US Army Corps
of Engineers
New Orleans District

LAKE PONTCHARTRAIN,LOUISIANA AND VICINITY

CHALMETTE AREA PLAN

BAYOU BIENVENUE CONTROL STRUCTURE

PERIODIC INSPECTION REPORT NO.7

30 MARCH 1994

Rec'vd 3/13/95
Not dated.

CEMRC-PE-G (CELMN-ED-G/25 Jan 95) (1130-2-320b) 1st End
Mr. Tucker/pt/(601) 634-5900
SUBJECT: Bayou Bienvenue Control Structure, Report of Periodic Inspection No. 7 Under ER 1110-2-100

DA, Mississippi River Commission, Vicksburg, MS 39181-0080
TO MAR '95

FOR Commander, New Orleans District, ATTN: CELMN-ED-G

The enclosed periodic inspection report is approved. No further action is required on this correspondence chain.

FOR THE PRESIDENT OF THE COMMISSION:

Encl (6 cys)
wd 1 cy

JAMES R. TUTTLE
Acting Director of Planning and Engineering

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

REPLY TO
ATTENTION OF:

CELMN-ED-G

25 January 1995

MEMORANDUM FOR Commander, Lower Mississippi Valley Division,
ATTN: CELMV-PE-G

SUBJECT: Bayou Bienvenue Control Structure, Periodic Inspection Report No. 7

Subject report is submitted for your approval.

FOR THE COMMANDER:

W. EUGENE TICKNER
Chief, Engineering Division

1 Encl (6 cys)
as

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY

CHALMETTE AREA PLAN

BAYOU BIENVENUE CONTROL STRUCTURE

PERIODIC INSPECTION REPORT NO. 7

30 MARCH 1994

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS

CORPS OF ENGINEERS

NEW ORLEANS, LOUISIANA

PHOTO TAKEN 27 SEPTEMBER 1974

BAYOU BIENVENUE CONTROL STRUCTURE

SUMMARY

The Bayou Bienvenue Control Structure was inspected on 30 March 1994 by representatives of the New Orleans District, Mississippi River Commission and Orleans Levee District. Overall the structure is in good condition. Observations are noted within.

BAYOU BIENVENUE CONTROL STRUCTURE
TABLE OF CONTENTS

SECTION I - INTRODUCTION

1-01 Authority. Authority is provided by ER 1110-2-100, dated 8 April 1988, subject "Periodic Inspections and Continuing Evaluation of Completed Civil Works Structures".

1-02 Purpose and Scope. The results and conclusions of the inspection and evaluation for assuring the structural integrity and operational adequacy of the structure are presented herein.

1-03 Safety. The inspection was performed in accordance with the pertinent provisions of the "General Safety Requirements", EM 385-1-1, dated 1 April 1981, revised October 1984 and other applicable recognized safe practices.

1-04 Datum. All elevations are in feet and refer to the National Geodetic Vertical Datum (N.G.V.D.), formerly Mean Sea Level (M.S.L.).

1-05 Previous Inspections. Past inspections of the Bayou Bienvenue Control Structure are included in the following reports:

Report No.	Date of Inspection
1	31 Oct 73
2	27 Jul 79
3	31 Mar 83
4	7 Mar 85
5	29 Mar 88
6	25 Jul 91

SECTION II - PROJECT DESCRIPTION AND BACKGROUND

2-01 General. The Bayou Bienvenue Control Structure is a feature of the Chalmette Area plan of the Lake Pontchartrain, Louisiana, and vicinity hurricane protection project authorized by Public Law 298, 89th Congress, 1st Session, approved 27 October 1965.

The structure is located at the eastern edge of Orleans Parish, Louisiana near the intersection of Bayou Bienvenue and the MR-GO. The structure is located at station 367+60.25 on the MR-GO base line, approximately 400 feet west of the original intersection of Bayou Bienvenue and the MR-GO.

The structure was constructed under contract No. DACW29-72-C-0064, awarded in Jan 1972 to T. L. James & Company. It was completed in Sep 1974 and turned over to local interest for maintenance and operation in accordance with the conditions of local cooperation, as specified by the authorizing law.

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 1). This report is supplementary to previously numbered reports.

SECTION III - OPERATION AND MAINTENANCE DATA

3-01 Operation and Maintenance Problems. There have been no accidents nor major operating problems since the previous periodic inspection of the structure.

3-02 Actions on Deficiencies from Last Inspection. The following proposed remedial work included in the last inspection report had not been accomplished by the Orleans Levee Board at the time of the inspection:

a. Riprap has not been replaced in deficient areas near the banks of the north and south approach channels behind the guidewalls.

b. Rusting steel members, ladders, corner plates and metal pile caps have not been repaired.

SECTION IV - REVIEW OF DESIGN AND ANALYSIS OF INSTRUMENTATION

4-01 Review of Design. The criteria used in the original design is equal to or more conservative than current design criteria. The present loads on the structure do not exceed design load conditions. Since the criteria and loading conditions have not changed, a detailed review of the original design is not warranted.

4-02 Analysis of Instrumentation Data.

a. Settlement Survey. The survey data, dated 2 Nov 93, show that no significant settlement has occurred at the wing-walls, the monoliths or the floodwalls on both sides of the structure.

b. Scour. The surveys show that scour is occurring between stations 17+00 and 19+00 on the south approach channel. This scour is far away and is not migrating toward the structure; therefore it does not represent any danger to the integrity and safety of the structure at this moment. This area will continue to be monitored in future surveys.

SECTION V - INSPECTION

5-01 Inspection Team. The field inspection of the Bayou Bienvenue Control Structure was conducted on 30 March 1994 by the following personnel from the New Orleans District(NOD), Mississippi River Commission(MRC) and the Orleans Levee District:

NOD

Emmanuel Harris	Inspection Coordinator
Dan Bradley	Gen & Envir Des Sec(Electrical)
Mike Sanchez-Barbudo	Gen & Envir Des Sec(Mechanical)
Mohan Desai	Struc Des Sec
Soheila Holley	F & M Br(Materials)
Roberto Estrada	F & M Br(Structures)
Erika Gomez	H & H Br
Robert Bass	H & H Br
Brian Keller	Op Div
Marcia Demma	Op Div

MRC

Edwin Boren	Con-Op Div
Lawrence Cook	Proj Eng Br
Patrick Tucker	Proj Eng Br

ORLEANS LEVEE DISTRICT

Max Rubbins

Ed Rubbins

Steve King

Al Wetheren

5-02 Orientation. Prior to inspecting the structure, the inspection team gave a brief orientation on the following features of the project: Structural, foundation and soils, hydraulic and hydrologic, instrumentation, operations and maintenance and the plan for accomplishing the inspection.

5-03 Observations. The overall condition of the structure was good. Most areas above the water surface were refurbished and painted. The structure was not dewatered; therefore, all observations were limited above the water elevation. The following observations were noted by the inspection team:

a. The condition of the gate bay structure was excellent.

b. The existing levee was raised 4 feet and the new sheet piling was tied into the concrete structure wall.

c. An electrical conduit on top of the west sector gate constitutes a tripping hazard.

d. The gates were operated through several cycles using the auxiliary generator. Both gates, their operating machinery and the auxiliary generator performed satisfactorily. The cable on both gates, however, was excessively slack and continued to fall off the top sheave during gate actuation. Additionally, the top sheave in the west machinery room appeared to be frozen.

e. The staff gages need to be refurbished, too hard to read.

f. Safety chains were missing from the structure in several locations on top of the sector gates and for the recess ladder.

g. Riprap is deficient along the banks of the north and south approach channels behind the guidewalls. (See Photo 1)

h. Rusting steel members, ladders, corner plates and metal pile caps need repair. (See Photos 2 & 3).

i. Termite infested portions of the timber guidewalls need replacing. Also, timbers were missing from the bottom half of the east sector gate and from the end of the northeast guide wall.

j. There were no significant changes in the condition of the concrete since the last inspection. There were small spalls as shown in Photos 4 & 5.

k. A depression, which had been filled with sandbags, was noted behind the wingwall at the northwest corner of the structure. Site personnel stated that this depression was apparently caused by material migrating through the joint at the wingwall/gatebay interface. The sandbags had been placed in the depression about three years ago and no appreciable movement had been noted since. This condition does not apparently pose any immediate threat to the structure. Site personnel will continue to monitor this area for change. (See Photo 6)

PHOTO 1 - Deficient Rip-Rap along banks of the north and south approach channels (Typical)

PHOTO 2 - Rusting steel members

PHOTO 3 - Rusting Steel Members

PHOTO 4 - Small spall with exposed rebar on the west side by monolith B-2

PHOTO 5 - Typical small spalls at the joints on the east side

PHOTO 6 - Depression filled with sandbags behind wingwall at northwest corner of structure

SECTION VI - CONCLUSIONS AND PROPOSED REMEDIAL ACTIONS

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

6-02 Remedial Actions. The following remedial actions will be accomplished by the Orleans Levee District in FY-95 under their routine periodic maintenance program:

a. Deficient riprap, rusting steel members, termite infested timbers and missing timbers will be replaced or repaired by contract forces.

b. Missing safety chains, a hazardous electrical conduit, loose cables/frozen sheave in machinery room, and unreadable staff gages will be corrected by site personnel.

c. Small concrete spalls and the depression behind the wingwall at the northwest corner of the structure will be monitored in future periodic inspections for further deterioration.

6-03 Next Inspection. The next inspection of the Bayou Bienvenue Control Structure is scheduled in March 1997.

APPENDIX I - MRC TRIP REPORT

CEMRC-PE-G (1105-2-10c) 4 May, 1994
Tucker/pt/5900

MEMORANDUM THRU

CEMRC-PE-G
CEMRC-PE-T
CEMRC-PE-W
CEMRC-CO
CEMRC-PE-A
CEMRC-PE

SUBJECT: Trip Report, Periodic Inspection No. 7, Bayou Bienvenue Control Structure

FOR MAIN FILES

1. On 30 March, 1994, the undersigned participated in the subject periodic inspection along with personnel from the New Orleans District. A list of attendees is enclosed (encl 1). The inspection was conducted in accordance with ER 1110-2-100, Periodic Inspection and Continuing Evaluation of Completed Civil Works Structures, dated 8 April 1988.

2. Project Description.

a. General. The Bayou Bienvenue Control Structure is located on the eastern edge of Orleans Parish, Louisiana, near the intersection of Bayou Bienvenue and the Mississippi River - Gulf Outlet (MRGO) channel. The control structure consists of a reinforced concrete sector gate bay supported on untreated timber piles, welded steel sector gates, treated timber guidewalls, pile-supported inverted T walls, and sheet pile I walls connecting the structure to the earthen levees on each side. The gate bay is 76 feet in length and has a channel width of 56 feet. The elevation of the top of the gates and floodwalls is 17.5 feet. The sector gates are operated by electric motors with provisions for manual operation.

3. Observations and Recommendations.

a. **General.** At the time of the inspection the structure was not unwatered. Therefore the inspection was limited to visual observation of those features above the water surface.

b. **Operation and Maintenance Observations.** The following deficiencies were noted:

(1). Riprap has not been replaced along the banks of the north and south approach channels behind the guidewalls.

(2). Rusting steel members, ladder, corner plates and metal pile caps need repair.

(3). Termite infested portions of the timber guidewalls need replacing. Also, timbers were missing from the bottom half of east sector gate and from the end of northeast guide wall.

(4). One or two safety chains were missing on top of the sector gates/sector gate bays.

(5). An electrical conduit on top of west sector gate constitutes a tripping hazard.

c. **Geotechnical Observations.** A depression which had been filled with sandbags was noted behind the wingwall at the northwest corner of the structure (see photo). Site personnel informed us that this depression was apparently caused by material migrating through the joint at the wingwall/gatebay interface. The sandbags had been placed in the depression about three years ago and no appreciable movement had been noted since. This condition does not apparently pose any immediate threat to the structure. Site personnel will continue to monitor this area for change.

4. Action Required. No action is required by the Commander at this time. CELMN will prepare an inspection report and submit the report to this office for review and approval.

