LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY

CHALMETTE AREA PLAN

BAYOU BIENVENUE

CONTROL STRUCTURE

PERIODIC INSPECTION REPORT NO. 3

31 MARCH 1983

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

New Orleans District

LMVED-GS (NOD 12 Aug 83) 5th Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Bienvenue Control Structure, Periodic Inspection Report No. 3, March 1983.

DA, Lower Mississippi Valley Division, Corps of Engineers, Vicksburg, MS 39180-0080

17 JUL '84
TO: Commander, New Orleans District, ATTN: LMNED-DG

The disposition of comments presented in the preceding 4th Ind is satisfactory subject to the following comment which is made for the record. No further action is required on this chain of correspondence.

Para a. Based on telecon with your F&M Br personnel, we understand that the tie-in levee section on the southeast side of the structure was constructed in 1980 and the tie-in levee section on the northwest side is scheduled to be constructed in 1985. We further understand that the concrete I-walls on both sides of the structure will be constructed after settlement observations of the northwest tie-in levee indicate that settlement of this levee is essentially complete, i.e., in approximately 1989.

FOR THE COMMANDER:

William R. Hill, P.E.
for

5 Incl
wd 1 cy

R. H. RESTA, P.E.
Chief, Engineering Division

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

REPLY TO
ATTENTION OF:

LMNED-DG

23 August 1983

SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Bienvenue Control Structure, Periodic Inspection Report No. 3, March 1983

Commander, Lower Mississippi Valley Division
ATTN: LMVED-G

Subject report is submitted herewith for your approval.

FOR THE COMMANDER:

FREDERIC M. CHATRY
Chief, Engineering Division

1 Incl (6 cys)
as

LMVED-GS (NOD 12 Aug 83) 1st Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Bienvenue Control Structure, Periodic Inspection Report No. 3, March 1983

DA, Lower Mississippi Valley Division, Corps of Engineers, Vicksburg, MS 39180
14 MAR '84

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

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

a. Para 4-03. Reference is made to LMVED-G 1st Ind to LMNED-DG letter, 30 Nov 79, subject: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Bienvenue Control Structure, Periodic Inspection No. 2, July 1979. Paragraph 1a(2) of the referenced 1st Ind reads as follows:

In the next periodic inspection report for this project, a subparagraph should also be included which discusses and evaluates observations of settlement of the tie-in levees on each side of the structure as shown on Plate 18. Since para 3-02 states that concrete sheet pile I-walls will be replaced when settlement of the tie-in levees has ceased, the subparagraph should include an evaluation of the time-rate of settlement of these levees. Plots of settlement versus time should be presented for a few typical settlement plates for the tie-in levees and the observed magnitude and rate of settlement should be compared with the predicted magnitude and rate of settlement to determine when consolidation of the levee and foundation is essentially completed.

This report should be revised to incorporate the information requested in the above comment.

b. Paras 5-03 and 6-02. The observation and recommendation pertaining to the joint between the west wingwall and structure on the protected side of the structure discussed in para 5d of the LMVD trip report in Appendix A should be addressed in these two paragraphs.

c. Para 6-02.

(1) Note that subpara b under Hydraulics and Hydrology on page V-4 and para 5c of the LMVD trip report in Appendix A address missing riprap along the channel banks as noted in Photo 3. Paragraph 5c of the LMVD trip report also mentions missing riprap on the outer edges of wingwalls on the Bayou Bienvenue side of the structure. Replacement of missing riprap at these locations should be addressed in para 6-02.

(2) The criteria for sizing the riprap discussed in subparas a and b should be stated.

d. Refer to additional comment in red on page VI-1.

14 MAR '84

LMVED-GS (NOD 23 Aug 83) 1st Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Bienvenue Control Structure, Periodic Inspection Report No. 3, March 1983

2. The inclosed report should be revised in accordance with the above comments and the revised pages of the report should be submitted to this office.

FOR THE COMMANDER:

Robert L Kaufman, P.E.

1 Incl (dupe)
wd 4 cy

for R. H. RESTA, P.E.
Chief, Engineering Division

LMNED-DG (23 August 1983) 2nd Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan, Bayou Bienvenue Control Structure, Periodic Inspection No. 3

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

TO: Commander, Lower Mississippi Valley Division
ATTN: LMVED-GS

The disposition of comments presented in the 1st Ind follows. Paragraph numbers refer to like numbered paragraphs in the indorsement. Duplicate copies of inclosures are submitted for your files.

a. Para 4-03. Concur. The evaluation and plots of the time rate of settlement of tie-in levees are being performed by our F&M personnel. Upon completion of the subject evaluation, the report will be revised and the information forwarded to your office.

b. Paras 5-03 and 6-02. The observation pertaining to the separation of expansion joints on the wingwalls adjacent to the structure was addressed in Para 5-03A(4). The recommendation of remedial action is detailed in Para 6-02. See Incl 2.

c. Para 6-02.

(1) Concur. See Incl 2.
(2) Concur. See Incl 3.

d. The referenced corrections have been made in our file copy of the report.

FOR THE COMMANDER:

William B. Seale
Frederic M. Chatry
Chief, Engineering Division

2 Incl
Added Incl 2 & 3
as (dupe)

S: 1 Jun 84

LMVED-GS (NOD 12 Aug 83) 3d Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Bienvenue Control Structure, Periodic Inspection Report No. 3, March 1983

DA, Lower Mississippi Valley Division, Corps of Engineers, Vicksburg, MS 39180

30 APR '84

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

Disposition of comments presented in the preceding 2d Ind is satisfactory subject to the following comments:

a. Para a. The settlement analysis and evaluation discussed in this paragraph should be submitted to this office by indorsement to this chain of correspondence NLT 1 Jun 84.

b. Para b. Do not concur. Paragraph 5-03A(4) addresses the expansion joints on the T-walls adjacent to the structure, not the joint between the west wingwall and structure on the protected side of the structure. The joint in question is circled in red on Incl 4. Paragraphs 5-03 and 6-02 should include observations and recommendations pertaining to this specific joint as discussed in para 5d of the LMVD trip report in Appendix A.

FOR THE COMMANDER:

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

3 Incl
2-3. wd 1 cy
Added 1 Incl:
4. as

LMNED-DG (23 August 1983) 4th Ind
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan, Bayou Bienvenue Control Structure, Periodic Inspection No. 3

DA, New Orleans District, Corps of Engineers, P. O. Box 60267, New Orleans, Louisiana 70160 1 June 1984

TO: Commander, Lower Mississippi Valley Division
ATTN: LMVED-GS

The disposition of comments presented in the 3rd Ind follows. Paragraph numbers refer to like numbered paragraphs in the indorsement. Duplicate copies of Incl 5 are submitted for your files.

a. Para a. The settlement analysis and evaluation discussed has been postponed until the tie-in levees at the Bayou Bienvenue Control Structure have been constructed to final grade. This work is scheduled for FY 89.

b. Para b. Paragraphs 5-03 and 6-02 have been revised to address the expansion joint between the west wingwall and structure on the protected side of the structure. See Incl 5.

FOR THE COMMANDER:

William B. Seale
FREDERIC M. CHATRY
Chief, Engineering Division

4 Incl
Added 1 Incl (dupe)
5 as

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY

CHALMETTE AREA PLAN

BAYOU BIENVENUE CONTROL STRUCTURE

PERIODIC INSPECTION NO. 3

31 MARCH 1983

U.S. ARMY ENGINEER DISTRICT

CORPS OF ENGINEERS

NEW ORLEANS, LOUISIANA

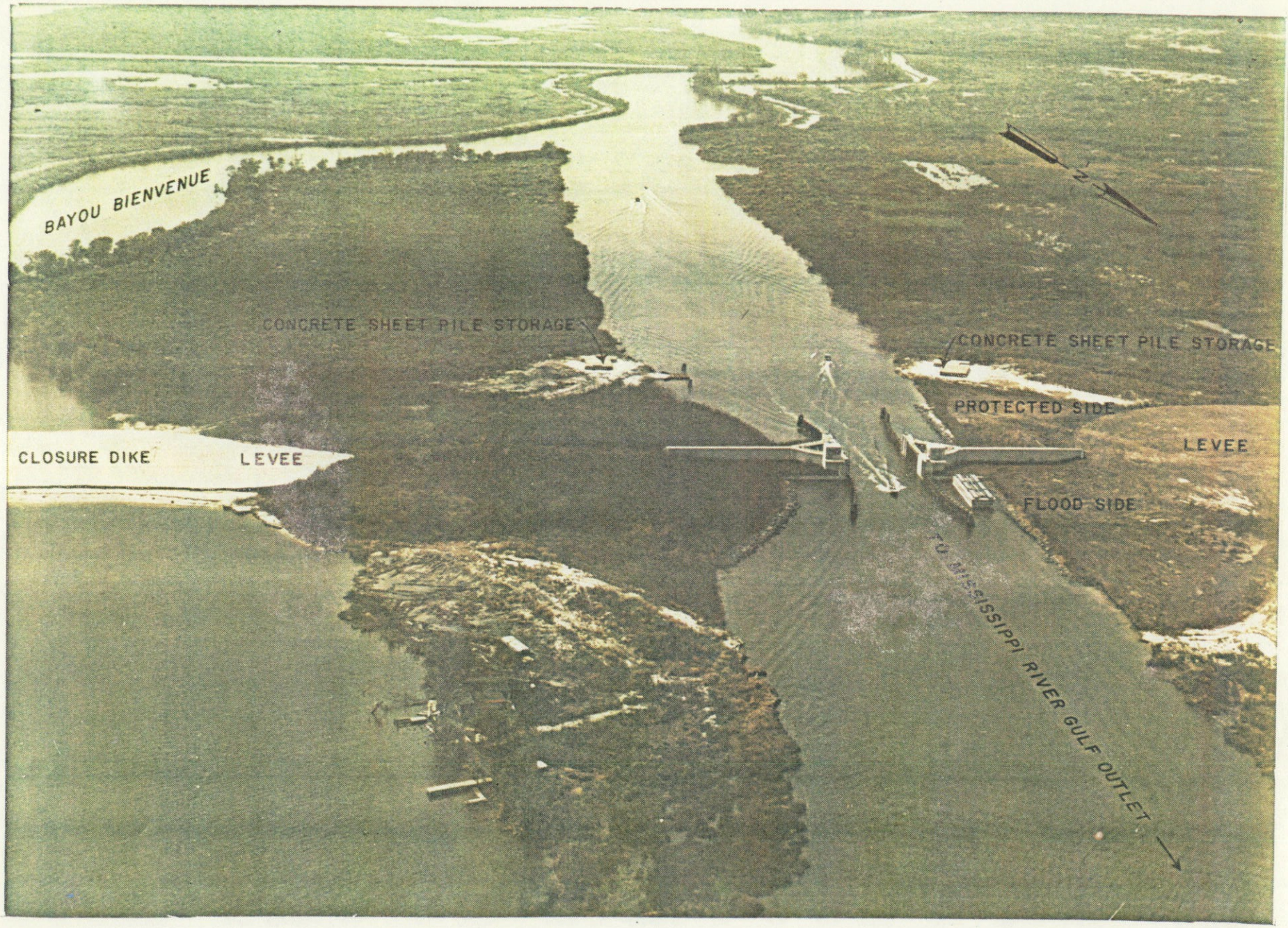

PHOTO TAKEN 27 SEPTEMBER 1974

BAYOU BIENVENUE CONTROL STRUCTURE

SUMMARY

The Bayou Bienvenue Control Structure was inspected on 31 March 1983 by representatives of NOD, State of Louisiana Office of Public Works and Orleans Levee Board, and found to be stable, safe and in satisfactory operating condition. Some spot rusting was noted on the sector gate framing members and the embedded metal, with severe corrosion in the area affected by tidal fluctuation.

BAYOU BIENVENUE CONTROL STRUCTURE

PERIODIC INSPECTION NO. 3

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BAYOU BIENVENUE CONTROL STRUCTURE

Previous Periodic Inspection Reports:

Item	Report No.	Date	Approved
1	1	October 1973	17 April 1974
2	2	27 July 1979	30 March 1980

SECTION I - INTRODUCTION

1-01 Authority. Authority is provided by ER 1110-2-100, "Periodic Inspection and Continuing Evaluation of Completed Civil Works Structures."

1-02 Purpose and Scope. This report presents the results and conclusions of the third periodic inspection of the Bayou Bienvenue Control Structure.

1-03 Datum. All elevations, except where otherwise indicated, are in feet and refer to the National Geodetic Vertical Datum of 1929 (NGVD), 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. A location map is included in this report (plate I-1). This report is supplementary to previously numbered reports.

SECTION III - CURRENT OPERATION AND MAINTENANCE AREA

3-01 Maintenance and Operating Problems. There were no accidents at the structure nor any major operating problems. Some vandalism of the various navigation systems such as lights, lens, solar panels, etc., has occurred and was repaired during regular maintenance.

3-02 Actions on Deficiencies from Last Inspection. The concrete sheet pile I-wall has been pulled out and stockpiled at the structure, and will be replaced when settlement of the levee adjacent to the structure has ceased.

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 works construction, published by the Office of 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, have not changed.

4-03 Analysis of Instrumentation.

a. Settlement Marks. Present survey shows no unusual settlement or rebound at any point of the structure.

b. Alinement Survey. Floodwall alinement data for 1982 indicates a maximum alinement differential at reference marks B-1 of 0.38 inches and B-10 of 0.50 inches; these are not considered critical deformations.

c. Scour Survey. Inspection of the 27 May 82 survey indicates that the erosion in both approach channels continues to extend towards the existing riprap aprons and the structure itself. The erosion has increased significantly.

Maximum scour depths for the 27 May 82 survey are listed below:

4+00 MRGO

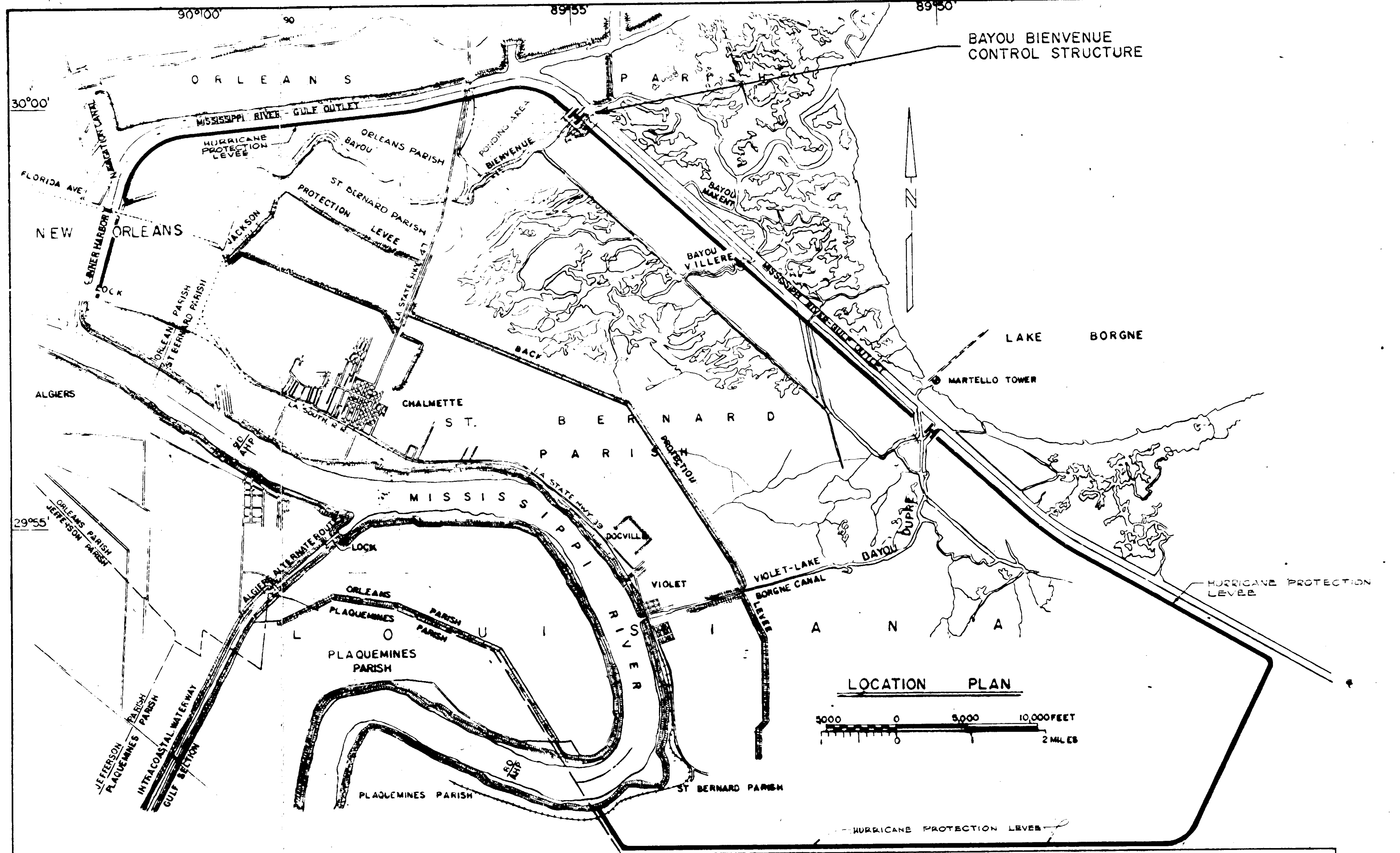
6+00, -18	12+88, -12	21+00, -16
6+50, -18	13+38, -12	22+00, -15
7+00, -20 (End Riprap Apron)	13+88, -28	23+00, -14
7+50, -20	14+50, -27	24+00, -14
8+00, -30	15+00, -27	25+00, -14
8+50, -40	15+50, -34	26+00, -12
9+00, -40	16+00, -30	27+00, -12
9+62, -30 (Beginning Riprap	16+50, -24	28+00, -12
10+00, -12 Apron)	17+00, -19	29+00, -13
10+62, -12	17+50, -18	30+00, -14
11+12, -12	18+00, -16	31+00, -13
11+60, -12 (Floodgate)	19+00, -18	32+00, -18
12+40, -14 (Floodgate)	20+00, -16	33+00, -22
		33+75, -22

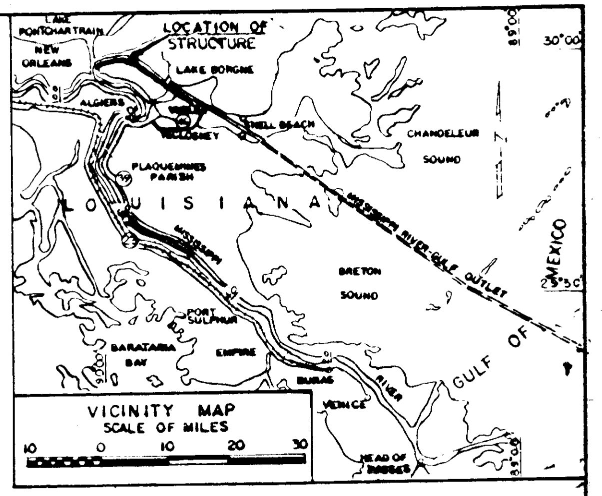
The scour survey of 1982 for the north approach channel, sta. 8+00 to sta. 10+00, shows a scour condition (-el. 40 to el. -28) which has a high influence in the safety factor requirements. Our stability analysis checked the effect the scour condition had to the tie-in levee. This condition shows that the safety factor (SF = 1.36) at this time is close to the minimum (SF = 1.3). Compared to the previous scour surveys, the safety factor will be less than the minimum sometime in the next 2 years. Similar, but not as critical of a condition, exists between sta. 13+88 to sta. 15+50 on the south approach. Immediate action should be taken to solve this problem and avoid any failure to the tie-in levee and control structure.

