LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY

CHALMETTE AREA PLAN

BAYOU BIENVENUE

CONTROL STRUCTURE

PERIODIC INSPECTION REPORT NO. 4

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

New Orleans District

LMVED-GS (LMNED-DS/9 Sep 85) 3d End Mr. Trahan/brs/5525
SUBJECT: Periodic Inspection No. 4 of Bayou Bienvenue Control Structure

DA, Lower Mississippi Valley Division, CE, Vicksburg, MS 39180-0080
02 NOV '85

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

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

FOR THE COMMANDER:

FRED H. BAYLEY III
Chief, Engineering Division

5 Encls (dupe)
wd dupe cy of encls 2 thru 5

R 11 Sep
SA 11 Oct

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

REPLY TO
ATTENTION OF:

LMNED-DG

9 September 1985

SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Bienvenue Control Structure, Periodic Inspection Inspection No. 4, March 1985

Commander, Lower Mississippi Valley Division Commission
ATTN: LMVED-G

Subject report is submitted herewith for your approval.

FOR THE COMMANDER:

1 Encl (6 cys)

FREDERIC M. CHATRY
Chief, Engineering Division

LMVED-G (LMNED-DG/9 Sep 85) 1st End Stegall/Trahan/eb/5525
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, Chalmette Area Plan; Bayou Bienvenue Control Structure, Periodic Inspection No. 4, March 1985

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

17 OCT 85

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

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

a. Para 3-02.

(1) All remedial actions recommended in para 6-02 of Periodic Inspection Report No. 3 should be addressed in this paragraph. It should be noted that a revision of this paragraph was submitted to this office in the 2d End to the LMVED-DG 23 Aug 83 letter transmitting Periodic Inspection Report No. 3 to this office for review and approval.

(2) This paragraph indicates that scour repair along channel banks was accomplished in May 84. However, the same riprap deficiencies along channel banks reported in the 1983 inspection report were also observed during the 7 Mar 85 periodic inspection. This apparent discrepancy should be reconciled.

b. Para 4-03. In subparas 4-03a, 4-03c, and 4-02d references should have been made to appropriate plates for settlement data, overbank range survey data and scour survey data, respectively. This procedure should also be used in future similar periodic inspection reports.

c. Para 5-01. The name of the New Orleans District Operations Division representative should be added to the list of personnel conducting the inspection.

d. Paras 5-03 and 6-02. In para 4d of the LMVD trip report in Appendix A, it was reported that vegetation was growing in one of the expansion joints in the northwest floodwall. This observation should be included in para 5-03 and a recommendation to clean the joint should be made in para 6-02.

e. Para 5-03A4. In para 4g of the LMVD trip report in Appendix A, it was reported that some of the safety chains on top of sector gates were not equipped with proper fasteners. This should be reported in para 5-03A4. It is noted that a recommendation to repair the safety chains is included in para 6-02g.

f. Para 6-02f. The riprap which will be placed in the deficient areas should be at least identical in gradation and blanket thickness to that placed when the structure was originally constructed.

2. The report should be revised in accordance with para 1 above and revised pages of the report should be submitted to this office by 29 Nov 85.

FOR THE COMMANDER:

Roland J. Dubuisson
for FRED H. BAYLEY III
Chief, Engineering Division

1 Encl (6 cys)
wd 3 cy

LMNED-DG (NOD 9 Sep 85) 2d End Mr. Drummond/ds/2711
SUBJECT: Periodic Inspection No. 4 of Bayou Bienvenue Control Structure

DA, New Orleans District Corps of Engineers, P. O. Box 60267, New Orleans, LA 70160 15 Nov 85

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

Disposition of comments presented in the 1st endorsement follows.

a. Para 3-02.

(1) Referenced paragraph has been revised by addressing the replacement of riprap on the outer edge of wingwalls, repair of the separation of expansion joints on the wingwalls and the clean-up of the vegetative growth and debris. Encl 2.

(2) Concur. The scour repair to the north and south channels was accomplished in May 84 but the replacement of riprap along the channel banks and outer edge of the wingwalls was not performed. This discrepancy has been reconciled in the subject paragraph. Encl 2.

b. Para 4-03. The appropriate plates for the settlement data, overbank range survey data and scour survey data have been referenced in subparagraphs 4-03a, 4-03c, and 4-03d. Encl 3.

c. Para 5-01. The New Orleans District Operations Division representative has been added to the list of personnel conducting the inspection. Encl 4, page V-1.

d. Para 5-03 and 6-02. Vegetation growing in one of the expansion joints in the northwest floodwall has been addressed in the referenced paragraphs. Encl 4, page V-3, and Encl 5.

e. Para 5-03A4. The referenced paragraph has been revised to address the improper fasteners of the safety chains on top of sector gates. Encl 4, page V-4.

f. Para 6-02f. Concur. Riprap similar in gradation and blanket thickness will be placed in deficient areas.

FOR THE COMMANDER:

FREDERIC M. CHATRY
Chief, Engineering Division

5 Encls (dupe)
wd Encl 1
Added Encls 2 thru 5

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY

CHALMETTE AREA PLAN

BAYOU BIENVENUE CONTROL STRUCTURE

PERIODIC INSPECTION REPORT NO. 4

7 MARCH 1985

U. S. ARMY ENGINEER DISTRICT

CORPS OF ENGINEERS

NEW ORLEANS, LOUISIANA

BAYOU BIENVENUE CONTROL STRUCTURE

PHOTO TAKEN 27 SEPTEMBER 1974

SUMMARY

The Bayou Bienvenue Control Structure was inspected on 7 March 1985 by representatives of NOD, LMVD and the Orleans Levee Board during a scheduled dewatering of the structure by local interest. There was a considerable amount of sediment, oyster shell, and miscellaneous debris inside of the sector gate recesses with aquatic growth on concrete and framing members normally underwater. The maintenance crew is planning on cleaning inside the sector gates and sand blast and repaint all metal framing members.

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
3	3	31 March 1983	23 August 1983

BAYOU BIENVENUE CONTROL STRUCTURE

PERIODIC INSPECTION REPORT NO. 4

TABLE OF CONTENTS

SECTION I - INTRODUCTION

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

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

1-03 Datum. All elevations in this report, except where otherwise indicated, are in feet and refer to the National Geodetic Vertical Datum of 1929 (NGVD) formally 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 previously numbered reports.

SECTION III - CURRENT OPERATION MAINTENANCE DATA

3-01. Operating and Maintenance Problems. There were no accidents at the structure nor any major operating problems. The structure was unwatered and undergoing maintenance by local interest.

3-02. Actions on Deficiencies from Last Inspection. The scour repair to the north and south channels was accomplished by contract labor forces in May 1984. The 3/4-inch gap between the gate seals, the corrosion in the areas of tidal fluctuation, and the separation of expansion joints on wingwalls were repaired during the dewatering of the structure by the Orleans Levee Board in March 1985. The vegetative growth and debris was cleaned-up in Sept 1983. The replacement of riprap along the channel banks and on the outer edge of the wingwalls has not been accomplished.

*Revised 31 Oct 85

SECTION IV - REVIEW OF DESIGN AND ANALYSIS OF INSTRUMENTATION

4-01. Review of Design. 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, have not changed.

4-03 Analysis of Instrumentation.

(a) Settlement survey. Present survey, dated 22 Oct 84, shows no unusual settlement or rebound at any point of the structure. The settlement reference marks for the west and east monoliths, floodwalls and northwest, northeast, southwest, and southeast wingwalls *show settlements as expected. Plates 1 through 9.

(b) Alinement survey.. Alinement surveys are no longer performed on this structure because previous surveys were not cost effective. A visual check of horizontal and vertical alinement of walls during the March 1985 inspection, indicated good alinement throughout the structure.

(c) Overbank Range Survey. The overbank range surveys, dated 22 Oct 84, indicate sinkholes or loss of material behind the northeast and northwest wingwalls at range 3+00. The surveys for the south wingwalls indicate very little settlement or loss of material behind the

*Revised 8 Nov 85

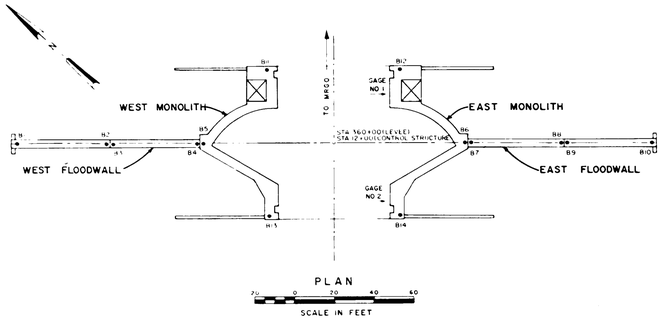
walls. These sinkholes will be investigated during the upcoming inspection. Plates 6 through 9.

(d) Scour Survey.. The scour survey, dated 22 Oct 84, from sta. 6+00 to sta. 22+00 indicates that no problems exist. Plates 12 through 18.