5. The next periodic inspection of this project is scheduled for 1999.

Edwin L. Boren

2 Encl
as

Edwin L. Boren

Lawrence F. Cook

Patrick G. Tucker

TEAM MEMBERS

PERIODIC INSPECTION NO. 7

OF

BAYOU BIENVENUE CONTROL STRUCTURE

30 MARCH 1994

MISSISSIPPI RIVER COMMISSION

Edwin L. Boren	CEMRC-CO-O
Lawrence F. Cook	CEMRC-PE-W
Patrick G. Tucker	CEMRC-PE-G

NEW ORLEANS DISTRICT

Emmanuel Harris	CELMN-ED-DG
Mike Sanchez-Barbudo	CELMN-ED-DG
Daniel Bradley	CELMN-ED-DG
Mohan Desai	CELMN-ED-DD
Erika Gomez	CELMN-ED-HC
Robert Bass	CELMN-ED-HC
Roberto Estrada	CELMN-ED-FS
Soheila Holley	CELMN-ED-FM
Brian Keller	CELMN-OD-R
Marcia Demma	CELMN-OD-SE

ORLEANS LEVEE DISTRICT

Max Rubbins
Ed Rubbins
Steve King
Al Wetheren

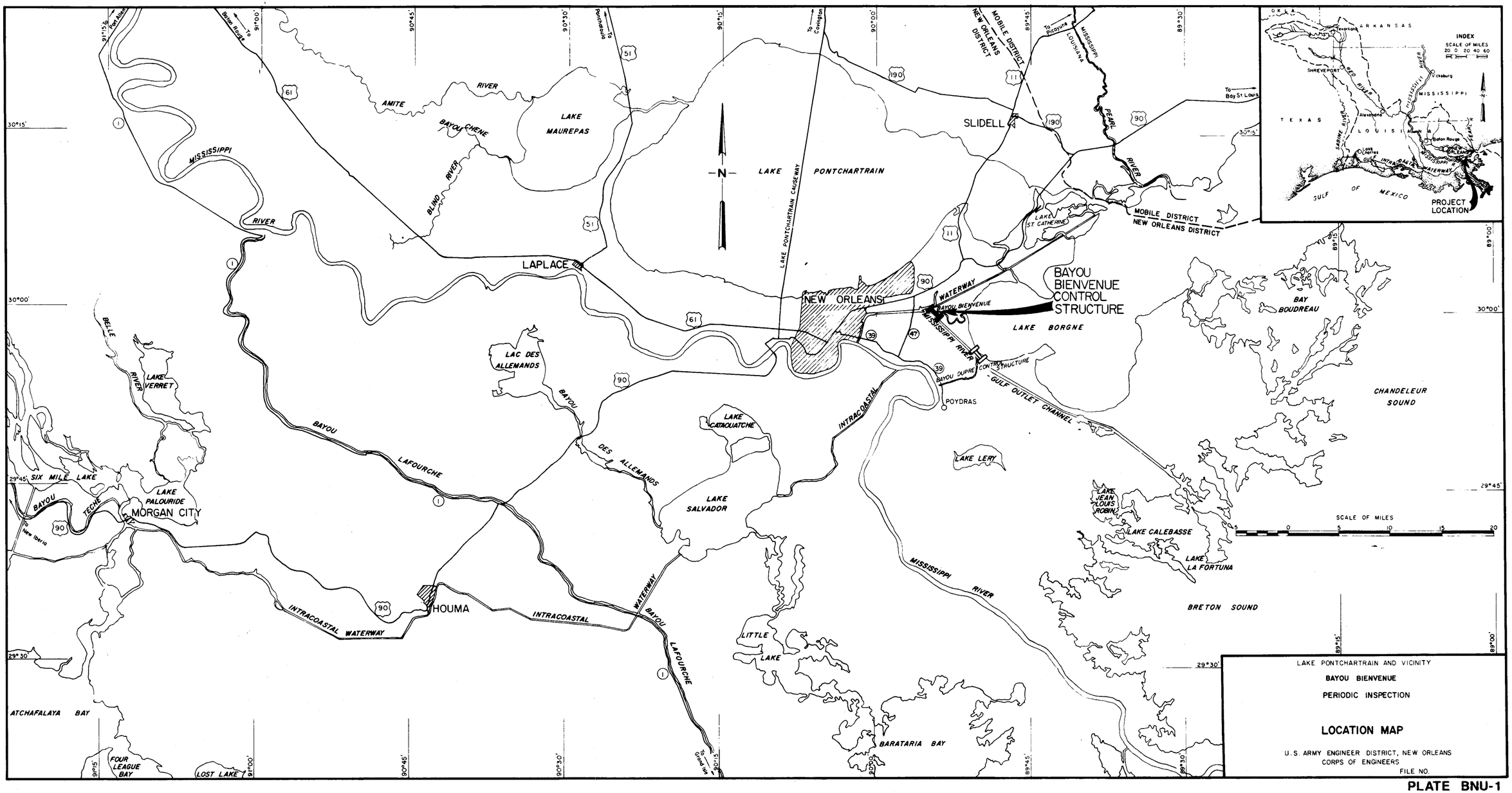
Enclosure1

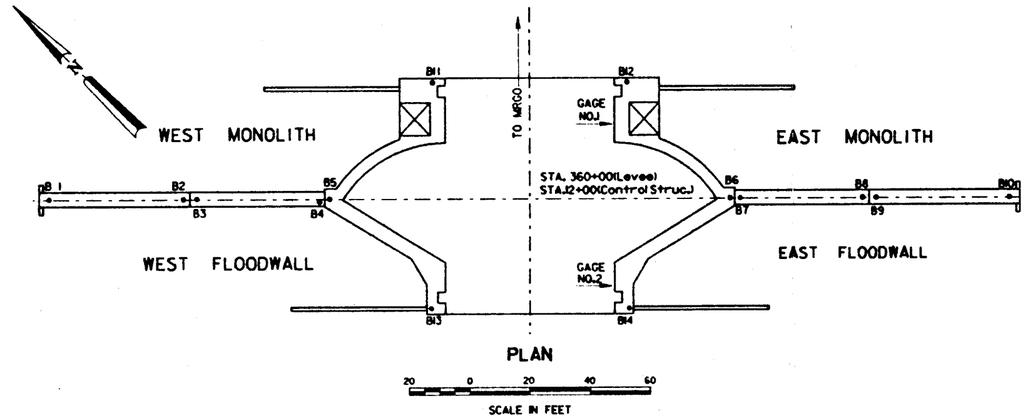
APPENDIX II - INSTRUMENTATION PLATES

BAYOU BIENVENUE CONTROL STRUCTURE

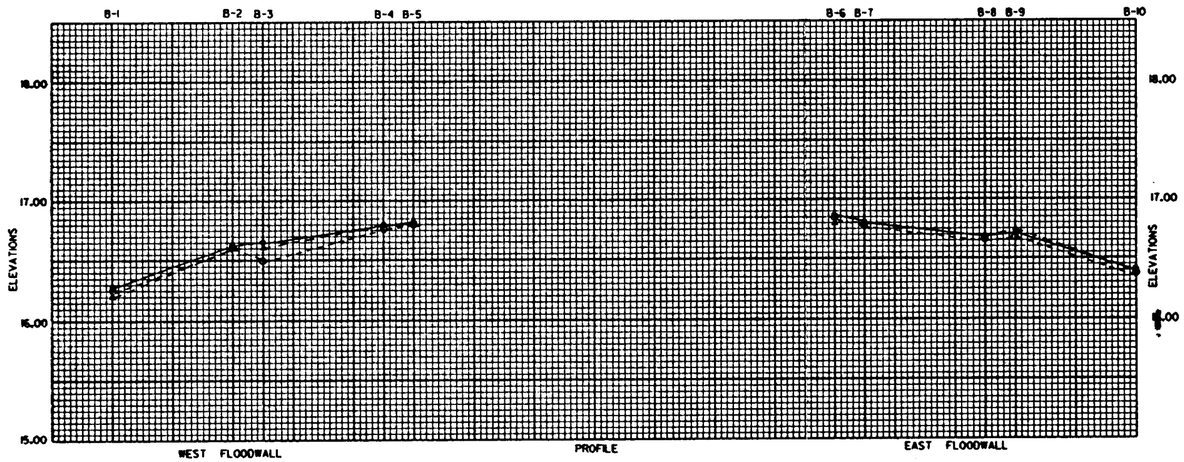
INSTRUMENTATION PLATES

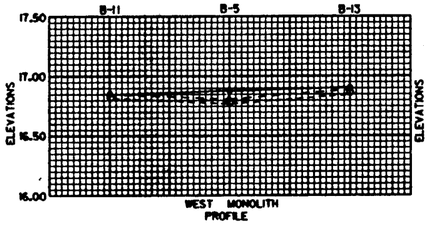
Plate No.	TItle
1	Location Map
2	Settlement Reference Marks Plan and Profile
3	Settlement Reference Marks Differential Settlement Chart
4	Wing-Wall Settlement Reference Marks Plan and Tabulation
5	Wing-Wall Settlement Reference Marks Differential Settlement Chart
6	Scour and Overbank Survey
7	Northwest Wingwall
8	Northeast Wingwall
9	Southwest Wingwall
10	Southeast Wingwall
11	Profile Survey
12	Profile Survey
13	Scour Survey
14	Scour 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

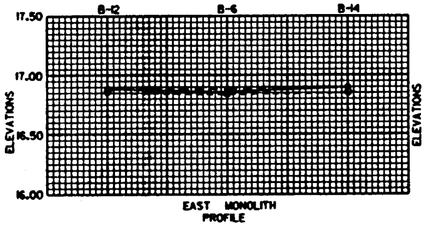

LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION
LOCATION MAP
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
FILE NO.
PLATE BNU-1
BAYOU BIENVENUE CONTROL STRUCTURE
MOBILE DISTRICT
NEW ORLEANS DISTRICT
PROJECT LOCATION
INDEX
SCALE OF MILES
SCALE OF MILES
LAKE PONTCHARTRAIN
NEW ORLEANS
SLIDELL
LAPLACE
MORGAN CITY
HOUMA
POYDRAS
LAKE BORGNE
CHANDELEUR SOUND
BRETON SOUND
BARATARIA BAY
ATCHAFALAYA BAY
LAKE MAUREPAS
LAKE VERRET
LAKE PALOURIDE
LAKE SALVADOR
LAKE CATAOUATCHE
LAKE LERY
LAKE CALEBASSE
LAKE LA FORTUNA
LAKE ST. CATHERINE
LAC DES ALLEMANDS
LITTLE LAKE
FOUR LEAGUE BAY
LOST LAKE
SIX MILE LAKE
BAY BOUDREAU
AMITE RIVER
BLIND RIVER
BELLE RIVER
MISSISSIPPI RIVER
PEARL RIVER
BAYOU LAFOURCHE
BAYOU DES ALLEMANDS
BAYOU TECHE
INTRACOASTAL WATERWAY
GULF OUTLET CHANNEL
MISSISSIPPI RIVER GULF OUTLET
LAKE PONTCHARTRAIN CAUSEWAY
ARKANSAS
TEXAS
LOUISIANA
MISSISSIPPI
SHREVEPORT
RED RIVER
SABINE RIVER
GULF OF MEXICO



SETTLEMENT REFERENCE MARKS																		
NO. OF REFERENCE MARKS	B-1	B-2	B-3	B-4	B-5	B-6	B-7	B-8	B-9	B-10	B-11	B-12	B-13	B-14	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°	L9	L9
DATE OF OBSERVATIONS																	
18 NOV 1991	16.28	16.54	16.64	16.78	16.82	16.87	16.81	16.68	16.72	16.61	16.87	16.89	16.90	16.90	86°	L9	L9
17 DEC 1992	16.23	16.59	16.49	16.74	16.79	16.84	16.78	16.65	16.68	16.37	16.83	16.88	16.86	16.87	63°	-	-
02 NOV 1993	16.20	16.60	16.60	16.80	16.80	16.88	16.82	16.69	16.72	16.40	16.87	16.89	16.90	16.90	72°	L4	2.2







LEGEND
- 18 NOV. 1991
- 17 DEC. 1992

COMPUTER AIDED DESIGN DRAFTING

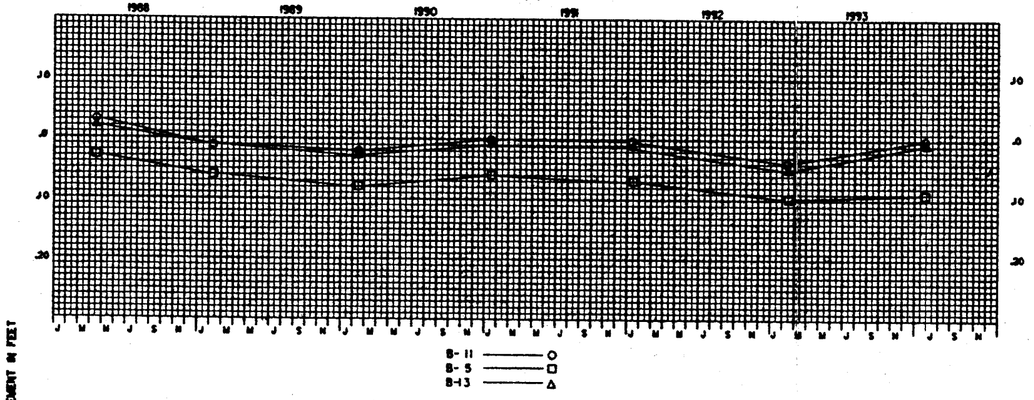
LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