BAYOU BIENVENUE CONTROL STRUCTURE

INSTRUMENTATION DRAWINGS

Plate No.	Title	File No.
1	General Layout	H-4-24326
2	Floodwall Alinement Reference Mark Tabulation	H-4-26857
3	Settlement Reference Marks - Plan & Profile	H-4-26858
4	Settlement Reference Marks - Differential Settlement Chart	H-4-26858
5	Settlement Reference Marks - Wing Wall	H-4-26857
6	Differential Settlement Chart - Wing Wall	H-4-26857
7	Settlement - Levees	
8	Settlement Reference Marks - North Wing Walls	
9	Settlement Reference Marks - Southwest Wing Walls	
10	Settlement Reference Marks - Southeast Wing Walls	
11	Settlement Reference Marks - Northwest Wing Walls	
12	Profile Survey	
13	Profile Survey	
14	Profile Survey	
15	Scour Survey	
16	Scour Survey	
17	Scour Survey	
18	Scour Survey	
19	Scour Survey	
20	Scour Survey	
21	Scour Survey	
22	Scour Survey	
23	Scour Survey	
24	Scour Survey	
25	Scour Survey	
26	Scour Survey	
27	Cross Section (Levee and Dam)	
28	Cross Section (Levee and Dam)	
29	Cross Section (Levee and Dam)	
30	Cross Section (Levee and Dam)	





NOTE:
ALL REFERENCES IN THIS SET OF DWGS. TO THE BAYOU DUPRE CONTROL STRUCTURE ARE TO BE DELETED.

Safety is a Part of Your Contract

THIS PLAN ACCOMPANIES MODIFICATION P00007 TO CONTRACT NO. DACW29-72-C-0064

INDEX TO DRAWINGS

DWG	TITLE
⚠1 *1	LOCATION PLAN AND INDEX TO DRAWINGS
2	GENERAL PLAN-BAYOU BIENVENUE
~~3~~	~~GENERAL PLAN-BAYOU DUPRE~~
⚠2 *~~4~~	~~LEVEE CLOSURE~~
5	LOG OF BORINGS
6	COMPLETED PLAN - BAYOU BIENVENUE
~~7~~	~~COMPLETED PLAN-BAYOU DUPRE~~
8	COMPLETED SECTIONS
9	INITIAL EXCAVATION PLAN AND SECTIONS-BAYOU BIENVENUE
~~10~~	~~INITIAL EXCAVATION PLAN AND SECTIONS-BAYOU DUPRE~~
11	FINAL STRUCTURE EXCAVATION-GATE BAY-PLANS & SECTS.-BAYOU BIENVENUE
~~12~~	~~FINAL STRUCTURE EXCAVATION-GATE BAY-PLANS & SECTS.-BAYOU DUPRE~~
13	GATE BAY PILING LAYOUT AND STABILIZATION SLAB
14	GATE BAY BASE SLAB - MASONRY PLAN
15	GATE BAY BASE SLAB -REINFORCEMENT PLAN, BOTTOM FACE
16	GATE BAY BASE SLAB -REINFORCEMENT PLAN, TOP FACE
17	GATE BAY BASE SLAB - SECTIONS
18	GATE BAY WALL MASONRY & REINFORCEMENT PLAN AT ELEV. -10.45
19	GATE BAY WALL MASONRY & REINFORCEMENT PLAN AT ELEV. 17.5
20	GATE BAY WALL-ELEVATIONS AND SECTIONS
21	GATE BAY WALL-ELEVATIONS AND SECTIONS
22	GATE BAY WALL-ELEVATIONS AND SECTIONS
23	CONTROL HOUSE - PLAN AND ELEVATION
24	CONTROL HOUSE - SECTIONS AND DETAILS
25	CONTROL HOUSE - REINFORCEMENT
26	HINGE ANCHOR - ASSEMBLY AND DETAILS
27	PINTLE SUPPORT ASSEMBLY AND DETAILS
28	NEEDLE GIRDER - PLAN AND DETAILS
29	NEEDLE DETAILS
30	MISC. METAL - PROTECTION ANGLES & PLATES
31	MISC. METAL - SEAL PLATES
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42	SECTOR GATES - CHANNEL TRUSS
43	SECTOR GATES - RECESS TRUSS
44	SECTOR GATES - SKIN PLATE
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51	SECTOR GATES - MISC. DETAILS
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57	OPERATING MACHINERY - SHEAVE ASSEMBLY DETAILS
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59	OPERATING MACHINERY - MISC. DETAILS
60	ONE LINE SCHEMATIC AND WIRING DIAGRAMS
*61	POWER LAYOUT - BAYOU BIENVENUE
62	LIGHTING LAYOUT
63	LIMIT SWITCH MOUNTING DETAILS
*64	CATHODIC PROTECTION, NAVIGATION AIDS AND DETAILS
65	SECTION AND CONDUIT SCHEDULE
PLATE A	SOIL BORING LEGEND, FILE NO. H-2-21800
*58A	OPERATING MACHINERY - CRANK STAND DETAILS
~~*61A~~	~~POWER LAYOUT - BAYOU DUPRE~~
*1A	ACCESS PLAN
*4A	TYPICAL SECTIONS
*4B	BORROW AREA LOCATION - HOWZE BEACH
*64A	CATHODIC PROTECTION - MOUNTING DETAILS (NO FULL SCALE)

REVISION	DATE	DESCRIPTION	BY	APPVD.
⚠3	5-2-73	Added new dwg. 64A mod #7	R.G.S.	
⚠2	4-3-72	Added new dwg. 4A and 4B and deleted dwg. No. 4 Mod 5	EHA	
⚠1	11-17-71	Added new dwg. 1A Amend. No. 1	PLO	

WALDEMAR S. NELSON AND COMPANY
ENGINEERS AND ARCHITECTS
NEW ORLEANS, LA

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

DESIGNED WSNCO | DRAWN WSNCO | CHECKED WSNCO

SUBMITTED [signature]
APPROVED [signature] PRESIDENT
DATE October, 1971
SUBMITTED [signature] CHIEF, DESIGN BRANCH
APPROVED [signature] CHIEF, ENGINEERING DIVISION
APPROVED [signature] COL., C. of E., DISTRICT ENGINEER

LAKE PONTCHARTRAIN, LA AND VICINITY

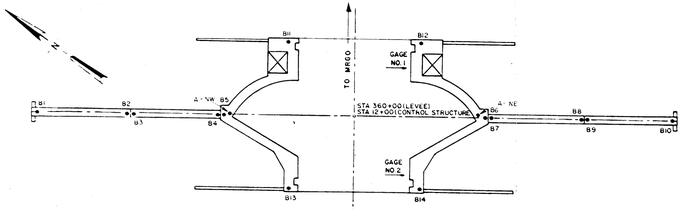
CHALMETTE AREA PLAN

LOCATION PLAN AND INDEX TO DRAWINGS

CODE MENR. No. | DRG | FILE No. H-4-24326

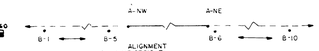
SCALE: AS SHOWN | SPEC. No. DACW 29-72-B-0031 | DWG. No. 1 of 65

CONTROL STRUCTURE PLATE I-1



PLAN

SCALE IN FEET



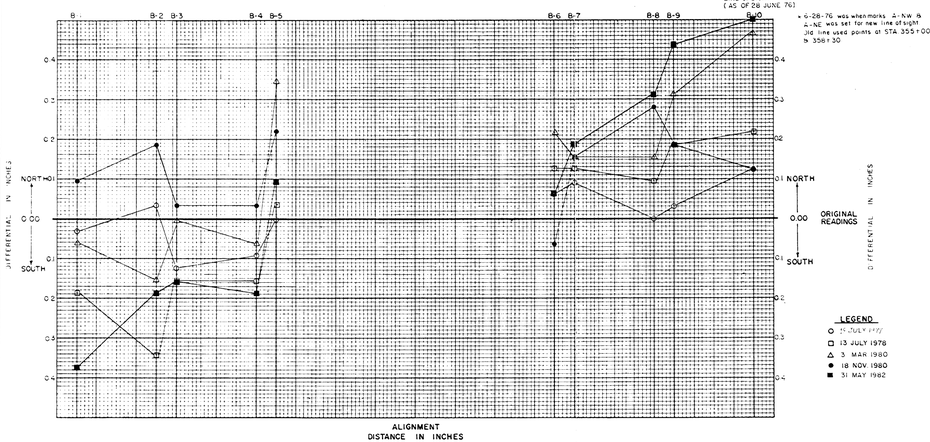
ALIGNMENT
LINE OF SIGHT
(AS OF 28 JUNE 76)

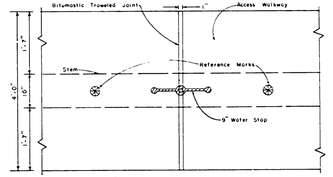
* 6-28-76 was when marks A-NW & A-NE was set for new line of sight
Old line used points at STA 355+00 & 358+30

ALIGNMENT											
NO. OF REFERENCE MARK	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	TEMP.
DATE INSTALLED	6-28-76	6-28-76	6-28-76	6-28-76	6-28-76	6-28-76	6-28-76	6-28-76	6-28-76	6-28-76	6-28-76
ORIGINAL READINGS (IN.)	4.688	4.343	4.562	4.438	4.406	3.875	3.688	3.500	3.188	3.750	94°
OBSERVATIONS 18 JULY 1977	4.719	4.219	4.687	4.531	4.406	3.812	3.594	3.500	3.156	3.625	82°
13 JULY 1978	4.875	4.594	4.719	4.594	4.375	3.750	3.563	3.406	3.000	3.531	94°
3 MAR 1980	4.750	4.406	4.563	4.500	4.063	3.656	3.531	3.344	2.875	3.281	49°
18 NOV 1980	4.593	4.062	4.531	4.406	4.188	3.938	3.531	3.219	3.000	3.625	59°
31 MAY 1982	5.063	4.438	4.719	4.625	4.313	3.938	3.500	3.188	2.750	3.250	88°
											*

NOTE: All marks are South of line of sight

DISTANCES BETWEEN REFERENCE MARKS							
NO. OF REFERENCE MARKS	B2 TO B3	B4 TO B5	B5 TO B6	B11 TO B12	B13 TO B14	B6 TO B7	B8 TO B9
INITIAL DATE	4-11-74	4-11-74	4-11-74	4-11-74	4-11-74	4-11-74	4-11-74
ORIGINAL READINGS (FT.)	4.97	3.98	131.35	64.17	64.19	2.48	5.00
OBSERVATIONS 22 JULY 1974	5.00	3.99	131.35	—	—	2.49	—
27 NOVEMBER 1974	5.02	4.00	131.34	64.15	64.17	2.50	5.00
27 JUNE 1975	5.02	3.99	131.36	64.18	64.19	—	5.04
28 JUNE 1976	5.03	4.00	131.42	64.21	64.22	2.51	5.04
18 JULY 1977	5.04	4.00	131.36	64.20	64.21	2.51	5.04
14 JULY 1978	5.03	4.00	131.56	64.23	64.24	2.66	5.29
3 MAR 1980	5.04	4.02	—	—	—	2.52	5.02
18 NOV 1980	5.05	4.03	—	—	—	2.54	5.06
31 MAY 1982	5.05	4.01	—	—	—	2.53	5.06





TOP OF FLOODWALL JOINT DETAIL

Scale: 1" = 1'-0"

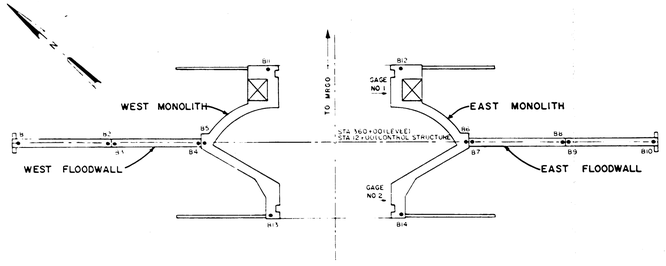
LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

FLOODWALL ALIGNMENT
REFERENCE MARKS TABULATION

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

FILE NO. H-4-26857

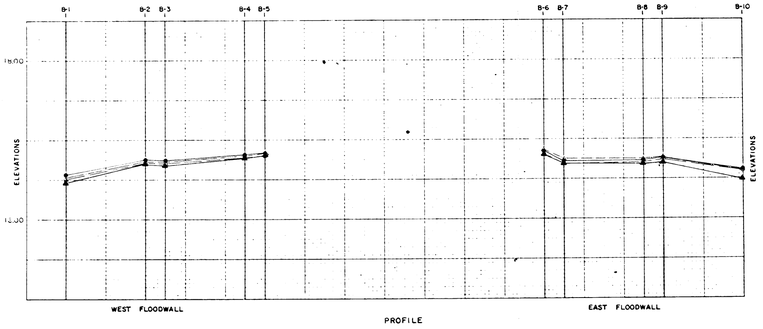
PLATE I-2



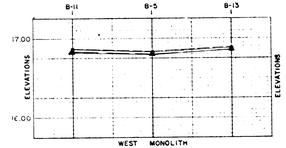
PLAN

SCALE IN FEET

SETTLEMENT REFERENCE MARKS																
NO OF REFERENCE MARK	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	TEMP	GAGE 1	GAGE 2
INITIAL DATE	6-25-74	6-25-74	6-25-74	6-25-74	6-25-74	6-25-74	6-25-74	6-25-74	6-25-74	6-25-74	6-25-74	6-25-74	6-25-74	6-25-74			
ORIGINAL READINGS	16.85	16.88	16.87	16.87	16.89	16.86	16.84	16.80	16.81	16.75	16.87	16.86	16.91	16.88	79°	1.9	1.9
OBSERVATIONS 15 JULY 1978	16.76	16.76	16.75	16.81	16.84	16.85	16.81	16.73	16.76	16.61	16.86	16.96	16.89	16.87	87°	1.00	0.95
29 FEB. 1980	16.51	16.72	16.71	16.79	16.81	16.83	16.79	16.71	16.75	16.58	16.86	16.95	16.87	16.86	58°	2.2	2.1
11 NOV. 1980	16.51	16.73	16.72	16.80	16.84	16.86	16.82	16.73	16.76	16.59	16.86	16.88	16.89	16.89	69°	1.5	1.4
31 MAY. 1982	16.46	16.68	16.67	16.76	16.80	16.82	16.78	16.68	16.71	16.49	16.82	16.84	16.86	16.85	95°	1.8	1.2