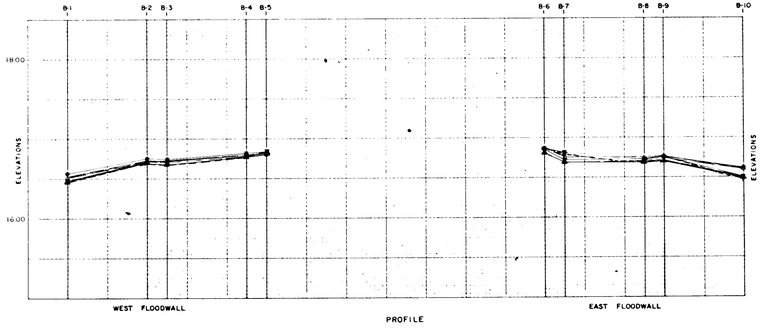
*Revised 8 Nov 85

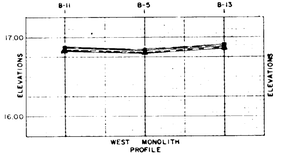
BAYOU BIENVENUE CONTROL STRUCTURE
INSTRUMENTATION DRAWINGS

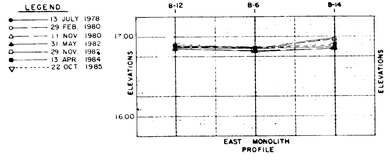
Plate No.	Title	File
1A	LOCATION PLAN	H-2-26327
1B	GENERAL LAYOUT	H-2-26327
1	SETTLEMENT REFERENCE MARKS-PLAN & PROFILE	H-4-26857
2	DIFFERENTIAL SETTLEMENT CHART	H-4-26857
3	WING-WALL DIFFERENTIAL REFERENCE MARKS	H-4-26857
4	WING-WALL DIFFERENTIAL SETTLEMENT CHART	H-4-26857
5	LOCATIONS OF SETTLEMENT REFERENCE MARKS	H-4-26857
6	SETTLEMENT REFERENCE MARKS NORTHEAST WING WALLS	H-4-26857
7	SETTLEMENT REFERENCE MARKS-NORTHWEST WING WALLS	H-4-26857
8	SETTLEMENT REFERENCE MARKS-OVERBANK RANGES	H-4-26857
9	SETTLEMENT REFERENCE MARKS-SOUTHWEST WING WALLS	H-4-26857
10	SCOUR & OVERBANK SURVEY RANGES	H-4-26857
11	PROFILE SURVEY	H-4-26857
12	SCOUR SURVEY	H-4-26857
13	SCOUR SURVEY	H-4-26857
14	SCOUR SURVEY	H-4-26857
15	SCOUR SURVEY	H-4-26857
16	SCOUR SURVEY	H-4-26857
17	SCOUR SURVEY	H-4-26857
18	SCOUR SURVEY	H-4-26857



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 13 JULY 1978	16.56	16.76	16.75	16.81	16.84	16.85	16.81	16.73	16.76	16.61	16.86	16.86	16.89	16.87	87°	1.00	0.95
29 FEB. 1980	16.51	16.72	16.71	16.78	16.81	16.83	16.79	16.72	16.75	16.58	16.83	16.85	16.87	16.86	58°	0.3	0.1
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	63°	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	16.48	16.82	16.84	16.89	16.85	85°	1.8	1.9
29 NOV. 1982	16.49	16.7	16.71	16.80	16.84	16.87	16.82	16.72	16.75	16.50	16.84	16.88	16.90	16.89	66°	1.2	1.6
13 APR. 1984	16.48	16.71	16.70	16.80	16.84	16.87	16.83	16.72	16.75	16.49	16.87	16.89	16.90	16.90	67°	—	1.0
22 OCT. 1985	16.46	16.70	16.69	16.78	16.82	16.86	16.81	16.70	16.73	16.46	16.86	16.87	16.88	16.88	80°	2.5	2.5







LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

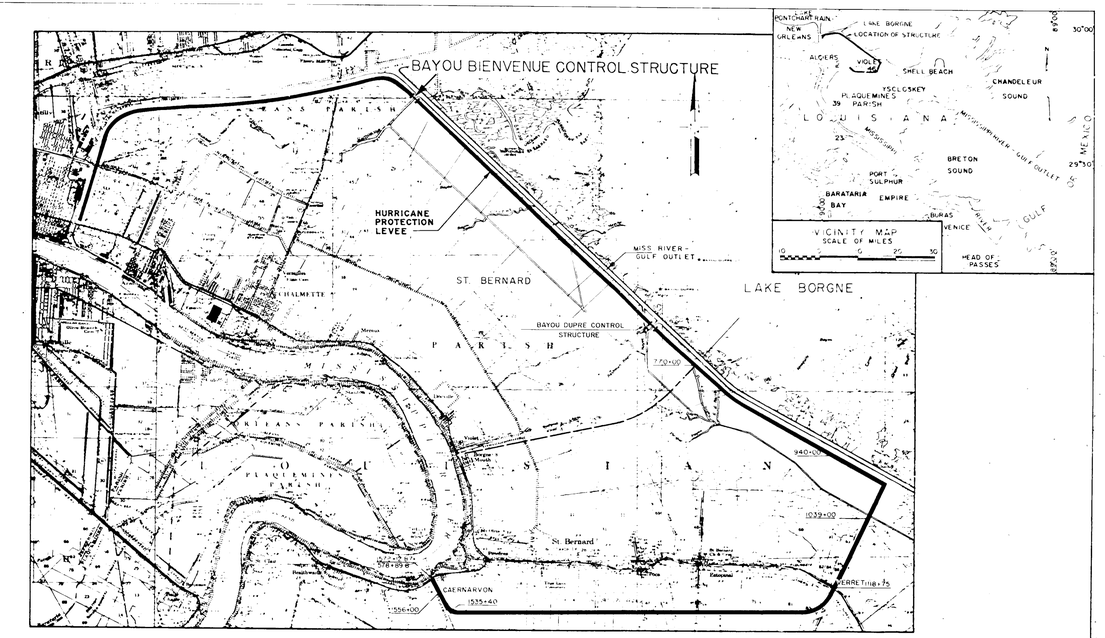
SETTLEMENT REFERENCE MARKS

PLAN AND PROFILE

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

FILE NO. H-4-26857

PLATE 1



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

BAYOU BIENVENUE CONTROL STRUCTURE

LOCATION PLAN AND VICINITY MAP

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

SHEET OF SHEETS FILE NO. H-2-[illegible]

PLATE

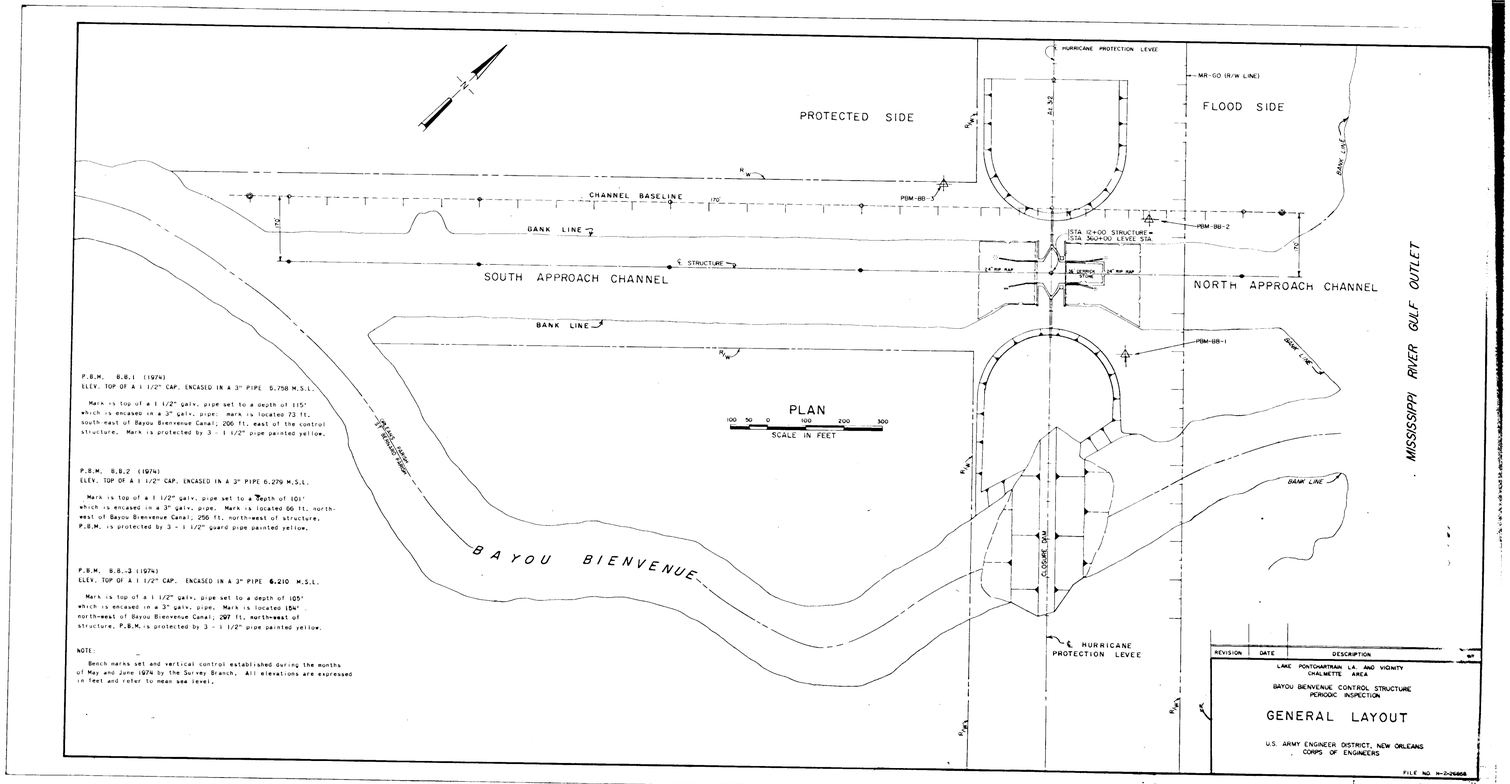
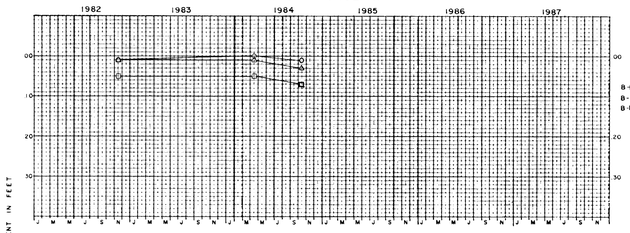