SETTLEMENT REFERENCE MARKS PLAN AND PROFILE

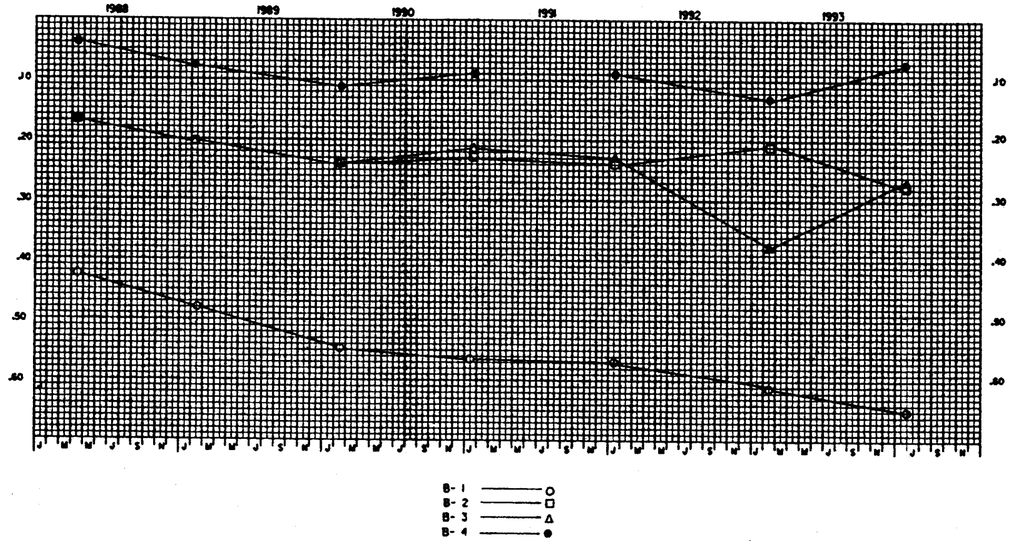
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

PLATE 2

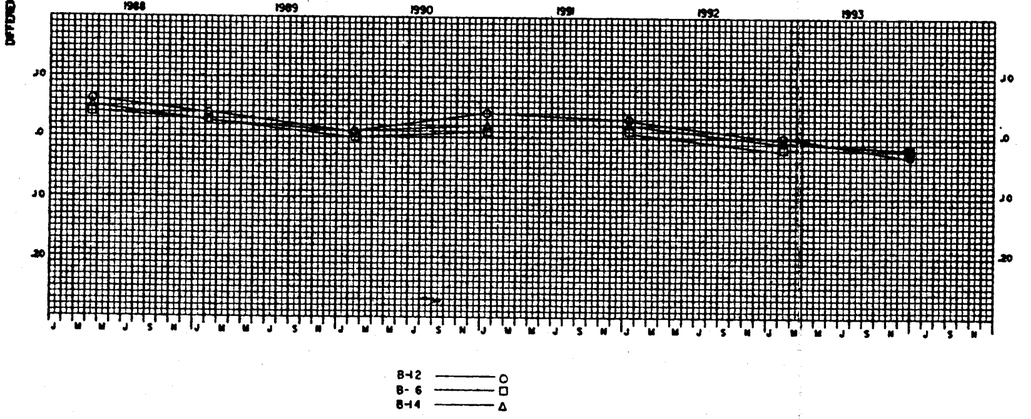
WEST MONOLITH



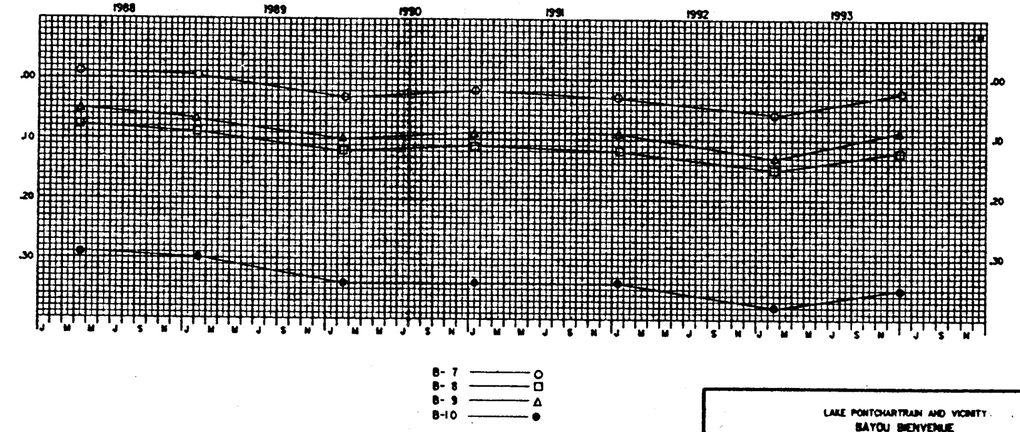
WEST FLOODWALL



EAST MONOLITH



EAST FLOODWALL



	DISTANCE BETWEEN REFERENCE MARKS						
NO.OF REFERENCE MARKS	B2TOB3	B4TOB5	B5TOB6	B1TOB2	B3TOB4	B6TOB7	B8TOB9
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 (FL)	4.97	3.98	13 L35	64.17	64.09	2.48	5.00
OBSERVATIONS 03 MAR. 1987	5.02	4.03	—	—	—	2.55	5.08
25 FEB. 1988	5.04	4.03	—	—	—	2.56	5.08
01 DEC. 1988	5.15	4.04	—	—	—	2.57	5.09
04 DEC. 1989	5.05	4.05	—	—	—	2.55	5.08
01 NOV. 1990	5.07	4.04	—	—	—	3.57	5.09
18 NOV. 1991	5.05	4.03	—	—	—	2.57	5.08
17 DEC. 1992	5.05	4.03	—	—	—	2.57	5.09
02 NOV 1993	5.05	4.05	—	—	—	2.58	5.08

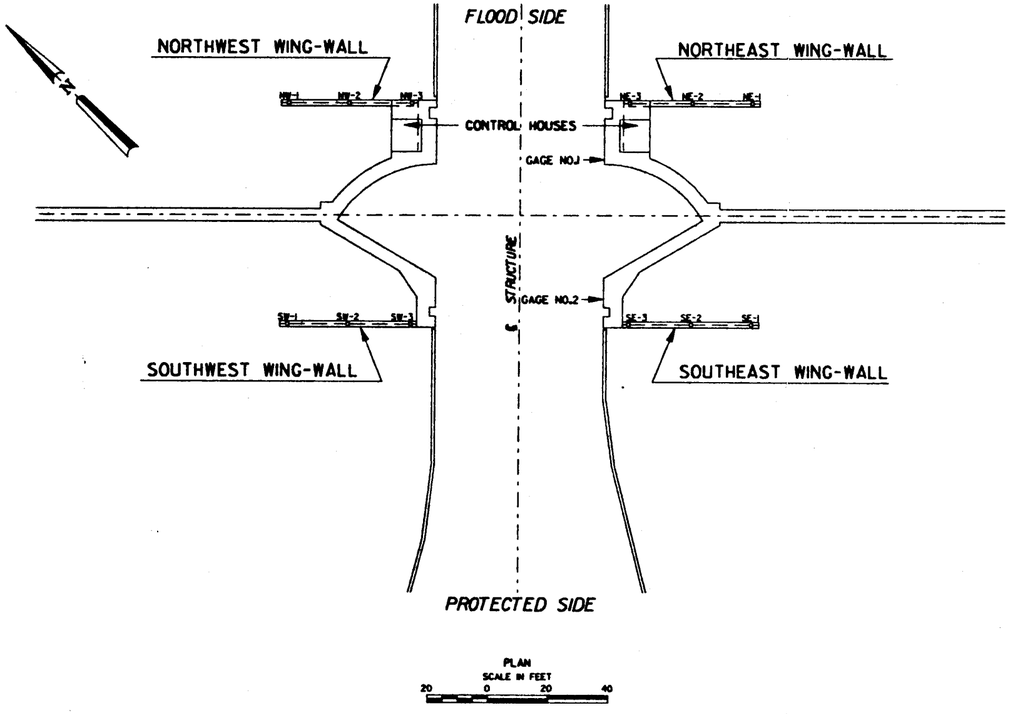
NOTE:
For location and tabulation of settlement reference marks see plate

LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

SETTLEMENT REFERENCE MARKS DIFFERENTIAL SETTLEMENT CHART

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

PLATE 3



PLAN
SCALE IN FEET
20 0 20 40

SETTLEMENT REFERENCE MARKS

NO. OF REFERENCE MARKS	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
DATE OF OBSERVATIONS																	
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	BB2	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	BB2	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	BB2	6.281
29 NOV. 1982	4.85	5.02	5.17	4.65	4.84	5.11	4.84	4.98	5.14	4.68	4.83	5.21	66°	1.1	1.6	BB3	2.10
13 APR. 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°	-	1.0	BB3	6.290
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	BB3	6.290
11 AUG. 1986	4.81	5.03	5.20	4.62	4.83	5.07	4.82	4.97	5.15	4.65	4.75	5.19	78°	1.1	1.0	BB3	6.290
03 MAR. 1987	4.81	5.00	5.20	4.59	4.79	5.08	4.80	4.94	5.12	4.62	4.78	5.18	60°	1.9	1.7	BB3	6.290
25 FEB. 1988	4.82	5.00	5.21	4.64	4.85	5.14	4.80	4.95	5.13	4.64	4.82	5.22	50°	-0.3	0.10	BB3	6.290
01 DEC. 1988	4.81	5.00	5.20	4.63	4.84	5.11	4.80	4.94	5.13	4.67	4.83	5.23	52°	0.8	0.8	BB3	6.290
04 DEC. 1989	4.79	4.99	5.18	4.60	4.80	5.09	4.78	4.93	5.13	4.63	4.79	5.19	52°	-	-	BB3	6.290
01 NOV. 1990	4.79	4.98	5.20	4.60	4.80	5.09	4.78	4.93	5.13	4.62	4.79	5.18	80°	1.8	1.4	BB3	6.290
18 NOV. 1991	4.80	4.99	5.20	4.62	4.83	5.11	4.79	4.94	5.14	4.63	4.80	5.23	86°	1.9	1.9	BB3	6.228
17 DEC. 1992	4.74	4.94	5.16	4.57	4.79	5.08	4.74	4.90	5.10	4.60	4.77	5.19	63°	-	-	BB3	6.290
02 NOV 1993	4.80	5.00	5.19	4.58	4.79	5.09	4.70	4.90	*	4.61	4.78	5.20	72°	1.4	2.2	BB3	6.290

* TOP OF BRASS BOLT BENT OVER.