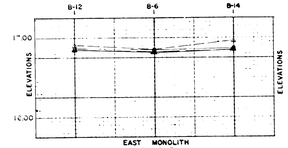
PROFILE



WEST MONOLITH PROFILE

LEGEND

15 JULY 1978
29 FEB. 1980
11 NOV. 1980
31 MAY 1982



EAST MONOLITH PROFILE

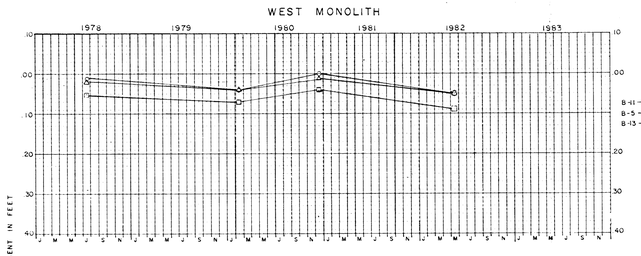
LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

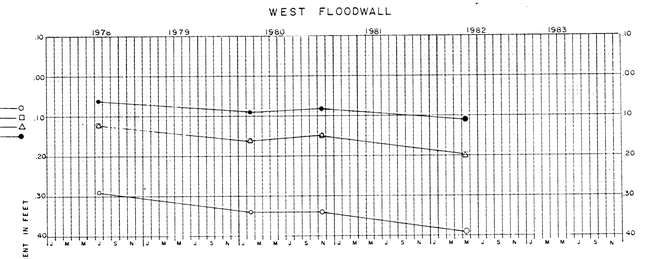
SETTLEMENT REFERENCE MARKS
PLAN AND PROFILE

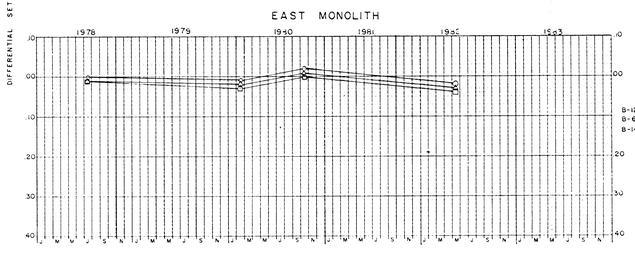
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

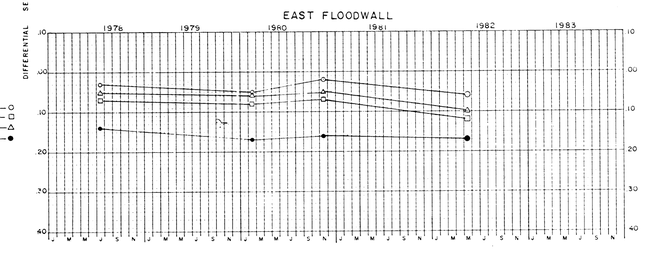
FILE NO. N-4-26857

PLATE I-9









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

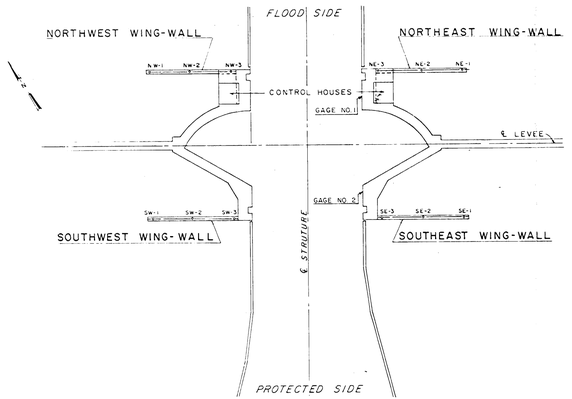
LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

SETTLEMENT REFERENCE MARKS DIFFERENTIAL SETTLEMENT CHART

U S ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

FILE NO. H-4-26857

PLATE I-9



PLAN
SCALE IN FEET
20 0 20 40

SETTLEMENT REFERENCE MARKS

NO OF REFERENCE MARK / INITIAL DATE	NW-1	NW-2	NW-3	NE-1	NE-2	NE-3	SW-1	SW-2	SW-3	SE-1	SE-2	SE-3	TEMP	GAGE 1	GAGE 2	B.M	ELEV
	3-29-78	3-29-78	3-29-78	3-29-78	3-29-78	3-29-78	3-29-78	3-29-78	3-29-78	3-29-78	3-29-78	3-29-78					
ORIGINAL READINGS	5.02	5.17	5.32	4.83	5.00	5.23	5.02	5.12	5.26	4.86	4.99	5.32	61°	0.4	0.3	88.2	6.279
29 FEB 1980	4.87	5.04	5.18	4.68	4.86	5.11	4.84	5.06	5.16	4.71	4.85	5.21	58°	-0.3	0.1	88.2	6.279
11 NOV 1980	4.86	5.02	5.22	4.67	4.84	5.13	4.86	4.98	5.13	4.70	4.85	5.19	69°	1.5	1.4	88.2	6.278
31 MAY 1982	4.81	4.99	5.16	4.62	4.80	5.07	4.81	4.84	5.09	4.66	4.80	5.17	85°	1.8	1.9	88.2	6.281

DATE OF OBSERVATIONS

LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

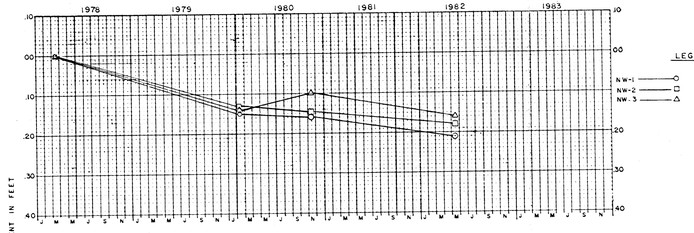
WING-WALL
SETTLEMENT REFERENCE MARKS
PLAN AND TABULATION

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

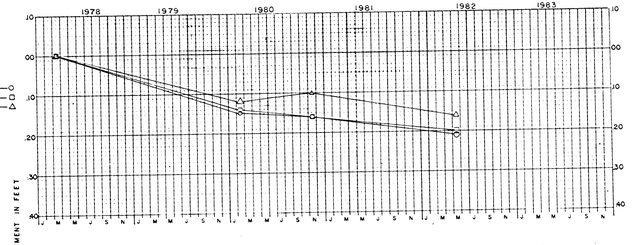
FILE NO. H-4-26857

PLATE I-5

NORTHWEST WING-WALL



NORTHEAST WING-WALL

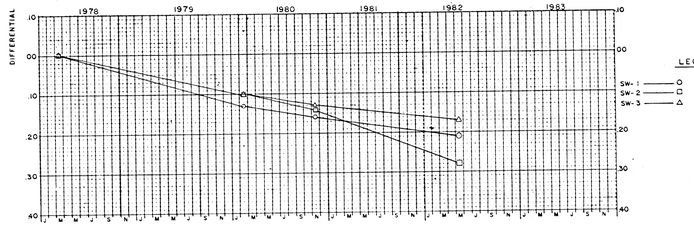


DIFFERENTIAL SETTLEMENT IN FEET

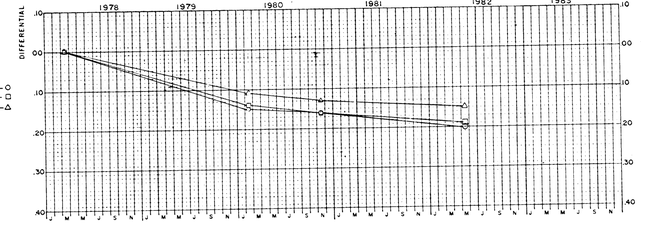
LEGEND

NW-1 ——○	NE-1 ——○
NW-2 ——□	NE-2 ——□
NW-3 ——△	NE-3 ——△

SOUTHWEST WING-WALL



SOUTHEAST WING-WALL



DIFFERENTIAL SETTLEMENT IN FEET

LEGEND

SW-1 ——○	SE-1 ——○
SW-2 ——□	SE-2 ——□
SW-3 ——△	SE-3 ——△

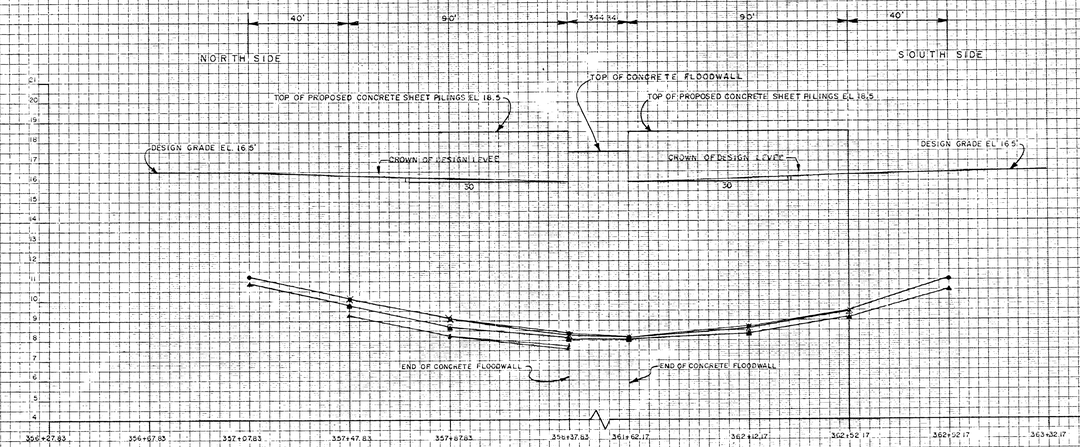
NOTE:
For location and tabulation of settlement reference marks see plate

LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION
WING-WALL
SETTLEMENT REFERENCE MARKS
DIFFERENTIAL SETTLEMENT CHART

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

FILE NO. H-4-26857

PLATE I-6



NOTE: SOUTH SIDE PLUGS COVER BY LEVEE CONSTRUCTION INDEXES.

CROWN OF LEVEE	07/14/78	●	●	●	
CROWN OF LEVEE	07/14/78	X	X	X	(4' OFFSET)
CROWN OF LEVEE	03/03/80	▲	▲	▲	
CROWN OF LEVEE	03/03/80	□	□	□	(4' OFFSET)
CROWN OF LEVEE	11/11/80	1	1	1	
CROWN OF LEVEE	11/11/80	2	2	2	(4' OFFSET)
CROWN OF LEVEE	05/31/82	3	3	3	
CROWN OF LEVEE	05/31/82	4	4	4	(4' OFFSET)

NOTE: THERE IS NO CONCRETE SHEET PILING AT BAYOU BIENVENUE AT PRESENT

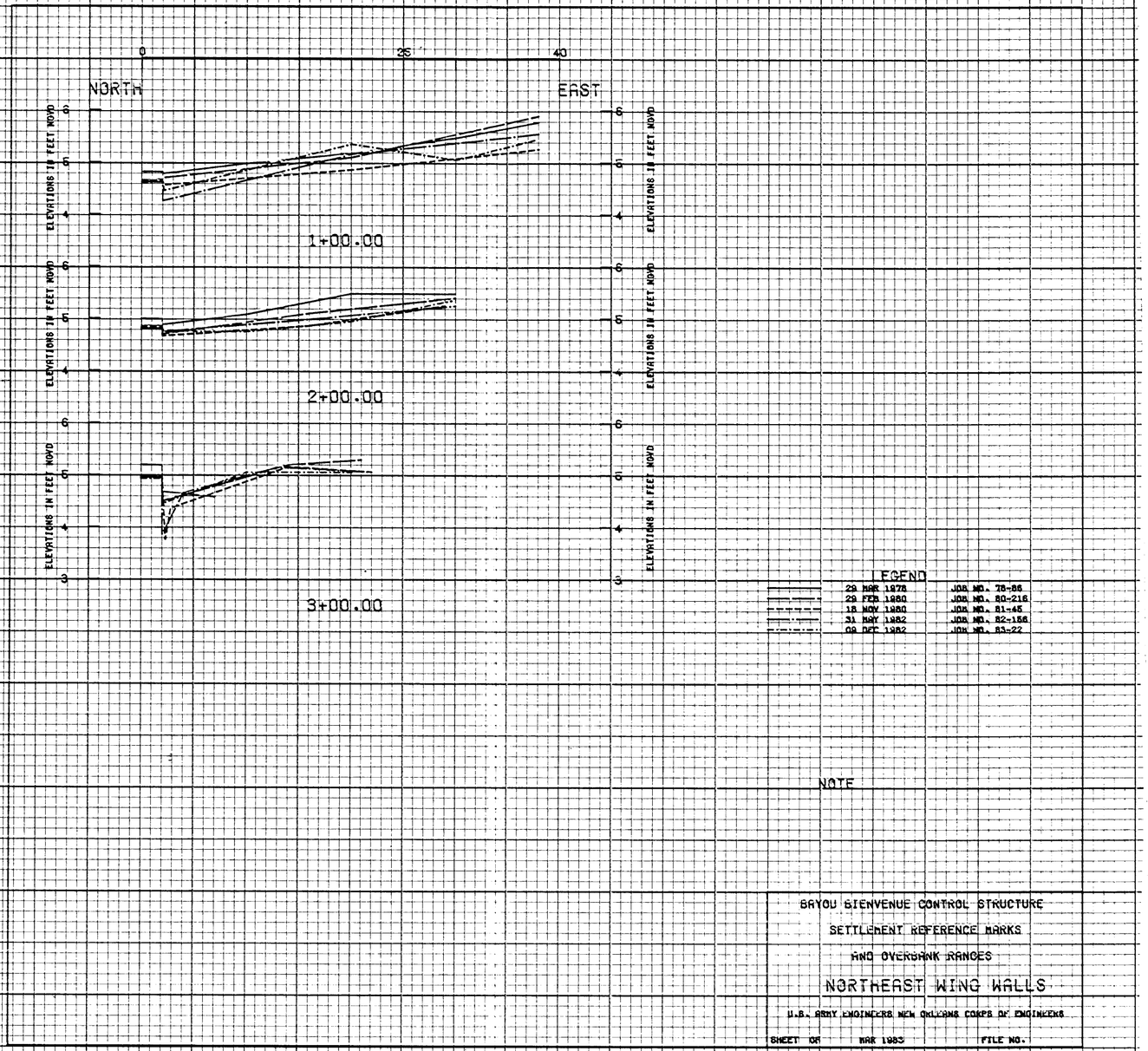
BAYOU BIENVENUE CONTROL STRUCTURE

SETTLEMENT - LEVEES

STATION 357+07.83 THRU 362+92.17

MAY 30, 1980

PLATE I-7



NOTE

BAYOU BIENVENUE CONTROL STRUCTURE

SETTLEMENT REFERENCE MARKS

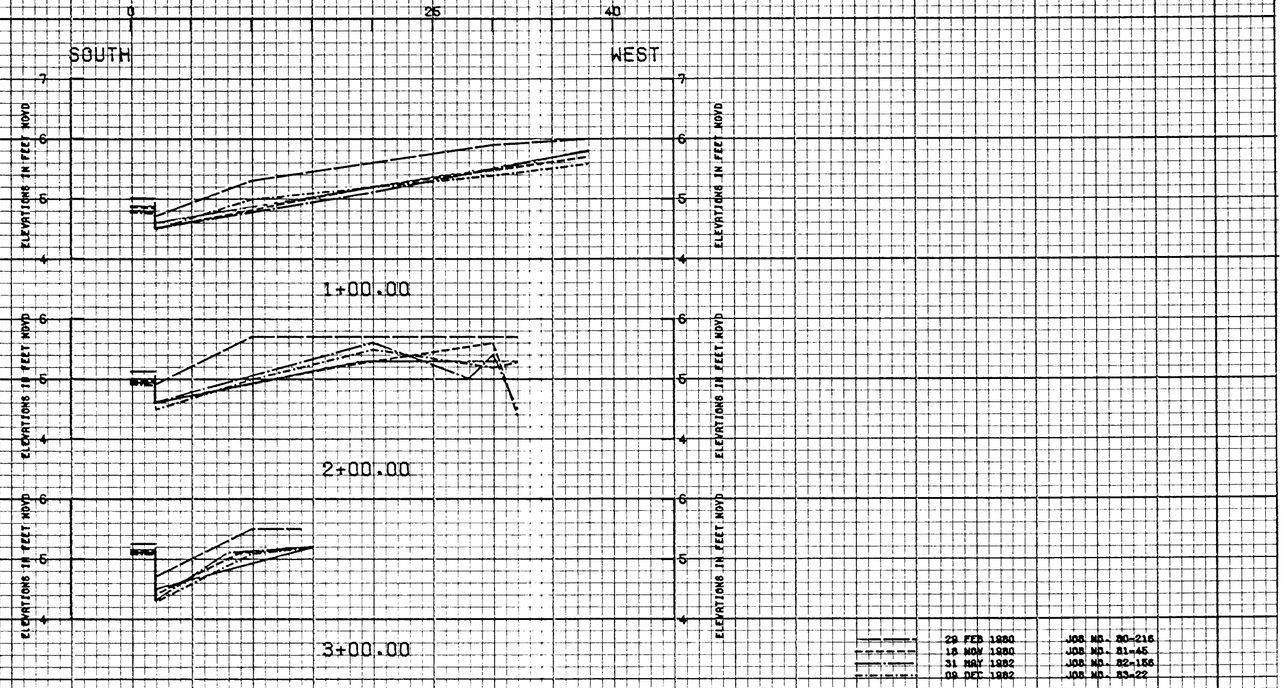
AND OVERBANK RANGES

NORTHEAST WING WALLS

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

SHEET OF MAR 1983 FILE NO.