HURRICANE PROTECTION LEVEE
MR-GO (R/W LINE)
PROTECTED SIDE
FLOOD SIDE
CHANNEL BASELINE
PBM-BB-3
PBM-BB-2
PBM-BB-1
BANK LINE
ISTA 12+00 STRUCTURE
ISTA 36+00 LEVEE STA
STRUCTURE
SOUTH APPROACH CHANNEL
NORTH APPROACH CHANNEL
MISSISSIPPI RIVER GULF OUTLET
BAYOU BIENVENUE
PLAN
SCALE IN FEET
HURRICANE PROTECTION LEVEE
P.B.M. B.B.1 (1974)
ELEV. TOP OF A 1 1/2" CAP, ENCASED IN A 3" PIPE 5.758 M.S.L.
Mark is top of a 1 1/2" galv. pipe set to a depth of 115' which is encased in a 3" galv. pipe; mark is located 73 ft. south-east of Bayou Bienvenue Canal; 206 ft. east of the control structure. Mark is protected by 3 - 1 1/2" pipe painted yellow.
P.B.M. B.B.2 (1974)
ELEV. TOP OF A 1 1/2" CAP, ENCASED IN A 3" PIPE 6.279 M.S.L.
Mark is top of a 1 1/2" galv. pipe set to a depth of 101' which is encased in a 3" galv. pipe. Mark is located 66 ft. north-west of Bayou Bienvenue Canal; 256 ft. north-west of structure. P.B.M. is protected by 3 - 1 1/2" guard pipe painted yellow.
P.B.M. B.B.-3 (1974)
ELEV. TOP OF A 1 1/2" CAP. ENCASED IN A 3" PIPE 6.210 M.S.L.
Mark is top of a 1 1/2" galv. pipe set to a depth of 105' which is encased in a 3" galv. pipe. Mark is located 134' north-east of Bayou Bienvenue Canal; 297 ft. north-east of structure. P.B.M. is protected by 3 - 1 1/2" pipe 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.
REVISION
DATE
DESCRIPTION
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
PERIODIC INSPECTION
GENERAL LAYOUT
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
FILE NO. N-2-27666

PLATE 18

WEST MONOLITH

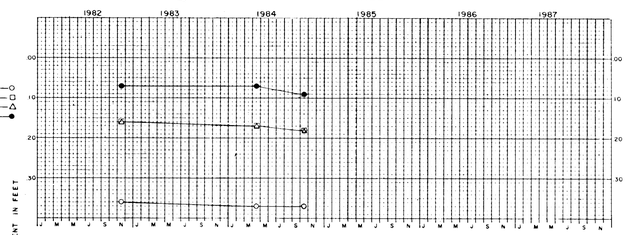


DIFFERENTIAL SETTLEMENT IN FEET

LEGEND

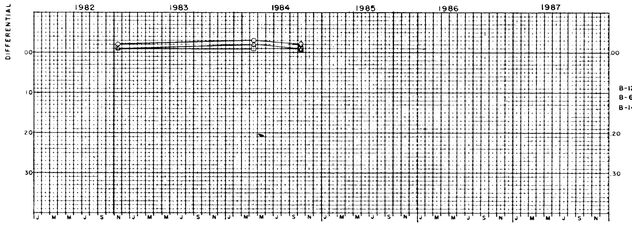
B-1 ——○
B-2 ——□
B-3 ——△
B-4 ——●
B-5 ——□
B-13 ——△

WEST FLOODWALL



DIFFERENTIAL SETTLEMENT IN FEET

EAST MONOLITH

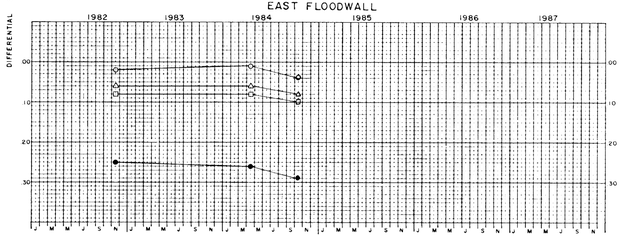


DIFFERENTIAL SETTLEMENT IN FEET

LEGEND

B-12 ——○
B-6 ——□
B-14 ——△
B-7 ——○
B-8 ——□
B-9 ——△
B-10 ——●

EAST FLOODWALL



DIFFERENTIAL SETTLEMENT IN FEET

	DISTANCES BETWEEN REFERENCE MARKS							
NO. OF REFERENCE MARKS	B2 TO B3	B4 TO B5	B5 TO B6	B11 TO B12	B13 TO B4	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 (IN.)	4.97	3.98	131.35	64.17	64.19	2.48	5.00	
OBSERVATIONS	29 NOV 1982	5.04	4.02	—	64.25	64.25	2.54	5.08
	13 JAN 1984	5.02	4.02	—	—	—	2.55	5.08
	22 OCT 1984	5.02	4.02	—	—	—	2.54	5.08

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

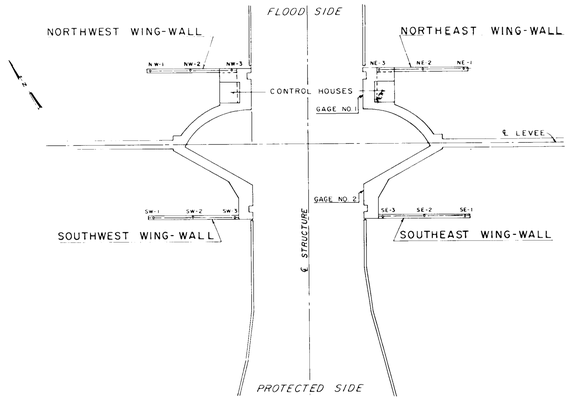
LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

SETTLEMENT REFERENCE MARKS DIFFERENTIAL SETTLEMENT CHART

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

FILE NO. H-4-26857

PLATE 2



PLAN
SCALE IN FEET
20 0 20 40

SETTLEMENT REFERENCE MARKS

NO OF REFERENCE MARK / DATE OF OBSERVATIONS	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
INITIAL DATE	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	BB 2	6.279
29 FEB 1980	4.87	5.04	5.18	4.68	4.86	5.11	4.89	5.02	5.16	4.71	4.85	5.21	58°	-0.3	0.1	BB 2	6.279
11 NOV 1980	4.86	5.04	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	BB 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	BB 2	6.281
29 NOV 1982	4.85	5.02	5.17	4.65	4.84	5.10	4.84	4.98	5.14	4.68	4.83	5.21	66°	1.1	1.6	BB 3	6.210
13 APRIL 1984	4.84	5.02	5.21	4.65	4.84	5.12	4.84	4.98	5.15	4.68	4.83	5.22	67°	—	1.6	BB 3	6.210
22 OCT 1984	4.84	5.03	5.21	4.64	4.83	5.11	4.84	4.97	5.15	4.68	4.83	5.21	80°	2.5	2.5	BB 3	6.210

LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

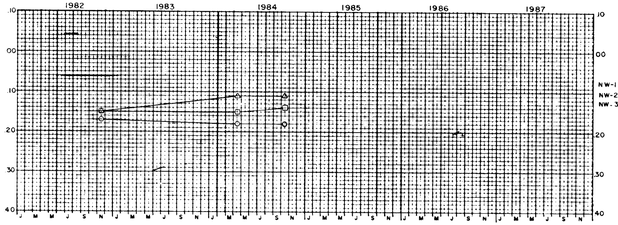
WING-WALL
SETTLEMENT REFERENCE MARKS PLAN AND TABULATION

