LAKE PONTCHARTRAIN, LA.
AND VICINITY
LAKE PONTCHARTRAIN
HIGH LEVEL PLAN

DESIGN MEMORANDUM NO. 17
GENERAL DESIGN

JEFFERSON PARISH
LAKEFRONT LEVEE

IN TWO VOLUMES
VOLUME II

US Army Corps
of Engineers
New Orleans District

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
NEW ORLEANS, LOUISIANA

NOVEMBER 1987

SERIAL NO.

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-SP

20 Nov 87

MEMORANDUM FOR: Commander, Lower Mississippi Valley Division,
ATTN: CELMV-ED-TD

SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, High Level Plan, Design Memorandum No. 17 - General Design, Jefferson Parish Lakefront Levee

1. The subject design memorandum is submitted for review and approval, and has been prepared generally in accordance with the provisions of ER 1110-2-1150, dated 15 November 1984.

2. A summary of the current status of the Clean Water Act, endangered species, EIS, and cultural resources investigations is as follows:

a. There is no deposition of dredged or fill material into waters of the U.S. associated with the subject work. However, a Section 404(b)(1) Evaluation has been prepared and an application for a Water Quality Certificate has been made.

b. Based on studies and investigations at this stage of design, the proposed action is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat of such species.

c. A final EIS for the barrier plan for the subject project was filed with CEQ on 17 January 1975. A final supplement to this EIS was filed with EPA on 7 December 1984. This supplement addressed the impacts associated with raising the height of the subject levee. The proposed levee work described in this GDM resulted in a decrease in acreage over that covered in the EIS Supplement. A Supplemental Information Report (SIR) has been prepared to address the change in impacts associated with this decreased acreage.

d. A cultural resources survey of the subject levee item was conducted by New World Research, Inc., under contract to the New Orleans District, U.S. Army Corps of Engineers. No significant cultural resources were located in the land-based portion of the rights-of-way. The survey report was coordinated with the Louisiana SHPO and he concurred with the survey findings. Numerous magnetic anomalies that could represent significant historic shipwrecks were noted in the offshore borrow sites. However, under the present construction method, no offshore borrow pits will be required.

CELMN-ED-SP
SUBJECT: Lake Pontchartrain, Louisiana and Vicinity, High Level Plan, Design Memorandum No. 17 - General Design, Jefferson Parish Lakefront Levee

3. In accordance with LMVED-TS letter dated 5 February 1981, this report has been reviewed by the District Security Officer. There were no comments to be incorporated in the report.

4. This report was scheduled to be submitted to LMVD by 31 October 1987. This delay will not cause a delay in the start of construction (as shown on the current PB-2a and in this report) provided an expeditious approval of this report is obtained.

5. Approval of the report as a basis for preparation of plans and specifications is recommended.

Encl (16 cys, fwd sep)

LLOYD K. BROWN
Colonel, CE
Commanding

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17, GENERAL DESIGN
JEFFERSON PARISH, LAKEFRONT LEVEE

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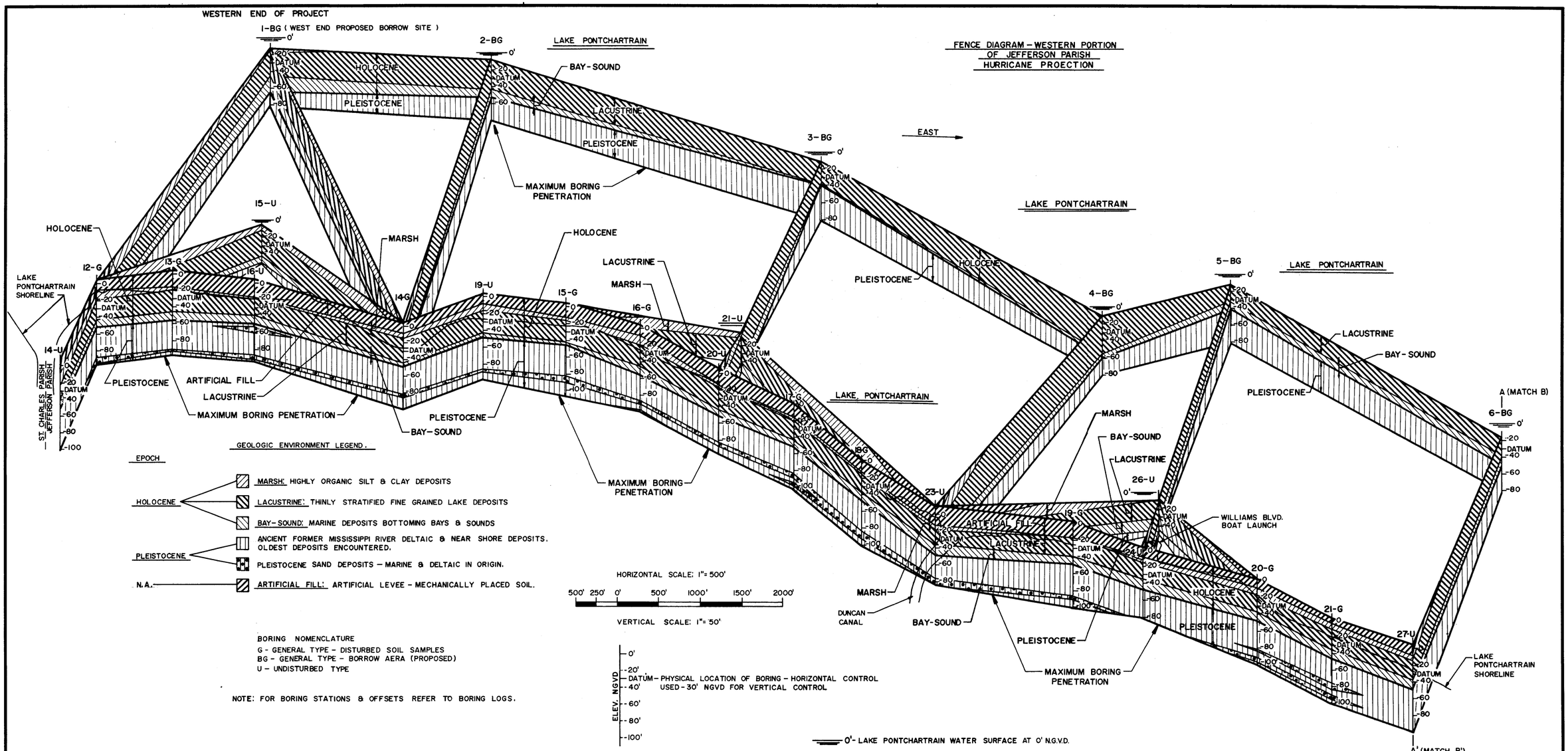
VOLUME II PLATES

PLATES (cont'd)

VOLUME II PLATES

PLATES (cont'd)

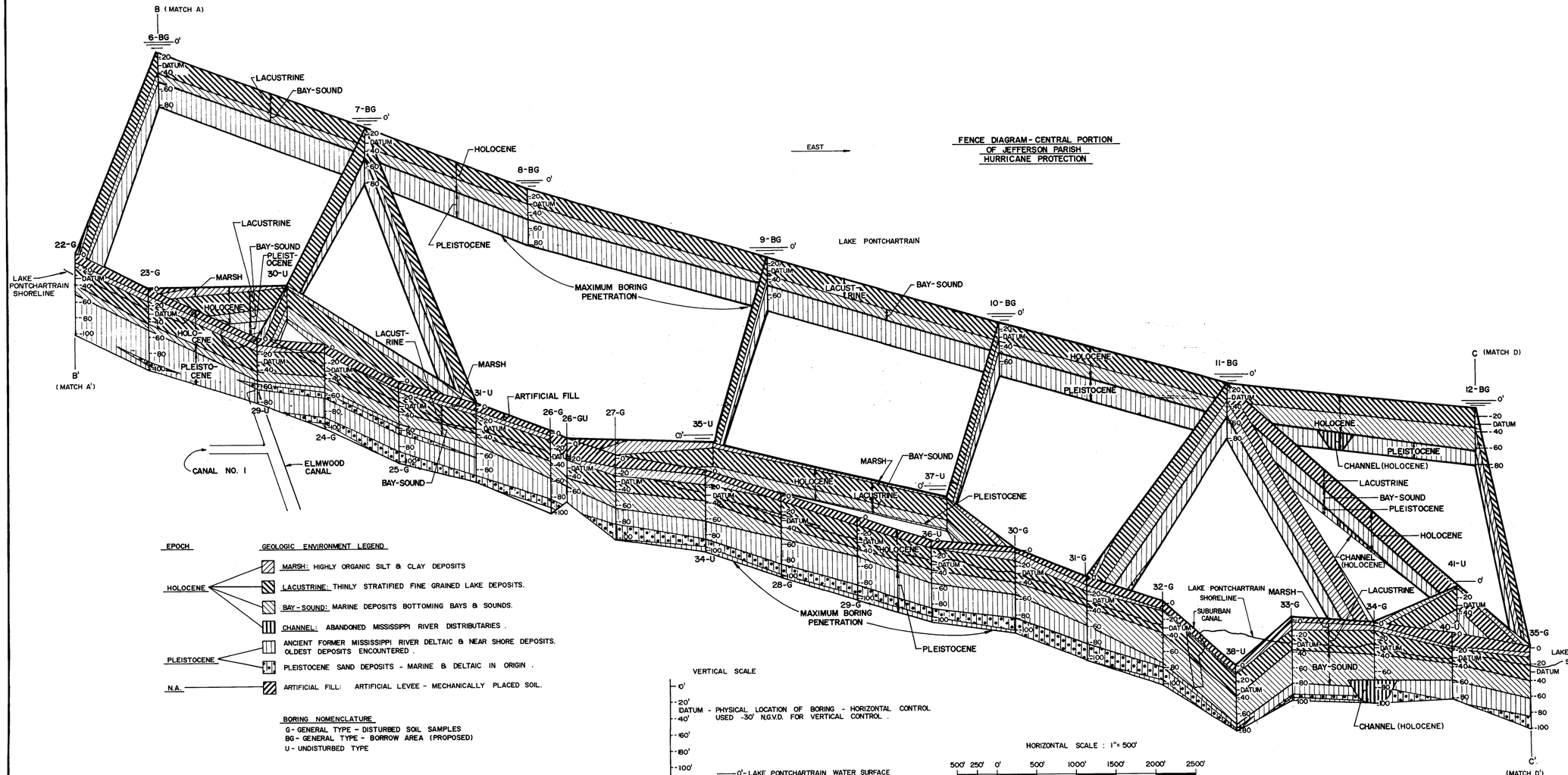
VOLUME II PLATES



LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
GEOLOGIC PROFILE
FENCE DIAGRAM
SECTION A
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 47



EPOCH

GEOLOGIC ENVIRONMENT LEGEND

HOLOCENE

- MARSH: HIGHLY ORGANIC SILT & CLAY DEPOSITS
- LACUSTRINE: THINLY STRATIFIED FINE GRAINED LAKE DEPOSITS.
- BAY-SOUND: MARINE DEPOSITS BOTTOMING BAYS & SOUNDS.
- CHANNEL: ABANDONED MISSISSIPPI RIVER DISTRIBUTARIES.

PLEISTOCENE

- ANCIENT FORMER MISSISSIPPI RIVER DELTAIC & NEAR SHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED.
- PLEISTOCENE SAND DEPOSITS - MARINE & DELTAIC IN ORIGIN.

N.A.

- ARTIFICIAL FILL: ARTIFICIAL LEVEE - MECHANICALLY PLACED SOIL.

BORING NOMENCLATURE

G - GENERAL TYPE - DISTURBED SOIL SAMPLES
BG - GENERAL TYPE - BORROW AREA (PROPOSED)
U - UNDISTURBED TYPE

NOTE: FOR BORING STATIONS AND OFFSETS REFER TO BORING LOGS.

VERTICAL SCALE

0'
20'
DATUM - PHYSICAL LOCATION OF BORING - HORIZONTAL CONTROL USED -30' N.G.V.D. FOR VERTICAL CONTROL.
40'
60'
80'
100'

0' - LAKE PONTCHARTRAIN WATER SURFACE AT 0' N.G.V.D.

LAKE PONTCHARTRAIN, LA. AND VICINITY
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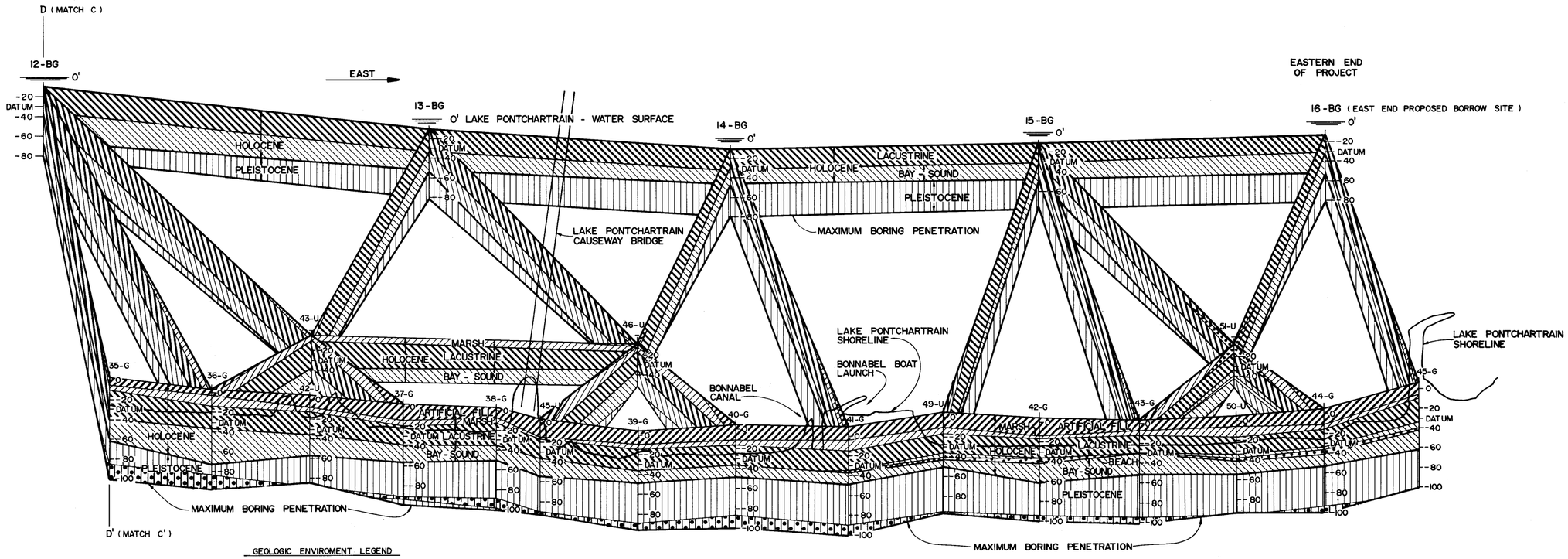
OCTOBER 1987 FILE NO. H-2-30148

PLATE 48

FENCE DIAGRAM - EASTERN PORTION OF JEFFERSON PARISH HURRICANE PROTECTION



GEOLOGIC ENVIROMENT LEGEND

EPOCH

HOLOCENE
- MARSH : HIGHLY ORGANIC SILT & CLAY DEPOSITS .
- LACUSTRINE : THINLY STRATIFIED FINE GRAINED LAKE DEPOSITS .
- BEACH : COURSE GRAINED SHORE DEPOSITS .
- BAY - SOUND : MARINE DEPOSITS BOTTOMING BAYS & SOUNDS .

PLEISTOCENE
- ANCIENT FORMER MISSISSIPPI RIVER DELTAIC & NEAR SHORE DEPOSITS . OLDEST DEPOSITS ENCOUNTERED .
- PLEISTOCENE SAND DEPOSITS - MARINE & DELTAIC IN ORIGIN .

N.A.
- ARTIFICIAL FILL : ARTIFICIAL LEVEE - MECHANICALLY PLACED SOIL .

BORING NOMENCLATURE

G - GENERAL TYPE - DISTURBED SOIL SAMPLES .
BG - GENERAL TYPE - BORROW AREA (PROPOSED) .
U - UNDISTURBED TYPE .

NOTE : FOR BORING STATIONS & OFFSETS REFER TO BORING LOGS .

HORIZONTAL SCALE 1" = 500'

500' 250' 0' 500' 1000' 1500' 2000' 2500'

VERTICAL SCALE 1" = 50'

ELEVATION N.G.V.D.
0'
-20'
DATUM - PHYSICAL LOCATION OF BORING - HORIZONTAL CONTROL
-40' USED -30' N.G.V.D FOR VERTICAL CONTROL
-60'
-80'
-100'

0' - LAKE PONTCHARTRAIN WATER SURFACE AT 0' N.G.V.D.

LAKE PONTCHARTRAIN, LA. AND VICINITY
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PLATE 49


LAKE
PONTCHARTRAIN
KENNER
NEW ORLEANS INTERNATIONAL AIRPORT
(MOISANT FIELD)
LAKE PONTCHARTRAIN CAUSEWAY
PUMPING STATION NO. 2
PUMPING STATION NO. 1
INDEX MAP
SCALE OF MILES
1/2
1 MILE
N
LOCATION OF WORK
VICINITY MAP
SCALE OF MILES
40 0 40 80 120 160 200
ARKANSAS
LOUISIANA
MISSISSIPPI
TEXAS
SHREVEPORT
MONROE
VICKSBURG
NATCHEZ
ALEXANDRIA
BATON ROUGE
LAKE CHARLES
LAFAYETTE
MORGAN CITY
NEW ORLEANS
GULF OF MEXICO

LAKE PONTCHARTRAIN, LA. AND VICINITY
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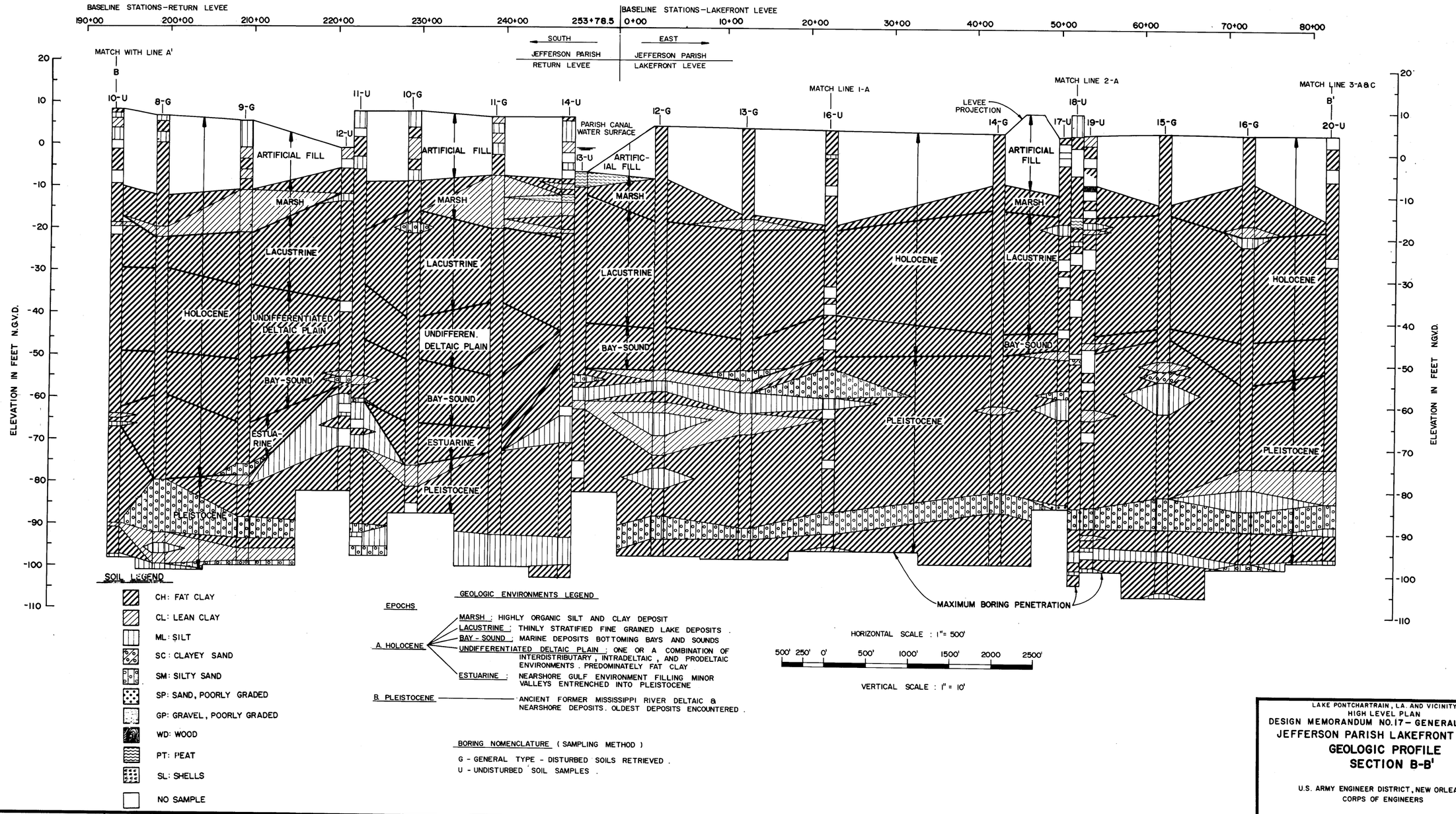
GEOLOGIC PROFILE LOCATION MAP

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

DATE OCTOBER 1987 FILE NO. H-2-30148

PLATE 49A

SOIL PROFILE - LEVEE BORINGS



SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

GEOLOGIC ENVIRONMENTS LEGEND

EPOCHS

A. HOLOCENE
- MARSH : HIGHLY ORGANIC SILT AND CLAY DEPOSIT
- LACUSTRINE : THINLY STRATIFIED FINE GRAINED LAKE DEPOSITS .
- BAY - SOUND : MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS
- UNDIFFERENTIATED DELTAIC PLAIN : ONE OR A COMBINATION OF INTERDISTRIBUTARY , INTRADELTAIC , AND PRODELTAIC ENVIRONMENTS . PREDOMINATELY FAT CLAY
- ESTUARINE : NEARSHORE GULF ENVIRONMENT FILLING MINOR VALLEYS ENTRENCHED INTO PLEISTOCENE

B. PLEISTOCENE — ANCIENT FORMER MISSISSIPPI RIVER DELTAIC & NEARSHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED .

HORIZONTAL SCALE : 1"= 500'

500' 250' 0' 500' 1000' 1500' 2000 2500'

VERTICAL SCALE : 1" = 10'

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE - DISTURBED SOILS RETRIEVED .
U - UNDISTURBED SOIL SAMPLES .

LAKE PONTCHARTRAIN, LA. AND VICINITY
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SECTION B-B'

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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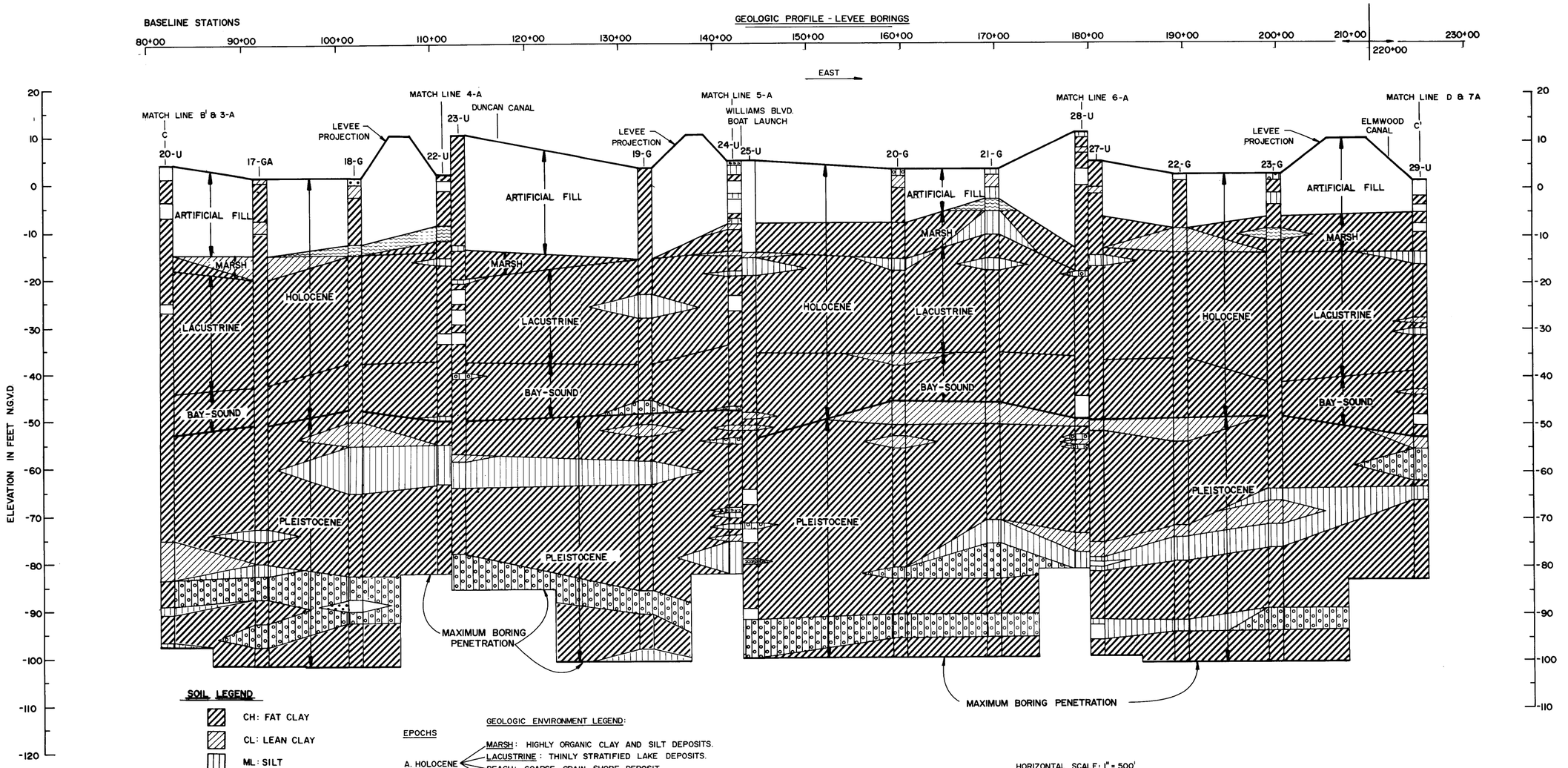
PLATE 50



SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

GEOLOGIC ENVIRONMENT LEGEND:

EPOCHS

A. HOLOCENE
- MARSH: HIGHLY ORGANIC CLAY AND SILT DEPOSITS.
- LACUSTRINE: THINLY STRATIFIED LAKE DEPOSITS.
- BEACH: COARSE GRAIN SHORE DEPOSIT.
- BAY-SOUND: MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS.

B. PLEISTOCENE — ANCIENT FORMER MISSISSIPPI RIVER DELTAIC AND NEAR SHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED.

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE - DISTURBED SOILS RETRIEVED
U - UNDISTURBED SOIL SAMPLES
BG - BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED.

HORIZONTAL SCALE: 1" = 500'

500' 250' 0' 500' 1000' 1500' 2000' 2500'

VERTICAL SCALE: 1" = 10'

LAKE PONTCHARTRAIN, LA. AND VICINITY
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U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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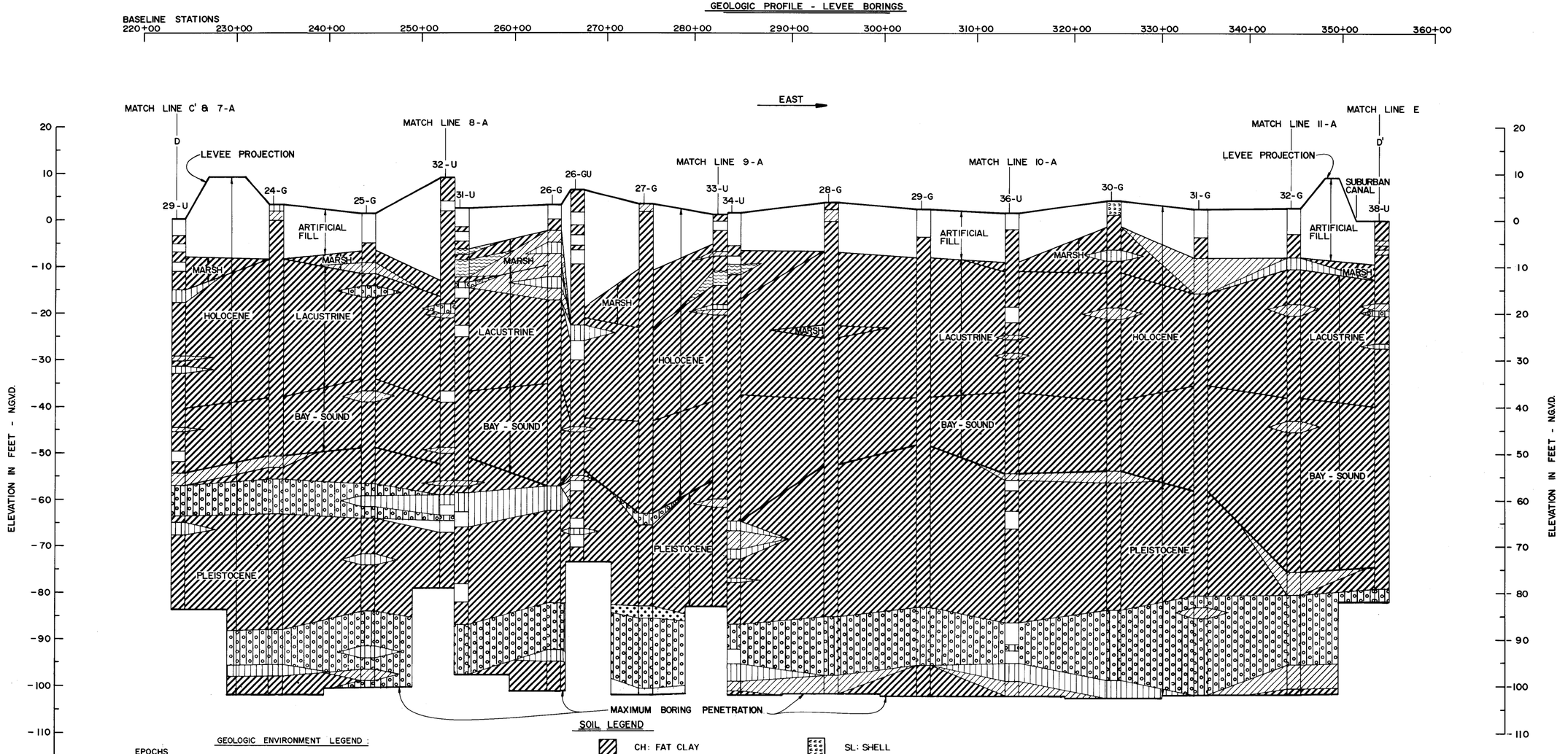
PLATE 51

GEOLOGIC PROFILE - LEVEE BORINGS



GEOLOGIC ENVIRONMENT LEGEND :

EPOCHS

A . HOLOCENE
- MARSH : HIGHLY ORGANIC CLAY AND SILT DEPOSITS .
- LACUSTRINE : THINLY STRATIFIED LAKE DEPOSITS .
- BEACH : COARSE GRAIN SHORE DEPOSIT .
- BAY - SOUND : MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS .

B . PLEISTOCENE : ANCIENT FORMER MISSISSIPPI RIVER DELTAIC AND NEAR SHORE DEPOSITS . OLDEST DEPOSITS ENCOUNTERED

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE - DISTURBED SOILS RETRIEVED .
U - UNDISTURBED SOIL SAMPLES
BG - BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED .

SOIL LEGEND

- CH: FAT CLAY
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- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- NO SAMPLE
- SL: SHELL

HORIZONTAL SCALE : 1"= 500'

500' 250' 0' 500' 1000' 1500' 2000' 2500'

VERTICAL SCALE : 1"= 10' .

SURVEY NOTES:

℄ - CENTER LINE OF LEVEE
PS - PARISH SIDE OF CENTERLINE
FS - FLOOD SIDE OF CENTERLINE

LAKE PONTCHARTRAIN, LA. AND VICINITY
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SECTION D-D'

U.S ARMY ENGINEER DISTRICT, NEW ORLEANS
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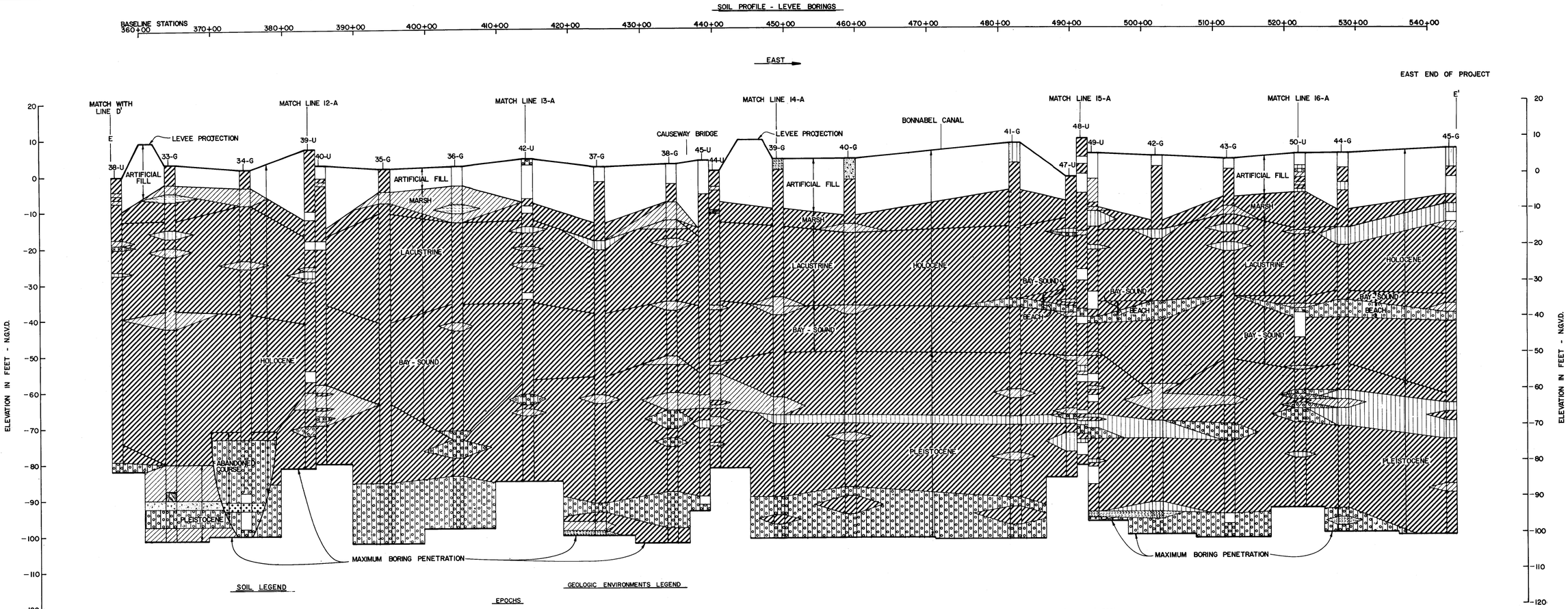
PLATE 52

SOIL PROFILE - LEVEE BORINGS



SOIL LEGEND

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- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELL
- NO SAMPLE

GEOLOGIC ENVIRONMENTS LEGEND

EPOCHS

A. HOLOCENE OR RECENT DEPOSITS
- MARSH : HIGHLY ORGANIC SILT & CLAY DEPOSITS .
- LACUSTRINE : THINLY STRATIFIED FINE GRAINED LAKE DEPOSITS .
- BAY - SOUND : MARINE DEPOSITS BOTTOMING BAYS & SOUNDS .
- BEACH : COARSE GRAIN SHORE DEPOSITS .
- ABANDONED COURSE : SANDY BELTS OF PREVIOUSLY OCCUPIED RIVER COURSES .

B. PLEISTOCENE : ANCIENT FORMER MISSISSIPPI RIVER DELTAIC & NEAR SHORE DEPOSITS . OLDEST DEPOSITS ENCOUNTERED .

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE - DISTURBED SOILS RETRIEVED .

U - UNDISTURBED SOIL SAMPLES .

HORIZONTAL SCALE : 1"= 500'

500' 250' 0' 500' 1000' 1500' 2000' 2500'

VERTICAL SCALE : 1"= 10'

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U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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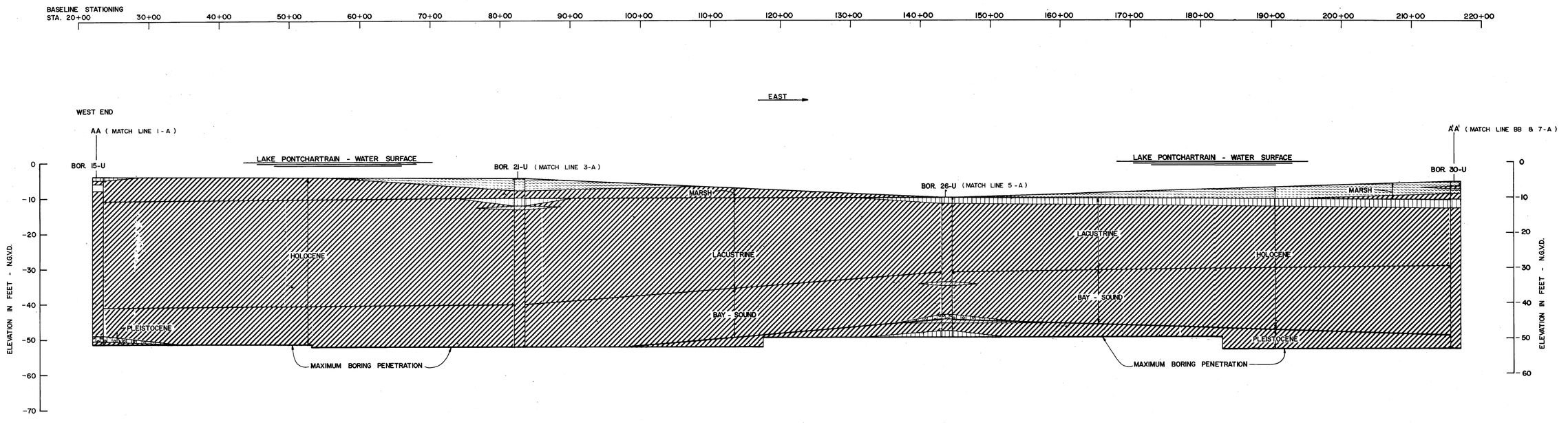
PLATE 53

PROPOSED LEVEE - FLOODSIDE TOE BORINGS



GEOLOGIC ENVIRONMENT LEGEND :

EPOCHS

A HOLOCENE
- MARSH : HIGHLY ORGANIC CLAY AND SILT DEPOSITS .
- LACUSTRINE : THINLY STRATIFIED LAKE DEPOSITS
- BAY - SOUND : MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS .

B PLEISTOCENE : ANCIENT FORMER MISSISSIPPI RIVER DELTAIC & NEAR SHORE DEPOSITS . OLDEST DEPOSITS ENCOUNTERED

BORING NOMENCLATURE

U - UNDISTURBED SOIL SAMPLES

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- PT: PEAT
- NO SAMPLE

HORIZONTAL SCALE : 1"= 500'

500' 250' 0' 500' 1000' 1500' 2000' 2500'

VERTICAL SCALE : 1"= 10'

LAKE PONTCHARTRAIN, LA. AND VICINITY
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GEOLOGIC PROFILE SECTION AA-A'A'

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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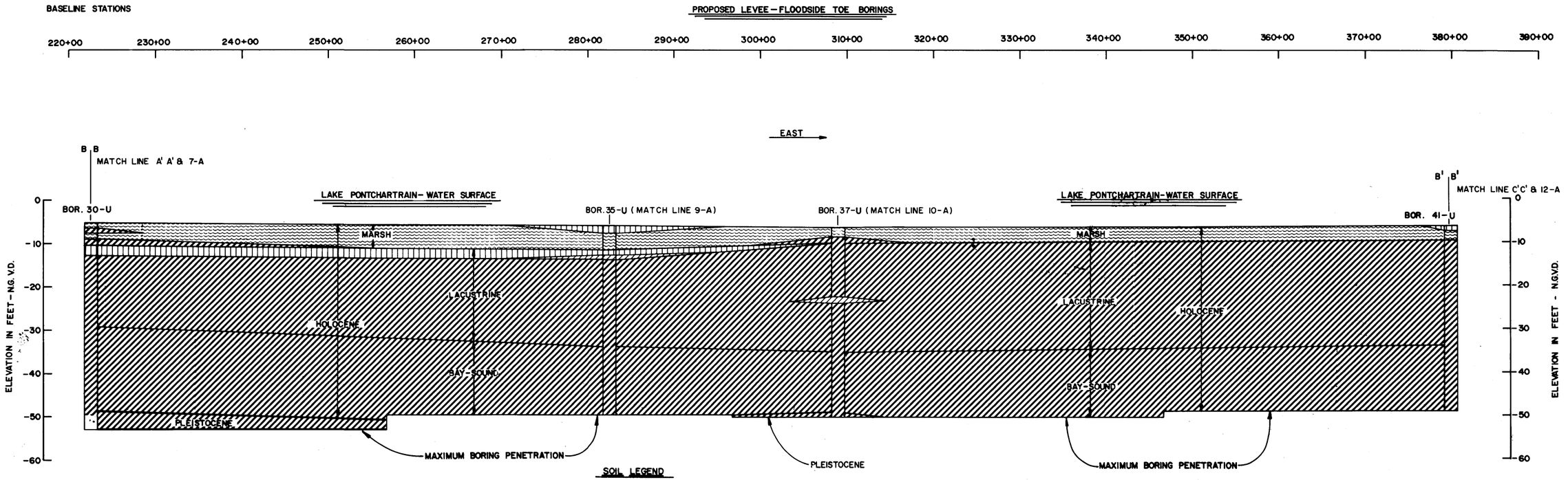
PLATE 54



SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

HORIZONTAL SCALE: 1"=500'

0 250' 500' 1000' 1500' 2000' 2500'

VERTICAL SCALE: 1"=10'

GEOLOGIC ENVIRONMENT LEGEND:

EPOCHS

A. HOLOCENE
- MARSH: HIGHLY ORGANIC CLAY AND SILT DEPOSITS.
- LACUSTRINE: THINLY STRATIFIED LAKE DEPOSITS.
- BEACH: COARSE GRAIN SHORE DEPOSIT.
- BAY-SOUND: MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS.

B. PLEISTOCENE: ANCIENT FORMER MISSISSIPPI RIVER DELTAIC AND NEAR SHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED.

BORING NOMENCLATURE (SAMPLING METHOD)

G – GENERAL TYPE-DISTURBED SOILS RETRIEVED.
U – UNDISTURBED SOIL SAMPLES.
BG – BORROW BORINGS – GENERAL SAMPLING TYPE – DISTURBED.

LAKE PONTCHARTRAIN, LA. AND VICINITY
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GEOLOGIC PROFILE SECTION BB-B'B'

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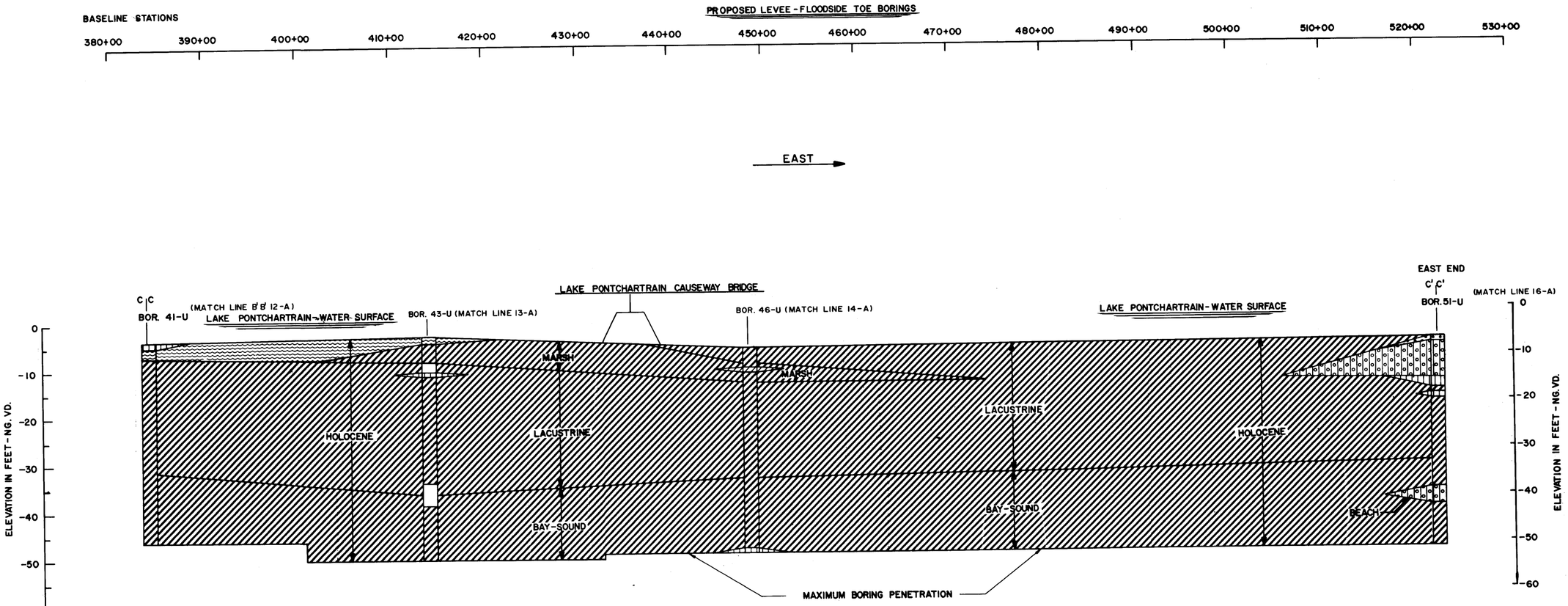
PLATE 55



GEOLOGIC ENVIRONMENT LEGEND:

EPOCHS

A. HOLOCENE
- MARSH: HIGHLY ORGANIC CLAY AND SILT DEPOSITS.
- LACUSTRINE: THINLY STRATIFIED LAKE DEPOSITS.
- BEACH: COARSE GRAIN SHORE DEPOSIT.
- BAY-SOUND: MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS.

B. PLEISTOCENE: ANCIENT FORMER MISSISSIPPI RIVER DELTAIC AND NEAR SHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED.

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE—DISTURBED SOILS RETRIEVED
U - UNDISTURBED SOIL SAMPLES
BG - BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED.

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

HORIZONTAL SCALE: 1" = 500'

500' 250' 0' 500' 1000' 1500' 2000' 2500'

VERTICAL SCALE: 1" = 10'

LAKE PONTCHARTRAIN, LA. AND VICINITY
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GEOLOGIC PROFILE SECTION CC-C'C'

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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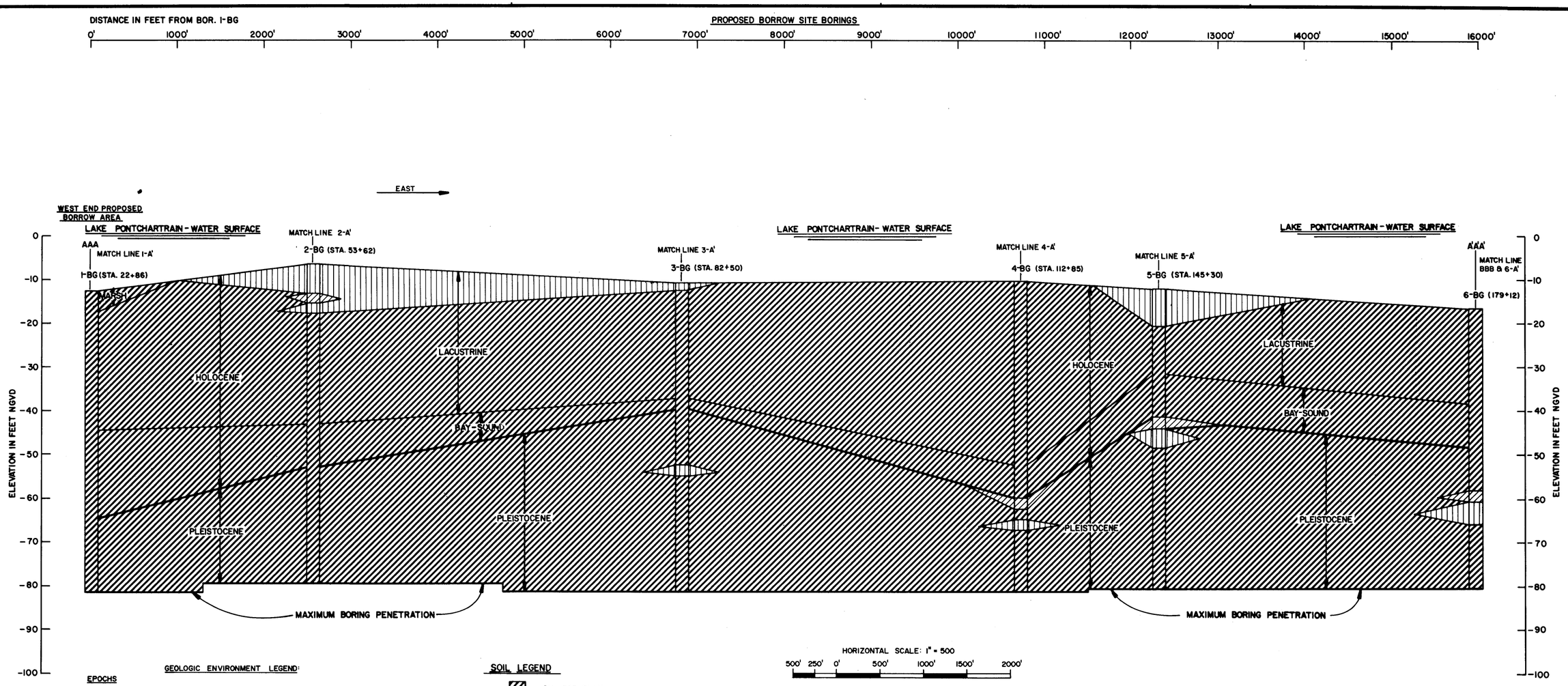
PLATE 56



HORIZONTAL SCALE: 1" = 500
500' 250' 0' 500' 1000' 1500' 2000'

VERTICAL SCALE: 1" = 10'

EPOCHS

A. HOLOCENE
- MARSH: HIGHLY ORGANIC CLAY AND SILT DEPOSITS.
- LACUSTRINE: THINLY STRATIFIED LAKE DEPOSITS.
- BEACH: COARSE GRAIN SHORE DEPOSIT.
- BAY-SOUND: MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS.

B. PLEISTOCENE — ANCIENT FORMER MISSISSIPPI RIVER DELTAIC AND NEAR SHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED.

GEOLOGIC ENVIRONMENT LEGEND:

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE - DISTURBED SOILS RETRIEVED
U - UNDISTURBED SOIL SAMPLES
BG - BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED.

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

LAKE PONTCHARTRAIN, LA. AND VICINITY
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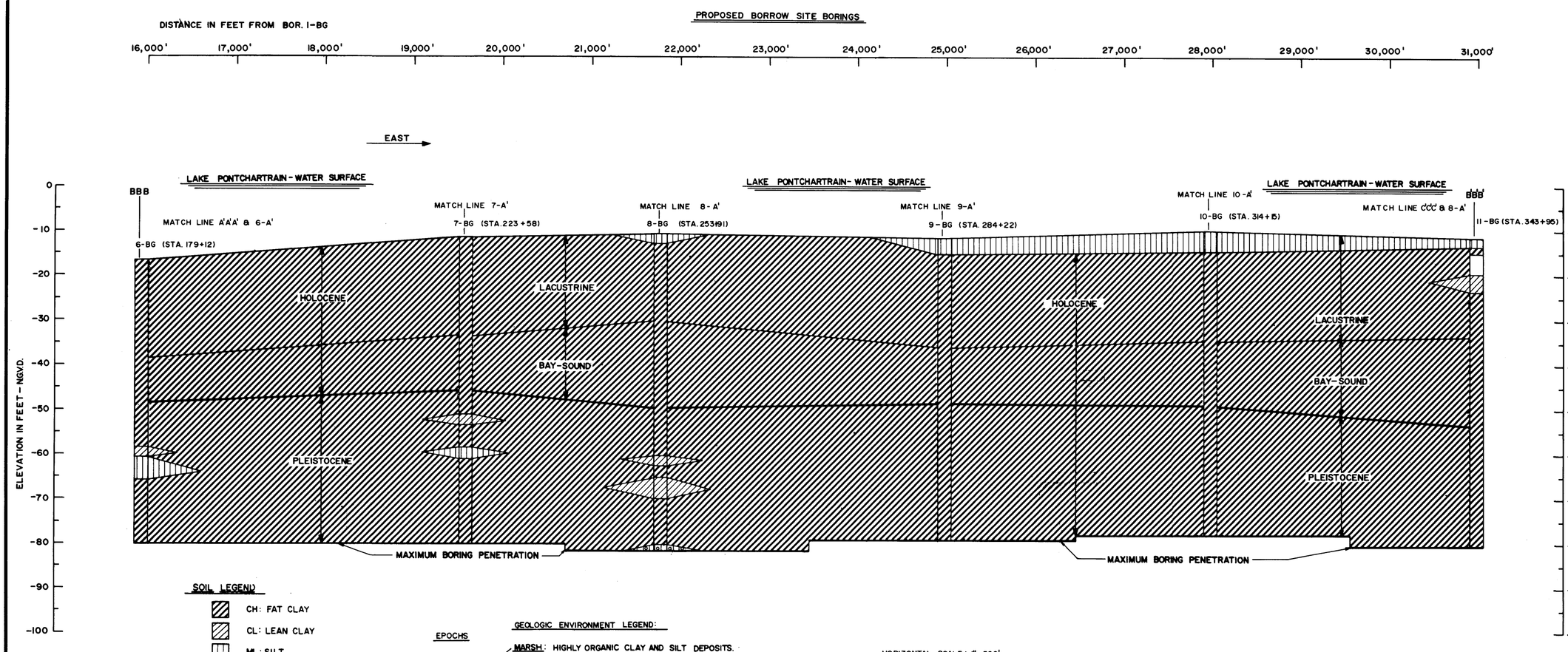
OCTOBER 1967 FILE NO. H-2-30148

PLATE 57

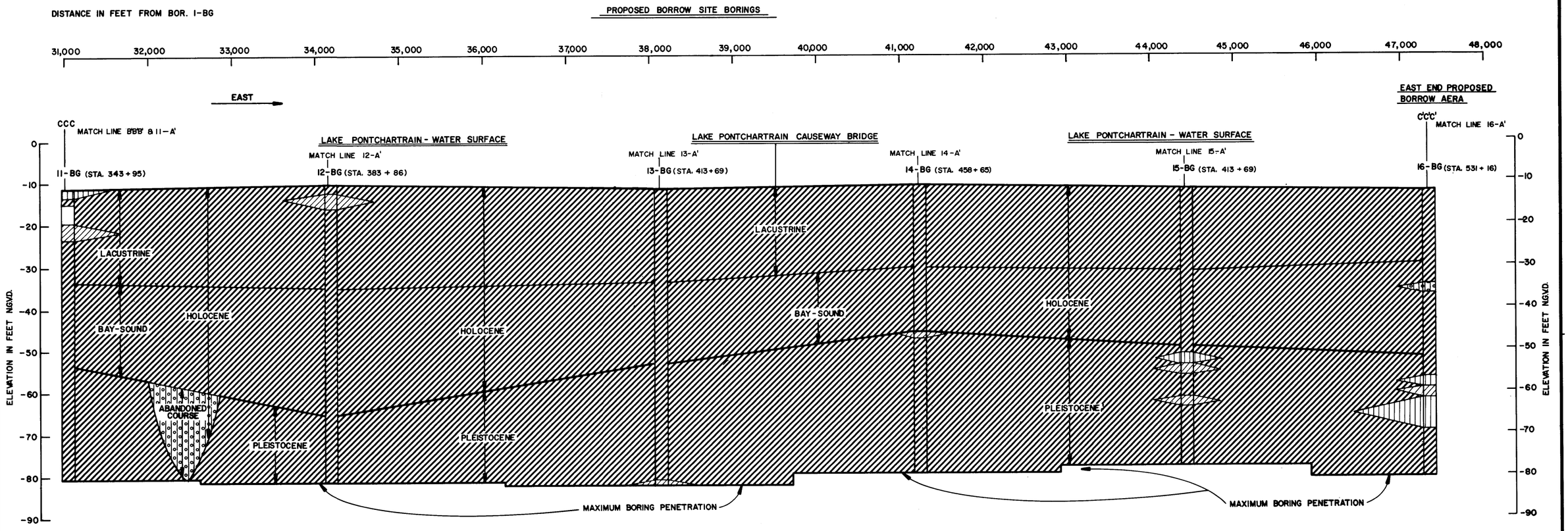


LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
GEOLOGIC PROFILE
SECTION BBB-BBB'

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 58



GEOLOGIC ENVIRONMENT LEGEND:

EPOCHS

A. HOLOCENE
- MARSH: HIGHLY ORGANIC CLAY AND SILT DEPOSITS.
- LACUSTRINE: THINLY STRATIFIED LAKE DEPOSITS.
- ABANDONED COURSE: SANDY BELTS OF PREVIOUSLY OCCUPIED RIVER COURSES.
- BAY-SOUND: MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS.

B. PLEISTOCENE: ANCIENT FORMER MISSISSIPPI RIVER DELTAIC AND NEAR SHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED.

BORING NOMENCLATURE (SAMPLING METHOD)

G- GENERAL TYPE - DISTURBED SOILS RETRIEVED
U- UNDISTURBED SOIL SAMPLES
BG- BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED.