COMPUTER AIDED DESIGN DRAFTING

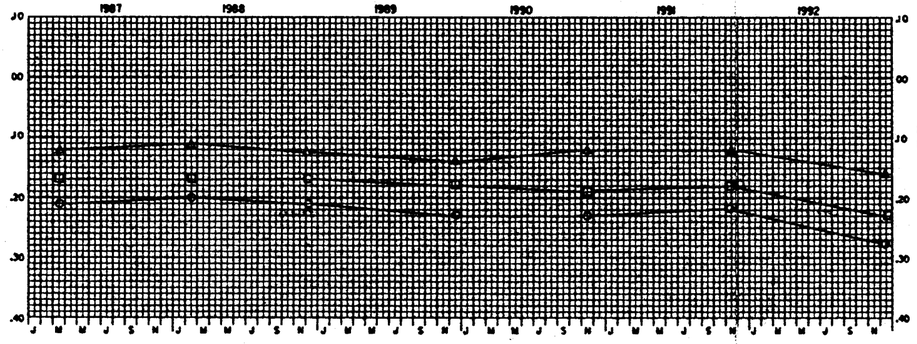
LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

WING-WALL SETTLEMENT REFERENCE MARKS PLAN AND TABULATION

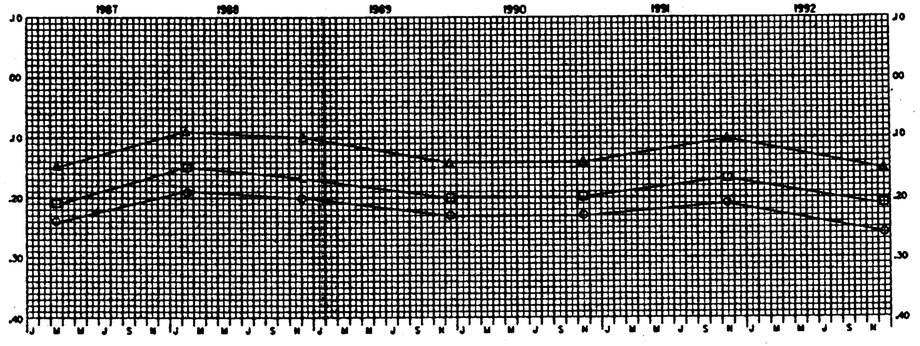
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

PLATE 4

NORTHWEST WING-WALL



NORTHEAST WING-WALL

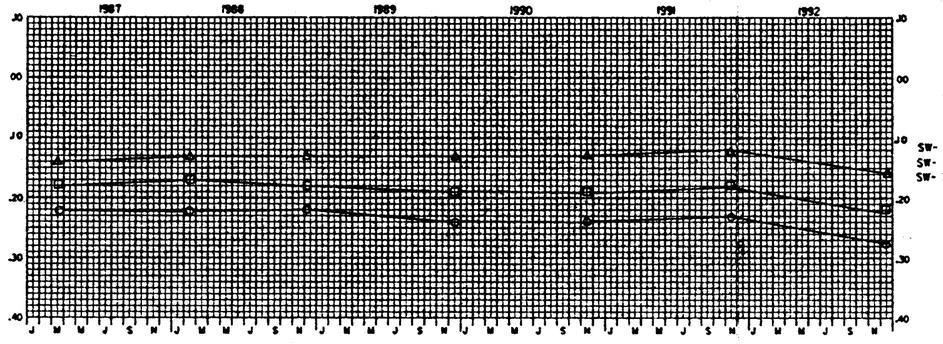


DIFFERENTIAL SETTLEMENT IN FEET

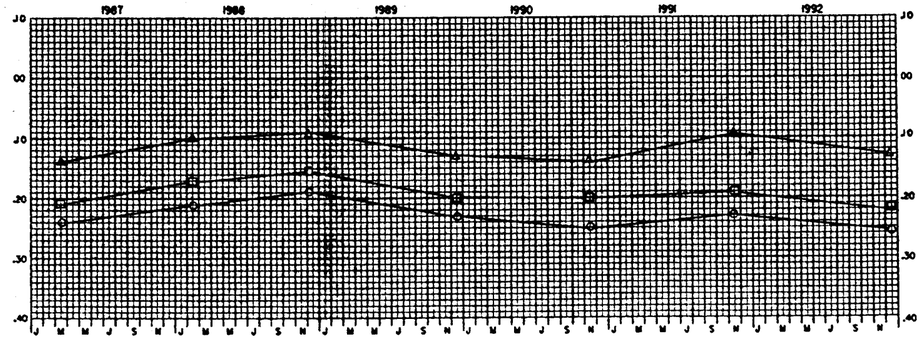
LEGEND

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	SW-3

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

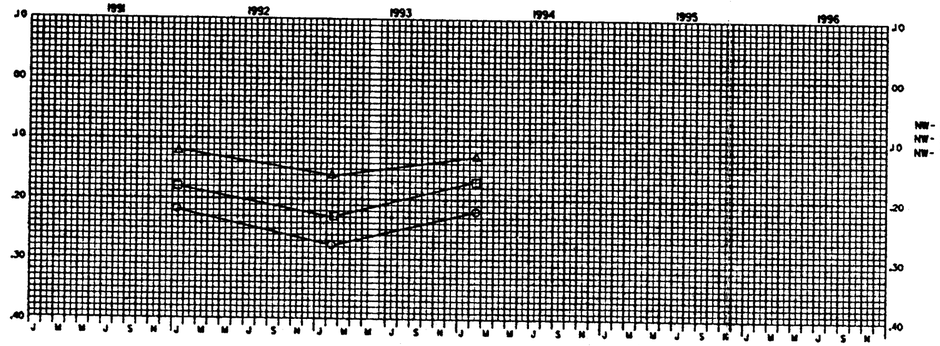
LAKE PONTCHARTRAIN AND VICINITY
BAYOU BIENVENUE
PERIODIC INSPECTION

WING-WALL
SETTLEMENT REFERENCE MARKS
DIFFERENTIAL SETTLEMENT CHART

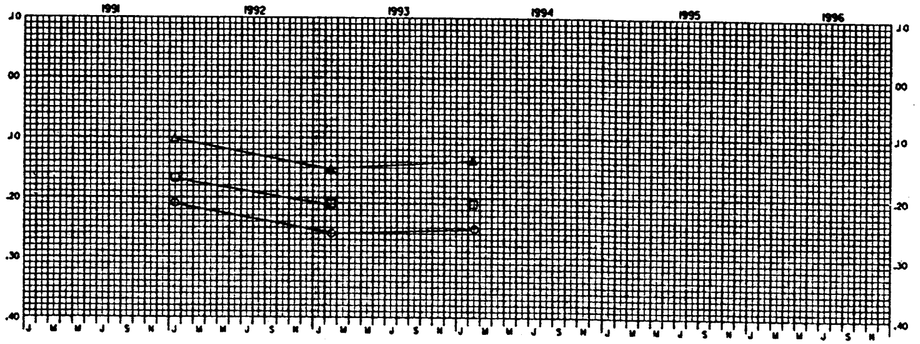
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

PLATE 5

NORTHWEST WING-WALL



NORTHEAST WING-WALL

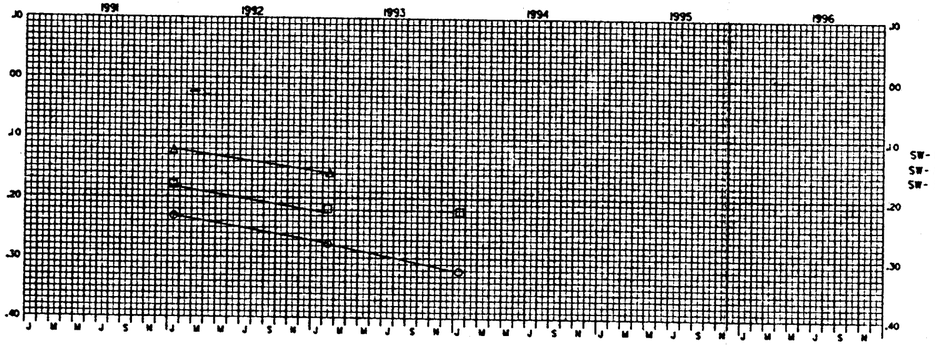


DIFFERENTIAL SETTLEMENT IN FEET

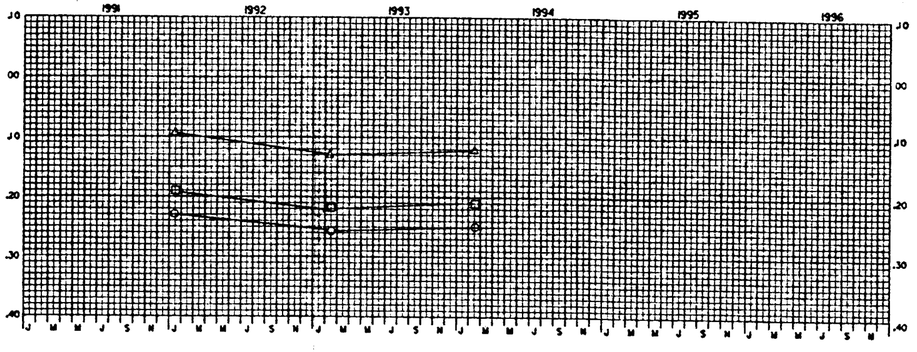
LEGEND

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 △ SW-3 △

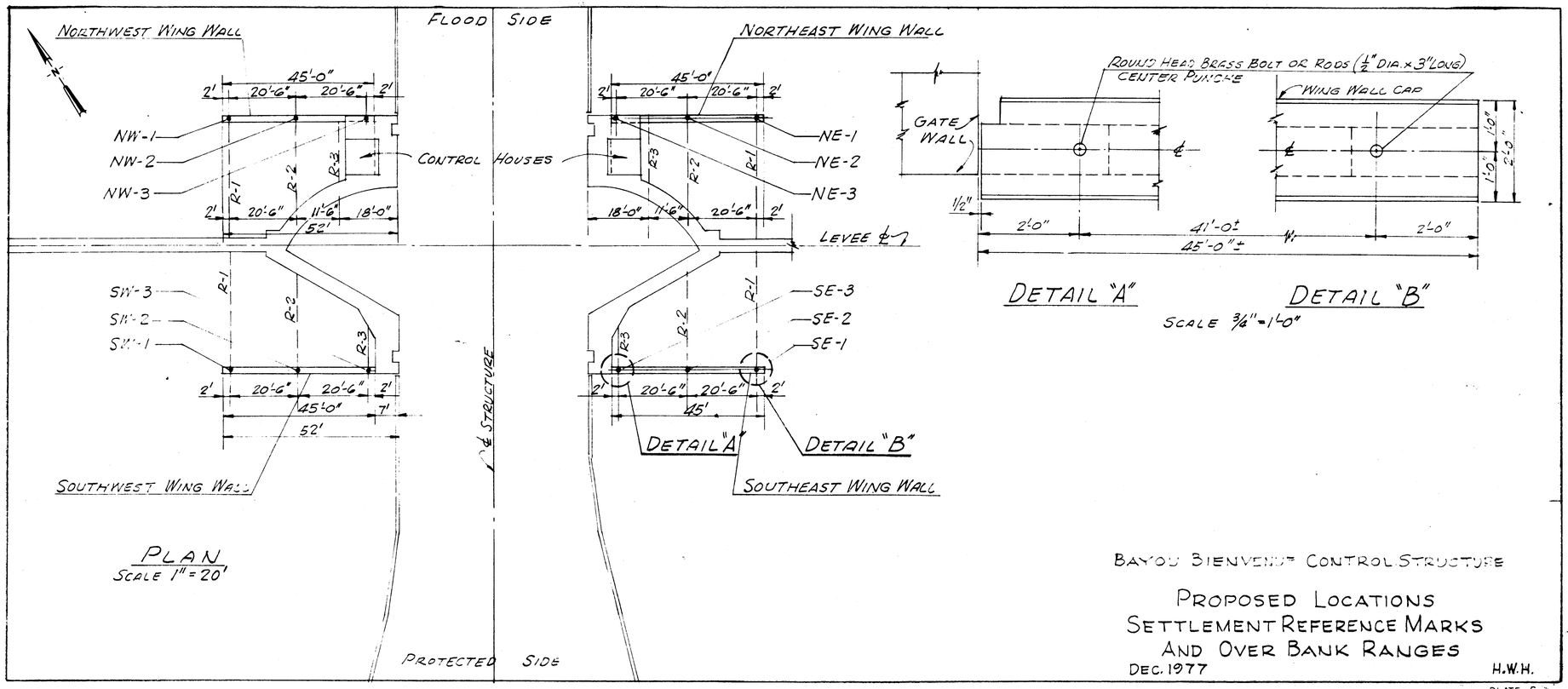
NOTE:
For location and tabulation of settlement reference marks see plate

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
NEW ORLEANS, LOUISIANA

PLATE 5A



BAYOU BIENVENUE CONTROL STRUCTURE

PROPOSED LOCATIONS SETTLEMENT REFERENCE MARKS AND OVER BANK RANGES

DEC. 1977

H.W.H.