PLATE I-8



NOTE

BAYOU BIENVENUE CONTROL STRUCTURE

SETTLEMENT REFERENCE MARKS

AND OVERBANK RANGES

SOUTHWEST WING WALLS

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

SHEET OF MAR 1983 FILE NO.

PLATE I-9

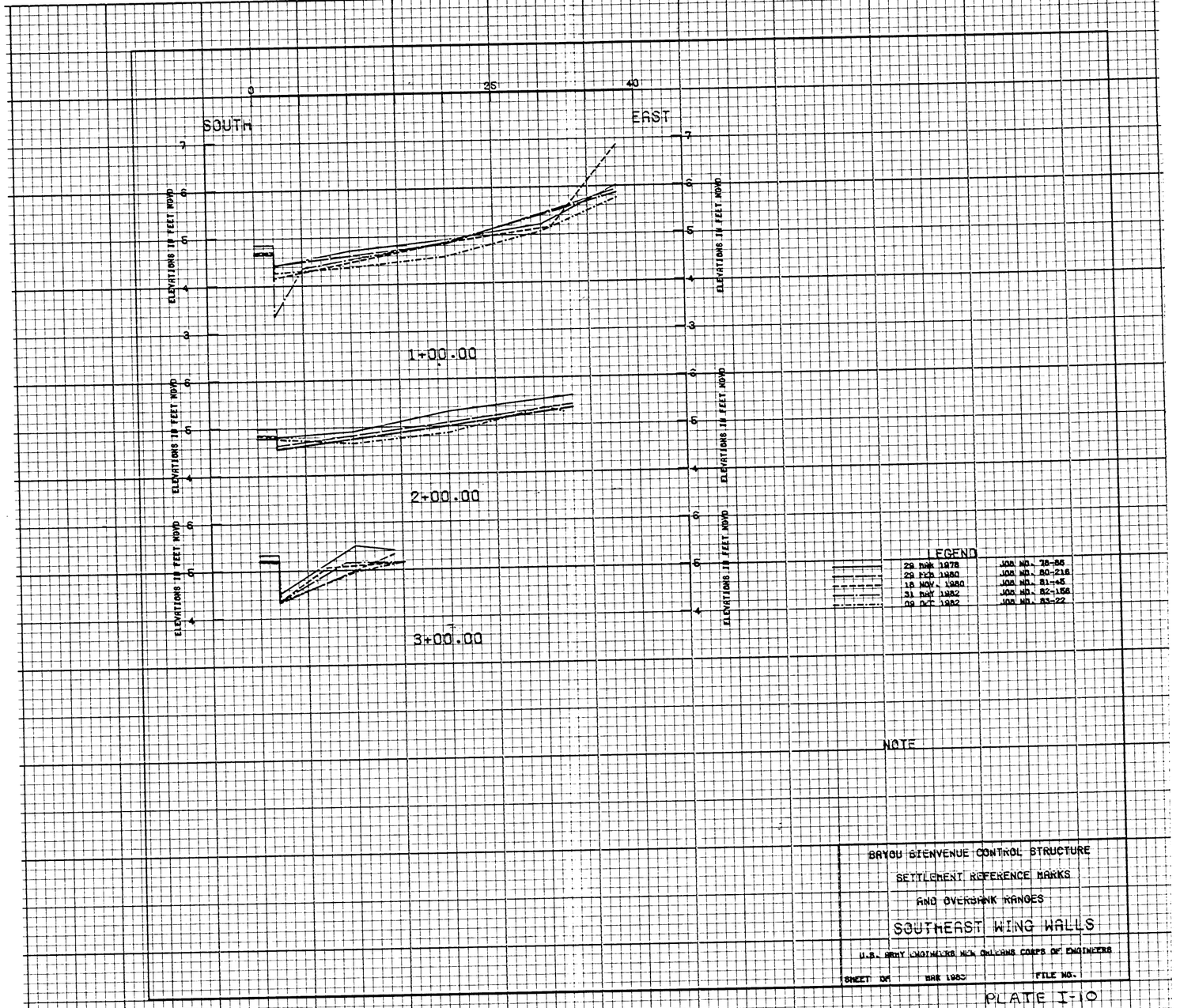
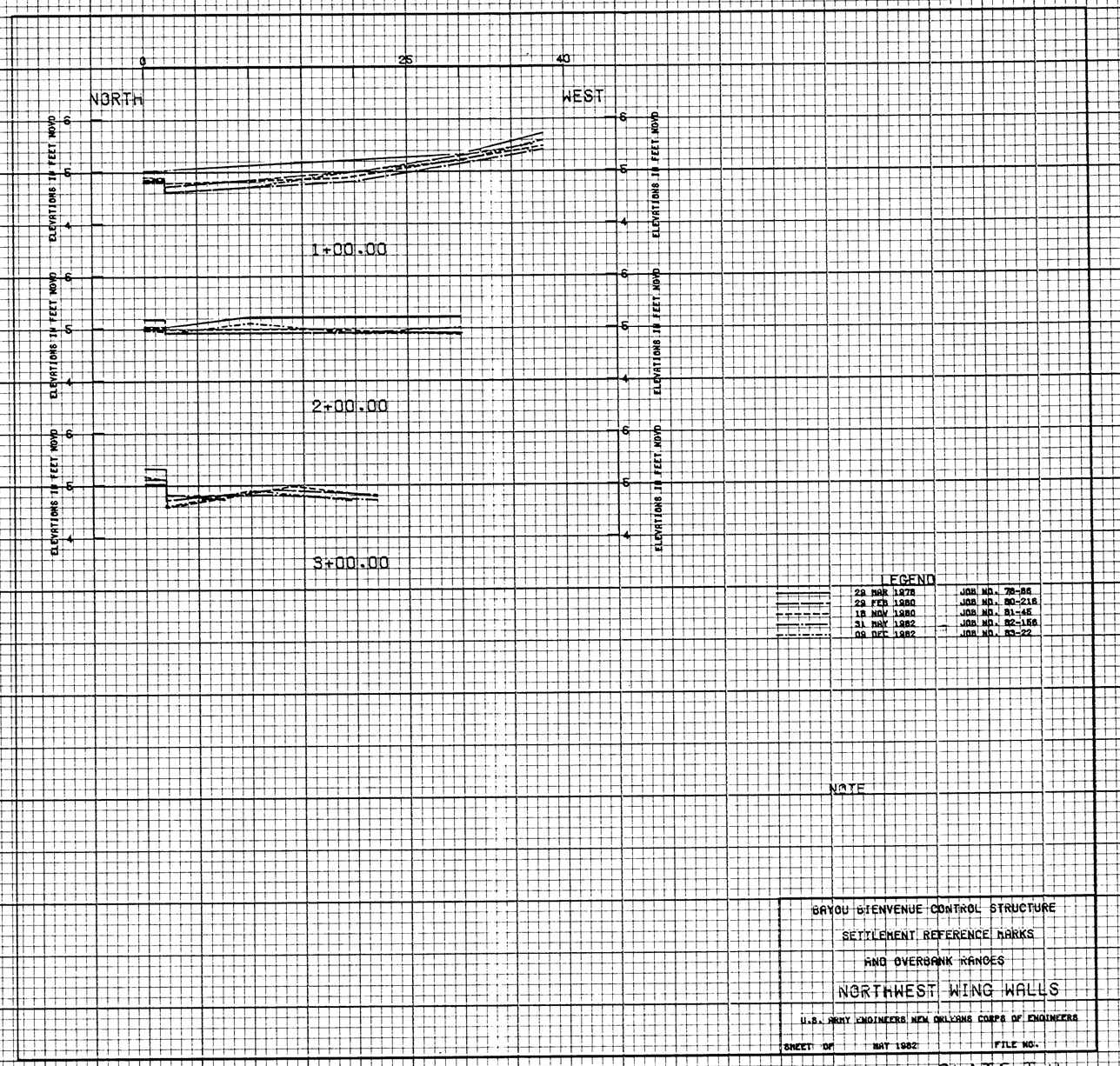

0
35
40
SOUTH
EAST
ELEVATIONS IN FEET NGVD
1+00.00
2+00.00
3+00.00
LEGEND
29 MAR 1978
29 NOV 1980
18 NOV 1980
31 MAY 1982
09 OCT 1982
JOB NO. 78-56
JOB NO. 80-216
JOB NO. 81-45
JOB NO. 82-156
JOB NO. 83-22
NOTE
BAYOU BIENVENUE CONTROL STRUCTURE
SETTLEMENT REFERENCE MARKS
AND OVERBANK RANGES
SOUTHEAST WING WALLS
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF
MAR 1983
FILE NO.

PLATE I-10



NOTE

BAYOU BIENVENUE CONTROL STRUCTURE

SETTLEMENT REFERENCE MARKS

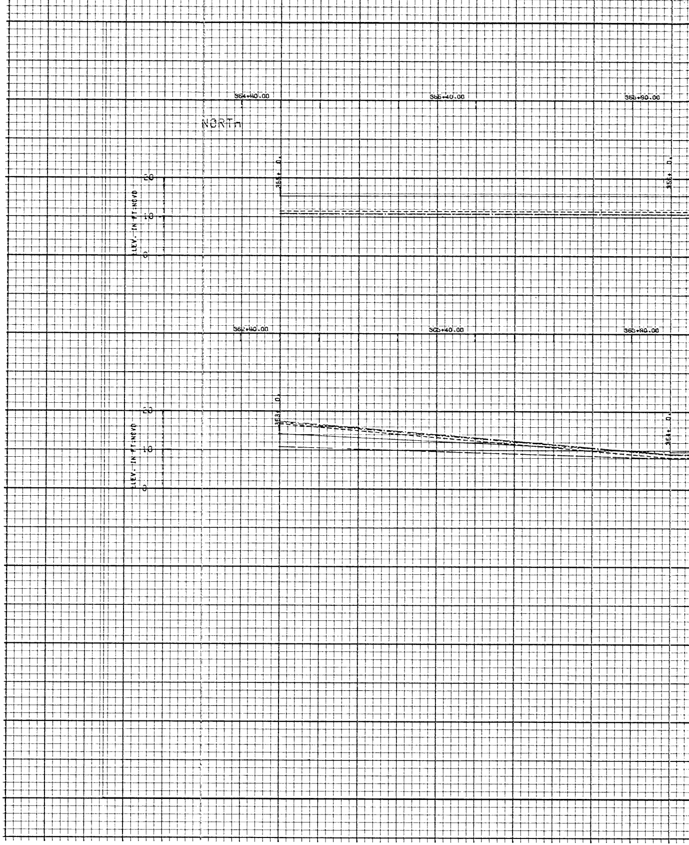
AND OVERBANK RANGES

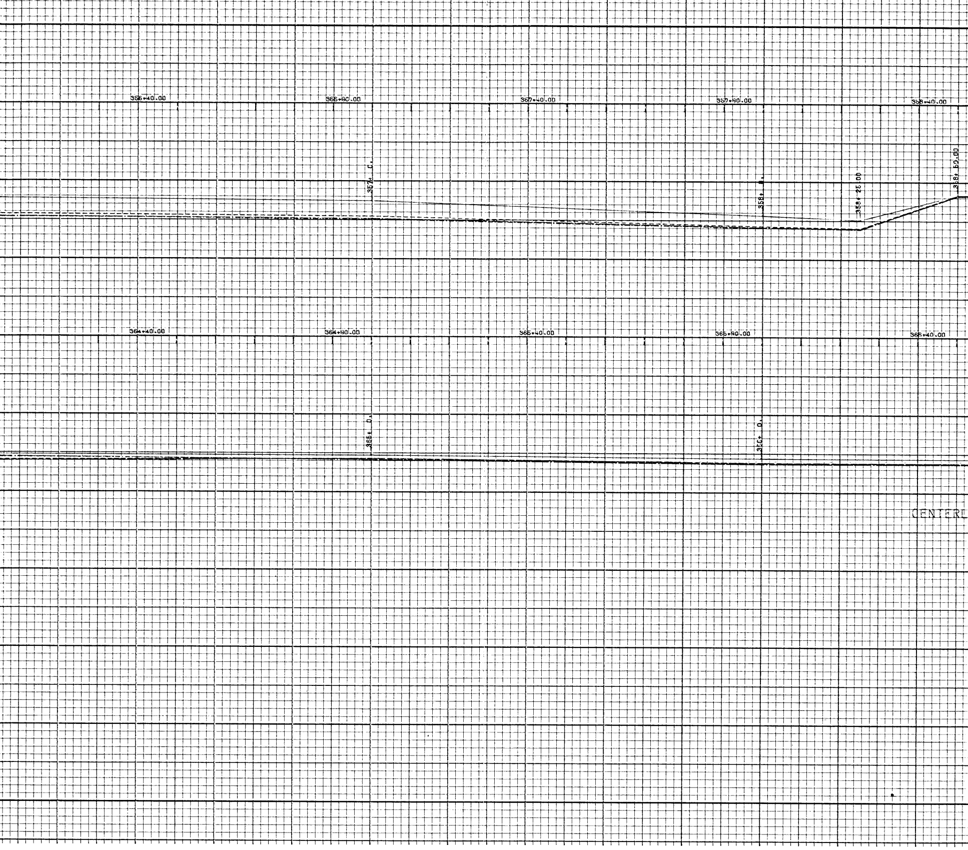
NORTHWEST WING WALLS

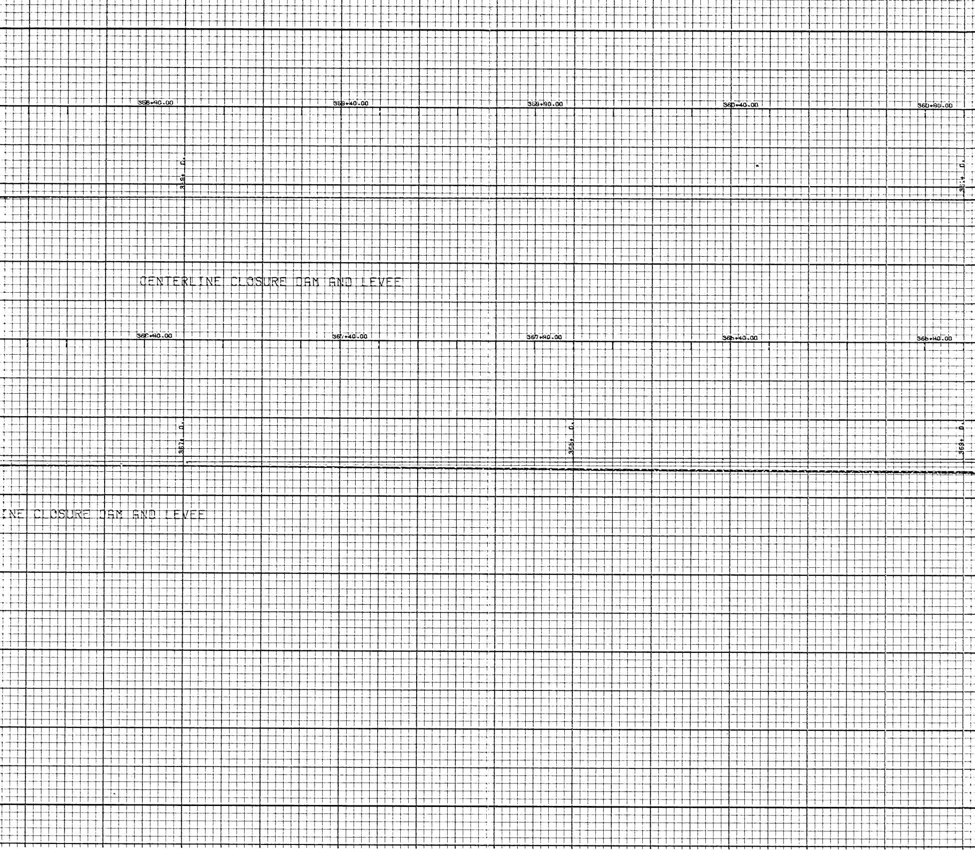
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

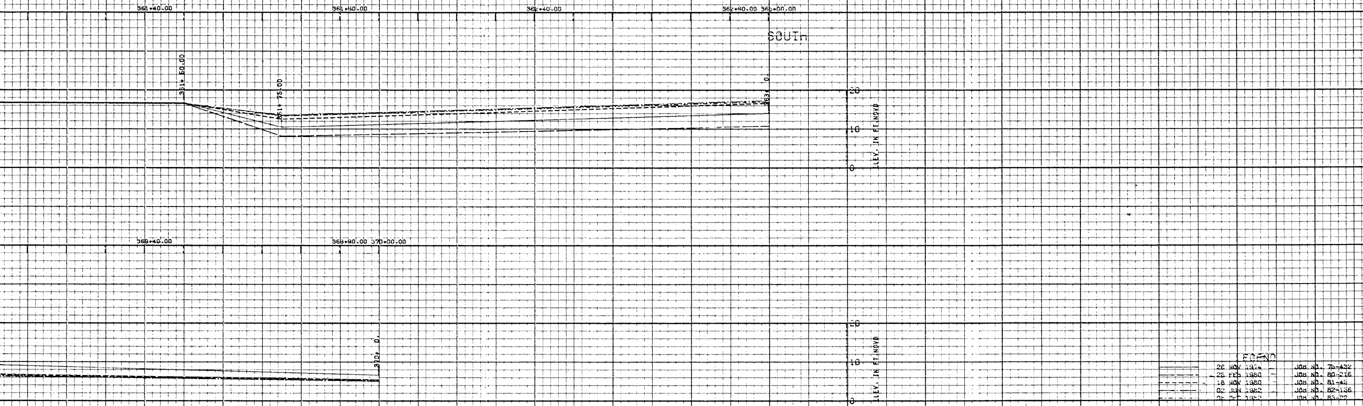
SHEET OF MAY 1982 FILE NO.