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

FILE NO H-4-26857

PLATE 3

NORTHWEST WING-WALL



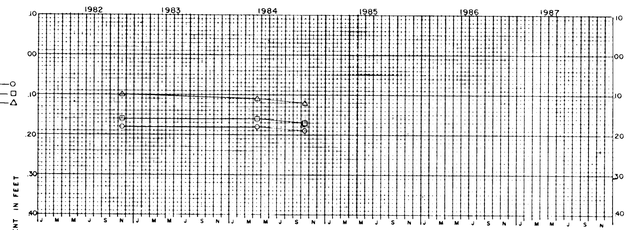
DIFFERENTIAL SETTLEMENT IN FEET

LEGEND

NW-1 ——○
NW-2 ——□
NW-3 ——△

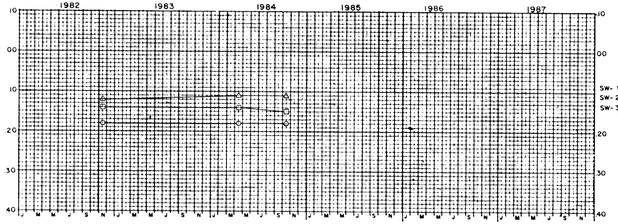
NE-1 ——○
NE-2 ——□
NE-3 ——△

NORTHEAST WING-WALL



DIFFERENTIAL SETTLEMENT IN FEET

SOUTHWEST WING-WALL



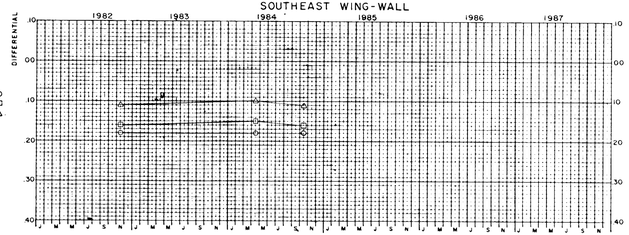
DIFFERENTIAL SETTLEMENT IN FEET

LEGEND

SW-1 ——○
SW-2 ——□
SW-3 ——△

SE-1 ——○
SE-2 ——□
SE-3 ——△

SOUTHEAST WING-WALL



DIFFERENTIAL SETTLEMENT IN FEET

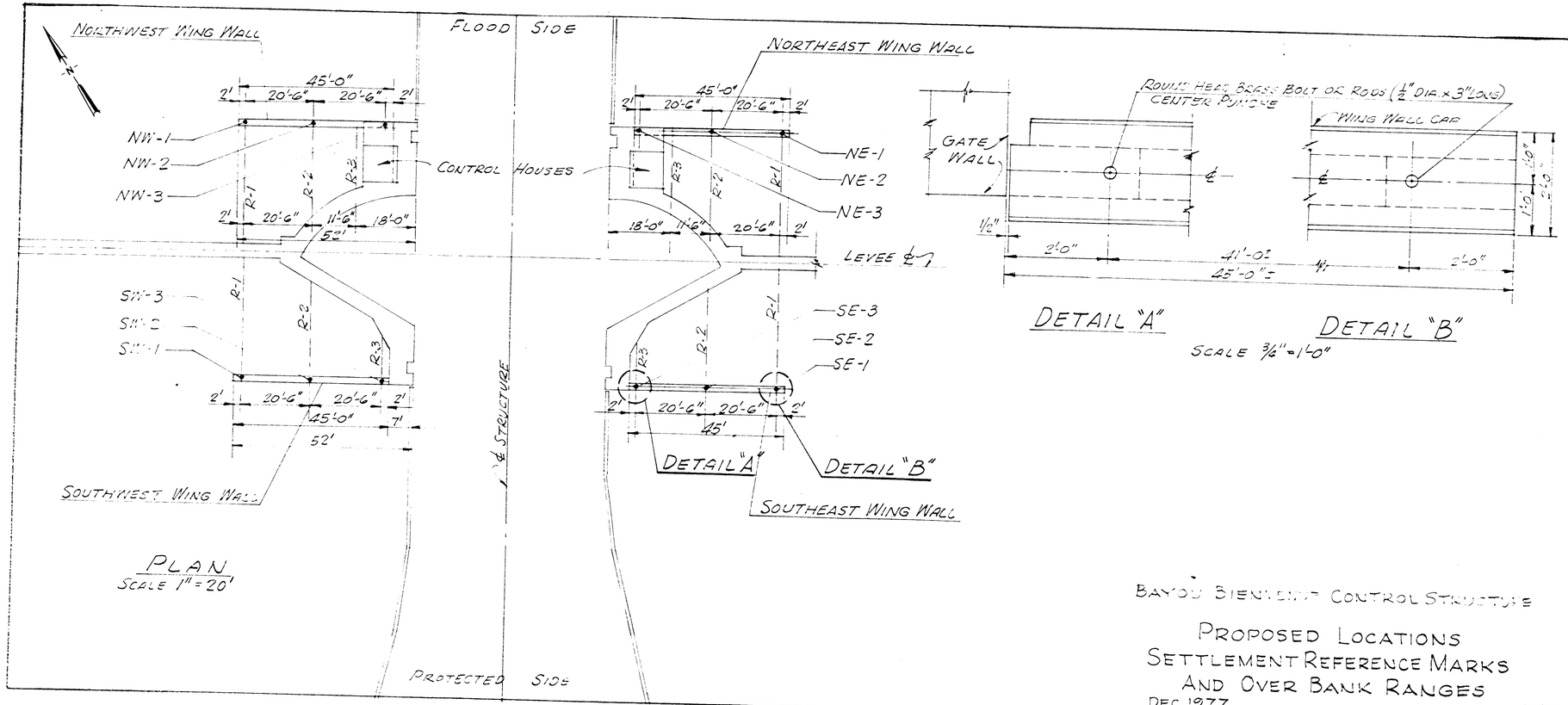
NOTE:
For location and tabulation of settlement reference marks see plate

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-1-26857

PLATE 4



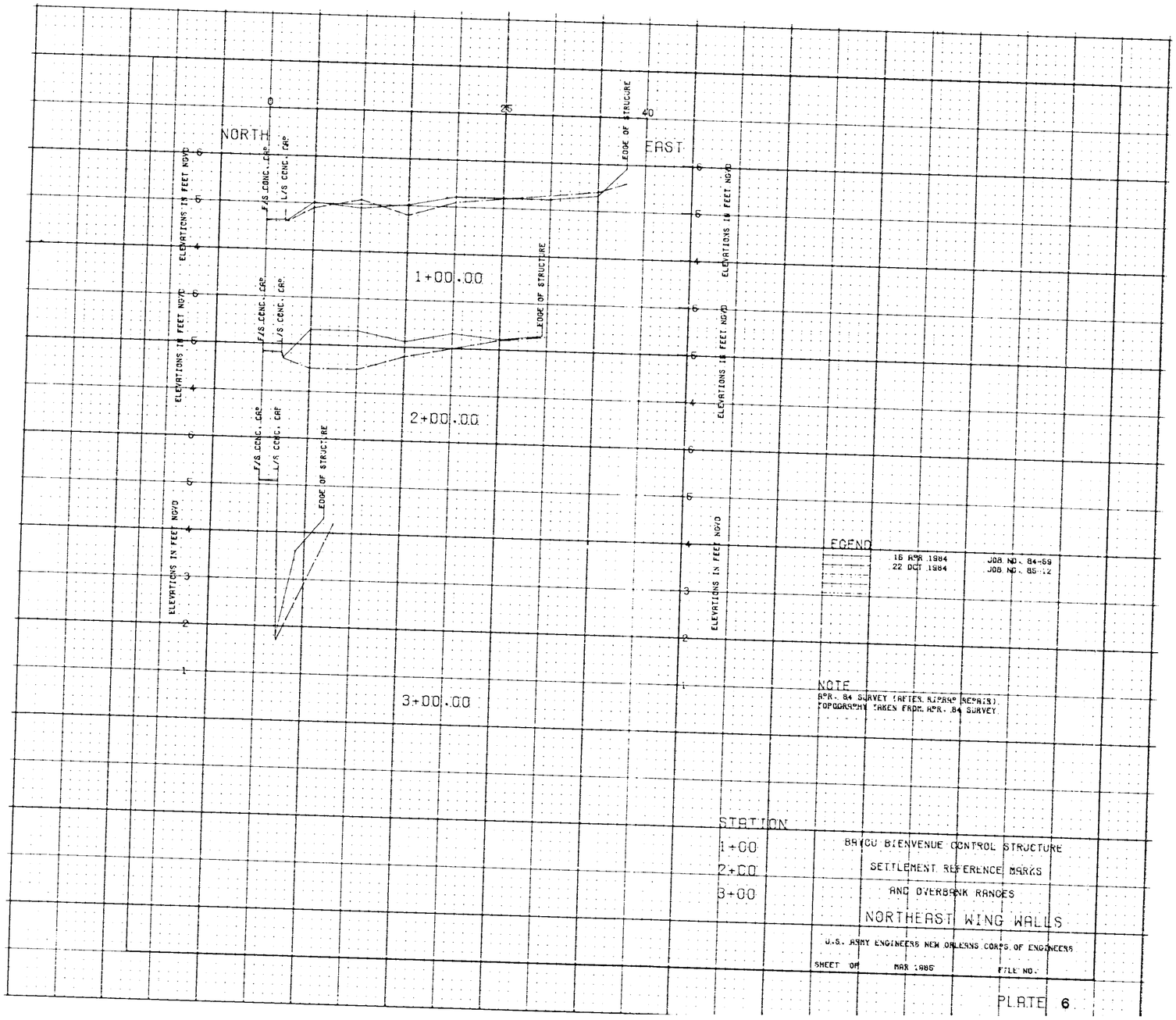
PLAN
SCALE 1" = 20'

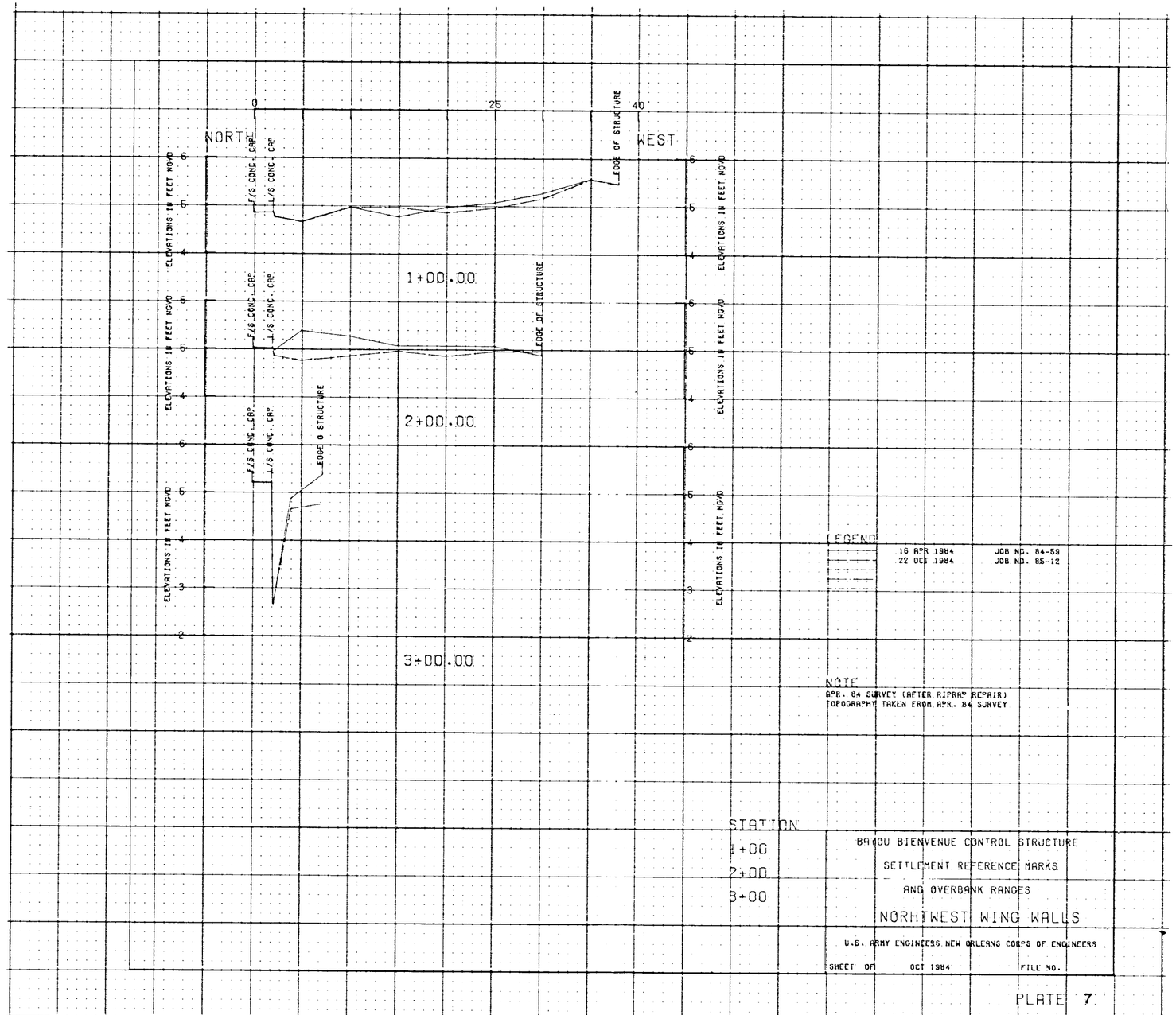
DETAIL "A"
DETAIL "B"
SCALE 3/16" = 1'-0"