PLATE. 6

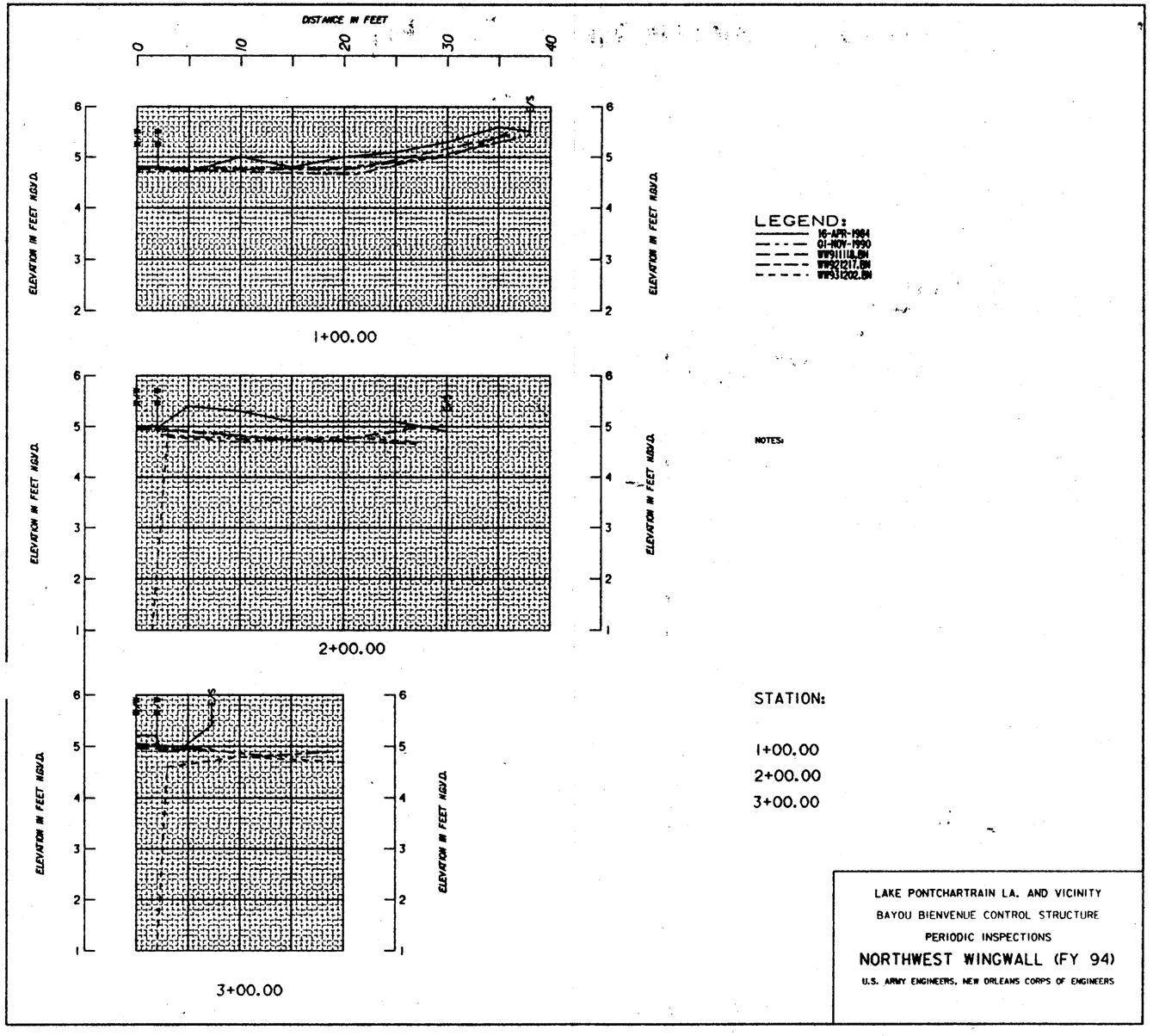

DISTANCE IN FEET
0
10
20
30
40
ELEVATION IN FEET NGVD
1+00.00
2+00.00
3+00.00
LEGEND:
16-APR-1984
01-NOV-1990
WW911114.GN
WW921217.GN
WW931202.GN
NOTES:
STATION:
1+00.00
2+00.00
3+00.00
LAKE PONTCHARTRAIN LA. AND VICINITY
BAYOU BIENVENUE CONTROL STRUCTURE
PERIODIC INSPECTIONS
NORTHWEST WINGWALL (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

PLATE 7

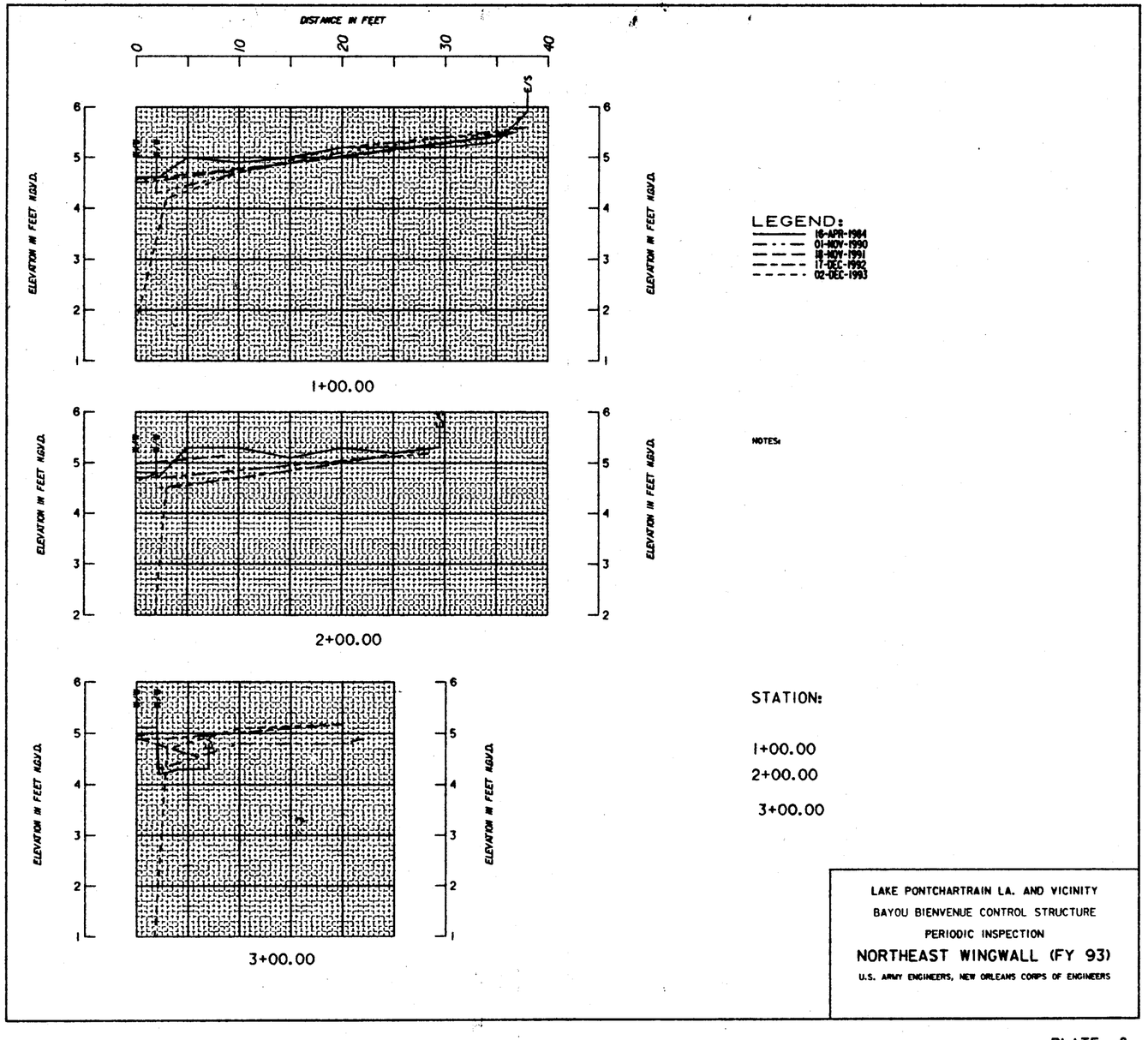
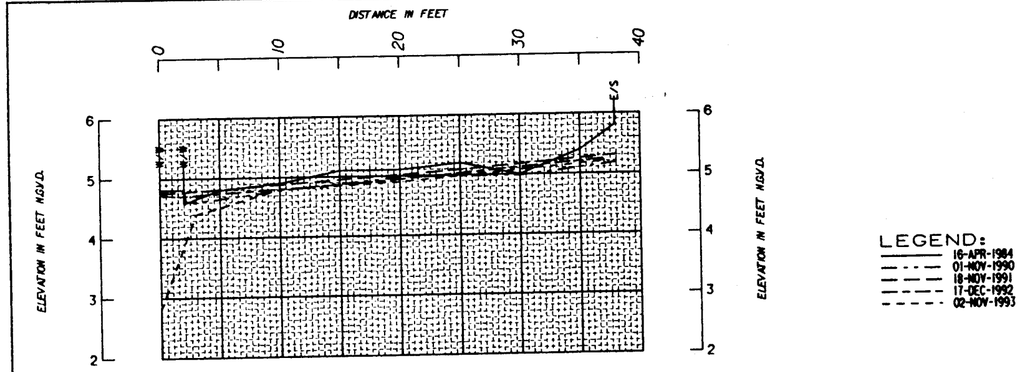
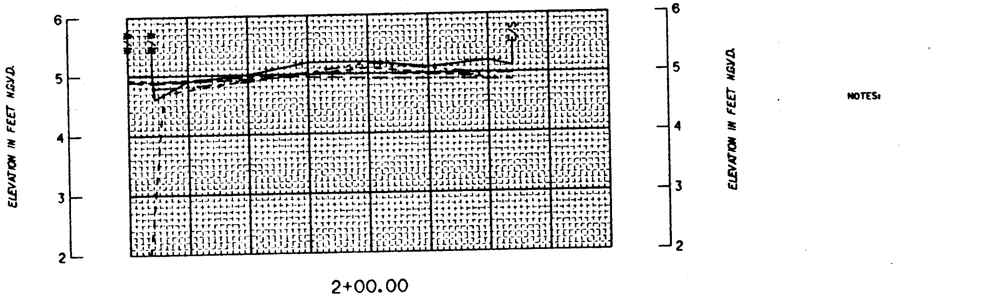

DISTANCE IN FEET
0
10
20
30
40
E/S
ELEVATION IN FEET NGVD.
1
2
3
4
5
6
1+00.00
2+00.00
3+00.00
LEGEND:
16-APR-1984
01-NOV-1990
18-NOV-1991
17-DEC-1992
02-DEC-1993
NOTES:
STATION:
1+00.00
2+00.00
3+00.00
LAKE PONTCHARTRAIN LA. AND VICINITY
BAYOU BIENVENUE CONTROL STRUCTURE
PERIODIC INSPECTION
NORTHEAST WINGWALL (FY 93)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

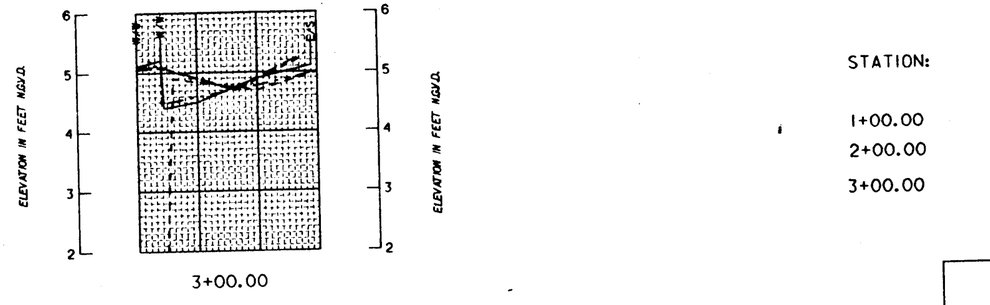
PLATE 8



1+00.00



2+00.00



3+00.00

LEGEND:

- 16-APR-1984
- 01-NOV-1990
- 18-NOV-1991
- 17-DEC-1992
- 02-NOV-1993

NOTES:

STATION:

1+00.00
2+00.00
3+00.00

LAKE PONTCHARTRAIN LA. AND VICINITY
BAYOU BIENVENUE CONTROL STRUCTURE
PERIODIC INSPECTIONS
SOUTHWEST WINGWALL (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