PLATE I-11




356+40.00
356+90.00
357+40.00
357+90.00
358+40.00
357+ 0.
358+ 0.
358+ 25.00
358+ 50.00
364+40.00
364+90.00
365+40.00
365+90.00
366+40.00
365+ 0.
366+ 0.
CENTERL





NOTE

LAKE PONT. LA & VIC

CHALMETTE AREA

BAYOU BIENVENUE CLOSURE DAM

PROFILE SURVEY (74-83)

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

SHEET OF APRIL 1983 FILE NO.

PLATE I-12

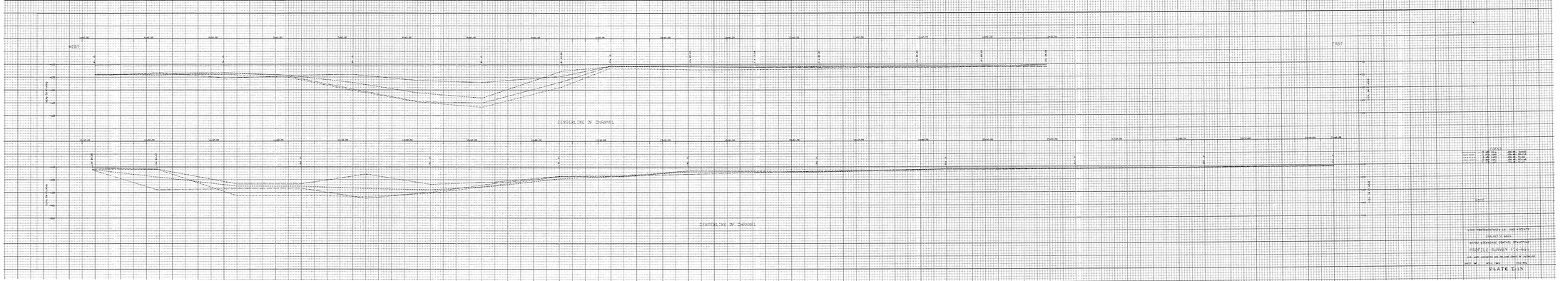
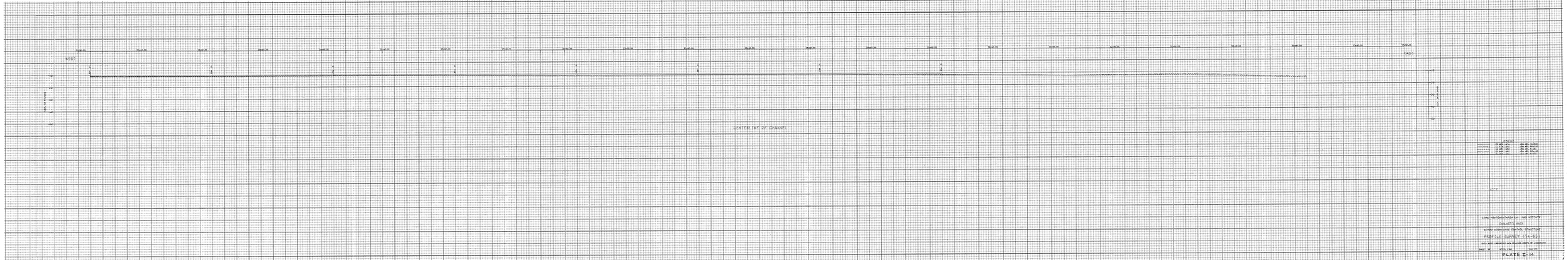
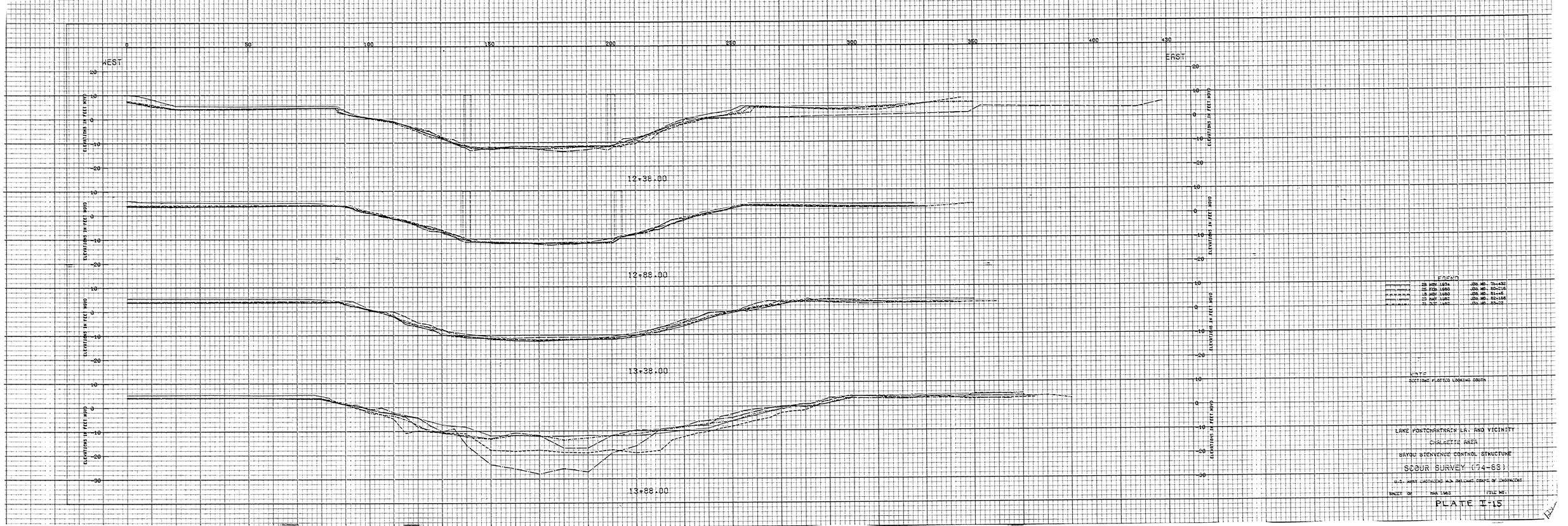


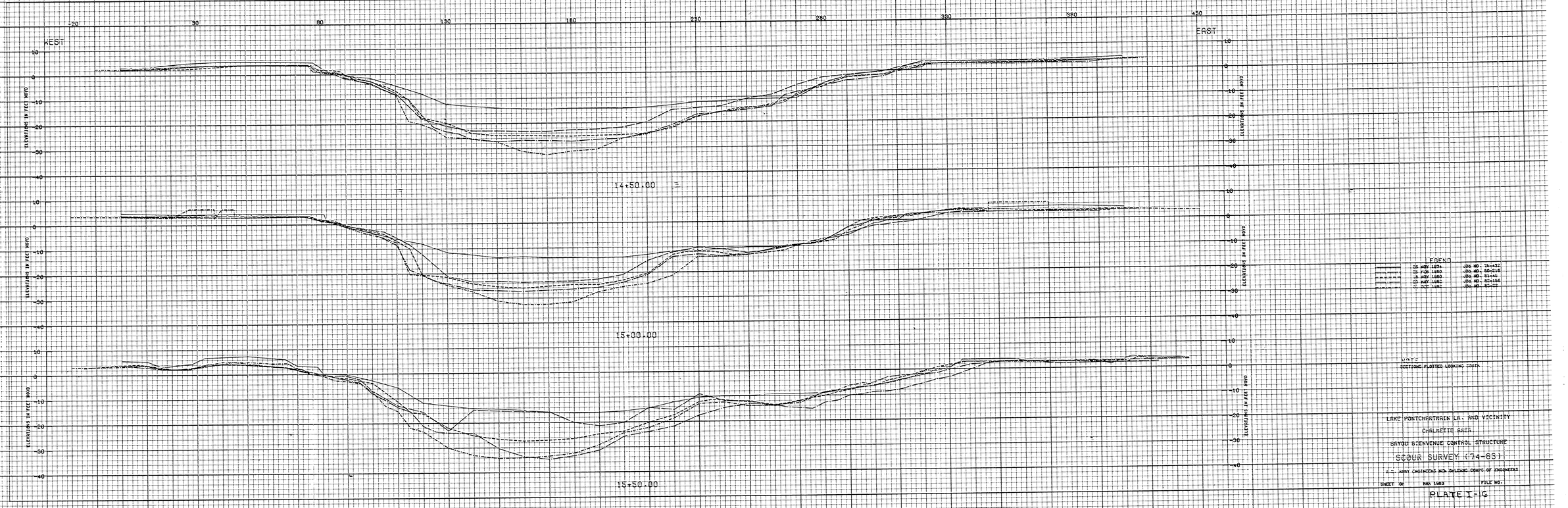
PLATE 2-15



SCALE
LONG CONTINENTAL LAB. AND SECURITY
COMMUNITY BASIS
UNITED STATES DEPARTMENT OF COMMERCE
PROFILE SURVEY 1-14-65
PLATE I-14



WEST
EAST
0
50
100
150
200
250
300
350
400
430
ELEVATIONS IN FEET NGVD
12+38.00
12+88.00
13+38.00
13+88.00
LEGEND
28 NOV 1974 JOB NO. 75-432
25 FEB 1980 JOB NO. 80-216
18 NOV 1980 JOB NO. 81-45
25 MAY 1982 JOB NO. 82-156
01 DEC 1982 JOB NO. 83-22
NOTE
SECTIONS PLOTTED LOOKING SOUTH
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (74-83)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MAR 1983 FILE NO.
PLATE I-15



LAKE PONTCHARTRAIN LA. AND VICINITY

CHALMETTE AREA

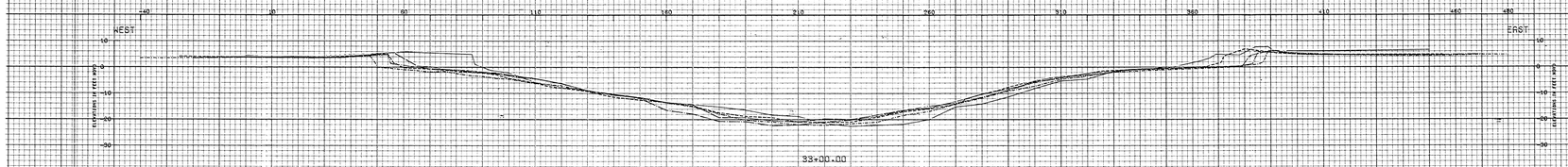
BAYOU BIENVENUE CONTROL STRUCTURE

SCOUR SURVEY (74-63)

U.S. ARMY ENGINEERS MOB ORLEANS CORPS OF ENGINEERS

SHEET OF MAR 1983 FILE NO.

PLATE I-6

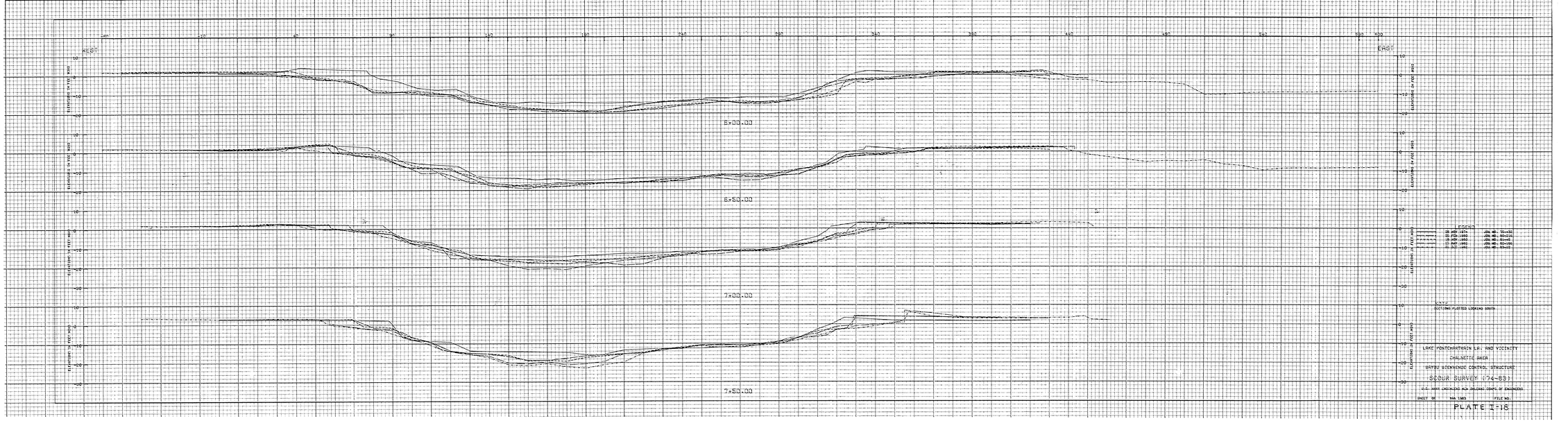


LEGEND

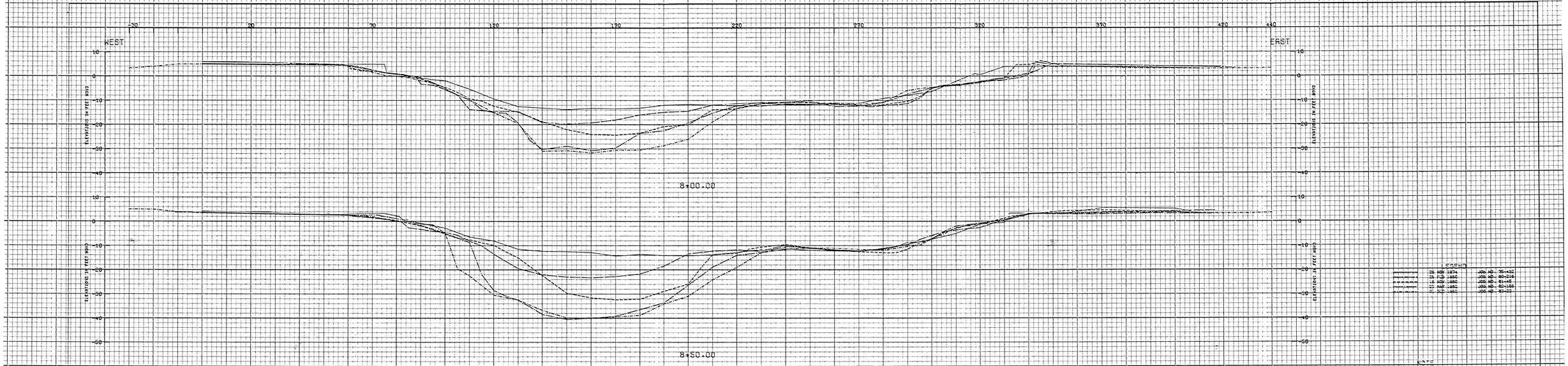
	08 NOV 1974	JOB NO. 75-430
	09 FEB 1980	JOB NO. 80-014
	18 NOV 1980	JOB NO. 81-049
	23 NOV 1982	JOB NO. 82-156
	01 DEC 1982	JOB NO. 83-022

NOTE
SECTIONS PLOTTED LOOKING SOUTH

LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (74-83)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MAR 1983 FILE NO.
PLATE I-17

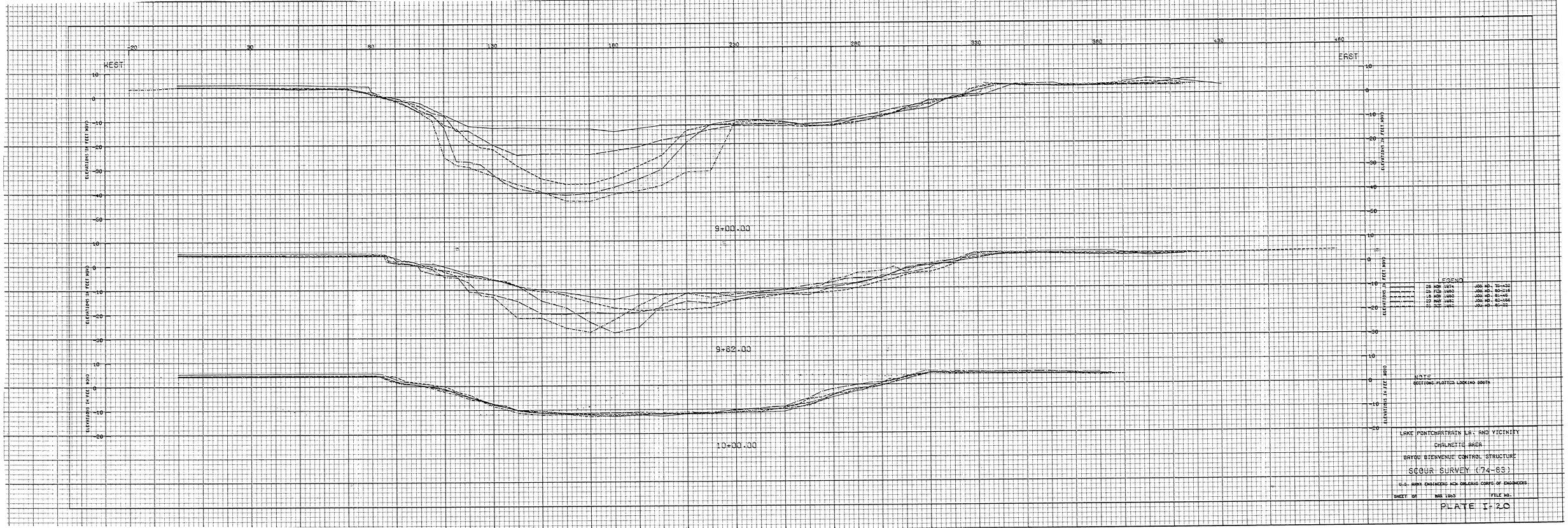


WEST
EAST
ELEVATIONS IN FEET NGVD
6+00.00
6+50.00
7+00.00
7+50.00
LEGEND
28 NOV 1974 JOB NO. 75-430
28 FEB 1980 JOB NO. 80-114
18 NOV 1980 JOB NO. 81-45
22 MAY 1982 JOB NO. 82-154
22 OCT 1982 JOB NO. 83-25
NOTE
SECTIONS PLOTTED LOOKING SOUTH
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (74-83)
U.S. ARMY ENGINEERS NEW ORLEANS DISTRICT OF ENGINEERS
SHEET 38 MAR 1983 FILE NO.
PLATE I-18



LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (174-63)
U.S. ARMY ENGINEER N.O. DISTRICT CORPS OF ENGINEERS
SHEET OF DRAWING NO. FILE NO.