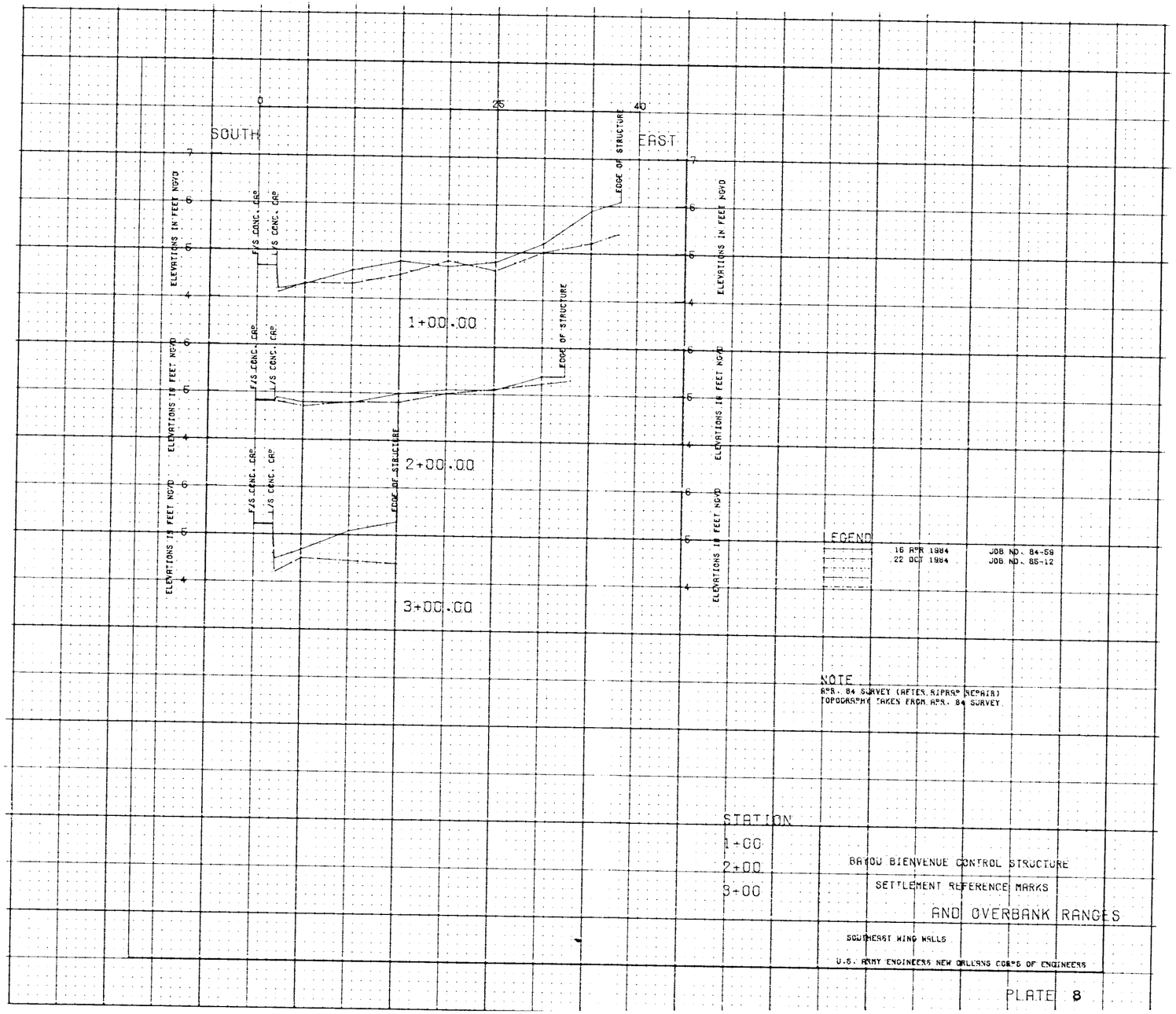
BAYOU SIENNETTE CONTROL STRUCTURE

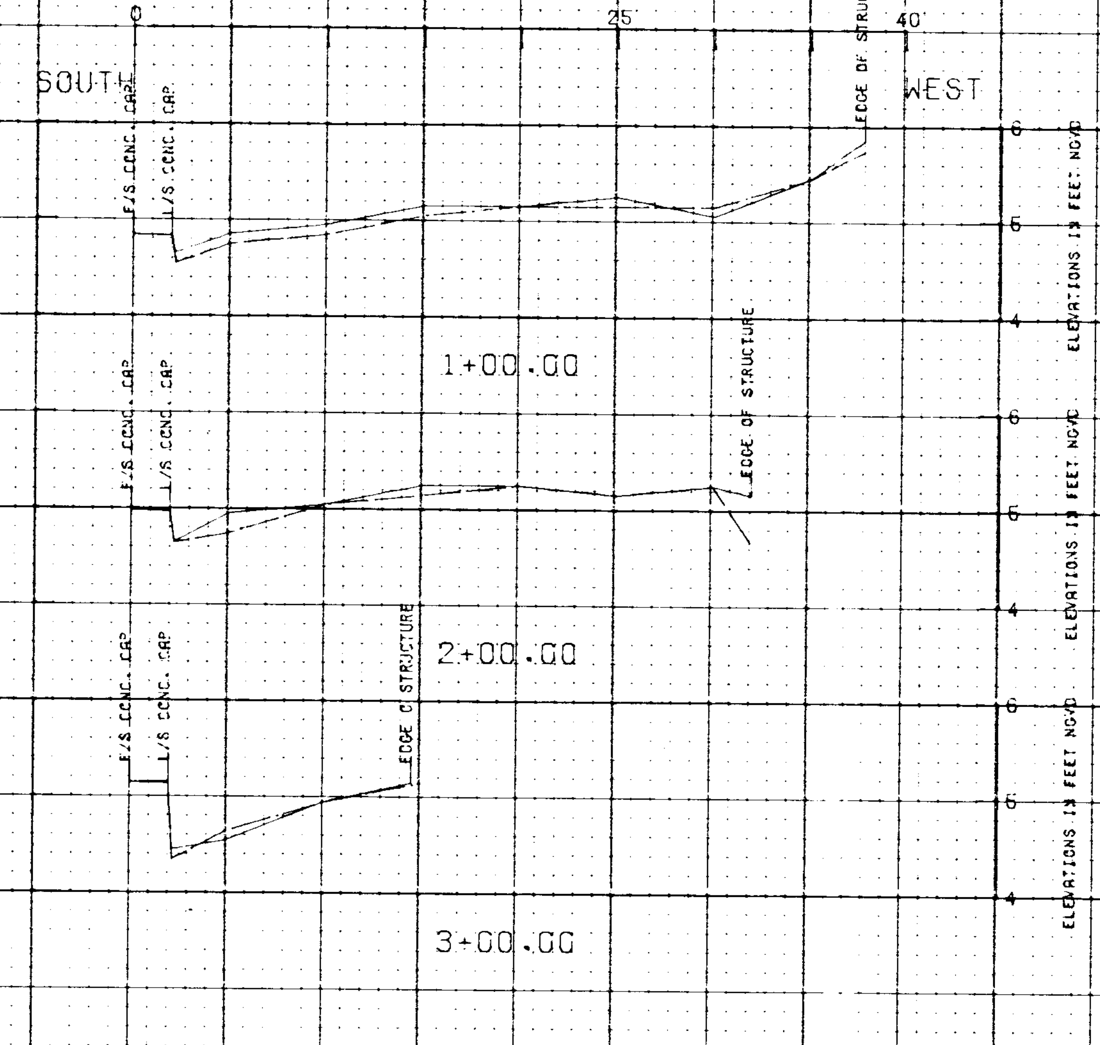
PROPOSED LOCATIONS
SETTLEMENT REFERENCE MARKS
AND OVER BANK RANGES
DEC. 1977

H.W.H.


