Engineer
Hement Shah	Engineer

5-02 Orientation. Prior to the inspection, the team members were given a brief orientation on the following features of the structure: hydraulics and hydrology, structural considerations, foundations, operating machinery and construction history.

5-03 Observations. The control structure was not dewatered at the time of the inspection; all observations recorded hereafter refer to those surfaces above the water line.

a. Reinforced Concrete.

1. Structural Cracks. No evidence of structural cracks.

2. Exposed Reinforcement. No evidence of exposed reinforcement.

3. General Condition of Concrete Surfaces. The concrete surfaces were in good condition, no evidence of spalls, pop-outs, weathering, corrosion, stains, honeycombs nor cracks.

(2). Some indicator lights on the control panels were burned out.

(3). There was a loose coupling on the electric motor on the #1 side.

e. Foundations. Observations made during the inspection of the structure indicate that the north approach channel is continuing to scour and thus eroding the bankline (Photo 3). Refer to Section IV, 4-03c for detailed analysis of scour.

Also observed were indications of a small amount of settlement occurring in the east side T-Wall as evidenced by the observed joint separation described in paragraph 5-03a(4).This settlement is probably due to the tie-in embankment being placed at the T-Wall in 1979.

Some riprap bank protection, especially in the zone subjected to repeated cycles of immersion and drying, is weathering and breaking down at a rather rapid rate due to poor quality of some of the riprap. While it is not yet a serious problem, the situation will worsen over the next several years and remedial repairs will be necessary. Surveillance of this area on a yearly basis is recommended.

INCL 4

PHOTOGRAPH NO. 1 - Rust Corrosion on Structural Steel Members of Sector Gate.

PHOTOGRAPH NO. 2 - Damaged pile bents on the N.W. Guide Wall.

PHOTOGRAPH NO. 3 - Severe Erosion in the west bank on the north approach channel.

SECTION VI - CONCLUSIONS AND PROPOSED REMEDIAL ACTION

6-01 Conclusions. It is concluded that the structure is safe, stable, well maintained and in satisfactory operating condition.

6-02 Proposed Remedial Actions. Plans and specifications to repair the scour/erosion damage in the vicinity of the Bayou Dupre structure are presently being prepared. A construction contract is scheduled for award in September 1980. Also, the following remedial actions should be scheduled during the current year:

a. Repair the two pile bents on the N.W. guidewall.

b. Replace lost riprap along the bank in the north approach.

c. [illegible] and paint the corroded structural steel members of the sector gates. This work should be scheduled during a period of low tide. Structural steel members below the water line should be scheduled for repair and painting during next dewatering period.

d. Adjust the alternator belt on the diesel engine for the generator.

e. Replace burned our indicator lights on the control panel.

f. Adjust the loose coupling on the electric motor on the #1 side.

6-03 Next Inspection. The next inspection of Bayou Dupre Control Structure is scheduled for November 1982.

Incl 2

Incl 3