PLATE I-19



LAKE PONTCHARTRAIN LA. AND VICINITY

CHALMETTE AREA

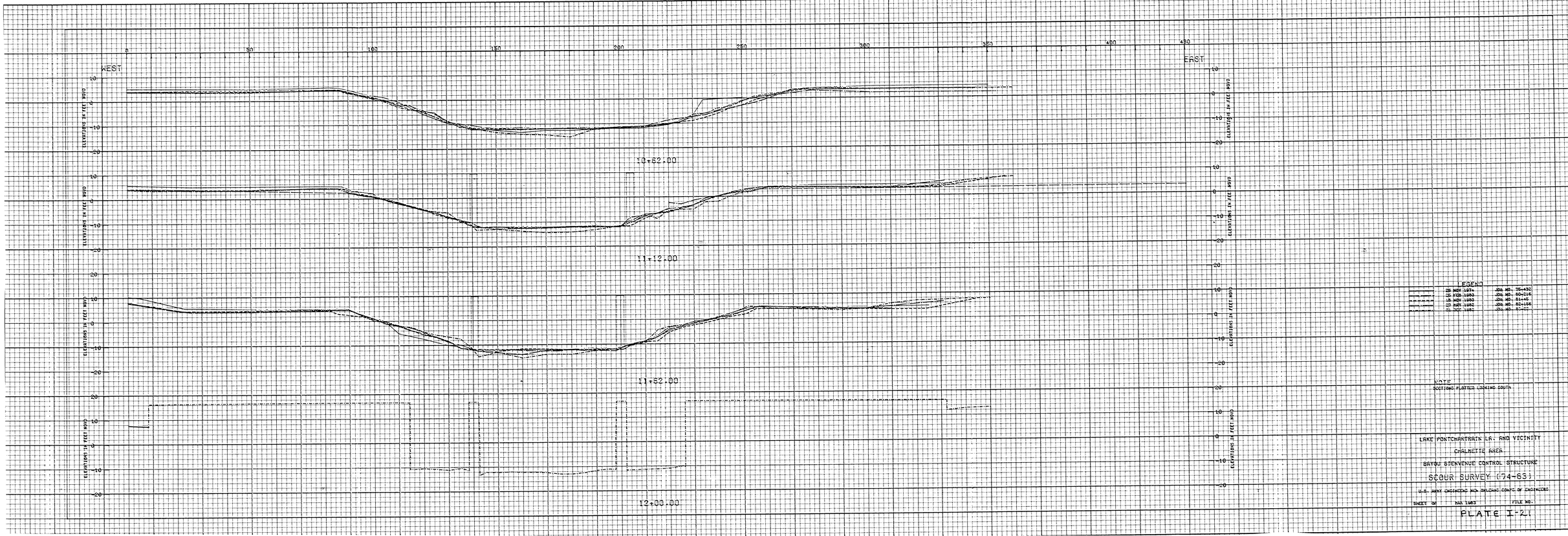
BAYOU BIENVENUE CONTROL STRUCTURE

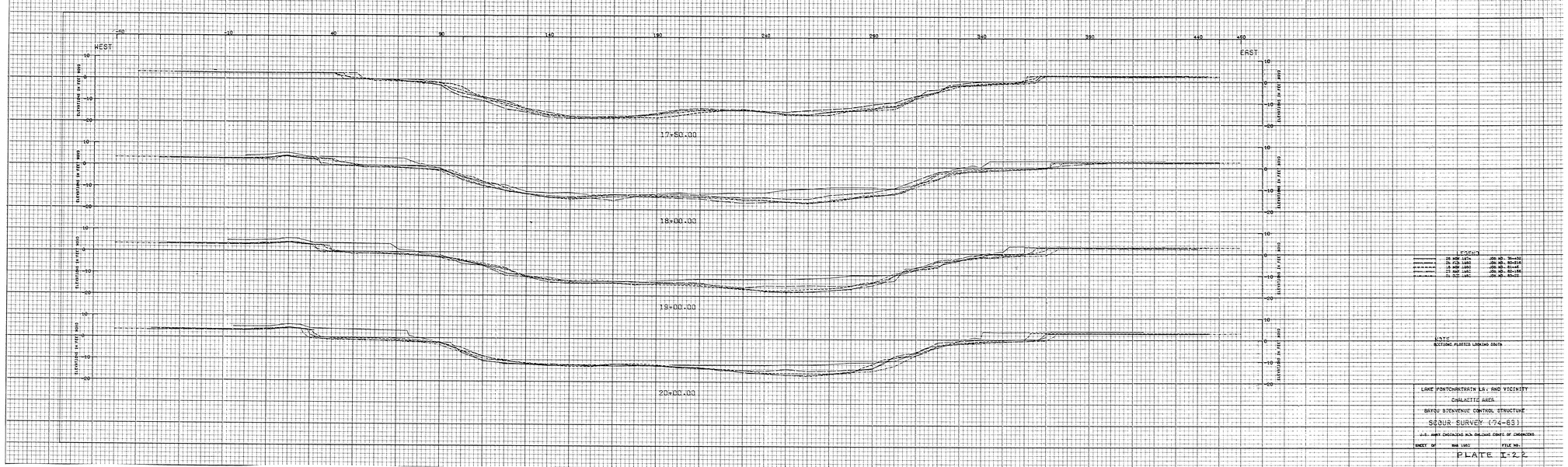
SCOUR SURVEY (74-83)

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

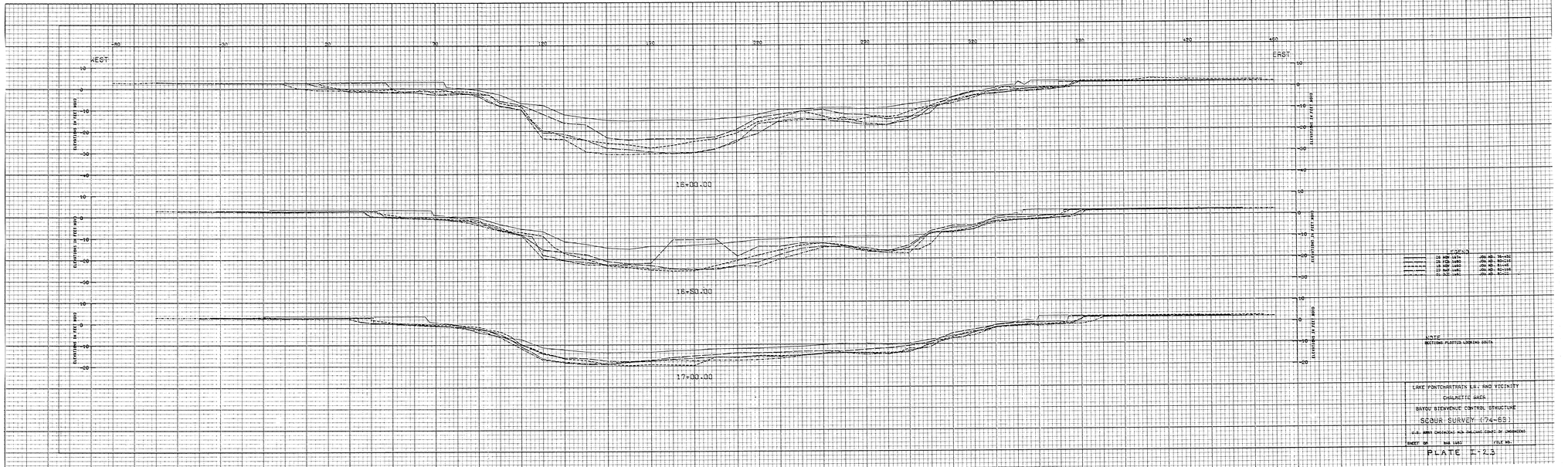
SHEET OF DES 1983 FILE NO.

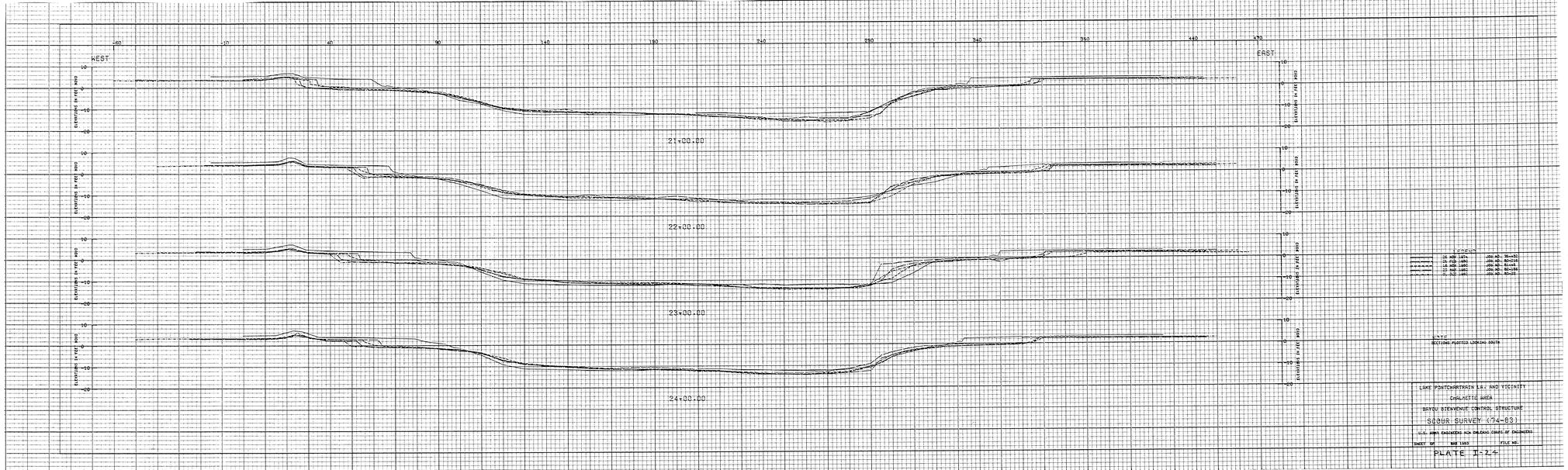
PLATE I-20


WEST
EAST
0
50
100
150
200
250
300
350
400
450
ELEVATIONS IN FEET NGVD
10
0
-10
-20
10+32.00
11+12.00
11+52.00
12+00.00
LEGEND
28 NOV 1979
24 FEB 1983
15 NOV 1983
27 MAY 1982
01 DEC 1982
JOB NO. 78-432
JOB NO. 80-216
JOB NO. 81-15
JOB NO. 82-156
JOB NO. 83-
NOTE
SECTIONS PLOTTED LOOKING SOUTH
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALKITE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (74-63)
U.S. ARMY ENGINEER NEW ORLEANS DISTRICT CORPS OF ENGINEERS
SHEET OF
MAR 1983
FILE NO.
PLATE I-21

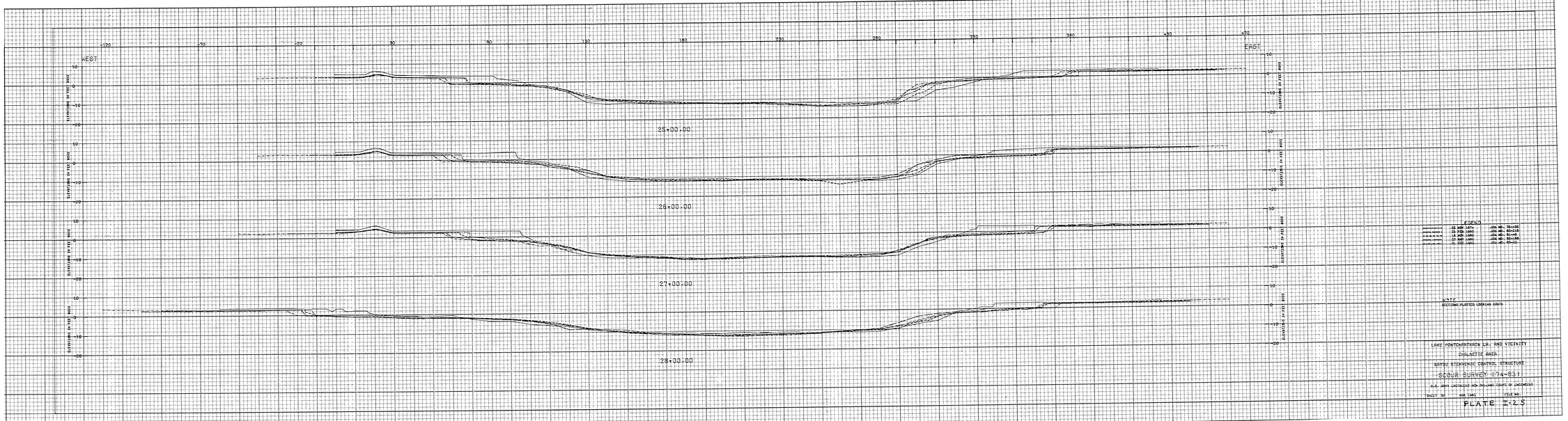


-60
-10
40
90
140
190
240
290
340
390
440
450
WEST
EAST
ELEVATIONS IN FEET NGVD
17+50.00
18+00.00
19+00.00
20+00.00
LEGEND
NOTE
SECTIONS PLOTTED LOOKING SOUTH
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (74-83)
U.S. ARMY ENGINEERS NEW ORLEANS DISTRICT OF ENGINEERS
SHEET OF
FILE NO.
PLATE I-22

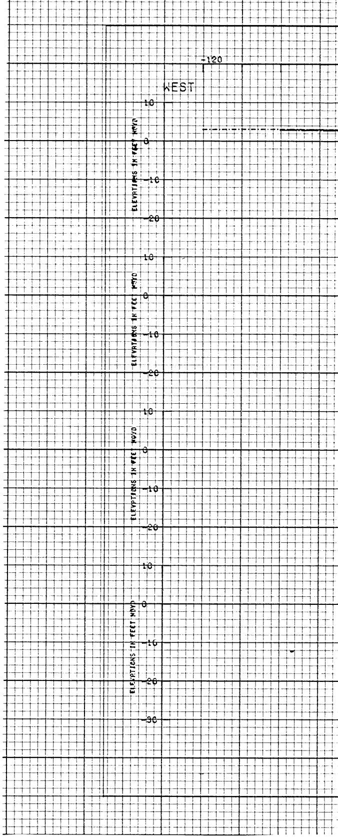

WEST
EAST
ELEVATIONS IN FEET NGVD
16+00.00
16+50.00
17+00.00
LEGEND
NOTE
SECTIONS PLOTTED LOOKING SOUTH
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (74-83)
U.S. ARMY ENGINEERS NEW ORLEANS DIST. OF ENGINEERS
SHEET OF
DAB 1983
FILE NO.
PLATE I-23