PLATE 9

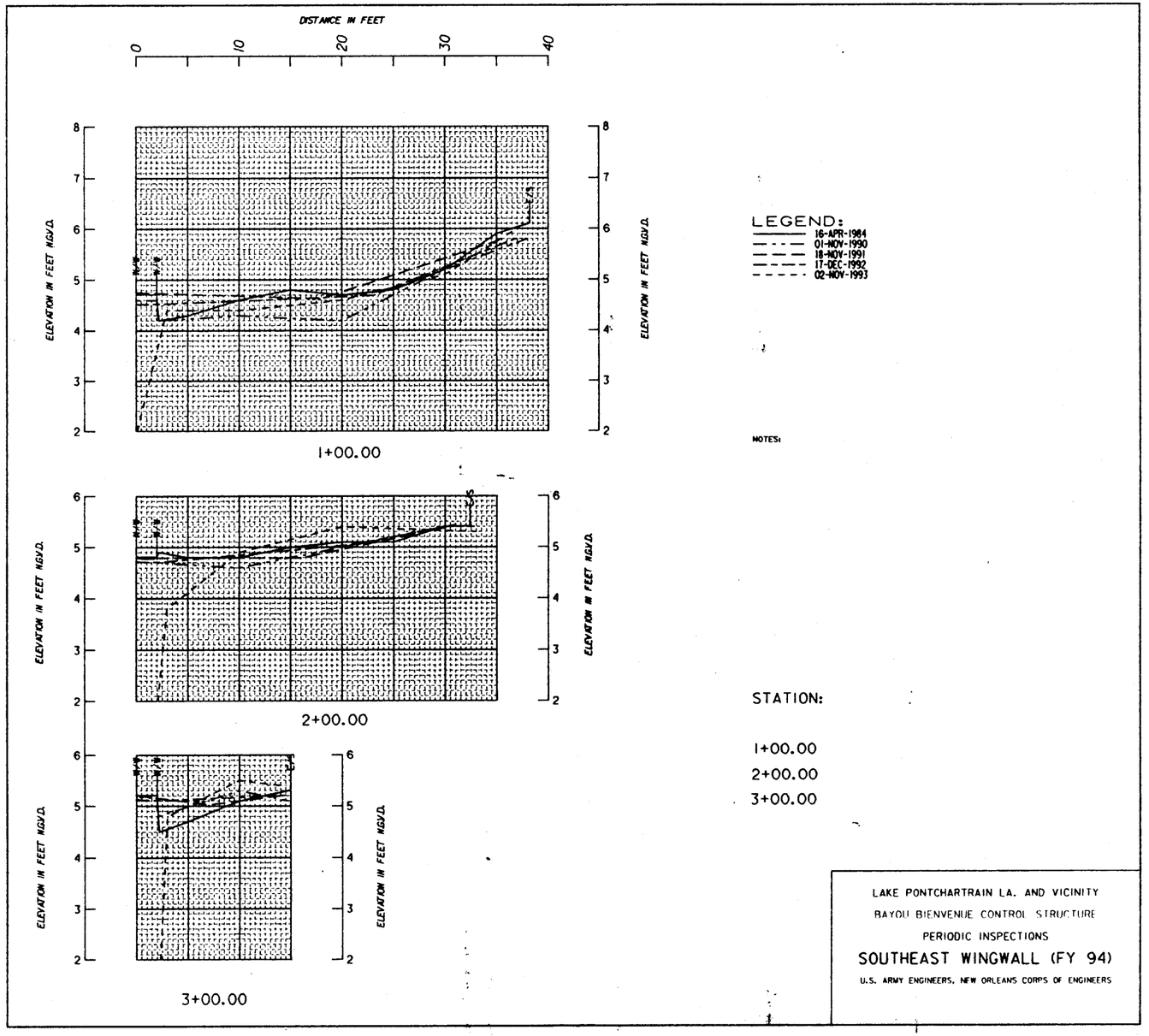
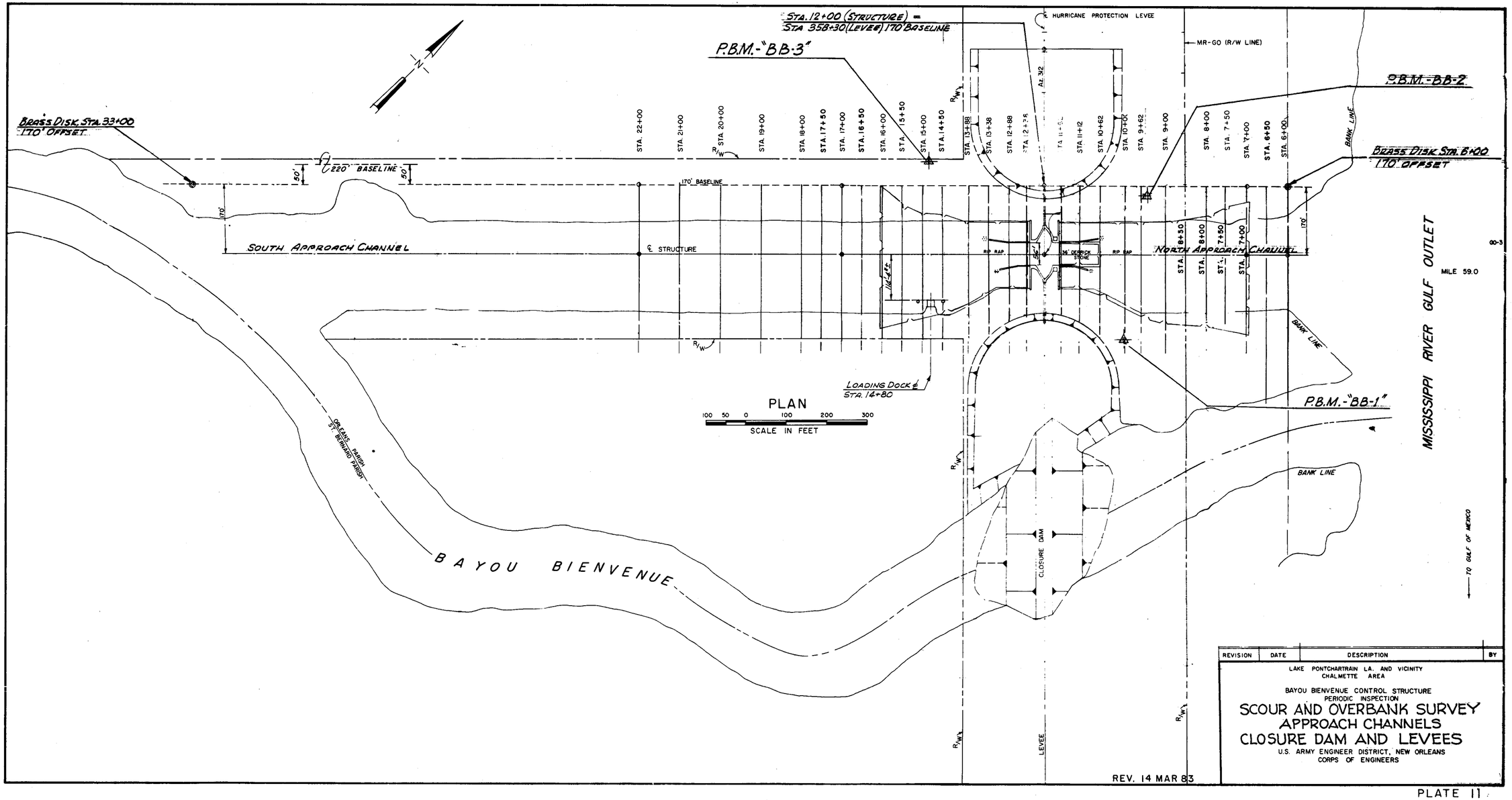

DISTANCE IN FEET
0
10
20
30
40
ELEVATION IN FEET NGVD.
2
3
4
5
6
7
8
1+00.00
2+00.00
3+00.00
LEGEND:
16-APR-1984
01-NOV-1990
18-NOV-1991
17-DEC-1992
02-NOV-1993
NOTES:
STATION:
1+00.00
2+00.00
3+00.00
LAKE PONTCHARTRAIN LA. AND VICINITY
BAYOU BIENVENUE CONTROL STRUCTURE
PERIODIC INSPECTIONS
SOUTHEAST WINGWALL (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

PLATE 10



REVISION	DATE	DESCRIPTION	BY

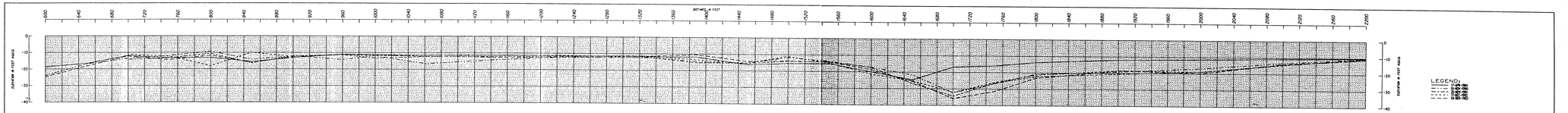
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA

BAYOU BIENVENUE CONTROL STRUCTURE
PERIODIC INSPECTION

SCOUR AND OVERBANK SURVEY
APPROACH CHANNELS
CLOSURE DAM AND LEVEES

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

PLATE 11



NOTES:

LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
PROFILE SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS DISTRICT, CORPS OF ENGINEERS

PLATE 12

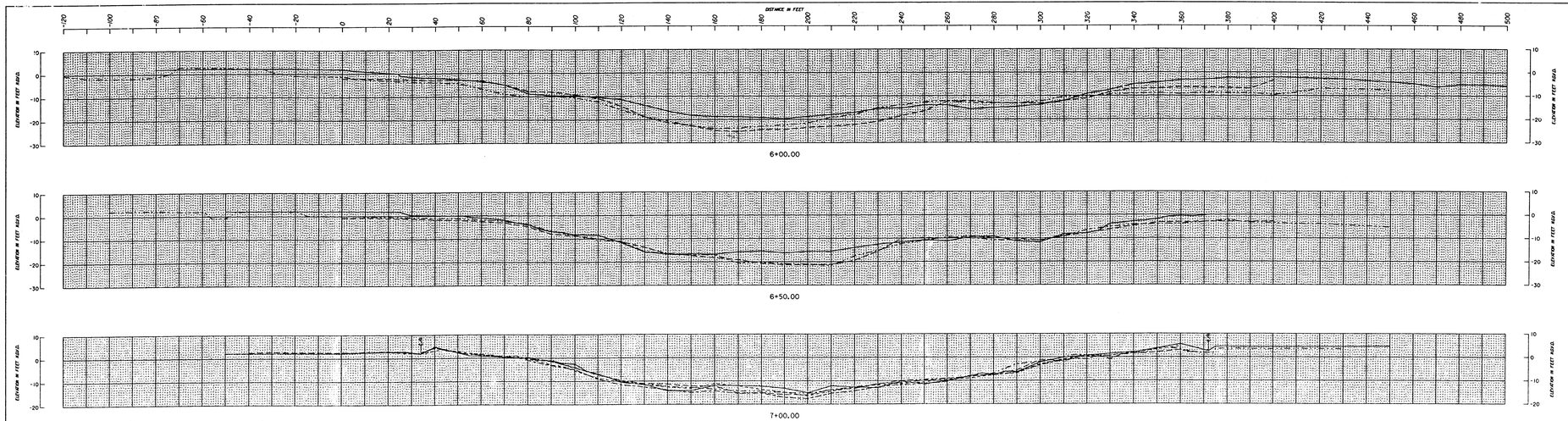

DISTANCE IN FEET
-120 -100 -80 -60 -40 -20 0 20 40 60 80 100 120 140 160 180 200 210 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500
ELEVATION IN FEET NGVD
10 0 -10 -20 -30
6+00.00
6+50.00
7+00.00
LEGEND:
NOTES:
STATION:
6+00.00
6+50.00
7+00.00
LAKE PONTCHARTRAIN L.& VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