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

HORIZONTAL SCALE : 1" = 500'

500' 250' 0' 500' 1000' 1500' 2000' 2500'

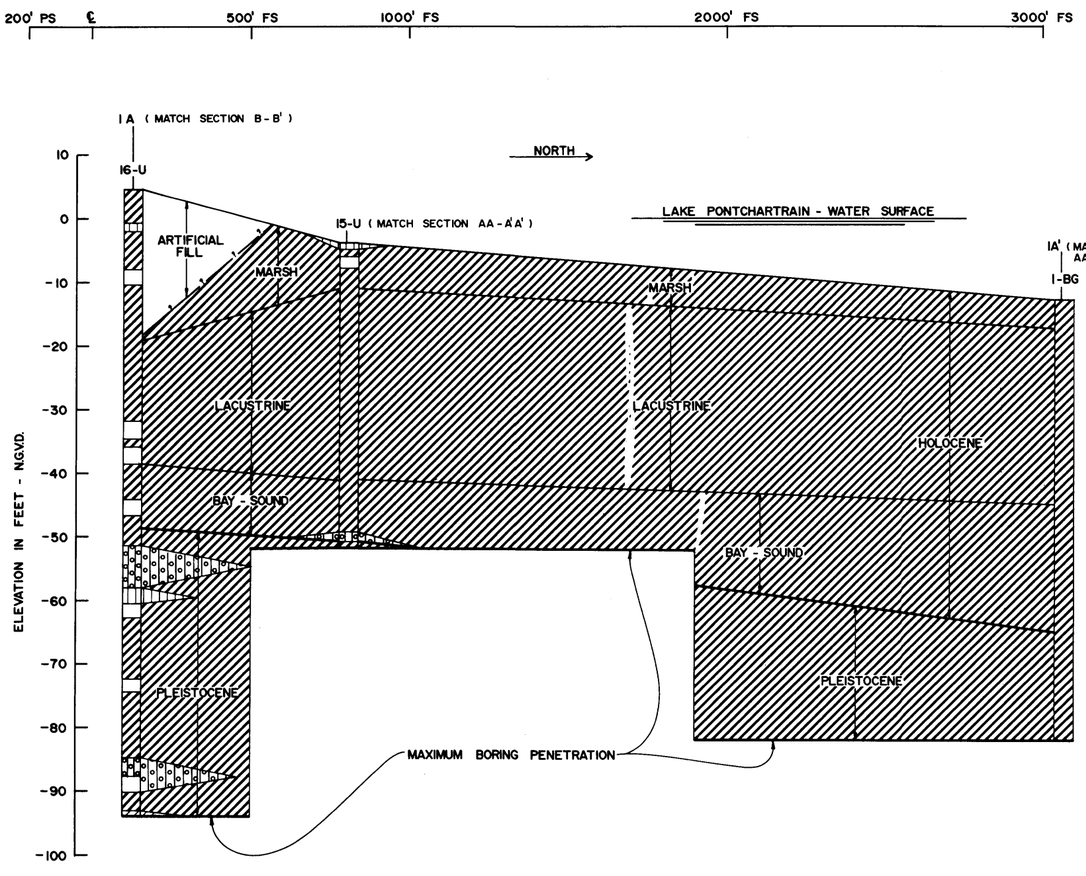
VERTICAL SCALE : 1"= 10'

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
GEOLOGIC PROFILE
SECTION CCC-C'C'C'

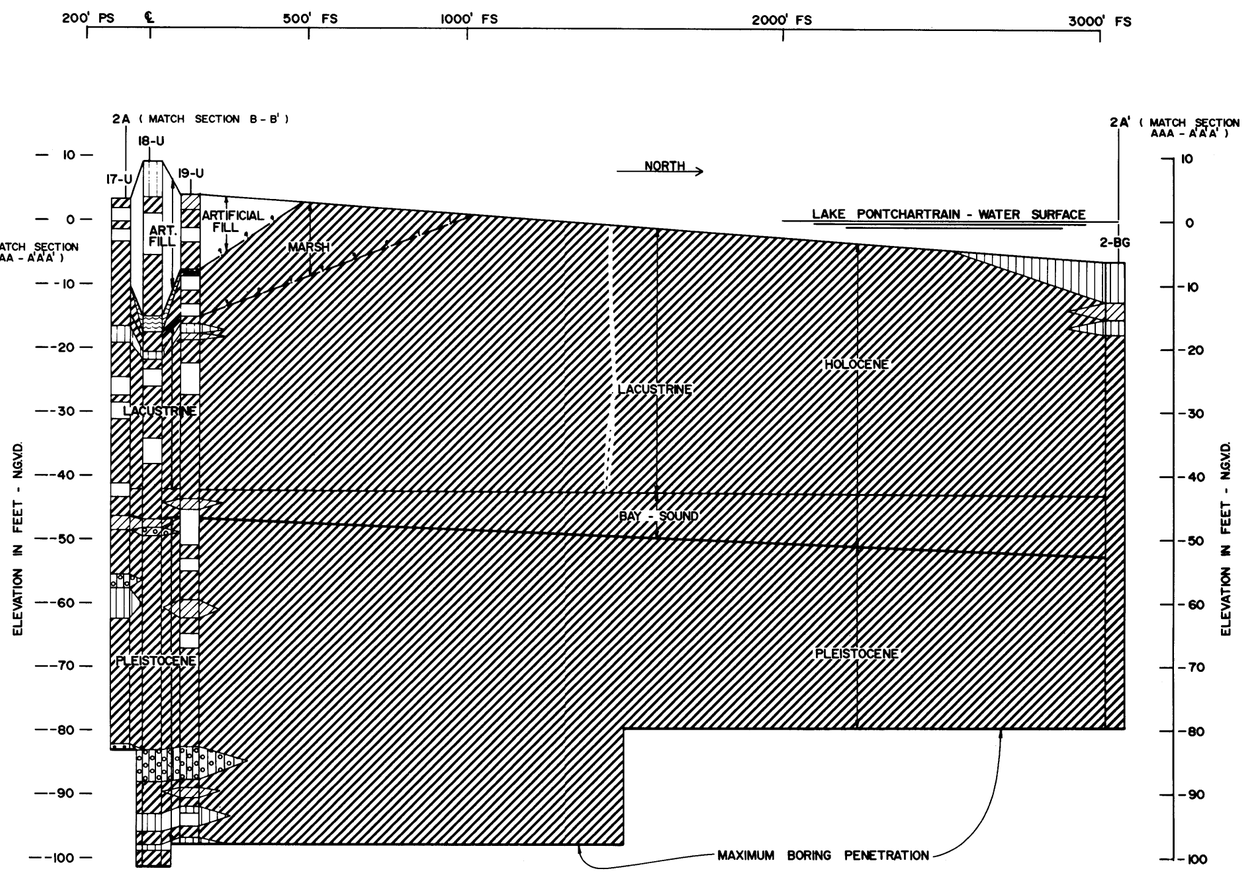
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 59



CROSS SECTION 1A - 1A' IS NORMAL TO BASELINE AT APPROX. STA. 22 + 86 .



CROSS SECTION 2A - 2A' IS NORMAL TO BASELINE AT APPROX. STA. 53 + 62 .

GEOLOGIC ENVIRONMENT LEGEND :

EPOCHS

A. HOLOCENE
- MARSH : HIGHLY ORGANIC CLAY AND SILT DEPOSITS .
- LACUSTRINE : THINLY STRATIFIED LAKE DEPOSITS .
- BEACH : COARSE GRAIN SHORE DEPOSIT .
- BAY - SOUND : MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS .

B. PLEISTOCENE : ANCIENT FORMER MISSISSIPPI RIVER DELTAIC & NEAR SHORE DEPOSITS . OLDEST DEPOSITS ENCOUNTERED .

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE - DISTURBED SOILS RETRIEVED .
U - UNDISTURBED SOIL SAMPLES .
BG - BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED .

SOIL LEGEND

- CH : FAT CLAY .
- CL : LEAN CLAY .
- ML : SILT .
- SC : CLAYEY SAND .
- SM : SILTY SAND .
- SP : SAND , POORLY GRADED .
- WD : WOOD .
- PT : PEAT .
- NO SAMPLE

HORIZONTAL SCALE : 1" = 200'

0' 100' 200' 400' 600' 800'

VERTICAL SCALE : 1" = 10'

SURVEY NOTES :

℄ - CENTERLINE OF LEVEE .
PS - PARISH SIDE OF CENTERLINE .
FS - FLOOD SIDE OF CENTERLINE .

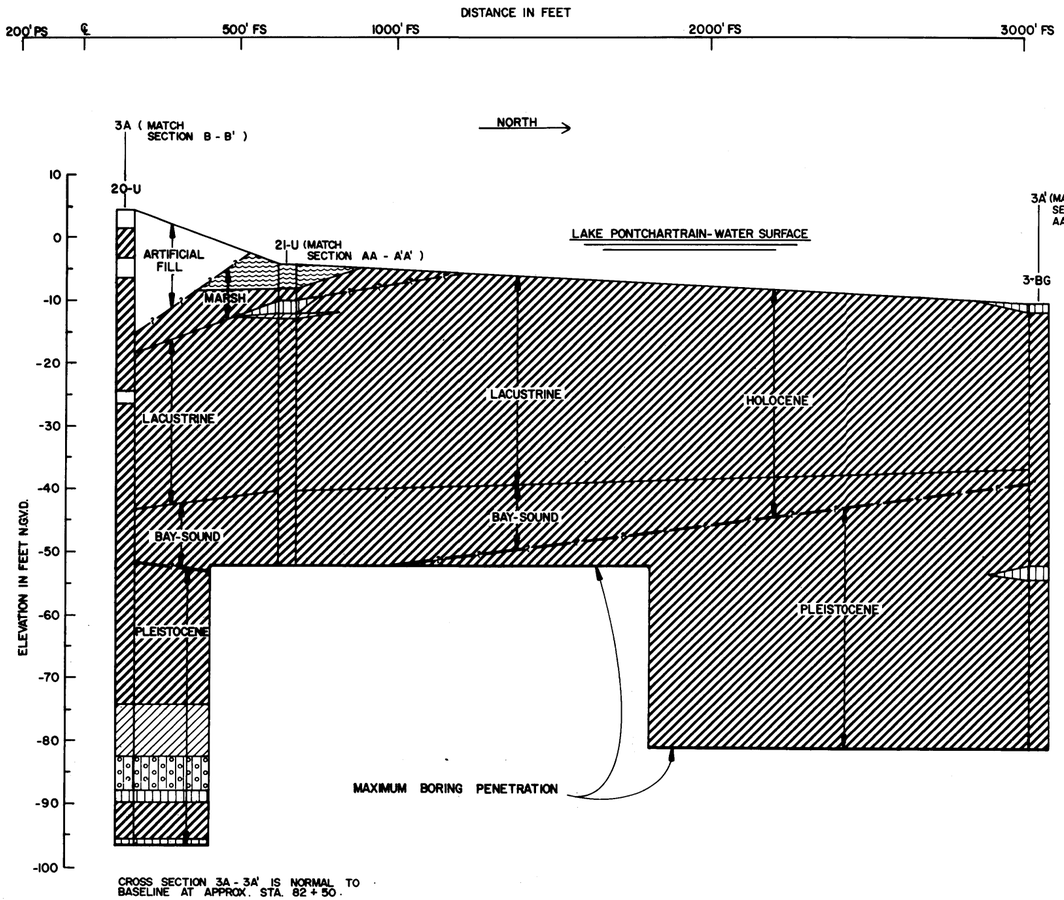
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN

JEFFERSON PARISH LAKEFRONT LEVEE
GEOLOGIC PROFILE
SECTION 1A-1A' & 2A-2A'

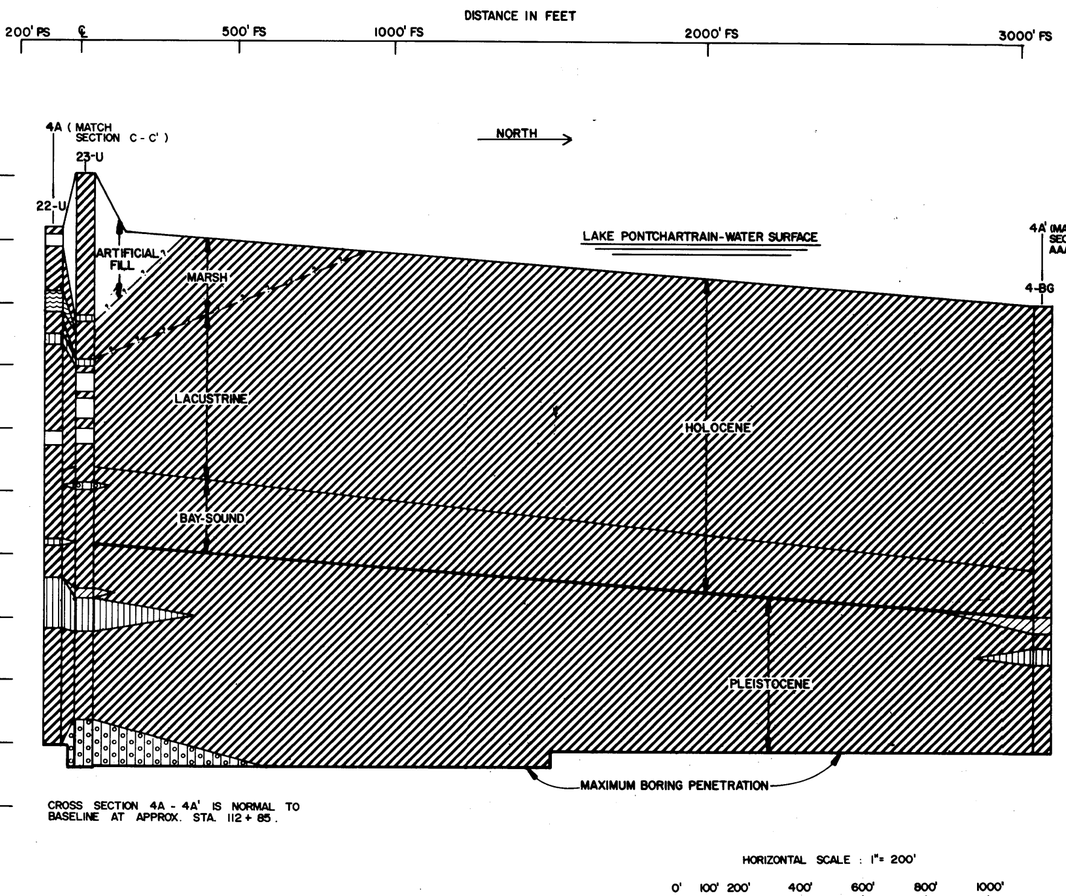
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 60



CROSS SECTION 3A - 3A' IS NORMAL TO BASELINE AT APPROX. STA. 82 + 50.



CROSS SECTION 4A - 4A' IS NORMAL TO BASELINE AT APPROX. STA. 112 + 85.

HORIZONTAL SCALE : 1" = 200'

0' 100' 200' 400' 600' 800' 1000'

VERTICAL SCALE : 1" = 10'

SURVEY NOTES:

℄ - CENTER LINE OF LEVEE
PS - PARISH SIDE OF CENTERLINE
FS - FLOOD SIDE OF CENTERLINE

GEOLOGIC ENVIRONMENT LEGEND:

EPOCHS

A. HOLOCENE
- MARSH: HIGHLY ORGANIC CLAY & SILT DEPOSITS
- LACUSTRINE: THINLY STRATIFIED LAKE DEPOSITS
- BEACH: COURSE GRAINED SHORE DEPOSITS
- BAY-SOUND : MARINE DEPOSITS BOTTOMING BAYS & SOUNDS.

B. PLEISTOCENE : ANCIENT FORMER MISSISSIPPI RIVER DELTAIC & NEARSHORE MARINE DEPOSITS

BORING NOMENCLATURE (SAMPLING METHOD)

G- GENERAL TYPE-DISTURBED SOILS RETRIEVED
U- UNDISTURBED SOIL SAMPLES
BG - BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

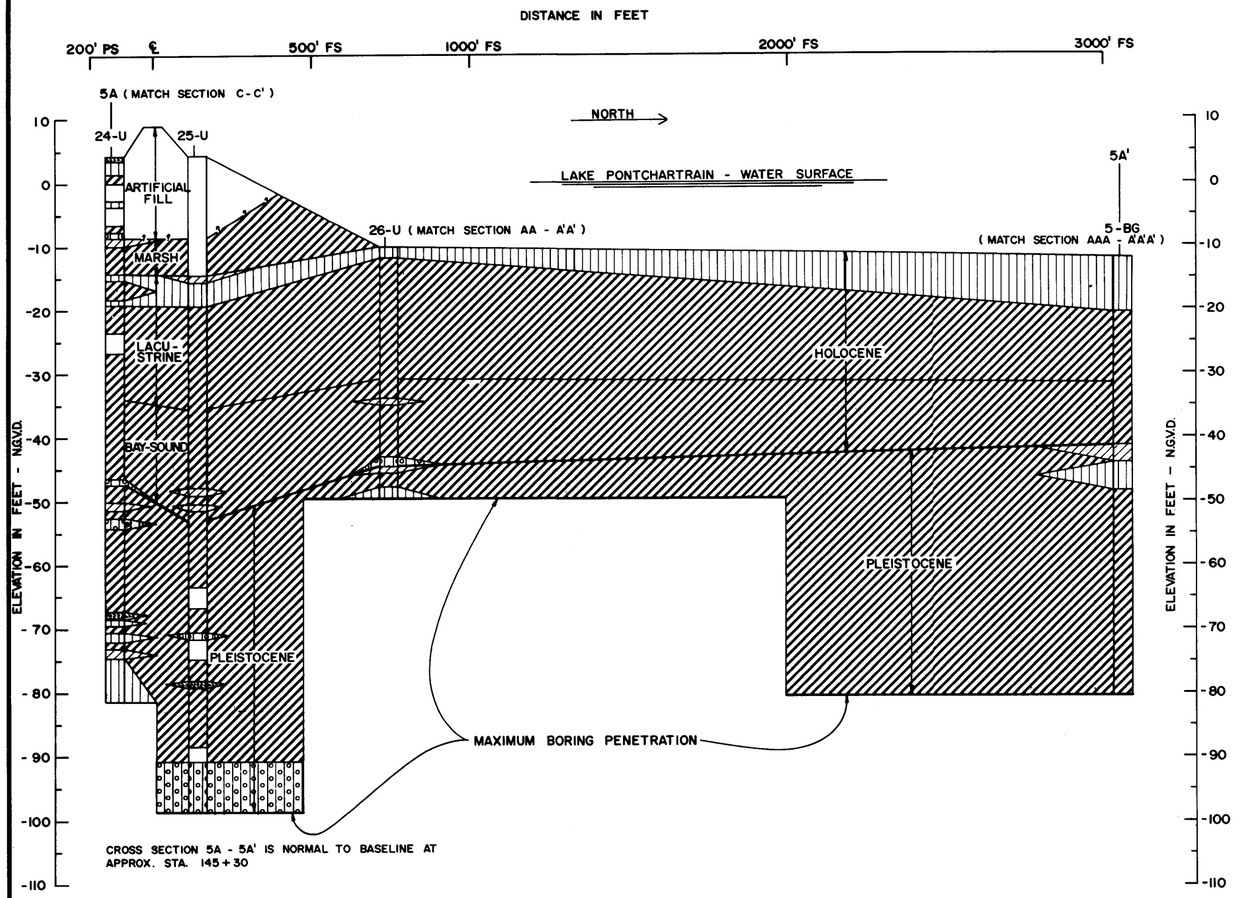
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN

JEFFERSON PARISH LAKEFRONT LEVEE
GEOLOGIC PROFILE
SECTION 3A-3A' & 4A-4A'

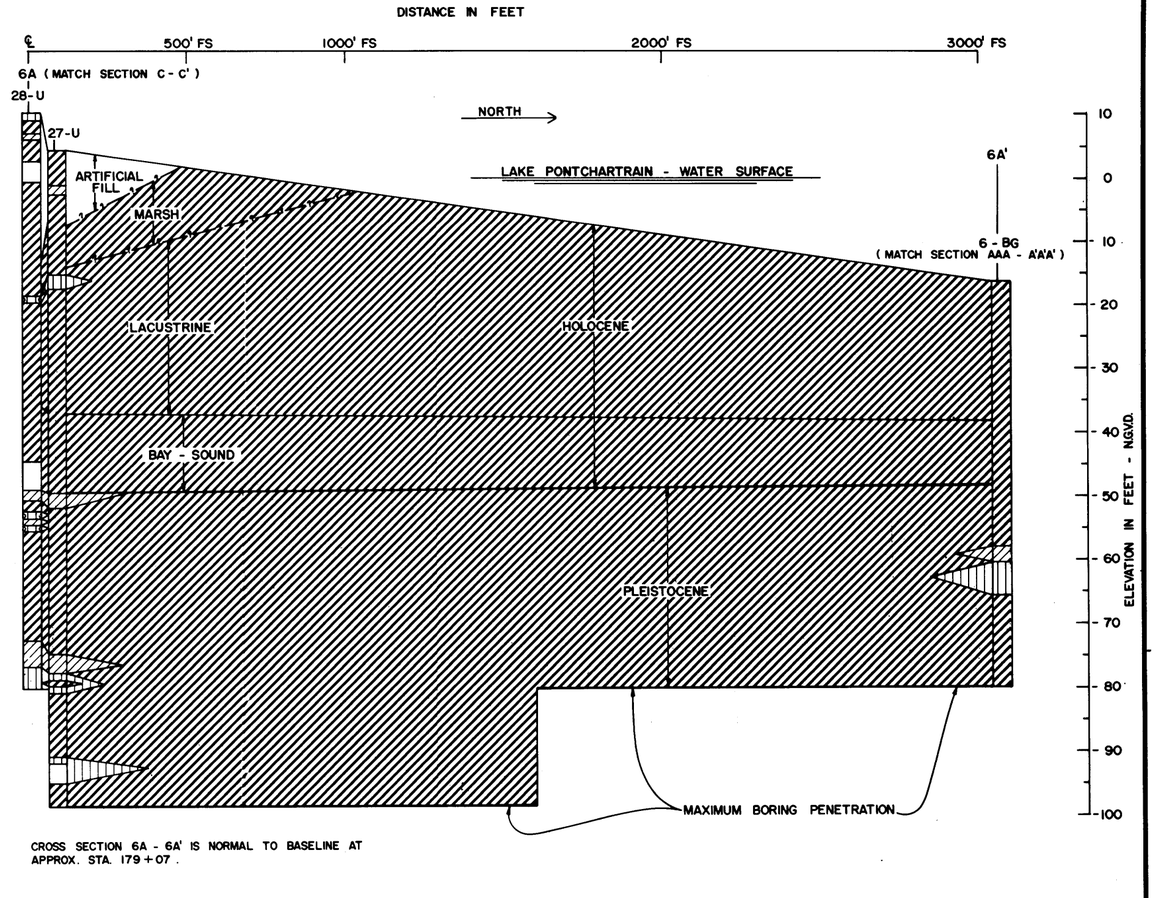
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 61



CROSS SECTION 5A - 5A' IS NORMAL TO BASELINE AT APPROX. STA. 145 + 30



CROSS SECTION 6A - 6A' IS NORMAL TO BASELINE AT APPROX. STA. 179 + 07 .

GEOLOGIC ENVIRONMENT LEGEND :

EPOCHS

A . HOLOCENE
- MARSH : HIGHLY ORGANIC CLAY & SILT DEPOSITS .
- LACUSTRINE : THINLY STRATIFIED LAKE DEPOSITS , TYPICALLY FINE GRAINED .
- BEACH : COURSE GRAINED SHORE DEPOSITS .
- BAY - SOUND : MARINE DEPOSITS BOTTOMING BAYS & SOUNDS .

B . PLEISTOCENE : ANCIENT FORMER MISSISSIPPI RIVER DELTAIC & NEAR SHORE MARINE DEPOSITS .

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE - DISTURBED SOILS RETRIEVED .
U - UNDISTURBED SOIL SAMPLES .
BG - BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED .

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- WD: WOOD
- PT: PEAT
- NO SAMPLE
- SL: SHELLS

HORIZONTAL SCALE : 1" = 200'

0' 100' 200' 400' 600' 800' 1000'

VERTICAL SCALE : 1" = 10'

SURVEY NOTES:
℄ - CENTER LINE
PS - PARISH SIDE OF CENTERLINE
FS - FLOOD SIDE OF CENTERLINE

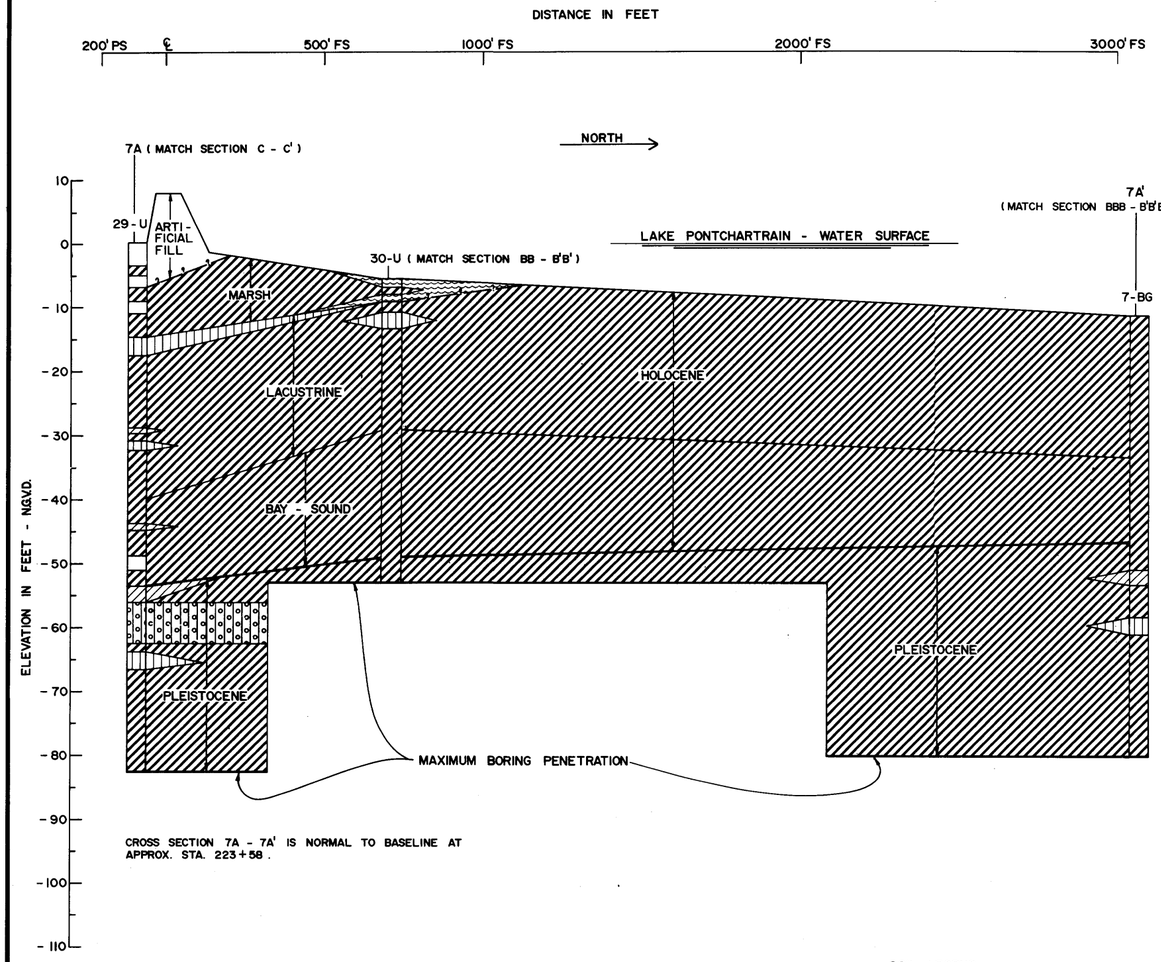
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN

JEFFERSON PARISH LAKEFRONT LEVEE
GEOLOGIC PROFILE
SECTION 5A-5A' & 6A-6A'

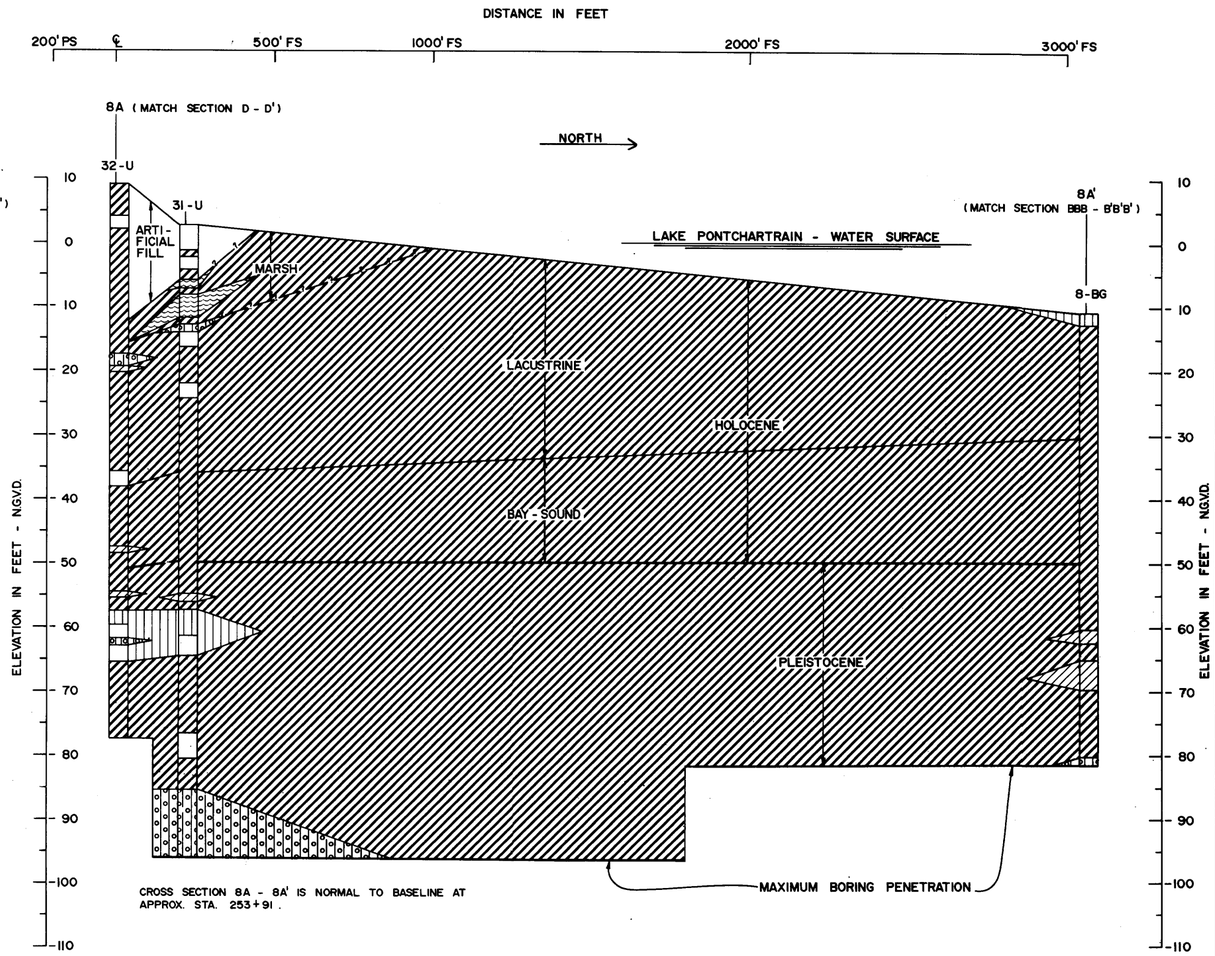
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 62



CROSS SECTION 7A - 7A' IS NORMAL TO BASELINE AT APPROX. STA. 223+58 .



CROSS SECTION 8A - 8A' IS NORMAL TO BASELINE AT APPROX. STA. 253+91 .

GEOLOGIC ENVIRONMENT LEGEND :

EPOCHS

A . HOLOCENE
- MARSH : HIGHLY ORGANIC CLAY & SILT DEPOSITS .
- LACUSTRINE : THINLY STRATIFIED LAKE DEPOSITS .
- BEACH : COARSE GRAINED SHORE DEPOSIT .
- BAY - SOUND : MARINE DEPOSITS BOTTOMING SOUNDS & BAYS .

B . PLEISTOCENE : ANCIENT FORMER MISSISSIPPI RIVER DELTAIC & NEAR SHORE DEPOSITS . OLDEST DEPOSITS ENCOUNTERED .

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE - DISTURBED SOILS RETRIEVED .
U - UNDISTURBED SOIL SAMPLES .
BG - BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED .

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

HORIZONTAL SCALE : 1"= 200'

0' 100' 200' 400' 600' 800' 1000'

VERTICAL SCALE : 1"= 10'

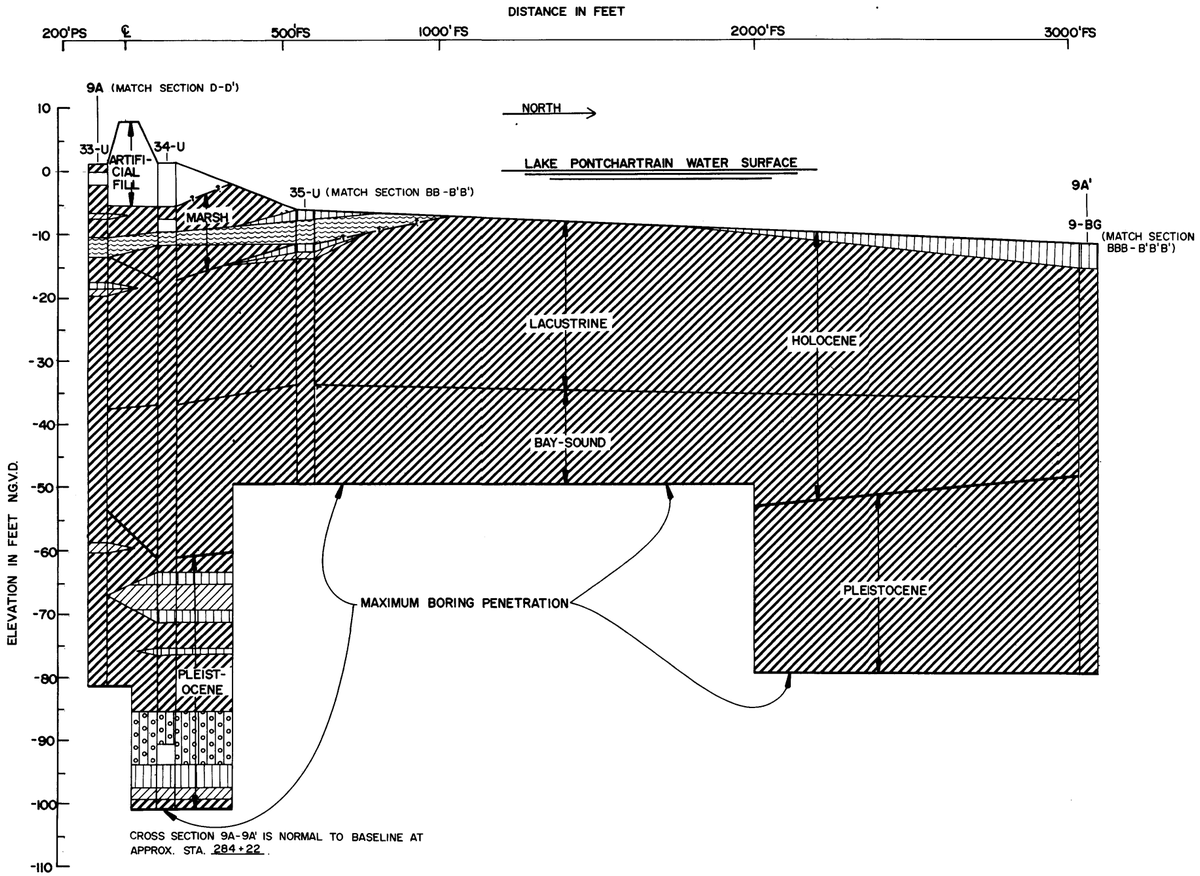
SURVEY NOTES:
℄ - CENTER LINE OF LEVEE
PS - PARISH SIDE OF CENTERLINE
FS - FLOOD SIDE OF CENTERLINE

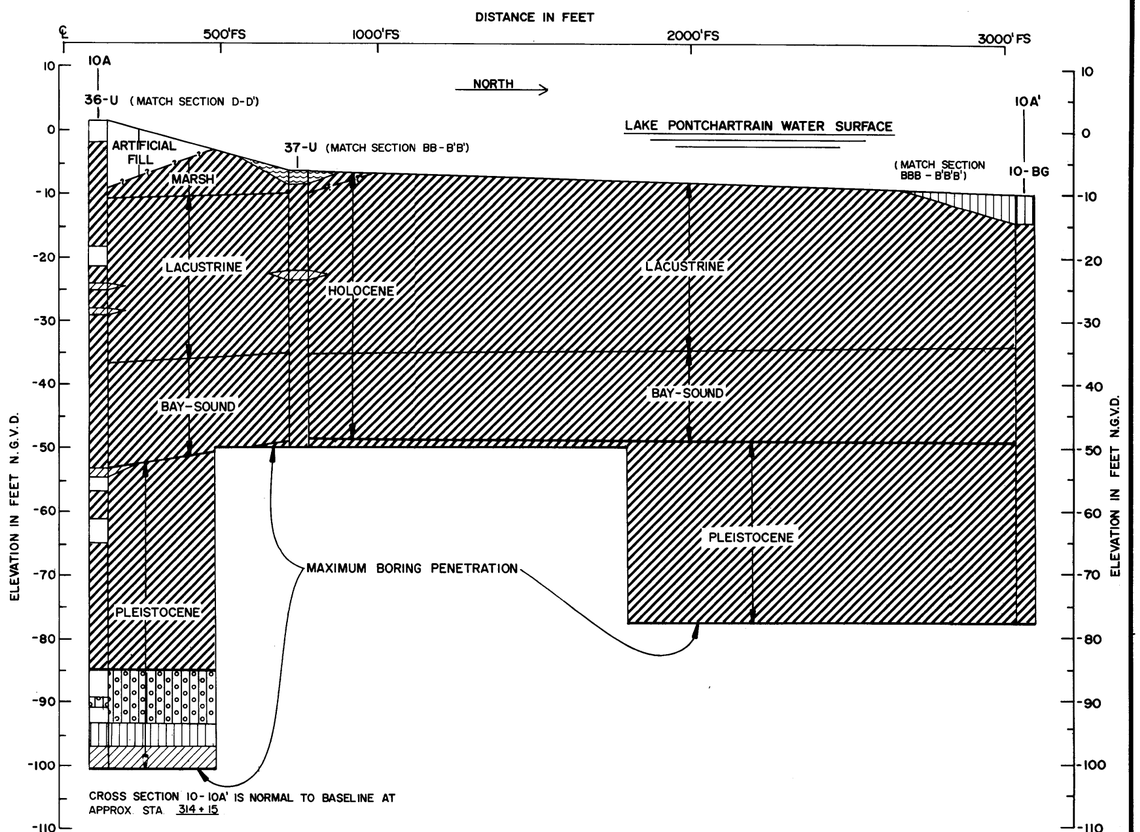
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
GEOLOGIC PROFILE
SECTION 7A-7A' & 8A-8A'

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 63





GEOLOGIC ENVIRONMENT LEGEND:

EPOCHS

A. HOLOCENE
- MARSH: HIGHLY ORGANIC CLAY AND SILT DEPOSITS.
- LACUSTRINE: THINLY STRATIFIED LAKE DEPOSITS
- BEACH: COARSE GRAIN SHORE DEPOSITS.
- BAY-SOUND: MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS.

B. PLEISTOCENE — ANCIENT FORMER MISSISSIPPI RIVER DELTAIC AND NEAR SHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED .

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE - DISTURBED SOILS RETRIEVED
U - UNDISTURBED SOIL SAMPLES
BG - BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

HORIZONTAL SCALE: 1" = 200'

0' 100' 200' 400' 600' 800' 1000'

VERTICAL SCALE : 1" = 10'

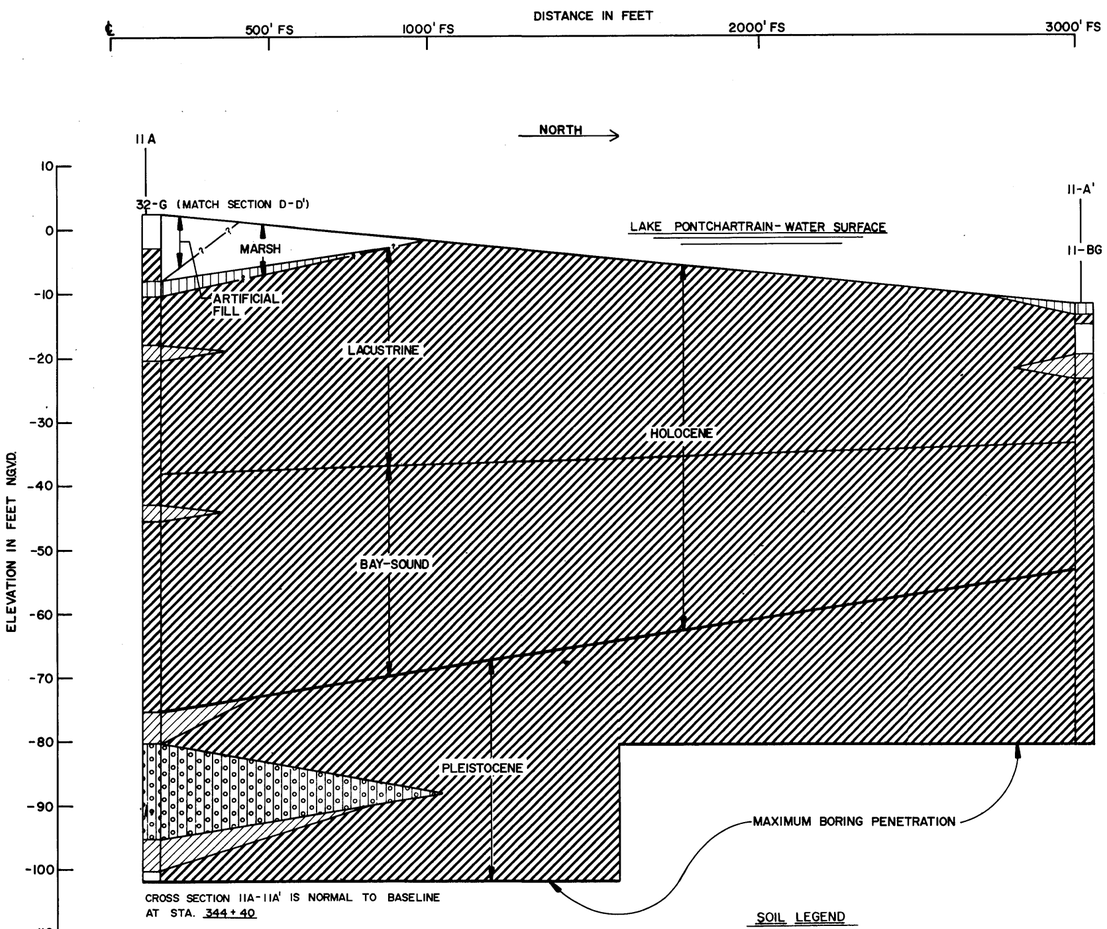
SURVEY NOTES:
℄ - CENTER LINE OF LEVEE
PS - PARISH SIDE OF CENTERLINE
FS - FLOOD SIDE OF CENTERLINE

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
GEOLOGIC PROFILE
SECTION 9A-9A' & 10A-10A'

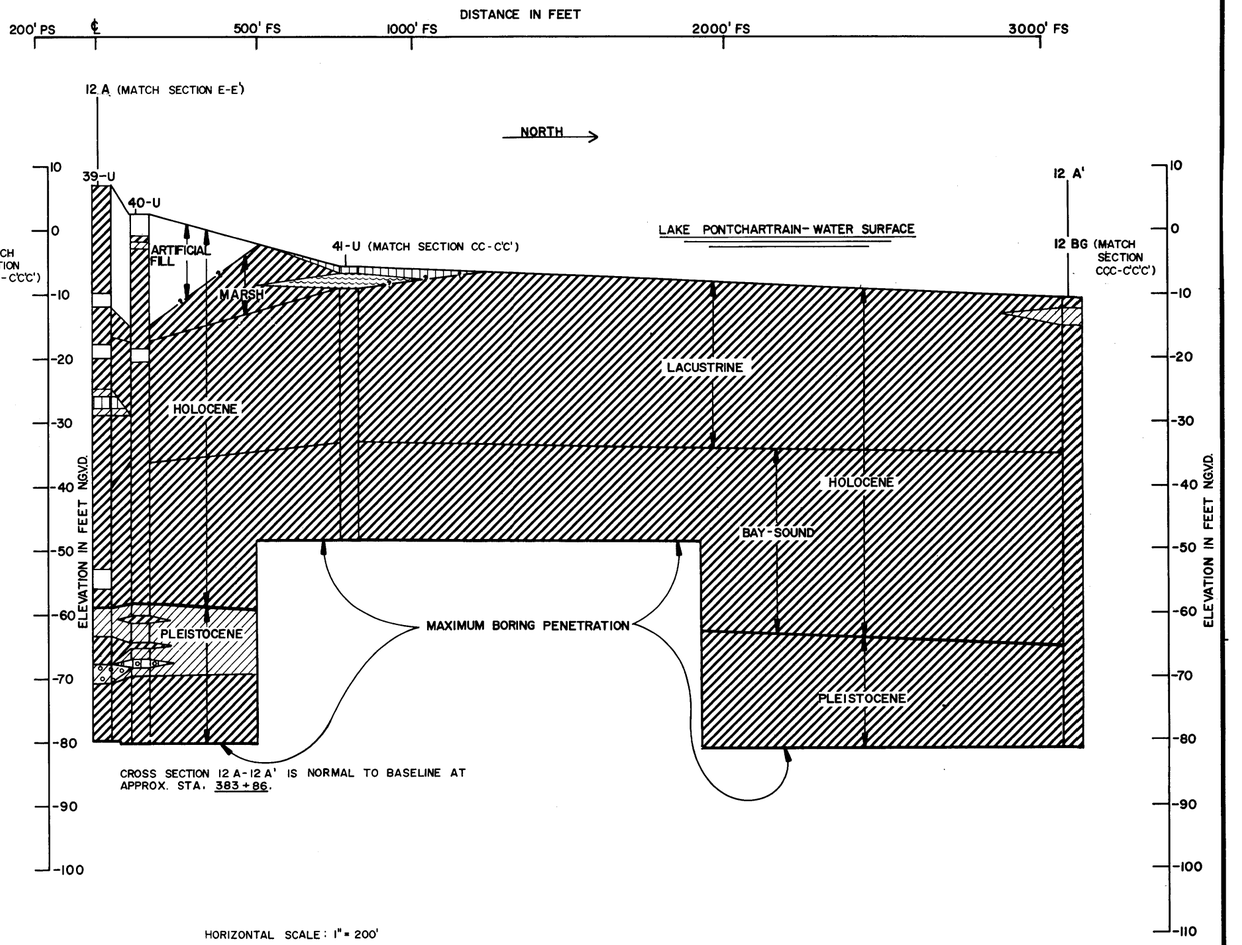
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 64



CROSS SECTION 11A-11A' IS NORMAL TO BASELINE AT STA. 344+40



CROSS SECTION 12 A-12 A' IS NORMAL TO BASELINE AT APPROX. STA. 383+86.

GEOLOGIC ENVIRONMENT LEGEND:

EPOCHS

A. HOLOCENE
- MARSH: HIGHLY ORGANIC CLAY AND SILT DEPOSITS.
- LACUSTRINE: THINLY STRATIFIED LAKE DEPOSITS.
- BEACH: COARSE GRAIN SHORE DEPOSIT.
- BAY-SOUND: MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS.

B. PLEISTOCENE — ANCIENT FORMER MISSISSIPPI RIVER DELTAIC AND NEAR SHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED.

BORING NOMENCLATURE (SAMPLING METHOD)

G- GENERAL TYPE - DISTURBED SOILS RETRIEVED
U- UNDISTURBED SOIL SAMPLES
BG- BORROW BORINGS - GENERAL SAMPLING TYPE - DISTURBED

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

HORIZONTAL SCALE: 1" = 200'

0' 100' 200' 400' 600' 800' 1000'

VERTICAL SCALE: 1" = 10'

SURVEY NOTES:

℄ - CENTER LINE OF LEVEE
PS - PARISH SIDE OF CENTERLINE
FS - FLOOD SIDE OF CENTERLINE

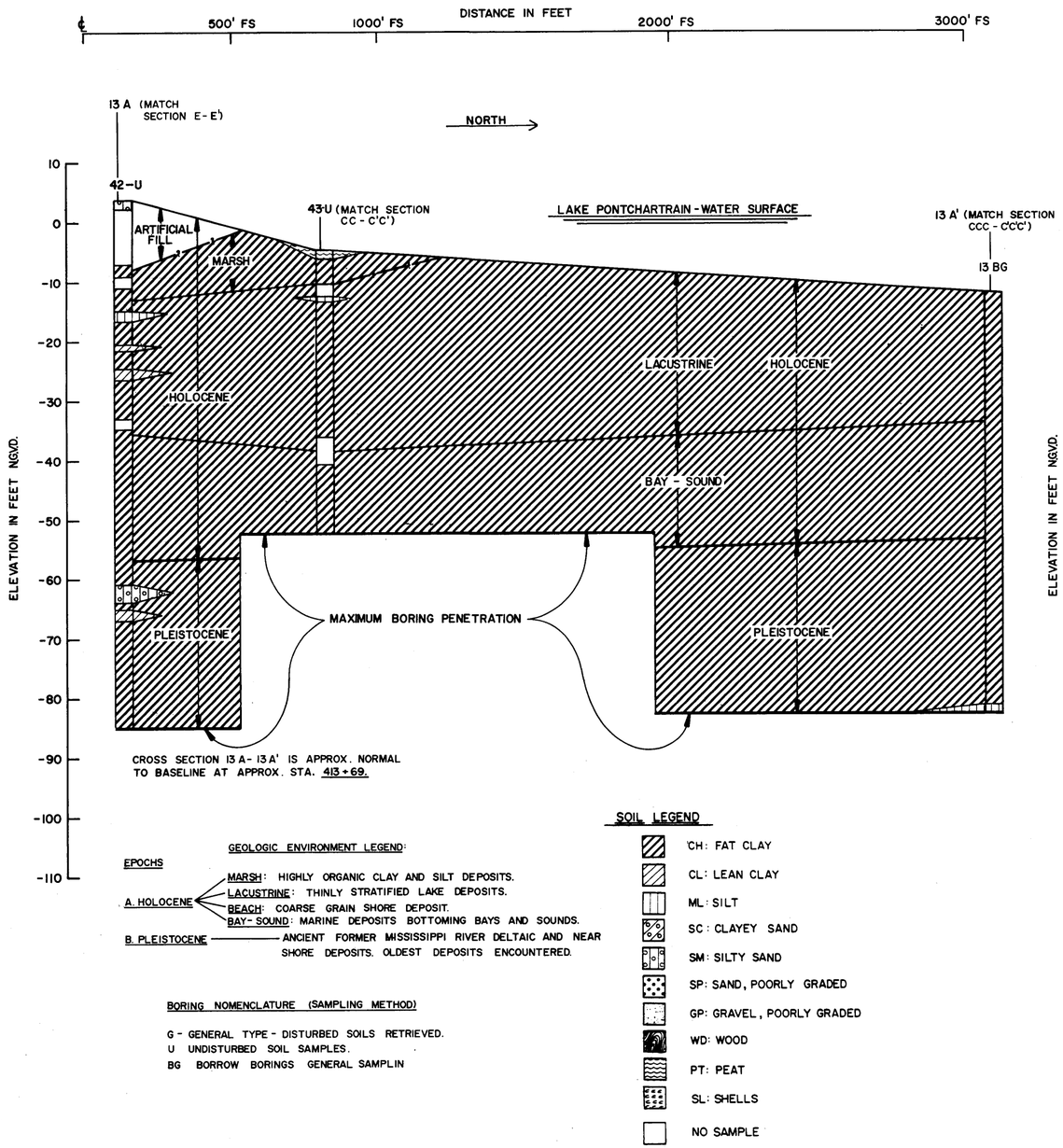
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

GEOLOGIC PROFILE
SECTION 11A-11A' & 12A-12A'

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 65



GEOLOGIC ENVIRONMENT LEGEND:

EPOCHS

A. HOLOCENE
- MARSH: HIGHLY ORGANIC CLAY AND SILT DEPOSITS.
- LACUSTRINE: THINLY STRATIFIED LAKE DEPOSITS.
- BEACH: COARSE GRAIN SHORE DEPOSIT.
- BAY - SOUND: MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS.

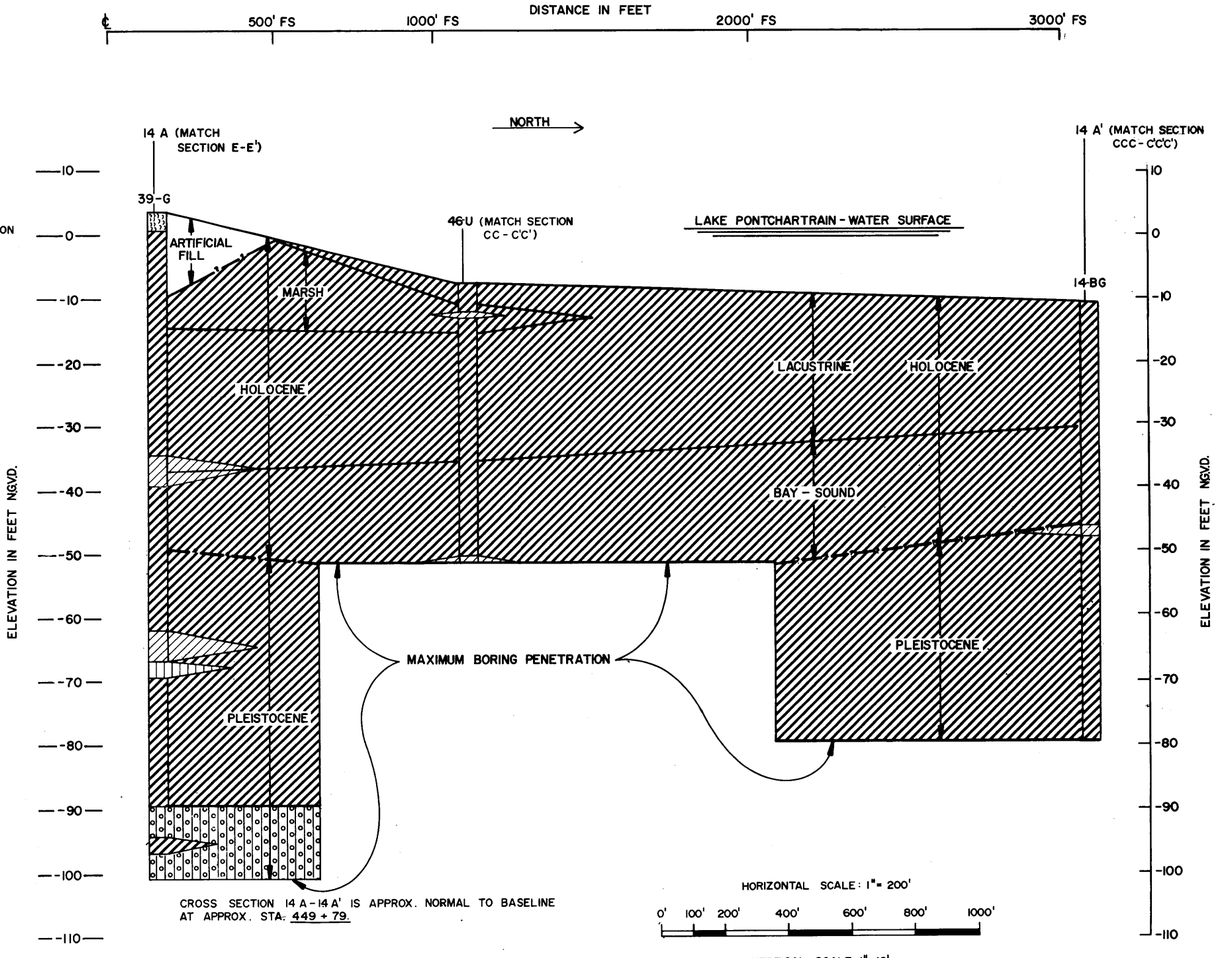
B. PLEISTOCENE — ANCIENT FORMER MISSISSIPPI RIVER DELTAIC AND NEAR SHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED.