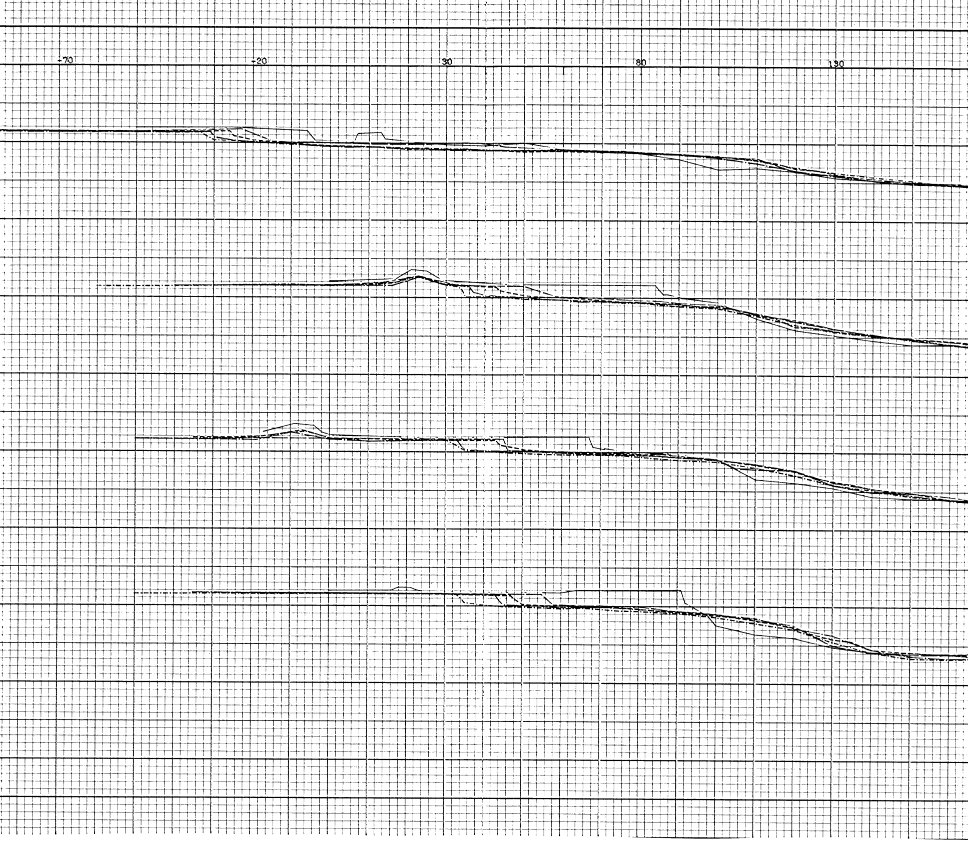


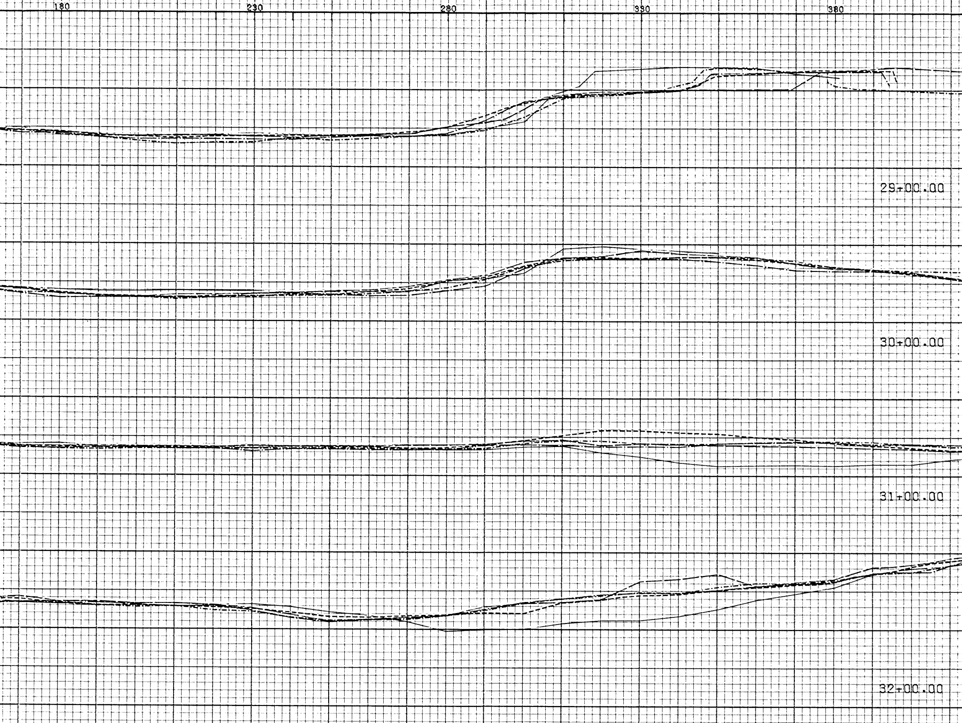
WEST
EAST
-60
-10
40
90
140
190
240
290
340
390
440
470
ELEVATIONS IN FEET NGVD
21+00.00
22+00.00
23+00.00
24+00.00
LEGEND
NOTE
SECTIONS PLOTTED LOOKING SOUTH
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (74-83)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF
MAR 1983
FILE NO.
PLATE I-24

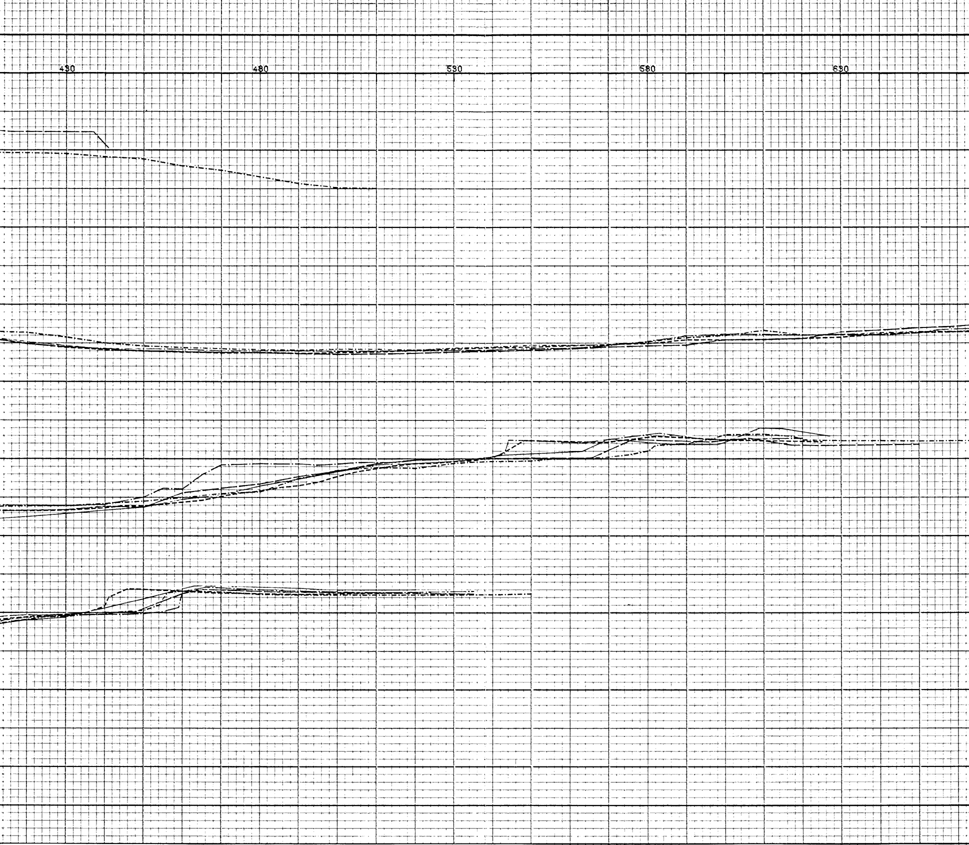


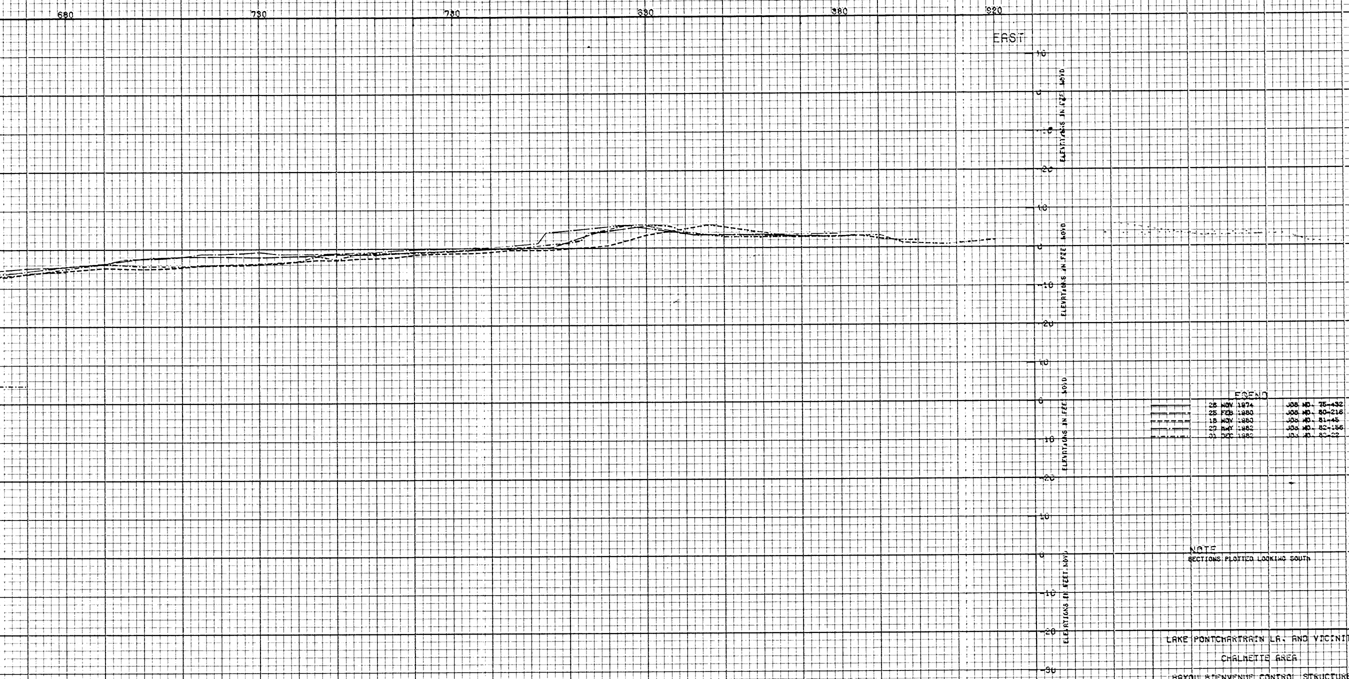
WEST
EAST
-120
-70
-20
30
80
130
180
230
280
330
380
430
470
ELEVATIONS IN FEET NGVD
10
0
-10
-20
25+00.00
26+00.00
27+00.00
28+00.00
LEGEND
25 NOV 1974 JOB NO. 75-432
25 FEB 1980 JOB NO. 80-116
15 NOV 1980 JOB NO. 81-45
13 MAR 1982 JOB NO. 82-156
31 DEC 1982 JOB NO. 83-32
NOTE
SECTIONS PLOTTED LOOKING SOUTH
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (74-83)
U.S. ARMY ENGINEERS NEW ORLEANS DISTRICT OF ENGINEERS
SHEET 20 MAR 1983 FILE NO.
PLATE I-2.5







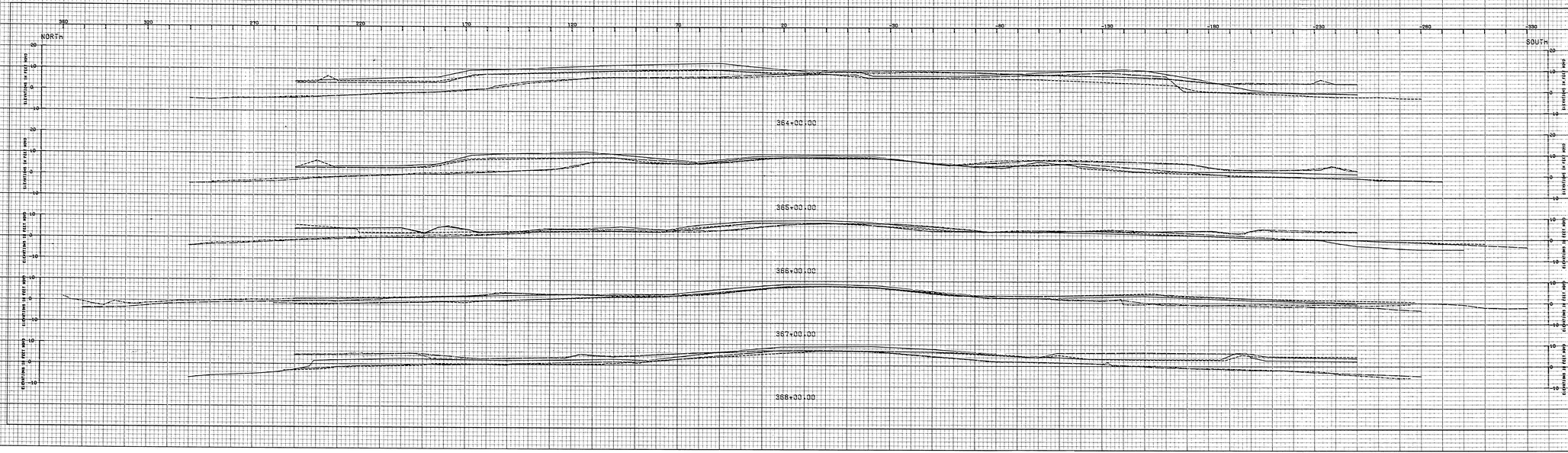




NOTE
SECTIONS PLOTTED LOOKING SOUTH

LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (74-83)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MAR 1983 FILE NO.

PLATE I-26



LEGEND

	28 NOV 1974	JOB NO. 75-432
	25 FEB 1983	JOB NO. 80-218
	18 NOV 1982	JOB NO. 81-46
	02 JUNE 1982	JOB NO. 82-03
	04 OCT 1982	JOB NO. 83-27

NOTE
RANGES PLOTTED LOOKING NORTH

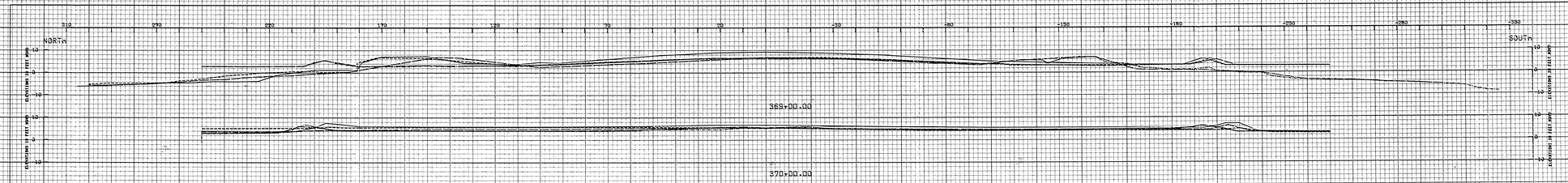
BAYOU BIENVENUE CONTROL STRUCTURE
HURRICANE PROTECTION LEVEE
AND CLOSURE DAM

CROSS SECTIONS

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

SHEET OF MARCH 1983 FILE NO.