NORTH
EAST
0
20
40
F/S CONC. CAP
L/S CONC. CAP
EDGE OF STRUCTURE
ELEVATIONS IN FEET NGVD
1+00.00
2+00.00
3+00.00
LEGEND
16 APR 1984
22 OCT 1984
JOB NO. 84-69
JOB NO. 85-12
NOTE
APR. 84 SURVEY (PILES, RIPRAP REPAIR)
TOPOGRAPHY TAKEN FROM APR. 84 SURVEY
STATION
1+00
2+00
3+00
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 1985
FILE NO.
PLATE 6


NORTH
WEST
0
25
40
F/S CONC. CAP.
L/S CONC. CAP.
EDGE OF STRUCTURE
1+00.00
2+00.00
3+00.00
ELEVATIONS IN FEET NGVD
2
3
4
5
6
LEGEND
16 APR 1984 JOB NO. 84-59
22 OCT 1984 JOB NO. 85-12
NOTE
APR. 84 SURVEY (AFTER RIPRAP REPAIR)
TOPOGRAPHY TAKEN FROM APR. 84 SURVEY
STATION
1+00
2+00
3+00
BAYOU BIENVENUE CONTROL STRUCTURE
SETTLEMENT REFERENCE MARKS
AND OVERBANK RANGES
NORHTWEST WING WALLS
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF OCT 1984 FILE NO.
PLATE 7


SOUTH
EAST
0
25
40
ELEVATIONS IN FEET NGVD
F/S CONC. CAP
I/S CONC. CAP
EDGE OF STRUCTURE
1+00.00
2+00.00
3+00.00
LEGEND
16 APR 1984 JOB NO. 84-58
22 OCT 1984 JOB NO. 85-12
NOTE
APR. 84 SURVEY (AFTER RIPRAP REPAIR)
TOPOGRAPHY TAKEN FROM APR. 84 SURVEY
STATION
1+00
2+00
3+00
BAYOU BIENVENUE CONTROL STRUCTURE
SETTLEMENT REFERENCE MARKS
AND OVERBANK RANGES
SOUTHEAST WING WALLS
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
PLATE 8



LEGEND

16 APR 1984 JOB NO. 84-59
22 OCT 1984 JOB NO. 85-12

NOTE
APR. 84 SURVEY (AFTER RIPRAP REPAIR).
TOPOGRAPHY TAKEN FROM APR. 84 SURVEY.

STATION
1+00
2+00
3+00

BAYOU BIENVENUE CONTROL STRUCTURE

SETTLEMENT REFERENCE MARKS

AND OVERBANK RANGES

SOUTHWEST WING WALLS

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

SHEET OF OCT. 1984 FILE NO.

PLATE 9

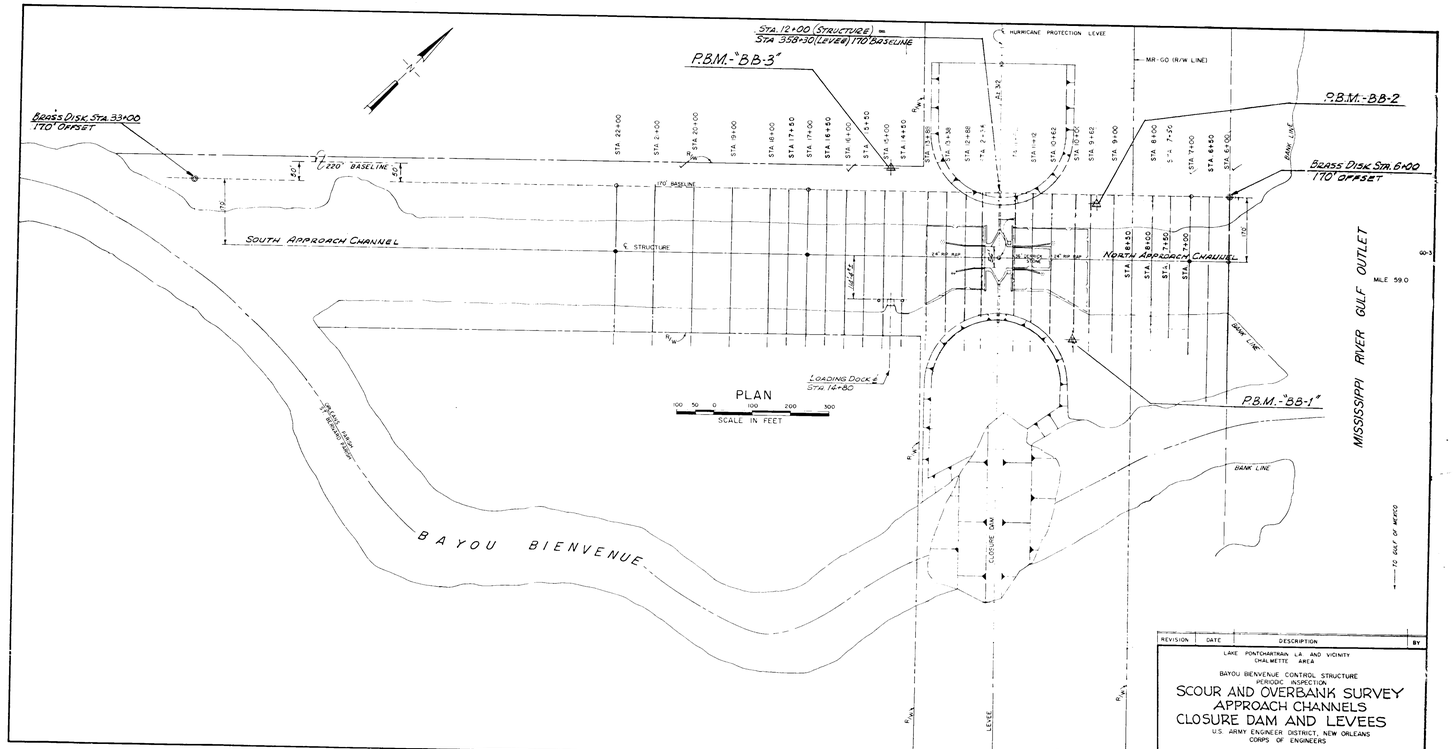


PLATE [redacted]


WEST
EAST
CENTERLINE OF CHANNEL
LEGEND
17 APR 1984 JOB NO. 84-59
22 OCT 1984 JOB NO. 85-12
NOTE
APR. 84 SURVEY (AFTER RIPRAP REPAIR)
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
PROFILE SURVEY (1984)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MARCH 1985 FILE NO.
PLATE 11

LEGEND

———	17 APR 1984	JOB NO. 84-59
— — —	22 OCT 1984	JOB NO. 85-1

NOTE

APR. 84 SURVEY (AFTER RIPRAP REPAIR).
TOPOGRAPHY TAKEN FROM APR. 84 SURVEY.

STATION
6+00
6+50
7+00
7+50

LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (1984)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MAR 1985 FILE NO.

PLATE 12

LEGEND

————	17 APR 1984	JOB NO. 84-59
— — —	22 OCT 1984	JOB NO. 85-12

NOTE

APR. 84 SURVEY (AFTER RIPRAP REPAIR).
TOPOGRAPHY TAKEN FROM APR. 84 SURVEY.

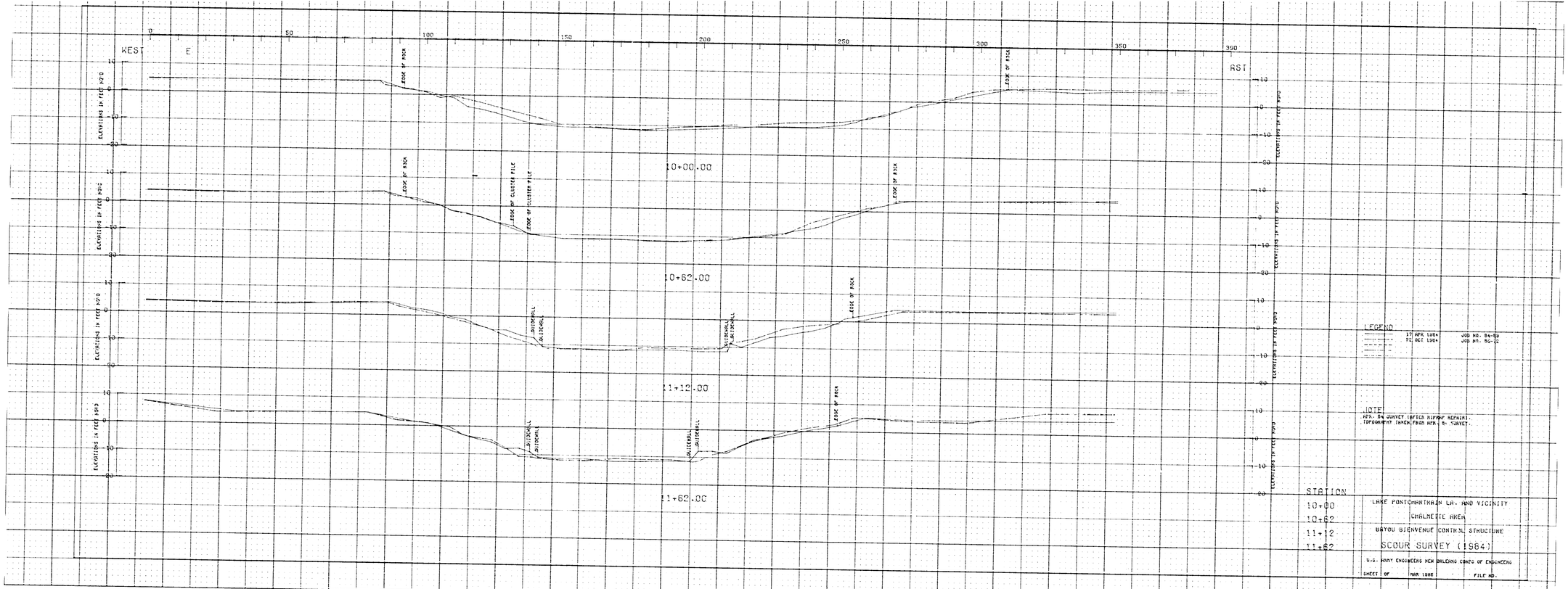
STATION
8+00
8+50
9+00
9+62

LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (1984)

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

SHEET OF | MAR 1985 | FILE NO.