BORING NOMENCLATURE (SAMPLING METHOD)

G - GENERAL TYPE - DISTURBED SOILS RETRIEVED.
U UNDISTURBED SOIL SAMPLES.
BG BORROW BORINGS GENERAL SAMPLIN

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE



SURVEY NOTES:

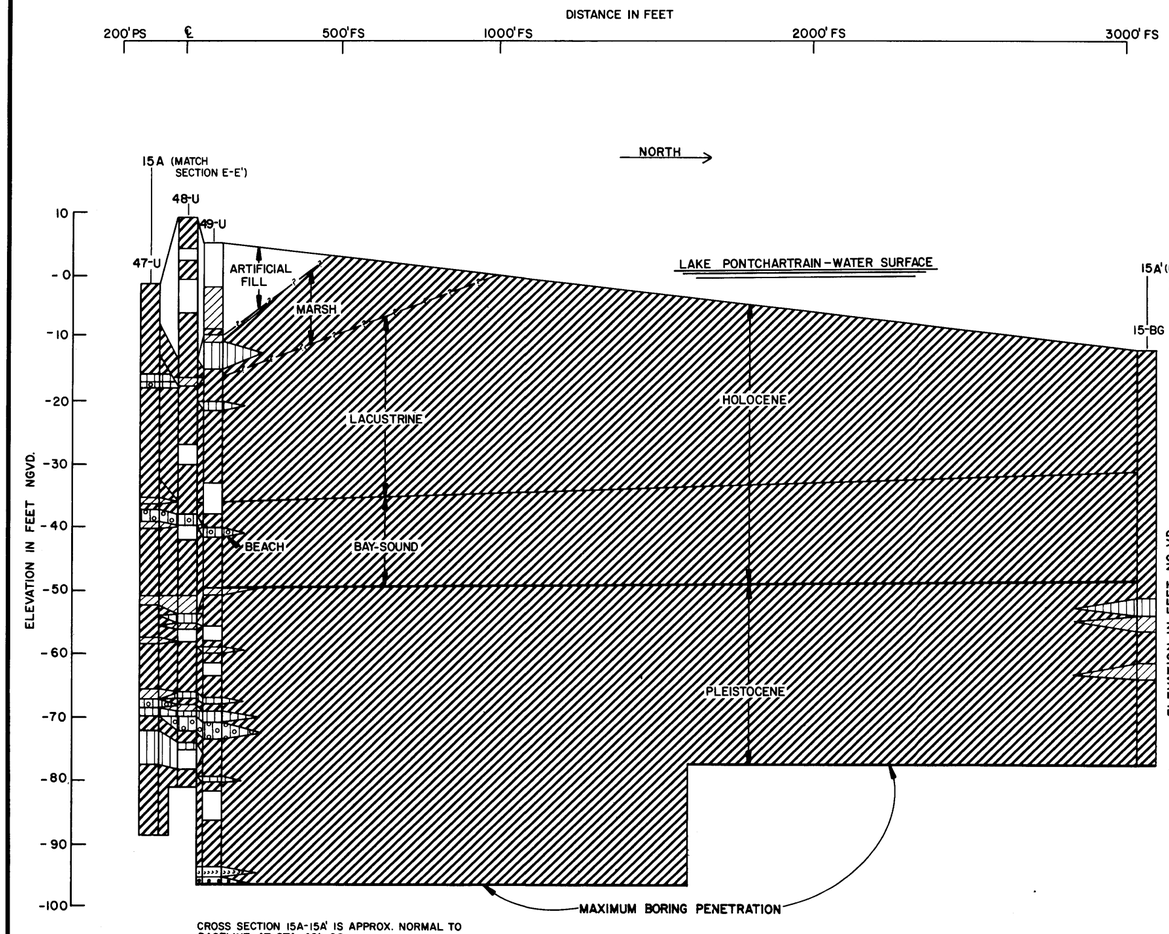
℄ - CENTERLINE OF LEVEE
PS - PARISH SIDE OF CENTERLINE
FS - FLOOD SIDE OF CENTERLINE

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
GEOLOGIC PROFILE
SECTION 13A-13A' & 14A-14A'

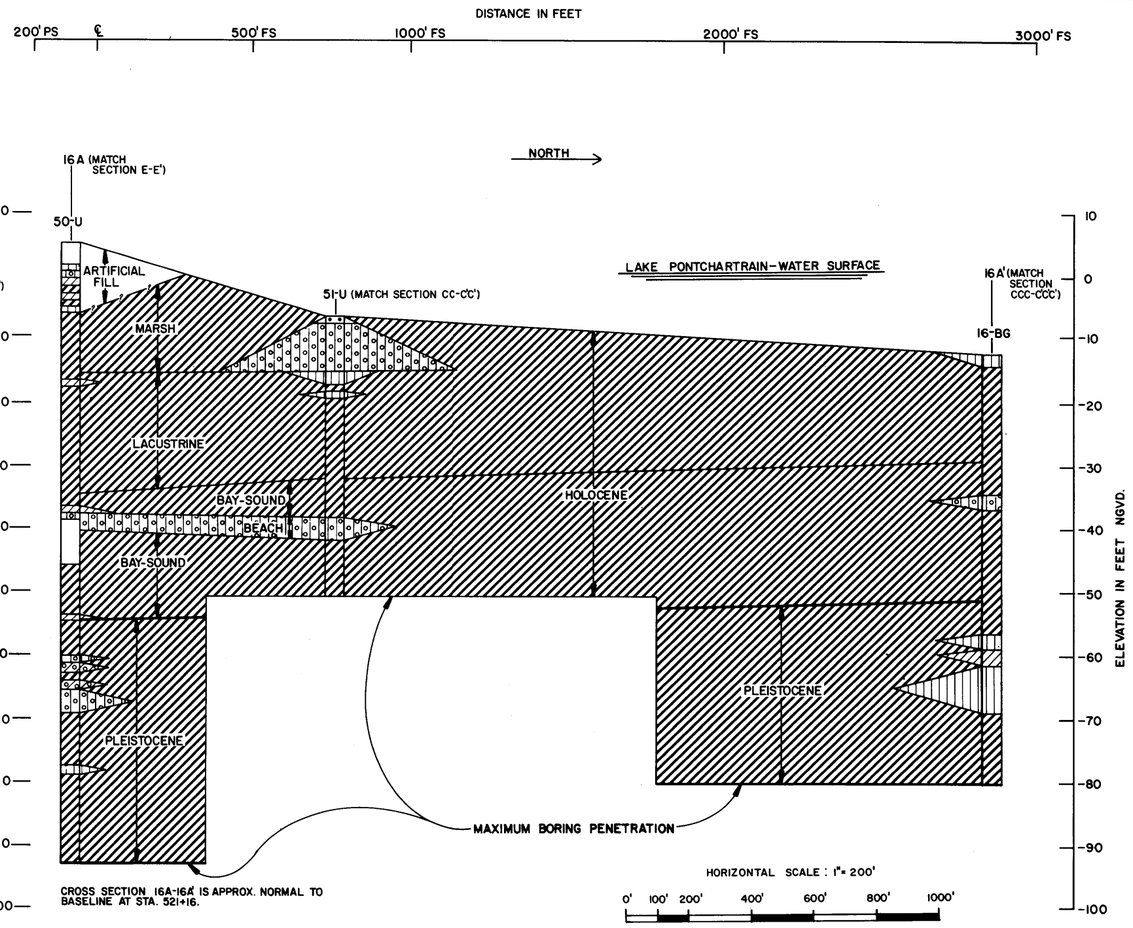
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 66



CROSS SECTION 15A-15A' IS APPROX. NORMAL TO BASELINE AT STA. 491+06.



CROSS SECTION 16A-16A' IS APPROX. NORMAL TO BASELINE AT STA. 521+16.

HORIZONTAL SCALE : 1"= 200'

0' 100' 200' 400' 600' 800' 1000'

VERTICAL SCALE: 1"=10'

SURVEY NOTES:

℄ - CENTER LINE OF LEVEE
PS - PARISH SIDE OF CENTERLINE
FS - FLOOD SIDE OF CENTERLINE

SOIL LEGEND

- CH: FAT CLAY
- CL: LEAN CLAY
- ML: SILT
- SC: CLAYEY SAND
- SM: SILTY SAND
- SP: SAND, POORLY GRADED
- GP: GRAVEL, POORLY GRADED
- WD: WOOD
- PT: PEAT
- SL: SHELLS
- NO SAMPLE

GEOLOGIC ENVIRONMENT LEGEND:

EPOCHS

A. HOLOCENE
- MARSH: HIGHLY ORGANIC CLAY AND SILT DEPOSITS.
- LACUSTRINE: THINLY STRATIFIED LAKE DEPOSITS.
- BEACH: COARSE GRAIN SHORE DEPOSIT.
- BAY-SOUND: MARINE DEPOSITS BOTTOMING BAYS AND SOUNDS.

B. PLEISTOCENE: ANCIENT FORMER MISSISSIPPI-RIVER DELTAIC AND NEAR SHORE DEPOSITS. OLDEST DEPOSITS ENCOUNTERED.

BORING NOMENCLATURE (SAMPLING METHOD)

G- GENERAL TYPE-DISTURBED SOILS RETRIEVED
U- UNDISTURBED SOIL SAMPLES
BG- BORROW BORINGS- GENERAL SAMPLING TYPE-DISTURBED.

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

GEOLOGIC PROFILE SECTION 15A-15A' & 16A-16A'

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

OCTOBER 1987

FILE NO. H-2-30148

PLATE 67

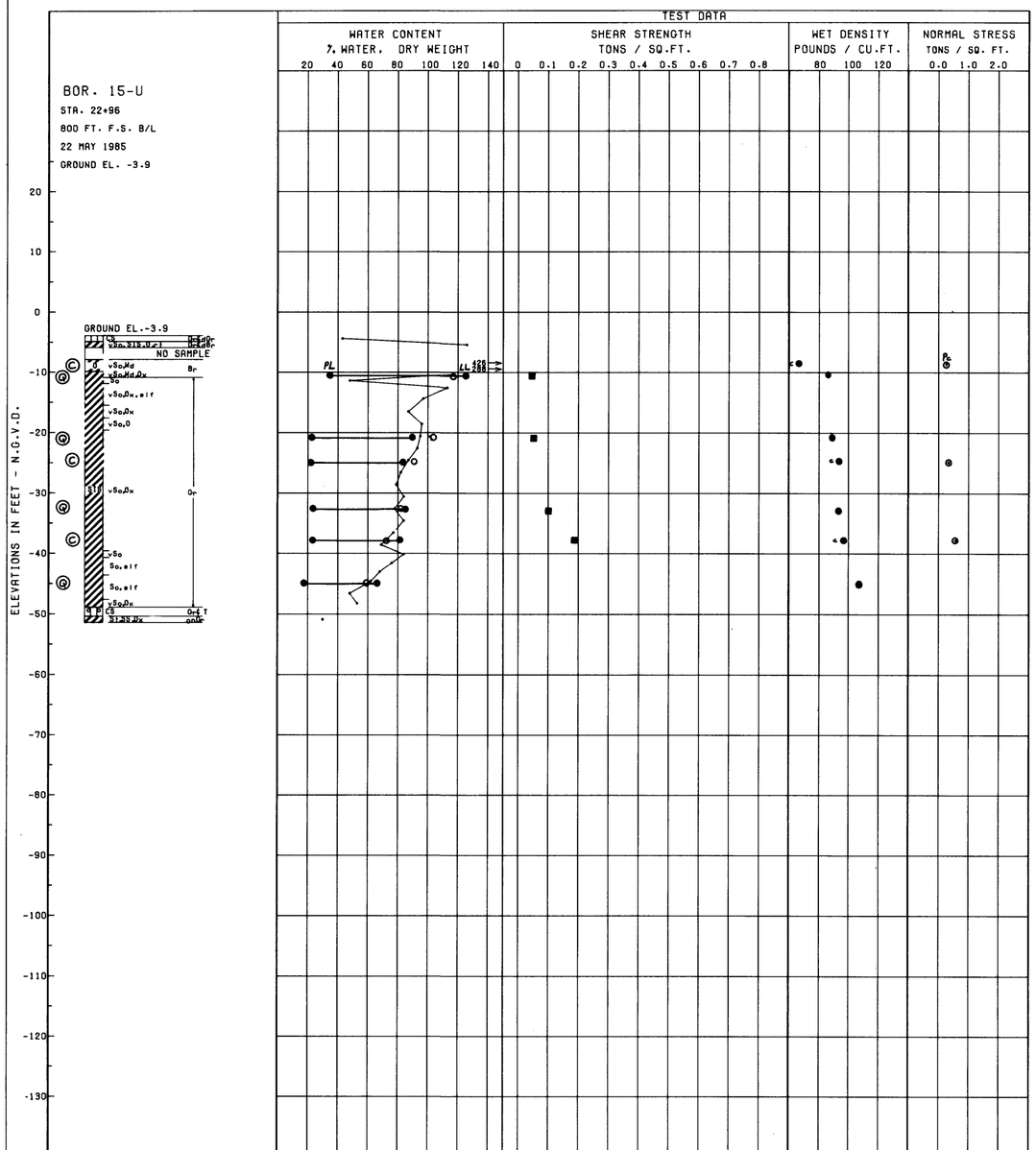
BOR. 15-U

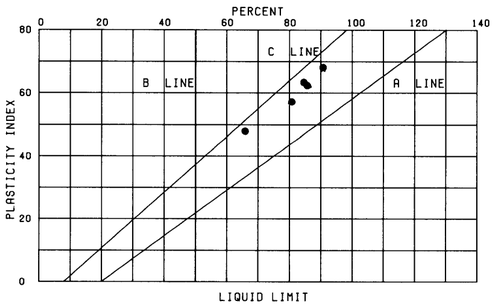
STA. 22+96

800 FT. F.S. B/L

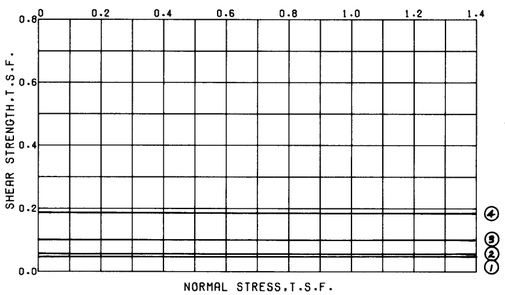
22 MAY 1985

GROUND EL. -3.9



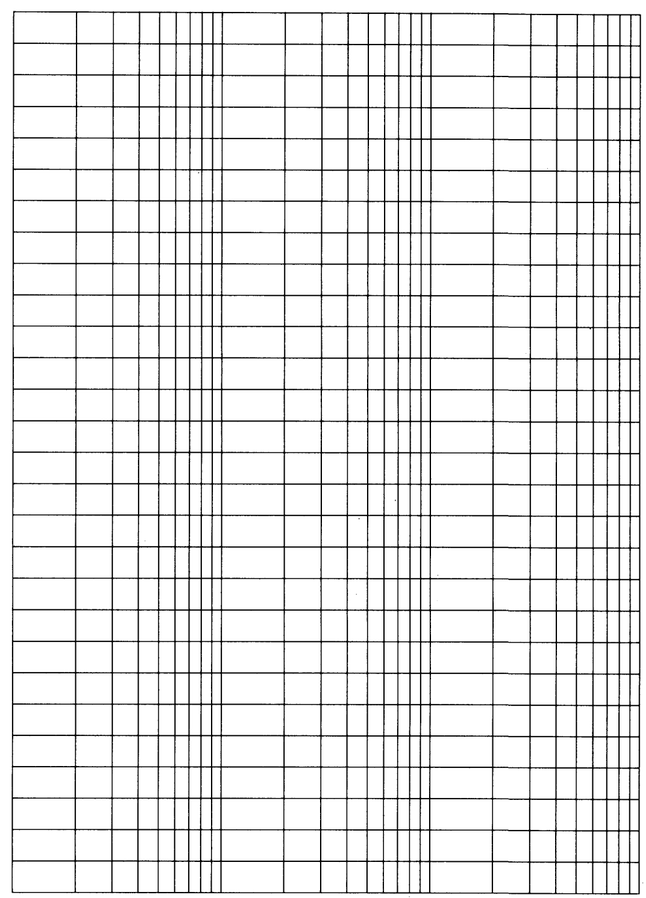


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-10.3	Q	0°	0.045	CH
2	-20.9	Q	0°	0.052	CH
3	-32.9	Q	0°	0.100	CH
4	-44.9	Q	0°	0.188	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 2

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO.15-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 68

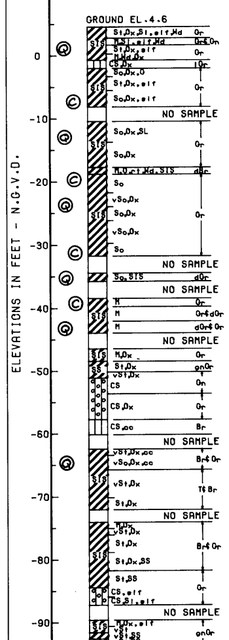
BOR. 16-U

STA 22+96

125 FT. F.S. OF B/L

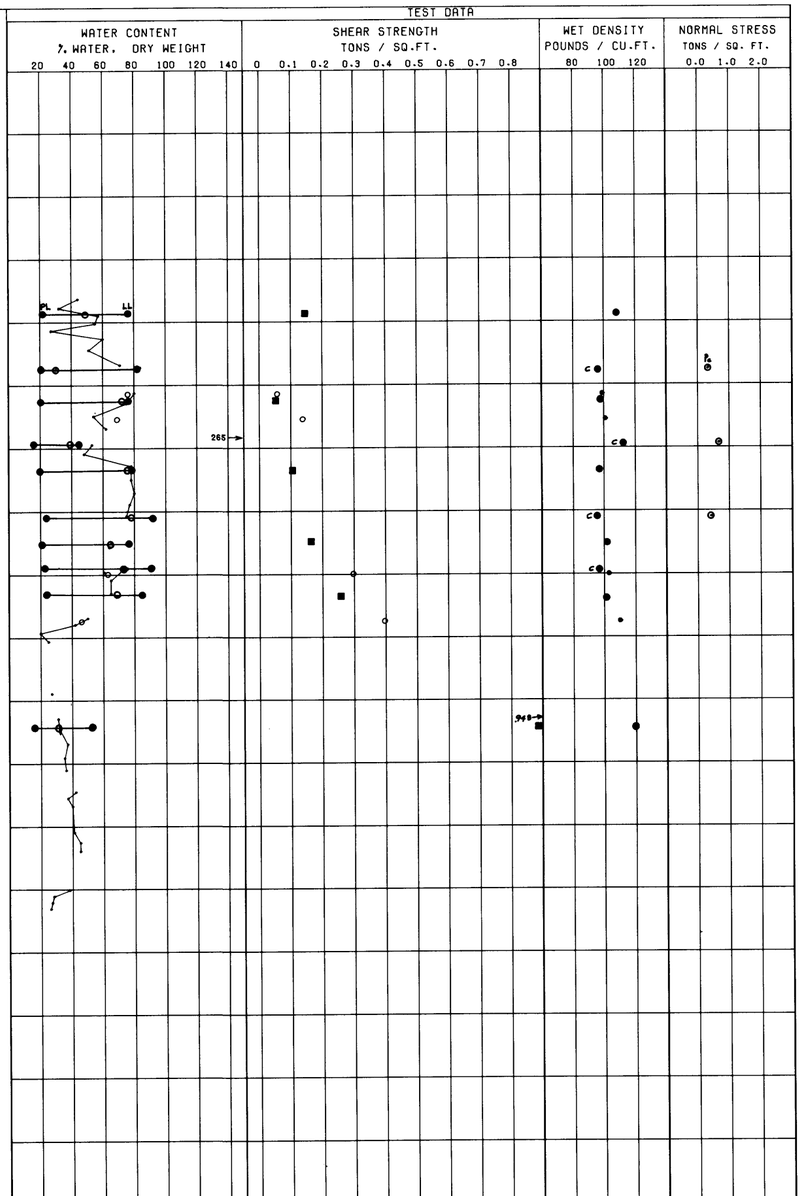
22-25 JAN. 85

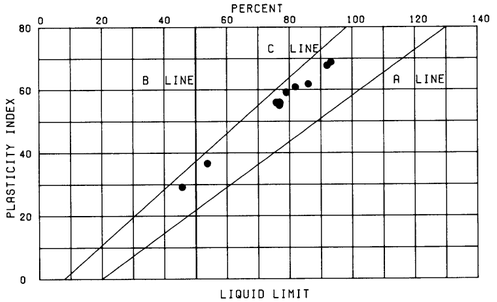
GROUND EL. 4.58



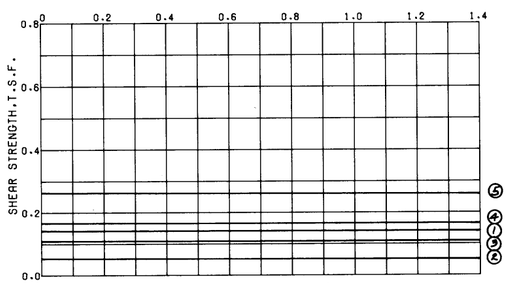
ELEVATIONS IN FEET - N.G.V.D.

TEST DATA



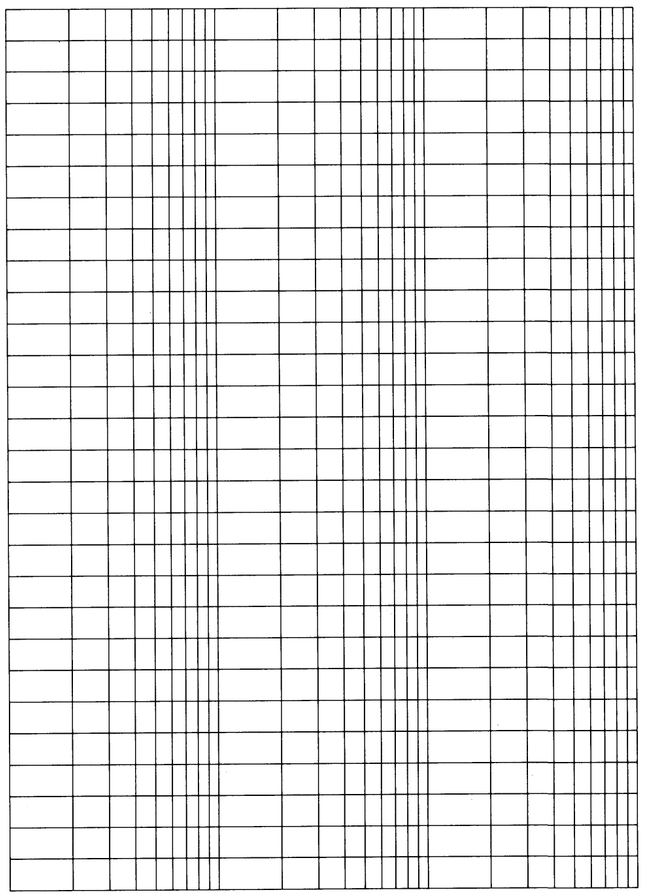


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	1.08	Q	0°	0.143	CH
2	-12.42	Q	0°	0.057	CH
3	-23.42	Q	0°	0.105	CH
4	-35.12	Q	0°	0.168	CH
5	-49.32	Q	0°	0.261	CH
6	-64.62	Q	0°	0.948	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 2

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO.16-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 69

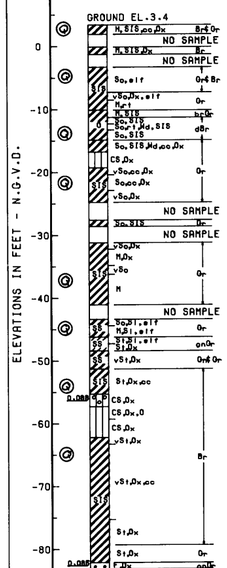
BOR. 17-U

STA. 53+42

82 FT. P.S. OF B/L

23-28 AUG. 1984

GROUND EL. 3.4



ELEVATIONS IN FEET - N.G.V.D.

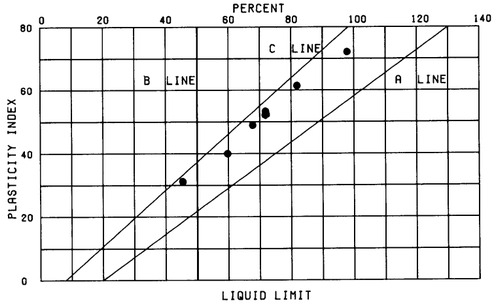
TEST DATA

WATER CONTENT
% WATER. DRY WEIGHT
20 40 60 80 100 120 140

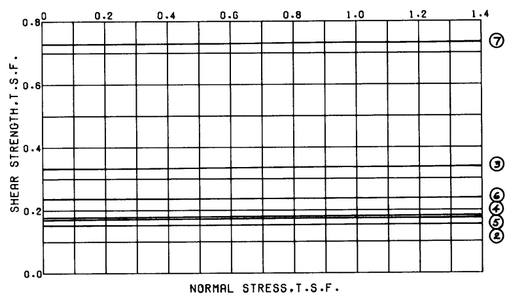
SHEAR STRENGTH
TONS / SQ.FT.
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

WET DENSITY
POUNDS / CU.FT.
80 100 120

NORMAL STRESS
TONS / SQ. FT.
0.0 1.0 2.0

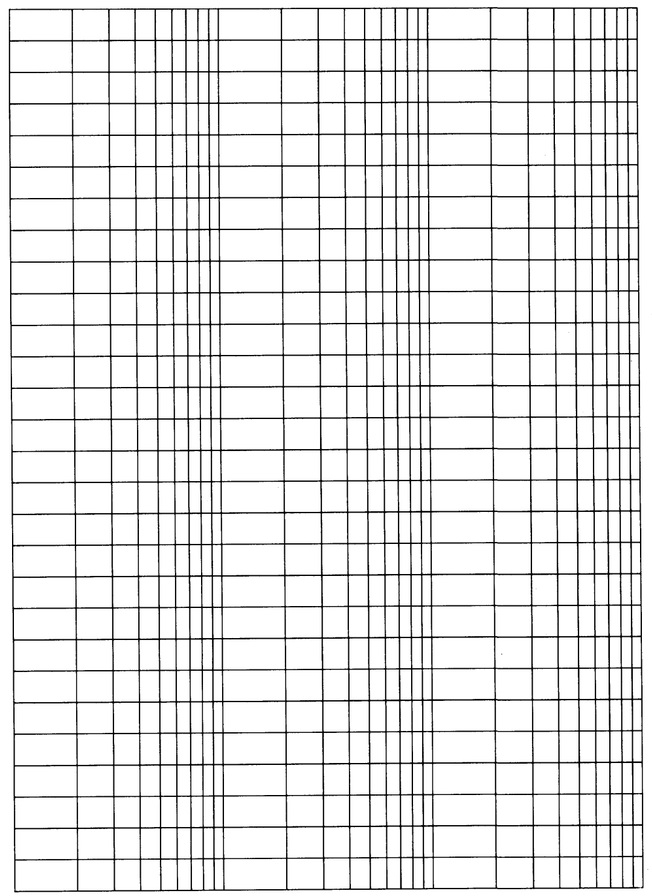


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	2.4	Q	0°	1.115	CH
2	-4.6	Q	0°	0.132	CH
3	-13.9	Q	0°	0.332	OH
4	-21.7	Q	0°	0.178	CH
5	-36.9	Q	0°	0.175	CH
6	-44.6	Q	0°	0.238	CH
7	-53.7	Q	0°	0.730	CH
8	-64.6	Q	0°	0.832	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 2

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO.17-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 70

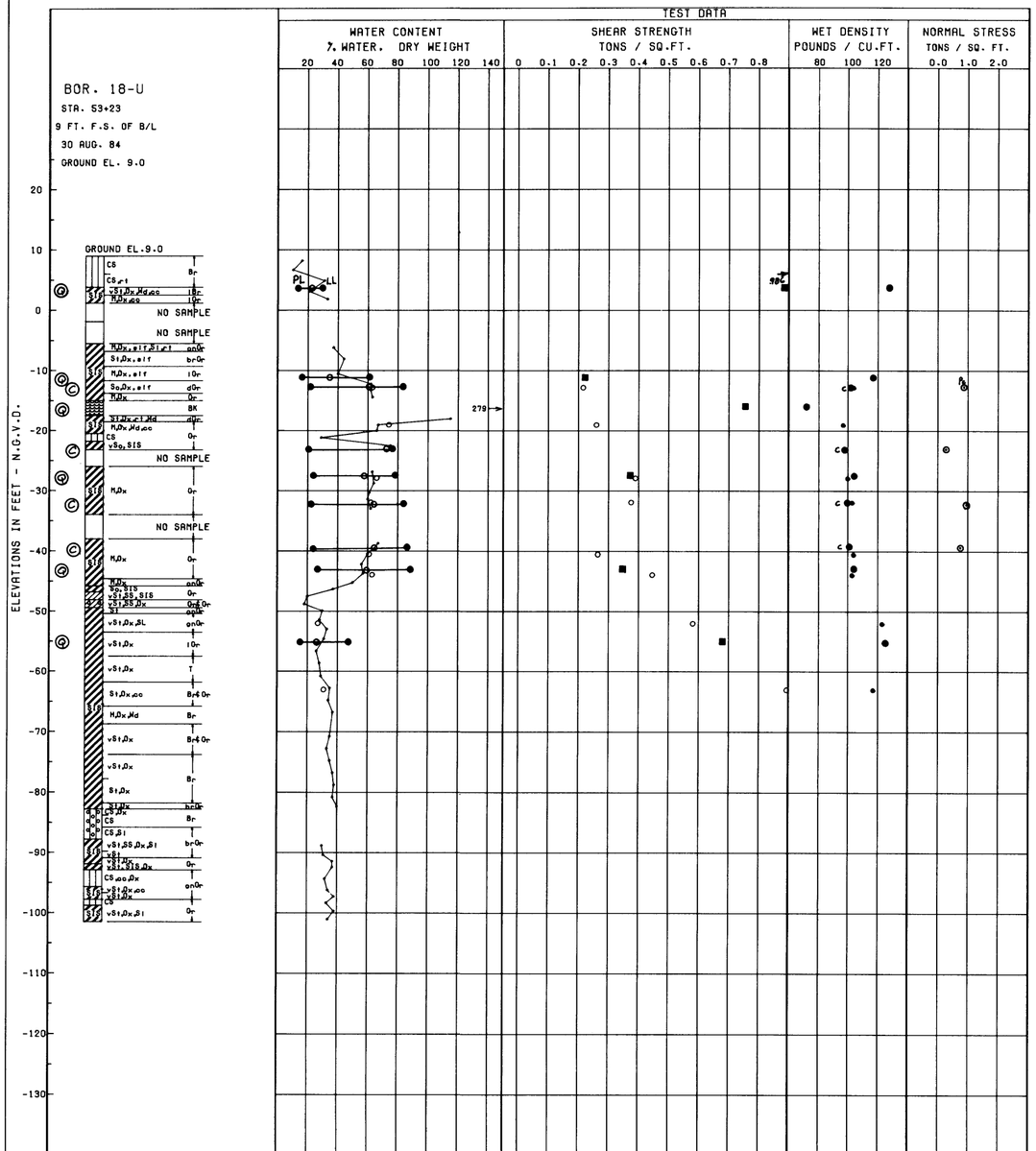
BOR. 18-U

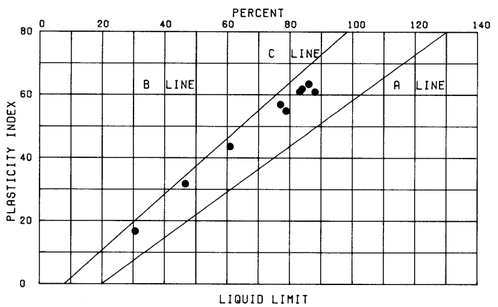
STA. 53+23

9 FT. F.S. OF B/L

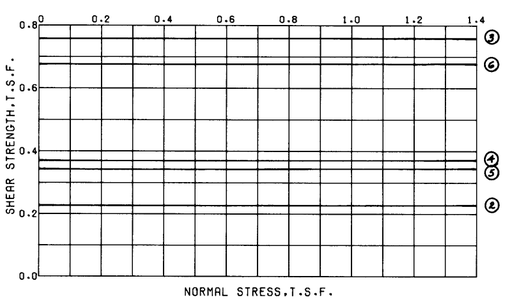
30 AUG. 84

GROUND EL. 9.0



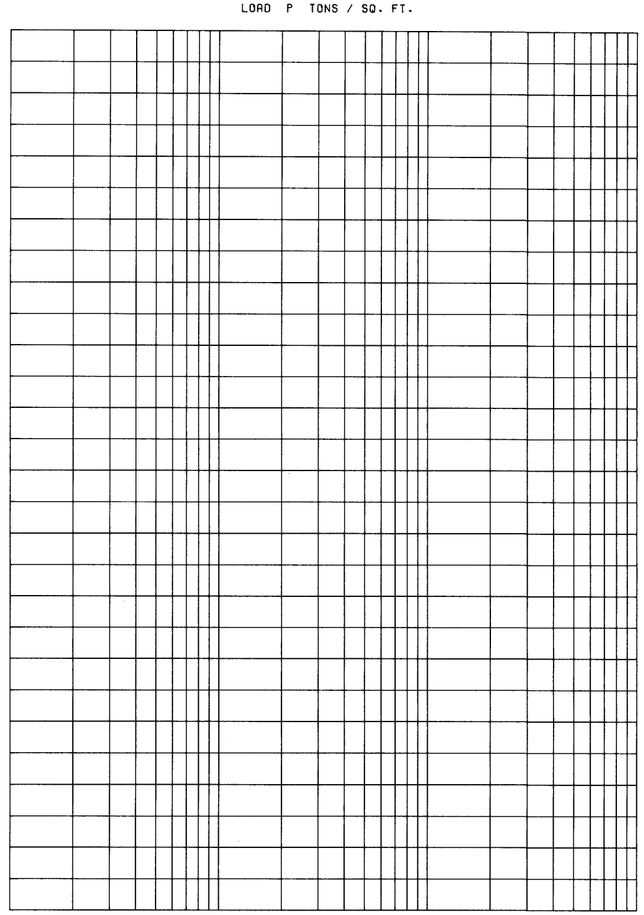


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	3.6	Q	0°	0.986	CL
2.	-11.0	Q	0°	0.226	CH
3.	-15.9	Q	0°	0.768	OH
4.	-27.5	Q	0°	0.370	CH
5.	-43.0	Q	0°	0.343	CH
6.	-55.0	Q	0°	0.679	CL



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 2

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO.18-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 71

BOR. 19-U

STA. 53+42

145 FT. F.S. OF B/L

18 JAN. 85

GROUND EL. 4.0

ELEVATIONS IN FEET - N.G.V.D.

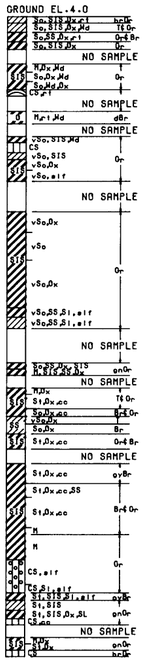
TEST DATA

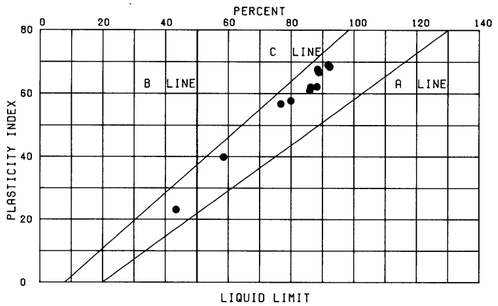
WATER CONTENT
% WATER, DRY WEIGHT
20 40 60 80 100 120 140

SHEAR STRENGTH
TONS / SQ.FT.
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

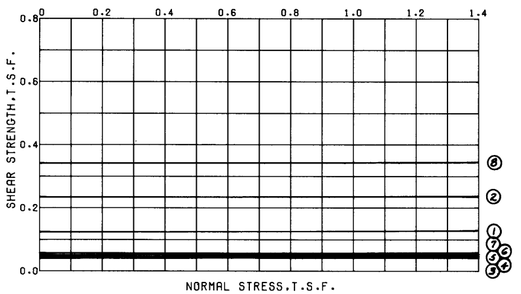
WET DENSITY
POUNDS / CU.FT.
80 100 120

NORMAL STRESS
TONS / SQ. FT.
0.0 1.0 2.0





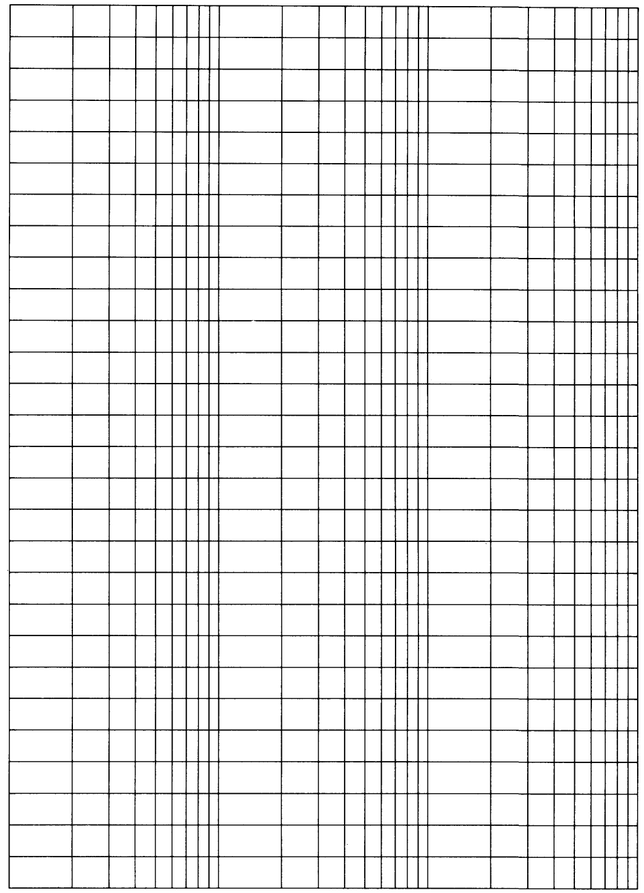
PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-0.5	Q	0°	0.129	CH
2.	-12.0	Q	0°	0.237	PT
3.	-20.9	Q	0°	0.042	CH
4.	-28.0	Q	0°	0.043	CH
5.	-31.9	Q	0°	0.045	CH
6.	-36.0	Q	0°	0.045	CH
7.	-40.0	Q	0°	0.055	CH
8.	-56.0	Q	0°	0.341	CH

LOAD P TONS / SQ. FT.



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 2

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 – GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 19-U

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

OCTOBER 1987

FILE NO. H-2-30148

PLATE 72

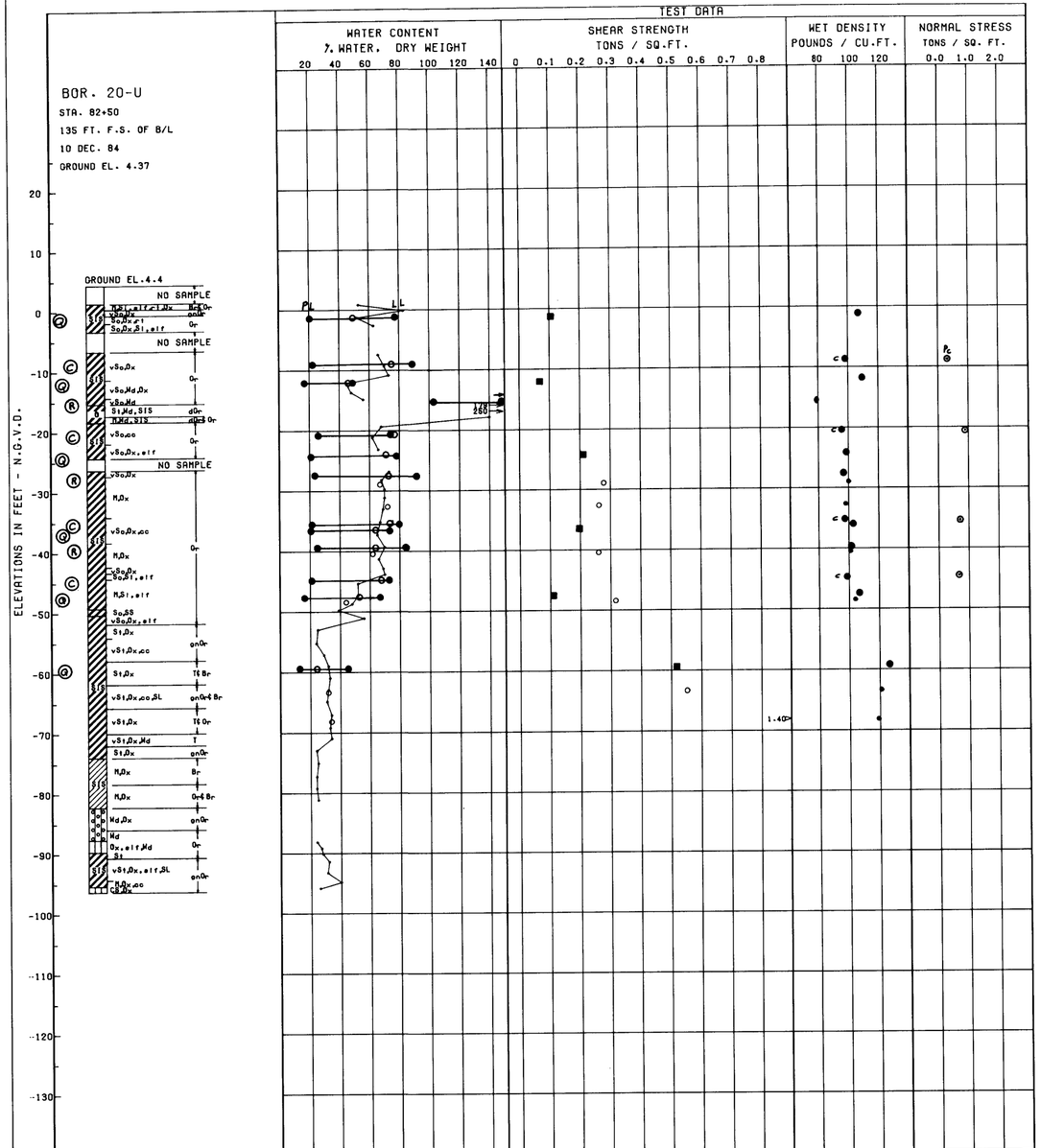
BOR. 20-U

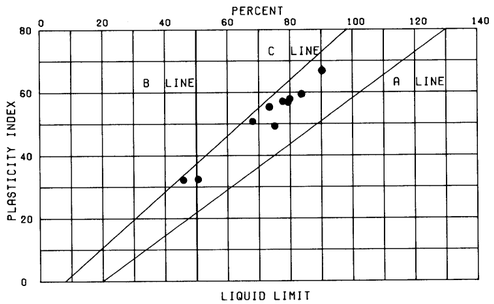
STA. 82+50

135 FT. F.S. OF B/L

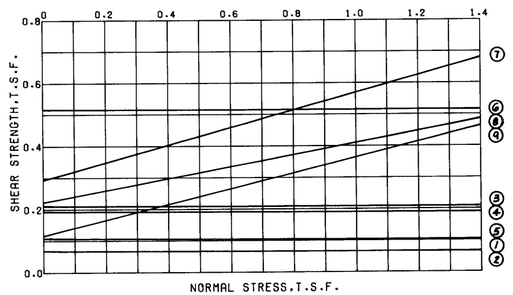
10 DEC. 84

GROUND EL. 4.37



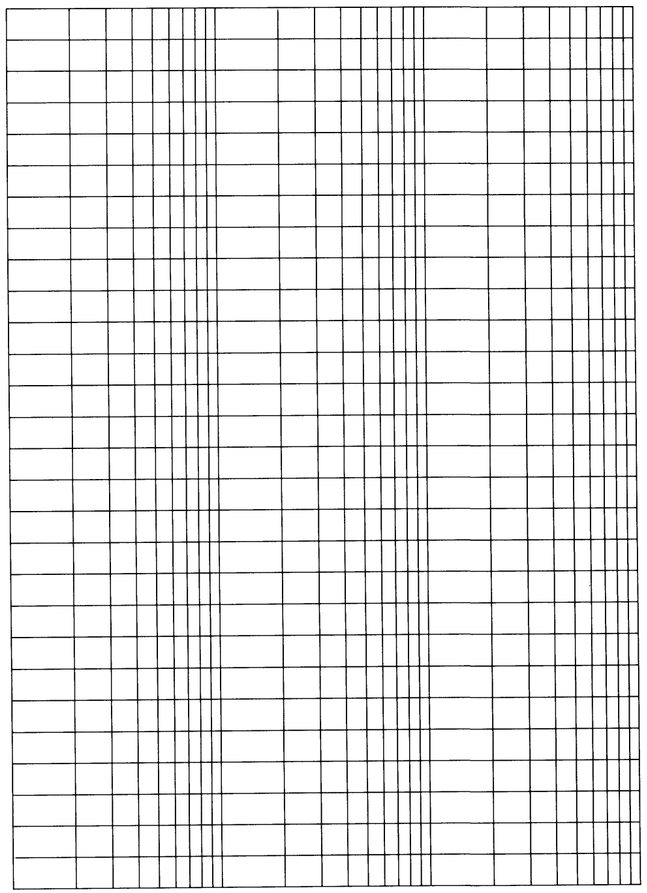


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-1.13	Q	0°	0.100	CH
2	-11.93	Q	0°	0.070	CH
3	-24.13	Q	0°	0.208	CH
4	-36.43	Q	0°	0.198	CH
5	-47.53	Q	0°	0.105	CH
6	-59.33	Q	0°	0.519	CH
7	-15.6	R	15°	0.290	CH
8	-27.6	R	10°	0.220	CH
9	-39.6	R	14°30'	0.110	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 3

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 20-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 73

BOR. 21-U
STA. 82+50
655 FT .F.S. B/L
21 MAY 1985
ORGUND EL. -4.3

ELEVATIONS IN FEET - N.G.V.D.

TEST DATA

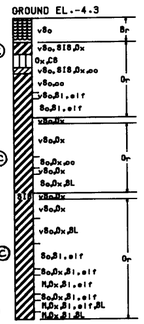
WATER CONTENT
% WATER. DRY WEIGHT
20 40 60 80 100 120 140

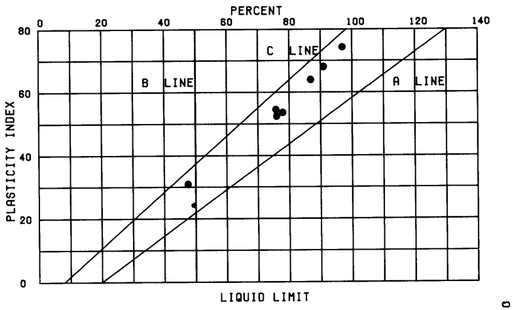
SHEAR STRENGTH
TONS / SQ.FT.
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

WET DENSITY
POUNDS / CU.FT.
80 100 120

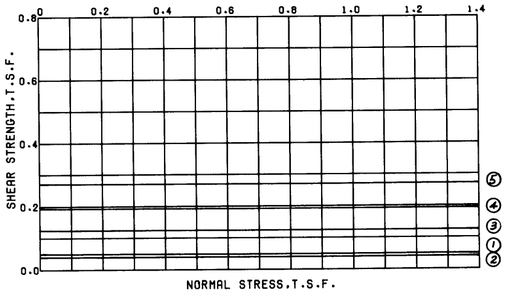
NORMAL STRESS
TONS / SQ. FT.
0.0 1.0 2.0

PL LL 337 341



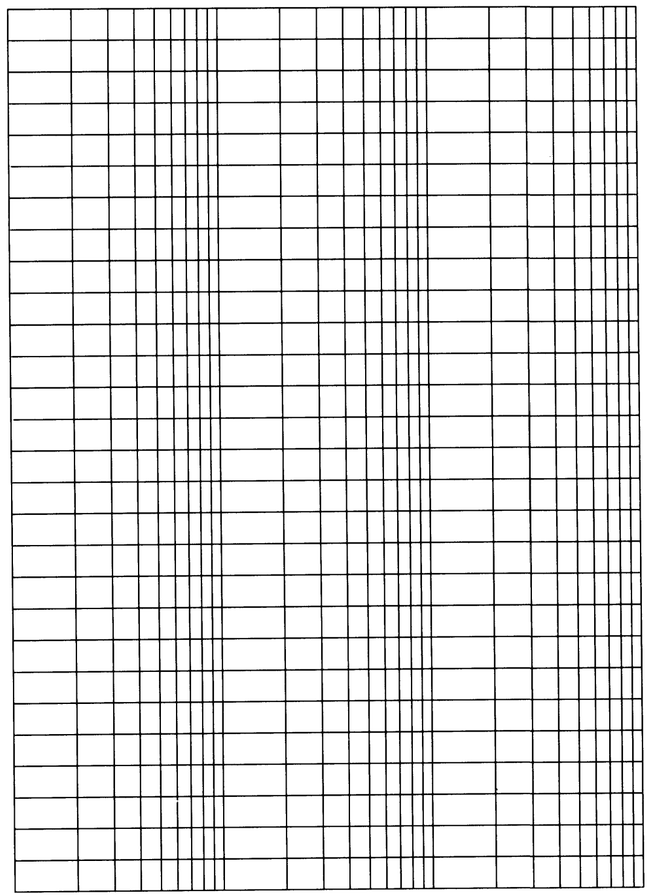


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENOTH Φ	STRENOTH C - TSF	CLASS
1	-6.0	Q	0°	0.053	PT
2	-17.3	Q	0°	0.093	CL
3	-30.3	Q	0°	0.128	CH
4	-42.2	Q	0°	0.195	CH
5	-50.7	Q	0°	0.278	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 3

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

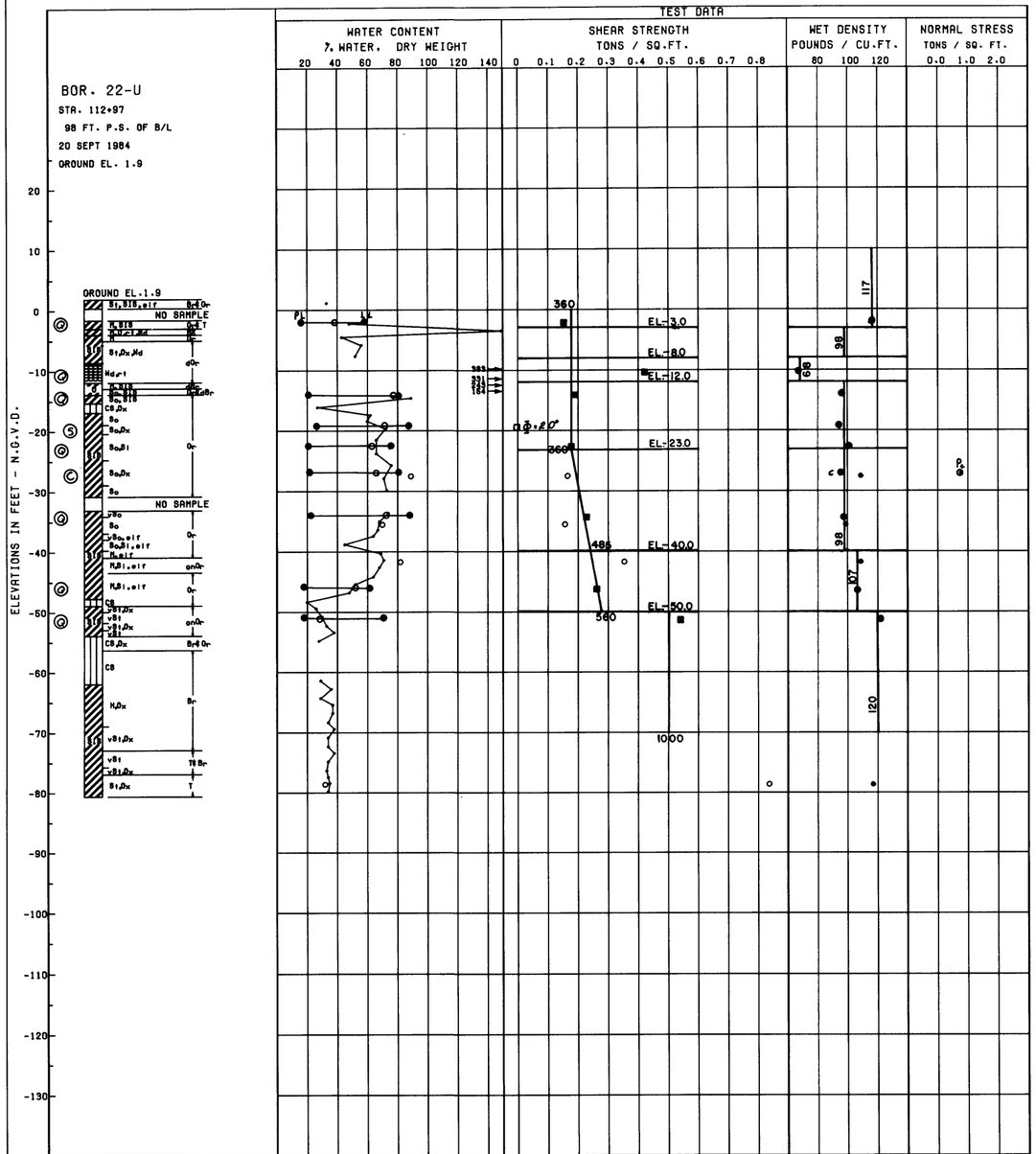
UNDISTURBED BORING NO. 21-U

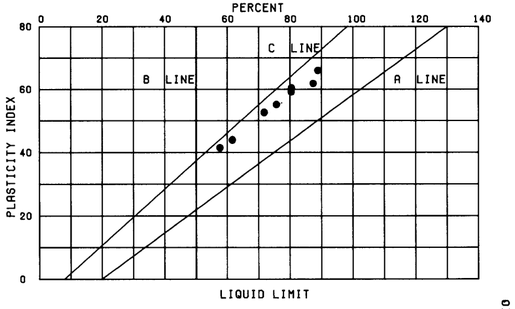
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

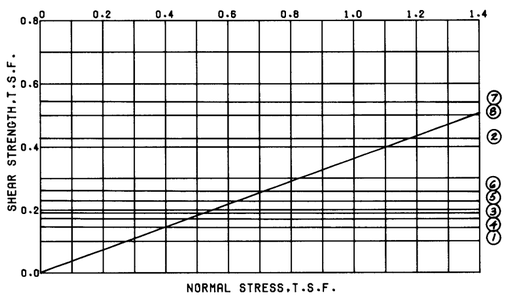
PLATE 74

BOR. 22-U
STA. 112+97
98 FT. P.S. OF B/L
20 SEPT 1984
ORGROUND EL. 1.9



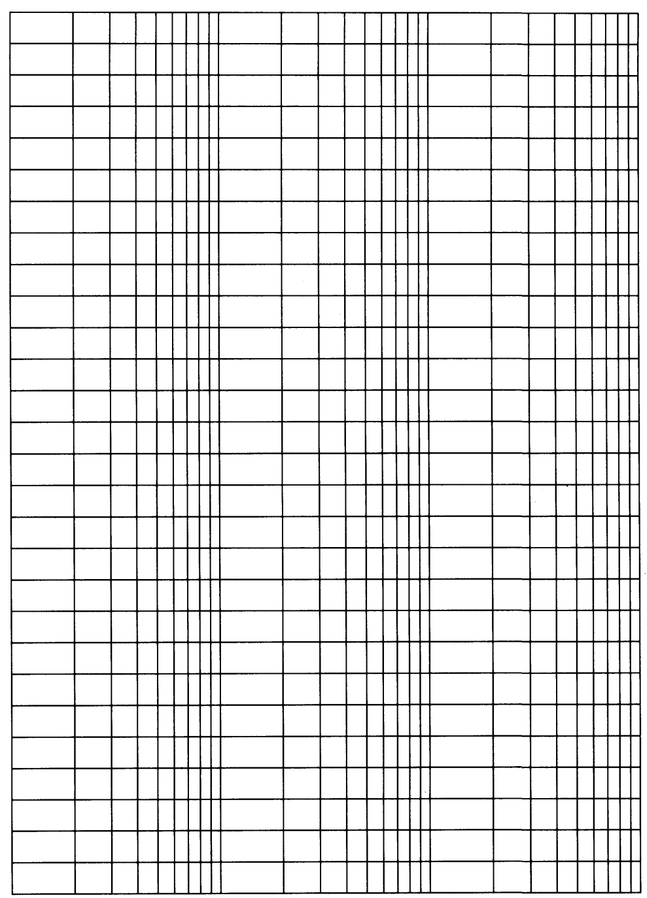


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-2.5	Q	0°	0.153	CH
2	-10.3	Q	0°	0.427	PT
3	-14.1	Q	0°	0.198	CH
4	-22.9	Q	0°	0.183	CH
5	-34.5	Q	0°	0.230	CH
6	-46.1	Q	0°	0.262	CH
7	-51.3	Q	0°	0.541	CH
8	-19.7	S	20°	0.000	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORING SEE PLATE 3

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
UNDISTURBED BORING NO. 22-U
SOIL DESIGN PARAMETERS
PROTECTED SIDE PUMPING STA. 4
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987
FILE NO. H-2-30148

PLATE 75

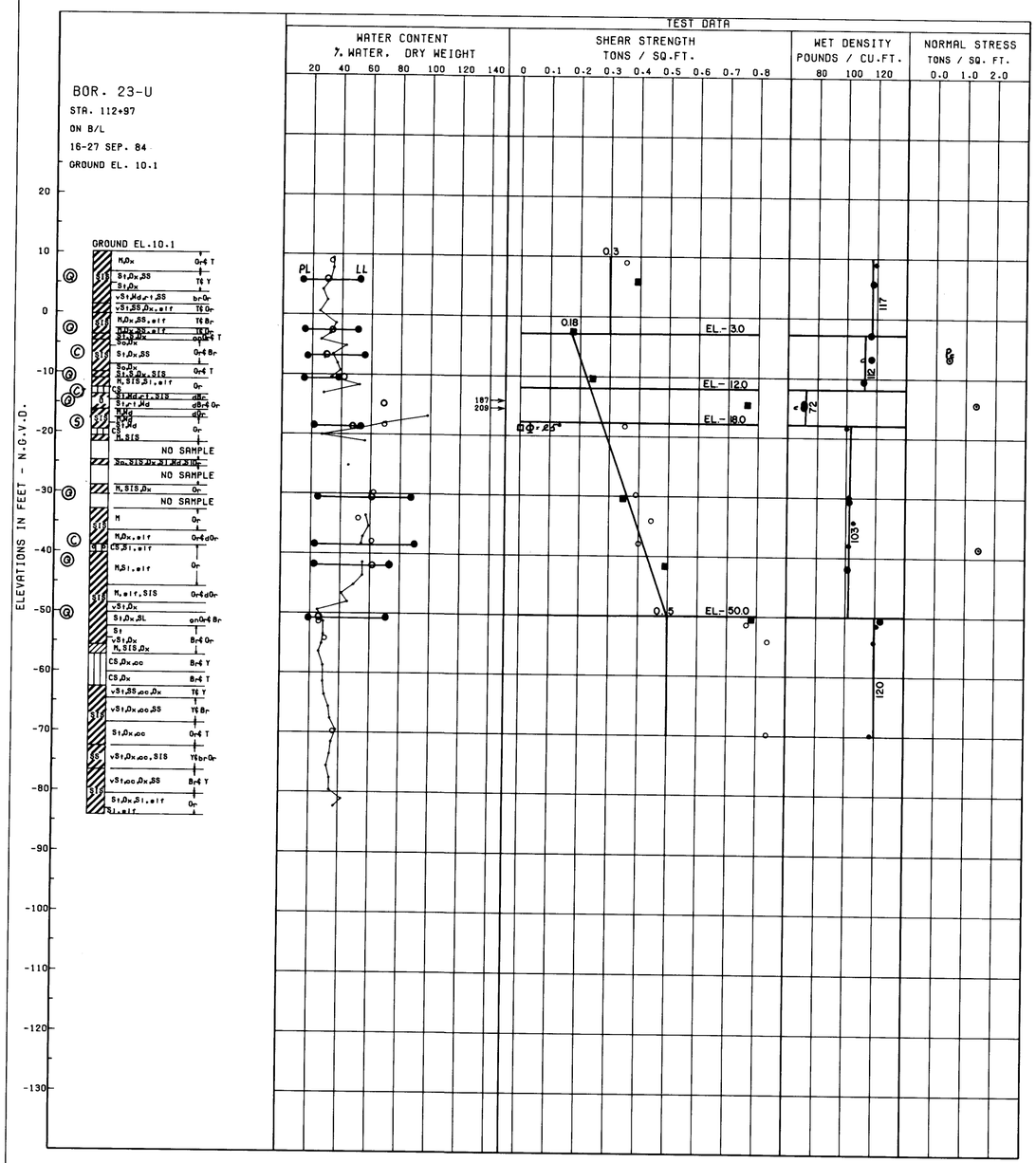
BOR. 23-U

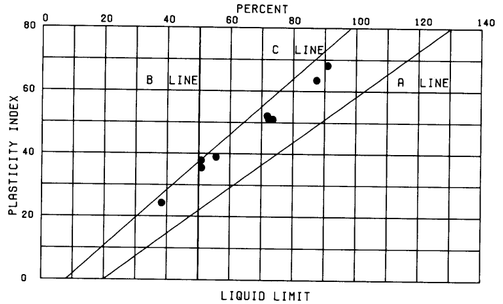
STA. 112+97

ON B/L

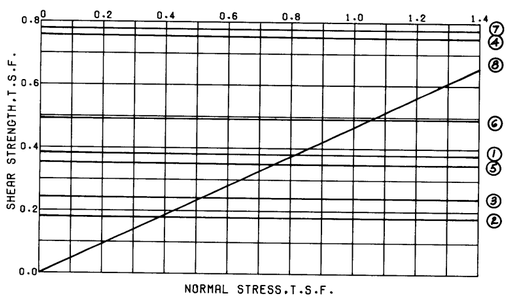
16-27 SEP. 84

GROUND EL. 10.1



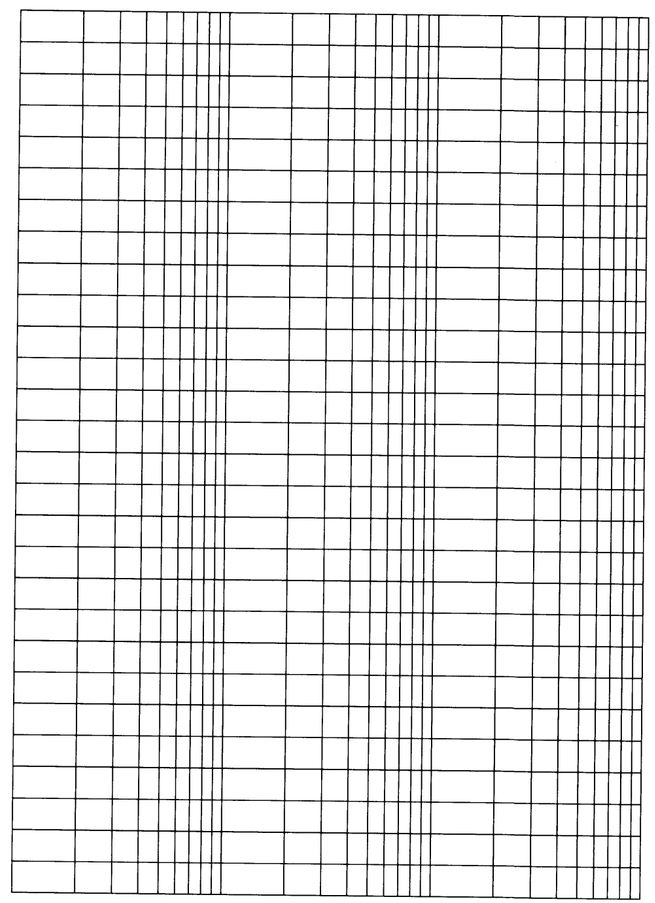


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	5.6	Q	0°	0.388	CH
2.	-2.9	Q	0°	0.181	CH
3.	-10.5	Q	0°	0.245	CH
4.	-14.9	Q	0°	0.761	CH
5.	-30.3	Q	0°	0.353	CH
6.	-41.9	Q	0°	0.495	CH
7.	-50.6	Q	0°	0.781	CH
8.	-128	S	25°	0.000	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST

■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST

▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST

⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 3

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 23-U
SOIL DESIGN PARAMETERS
C/L PUMPING STA. 4

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

OCTOBER 1987

FILE NO. H-2-30148

PLATE 76

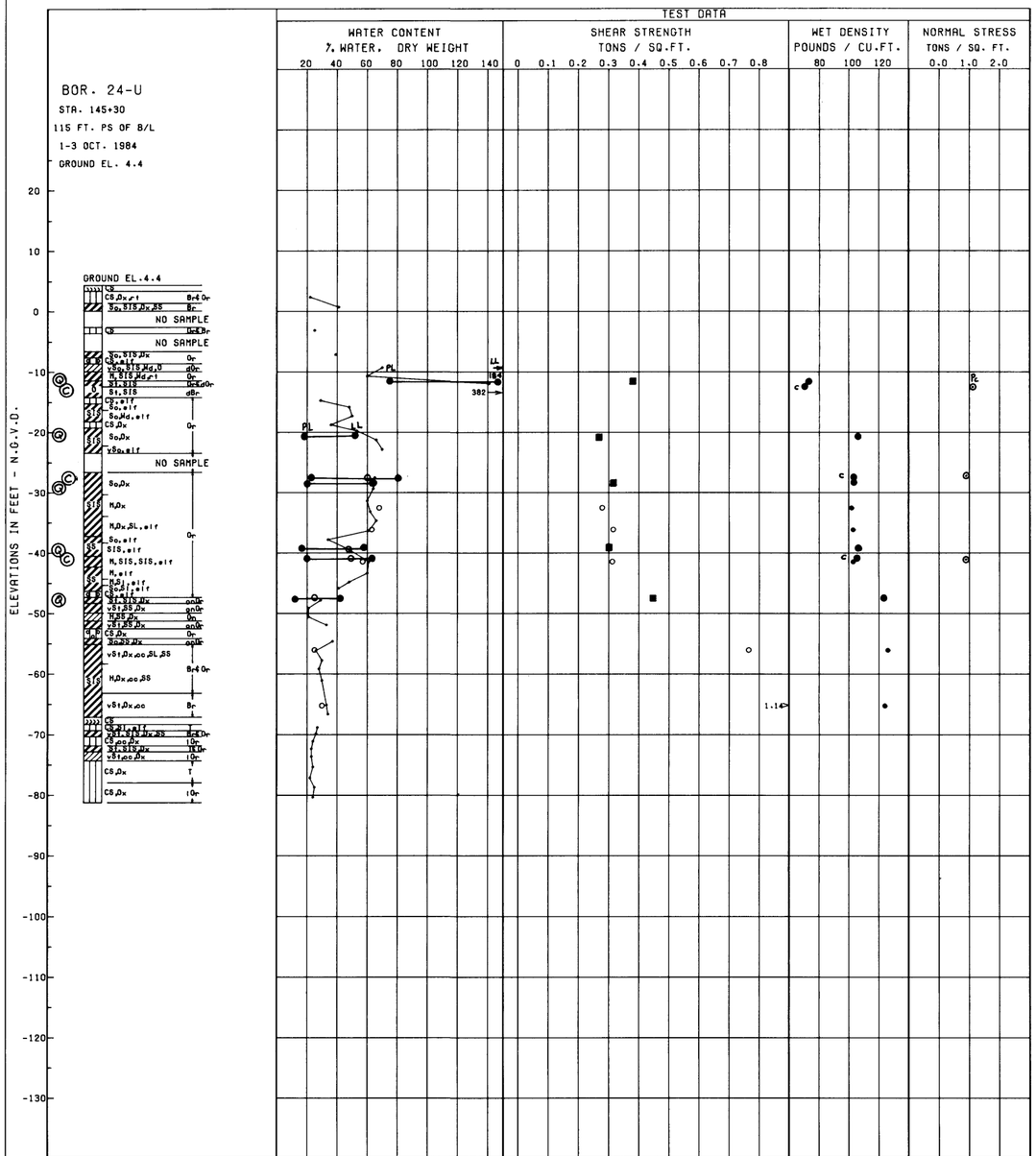
BOR. 24-U

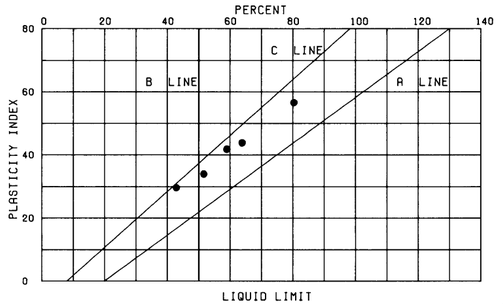
STA. 145+30

115 FT. PS OF B/L

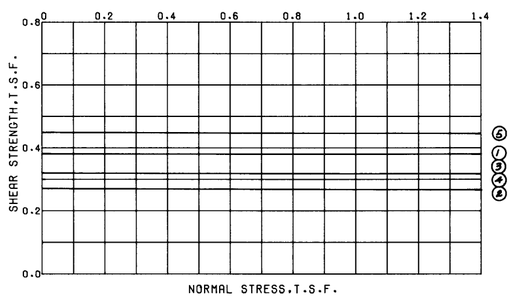
1-3 OCT. 1984

GROUND EL. 4.4



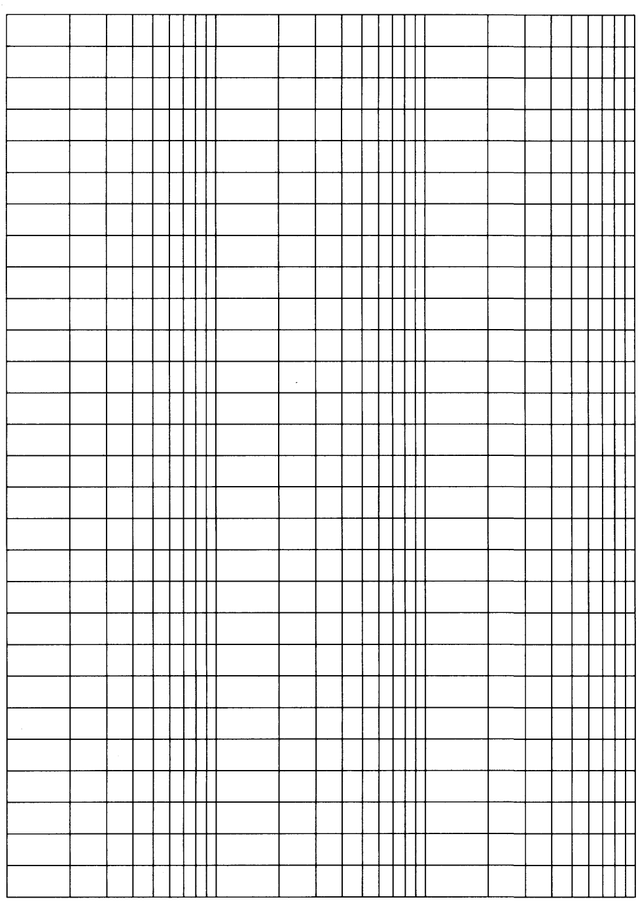


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-11.7	Q	0°	0.380	OH
2	-20.6	Q	0°	0.270	CH
3	-28.3	Q	0°	0.320	CH
4	-39.6	Q	0°	0.305	CH
5	-47.6	Q	0°	0.450	CL



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 4

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 – GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 24-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 77

BOR. 25-U

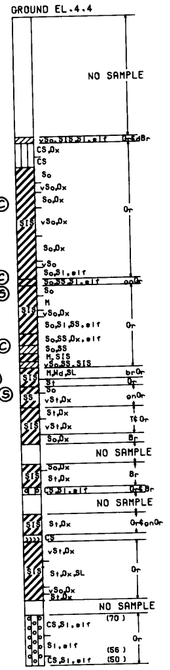
STA. 145+19

150 FT. F.S. OF B/L

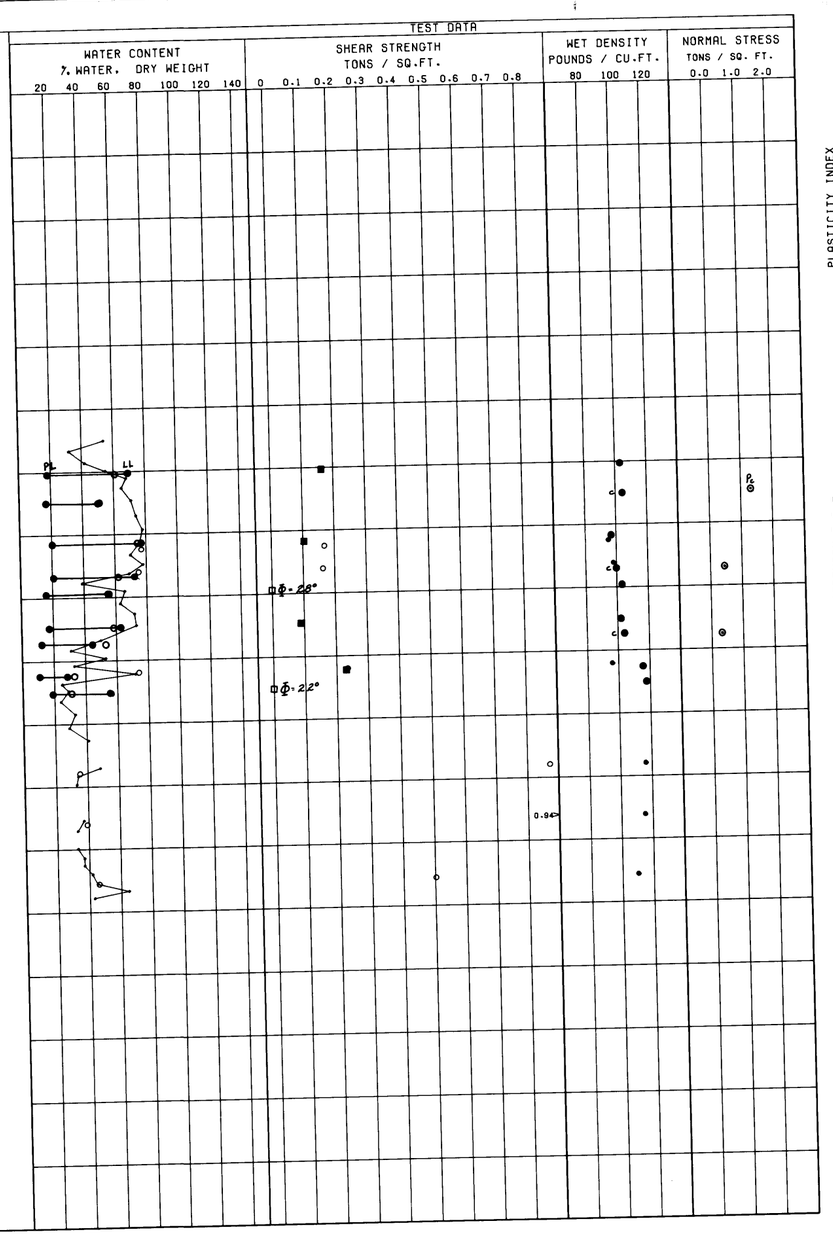
11 OCT. 84

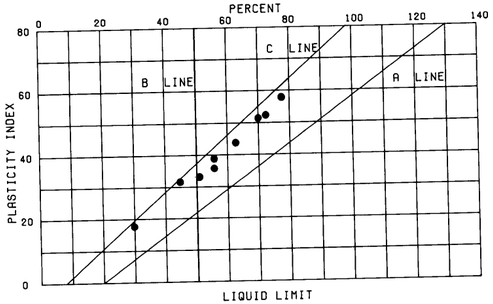
GROUND EL. 4.4

ELEVATIONS IN FEET - N.G.V.D.

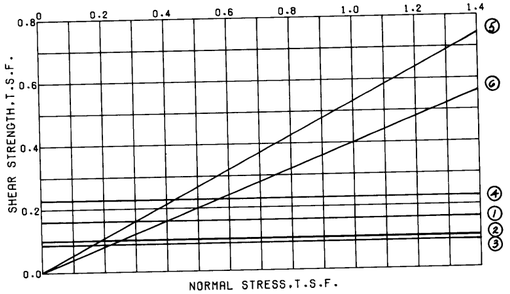


TEST DATA





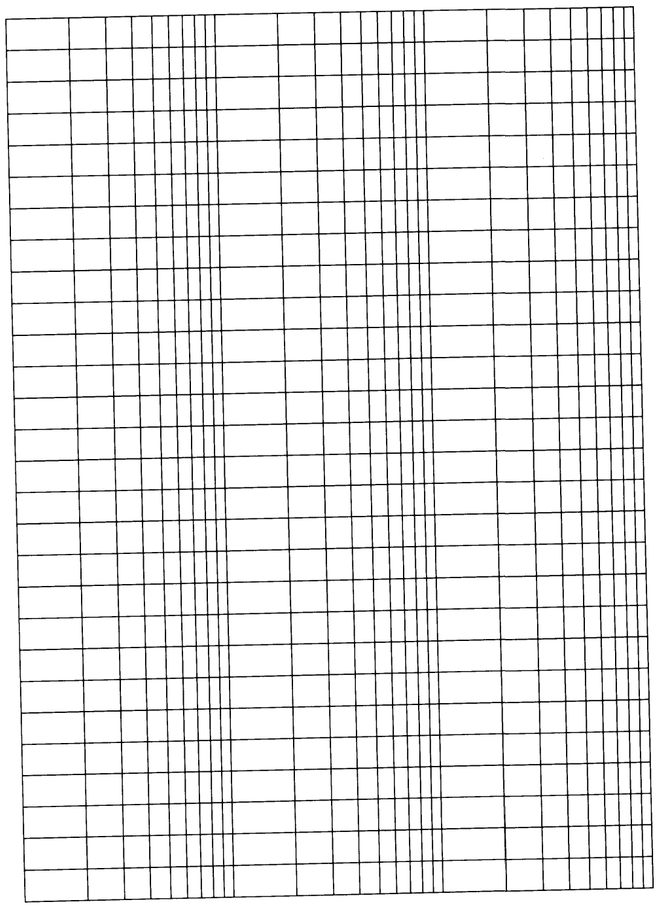
PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-20.5	Q	0°	0.160	CH
2	-31.6	Q	0°	0.100	CH
3.	-45.0	Q	0°	0.090	CH
4	-52.5	Q	0°	0.230	CL
5.	-39.7	S	28°	0.000	CH
6	-55.1	S	22°	0.000	CH

LOAD P TONS / SQ. FT.



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 4

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 25-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 78

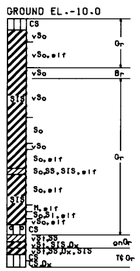
BOR. 26-U

STA. 145+30

755 FT. F.S. OF B/L

16-17 MAY 85

GROUND EL. -10.0



ELEVATIONS IN FEET - N.G.V.D.

TEST DATA

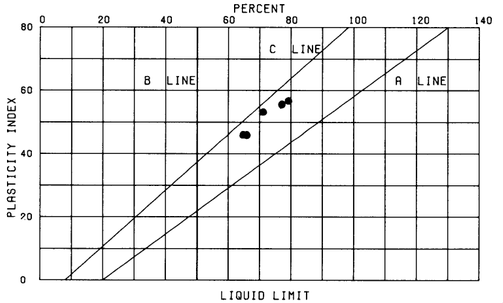
WATER CONTENT
% WATER, DRY WEIGHT
20 40 60 80 100 120 140

SHEAR STRENGTH
TONS / SQ.FT.
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

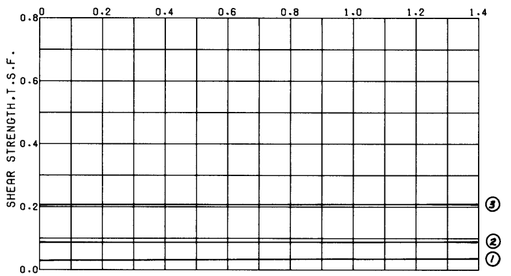
WET DENSITY
POUNDS / CU.FT.
80 100 120

NORMAL STRESS
TONS / SQ. FT.
0.0 1.0 2.0

PL LL



PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-15.8	Q	0°	0.030	CH
2	-27.0	Q	0°	0.093	CH
3	-36.0	Q	0°	0.202	CH

LOAD P TONS / SQ. FT.

CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 4

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 26-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 79

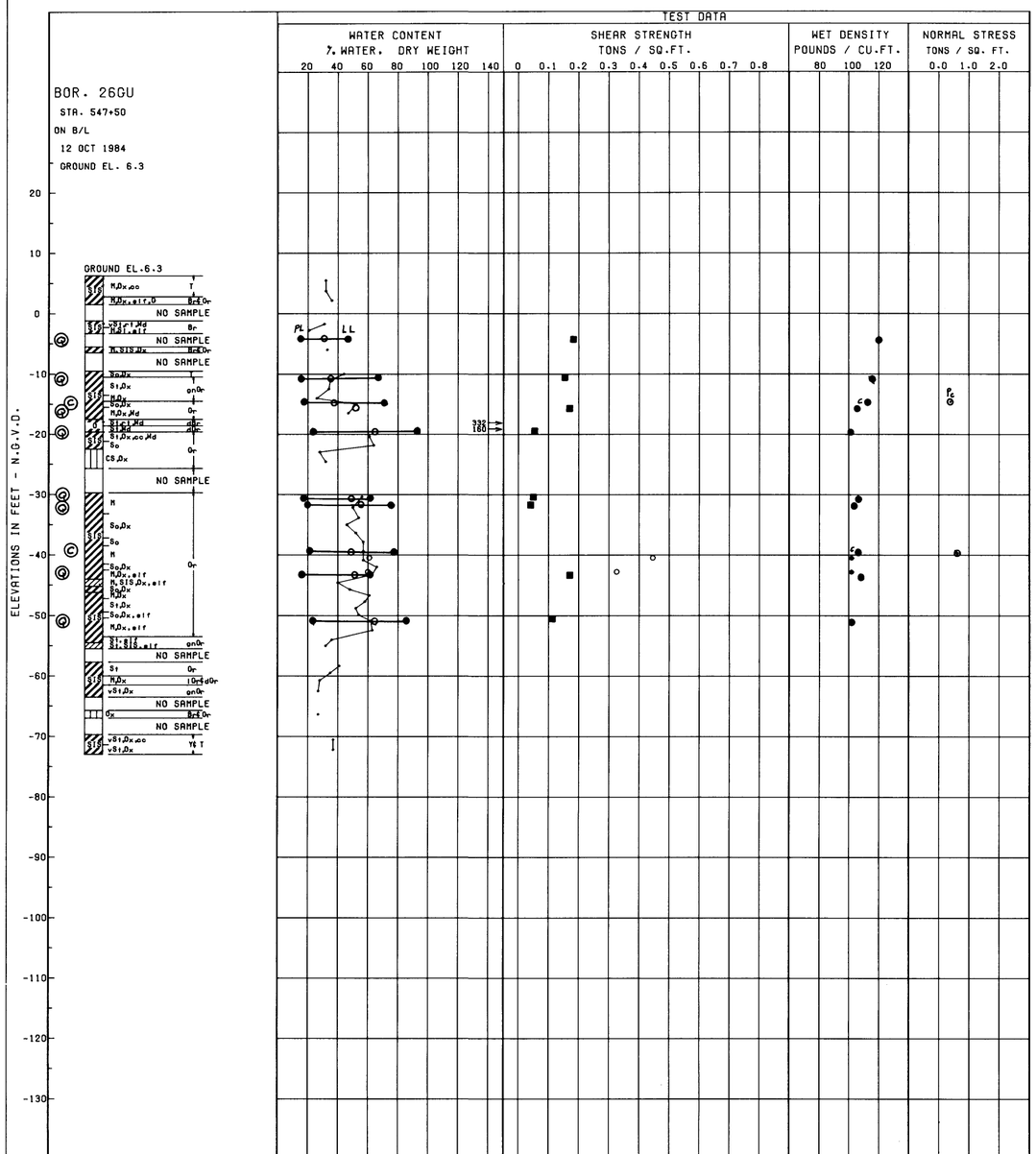
BOR. 26GU

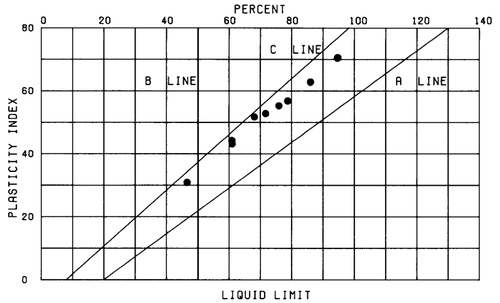
STA. 547+50

ON B/L

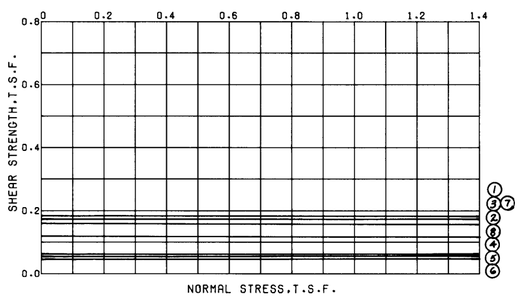
12 OCT 1984

GROUND EL. 6.3



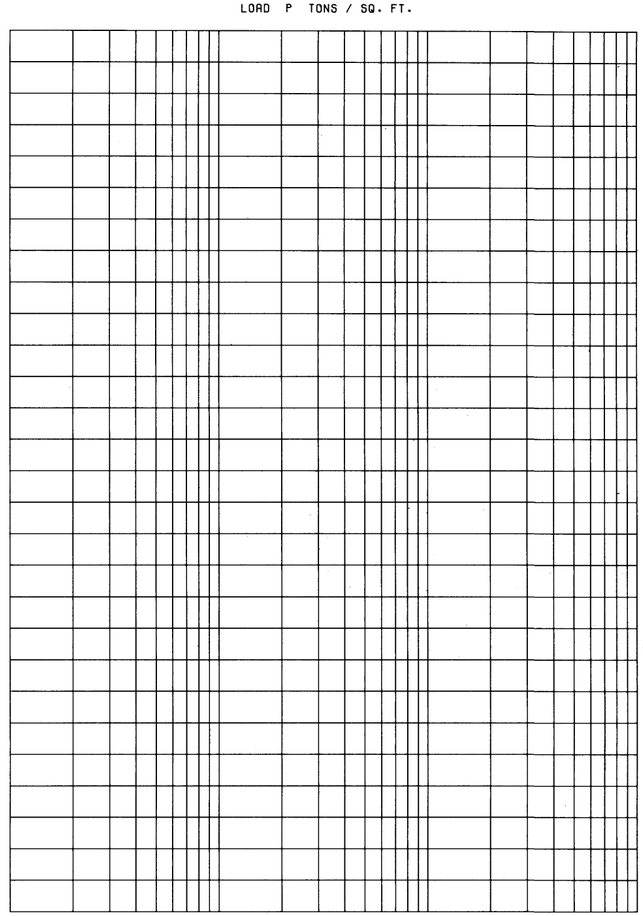


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-4.3	Q	0°	0.180	CH
2.	-10.7	Q	0°	0.157	CH
3.	-15.7	Q	0°	0.170	CH
4.	-19.8	Q	0°	0.060	CH
5.	-30.7	Q	0°	0.055	CH
6.	-31.7	Q	0°	0.045	CH
7.	-43.3	Q	0°	0.173	CH
8.	-50.7	Q	0°	0.115	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 5

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 26G-U

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

OCTOBER 1987

FILE NO. H-2-30148

PLATE 80

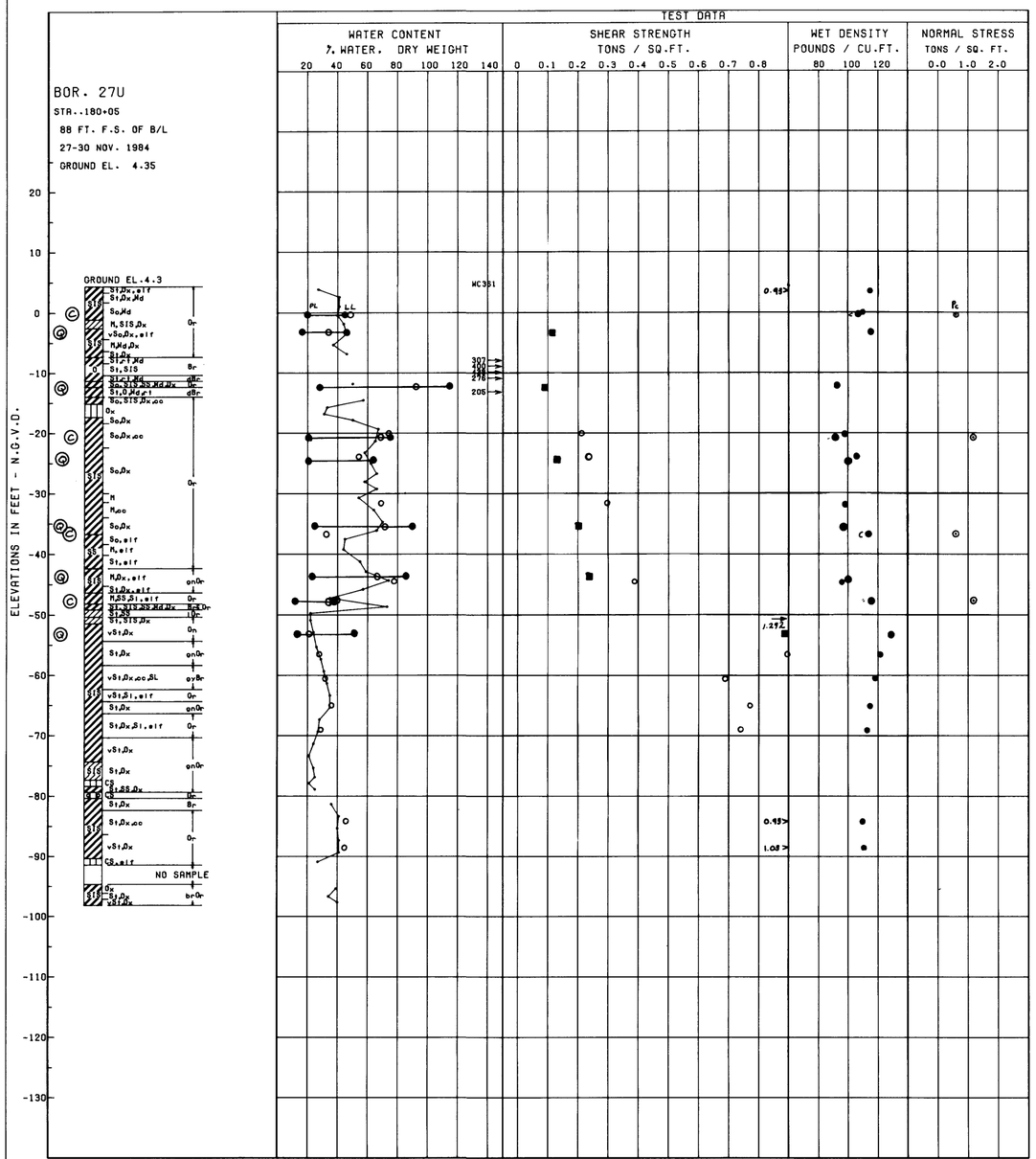
BOR. 27U

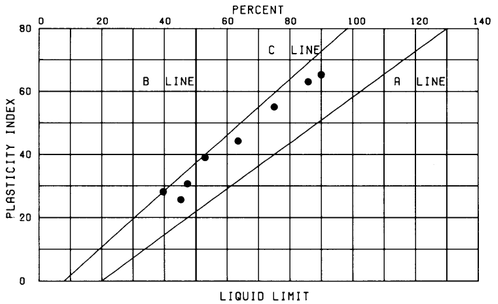
STR..180+05

88 FT. F.S. OF B/L

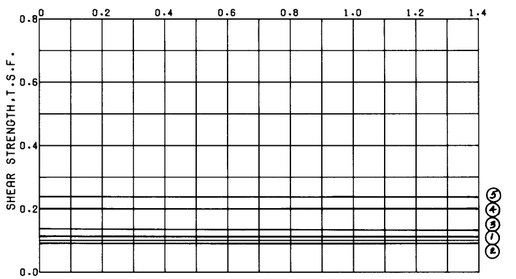
27-30 NOV. 1984

GROUND EL. 4.35



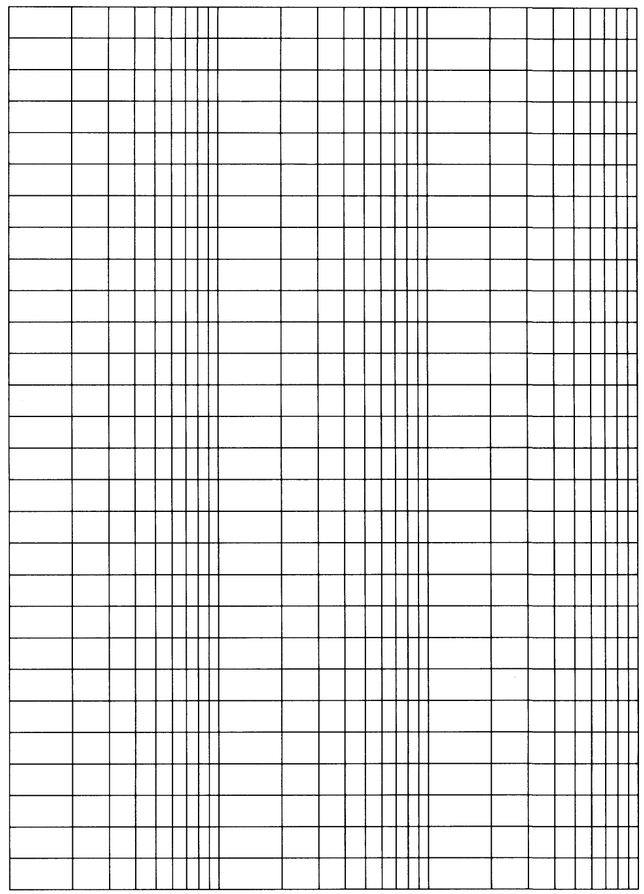


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-9.65	Q	0°	0.115	CL
2	-12.45	Q	0°	0.095	CH
3	-24.35	Q	0°	0.135	CH
4	-35.65	Q	0°	0.203	CH
5	-43.65	Q	0°	0.238	CH
6	-53.05	Q	0°	1.292	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 4

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 – GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 27-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 81

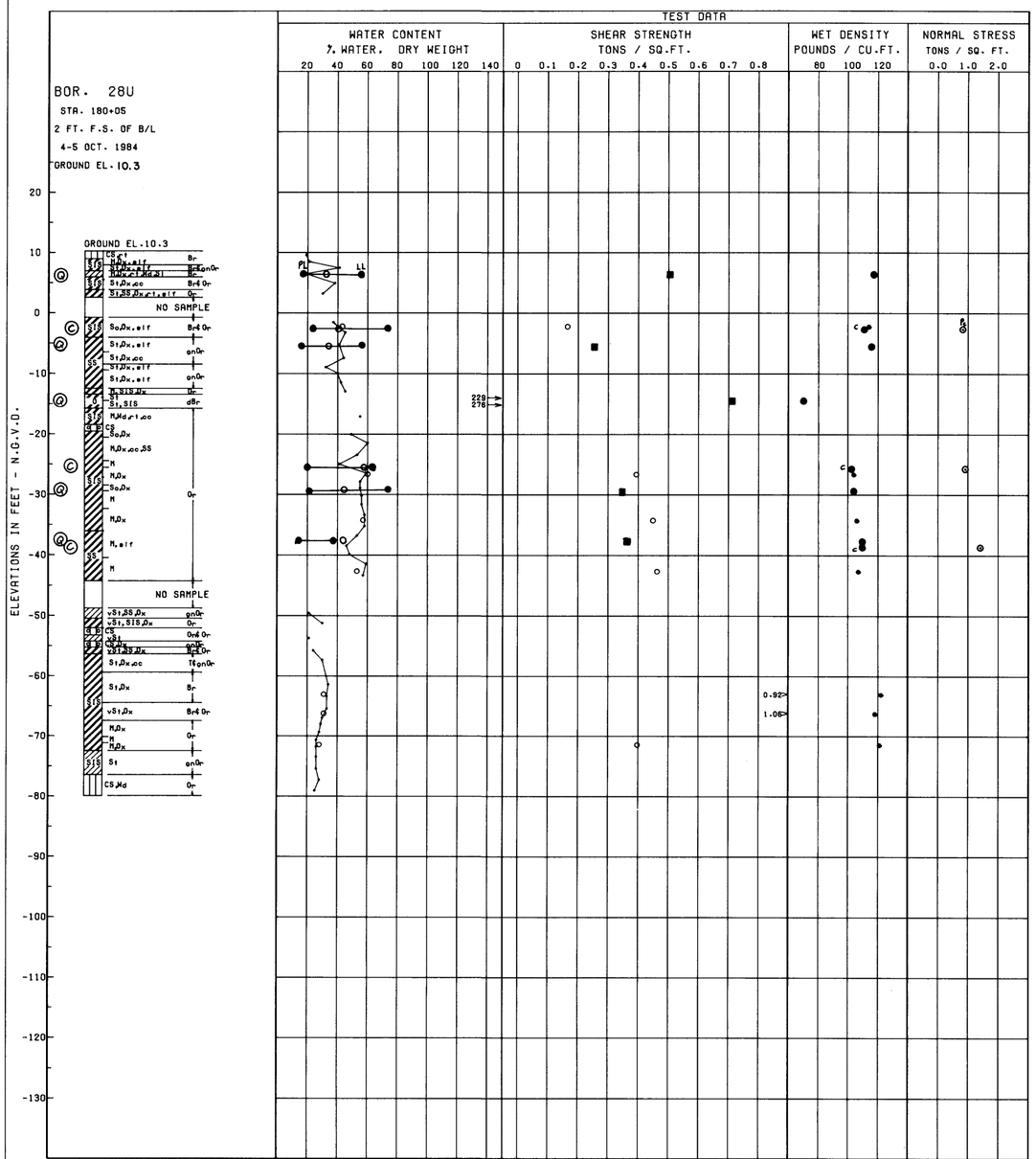
BOR. 28U

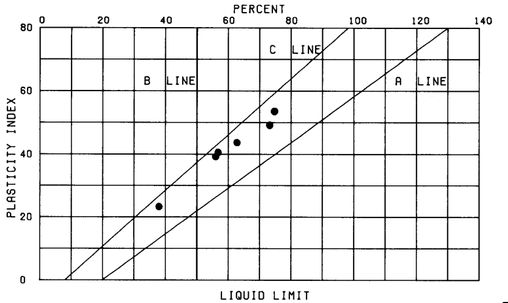
STA. 180+05

2 FT. F.S. OF B/L

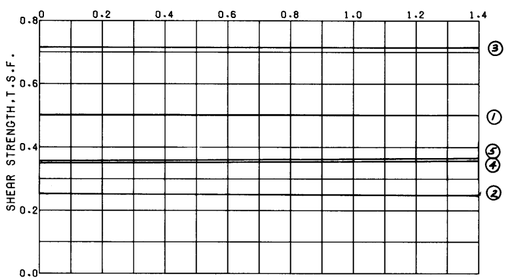
4-5 OCT. 1984

GROUND EL. 10.3



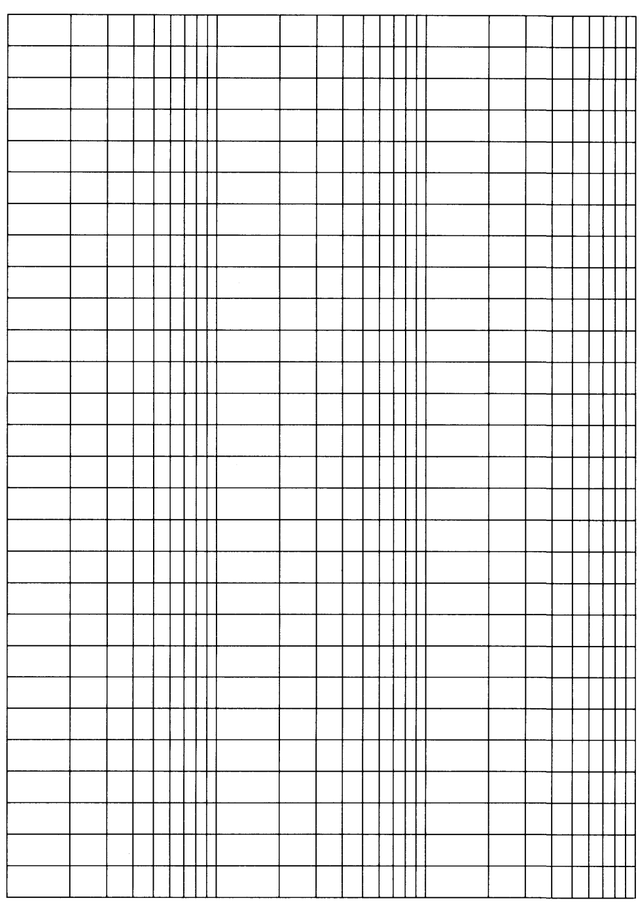


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	6.06	Q	0°	0.500	CH
2.	-5.74	Q	0°	0.250	CH
3.	-14.34	Q	0°	0.710	PT
4.	-29.34	Q	0°	0.350	CH
5.	-37.74	Q	0°	0.360	CL



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 4

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 – GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 28–U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 82

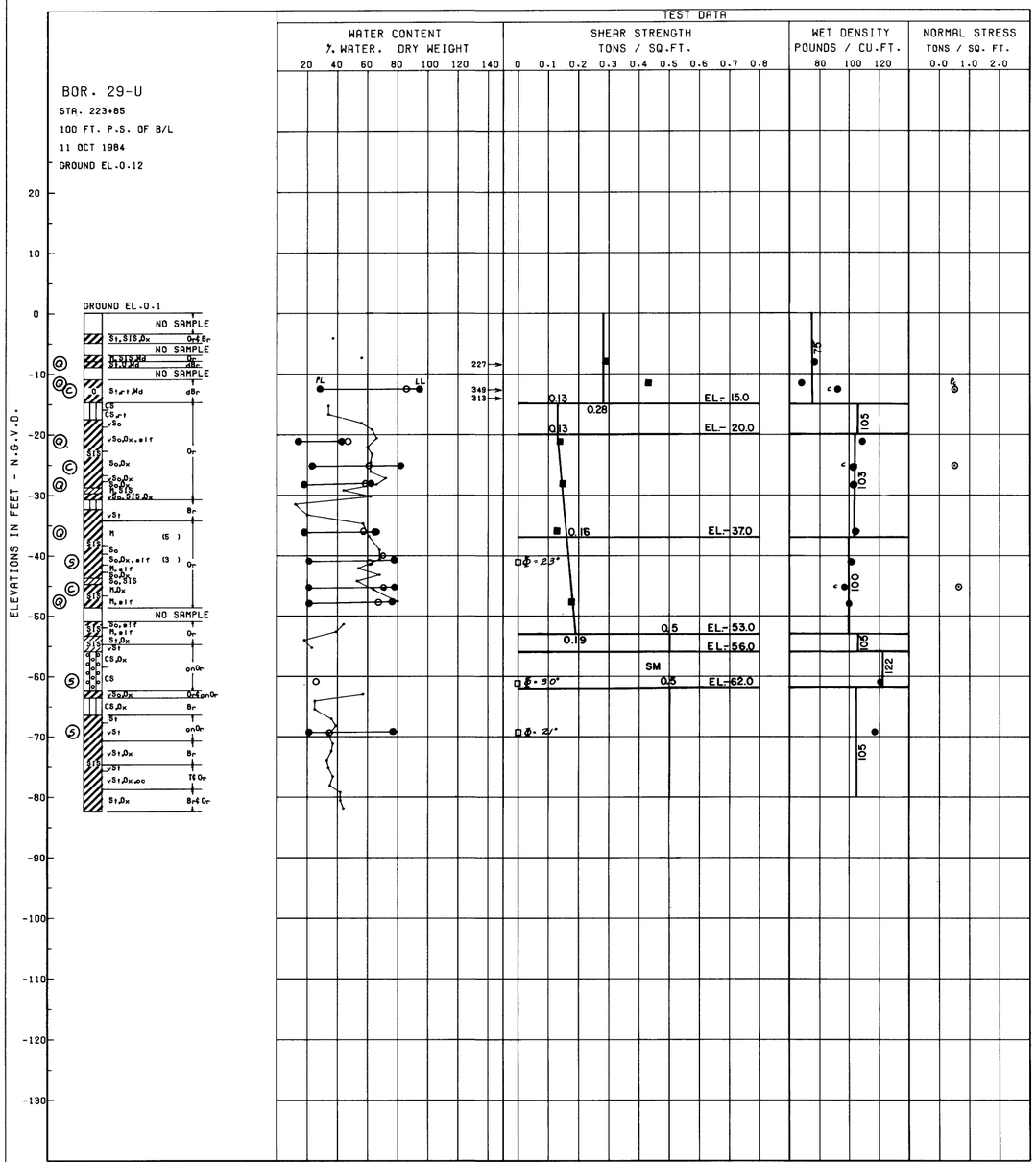
BOR. 29-U

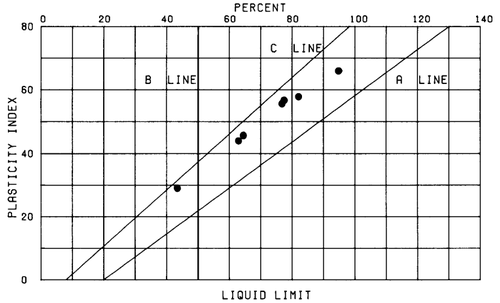
STA. 223+85

100 FT. P.S. OF B/L

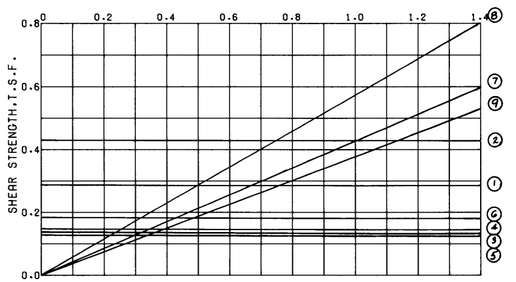
11 OCT 1984

GROUND EL.0.12



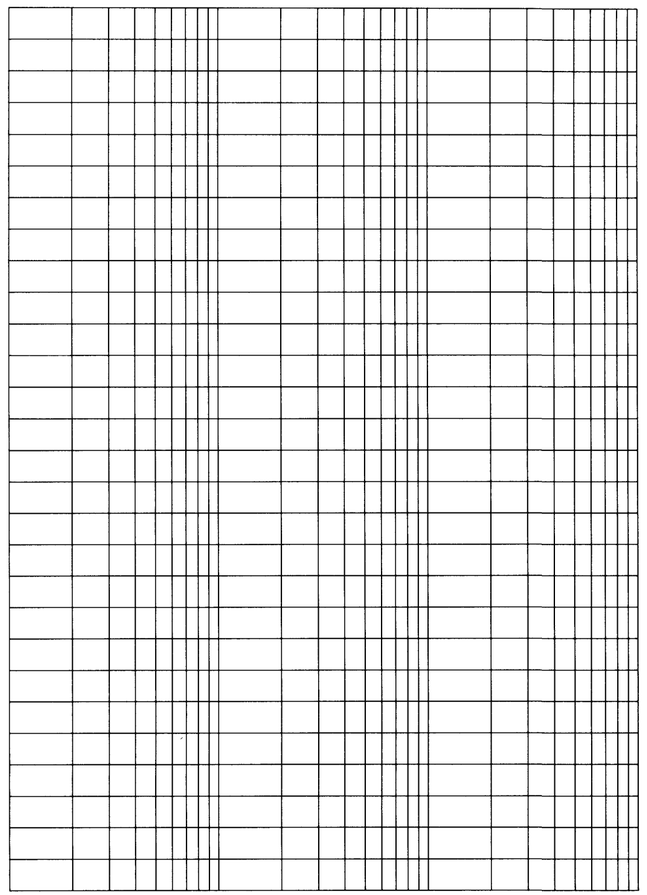


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-8.38	Q	0°	0.290	OH
2.	-11.88	Q	0°	0.430	PT
3.	-21.28	Q	0°	0.140	CH
4.	-28.38	Q	0°	0.150	CH
5.	-36.20	Q	0°	0.130	CH
6.	-47.88	Q	0°	0.180	CH
7.	-40.78	S	23°	0.000	CH
8.	-60.78	S	30°	0.000	ML
9.	-69.28	S	21°	0.000	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

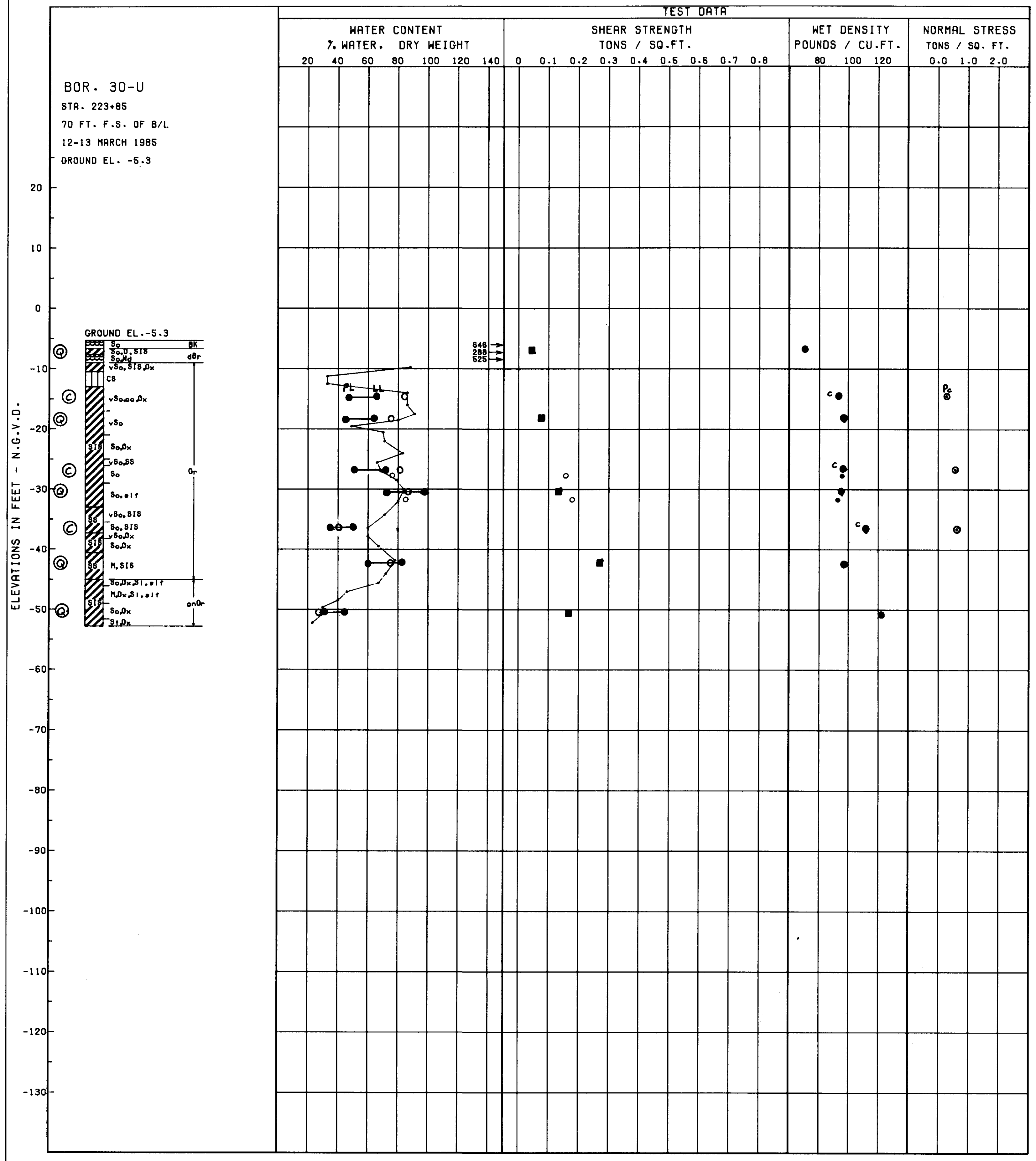
FOR SOIL BORING LEGEND SEE PLATE A

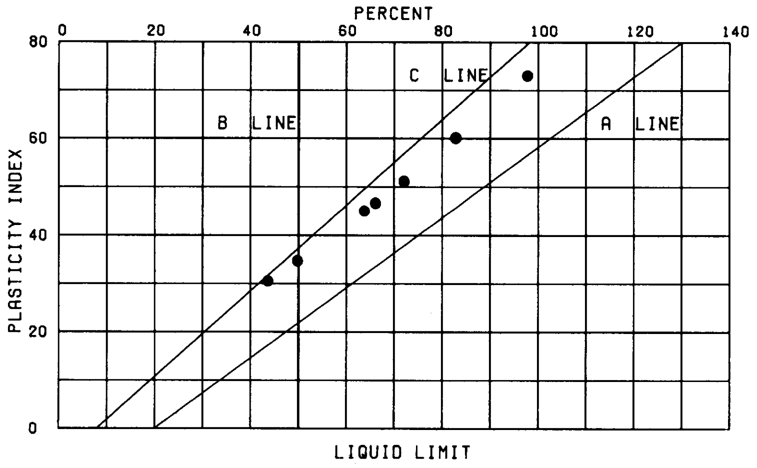
FOR LOCATION OF BORING SEE PLATE 5

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
UNDISTURBED BORING NO. 29-U
SOIL DESIGN PARAMETERS
PROTECTED SIDE PUMPING STA. 3
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

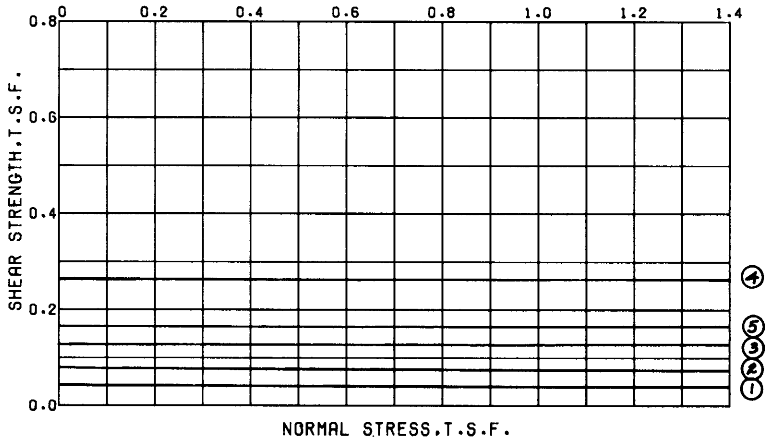
OCTOBER 1987 FILE NO. H-2-30148

PLATE 83



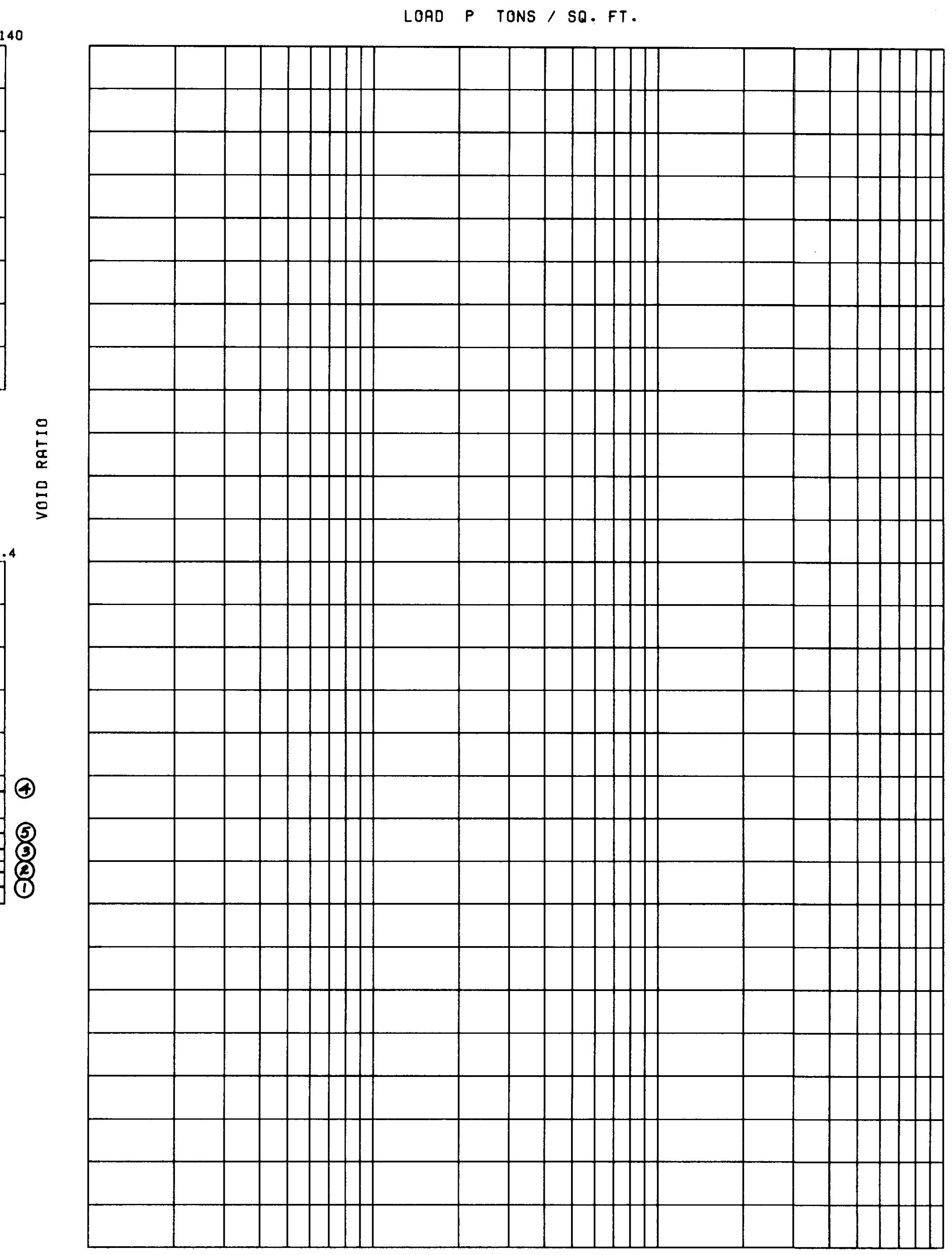


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE		TYPE	STRENGTH		CLASS
NO.	EL.		Φ	C - TSF	
1.	-7.2	Q	0°	0.042	PT
2	-18.3	Q	0°	0.078	CH
3.	-30.3	Q	0°	0.130	CH
4.	-42.3	Q	0°	0.264	CH
5.	-50.3	Q	0°	0.166	CL



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
◫ - (S) CONSOLIDATED - DRAINED SHEAR TEST
BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORING SEE PLATE 5

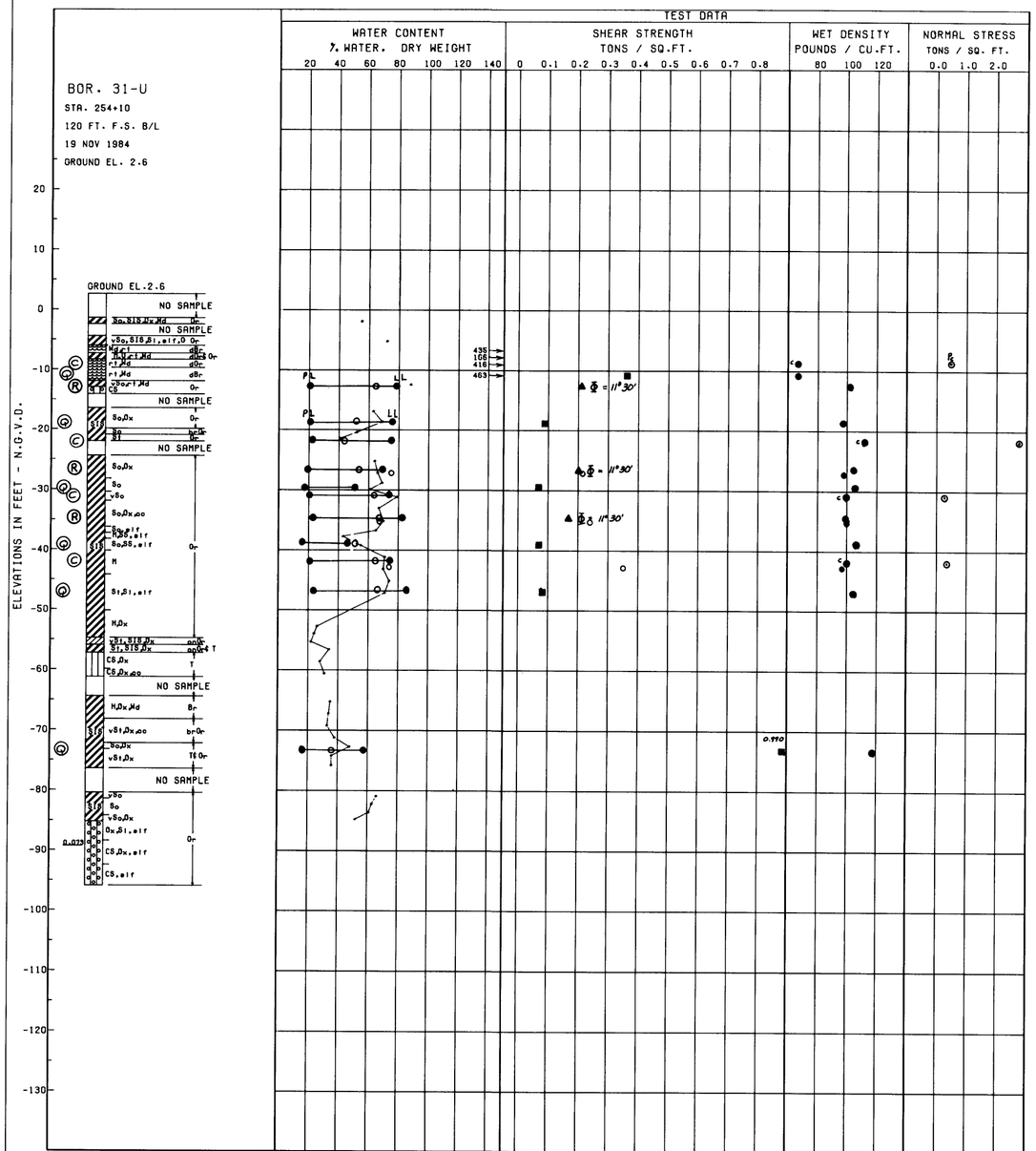
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

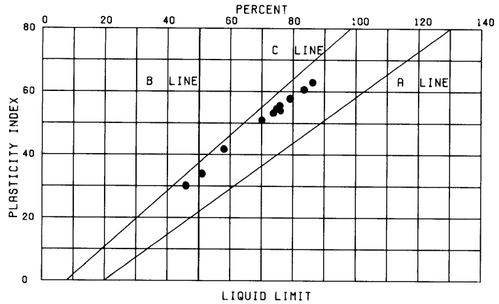
UNDISTURBED BORING NO. 30-U

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

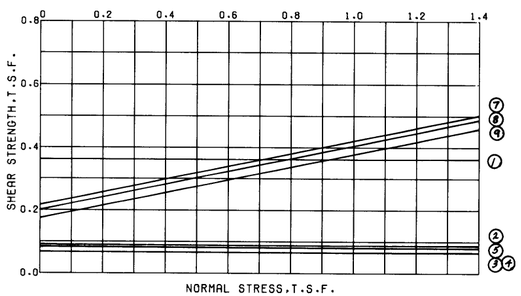
OCTOBER 1987 FILE NO. H-2-30148

BOR. 31-U
STA. 254+10
120 FT. F.S. B/L
19 NOV 1984
GROUND EL. 2.6



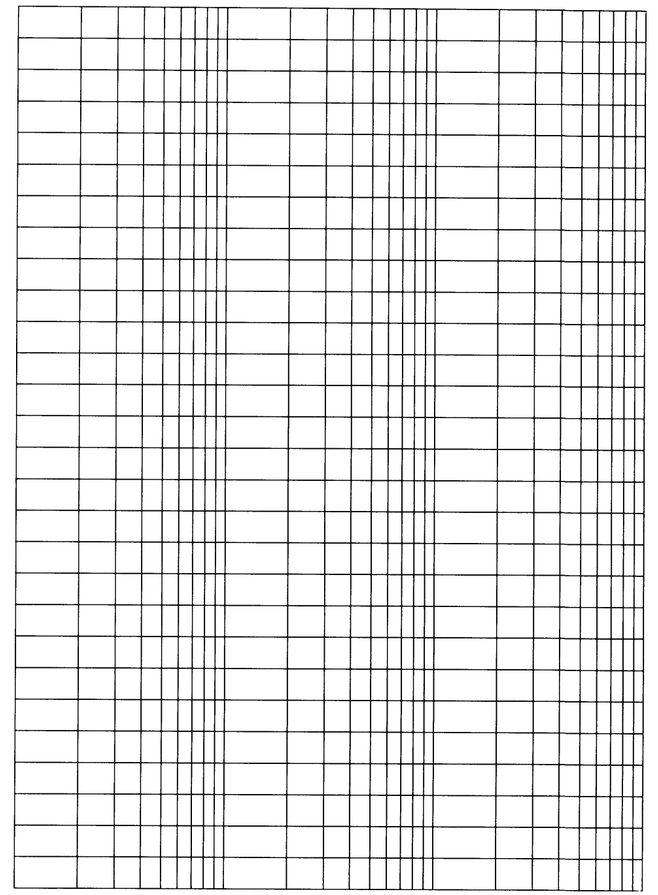


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-10.4	Q	0°	0.360	PT
2.	-18.8	Q	0°	0.090	CH
3.	-29.9	Q	0°	0.070	CH
4.	-38.8	Q	0°	0.070	CH
5.	-46.8	Q	0°	0.085	CH
6.	-73.4	Q	0°	0.990	CH
7.	-17.8	R	11°30'	0.210	CH
8.	-26.8	R	11°30'	0.200	CH
9.	-34.4	R	11°30'	0.170	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORING SEE PLATE 5

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 31 - U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 85

BOR. 32-U

STA. 254+10

ON B/L

18 OCT 1984

GROUND EL. 8.96

ELEVATIONS IN FEET - N.G.V.D.