PLATE 13

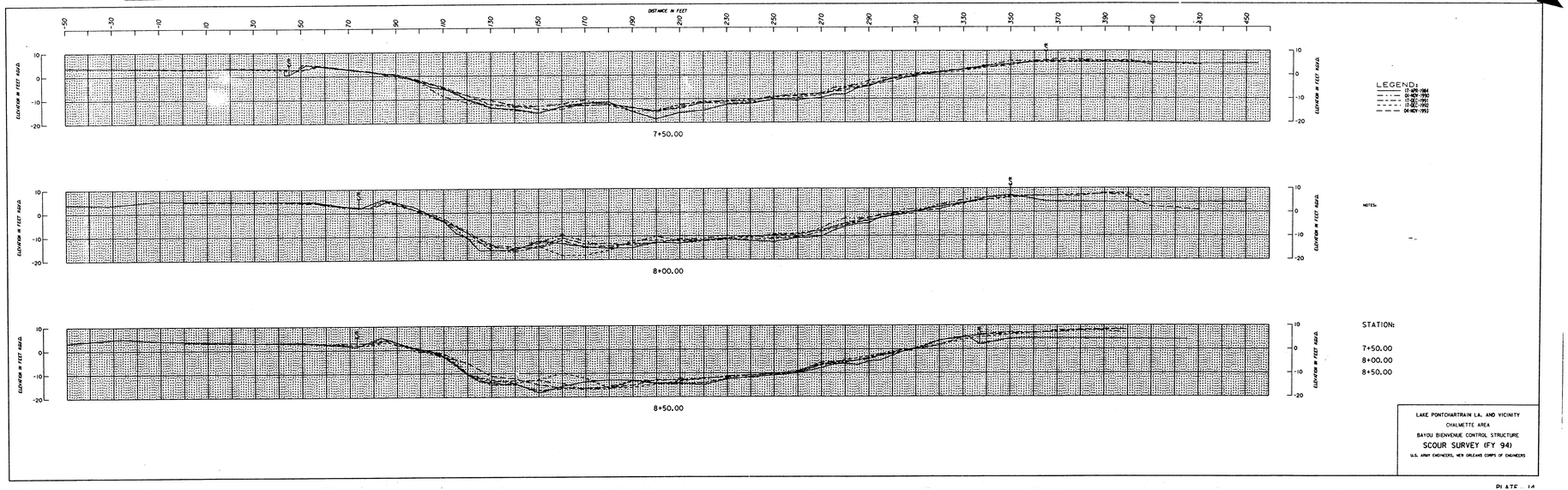
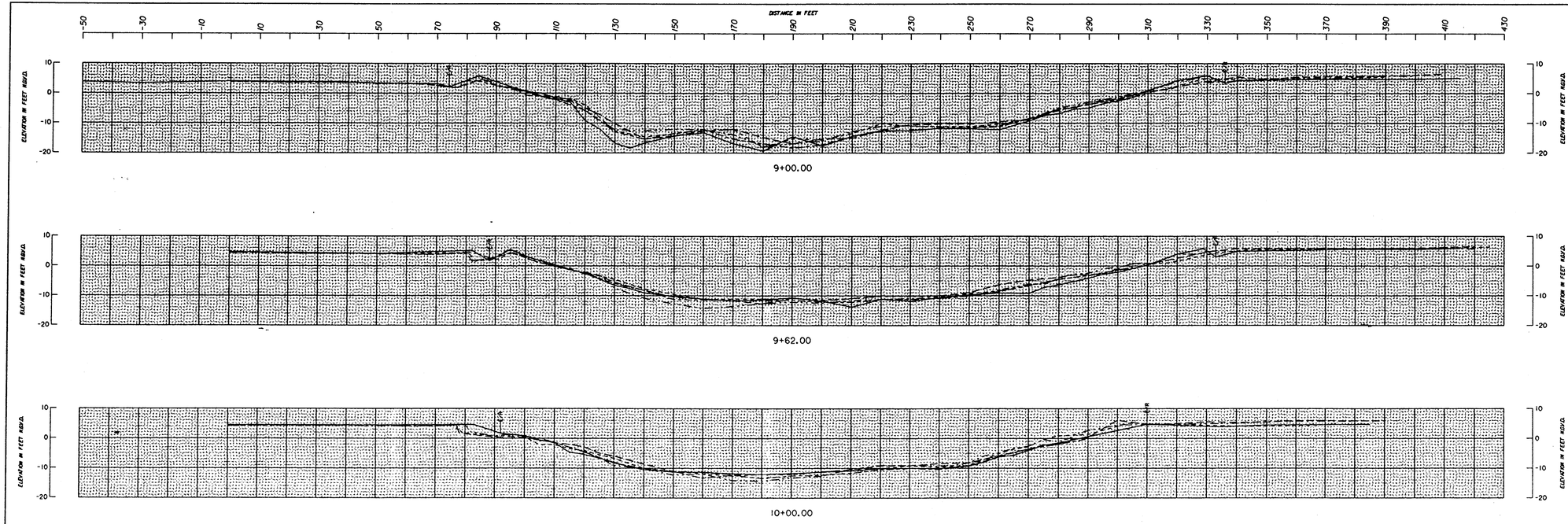

DISTANCE IN FEET
-50
-30
-10
10
30
50
70
90
110
130
150
170
190
210
230
250
270
290
310
330
350
370
390
410
430
450
ELEVATION IN FEET NGVD
10
0
-10
-20
7+50.00
8+00.00
8+50.00
LEGEND:
17-APR-1984
01-NOV-1990
17-DEC-1993
12-JAN-1993
04-NOV-1993
NOTES:
STATION:
7+50.00
8+00.00
8+50.00
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

PLATE 14



LEGEND:

17-APR-1984
01-NOV-1990
17-DEC-1991
17-DEC-1992
04-NOV-1993

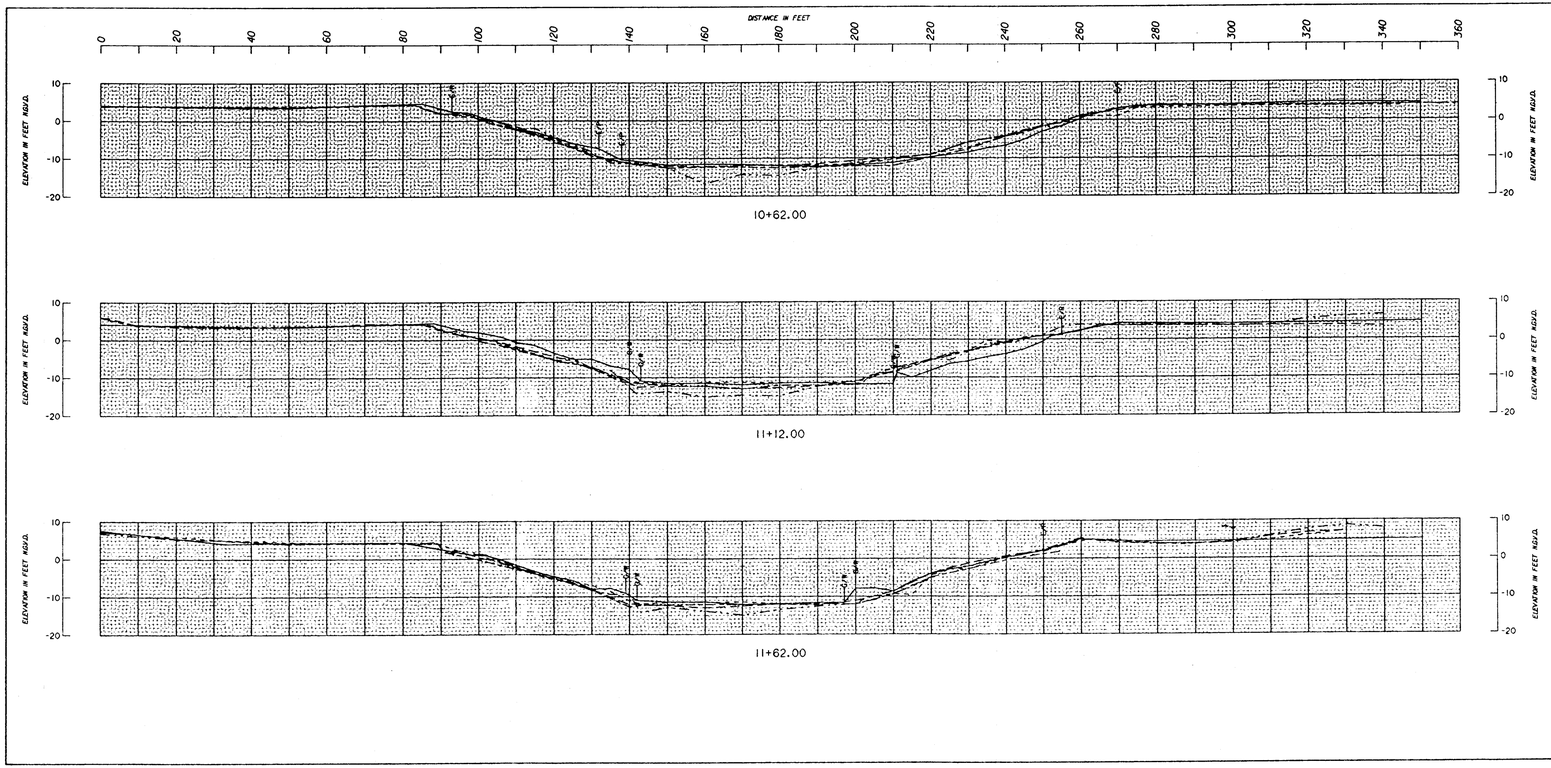
NOTES:

STATION:

9+00.00
9+62.00
10+00.00

LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

PLATE 15



LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS DISTRICT OF ENGINEERS

PLATE 16

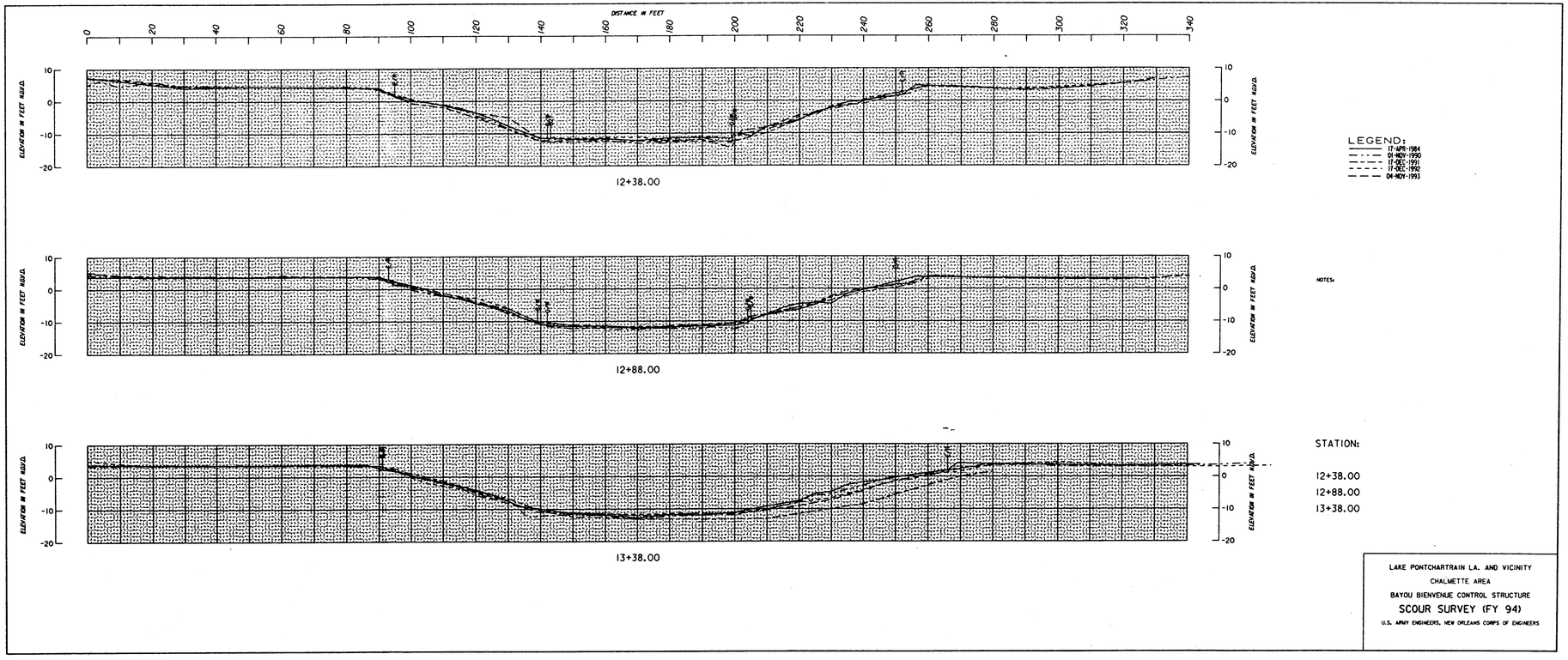

DISTANCE IN FEET
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
ELEVATION IN FEET NGVD
10
0
-10
-20
12+38.00
12+88.00
13+38.00
LEGEND:
17-APR-1984
01-NOV-1990
17-DEC-1991
17-DEC-1992
04-NOV-1993
NOTES:
STATION:
12+38.00
12+88.00
13+38.00
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