PLATE 13

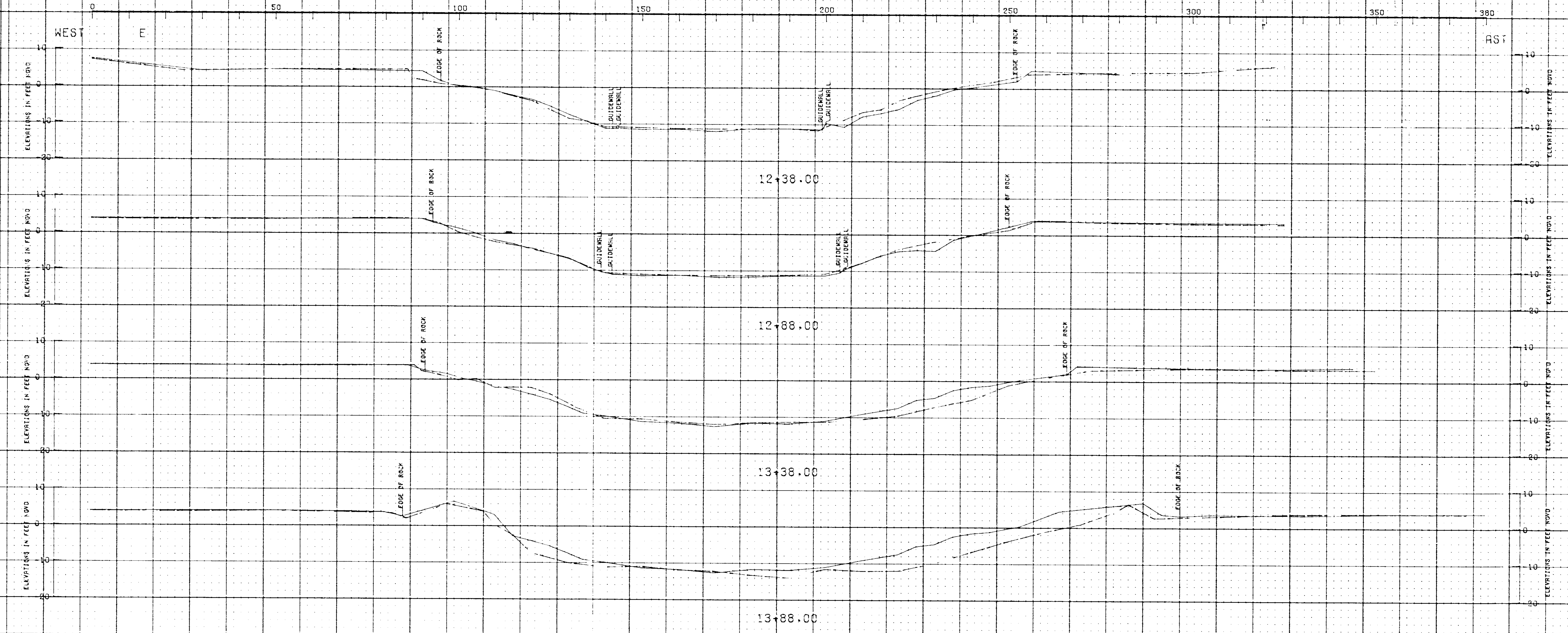


NOTE
APR. 84 SURVEY (OFFICE RIPRAP REPAIR).
TOPOGRAPHY TAKEN FROM APR. 84 SURVEY.

STATION
10+00
10+62
11+12
11+62

LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (1984)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF MAR 1985 FILE NO.

PLATE 14



LEGEND

———	17 APR 1984	JOB NO. 84-59
— — —	22 OCT 1984	JOB NO. 85-12

NOTE
APR. 84 SURVEY (AFTER R.PRAP REPAIR).
TOPOGRAPHY TAKEN FROM APR. 84 SURVEY.

STATION
12+38
12+88
13+38
13+88

LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (1984)
U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS
SHEET OF | MAR 1985 | FILE NO.

PLATE 15

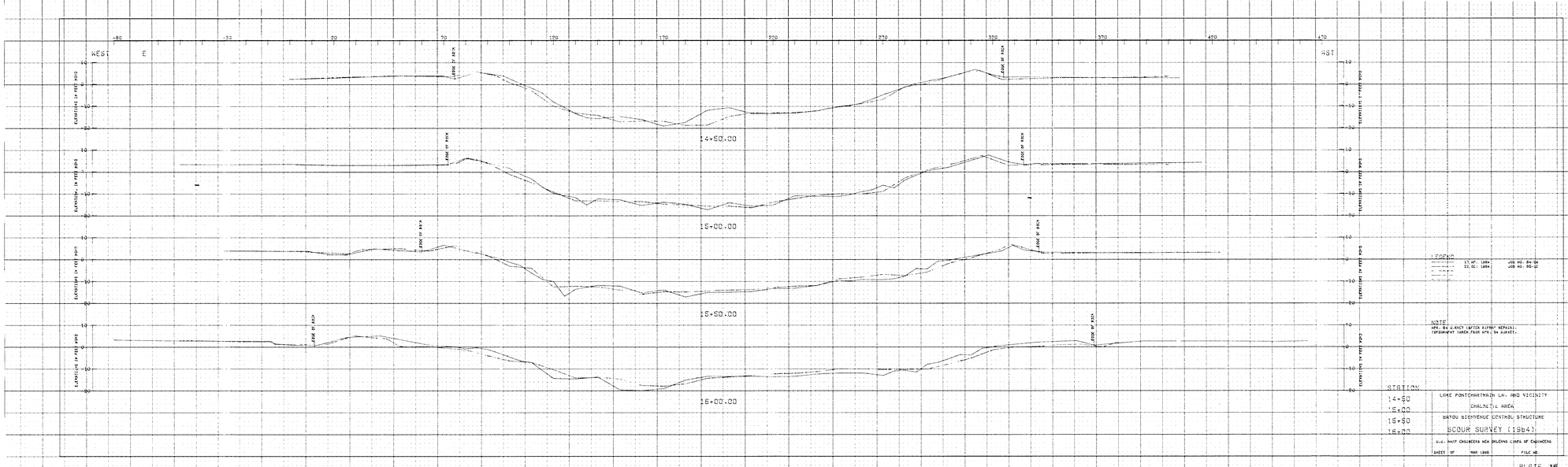

WEST
EAST
-80
-30
20
70
120
170
220
270
320
370
420
470
ELEVATION IN FEET MSL
10
0
-10
-20
EDGE OF WATER
14+50.00
15+00.00
15+50.00
16+00.00
LEGEND
APR. 84 SURVEY (AFTER RIPRAP REPAIR)
OCT. 1984
17 APR. 1984
22 OCT. 1984
JOB NO. 84-18
JOB NO. 86-12
NOTE:
APR. 84 SURVEY (AFTER RIPRAP REPAIR).
TOPOGRAPHY TAKEN FROM APR. 84 SURVEY.
STATION
14+50
15+00
15+50
16+00
LAKE PONTCHARTRAIN LA., AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (1984)
U.S. DEPT CHICAGO NEW ORLEANS CORPS OF ENGINEERS
SHEET OF
MAR 1988
FILE NO.

PLATE 16

LEGEND

————	17 APR 1984	JOB NO. 84-59
—— — —	22 OCT 1984	

NOTE
APR. 84 SURVEY (AFTER RIPRAP REPAIR).
TOPOGRAPHY TAKEN FROM APR. 84 SURVEY.

STATION
16+50
17+00
17+50
18+00

LAKE PONTCHARTRAIN LA. AND VICINITY

CHALMETTE AREA

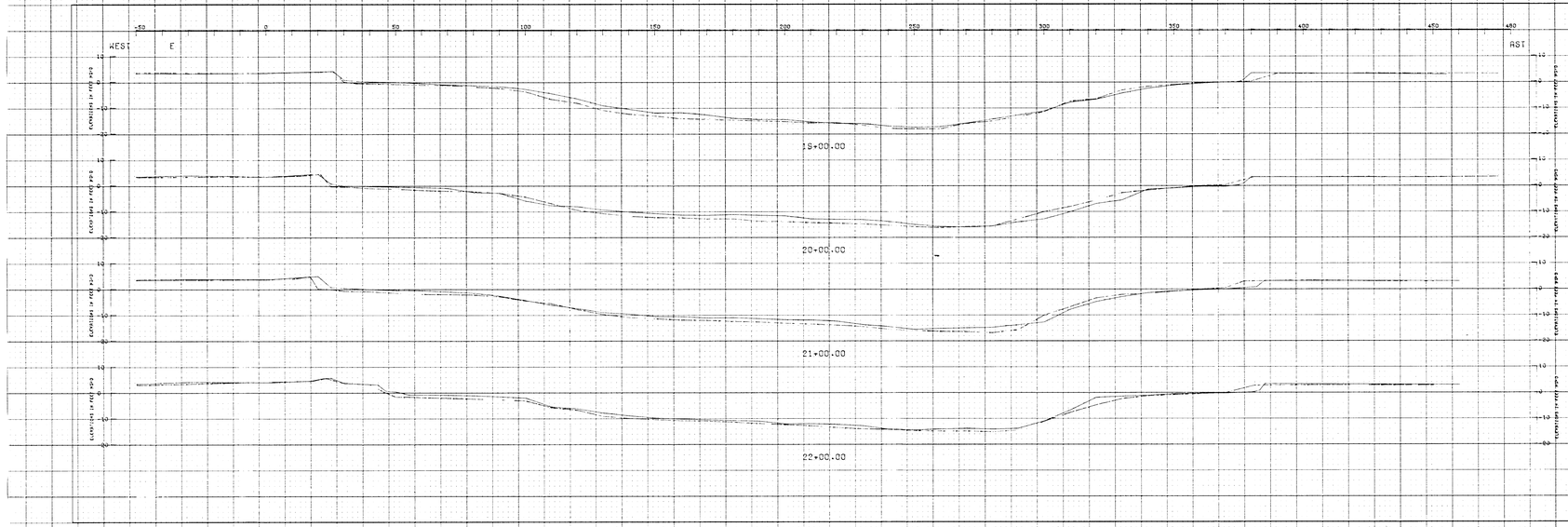
BAYOU BIENVENUE CONTROL STRUCTURE

SCOUR SURVEY (1984)

U.S. ARMY ENGINEERS NEW ORLEANS CORPS OF ENGINEERS

SHEET OF | MAR 1985 | FILE NO.