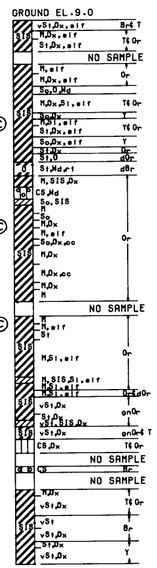
TEST DATA

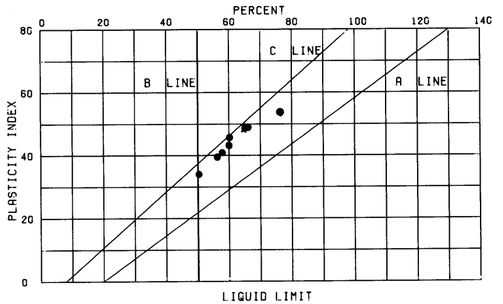
WATER CONTENT
%, WATER. DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

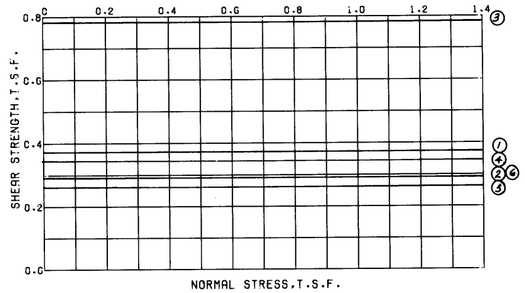
WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.



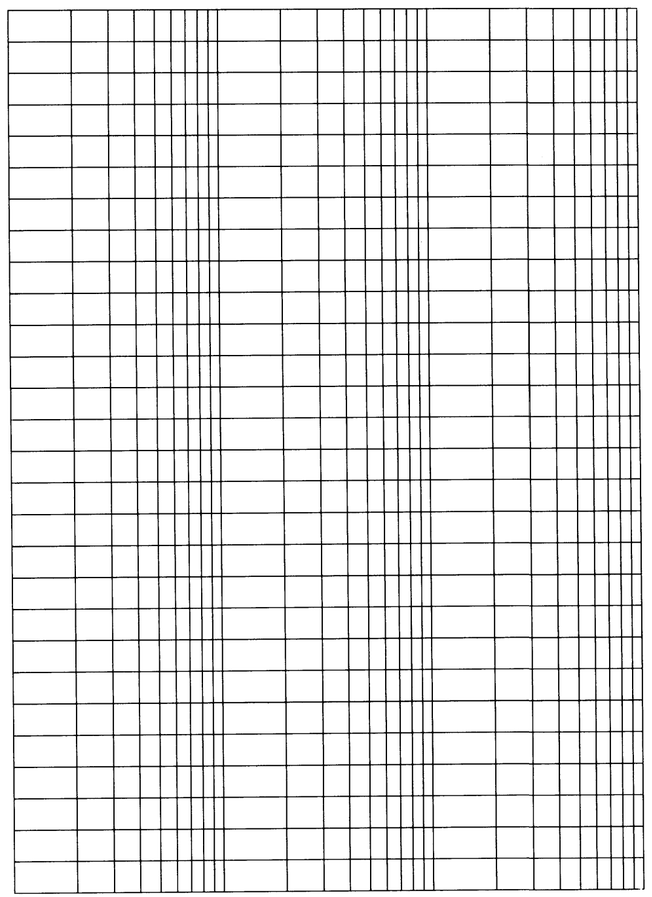


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	6.96	Q	0°	0.370	CH
2	-3.74	Q	0°	0.290	CH
3	-15.04	Q	0°	0.780	CH
4	-27.04	Q	0°	0.340	CH
5	-40.34	Q	0°	0.260	CH
6	-47.44	Q	0°	0.290	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 5

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 32-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 86

BOR. 33-U

STA. 284+10

85 FT. P.S. OF B/L

17 OCT. 1984

GROUND EL. 1.2

ELEVATIONS IN FEET - N.G.V.D.

TEST DATA

WATER CONTENT
% WATER. DRY WEIGHT
20 40 60 80 100 120 140

SHEAR STRENGTH
TONS / SQ.FT.
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

WET DENSITY
POUNDS / CU.FT.
80 100 120

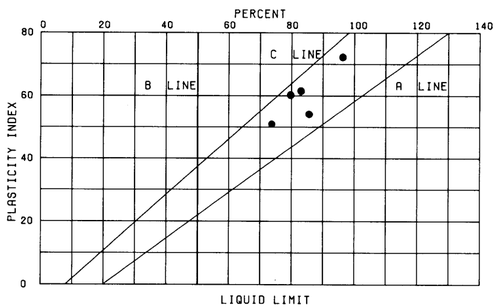
NORMAL STRESS
TONS / SQ. FT.
0.0 1.0 2.0

PL LL

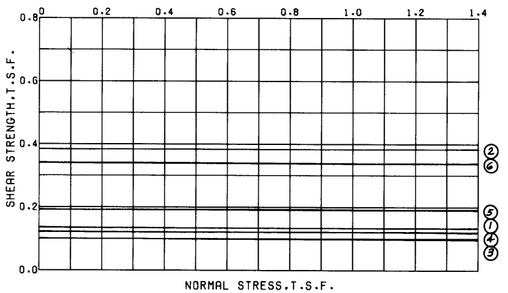
238
365
438
450

GROUND EL. 1.2

NO SAMPLE



PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-2.9	Q	0°	0.137	CH
2.	-11.7	Q	0°	0.382	PT
3.	-19.6	Q	0°	0.100	CH
4.	-31.5	Q	0°	0.123	CH
5.	-43.6	Q	0°	0.195	CH
6.	-51.8	Q	0°	0.342	CH

VOID RATIO

LOAD P TONS / SQ. FT.

CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 6

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

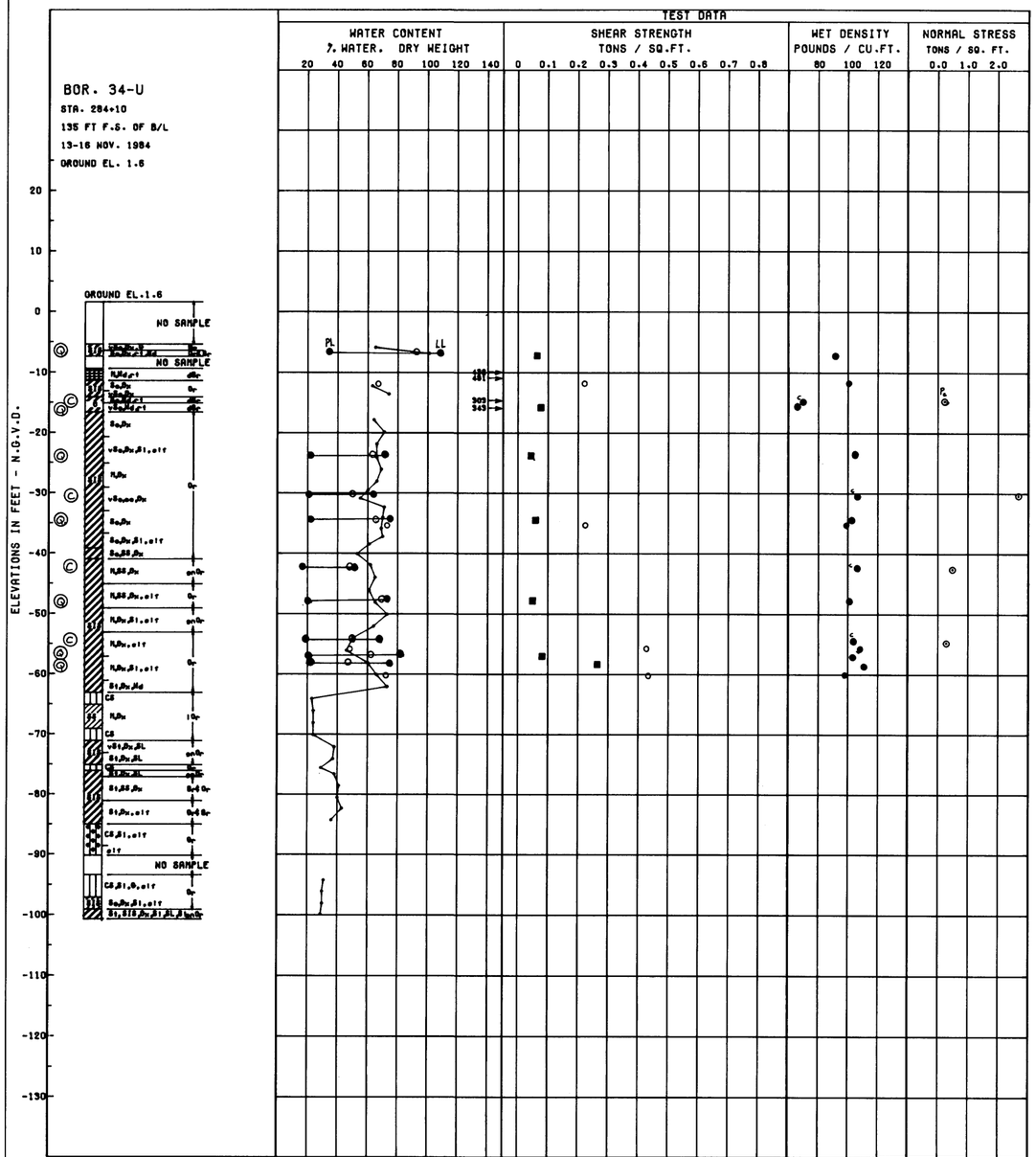
UNDISTURBED BORING NO. 33-U

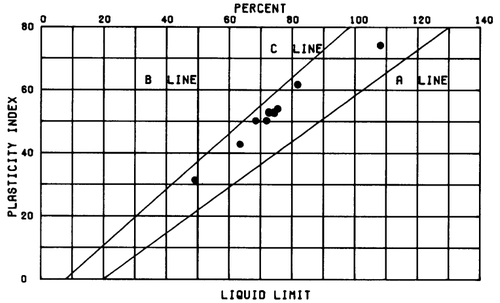
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

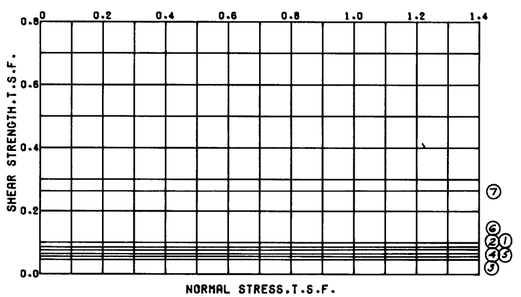
PLATE 87

BOR. 34-U
STA. 284+10
135 FT F.S. OF B/L
13-16 NOV. 1984
GROUND EL. 1.6



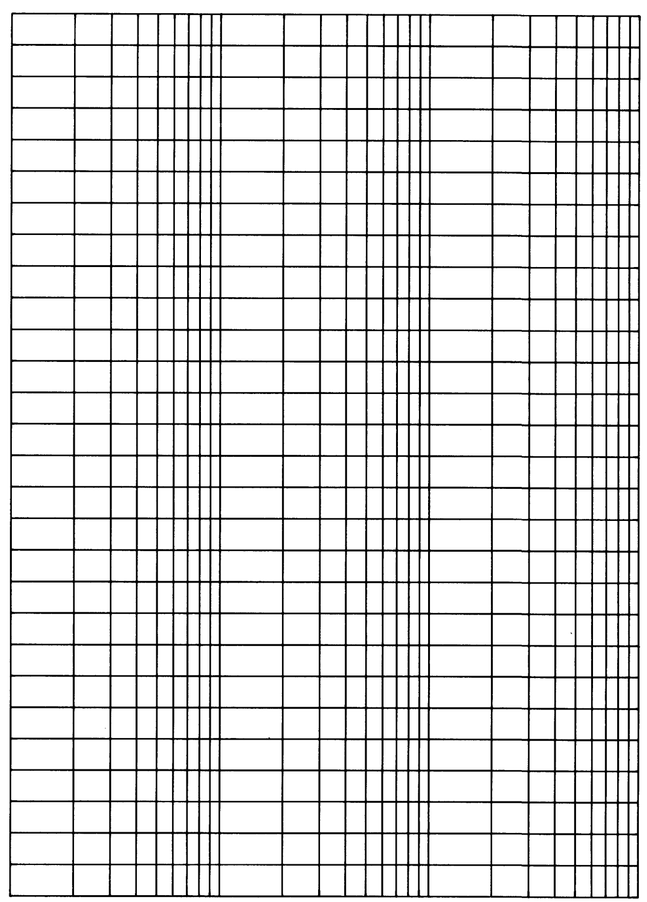


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-7.1	Q	0°	0.065	CH
2	-15.7	Q	0°	0.080	PT
3	-23.8	Q	0°	0.050	CH
4	-34.4	Q	0°	0.060	CH
5	-47.8	Q	0°	0.060	CH
6	-58.4	Q	0°	0.090	CH
7	-78.9	Q	0°	0.270	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORING SEE PLATE 6

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 34-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 88

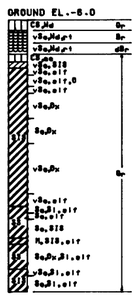
BOR. 35-U

STA. 284+10

580 FT. F.S.OF B/L

7-8 MARCH 1985

GROUND EL. -6.0



ELEVATIONS IN FEET - N.G.V.D.

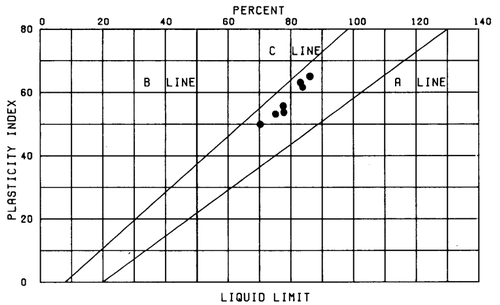
TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT
20 40 60 80 100 120 140

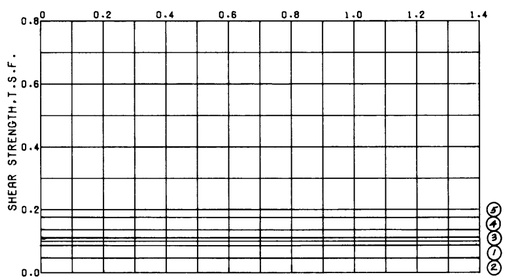
SHEAR STRENGTH
TONS / SQ.FT.
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

WET DENSITY
POUNDS / CU.FT.
80 100 120

NORMAL STRESS
TONS / SQ. FT.
0.0 1.0 2.0



PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-8.0	Q	0°	0.085	PT
2	-16.3	Q	0°	0.043	CH
3	-26.9	Q	0°	0.103	CH
4	-35.9	Q	0°	0.135	CH
5	-42.7	Q	0°	0.178	CH

LOAD P TONS / SQ. FT.

CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 6

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 35-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 89

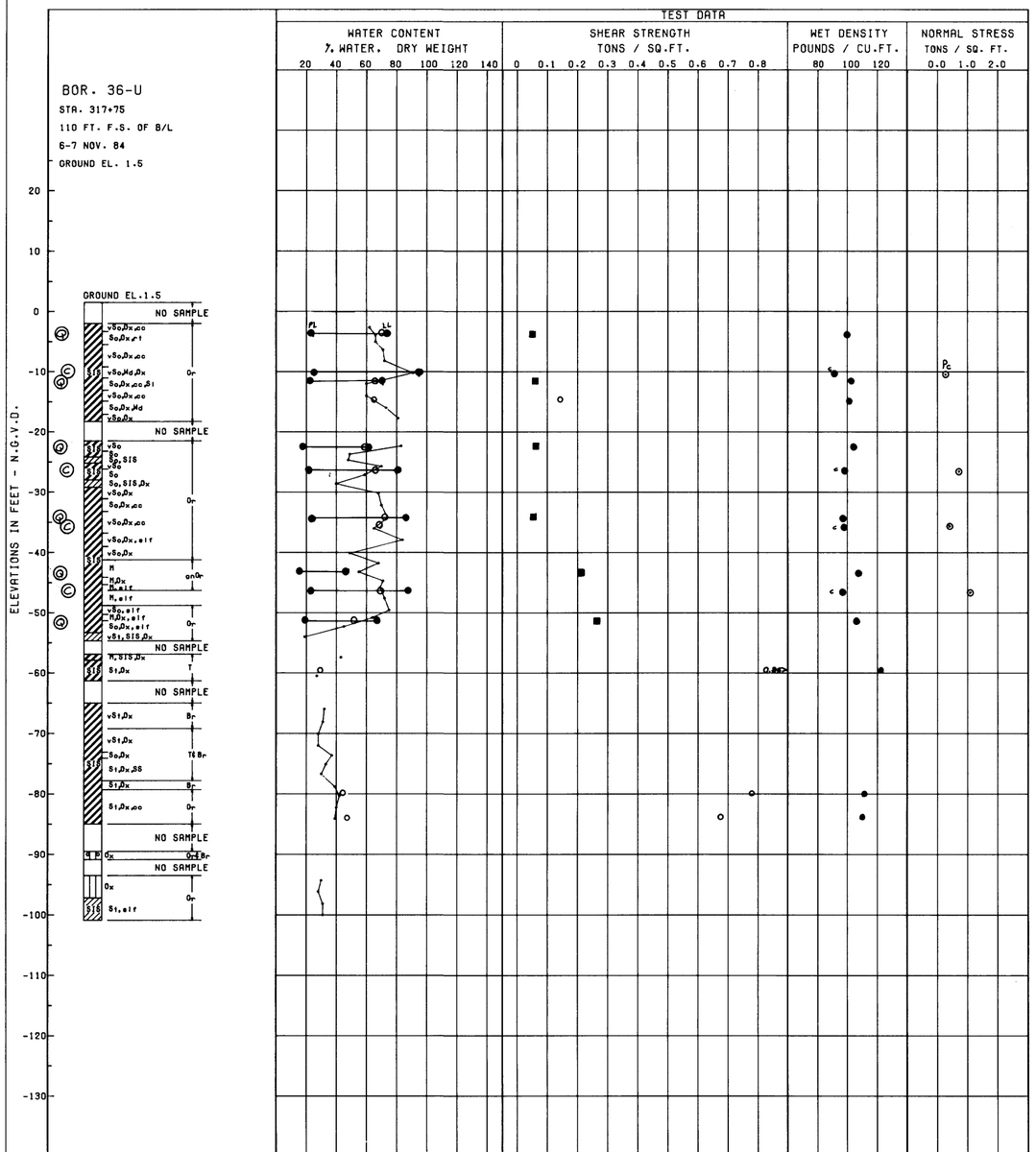
BOR. 36-U

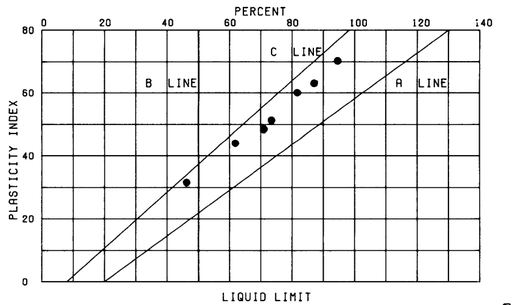
STA. 317+75

110 FT. F.S. OF B/L

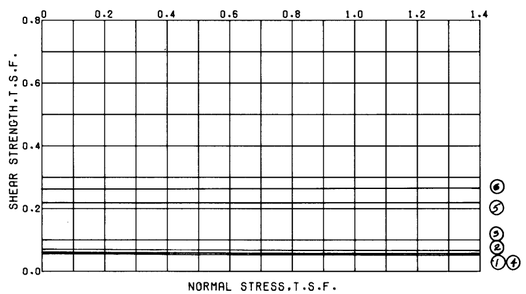
6-7 NOV. 84

GROUND EL. 1.5



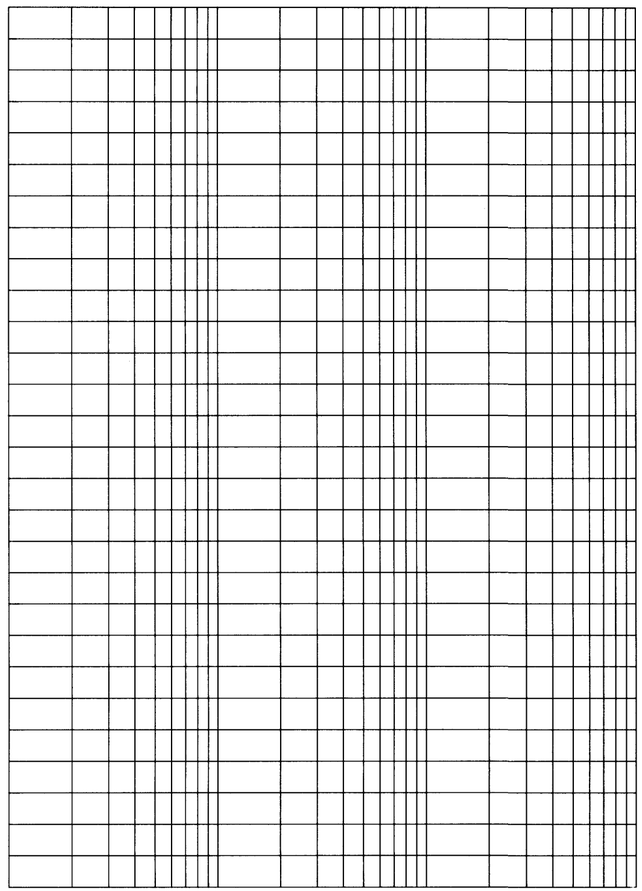


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-3.9	Q	0°	0.055	CH
2	-11.6	Q	0°	0.062	CH
3	-22.5	Q	0°	0.063	CH
4	-34.5	Q	0°	0.057	CH
5	-43.4	Q	0°	0.214	CH
6	-51.4	Q	0°	0.265	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 6

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

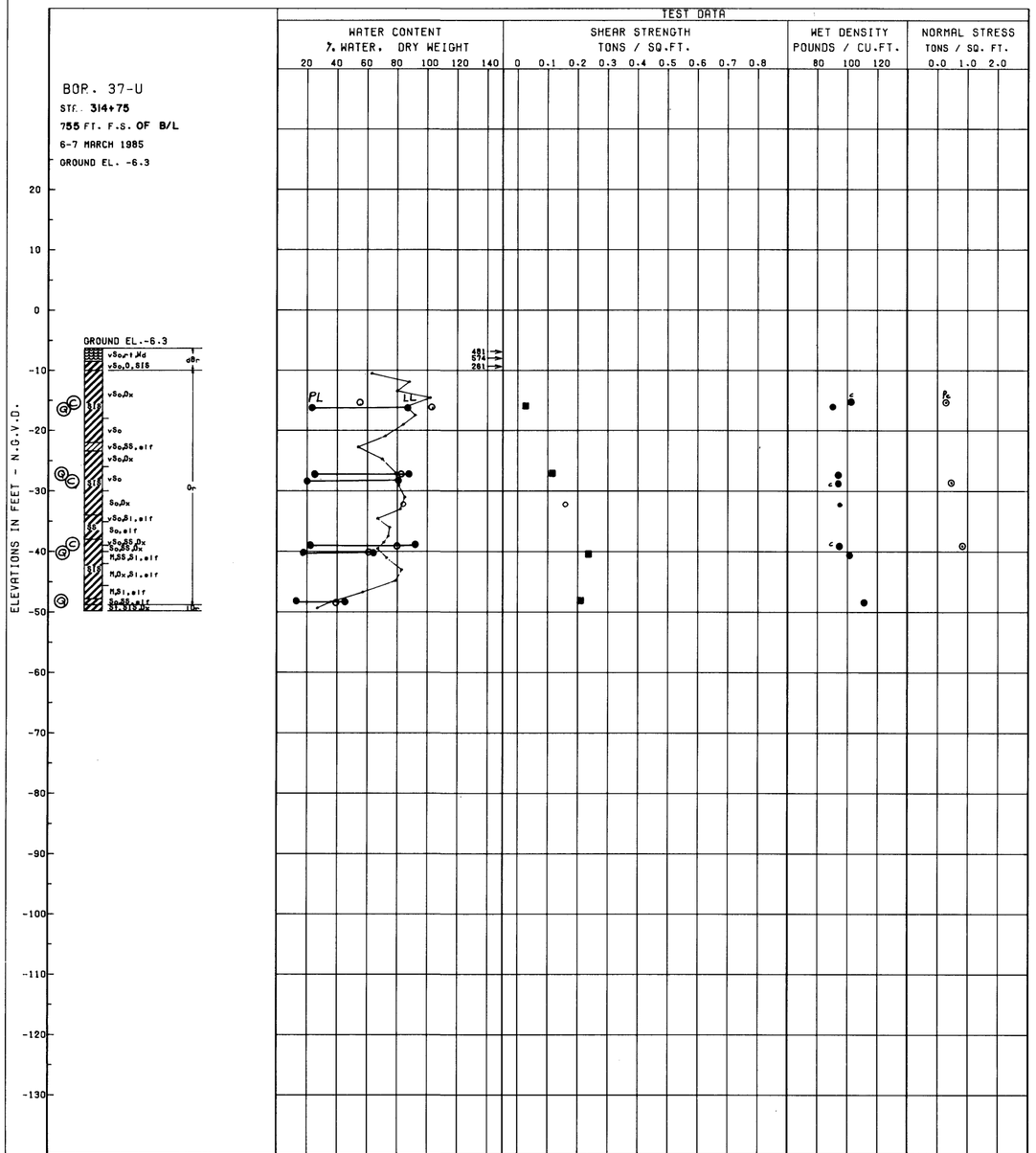
UNDISTURBED BORING NO. 36-U

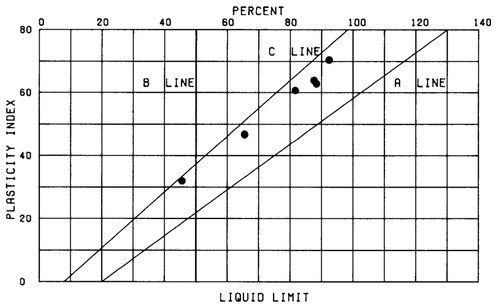
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

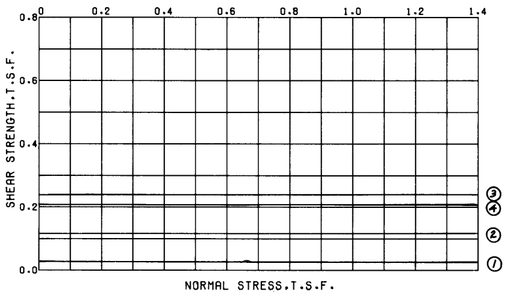
PLATE 90

BOR. 37-U
STA. 314+75
755 FT. F.S. OF B/L
6-7 MARCH 1985
GROUND EL. -6.3





PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-14.3	Q	0°	0.028	CH
2	-27.3	Q	0°	0.115	CH
3	-40.3	Q	0°	0.234	CH
4	-48.6	Q	0°	0.205	CH

LOAD P TONS / SQ. FT.

CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 6

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 37-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 91

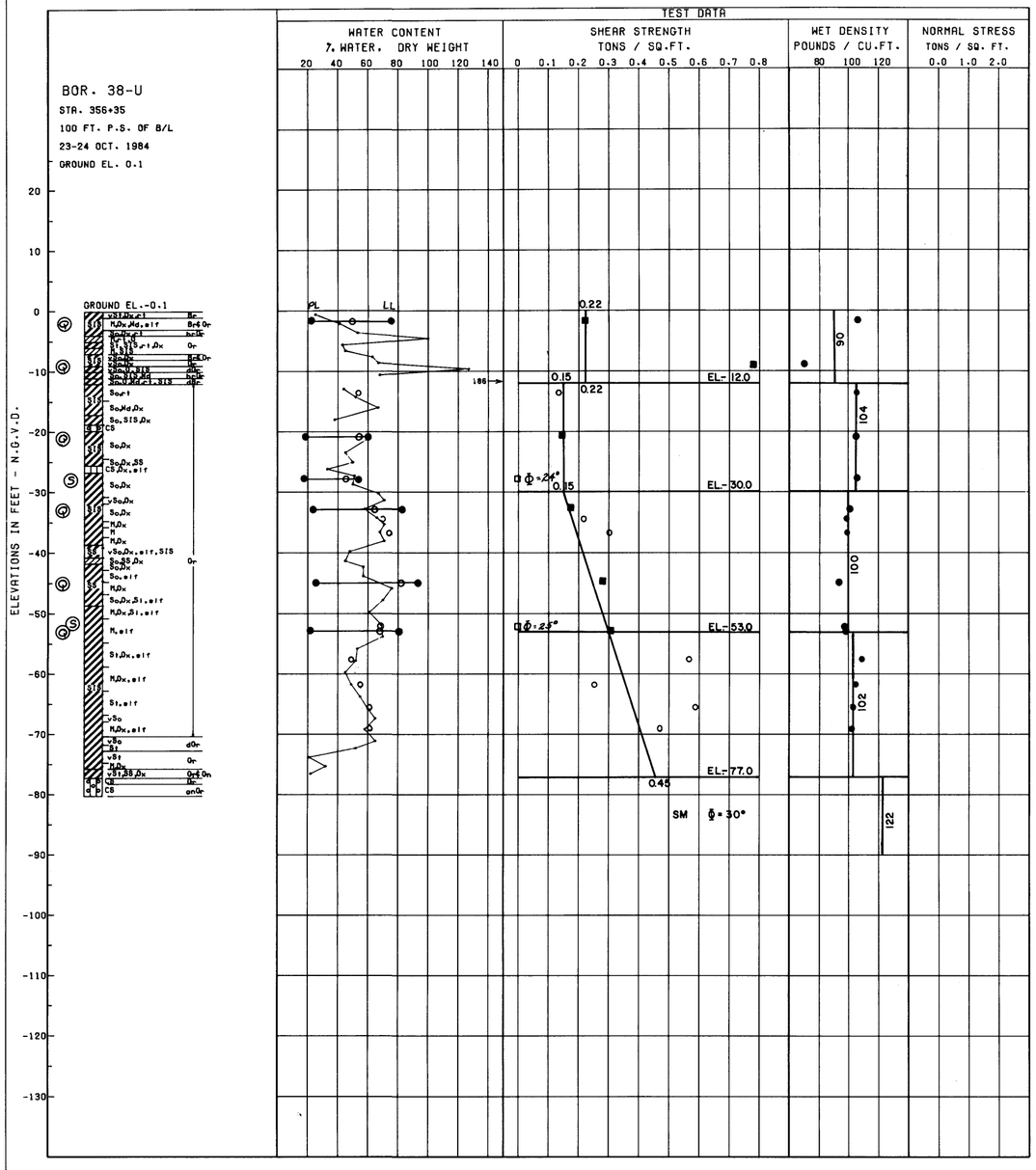
BOR. 38-U

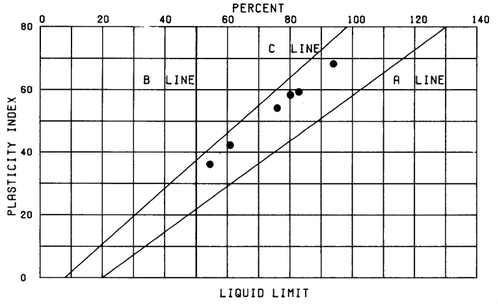
STA. 356+35

100 FT. P.S. OF B/L

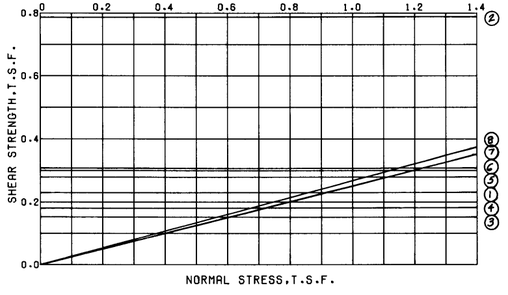
23-24 OCT. 1984

GROUND EL. 0.1



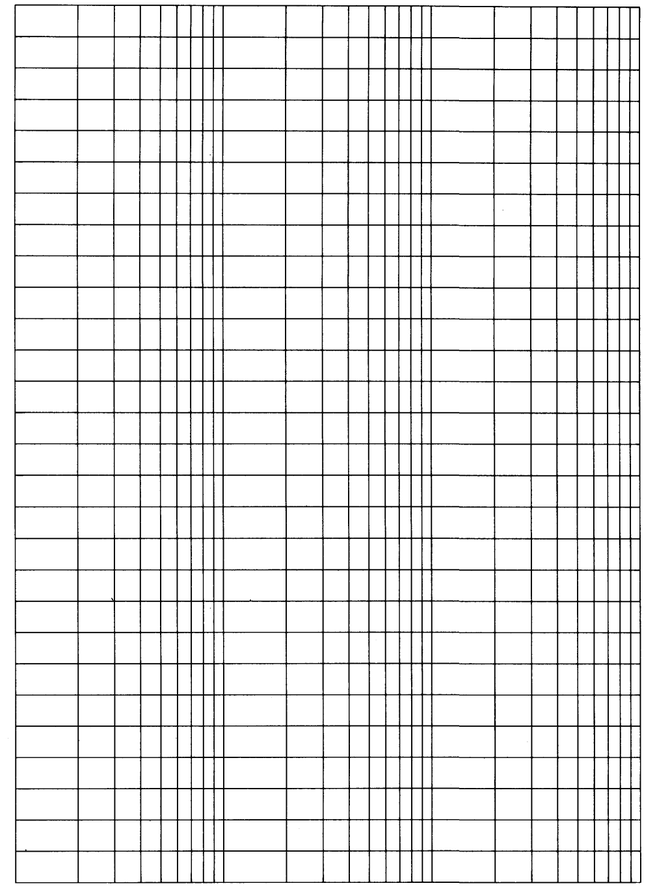


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-1.8	Q	0°	0.224	CH
2	-9.1	Q	0°	0.785	PT
3	-21.0	Q	0°	0.150	CH
4	-33.0	Q	0°	0.180	CH
5	-45.0	Q	0°	0.283	CH
6	-53.0	Q	0°	0.310	CH
7	-28.0	S	24°	0.000	CH
8	-52.1	S	25°	0.000	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 7

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 38 - U
SOIL DESIGN PARAMETERS
PROTECTED SIDE PUMPING STA. 2

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

OCTOBER 1987

FILE NO. H-2-30148

PLATE 92

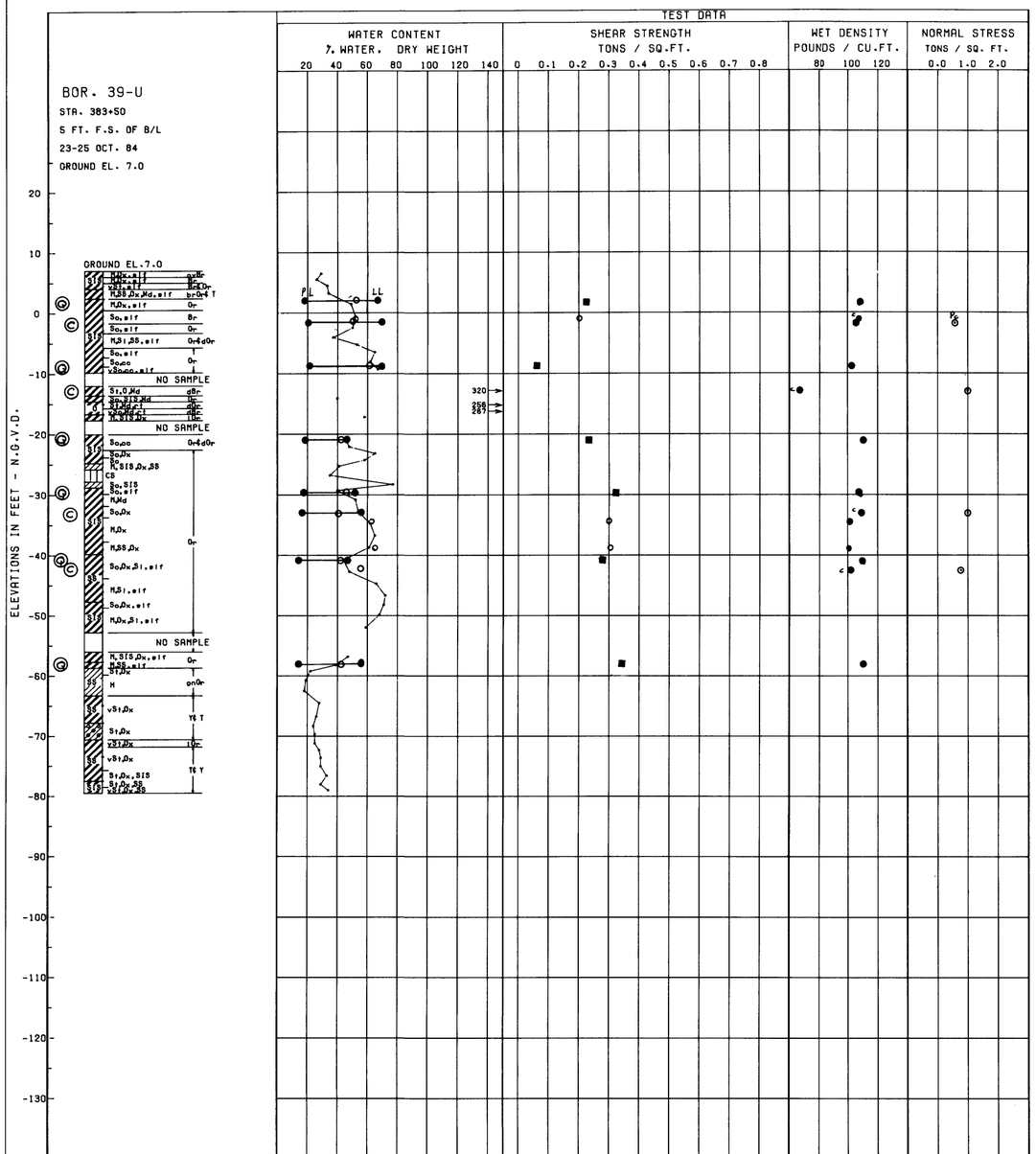
BOR. 39-U

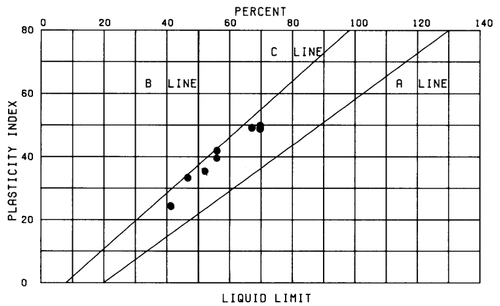
STA. 383+50

5 FT. F.S. OF B/L

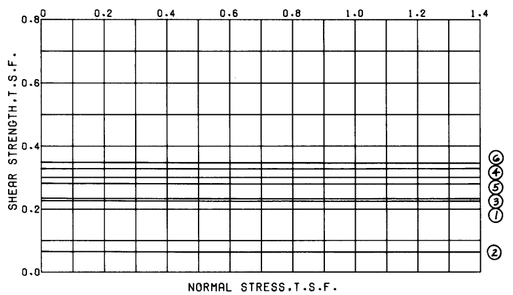
23-25 OCT. 84

GROUND EL. 7.0



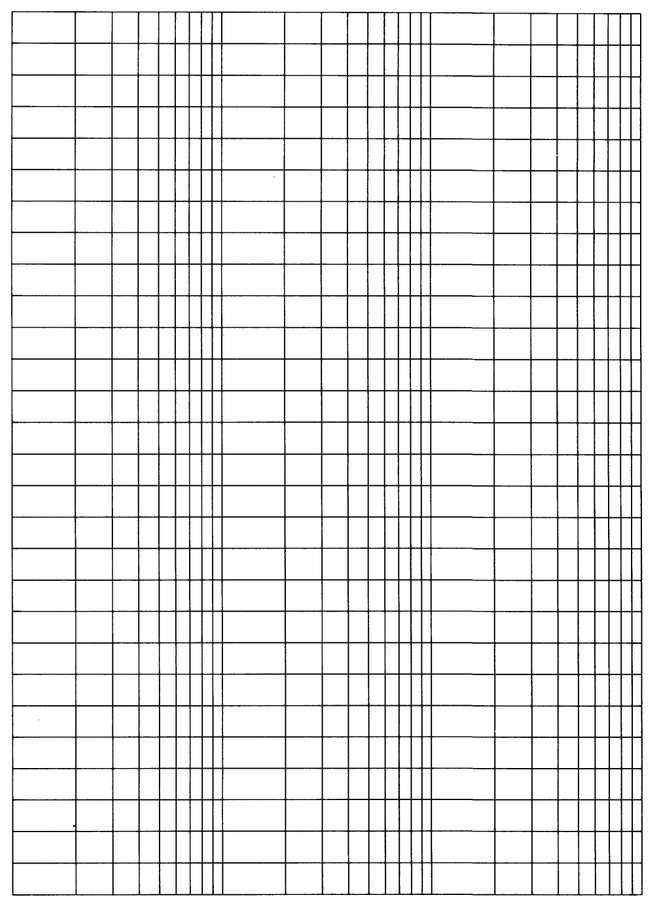


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	1.6	Q	0°	0.227	CH
2	-9.0	Q	0°	0.065	CH
3	-21.0	Q	0°	0.230	CH
4	-29.9	Q	0°	0.323	CH
5	-41.0	Q	0°	0.280	CH
6	-57.9	Q	0°	0.350	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 7

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 39-U

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

OCTOBER 1987 FILE NO H-2-30148

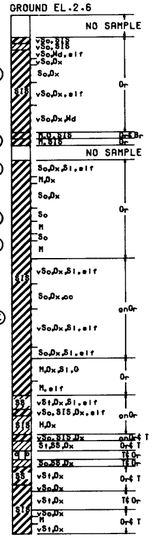
PLATE 93

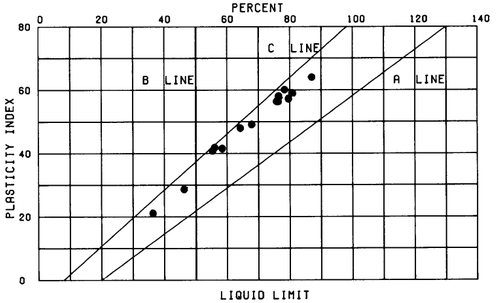
BOR. 40-U
STA. 383+50
120 FT. F.S. OF B/L
12-13 JUN. 1985
GROUND EL. 2.6

TEST DATA

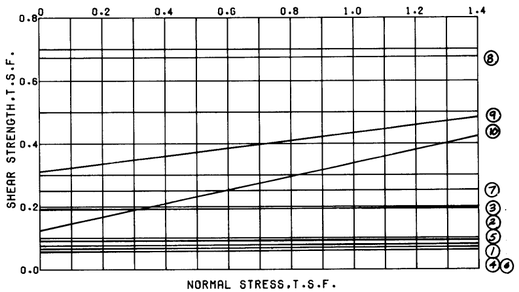
WATER CONTENT, % WATER, DRY WEIGHT — 20 40 60 80 100 120 140
SHEAR STRENGTH, TONS / SQ.FT. — 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8
WET DENSITY, POUNDS / CU.FT. — 80 100 120
NORMAL STRESS, TONS / SQ. FT. — 0.0 1.0 2.0

ELEVATIONS IN FEET - N.G.V.D.



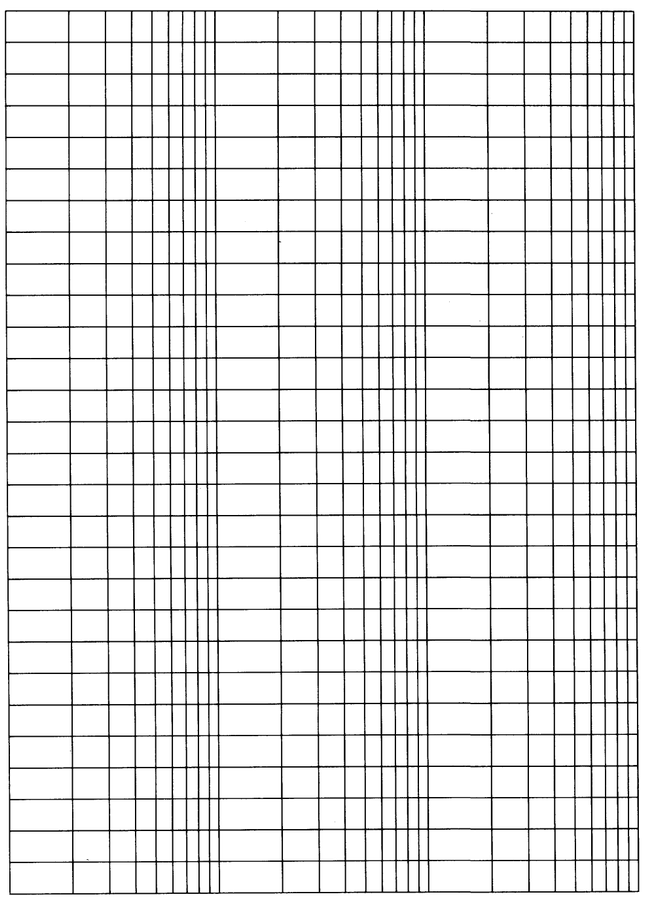


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-5.2	Q	0°	0.070	CH
2.	-13.4	Q	0°	0.097	CL
3.	-25.3	Q	0°	0.193	CL
4.	-37.4	Q	0°	0.063	CH
5.	-38.4	Q	0°	0.080	CH
6.	-46.4	Q	0°	0.063	CH
7.	-57.4	Q	0°	0.253	CH
8.	-69.4	Q	0°	0.672	CH
9.	-17.4	R	6°30'	0.310	CH
10.	-29.4	R	12°30'	0.130	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORING SEE PLATE 7

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 40-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 94

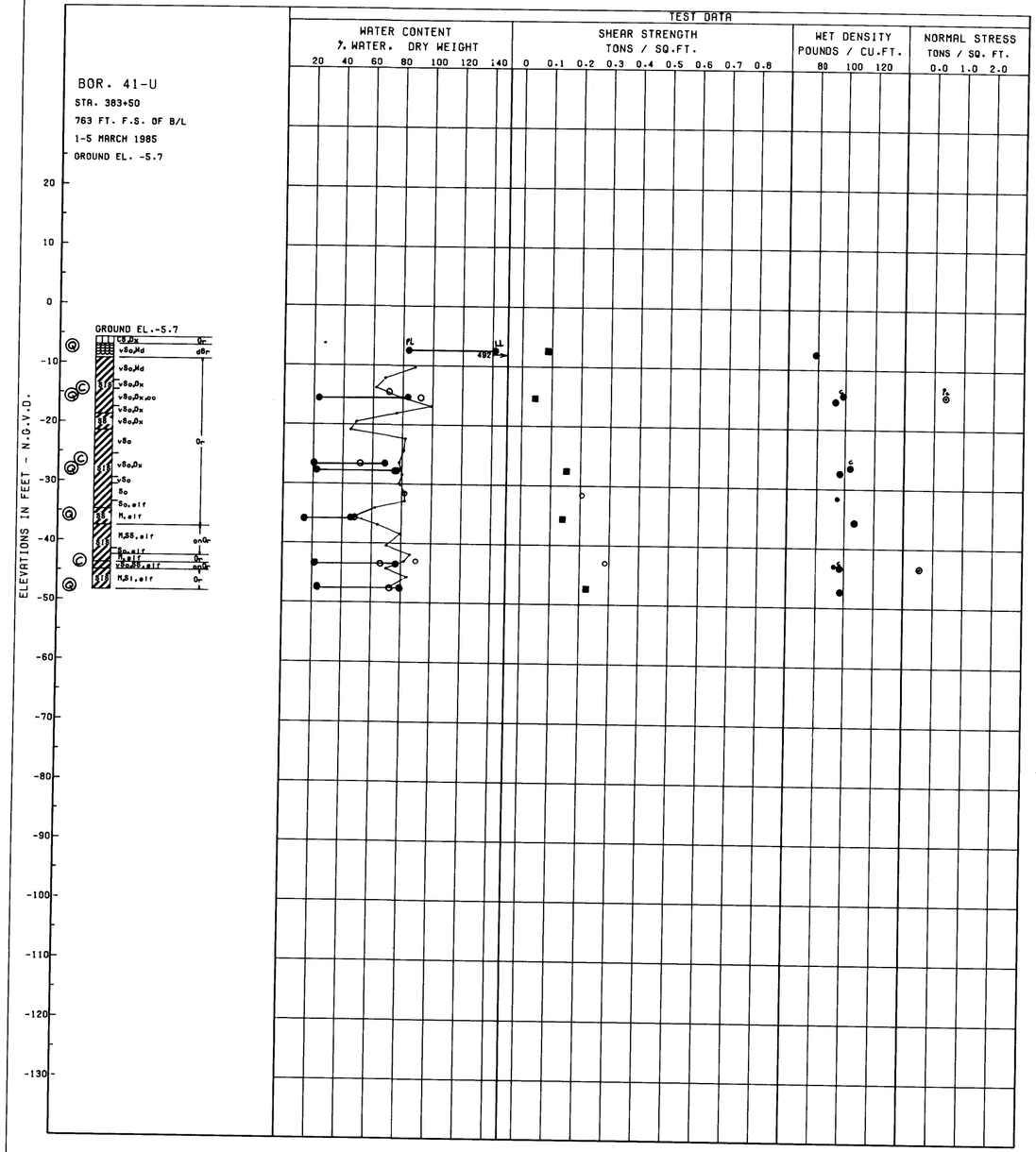
BOR. 41-U

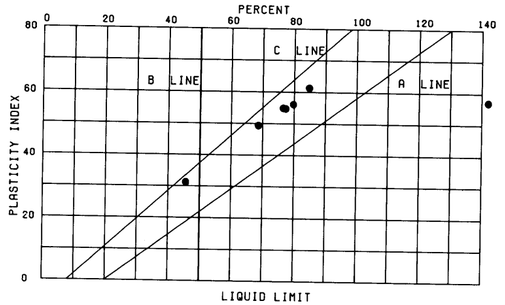
STA. 383+50

763 FT. F.S. OF B/L

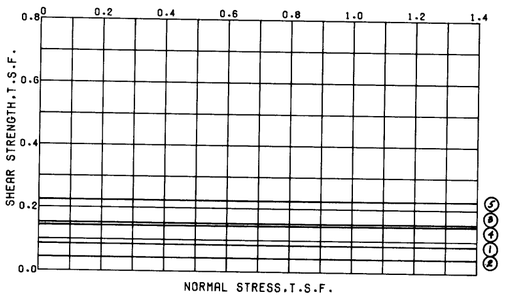
1-5 MARCH 1985

GROUND EL. -5.7



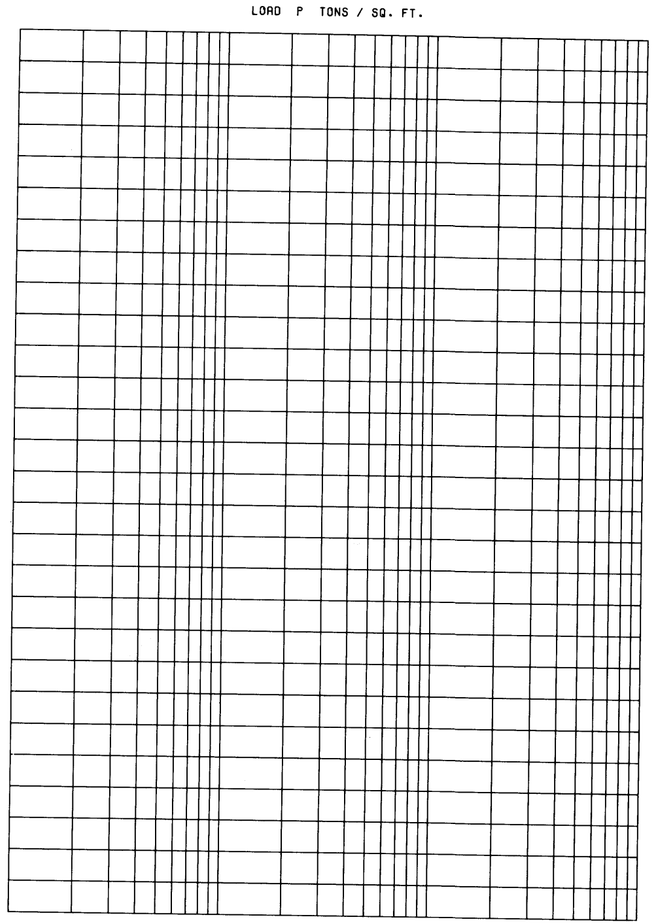


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENOTH Φ	C - TSF	CLASS
1.	-7.7	Q	0°	0.088	CH
2.	-15.7	Q	0°	0.045	CH
3	-22.7	Q	0°	0.153	CH
4.	-35.7	Q	0°	0.149	CH
5	-47.6	Q	0°	0.224	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 7