PLATE I-27



LEGEND

	28 MAY 1974	JOB NO. 75-432
	15 FEB 1980	JOB NO. 80-218
	15 MAY 1980	JOB NO. 81-48
	02 JUN 1980	JOB NO. 82-03
	04 JUL 1980	JOB NO. 83-02

NOTE

HANDLE PLOTTED LOOKING NORTH

BAYOU STEWARDS CONTROL STRUCTURE

HURRICANE PROTECTION LEVEE

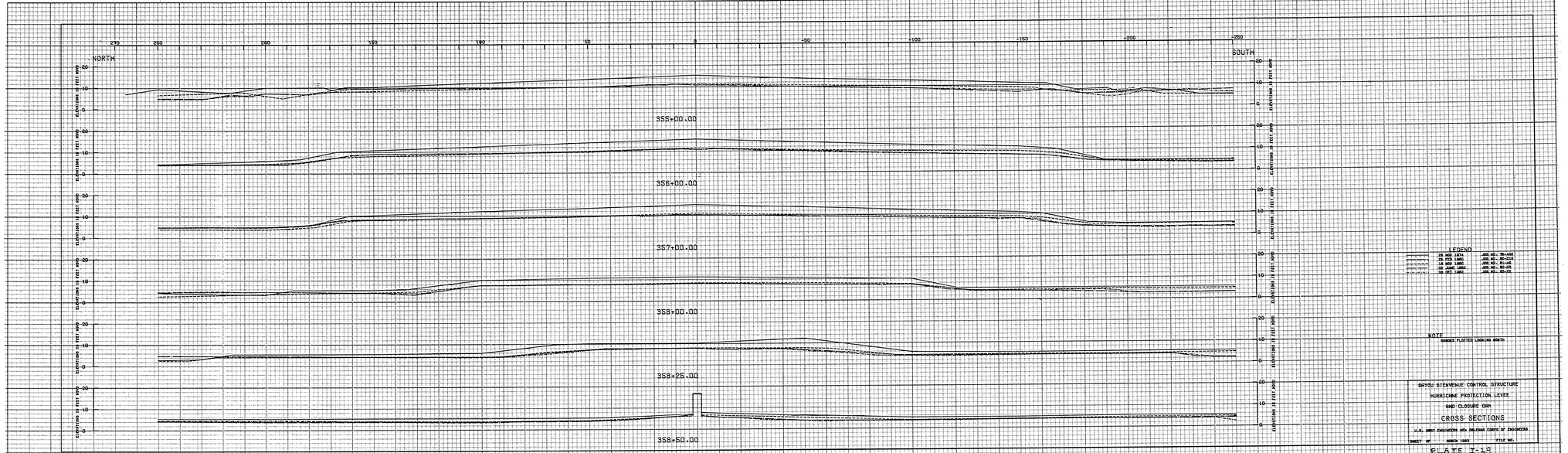
AND CLOSURE DAM

CROSS SECTIONS

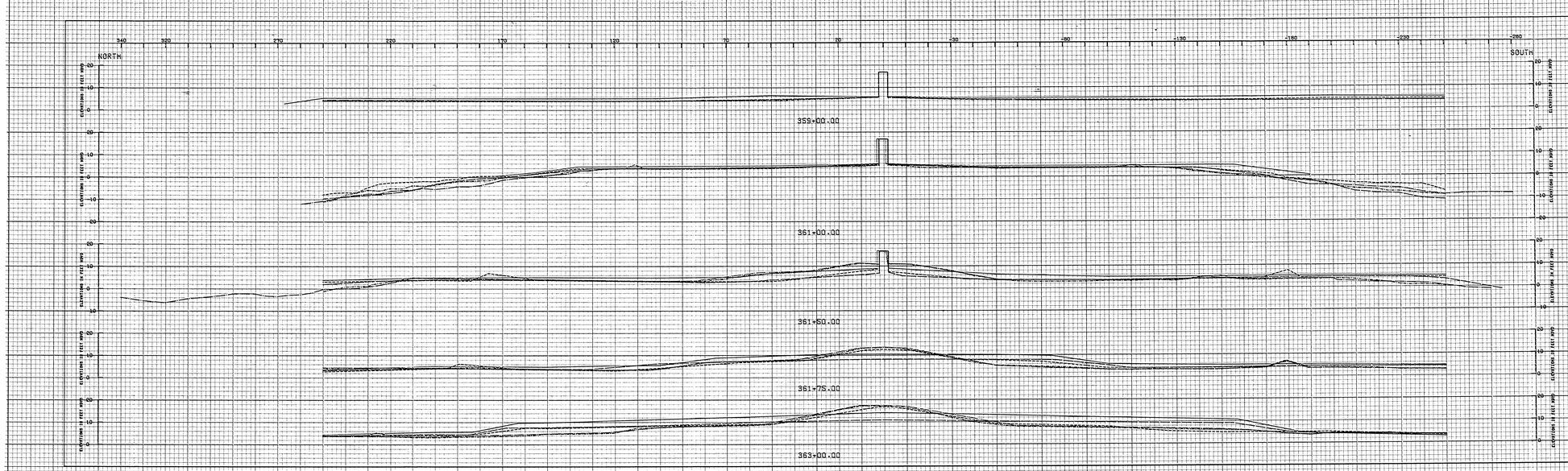
U.S. ARMY CORPS OF ENGINEERS

SHEET 34 MARCH 1980 FILE NO.

PLATE I-28



NORTH
SOUTH
270
250
200
150
100
50
0
-50
-100
-150
-200
-250
ELEVATIONS IN FEET NGVD
20
10
0
3S5+00.00
3S6+00.00
3S7+00.00
3S8+00.00
3S8+25.00
3S8+50.00
LEGEND
28 NOV 1974
25 FEB 1980
18 NOV 1980
02 JUNE 1982
06 OCT 1982
JOB NO. 76-432
JOB NO. 80-314
JOB NO. 81-45
JOB NO. 82-03
JOB NO. 83-22
NOTE
BOUNDER PLOTTED LOOKING NORTH
BATCU BIENVENUE CONTROL STRUCTURE
HURRICANE PROTECTION LEVEE
AND CLOSURE DAM
CROSS SECTIONS
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF
MARCH 1983
FILE NO.
PLATE I-29



LEGEND

	28 NOV 1974	JOB NO. 75-432
	28 FEB 1980	JOB NO. 80-216
	18 NOV 1980	JOB NO. 81-48
	22 JUNE 1982	JOB NO. 82-53
	28 OCT 1982	JOB NO. 83-27

NOTE
RANGES PLOTTED LOOKING NORTH

BAYOU BIENVENUE CONTROL STRUCTURE
HURRICANE PROTECTION LEVEE
AND CLOSURE DAM

CROSS SECTIONS

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

SHEET OF MARCH 1983 FILE NO.

PLATE I-30

SECTION V - INSPECTION

5-01 Inspection Team. The inspection of the structure was conducted on 31 March 1983 by the following personnel:

NOD

Johnny B. Drummond	General Engineering Section
Harvey Sims	General Engineering Section
Lynn Tinto	Structural Design Section
Jose Alicea	F&M Branch
Angelx Mislan	H&H Branch
Richard Baldini	Operations Division

LMVD

Charles C. Trahan	GS&M Branch

ORLEANS LEVEE BOARD

Earl Magner, Jr.	Chief Engineer

LOUISIANA OFFICE OF PUBLIC WORKS

Gasper Chifici District Engineer for N. O.

5-02 Orientation. Prior to the inspection, the team members were given a brief orientation of the following features of the structure: hydraulic 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.

STRUCTURAL.

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 are in good condition, no evidence of spalls, pop-outs, weathering, corrosion, honeycomb or cracks.

INCL 3

4. Condition of Horizontal and Vertical Joints. There is minor evidence of separation of expansion joints on the T-walls adjacent to
* the structure and the joint between the west wingwall and structure on the protected side of the structure which also had a void in the backfill. There is vegetation growing into some of these joints that will eventually cause them to separate if not removed, (Photo 1), typical. There is no evidence of slippage or separation of joints on the structure itself.

5. Visual Check of Horizontal and Vertical Alinement of Walls. Good alinement throughout the structure.

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, however, when the gates were in the closed position there was a gap of 3/4" between the gate seals.

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

3. Condition of Paint. Good, only the area of tidal fluctuation is corroded (Photo 2).

4. Corrosion. Corrosion was found in the area of tidal fluctuation on the gates and the plates around the bulkhead recesses. There were barnacles on the skin plate in the area of tidal fluctuation. The corrosion was superficial at the time of this inspection and no plans were discussed

* Revised 30 May 1984

Incl 5'

with the Levee Board to repair it, however, its progress should be noted closely at subsequent inspections in case it should impair the structural integrity of the gates.

C. Guide Walls and Fenders, General Condition of Timber and Connections. Good.

HYDRAULICS AND HYDROLOGY.

A. It appears that the south approach channel is not stabilized. More erosion and scour can be expected in the future. Similar conditions exist along the north approach channel.

B. The erosion along the banks and the missing riprap revetment probably resulted from the wave action that the boats and ships generate. The missing riprap along the banks give the impression that the rocks used are lighter than needed (Photo 3).

* Based on experience, we find that designing this type of channel protection for a 4.0 ft wave results in a satisfactory design. The design gives the following rock gradation:

% Lighter (by weight)	Weight Range (pounds)
100	900 - 2200
50	440 - 930
15	130 - 460

This protection should have a thickness of 3.0 feet. A bedding of 1.0 ft of shell under the rock is recommended.

C. After the 20 Jan 83 high water we analyzed the Corps north and south gage charts and the chart from the levee board gage. The levee board gage is the gage used to determine when to close the structure. The gage records indicate that when the decision was made to close the gate at about 10:30 a.m. the levee board gage was at 4.4 ft NGVD; but our gage further out into the MRGO was at 7 ft. The inside gage was recording a stage of 3.8 ft. It seems

* Revised 12 April 1984

apparent from this occurrence that the levee board gage is located too close to the structure to accurately predict the stage in the MRGO and, therefore, the true head loss across the structure. Velocities under these high head conditions could be considerably larger than those used in the structure design. Scouring problems could easily result from this situation. Additional scour can be expected as a result of flow turbulence due to the direction of the flow going through the structure and the direction of the waves generated by the ships.

D. A tendency of Bayou Bienvenue to meander along the south approach channel was noticed. This condition is exposing the east bank of the channel to additional erosion which can be expected because of the alinement of the channel and structure. This could affect the east embankment of the structure in the future. The meandering appears to be affecting the flow distribution along the channel, increasing flow turbulence and scour.

FOUNDATION AND MATERIALS.

The scour survey of 1982 for the north approach channel, sta. 8+50 to sta. 9+00, shows a scour condition (el. -40) which has a high influence on the safety factor. A similar, but not as critical, condition exists between sta. 13+88 to sta. 15+50 on the south approach. Immediate action should be taken to solve this problem and avoid any failure to the tie-in levee and control structure. There was extensive vegetative growth and debris at the structure (Photos 4).

PHOTO 1: SEPARATION OF EXPANSION JOINTS

ON T-WALLS DUE TO VEGETATIVE GROWTH

PHOTO 2: CORROSION IN AREA OF TIDAL FLUCTUATION

PHOTO 3: MISSING RIPRAP ALONG THE BANKS

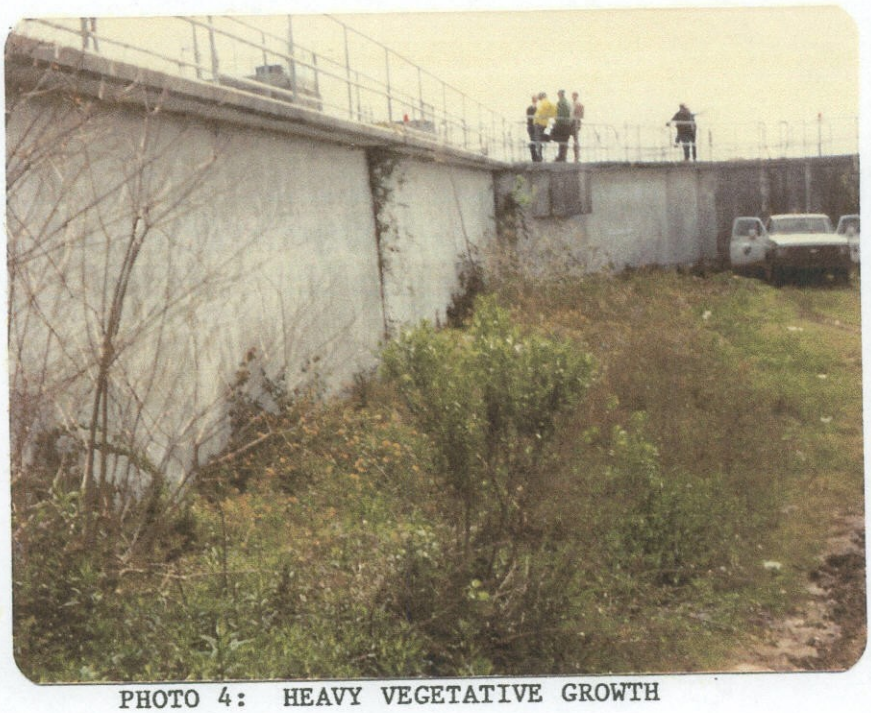


PHOTO 4: HEAVY VEGETATIVE GROWTH

SECTION VI - CONCLUSION AND REMEDIAL ACTION

6-01 Conclusions. It is concluded that the Bayou Bienvenue Control Structure is a stable, safe, and adequately maintained structure in satisfactory operating condition, pending completion of the following remedial actions.

6-02 Remedial Actions. The following major remedial actions will be accomplished by contract labor forces starting in Feb 1984 and ending in May 1984.

a. Scour Repair to North Channel: 275-foot of riprap will be placed from existing riprap location.

b. Scour Repair to South Channel: 200-foot of riprap will be placed from existing riprap location.

c. Replacement of missing riprap along the channel banks and on the outer edge of wingwalls.

The following minor remedial actions will be accomplished by the Orleans Levee Board.

a. The 3/4-inch gap between the gate seals, the corrosion in the areas of tidal fluctuation and the separation of expansion joints on the wingwalls adjacent to the structure will be repaired during the dewatering of the structure by the Orleans Levee Board in July 1984.

b. Herbacide for the heavy vegetative growth was sprayed during July 1983. Clean-up of the vegetative growth and debris is scheduled for September 1983.

* c. The expansion joint between the west wingwall and structure on the protected side will be repaired and the backfill replaced during the dewatering of the structure by the Orleans Levee Board in July 1984.

* Revised 30 May 1984

6-03 Next Inspection. The next inspection of Bayou Bienvenue Control Structure is scheduled for July 1984 during the dewatering of the structure by Orleans Levee Board.

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. 3, Bayou Bienvenue Control Structure, 31 Mar 83

TO THRU Mr. Cave
Mr. Weaver
Mr. WRHill
Mr. Louque
Mr. Kaufman
Mr. WJHill
Mr. Resta

FROM Mr. Trahan DATE 11 Apr 83 CMT 1
Trahan/bj/5525

TO MAIN FILES

1. On 31 Mar 83, the undersigned participated in the third periodic inspection of Bayou Bienvenue Control Structure, together with representatives of the New Orleans District and the Orleans Levee Board. Personnel making the inspection are listed in Incl 1.

2. Purpose of Inspection. The inspection was made in compliance with the provisions of ER 1110-2-100, "Periodic Inspection and Continuing Evaluation of Completed Civil Works Structures."

3. Background. The Bayou Bienvenue Control Structure is located in Bayou Bienvenue at its confluence with the Mississippi River Gulf Outlet (MRGO) just southeast of New Orleans, LA. The structure serves as part of the hurricane protection for the general area and allows water traffic to pass between the MRGO and Bayou Bienvenue. The structure was essentially completed in 1974 and was turned over to local interest for operation and maintenance.

4. Description. The structure consists of a reinforced concrete sector gatebay supported on timber piles, steel sector gates, timber guide walls, and pile supported T-walls. The I-walls which will connect the T-walls with the hurricane protection levee have not yet been constructed. These walls will be installed after settlements of the tie-in levees are essentially completed as subsequently discussed in this trip report. A more detailed description of the structure is given in previous periodic inspection reports.

5. Observations and Recommendations. In general, the structure was found to be in good condition in regard to structural adequacy, safety, and operation. Some of the observations and recommendations made during the inspection are listed below:

a. NOD personnel indicated that the latest scour survey indicated significant scour both upstream and downstream of the floodgate and recommended that remedial repairs be made similar to scour repairs made at the Bayou Dupre Floodgate. This should be done as soon as possible to prevent a critical stability problem from occurring.

b. There was considerable vegetation growing on the backfill adjacent to the structure. Vegetation was growing into the joints of the T-walls on both sides of the structure. This could cause displacement of mastic material and spalling of the joints if it is not cleared in the near future. Also, considerable debris and dead swamp grass covered much of the backfill on the

MRGO side of the floodgate so that it was not possible to observe the condition of the backfill. It was recommended that all vegetation and all debris be removed from the backfill between the wing walls and the structure on both sides of the structure and that a program be established for keeping the backfill free from vegetation and debris.

c. Riprap was missing in many areas near the top of the channel slopes and erosion had occurred where the riprap was missing. In addition, riprap was missing from the outer edges of wingwalls on the Bayou Bienvenue side of the structure and erosion of the backfill was occurring around the outer edges of the wingwalls. It was recommended that the missing riprap be replaced along the upper channel slopes and additional riprap should be placed around the outer edges of the wingwalls to prevent further erosion.

d. It appeared that the joint between the Bayou Bienvenue side west wing wall and the structure was not providing a water-tight seal and soil was leaching out of the backfill. The joint should be repaired and the void in the backfill should be filled.

e. There were a few rust-spots on the structure and these areas should be cleaned and repainted.

f. The I-walls which are to connect the T-walls with the adjacent levees have not yet been installed. The walls will consist of prestressed concrete sheet piles with full length tongue-and-groove with plastic interlock. These sheetpiles were to be driven through the tie-in levees between the T-walls and adjacent hurricane protection levees. However, at the time the structure was essentially completed it was decided not to install the I-walls until after settlement of the tie-in levee was complete. The undersigned recommended that status of these I-walls be clearly addressed in the forthcoming periodic inspection report.

g. The Orleans Levee Board representative informed the inspection team that the Levee Board intends to unwater the structure and perform necessary maintenance work sometime during their next fiscal year, i.e. Jun 83-Jul 84. NOD plans to schedule a supplemental inspection at that time. It should be noted that normally, local interest is not responsible for unwatering a structure; however, on this project local interest is responsible for 100 percent of major maintenance.

h. Action Required. New Orleans District will prepare a periodic inspection report and submit to LMVD for review and approval.

LMVED-GS 11 Apr 83
SUBJECT: Periodic Inspection No. 3, Bayou Bienvenue Control Structure, 31 Mar 83

1. Next Inspection. The next periodic inspection is scheduled for FY 88. A supplemental inspection will be made when the structure is unwatered by local interest in FY 84 and results of the inspection will be submitted to LMVD as a supplement to Periodic Inspection Report No. 3.

Chas. C. Trahan

1 Incl C. C. TRAHAN
as

CF:
LMNED-DG (ATTN: Mr. Mehrtens)

Inspection Participants for

Periodic Inspection No. 3
Bayou Bienvenue Control Structure

31 March 1983

LMVD

Charles C. Trahan	Geology, Soils, and Materials Branch

NOD

Johnny Drummond	Struc Inspection Unit
Harvey Sims	Struc Inspection Unit
Jose Alicea	F&M Branch
Angelx Mislan	H&H Branch
Lynn Tinto	Struc Design Section
Paul Komdroske	Operations Division
Jerry Coletti	Operations Division
Richard Baldini	Operations Division

Orleans Levee Board

E. Magner