PLATE 17



STATION
19+00
20+00
21+00
22+00

LAKE PONTCHARTRAIN, LA. AND VICINITY

CHANNETTE AREA

BAYOU BIENVENUE CONTROL STRUCTURE

SCOUR SURVEY (1984)

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

SHEET OF MAR 1985 FILE NO.

SECTION V - INSPECTION

5-01 Inspection Team. The inspection of the structure was conducted on 7 March 1985 by the following personnel:

NOD

	Johnny Drummond	General Engineering Section
	Lynn Broussard	Structural Design Section
	Larry Dement	H&H Br
	Charles Rome	F&M Br, Materials Section
	Richard Pinner	F&M Br, Struc Foundation Sec
	Dennis Strecker	M&E Unit, General Eng Sec
	Gerard Jesclard	M&E Unit, General Eng Sec
*	Richard Baldini	Ops Division

LMVD

Charles Trahan	GS&M Br
Mel Stegall	GS&M Br
Frank Johnsonn	Technical Engineering Br
Larry Cook	Water Control Branch
Edwin Boren	Con-Op Div

ORLEANS LEVEE BOARD

Earl Magner, Jr.	Chief Engineer

LOUISIANA OFFICE OF PUBLIC WORKS

Gasper Chifici	District Engineer

*Revised 1 Nov 85

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

5-03 Observations. The Control Structure was dewatered at the time of the inspection; however, sediment, oyster shells, miscellaneous debris and aquatic growth made complete observation of surfaces below the waterline impossible.

A. STRUCTURAL.

1. Reinforced Concrete.

a. Structural Cracks. No evidence of major structural cracks. Minor cracks were observed in the floodwalls and the concrete sheetpile wingwalls.

b. Exposed Reinforcement. No evidence of exposed reinforcement.

c. General Condition of Concrete Surface. The concrete surfaces are in good condition, no evidence of spalls, pop-outs, weathering, corrosion or honeycombs.

d. Condition of Horizontal and Vertical Joints. The joints between the wingwall and main structure on the southwest side of the structure appeared not to be watertight and soil was washing out of the backfill causing a void in the backfill behind the joint (See Photo 1). A close inspection of all wingwalls revealed that this condition was occurring at all similar joints. Further, the seal between the northwest wingwall and the structure has completely pulled away from the

*Revised 8 Nov 85

* structure. Vegetation was growing in one of the expansion joints in the northwest floodwall. *

e. Visual Check of Horizontal and Vertical Alinement of Walls. Generally good alinement throughout the structure.

f. Evidence of Structural Damage. None found.

2. Gates.

a. Evidence of Difficulty in Opening and Closing. The gates were not operated for this inspection since the structure was in the dewatered condition and repair work was being done. There was, however, evidence of silting and accumulation of oyster shells in the gate bays which had previously caused difficulties when the gates were operated, not allowing the gates to reach the fully open position. The silting and accumulation of oyster shells were removed during the dewatering repairs in March 1985.

b. Evidence of Damage to Skin Plate, Ribs, Girders, Framing, Walkways and Handrails. There is minor separation of handrails on the east T-wall walkway due to joint separation of the T-wall.

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

d. Corrosion. Corrosion was found in the area of tidal fluctuation. The Orleans Levee Board was in the process of sandblasting and repainting the gates at the time of this inspection.

Guide Walls, Floodwalls, Wingwalls and Fenders, General Condition of Timber and Connections. Overall the guidewalls, floodwalls, wingwalls and fenders were in good condition. Minor differential settlement was

*Revised 8 Nov 85

observed between reference marks B8 and B9 on the east floodwall (See Photo 3), and between the structure and east floodwall (See Photo 3), and between the structure and east floodwall. No other differential settlement or alinement problems of the structure and floodwalls were observed during the inspection. The timbers had been removed for painting of the gates, but they were in good condition. After minor repairs they are ready to be reinstalled.

4. Safety Precautions.

a. Safety Precautions for Personnel. Good.

* b. Need for Additional Safety Precautions. Some of the safety chains on top of sector gates were not equipped with proper fasteners.

B. Foundations and Materials.

1. Embankment. Except for the low levee crown elevation of the embankment, and trees and other vegetation in the area, the embankment in the vicinity of the structure appeared to be in good condition.

2. Riprap. The riprap is deficient along the banks of the north and south approach channels behind the guidewalls. (See photo 2).

3. Erosion and Sinkholes. Sinkholes approximately 3 feet in diameter by 3 feet deep were observed at station 3+00 behind the northwest and northeast wingwalls. It seems the holes were caused by material being washed out past the rubber waterstop betwween the rubber waterstop between the structure and wingwalls. Also observed during the inspection was erosion on the ends of all the wingwalls.

4. Reference Markers. Reference markers throughout the structure have voids around them. Therefore, these marks are susceptible to bending and deterioration.

*Revised 8 Nov 85

C. Hydraulics and Hydrology.

Staff Gages. Two adjacent staff gages located on the protected side of the structure had a difference in water level reading of 6 inches. Furthermore, these gages were in need of repair and/or cleaning.

D. Mechanical and Electrical.

1. The generator was the only piece of equipment operated since the gates were dewatered and in the process of being sandblasted. Except for the need of general cleaning, painting and cable adjustment the machinery appeared to be in good condition.

2. The anodes for the cathodic protection system on the skin plate and structural members were replaced during the dewatering of the structure in March 1985.

PHOTO 3: Minor differential settlement between reference marks B8 and B9

PHOTO 1:Voids behind the joints between the wing wall and main structure(Typical)

PHOTO 2: Deficient rip-rap

SECTION VI - CONCLUSIONS AND REMEDIAL ACTIONS

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

*6-02 Remedial Actions. The following work has been accomplished by local interest, The Orleans Levee Board, during the dewatering repairs to the structure in March 1985.

a. Silting and accumulated oyster shells were removed from the gate bays.

b. Corrosion in the area of tidal fluctuation was removed and the gates were sandblasted and repainted.

c. The anodes for the cathodic protection system on the skin plate and structural members were replaced.

The following remedial work will be completed by local interest in FY 86.

d. All floodwall and wingwall joints will be repaired and made *watertight. Vegetation will be removed from one of the expansion joints in the northwest floodwall.

e. Sinkholes and voids behind the wingwalls will be backfilled.

*f. Riprap, identical in gradation and blanket thickness to that placed when the structure was originally built, will be replaced in deficient areas near the banks of the north and south approach channels behind the guidewalls.

*g. Broken handrails and safety chains will be replaced.

h. Staff gages will be repaired and/or cleaned.

i. Minor concrete cracks will continue to be monitored for future deterioration.

j. Reference markers will be repaired and grouted.

6-03 Next Inspection. The next inspection of the Bayou Bienvenue Control Structure is scheduled for March 1988.

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 of Bayou Bienvenue Control Structure, 7 Mar 85

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

FROM: Messrs. Trahan, Stegall, Johnson, Cook, & Boren

DATE: 22 Mar 85

CMT 1
Trahan/bj/5525

TO MAIN FILES

1. On 7 Mar 85, the undersigned participated in the fourth periodic inspection of Bayou Bienvenue Control Structure. Although the last periodic inspection of this structure was conducted in Mar 83, an inspection was scheduled in Mar 85 because the structure was unwatered and undergoing maintenance by local interest which afforded an opportunity to inspect the unwatered positions of the structure. 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.

2. 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.

3. 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. A more detailed description of the structure is given in previous periodic inspection reports.

4. 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. At the time of our inspection there was a considerable amount of sediment, oyster shells, and miscellaneous debris inside of the sector gate recesses. This was being cleaned by the maintenance Contractor. The portions of concrete which had been underwater were covered with aquatic growth which the maintenance crew planned to clean. The maintenance crew also planned to sand blast and repaint all metal portions of the gates.

b. In the last periodic inspection report, it was noted that the joint between the wingwall and main structure on the southwest side of the structure appeared not to be watertight and soil was leaching out of the backfill causing a void in the backfill behind the joint. A close inspection of all wingwalls revealed that this condition was occurring at all similar joints. Further, the seal between the northwest wingwall and the structure had completely pulled away from the structure. It was recommended that all joints be repaired and made water-tight and existing voids behind the walls be backfilled.

c. As noted in the previous inspection, it was observed that riprap was missing in many areas near the top of the channel slopes and erosion was occurring where riprap was missing. Erosion was also occurring around the outer edges of the wingwalls. It was again recommended that the missing riprap along the upperbank slopes be replaced and additional riprap placed at the outer edges of the wingwalls to prevent further erosion.

d. Vegetation was noted growing in one of the expansion joints in the northwest floodwall. This should be cleared.

e. Minor vertical cracks were noted at the cable wells on both sides of the structure. These cracks present no problems at this time but should be monitored.

f. Horizontal hand rail was broken on south floodwall. This should be repaired.

g. All safety chains on top of the sector gates should be equipped with proper fasteners. Some are in conditions where they are not functioning in the intended manner.

h. There are several staff gages located on this structure which are in need of repair and/or cleaning. Futhermore, these gages appear to be set to different datums. If these gages are not needed, they should be removed from the structure. If they are needed, they should be repaired, cleaned, and set to the correct datum.

5. Action Required. New Orleans will prepare an inspection report which includes the observations and recommendations of the inspection team. The report will also include, as an appendix, a description of maintenance work performed during the time the structure was unwatered. The report will be submitted to LMVD for review and approval.

C. C. Trahan
C. C. TRAHAN

M. J. Stegall
M. J. STEGALL

F. N. JOHNSON

L. F. COOK

E. L. Boren
E. L. BOREN

CF:
LMNED-DG
(ATTN: Mr. Mahnt[illegible])