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 41-U

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

OCTOBER 1987

FILE NO. H-2-30148

PLATE 95

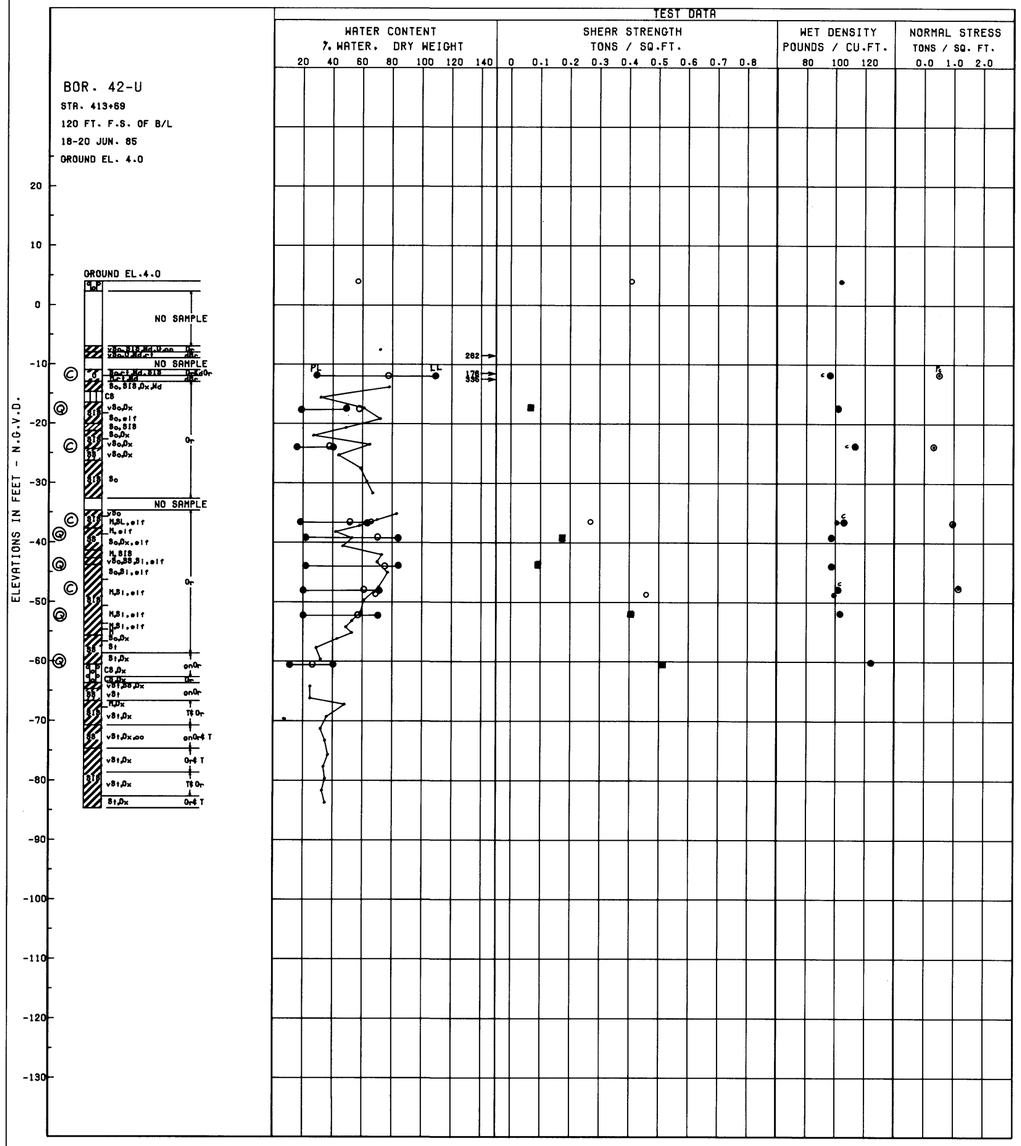
BOR. 42-U

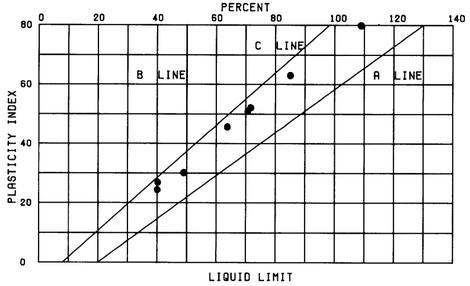
STA. 413+69

120 FT. F.S. OF B/L

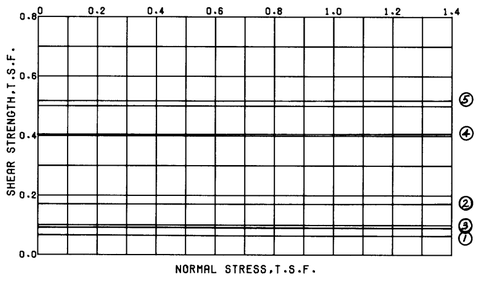
18-20 JUN. 85

ORGUND EL. 4.0



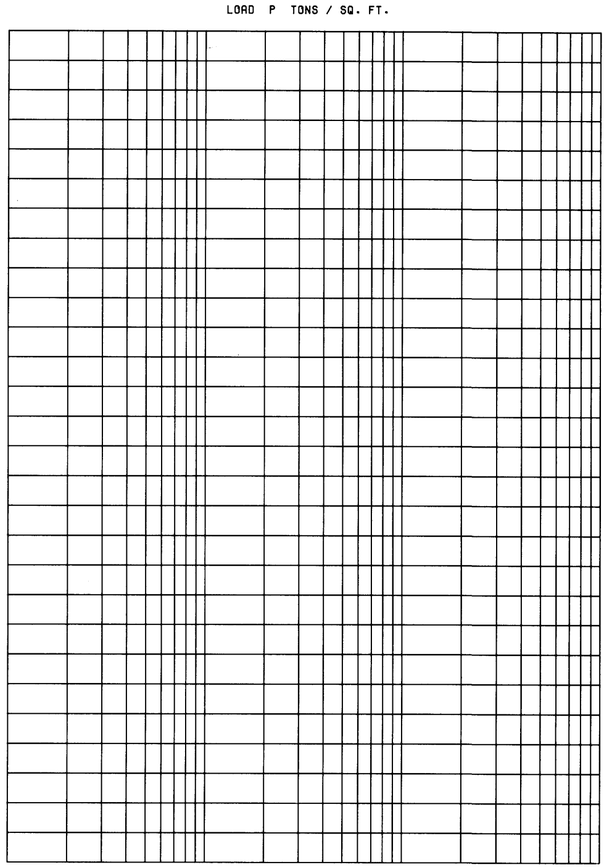


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-17.4	Q	0°	0.065	CH
2	-39.3	Q	0°	0.175	CH
3	-44.0	Q	0°	0.097	CH
4	-52.0	Q	0°	0.405	CH
5	-60.1	Q	0°	0.517	CL



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 7

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 42-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 96

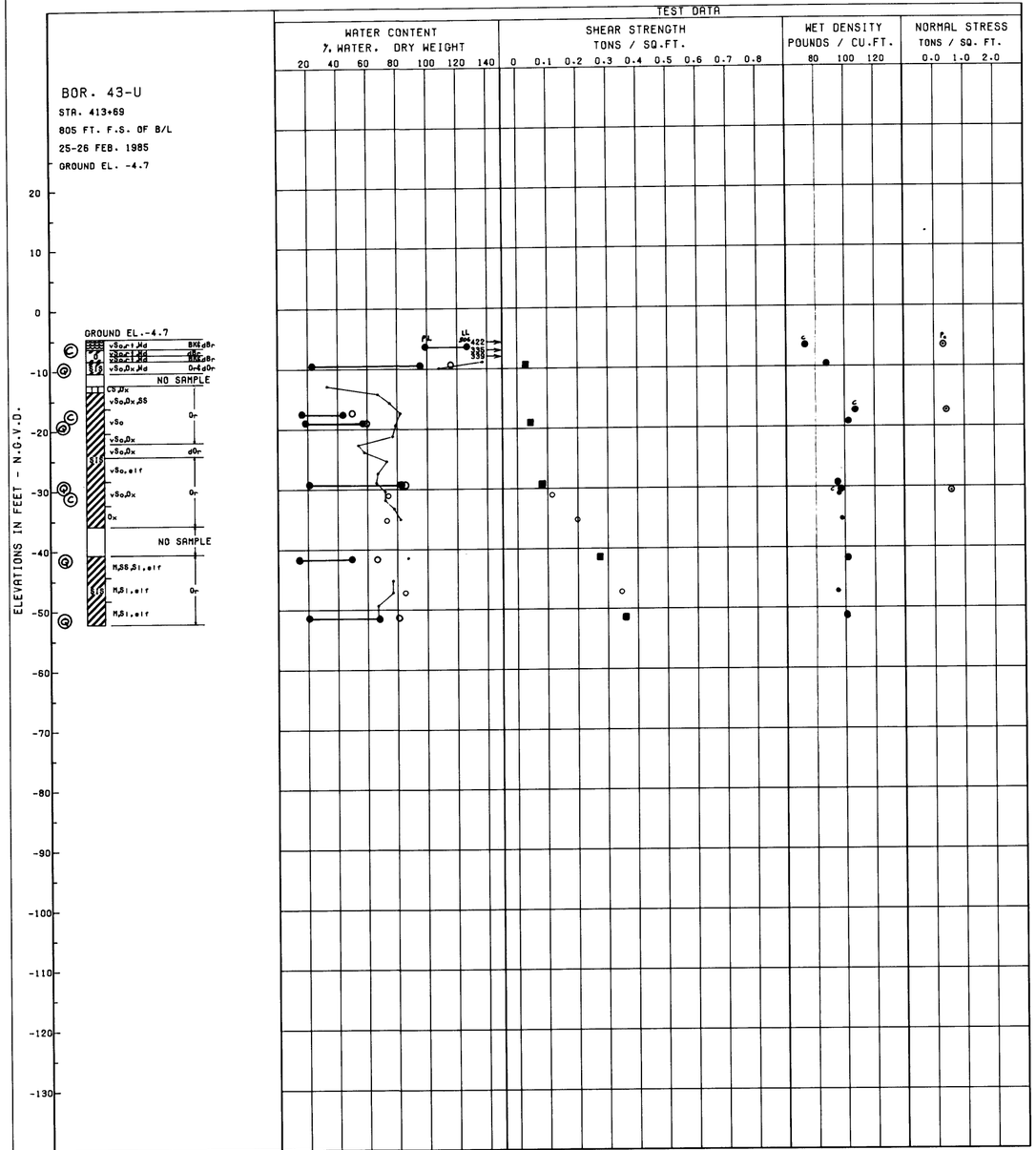
BOR. 43-U

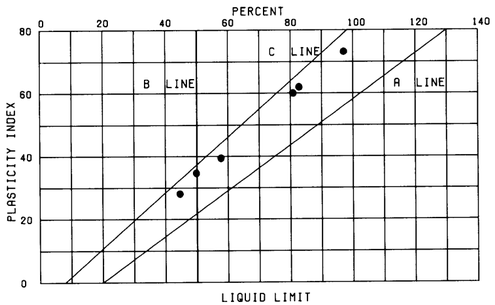
STA. 413+69

805 FT. F.S. OF B/L

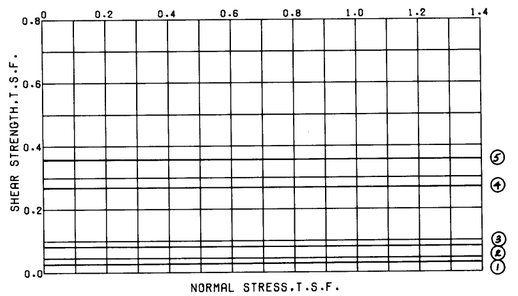
25-26 FEB. 1985

GROUND EL. -4.7



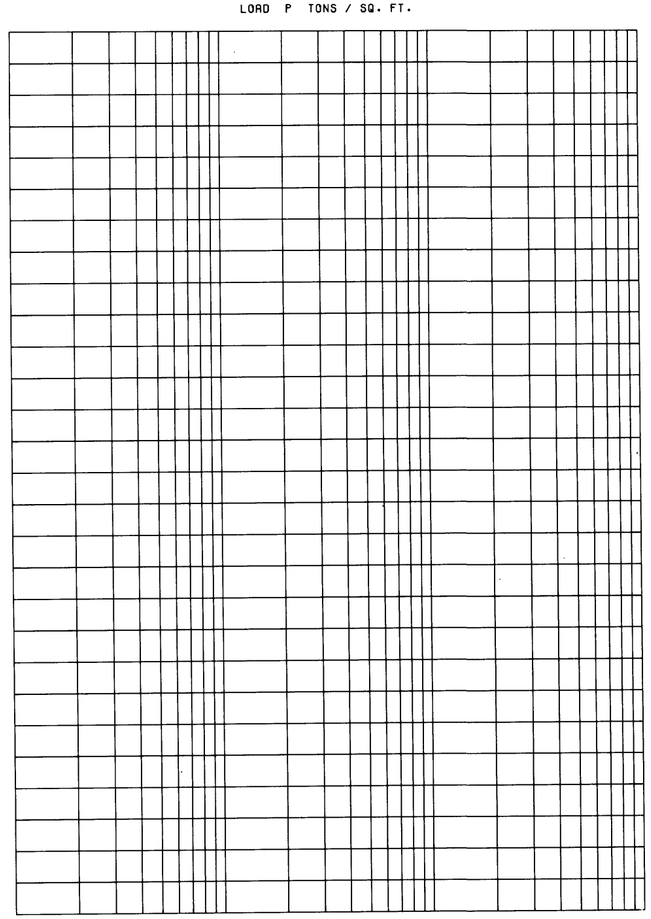


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	- 9.7	Q	0°	0.030	CH
2	-19.0	Q	0°	0.048	CH
3	-29.7	Q	0°	0.089	CH
4	-41.5	Q	0°	0.273	CH
5	-51.1	Q	0°	0.360	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE 8

FOR LOCATION OF BORING SEE PLATE 7

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO.43-U

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

OCTOBER 1987

FILE NO. H-2-30148

PLATE 97

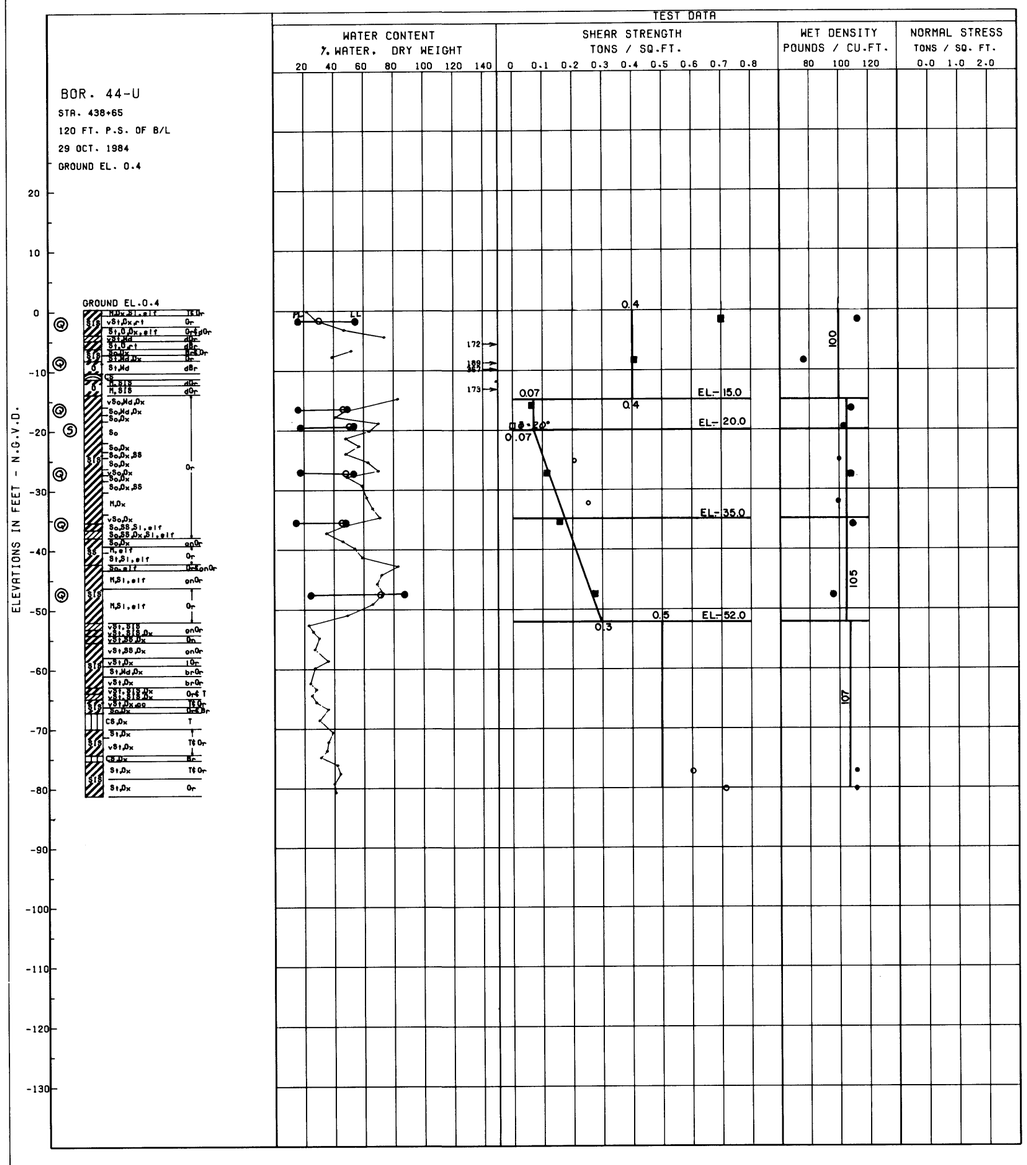
BOR. 44-U

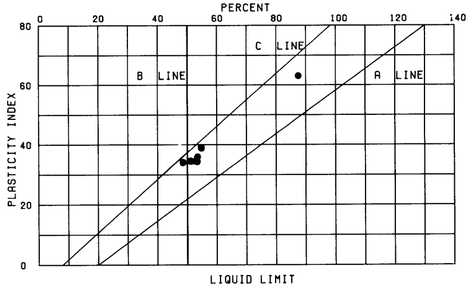
STA. 438+65

120 FT. P.S. OF B/L

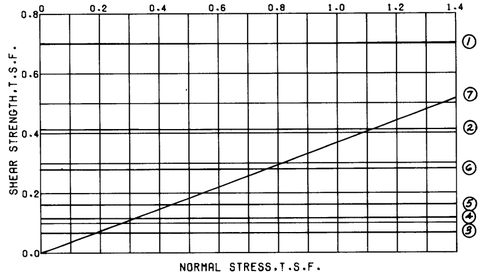
29 OCT. 1984

GROUND EL. 0.4



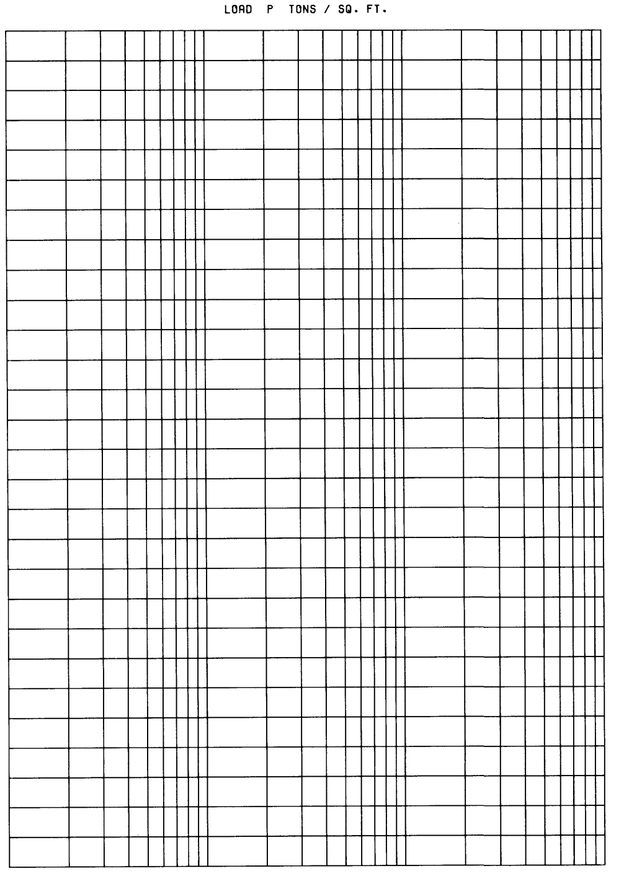


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1	-1.6	Q	0°	0.700	CH
2	-8.5	Q	0°	0.410	PT
3	-16.5	Q	0°	0.072	CH
4	-27.2	Q	0°	0.120	CH
5	-35.6	Q	0°	0.167	CH
6	-47.6	Q	0°	0.285	CH
7	-19.6	S	20°	0.000	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

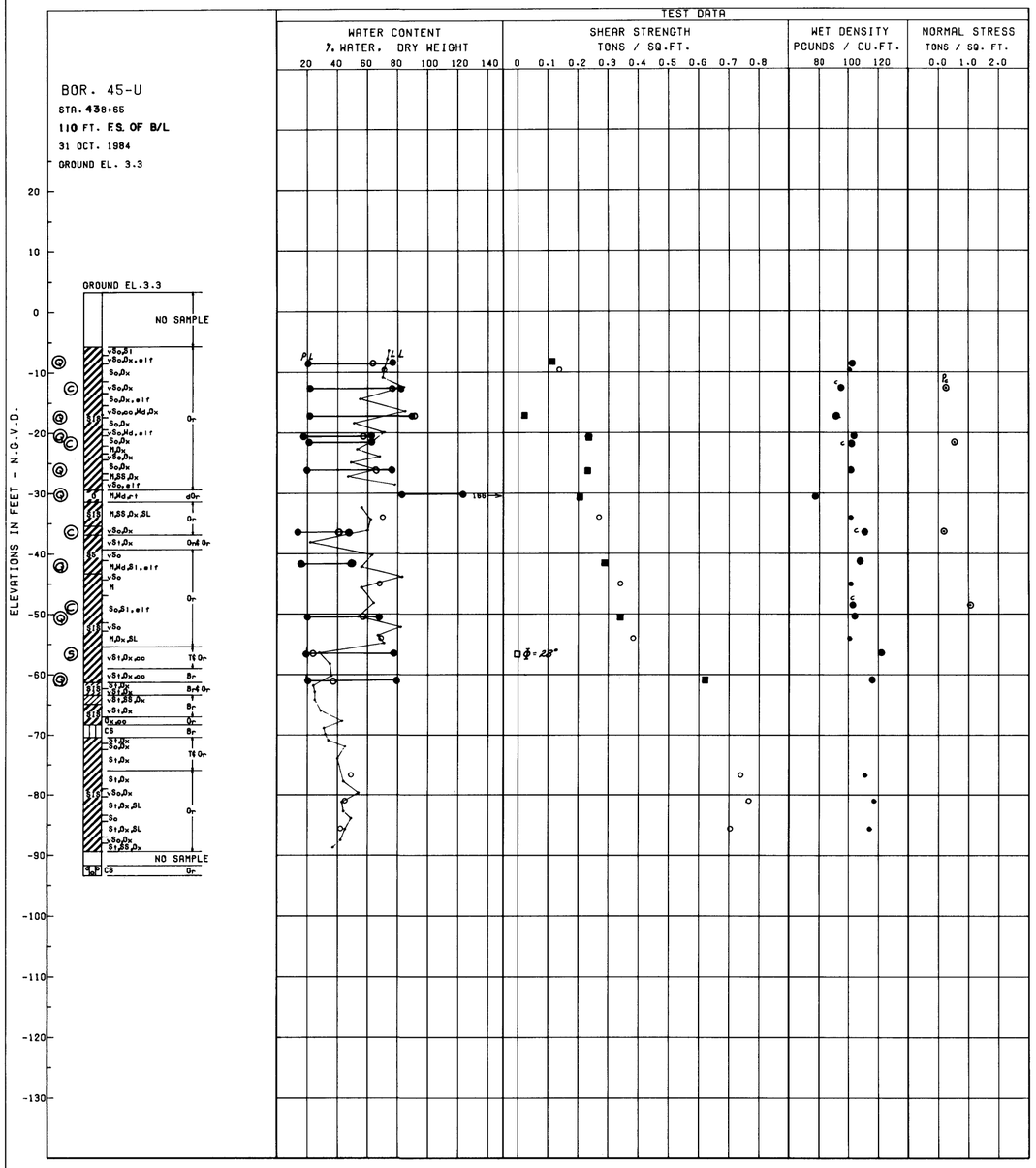
FOR LOCATION OF BORING SEE PLATE B

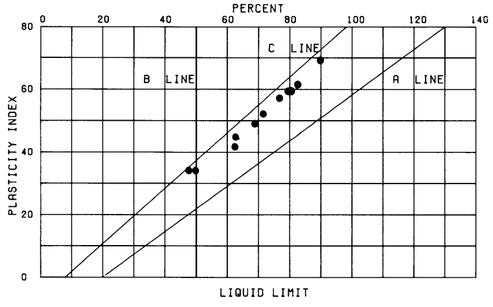
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
UNDISTURBED BORING NO. 44-U
SOIL DESIGN PARAMETERS
CAUSEWAY FLOOD WALL
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

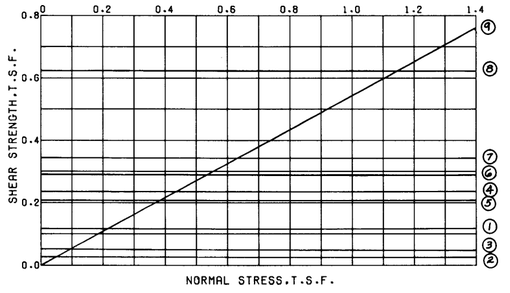
PLATE 98

BOR. 45-U
STA. 438+65
110 FT. F.S. OF B/L
31 OCT. 1984
GROUND EL. 3.3



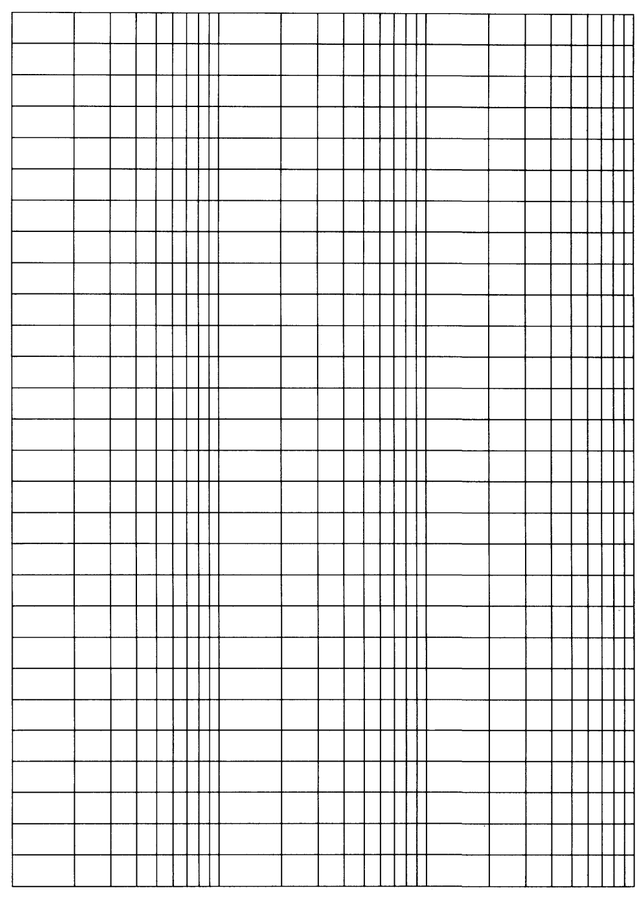


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-8.7	Q	0°	0.112	CH
2.	-17.2	Q	0°	0.025	CH
3.	-20.7	Q	0°	0.050	CH
4.	-26.1	Q	0°	0.237	CH
5.	-30.1	Q	0°	0.202	OH
6.	-41.3	Q	0°	0.292	CH
7.	-50.1	Q	0°	0.342	CH
8.	-60.7	Q	0°	0.622	CH
9.	-56.7	S	28°	0.000	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORING SEE PLATE 8

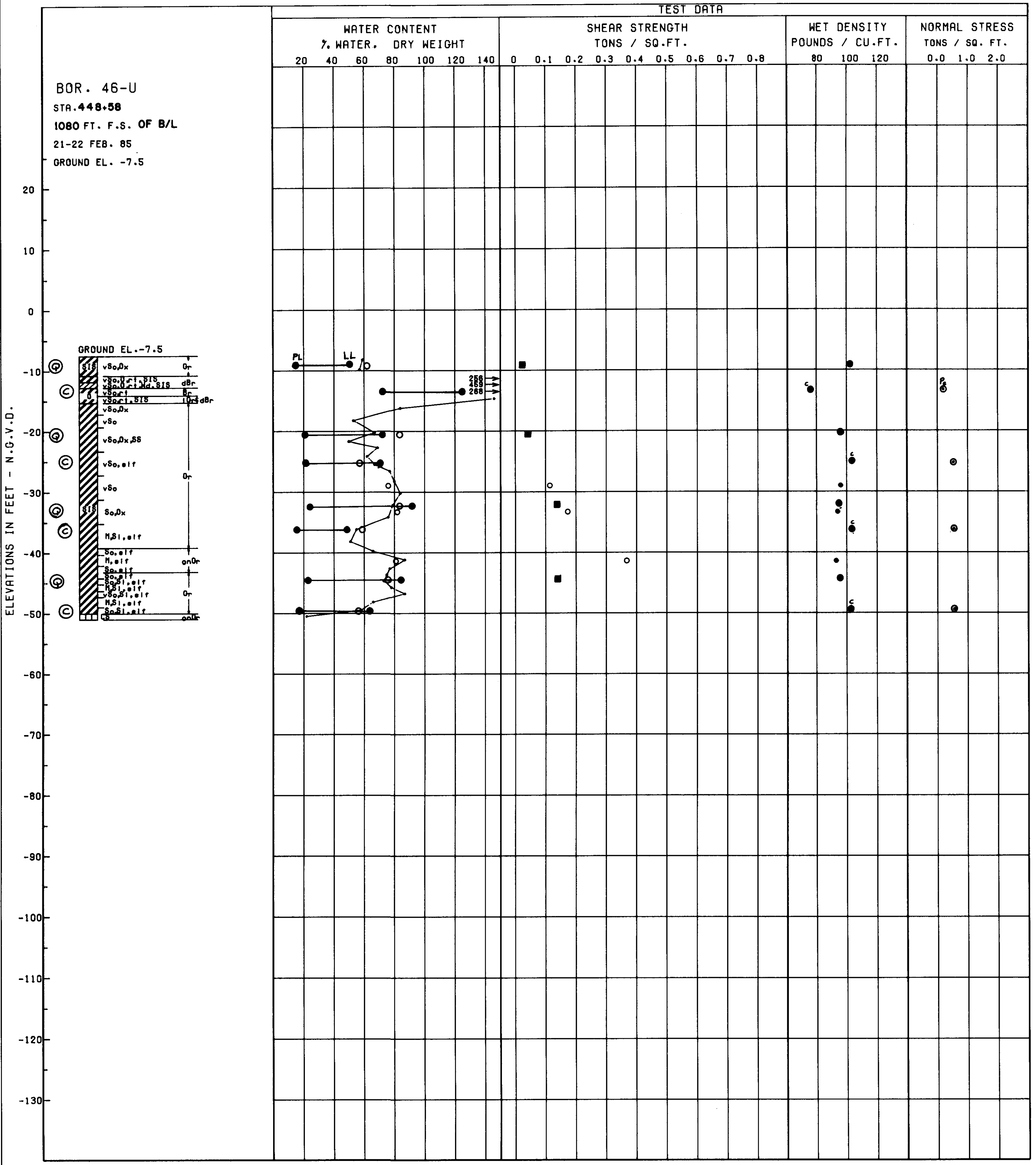
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

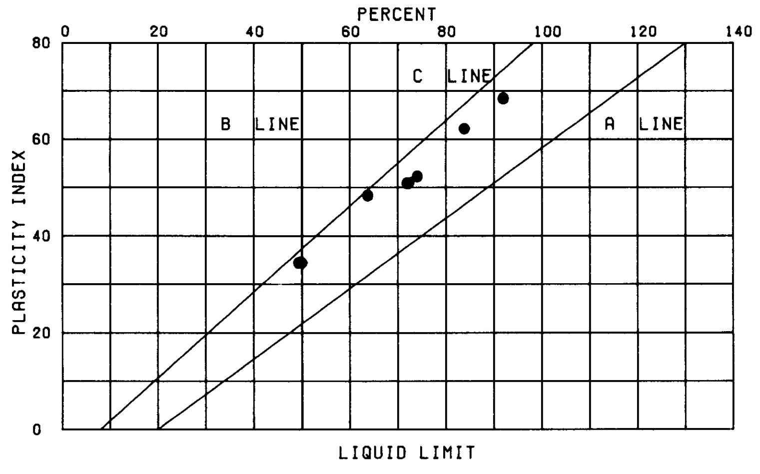
UNDISTURBED BORING NO. 45-U

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

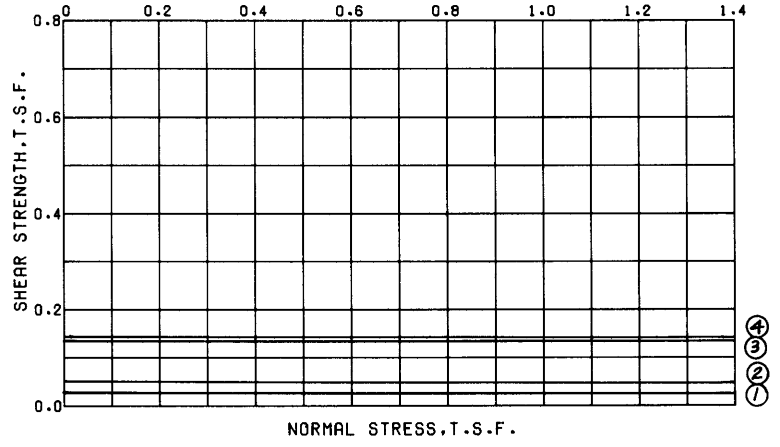
OCTOBER 1987 FILE NO. H-2-30148

PLATE 99



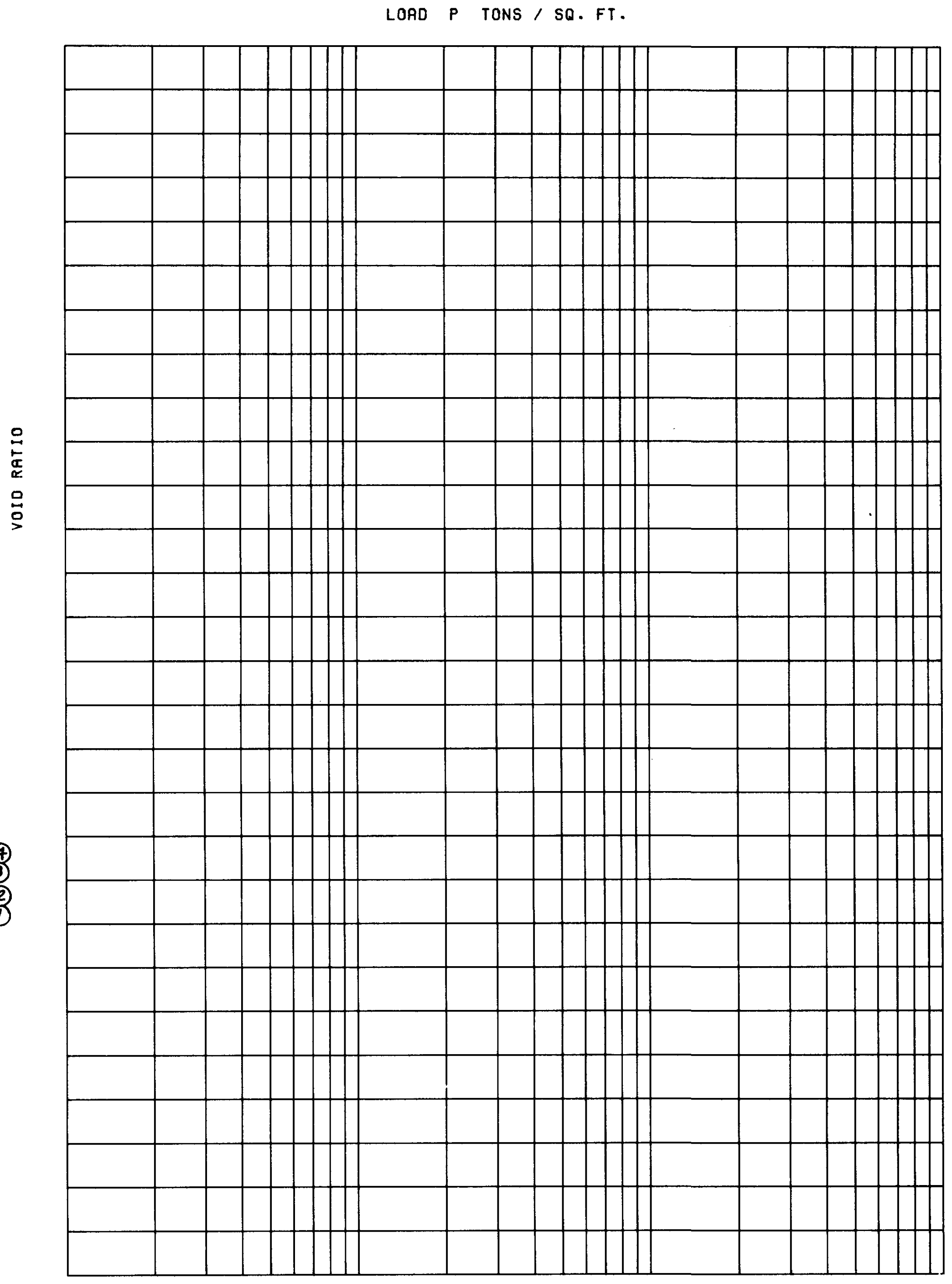


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE		TYPE	STRENGTH		CLASS
NO.	EL.		Φ	C -- TSF	
1.	-9.1	Q	0°	0.023	CH
2.	-20.5	Q	0°	0.043	CH
3.	-32.4	Q	0°	0.134	CH
4.	-44.4	Q	0°	0.136	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST
BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORING SEE PLATE 8

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 46-U

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

OCTOBER 1987 FILE NO. H-2-30148

BOR. 47-U

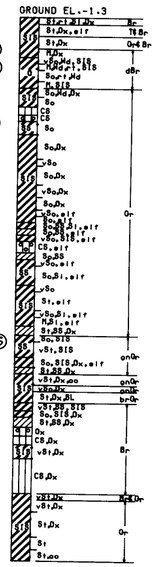
STA. 492+00

100 FT. P.S. OF B/L

3-7 DEC. 84

ORGROUND EL. -1.31

ELEVATIONS IN FEET - N.G.V.D.



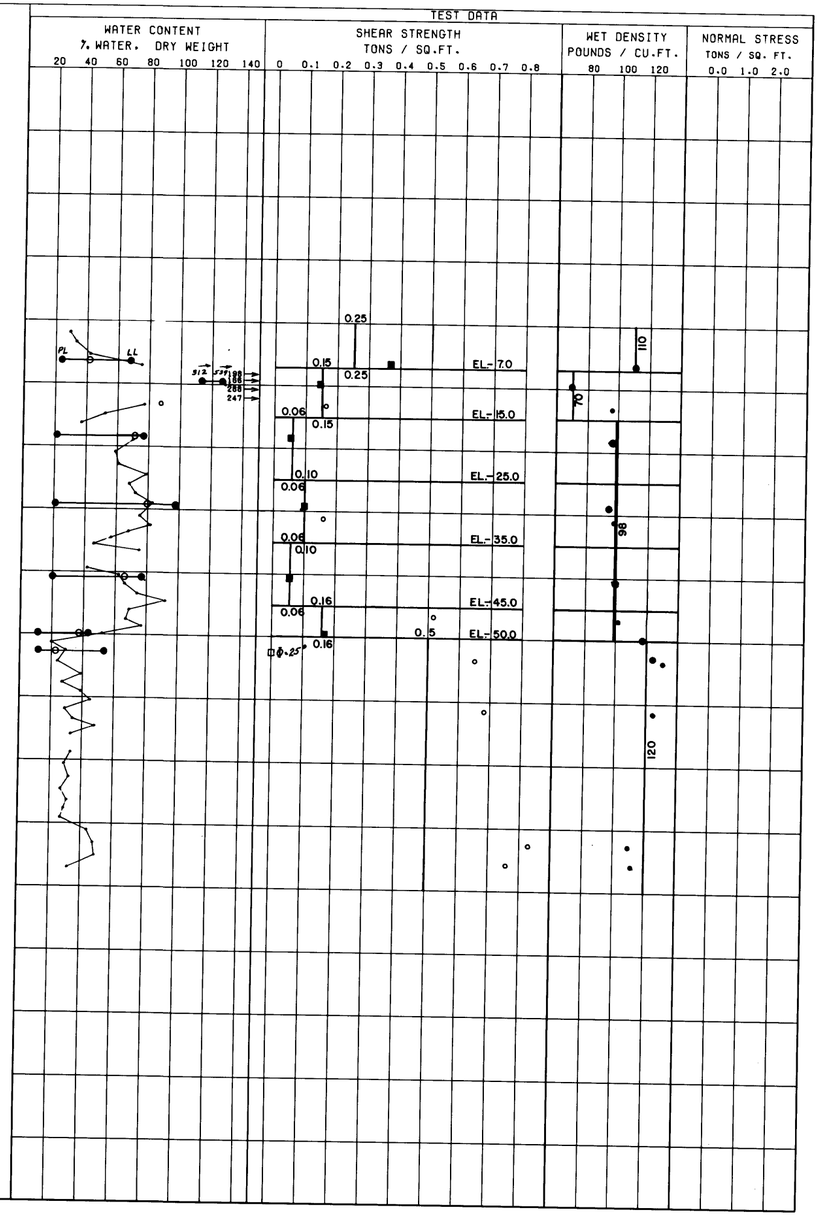
TEST DATA

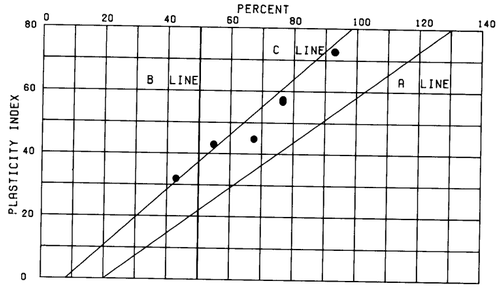
WATER CONTENT
% WATER. DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

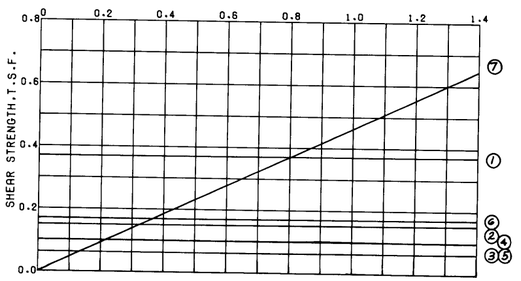
WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.



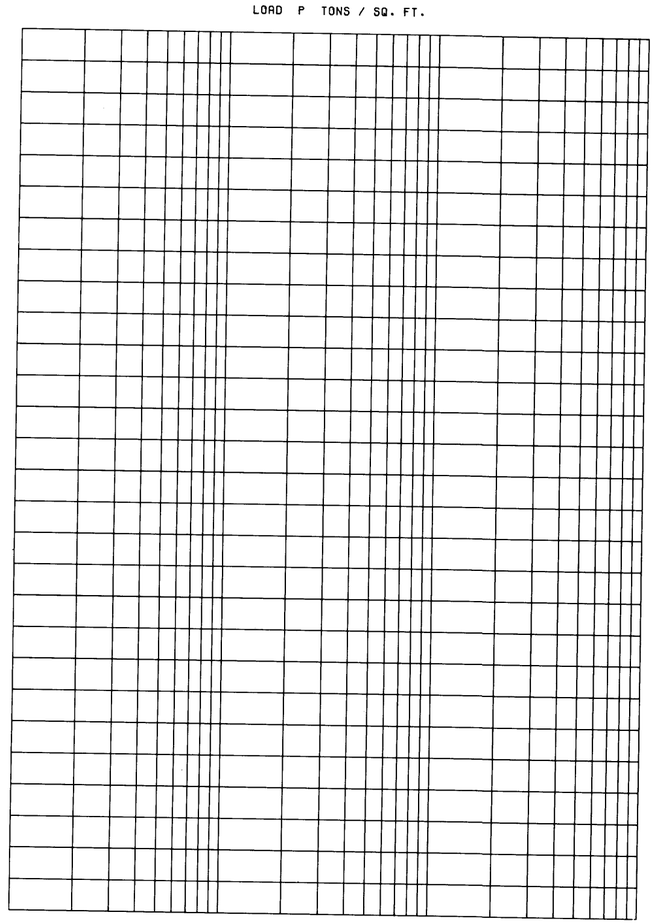


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-6.5	Q	0°	0.370	CH
2.	-9.9	Q	0°	0.150	OH
3.	-18.5	Q	0°	0.060	CH
4.	-29.3	Q	0°	0.100	CH
5.	-41.1	Q	0°	0.060	CH
6.	-50.0	Q	0°	0.170	CL
7.	-54.0	S	25°	0.000	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 9

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
UNDISTURBED BORING NO. 47-U
SOIL DESIGN PARAMETERS
PROTECTED FLOOD SIDE PUMPING STA. 1
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987

FILE NO. H-2-30148

PLATE 101

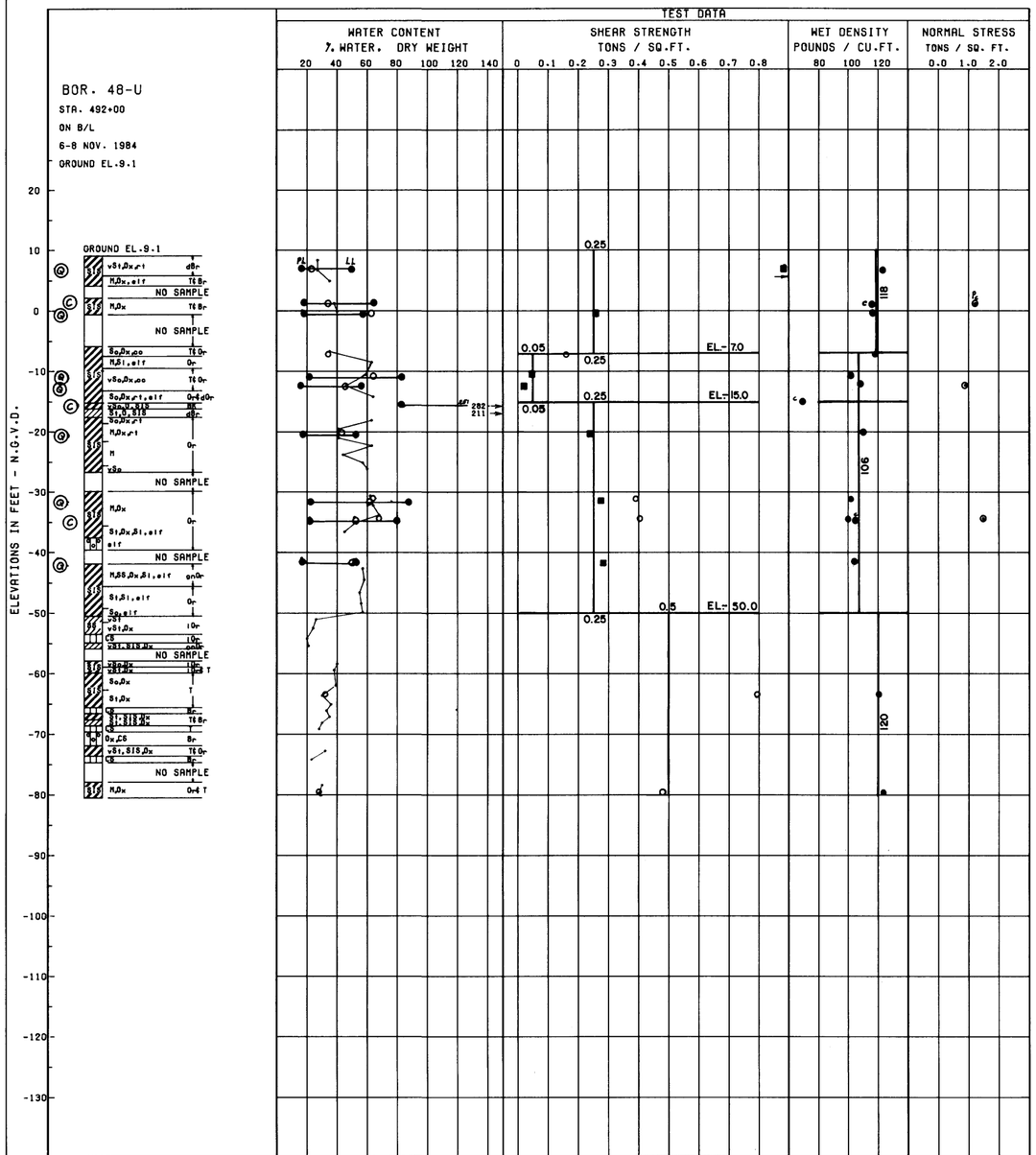
BOR. 48-U

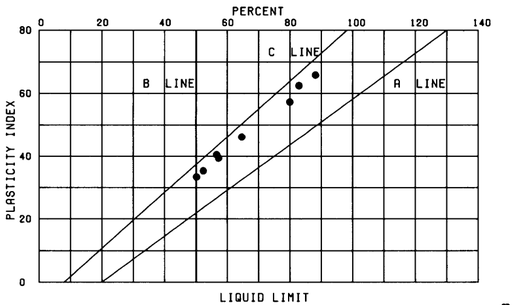
STA. 492+00

ON B/L

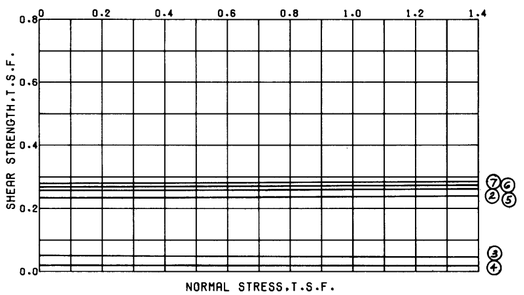
6-8 NOV. 1984

GROUND EL. 9.1



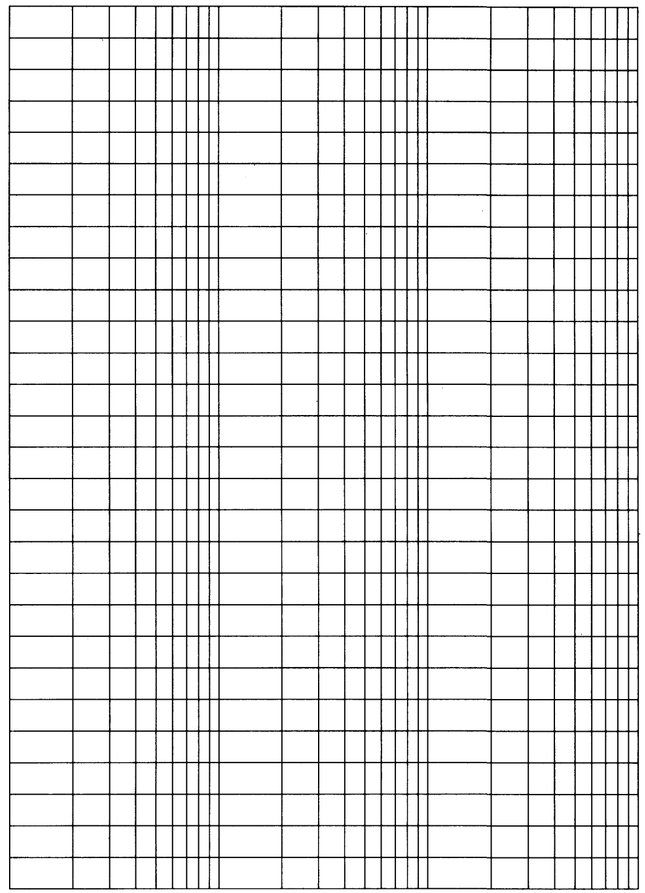


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	6.9	Q	0°	0.940	CH
2.	-0.3	Q	0°	0.260	CH
3.	-10.9	Q	0°	0.050	CH
4.	-12.3	Q	0°	0.025	CH
5.	-20.2	Q	0°	0.240	CH
6.	-31.6	Q	0°	0.270	CH
7.	-42.7	Q	0°	0.280	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST

■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST

▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST

⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 9

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
UNDISTURBED BORING NO. 48-U
SOIL DESIGN PARAMETERS
C/L PUMPING STA. 1
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987

FILE NO. H-2-30148

PLATE 102

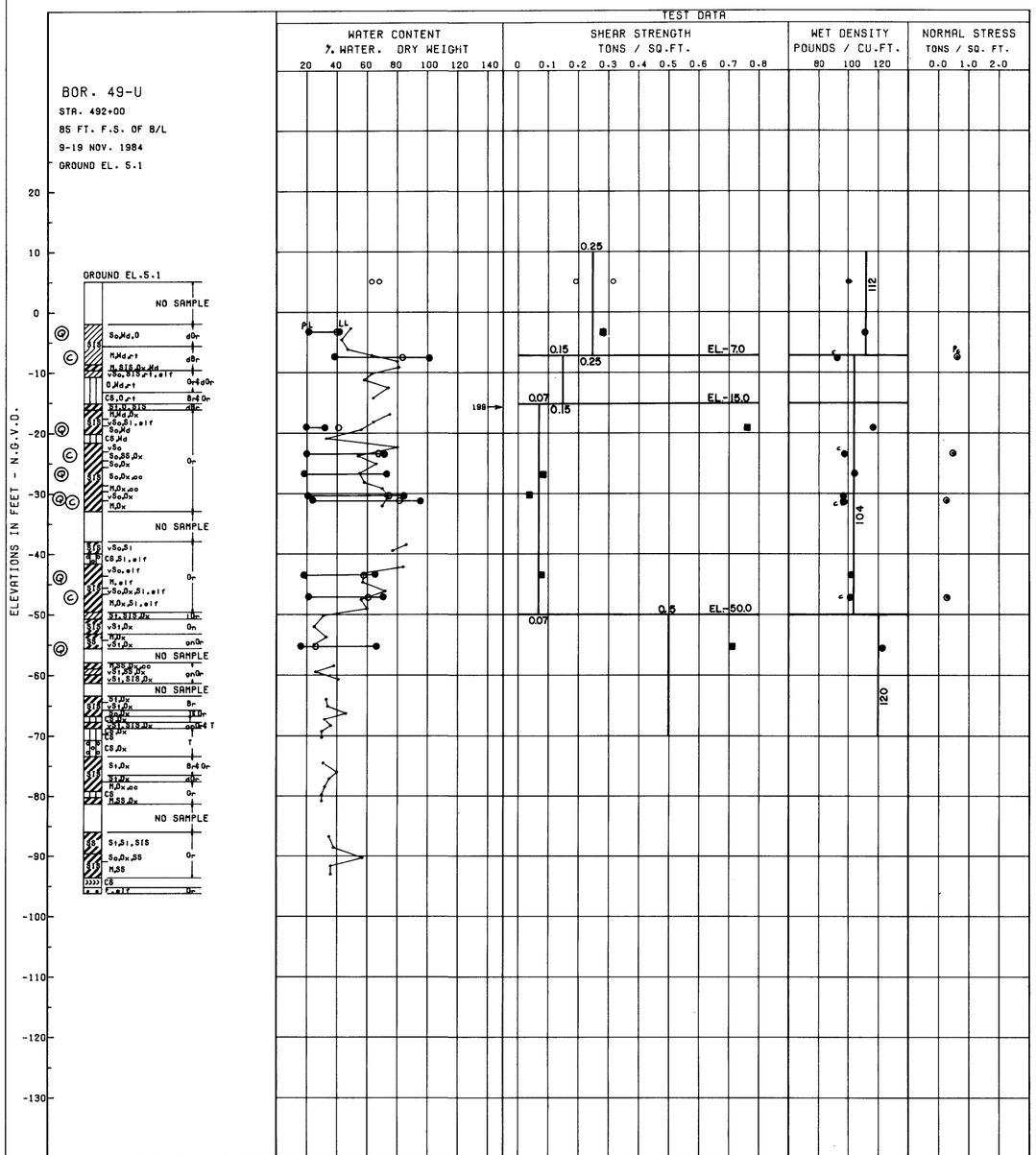
BOR. 49-U

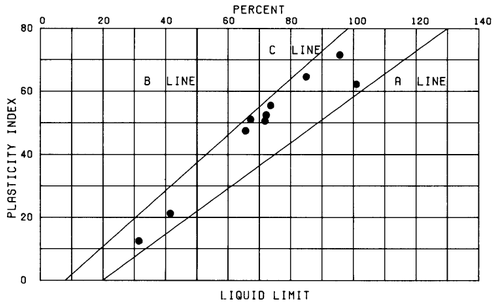
STA. 492+00

85 FT. F.S. OF B/L

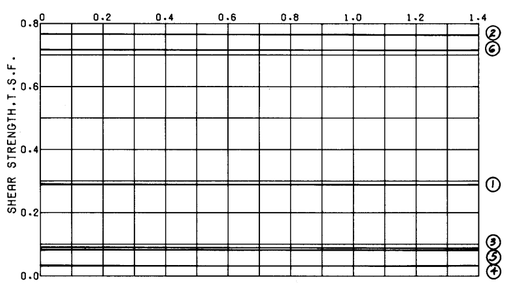
9-19 NOV. 1984

GROUND EL. 5.1



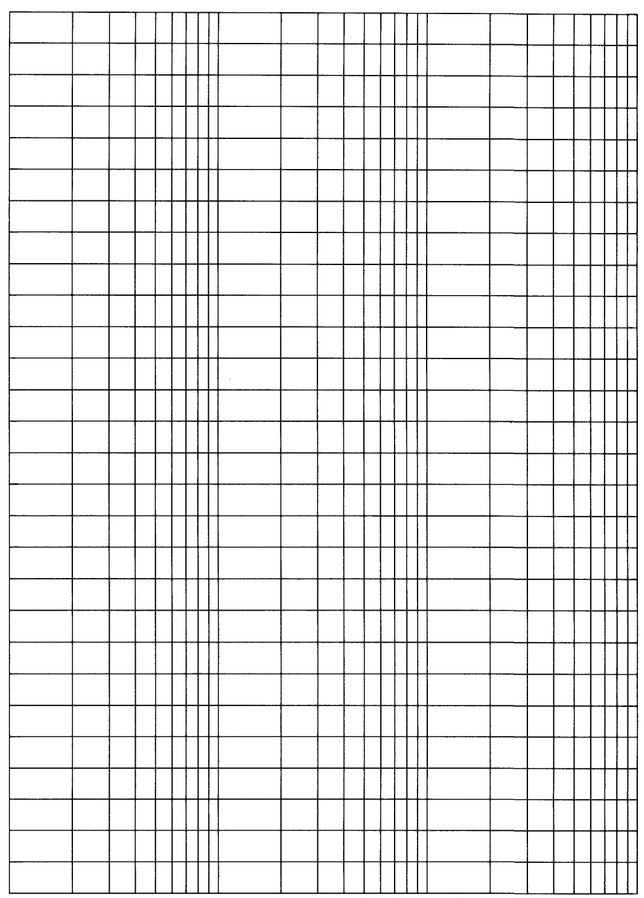


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-34	Q	0°	0.285	CL
2.	-19.6	Q	0°	0.761	CL
3.	-26.9	Q	0°	0.088	CH
4.	-30.4	Q	0°	0.033	CH
5.	-43.6	Q	0°	0.083	CH
6.	-55.4	Q	0°	0.716	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 9

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO 17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 49-U
SOIL DESIGN PARAMETERS
FLOOD SIDE PUMPING STA. 1

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 103

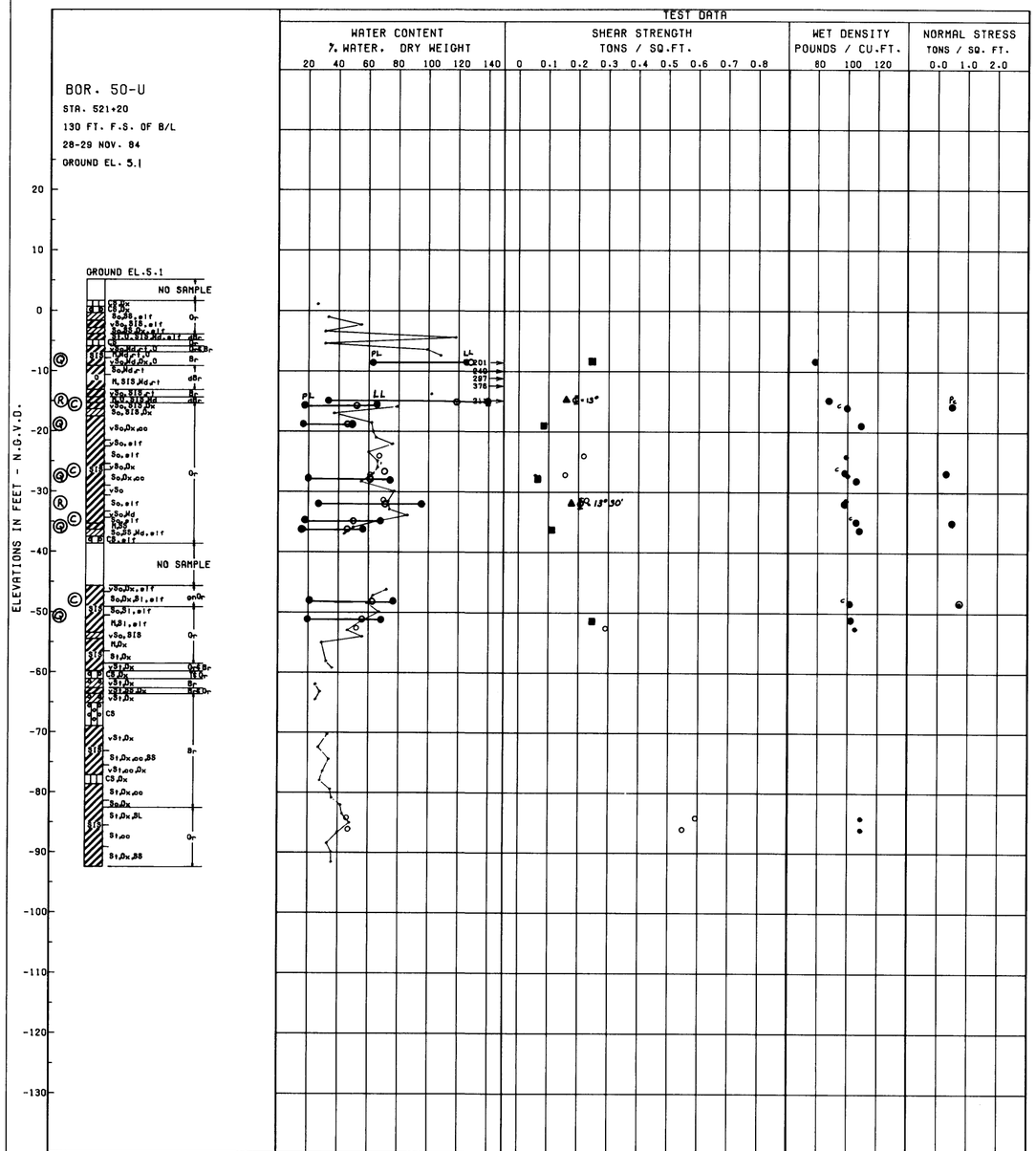
BOR. 50-U

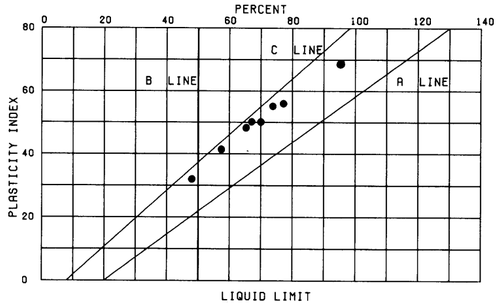
STA. 521+20

130 FT. F.S. OF B/L

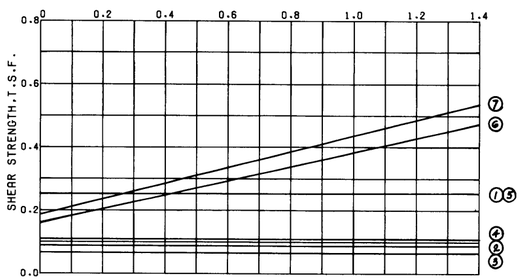
28-29 NOV. 84

GROUND EL. 5.1



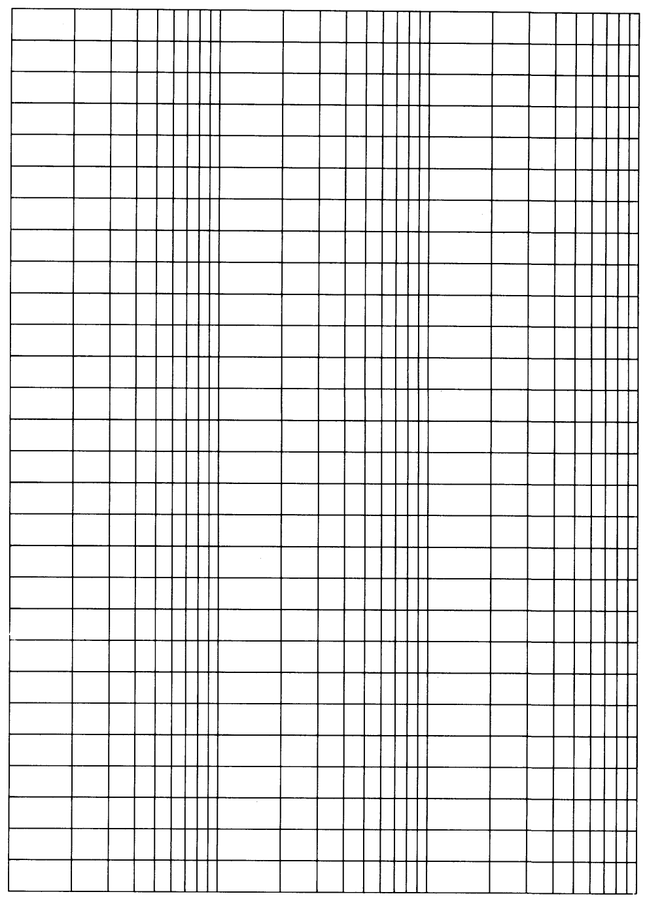


PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-8.3	Q	0°	0.249	OH
2.	-18.9	Q	0°	0.088	CH
3.	-27.7	Q	0°	0.068	CH
4.	-36.0	Q	0°	0.107	CH
5.	-50.8	Q	0°	0.250	CH
6.	-14.8	R	13°	0.160	CH
7.	-31.8	R	13°30'	0.180	CH



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 9

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 50-U

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 104

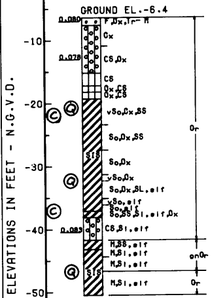
BOR. 51-U

STA. 521+20

960 FT. F.S. OF B/L

13-20 FEB. 85

GROUND EL. -6.4



ELEVATIONS IN FEET - N.G.V.D.