PLATE 17

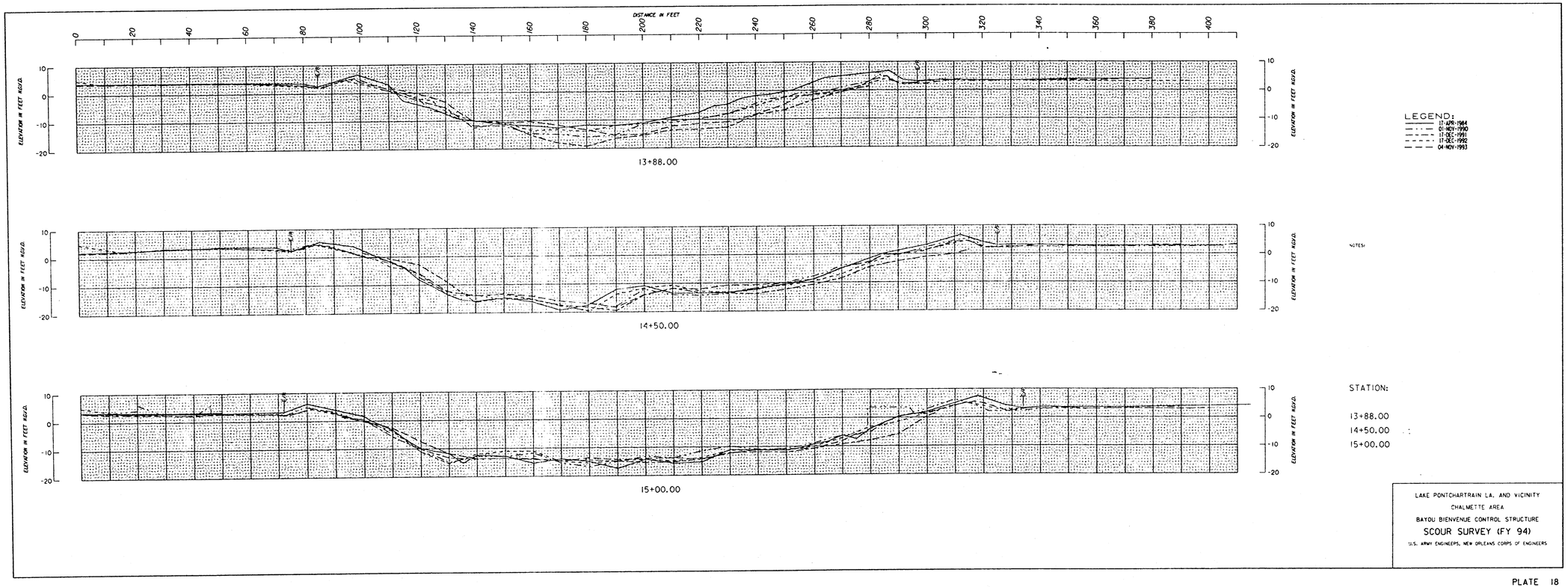

DISTANCE IN FEET
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
340
360
380
400
ELEVATION IN FEET NGVD.
10
0
-10
-20
13+88.00
14+50.00
15+00.00
LEGEND:
17-APR-1984
01-NOV-1990
17-DEC-1991
17-DEC-1992
04-NOV-1993
NOTES:
STATION:
13+88.00
14+50.00
15+00.00
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

PLATE 18

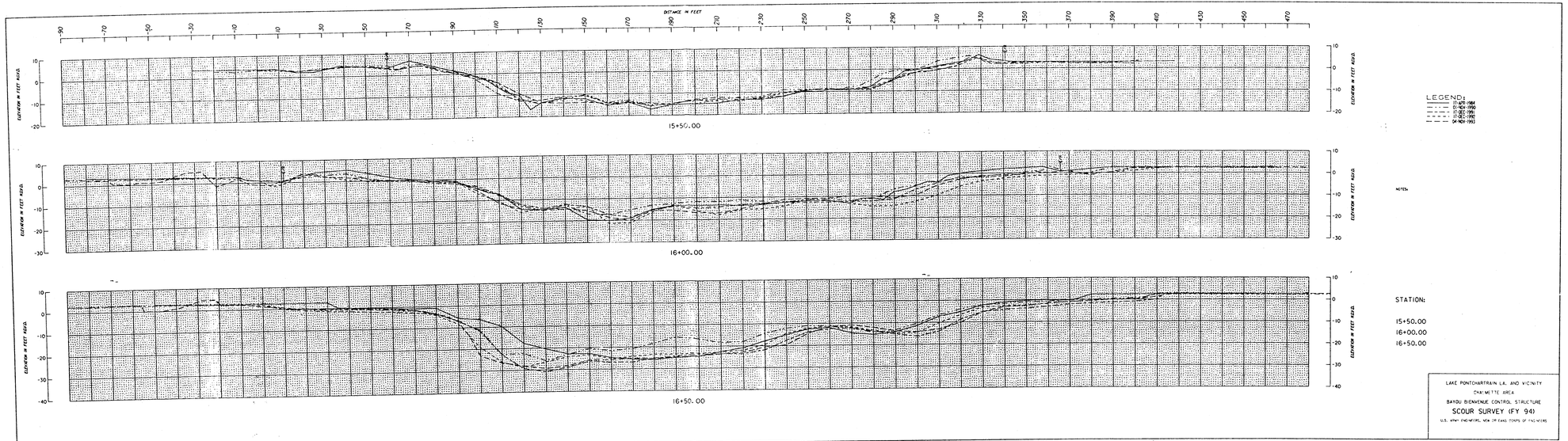

DISTANCE IN FEET
-90 -70 -50 -30 -10 10 30 50 70 90 110 130 150 170 190 210 230 250 270 290 310 330 350 370 390 410 430 450 470
ELEVATION IN FEET N.G.V.D.
10 0 -10 -20
15+50.00
ELEVATION IN FEET N.G.V.D.
10 0 -10 -20 -30
16+00.00
ELEVATION IN FEET N.G.V.D.
10 0 -10 -20 -30 -40
16+50.00
LEGEND:
17-APR-1984
01-NOV-1990
11-DEC-1991
17-DEC-1992
04-NOV-1993
NOTES:
STATION:
15+50.00
16+00.00
16+50.00
LAKE PONTCHARTRAIN LA. AND VICINITY
CHARMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS DISTRICT OF THE CORPS

PLATE 19

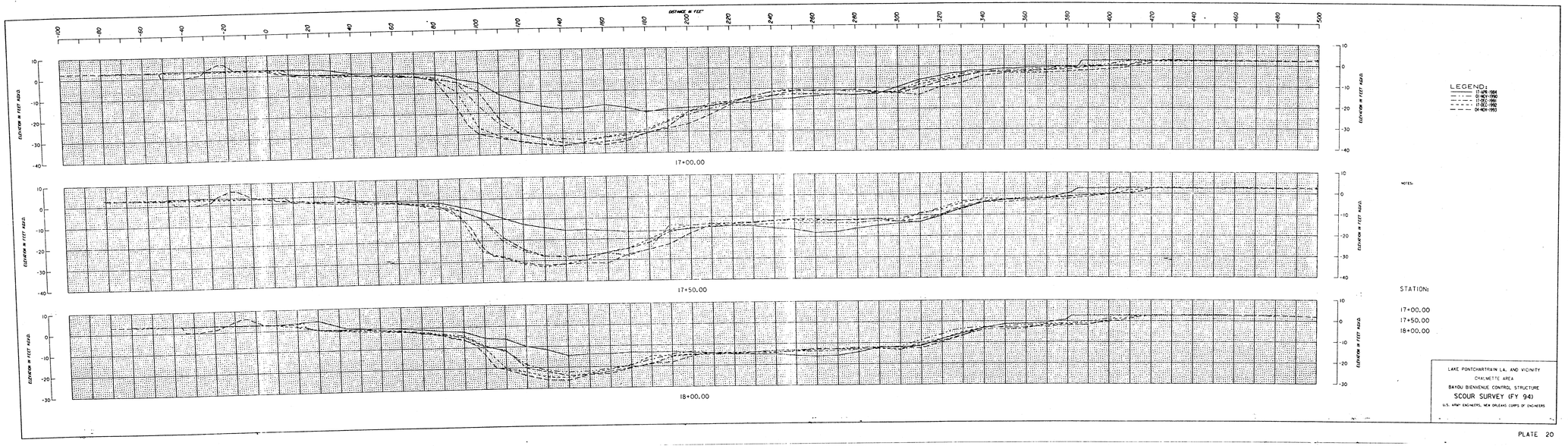

DISTANCE IN FEET
-100 -80 -60 -40 -20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500
ELEVATION IN FEET NGVD
10 0 -10 -20 -30 -40
17+00.00
17+50.00
18+00.00
LEGEND:
01-APR-1964
01-APR-1990
01-DEC-1990
01-DEC-1992
04-APR-1993
NOTES:
STATION:
17+00.00
17+50.00
18+00.00
LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

PLATE 20

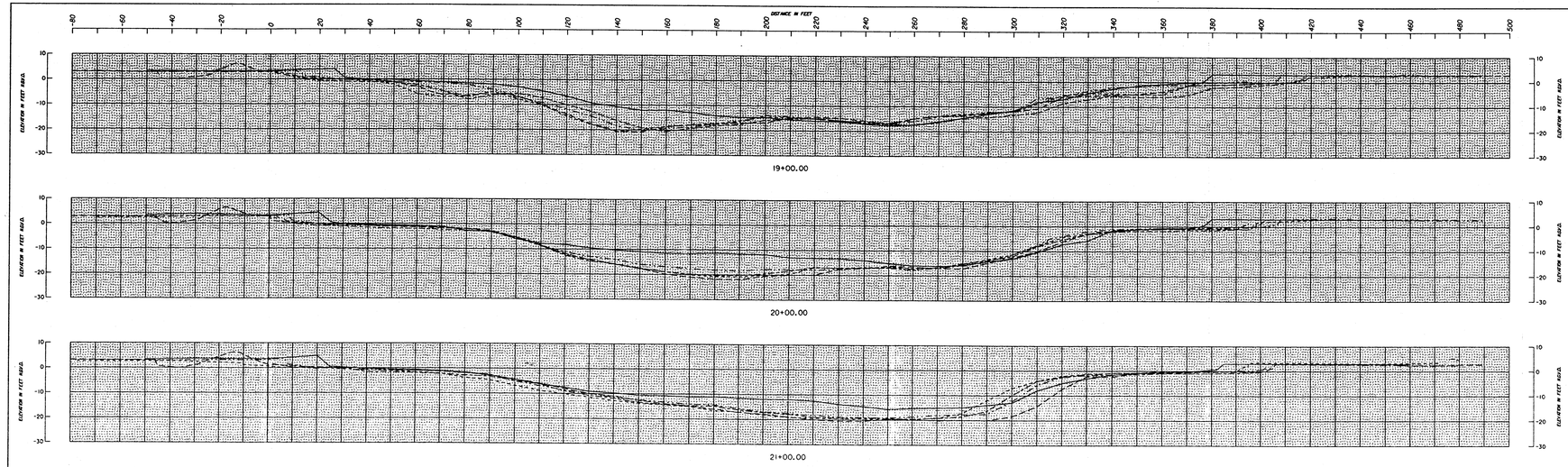
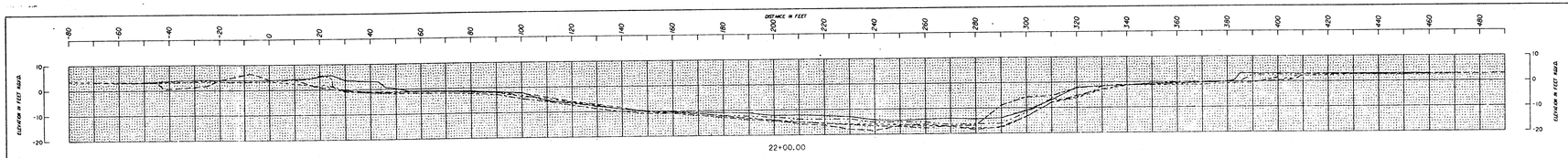

DISTANCE IN FEET
-80 -60 -40 -20 0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 320 340 360 380 400 420 440 460 480 500
ELEVATION IN FEET NGVD
10 0 -10 -20 -30
19+00.00
20+00.00
21+00.00
LEGEND:
NOTES:
STATION:
19+00.00
20+00.00
21+00.00
LAKE PONTCHARTRAIN, LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS

PLATE 21



NOTES:

STATION:

22+00.00

LAKE PONTCHARTRAIN LA. AND VICINITY
CHALMETTE AREA
BAYOU BIENVENUE CONTROL STRUCTURE
SCOUR SURVEY (FY 94)
U.S. ARMY ENGINEERS, NEW ORLEANS CORPS OF ENGINEERS