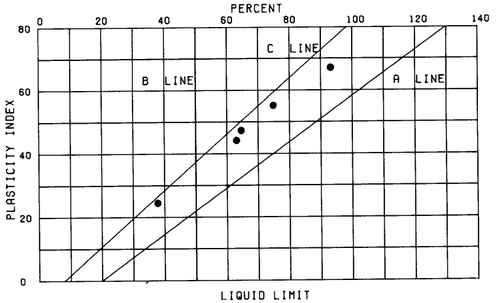
TEST DATA

WATER CONTENT
% WATER. DRY WEIGHT
20 40 60 80 100 120 140

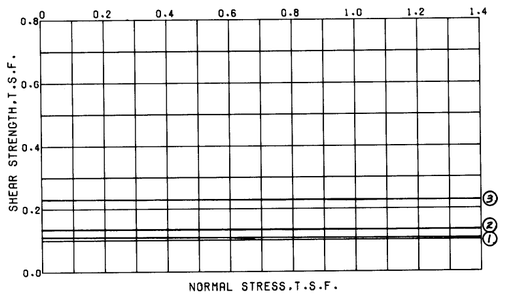
SHEAR STRENGTH
TONS / SQ.FT.
0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8

WET DENSITY
POUNDS / CU.FT.
80 100 120

NORMAL STRESS
TONS / SQ. FT.
0.0 1.0 2.0



PLASTICITY CHART



SHEAR STRENGTH DATA

ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1.	-20.6	Q	0°	0.107	CH
2.	-32.3	Q	0°	0.132	CH
3.	-45.6	Q	0°	0.228	CH

LOAD P TONS / SQ. FT.

CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORING SEE PLATE 9

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING NO. 51-U

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

OCTOBER 1987 FILE NO. H-2-30148

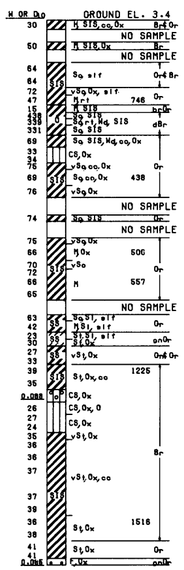
PLATE 105

BOR. 17-U

STA. 53+42

82 FT. P.S. OF B/L

23-28 AUG. 1984

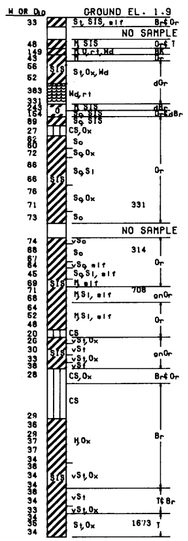


BOR. 22-U

STA. 112+97

98 FT. P.S. OF B/L

20 SEPT 1984

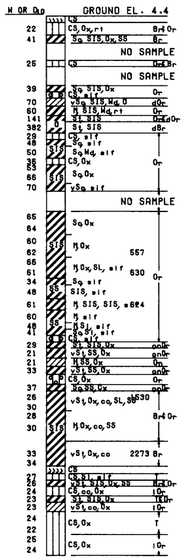


BOR. 24-U

STA. 145+30

115 FT. PS OF B/L

1-3 OCT. 1984

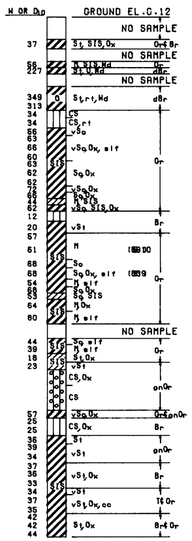


BOR. 29-U

STA. 223+85

100 FT. P.S. OF B/L

11 OCT 1984

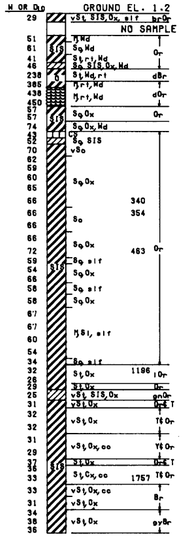


BOR. 33-U

STA. 284+10

85 FT. P.S. OF B/L

17 OCT. 1984

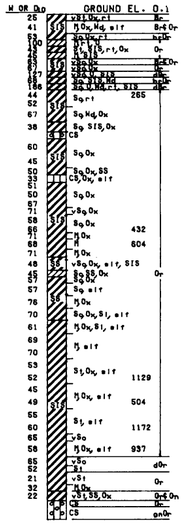


BOR. 38-U

STA. 356+35

100 FT. P.S. OF B/L

23-24 OCT. 1984

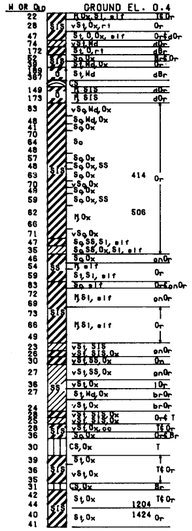


BOR. 44-U

STA. 438+65

120 FT. P.S. OF B/L

29 OCT. 1984

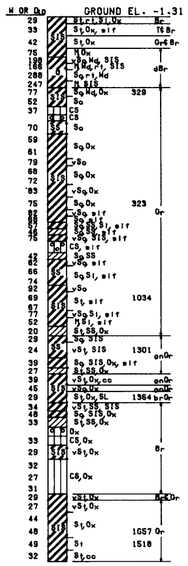


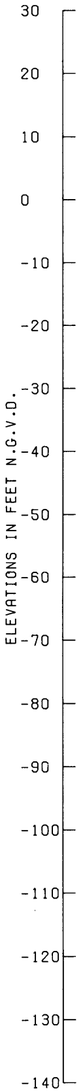
BOR. 47-U

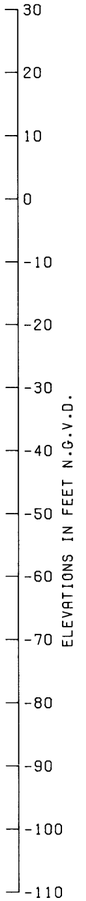
STA. 492+00

100 FT. P.S. OF B/L

3-7 DEC. 84







NOTES:

GENERAL TYPE BORINGS OBTAINED WITH 1-7/8 IN. I.D. X 29 INCH. SAMPLER UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON TYPE SAMPLER.

FOR BORINGS LOCATIONS SEE PLATES 2 THRU 9

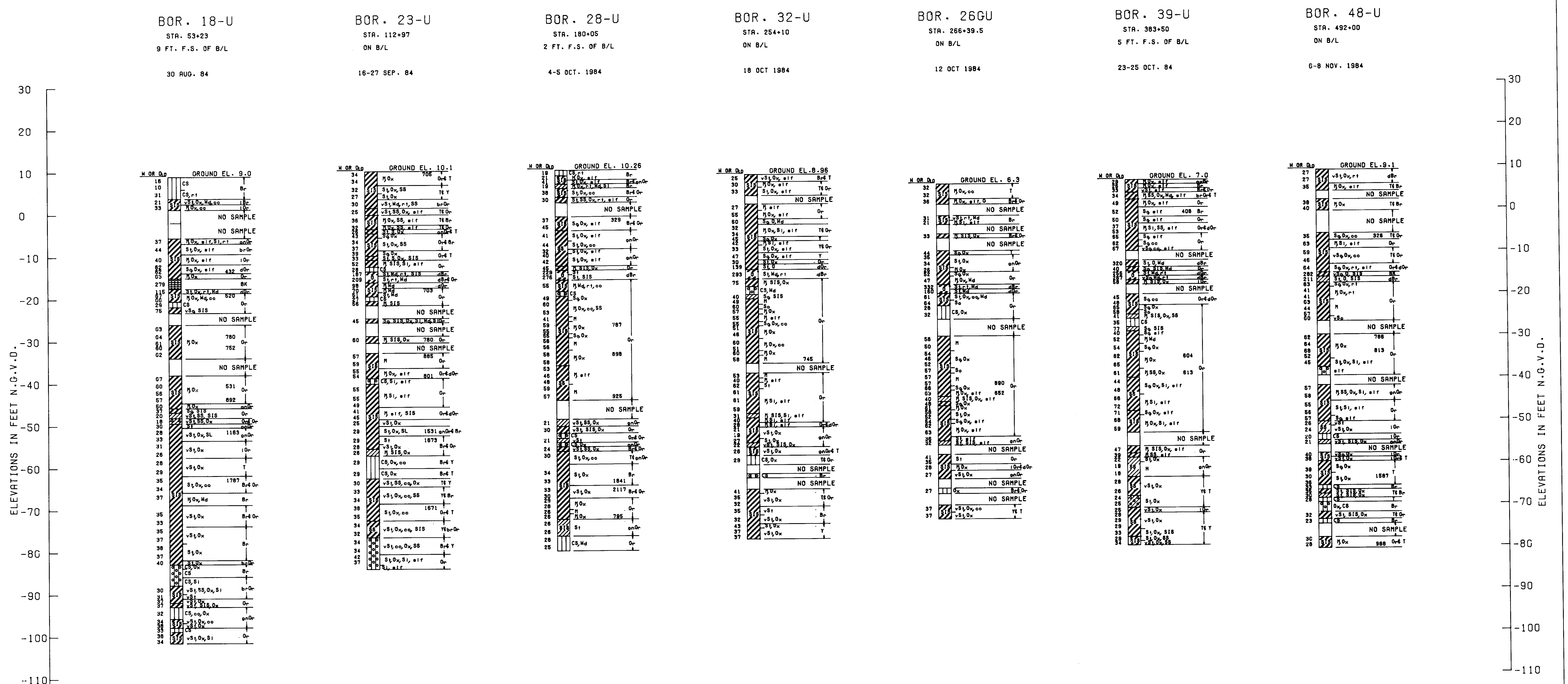
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING LOGS PROTECTED SIDE TOE

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 106



NOTES:
GENERAL TYPE BORINGS OBTAINED WITH 1-7/8 IN. I.D. X 29 INCH. SAMPLER. UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON TYPE SAMPLER.

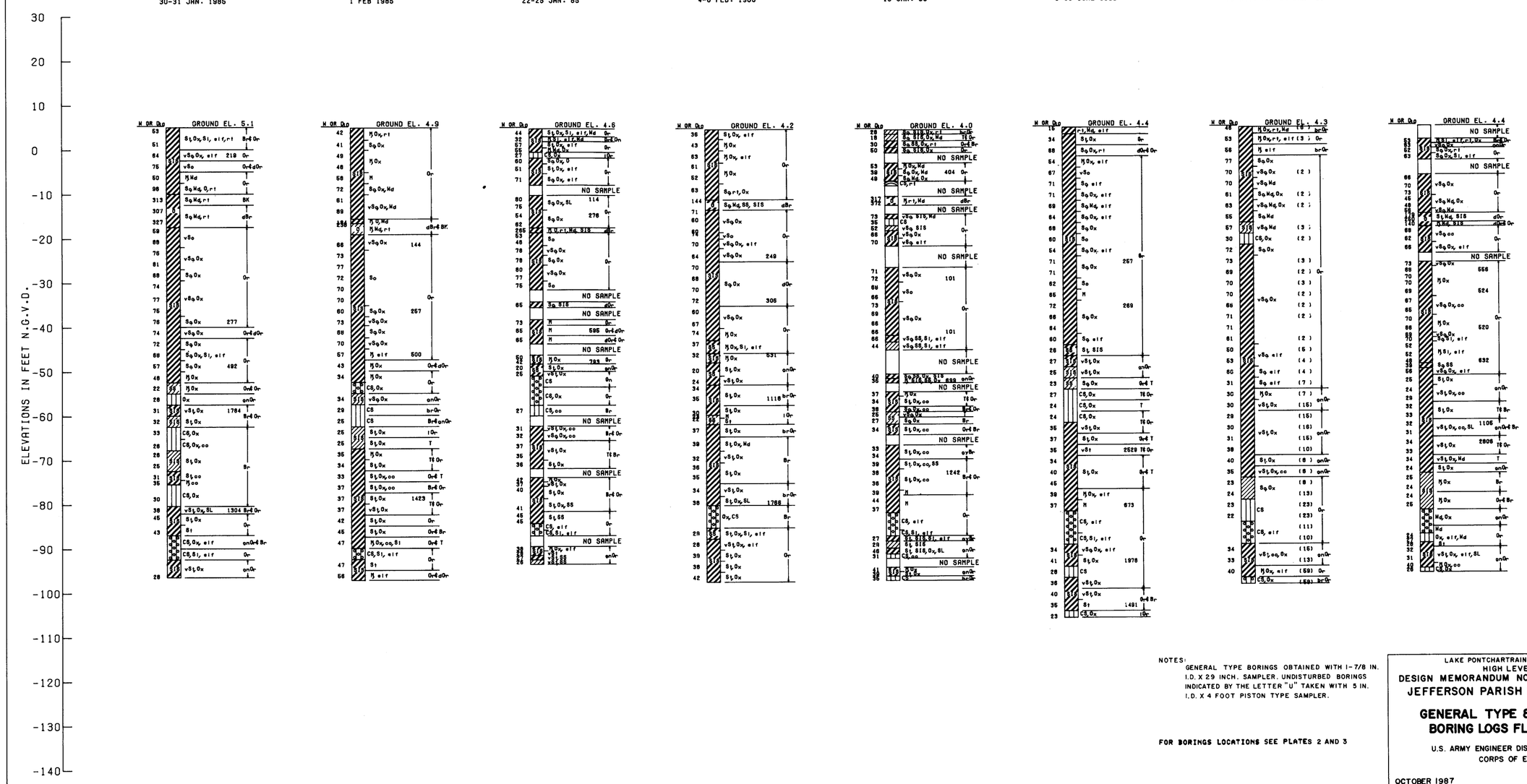
FOR BORINGS LOCATIONS SEE PLATES 2 THRU 9

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING LOGS
EXISTING LEVEE C/L

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

OCTOBER 1987 FILE NO. H-2-30148



NOTES:
GENERAL TYPE BORINGS OBTAINED WITH 1-7/8 IN. I.D. X 29 INCH. SAMPLER. UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON TYPE SAMPLER.

FOR BORINGS LOCATIONS SEE PLATES 2 AND 3

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

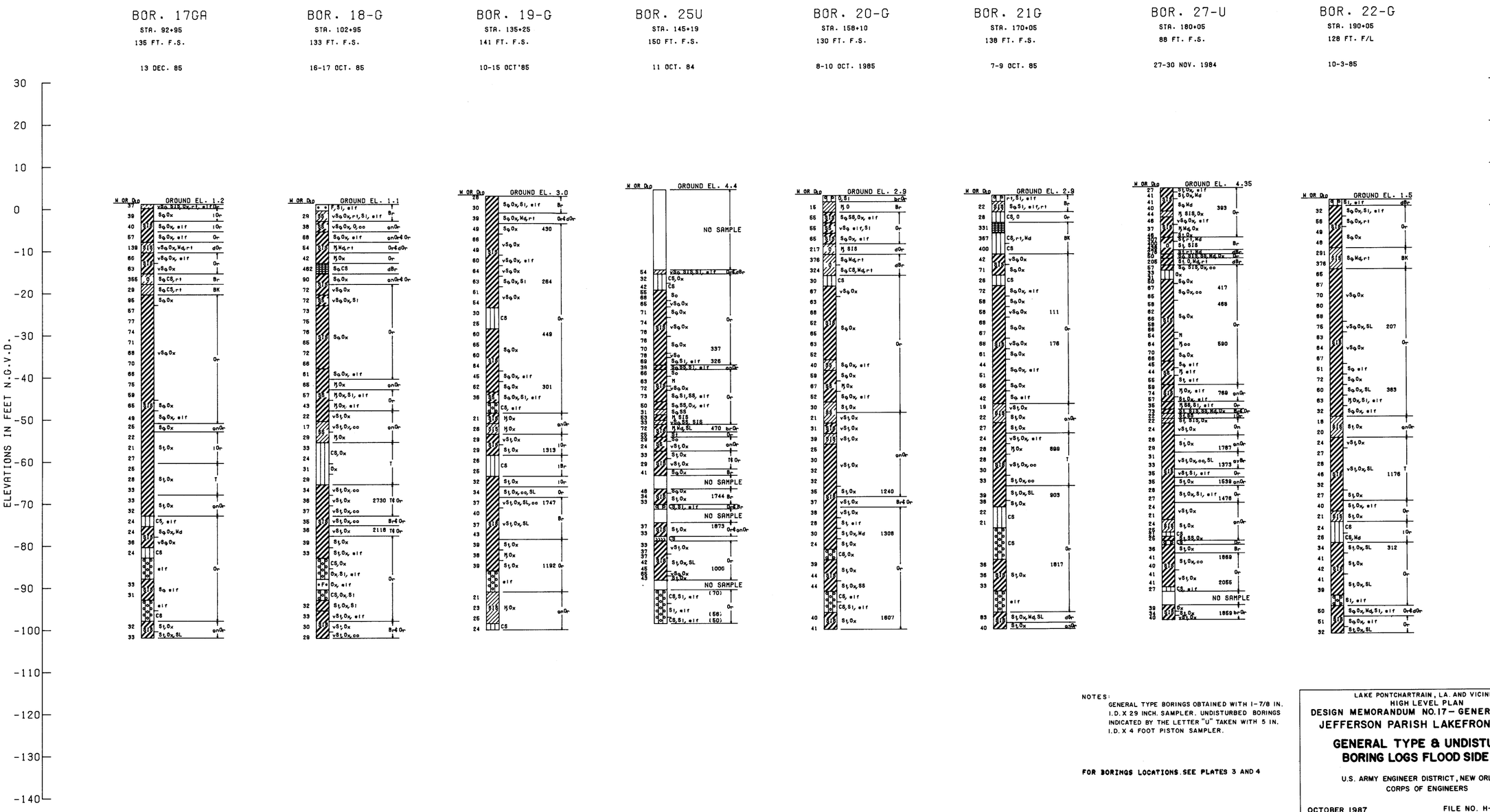
GENERAL TYPE & UNDISTURBED BORING LOGS FLOOD SIDE TOE

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

OCTOBER 1987

FILE NO. H-2-30148

PLATE 108



NOTES:
GENERAL TYPE BORINGS OBTAINED WITH 1-7/8 IN. I.D. X 29 INCH. SAMPLER. UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON SAMPLER.

FOR BORINGS LOCATIONS SEE PLATES 3 AND 4

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 – GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

GENERAL TYPE & UNDISTURBED BORING LOGS FLOOD SIDE TOE

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 109

BOR. 23-G
STA. 200+05
127 FT. F.S.
1-2 OCT '85

BOR. 24-G
STA. 234+10
117 FT. F.S.
26 SEPT. 85

BOR. 25-G
STA. 244+16
118 FT. F.S.
17 MAY 1985

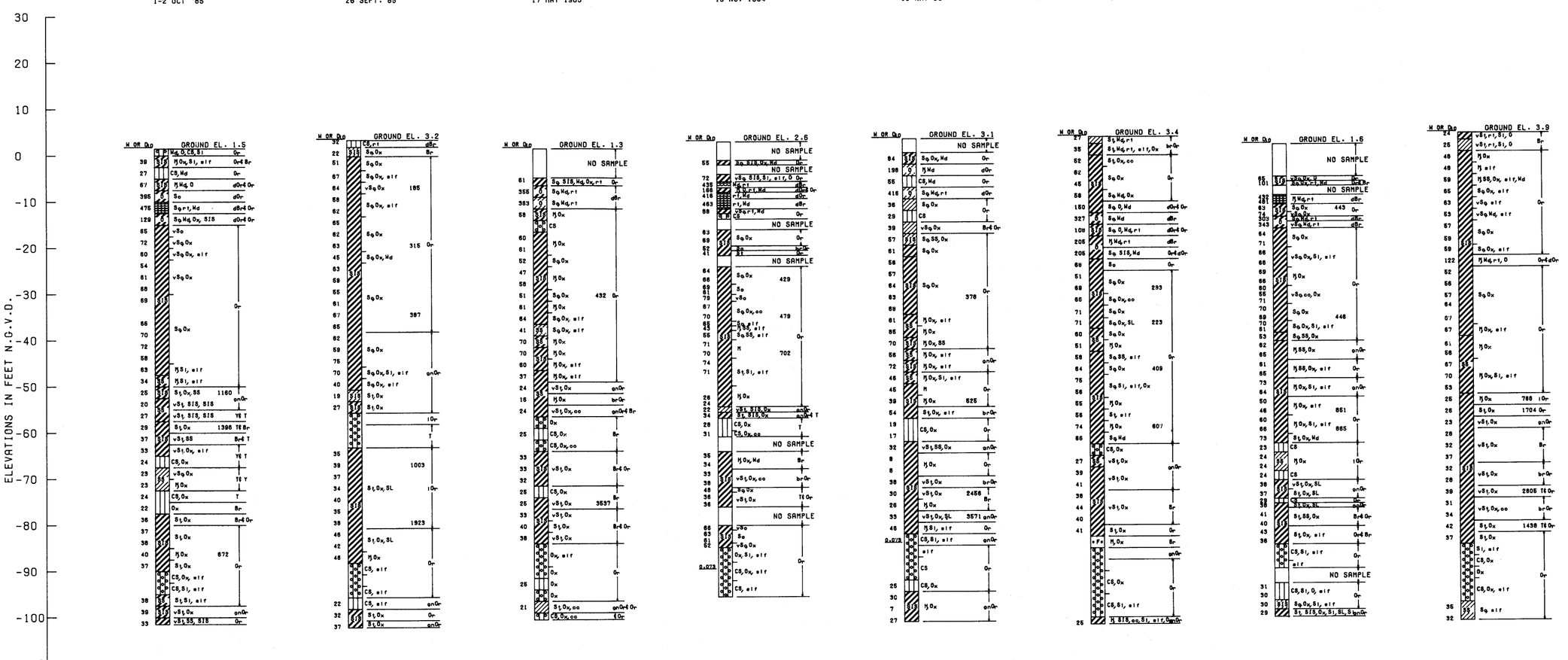
BOR. 31-U
STA. 254+10
120 FT. F.S.
19 NOV 1984

BOR. 26-G
STA. 264+10
120 FT. F.S.
16 MAY 85

BOR. 27-G
STA. 274+10
100 FT. F.S.
23-24 SEP 85

BOR. 34-U
STA. 284+10
135 FT. F.S.
13-16 NOV. 1984

BOR. 28-G
STA. 294+10
98 FT. F.S.
18-19 SEP. 85



NOTES:
GENERAL TYPE BORINGS OBTAINED WITH 1-7/8 IN. I.D. X 29 INCH SAMPLER. UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON TYPE SAMPLER.

FOR BORINGS LOCATIONS SEE PLATES 4 THRU 6

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

GENERAL TYPE & UNDISTURBED BORING LOGS FLOOD SIDE TOE

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

OCTOBER 1987

FILE NO. H-2-30148

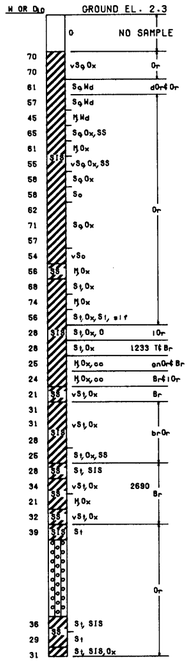
PLATE 110

BOR. 29-G

STA. 303+95

132 FT. F.S.

15 MAY 1985

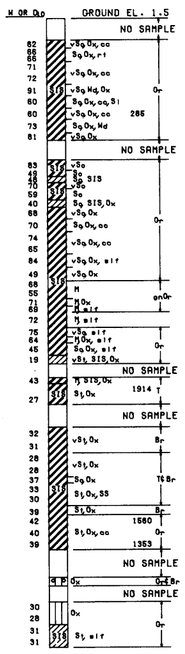


BOR. 36U

STA. 317+75

110 FT. F.S.

6-7 NOV. 84

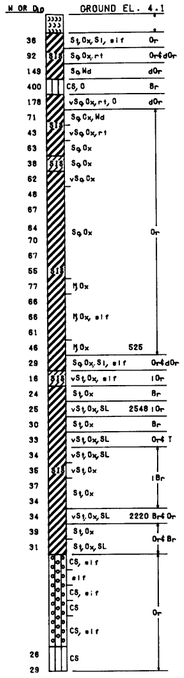


BOR. 30-G

STA. 324+15

132 FT. F.S.

10 MAY 1985

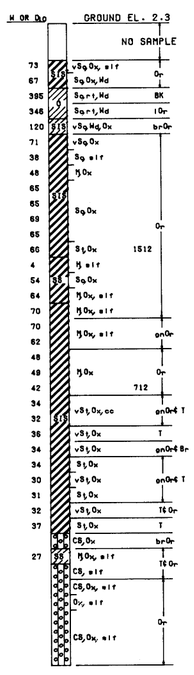


BOR. 31-G

STA. 334+15

131 FT. F.S.

13-14 MAY 1985

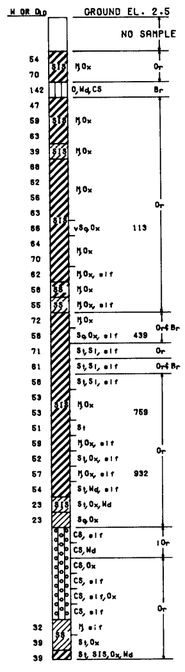


BOR. 32-G

STA. 344+20

110 FT. F.S.

8 MAY 85

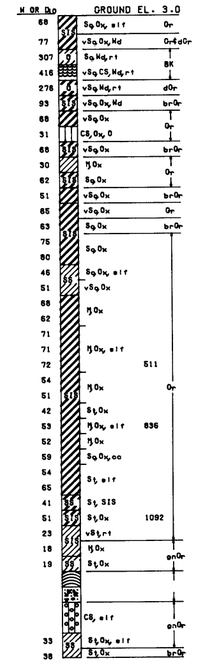


BOR. 33-G

STA. 363+52

130 FT. F.S.

7 MAY 1985

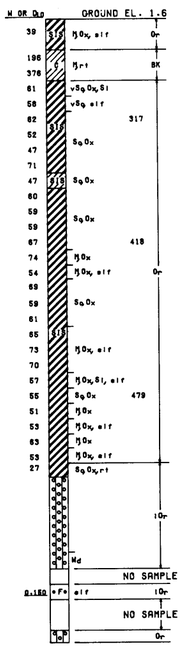


BOR. 34-G

STA. 373+50

130 FT. F.S.

1-6 NOV. 84



ELEVATIONS IN FEET N.G.V.D.

30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100 -110 -120 -130 -140

ELEVATIONS IN FEET N.G.V.D.

30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100 -110

NOTES :

GENERAL TYPE BORINGS OBTAINED WITH I-7/8 IN. I.D.X 29 INCH. SAMPLER. UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON SAMPLER.

FOR BORINGS LOCATIONS SEE PLATES 6 AND 7

LAKE PONTCHARTRAIN, LA. AND VICINITY

HIGH LEVEL PLAN

DESIGN MEMORANDUM NO.17 – GENERAL DESIGN

JEFFERSON PARISH LAKEFRONT LEVEE

GENERAL TYPE & UNDISTURBED BORING LOGS FLOOD SIDE TOE

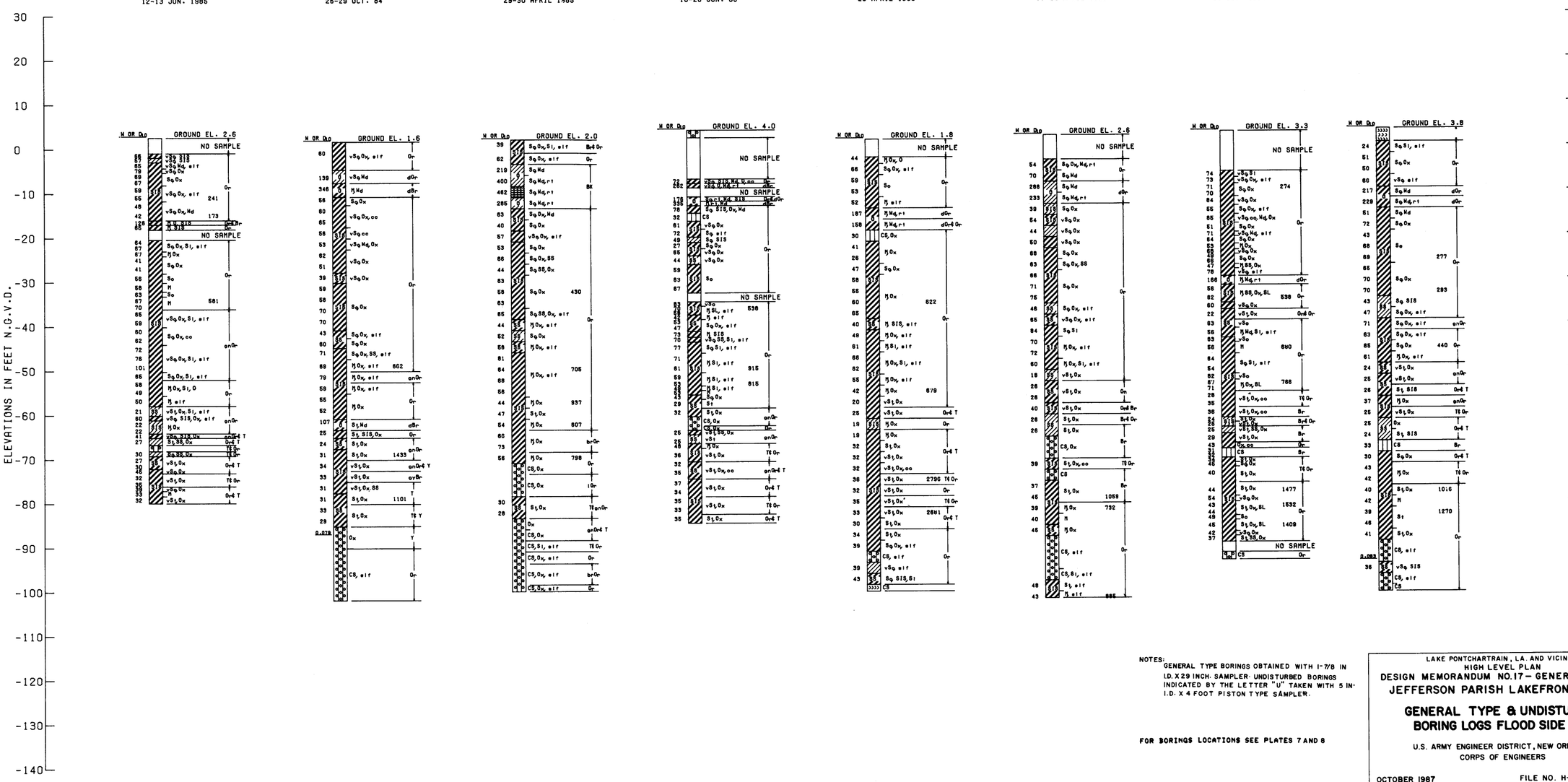
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS

CORPS OF ENGINEERS

OCTOBER 1987

FILE NO. H-2-30148

PLATE III



NOTES:
GENERAL TYPE BORINGS OBTAINED WITH 1-7/8 IN I.D. X 29 INCH SAMPLER. UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON TYPE SAMPLER.

FOR BORINGS LOCATIONS SEE PLATES 7 AND 8

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

GENERAL TYPE & UNDISTURBED BORING LOGS FLOOD SIDE TOE

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

OCTOBER 1987 FILE NO. H-2-30148

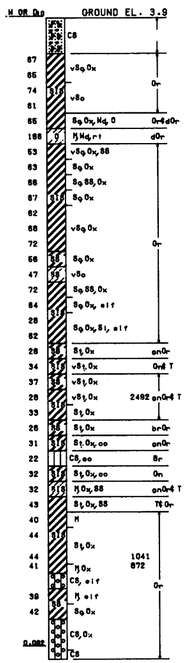
PLATE 112

BOR. 40-G

STA. 458+58

109 FT. F.S.

8-9 APRIL 1985

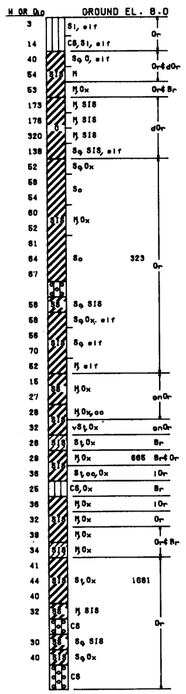


BOR. 41-G

STA. 480+45

73 FT. F.S.

2 APRIL 1985

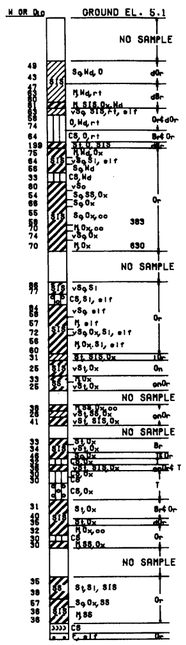


BOR. 49-U

STA. 492+00

85 FT. F.S. OF B/L

9-19 NOV. 1984

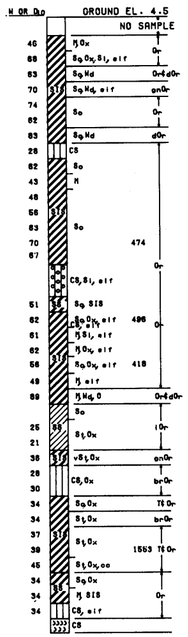


BOR. 42-G

STA. 500+45

130 FT. F.S.

26 MAR. 85

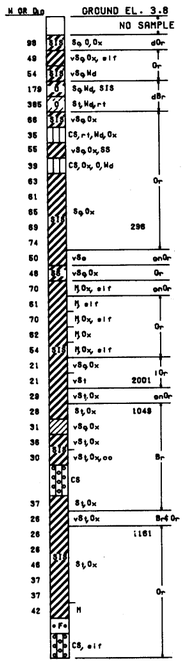


BOR. 43-G

STA 510+45

93 FT. F.S.

27 MARCH 1985

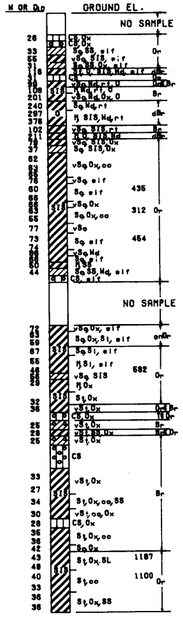


BOR. 50-U

STA. 521+20

130 FT. F.S.

28-29 NOV. 84

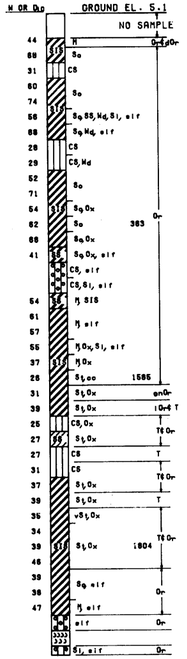


BOR. 44-G

STA. 531+15

105 FT. F.S.

11 APRIL 1985

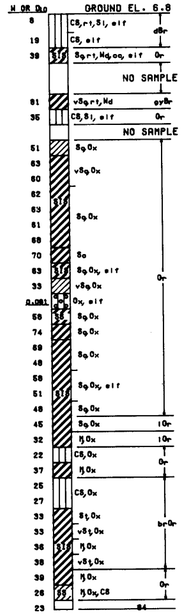


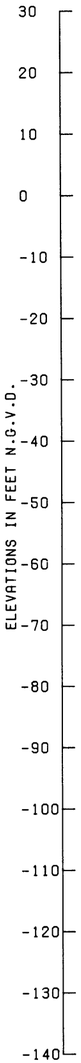
BOR. 45G

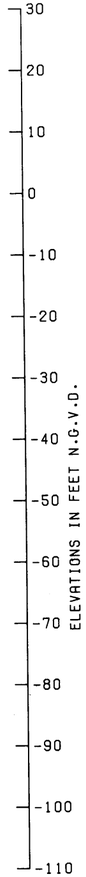
STA. 541+15

130 FT. F.S.

13-15 MAR. 85







NOTES:

GENERAL TYPE BORINGS OBTAINED WITH 1-7/8 IN. I.D. X 29 INCH. SAMPLER UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON TYPE SAMPLER.

FOR BORINGS LOCATIONS SEE PLATES 8 AND 9

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

GENERAL TYPE & UNDISTURBED BORING LOGS FLOOD SIDE TOE

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

OCTOBER 1987

FILE NO. H-2-30148

PLATE 113

BOR. 15-U
STA. 22+96
800 FT. F.S. B/L
22 MAY 1985

BOR. 21-U
STA. 82+50
655 FT. F.S. OF B/L
21 MAY 1985

BOR. 26-U
STA. 145+30
755 FT. F.S. OF B/L
16-17 MAY 85

BOR. 30-U
STA. 223+85
70 FT. F.S. OF B/L
12-13 MARCH 1985

BOR. 35-U
STA. 284+10
580 FT. F.S. OF B/L
7-8 MARCH 1985

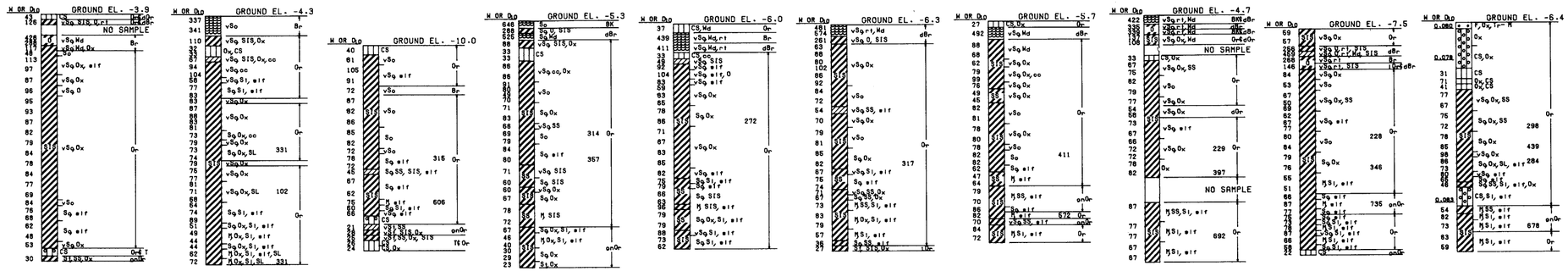
BOR. 37U
STA. 314+75
755 FT. F.S. OF B/L
6-7 MARCH 1985

BOR. 41-U
STA. 383+50
763 FT. F.S. OF B/L
1-5 MARCH 1985

BOR. 43-U
STA. 413+69
805 FT. F.S. OF B/L
25-26 FEB. 1985

BOR. 46-U
STA. 448+58
1080 FT. F.S. OF B/L
21-22 FEB. 85

BOR. 51-U
STA. 521+20
960 FT. F.S. OF B/L
13-20 FEB. 85



ELEVATIONS IN FEET N.G.V.D.

30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100 -110 -120 -130 -140

NOTES:
GENERAL TYPE BORINGS OBTAINED WITH 1-7/8 IN I.D. X 29 INCH SAMPLER. UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON TYPE SAMPLER.

FOR BORINGS LOCATIONS SEE PLATES 2 THRU 9

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 – GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

UNDISTURBED BORING LOCATED IN THE LAKE

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 114

BOR. 1-BG
STA. 22+86
3070 FT. F.S. OF B/L
3 APRIL 1985

BOR. 2-BG
STA. 53+62
3070 FT. F.S. OF B/L
29 MAR. 85

BOR. 3-BG
STA. 82+60
3065 FT. F.S. OF B/L
27 MAR. 85

BOR. 4BG
STA. 112+85
3060 FT. F.S. OF B/L
3-25-85

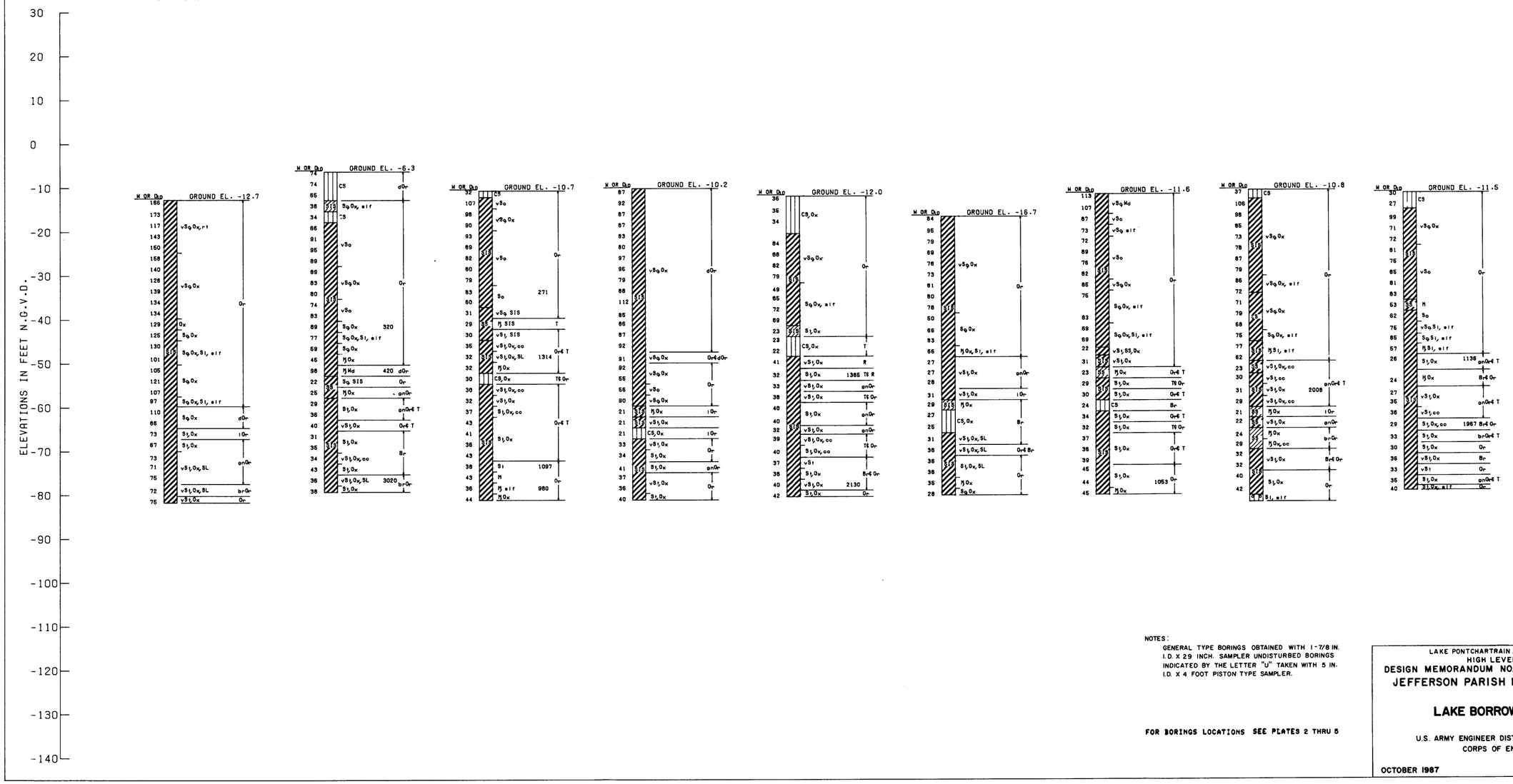
BOR. 5BG
STA. 145+30
3050 FT. F.S. OF B/L
21 MAR 1985

BOR. 6-BG
STA. 179+12
3067 FT. F.S. OF B/L
15 MAR. 1985

BOR. 7 BG
STA. 223+58
3065 FT. F.S. OF B/L
13-14 APRIL 1985

BOR. 8-BG
STA. 253+91
3065 FT. F.S. OF B/L
4-5 APRIL 1985

BOR. 9 BG
STA. 284+22
3065 FT. F.S. OF B/L
16 APRIL 1985



NOTES:
GENERAL TYPE BORINGS OBTAINED WITH 1-7/8 IN. I.D. X 29 INCH. SAMPLER UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON TYPE SAMPLER.

FOR BORINGS LOCATIONS SEE PLATES 2 THRU 5

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

LAKE BORROW BORINGS

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

OCTOBER 1987 FILE NO. H-2-30148

BOR. 8-BG
STA. 253+91
3065 FT. F.S. OF B/L
4-5 APRIL 1985

BOR. 9 BG
STA. 284+22
3065 FT. F.S. OF B/L
16 APRIL 1985

BOR. 10BG
STA. 314+15
3050 FT. F.S. OF B/L
17 APRIL 1985

BOR. 11BG
STA. 343+95
3060 FT. F.S. OF B/L
18 APR. 85

BOR. 12BG
STA. 383+86
3060 FT. F.S. OF B/L
19 APRIL 1985

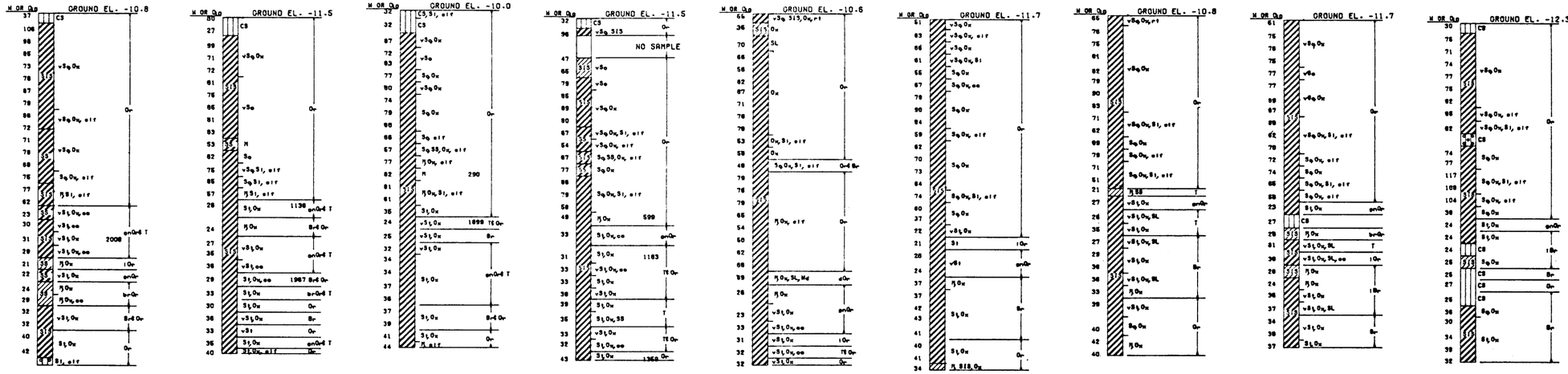
BOR. 13-BG
STA. 413+69
3050 FT. F.S. OF B/L
23 APRIL 1985

BOR. 14BG
STA. 458+85
3060 FT. F.S. OF B/L
24 APRIL 1985

BOR. 15 BG
STA. 413+69
3075 FT. FS. OF B/L
25 APR. 85

BOR. 16 BG
STA. 513+16
3050 FT F.S. OF B/L
26 APR. 85

ELEVATIONS IN FEET N.G.V.D.



FOR BORINGS LOCATIONS SEE PLATES 6 THRU 9

BOR. 4-S
RANGE 1
8000 FT. SOUTH
4 AUG 72

BOR. 3-S
RANGE 1
8000 FT. SOUTH
WATER TABLE AT 5.0
4 AUG 72

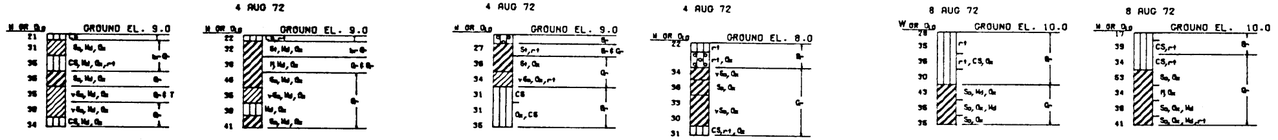
BOR. 9-S
RANGE 2
10000 FT. SOUTH
WATER TABLE 7.5 FEET
4 AUG 72

BOR. 8-S
RANGE 2
8000 FT. SOUTH
WATER TABLE 4.0 FEET
4 AUG 72

BOR. 14-S
RANGE 3
10000 FT. SOUTH
WATER TABLE 5.0 FT.
8 AUG 72

BOR. 13-S
RANGE 3
8000 FT. SOUTH
WATER TABLE 2.5 FT.
8 AUG 72

ELEVATIONS IN FEET M.S.L.



NOTES:
GENERAL TYPE BORINGS OBTAINED WITH 1-7/8 IN. I.D. X 29 INCH SAMPLER UNDISTURBED BORINGS INDICATED BY THE LETTER "U" TAKEN WITH 5 IN. I.D. X 4 FOOT PISTON TYPE SAMPLER.

FOR BORINGS LOCATIONS SEE PLATE 46

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

LAKE BORROW BORINGS

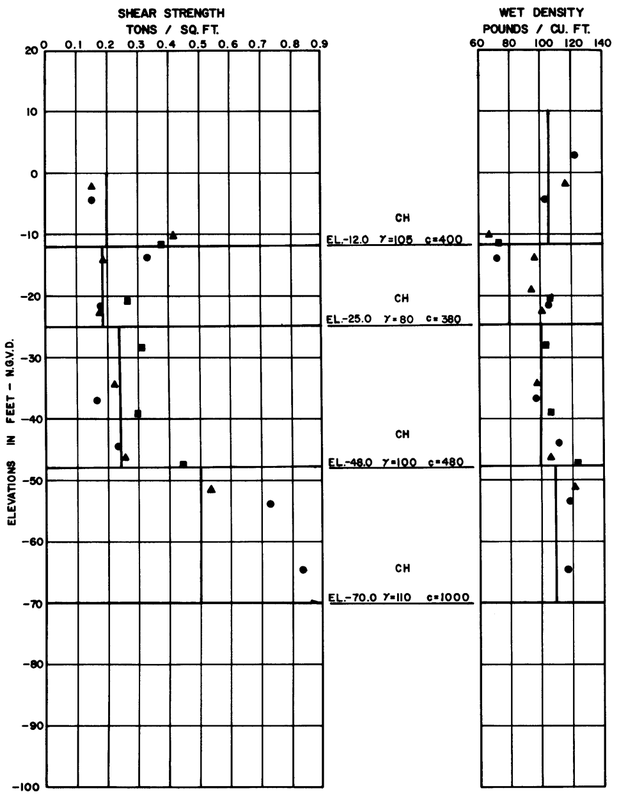
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 116

STA. 0+00 TO STA. 185+00

REACH A

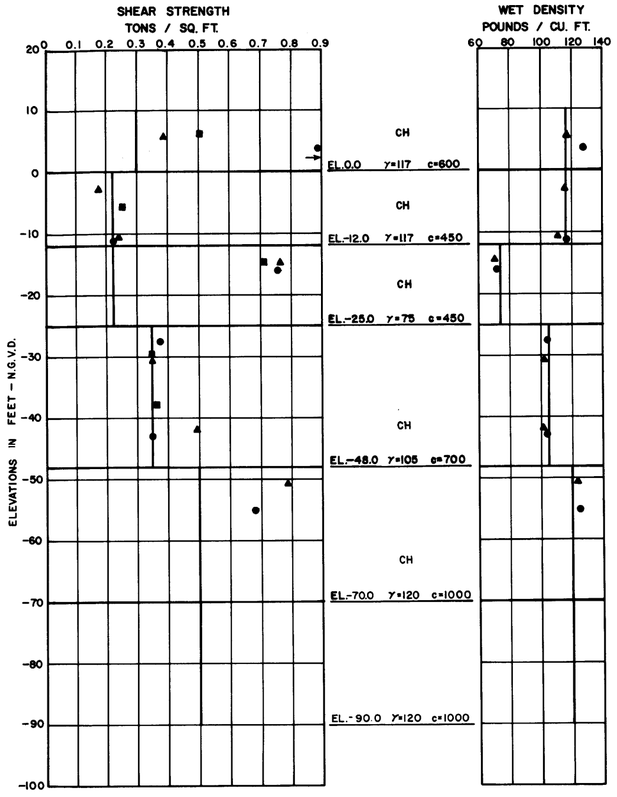


BORING LEGEND:

● 17-U ■ 24-U
▲ 22-U

PROTECTED SIDE

FOR BORINGS LOCATIONS SEE PLATES 2 THRU 4

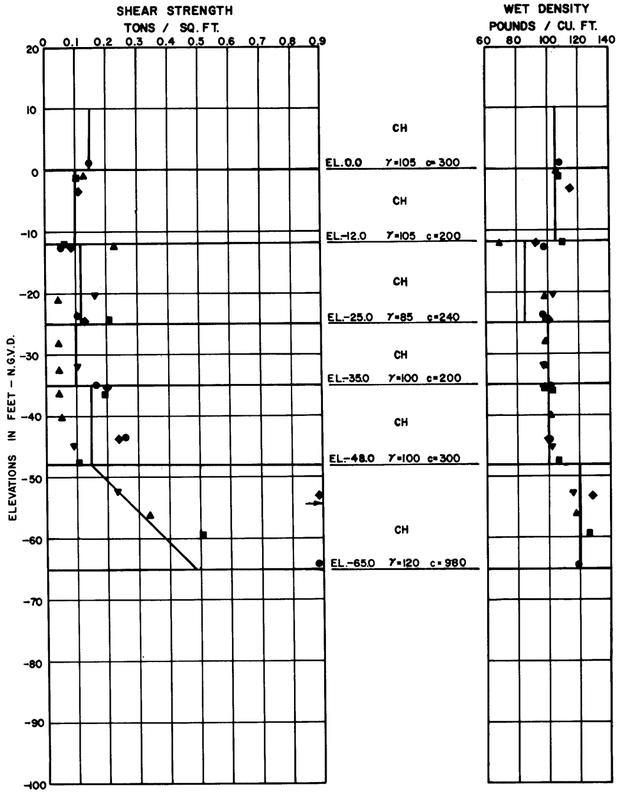


BORING LEGEND:

● 18-U ■ 28-U
▲ 23-U

CENTER LINE

FOR BORINGS LOCATIONS SEE PLATES 2 THRU 4



BORING LEGEND:

● 16-U ■ 20-U ◆ 27-U
▲ 19-U ▼ 25-U

FLOOD SIDE

FOR BORINGS LOCATIONS SEE PLATES 2 THRU 4

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

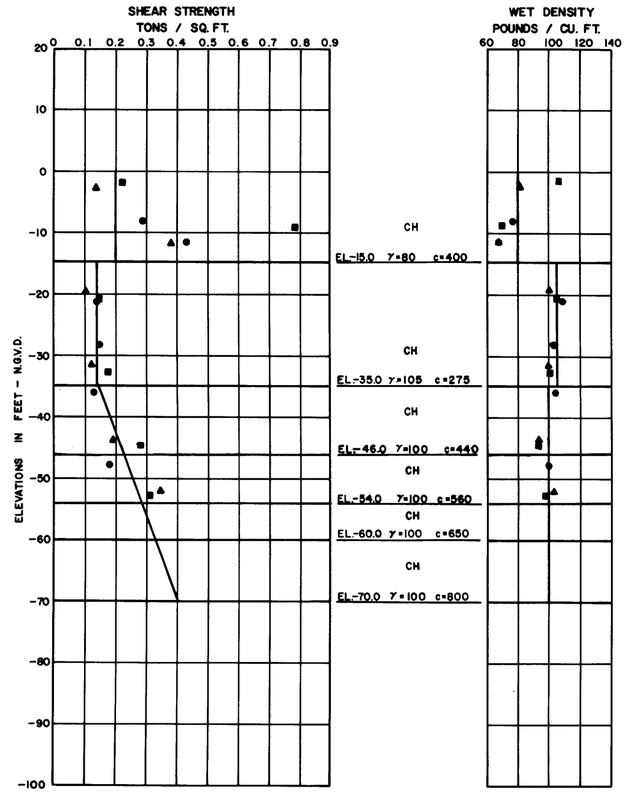
SOIL DESIGN PARAMETERS REACH A

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

OCTOBER 1987 FILE NO. H-2-30148

STA. 185+00 TO STA. 343+95

REACH B

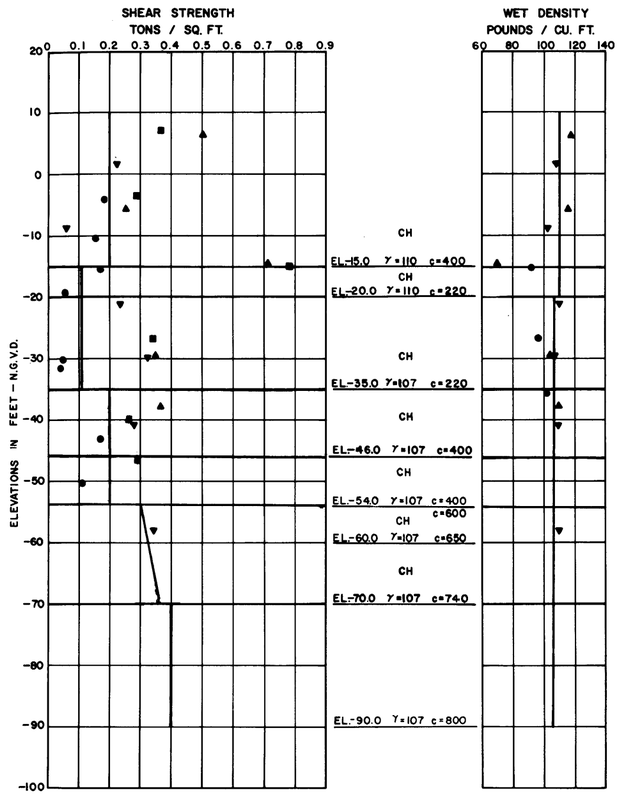


BORING LEGEND:

- ● 29-U
- ■ 38-U
- ▲ 33-U

PROTECTED SIDE

FOR BORINGS LOCATIONS SEE PLATE

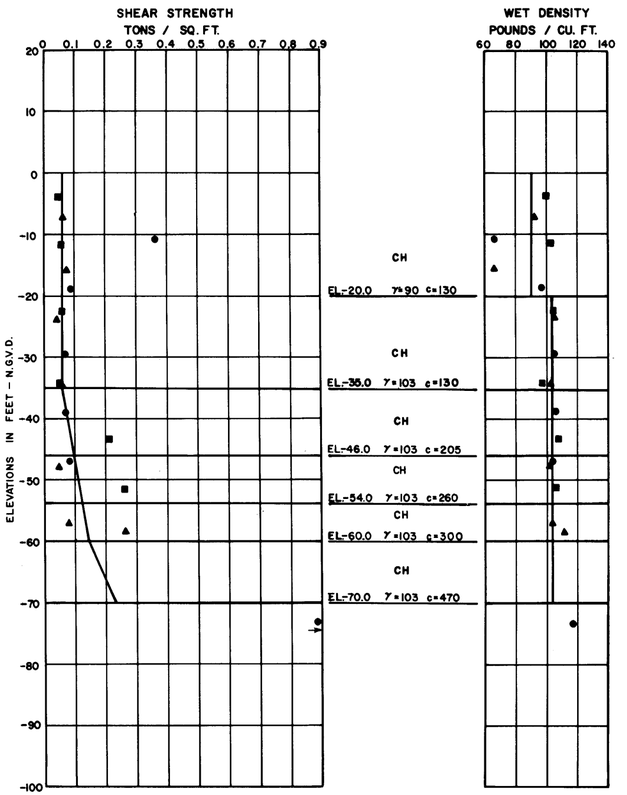


BORING LEGEND:

- ● 26-GU
- ■ 32-U
- ▲ 28-U
- ▼ 39-U

CENTER LINE

FOR BORINGS LOCATIONS SEE PLATE



BORING LEGEND:

- ● 31-U
- ■ 36-U
- ▲ 34-U

FLOOD SIDE

FOR BORINGS LOCATIONS SEE PLATES 5 AND 6

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

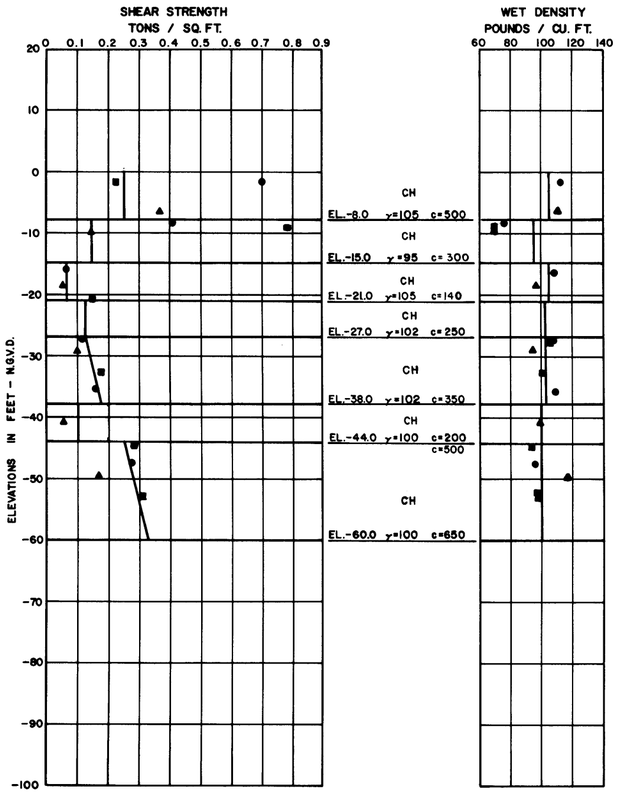
SOIL DESIGN PARAMETERS
REACH B

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

OCTOBER 1987 FILE NO. H-2-30148

STA. 343+95 TO STA. 549+42.9

REACH C

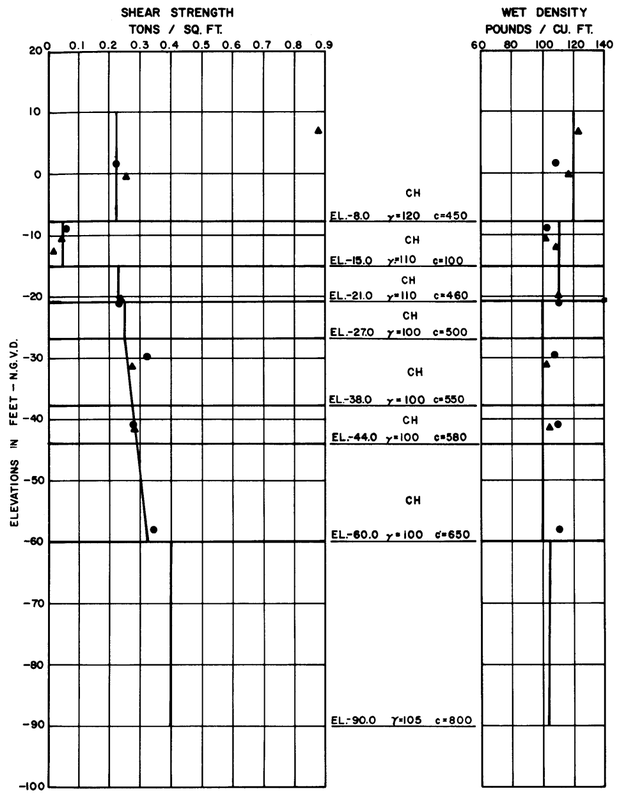


BORING LEGEND:

● 44-U ■ 38-U
▲ 47-U

PROTECTED SIDE

FOR BORINGS LOCATIONS SEE PLATE

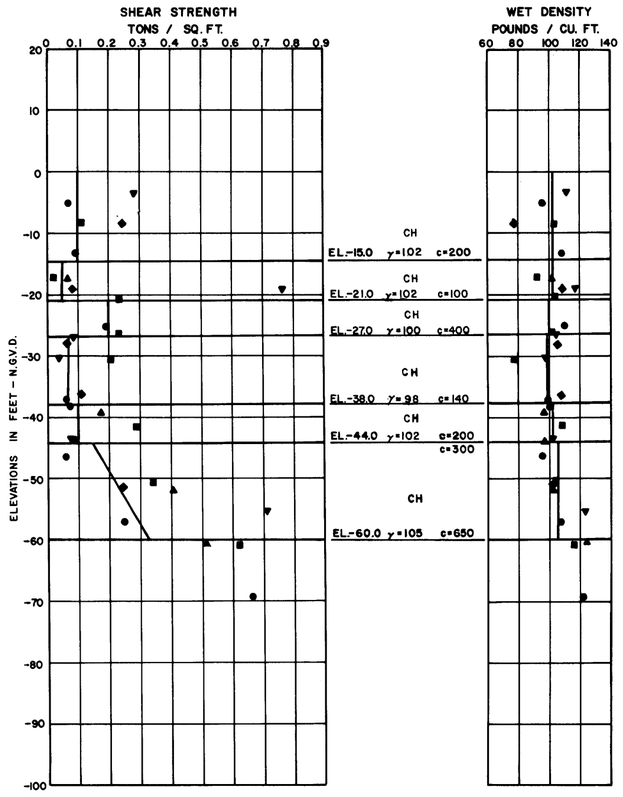


BORING LEGEND:

● 39-U
▲ 48-U

CENTER LINE

FOR BORINGS LOCATIONS SEE PLATE



BORING LEGEND:

● 40-U ■ 45-U ◆ 50-U
▲ 42-U ▼ 49-U

FLOOD SIDE

FOR BORINGS LOCATIONS SEE PLATES 7 THRU 9

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

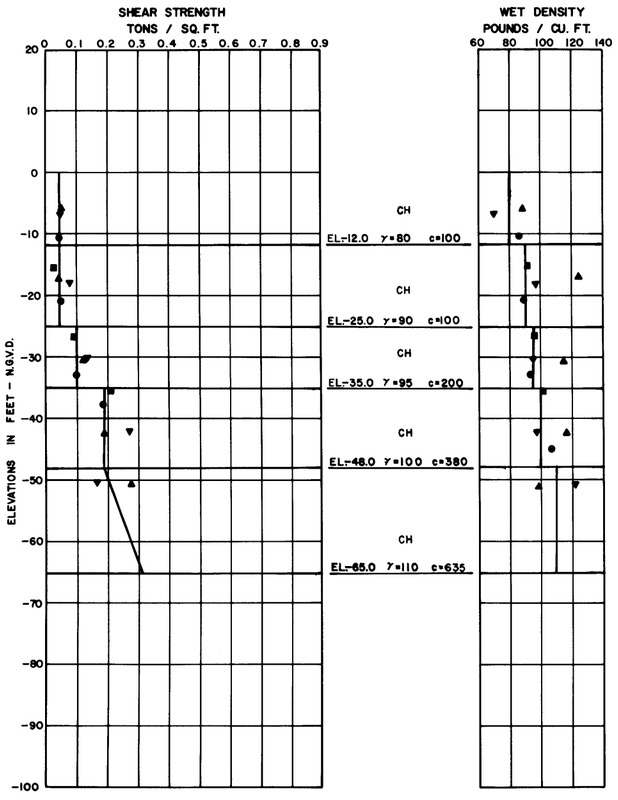
SOIL DESIGN PARAMETERS
REACH C

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

OCTOBER 1987 FILE NO. H-2-30148

STA. 0+00 TO STA. 185+00

REACH A



BORING LEGEND:

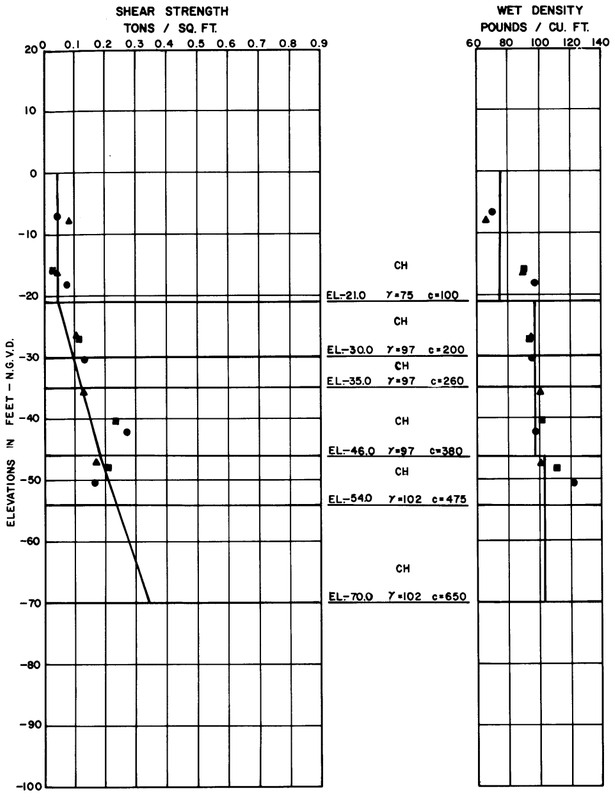
● 15-U ■ 26-U
▲ 21-U ▼ 30-U

LAKE

FOR BORINGS LOCATIONS SEE PLATES 2 THRU 5

STA. 185+00 TO STA. 343+95

REACH B



BORING LEGEND:

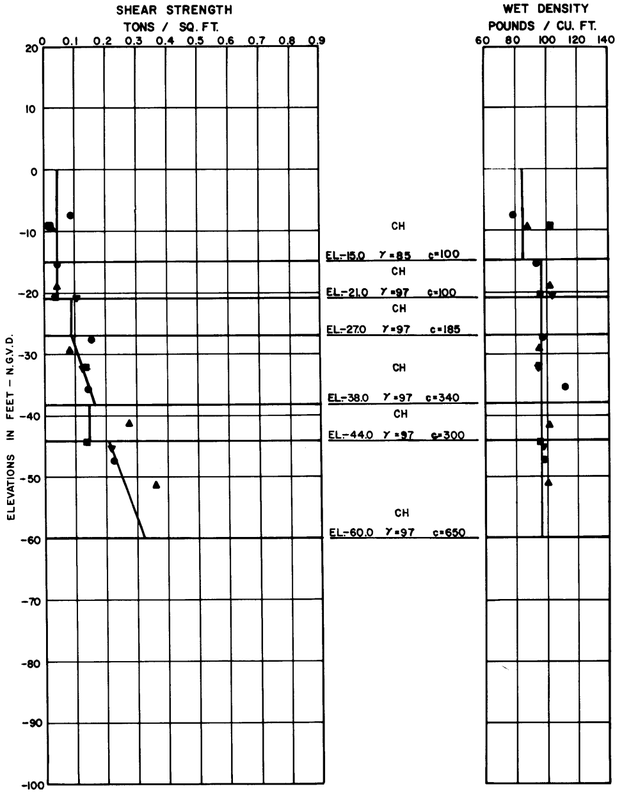
● 30-U ■ 37-U
▲ 35-U

LAKE

FOR BORINGS LOCATIONS SEE PLATES 5 AND 6

STA. 343+95 TO STA. 549+42.9

REACH C



BORING LEGEND:

● 41-U ■ 46-U
▲ 43-U ▼ 51-U

LAKE

FOR BORINGS LOCATIONS SEE PLATES 7 THRU 9

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 – GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

SOIL DESIGN PARAMETERS REACHES, A, B & C IN THE LAKE

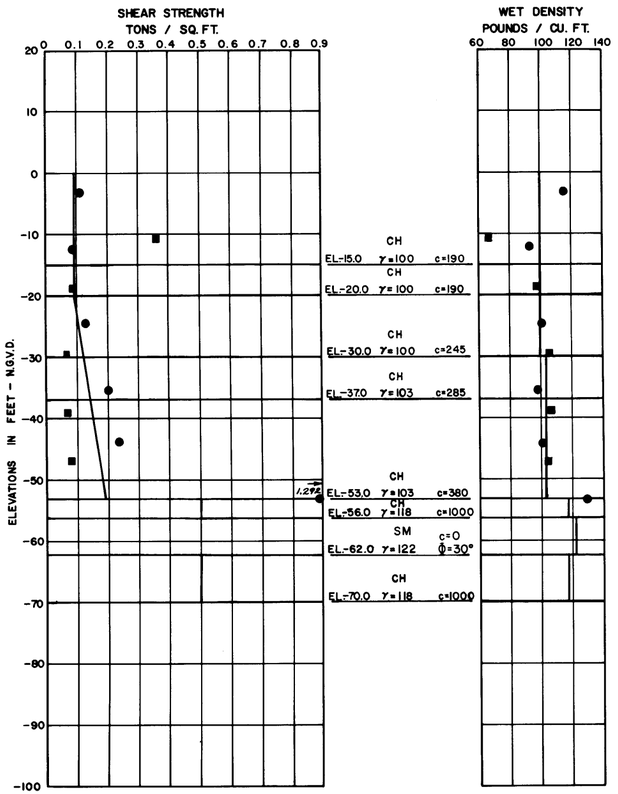
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 120

PUMPING STATION NO. 3

FLOOD SIDE



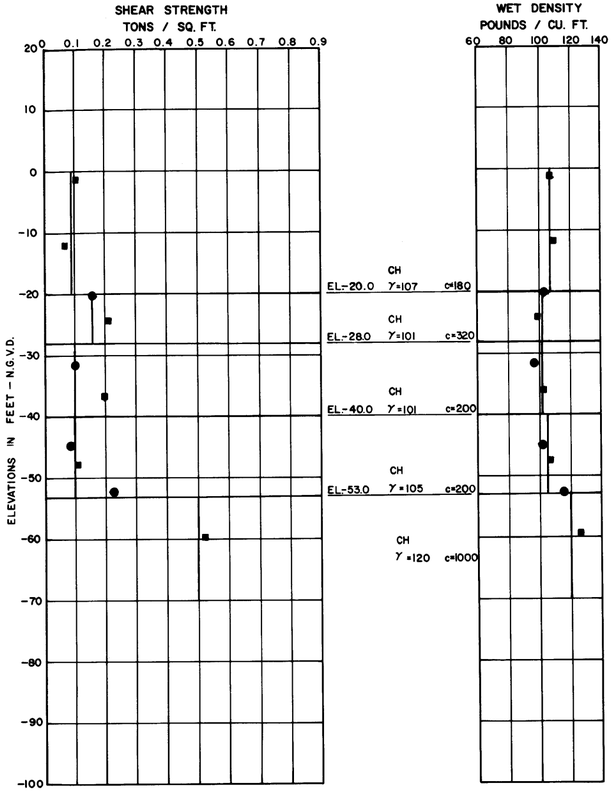
BORING LEGEND:

27-U=● 31-U=■

FOR BORINGS LOCATIONS SEE PLATES 4 AND 5

PUMPING STATION NO. 4

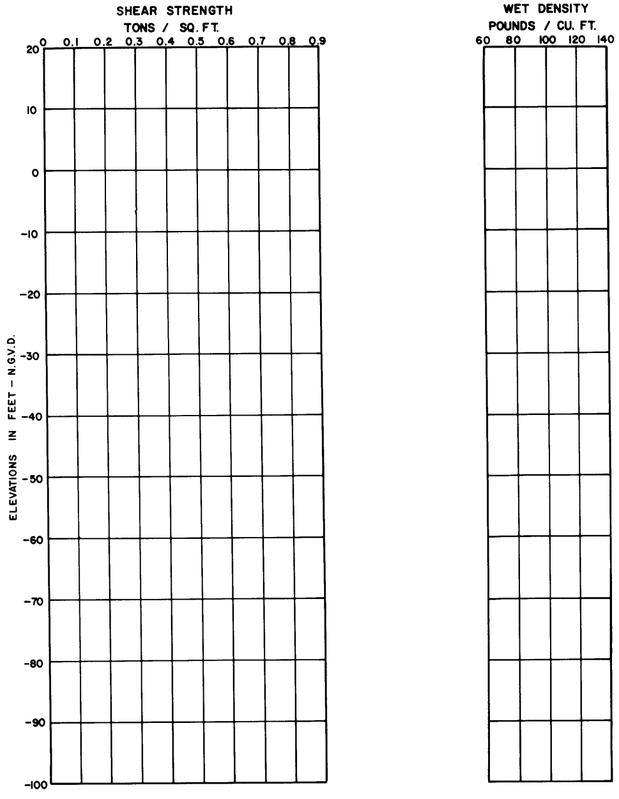
FLOOD SIDE



BORING LEGEND:

20-U=■ 25-U=●

FOR BORINGS LOCATIONS SEE PLATES 3 AND 4



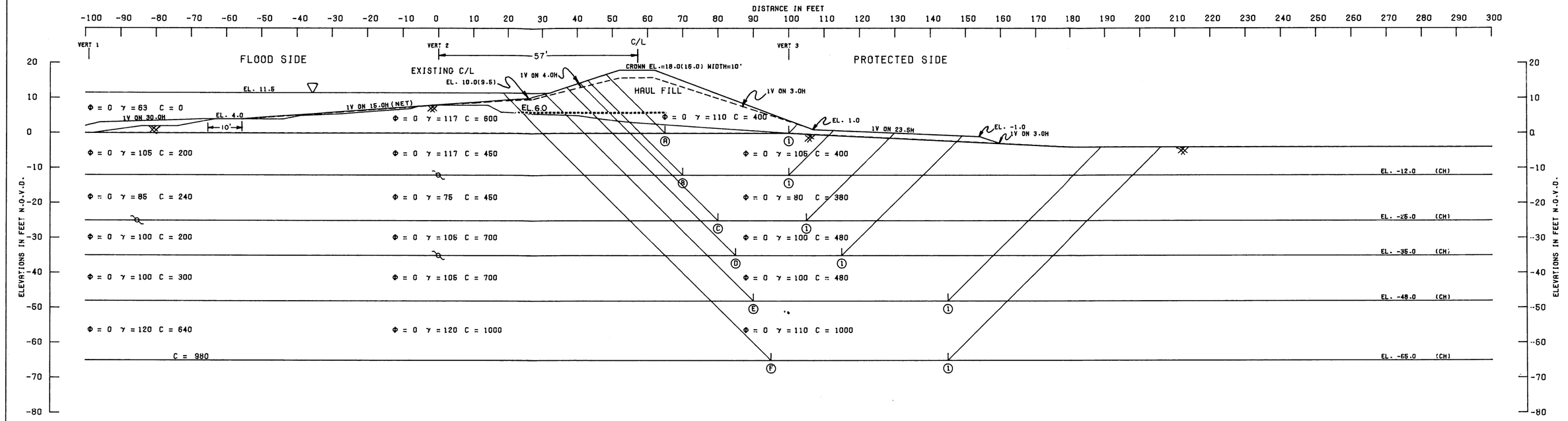
BORING LEGEND:

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

SOIL DESIGN PARAMETERS
FLOOD SIDE PUMPING STAS. 3 & 4

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

OCTOBER 1987 FILE NO. H-2-30148



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 117

CROWN ELEVATION LISTED AS GROSS(NET).

GEOTEXTILE WILL BE USED IN THIS SECTION TO OBTAIN A FACTOR OF SAFETY OF 1.3. FOR DESIGN OF THE REINFORCEMENT TEXTILE SEE APPENDIX. B2

GEOTEXTILE ----------

ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
(R)	(1)	0.0	13792	14306	2115	17291	529	30213	16762	1.80
(B)	(1)	-12.0	22624	11715	10204	46156	9887	44543	36269	1.23
(C)	(1)	-25.0	32543	9640	19495	88915	32396	61678	56519	1.09
(D)	(1)	-35.0	42407	14647	28441	130415	58670	85495	71745	1.19
(E)	(1)	-48.0	55297	26510	38360	197711	96150	120167	101561	1.18
(F)	(1)	-65.0	89981	60000	72360	311290	183103	212341	128187	1.66

NOTES

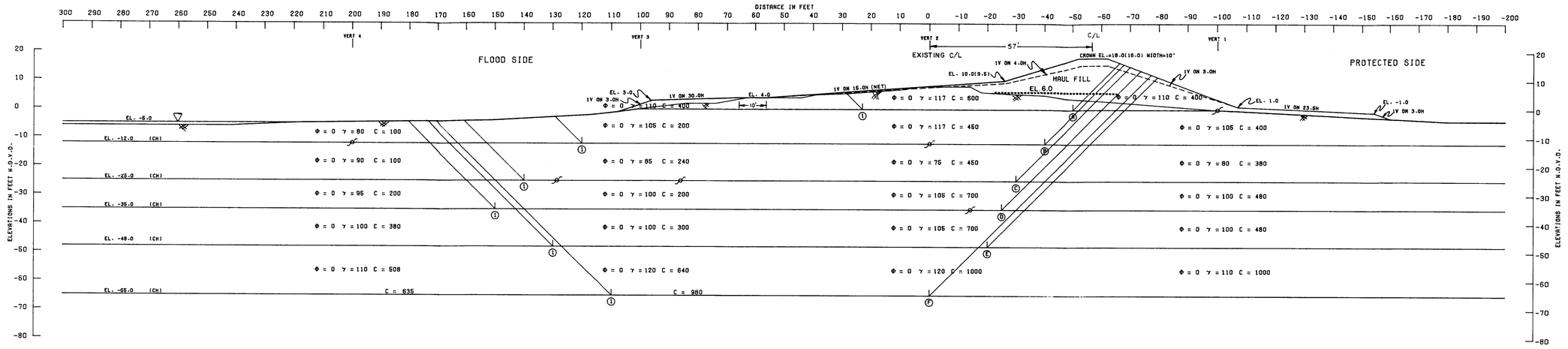
Φ --- ANGLE OF INTERNAL FRICTION, DEGREES
C --- UNIT COHESION, P.S.F.
▽ --- STATIC WATER SURFACE
D --- HORIZONTAL DRIVING FORCE IN POUNDS
R --- HORIZONTAL RESISTING FORCE IN POUNDS
A --- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B --- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P --- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17— GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
REACH A
PROTECTED SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 122



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL HERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 117, 120.
CROWN ELEVATION LISTED AS GROSS(NET).

GEOTEXTILE WILL BE USED IN THIS SECTION TO OBTAIN A FACTOR OF SAFETY OF 1.3 FOR FAILURE TOWARD THE PROTECTED SIDE.

GEOTEXTILE **********

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
(A) (1)	0.0	13761	31564	6124	17212	2172	51449	15040	3.42
(B) (1)	-12.0	23618	53739	3267	46277	4610	80514	41767	1.93
(C) (1)	-25.0	33784	55317	6787	89583	20293	95898	69290	1.38
(D) (1)	-35.0	45102	71810	9696	131924	42427	126598	89497	1.41
(E) (1)	-48.0	59282	72918	18632	201028	90100	150832	110928	1.36
(F) (1)	-65.0	94389	108627	39666	316042	182827	242682	133215	1.82

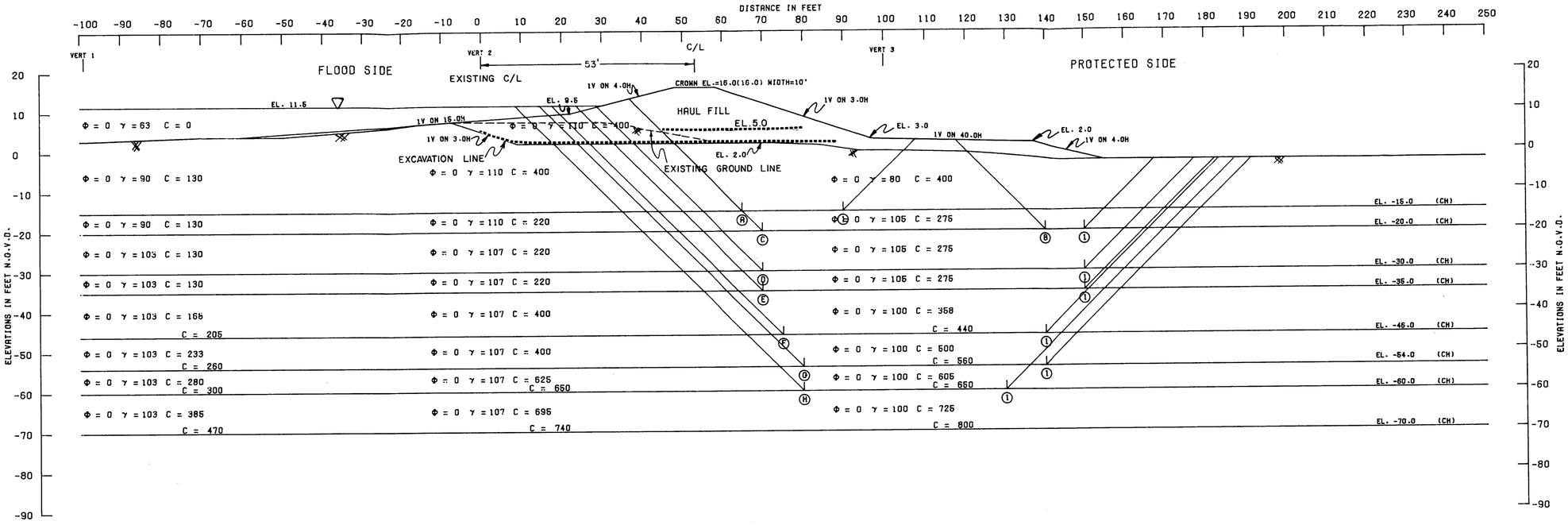
NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
REACH A
FLOOD SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
OCTOBER 1967 FILE NO. N-2-30148

PLATE 123



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 118

CROWN ELEVATION LISTED AS GROSS(NET).

GEOTEXTILE WILL BE USED IN THIS SECTION TO OBTAIN A FACTOR OF SAFETY OF 1.3. FOR DESIGN OF THE REINFORCEMENT TEXTILE SEE APPENDIX. B2

GEOTEXTILE ----------

ASSUMED FAILURE NO.	ASSUMED SURFACE ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
(A) (1)	-15.0	22561	6566	14185	47347	15239	43312	32108	1.35
(B) (1)	-20.0	16740	2750	12750	22083	12906	32240	9177	3.51
(C) (1)	-20.0	25132	21753	12750	62265	12906	59635	49359	1.21
(D) (1)	-30.0	28593	21753	18250	100202	33405	68596	66797	1.03
(E) (1)	-35.0	30282	21753	21000	122755	47592	73035	75163	0.97
(F) (1)	-46.0	37620	28475	28876	180596	90468	94971	90128	1.05
(G) (1)	-54.0	45045	33280	36876	229183	127267	115201	101916	1.13
(H) (1)	-60.0	51883	32500	44136	271312	163720	128519	107592	1.19

NOTES

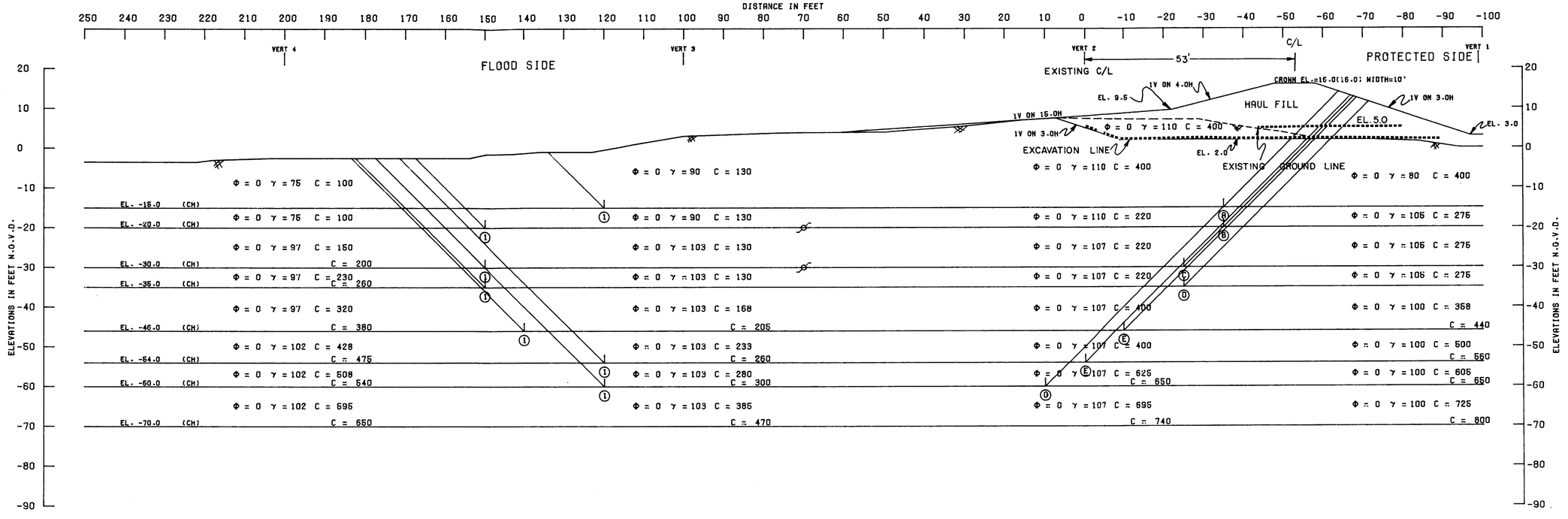
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
REACH B
PROTECTED SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 124



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 118,120

CROWN ELEVATION LISTED AS GROSS(NET).

GEOTEXTILE WILL BE USED IN THIS SECTION TO OBTAIN A FACTOR OF SAFETY OF 1.3. FOR DESIGN OF THE REINFORCEMENT TEXTILE SEE APPENDIX. B2

GEOTEXTILE ----------

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
(R) (1)	-15.0	23201	28080	3413	47742	8490	54694	39252	1.39
(B) (1)	-20.0	24610	31666	3933	63515	12618	60208	50897	1.18
(C) (1)	-30.0	29343	30549	6648	101861	31679	66540	70182	0.95
(D) (1)	-35.0	30780	31299	8441	124814	44845	70520	79969	0.88
(E) (1)	-46.0	40146	43870	13662	182696	84253	97678	98443	0.99
(F) (1)	-54.0	46985	38630	17695	232558	124682	103310	107876	0.96
(O) (1)	-60.0	54878	47654	22093	272822	155533	124625	117289	1.06

NOTES

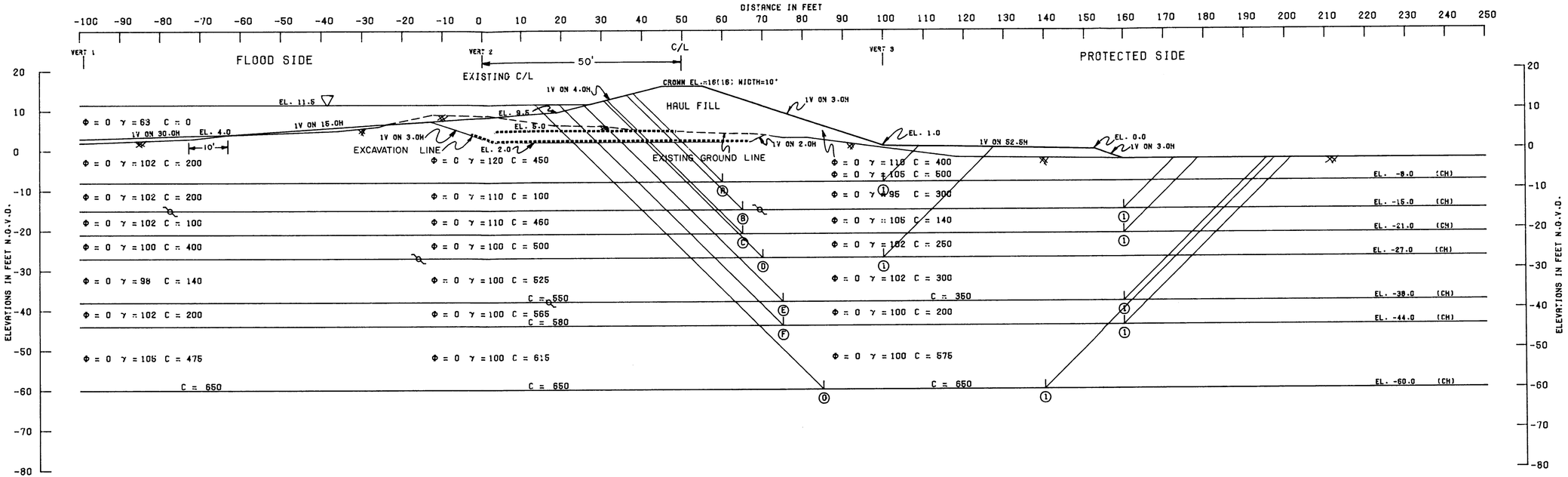
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
$\underline{\nabla}$ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
REACH B
FLOOD SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-50148

PLATE 125



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 119

CROWN ELEVATION LISTED AS GROSS(NET).

GEOTEXTILE WILL BE USED IN THIS SECTION TO OBTAIN A FACTOR OF SAFETY OF 1.3. FOR DESIGN OF THE REINFORCEMENT TEXTILE SEE APPENDIX. B2

GEOTEXTILE ▪▪▪▪▪▪▪▪▪▪▪▪▪

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
Ⓐ 1	-8.0	19311	10400	8548	30416	4216	38259	26199	1.46
Ⓑ 1	-15.0	22093	15213	9700	49616	7958	47006	41658	1.13
Ⓒ 1	-21.0	24044	15260	11380	69934	17303	50684	52631	0.96
Ⓓ 1	-27.0	27875	8625	16844	92991	39504	53344	53487	1.00
Ⓔ 1	-38.0	35207	18187	20980	143864	63872	74374	79992	0.93
Ⓕ 1	-44.0	38353	18187	23380	177072	87311	79920	89761	0.89
Ⓖ 1	-60.0	57214	35750	41780	278170	172029	134744	106141	1.27

NOTES

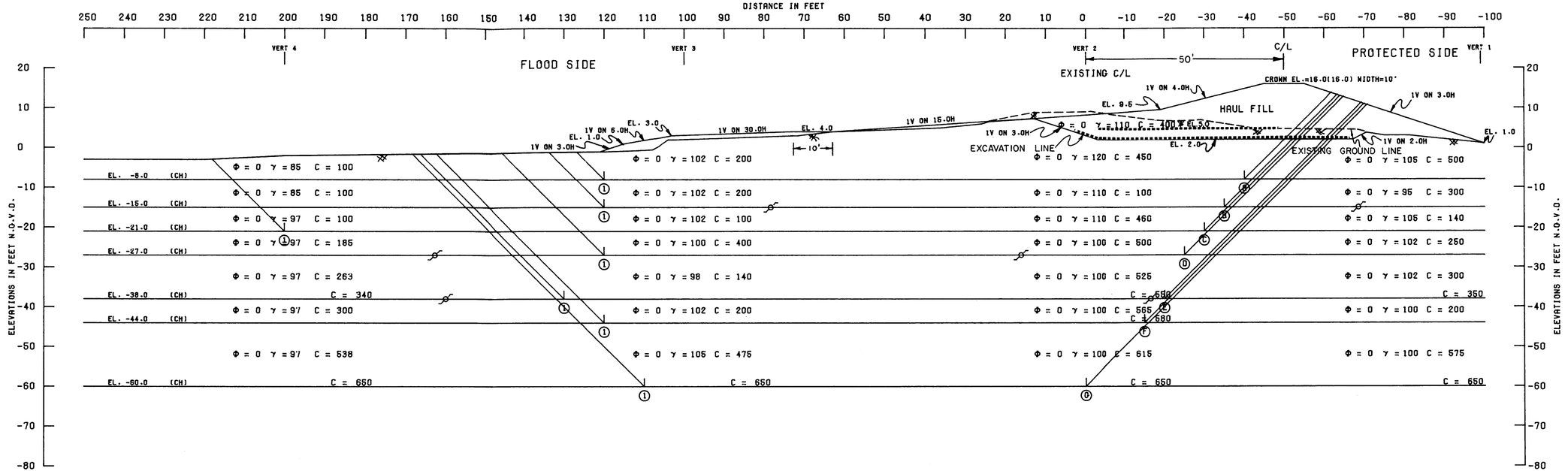
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
REACH C
PROTECTED SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 126



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 119,120

CROWN ELEVATION LISTED AS GROSS(NET).

GEOTEXTILE WILL BE USED IN THIS SECTION TO OBTAIN A FACTOR OF SAFETY OF 1.3. FOR DESIGN OF THE REINFORCEMENT TEXTILE SEE APPENDIX. B2

GEOTEXTILE ----------

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓡ ①	-8.0	18856	24416	2445	30379	2397	45717	27982	1.63
Ⓑ ①	-15.0	20965	20650	4790	50105	9491	46405	40614	1.14
Ⓒ ①	-21.0	25044	50345	3619	70547	14827	79008	55720	1.42
Ⓓ ①	-27.0	29995	49007	9818	94105	32641	88820	61464	1.45
Ⓔ ①	-38.0	38886	60184	12672	145817	64625	101742	81192	1.25
Ⓕ ①	-44.0	44589	51467	15464	178322	88828	111520	89494	1.25
Ⓓ ①	-60.0	63841	71500	30925	281666	171461	166266	110205	1.51

NOTES

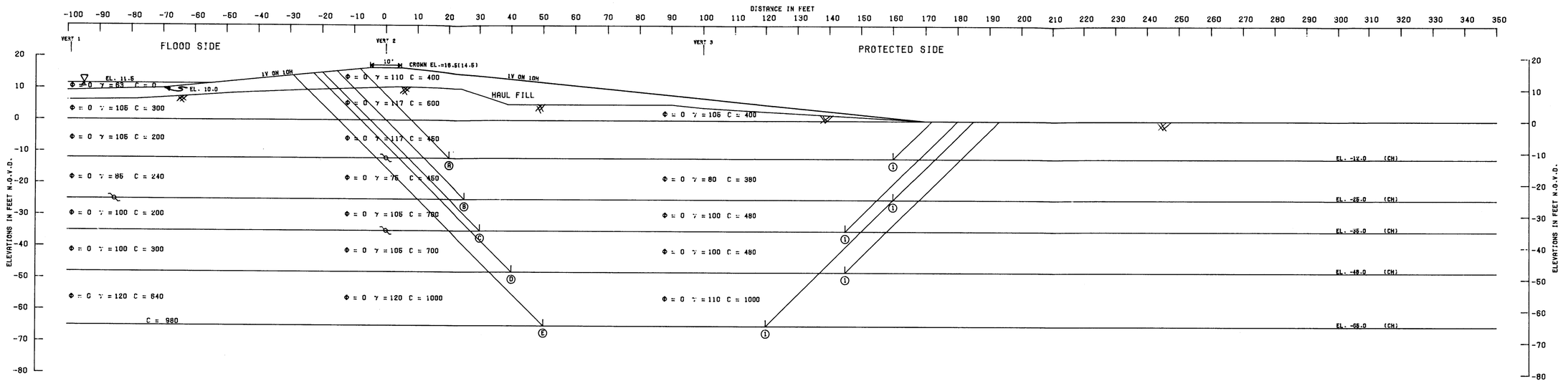
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
REACH C
FLOOD SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-2-30148

PLATE 127



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 117

CROWN ELEVATION LISTED AS GROSS(NET).

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_B	R_A	R_P	D_B	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-12.0	27686	55440	9000	44770	8096	92626	36675	2.53
Ⓑ ①	-28.0	38184	53269	19480	91923	31235	110913	60688	1.83
Ⓒ ①	-36.0	50494	60589	26060	137527	62046	140169	75481	1.86
Ⓓ ①	-48.0	60428	54359	41660	210420	113985	152347	97025	1.57
Ⓔ ①	-56.0	99866	70000	76660	332800	217531	245416	115269	2.13

NOTES

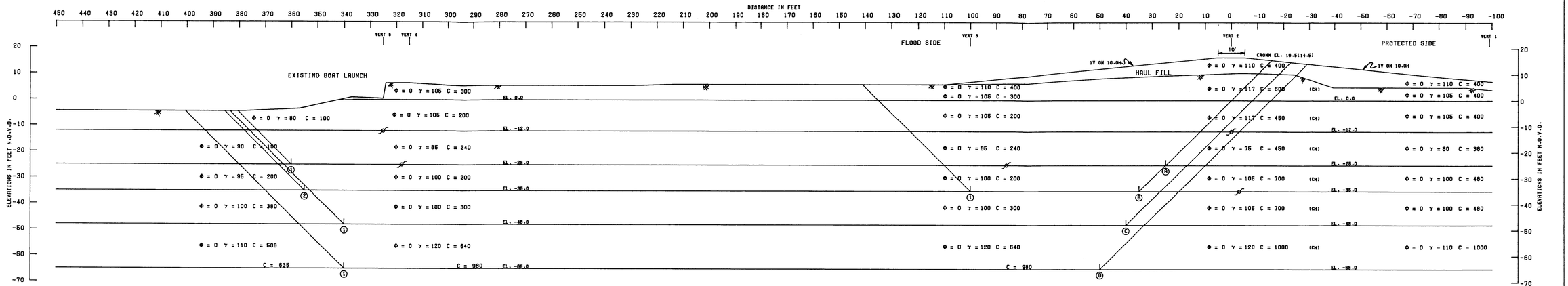
Φ --- ANGLE OF INTERNAL FRICTION, DEGREES
C --- UNIT COHESION, P.S.F.
∇ --- STATIC WATER SURFACE
D --- HORIZONTAL DRIVING FORCE IN POUNDS
R --- HORIZONTAL RESISTING FORCE IN POUNDS
A --- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B --- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P --- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_B + R_A + R_P}{D_B - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
WILLIAMS BLVD. RAMP CROSSING
PROTECTED SIDE
U.S ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-2-30148

PLATE 128



CLASSIFICATION. STRATIFICATION. SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 117,120

CROWN ELEVATIONS LISTED AS GROSS(NET).

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_B	$-D_P$	RESISTING	DRIVING	
(A) (1)	-25.0	37409	71773	4100	91973	18271	113282	73702	1.54
(B) (1)	-36.0	48409	23682	18640	136809	84268	90811	52353	1.73
(B) (2)	-36.0	48409	74682	8100	136809	41140	131071	95469	1.37
(C) (1)	-48.0	63721	98800	17980	210987	88712	180501	122265	1.48
(D) (1)	-86.0	93457	277644	36252	334342	172945	408253	161397	2.52

NOTES

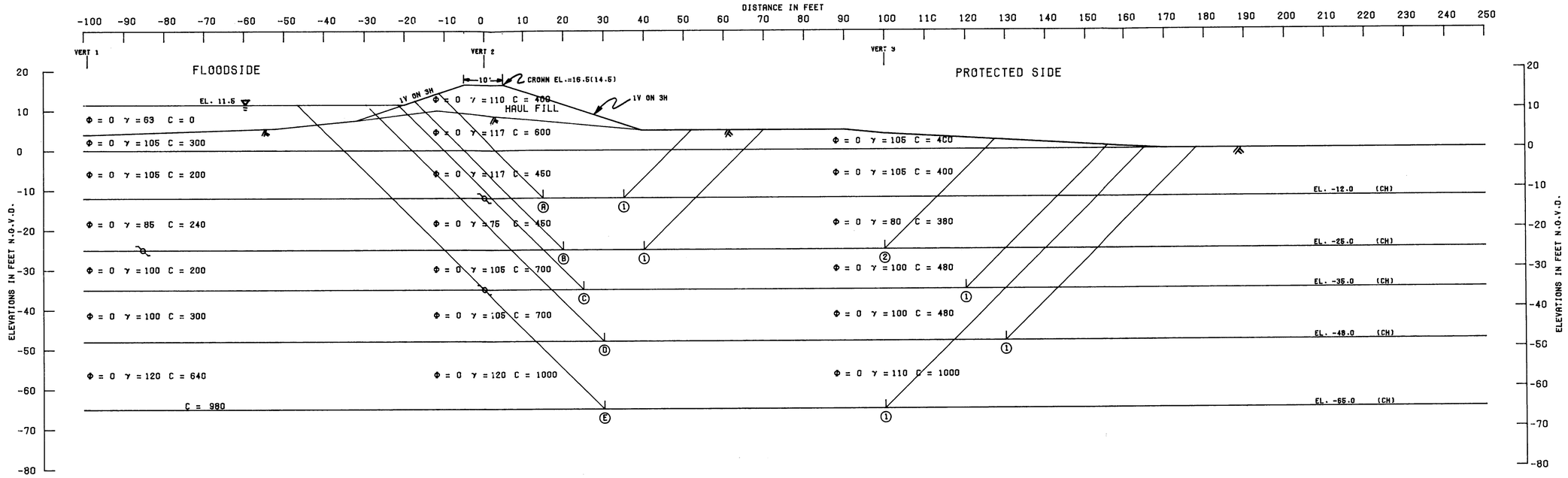
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
∇ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_B - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
WILLIAMS BLVD. RAMP CROSSING
FLOODSIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-E-30148

PLATE 129



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 117

CROWN ELEVATION LISTED AS GROSS(NET).

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_A	$-D_P$	RESISTING	DRIVING	
(A) (1)	-12.0	25879	8650	15318	43109	16555	49847	26554	1.88
(B) (1)	-25.0	35435	8580	25595	86807	47026	69610	39781	1.75
(B) (2)	-25.0	35435	32640	21426	86807	39651	89501	47156	1.90
(C) (1)	-35.0	46966	51787	29729	128413	65559	128482	62854	2.04
(D) (1)	-48.0	61581	53389	41560	196525	114847	156530	81678	1.92
(E) (1)	-65.0	91494	70000	75776	313161	218767	237270	94394	2.51

NOTES

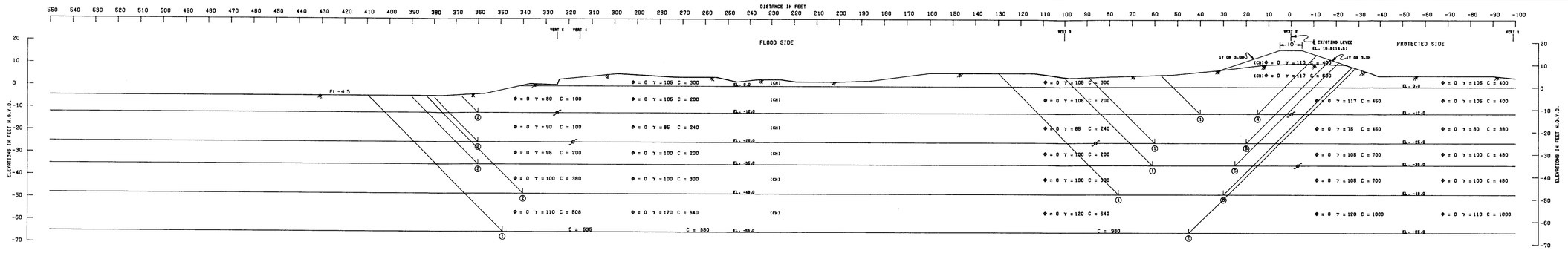
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
WILLIAMS BLVD STA. 141+00 TO 146+00
PROTECTED SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-2-50148

PLATE 130



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 117,120
CROWN ELEVATIONS LISTED AS GROSS(NET).

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_a	R_s	R_p	D_a	$-D_p$	RESISTING	DRIVING	
(A) (1)	-12.0	25827	9531	12586	43348	17803	48043	25546	1.88
(B) (2)	-12.0	25827	74031	1596	43348	2898	101453	40683	2.49
(B) (1)	-25.0	36271	14640	17031	87184	45743	86942	41441	1.82
(D) (2)	-25.0	36271	73787	4100	87184	18271	113158	68913	1.64
(C) (1)	-36.0	45313	17459	22888	128938	78570	85660	50368	1.72
(C) (2)	-36.0	45313	91081	8100	128938	40721	136474	88217	1.54
(D) (1)	-48.0	60974	22447	28860	196555	139021	112281	57534	1.96
(E) (2)	-48.0	60974	104398	17880	196555	88712	183253	107843	1.70
(E) (1)	-58.0	90279	288212	36252	308378	170201	419743	138178	2.88

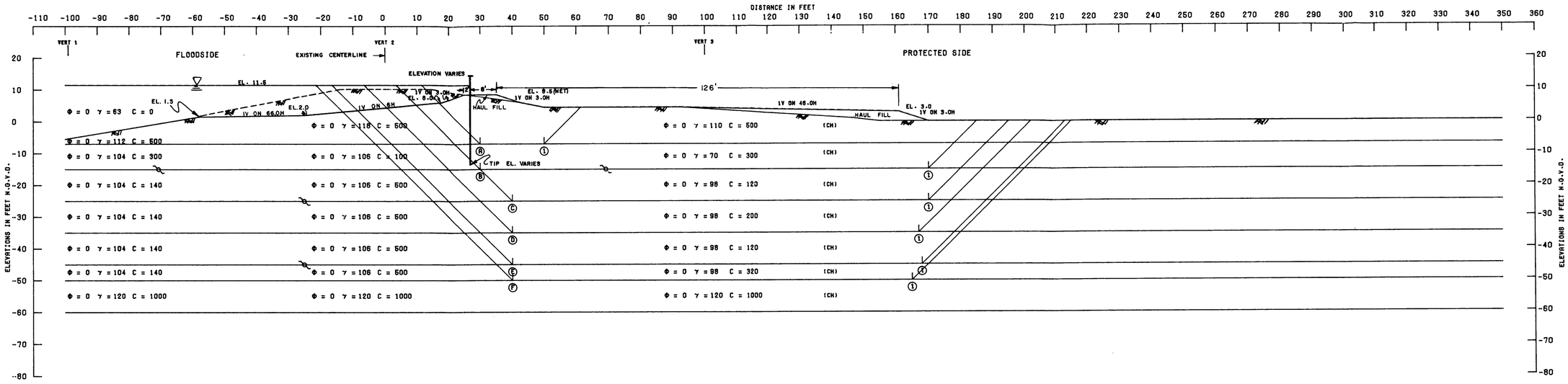
NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_a + R_s + R_p}{D_a - D_p}$

LAKE PONTCHARTRAIN, LA AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17-GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
WILLIAMS BLVD STA 141+00 TO 146+00
FLOOD SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
OCTOBER 1967
FILE NO. N-E-30148

PLATE 131



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 101,102,103

FOR I-WALL ANALYSIS SEE PLATES 148,149,150

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_a	R_b	R_f	D_a	$-D_f$	RESISTING	DRIVING	
(R) (1)	-7.0	12966	3600	11500	15828	7508	28059	8320	3.37
(B) (1)	-15.0	14701	21707	11800	33808	11095	48208	22513	2.14
(C) (1)	-25.0	22041	22440	14200	63564	29294	58681	34270	1.71
(D) (1)	-35.0	29520	22080	18200	104983	57458	69800	47525	1.47
(E) (1)	-45.0	37041	22200	20600	158717	95166	79841	61551	1.30
(F) (1)	-50.0	41836	43240	23800	186460	118125	108876	68335	1.59

NOTES

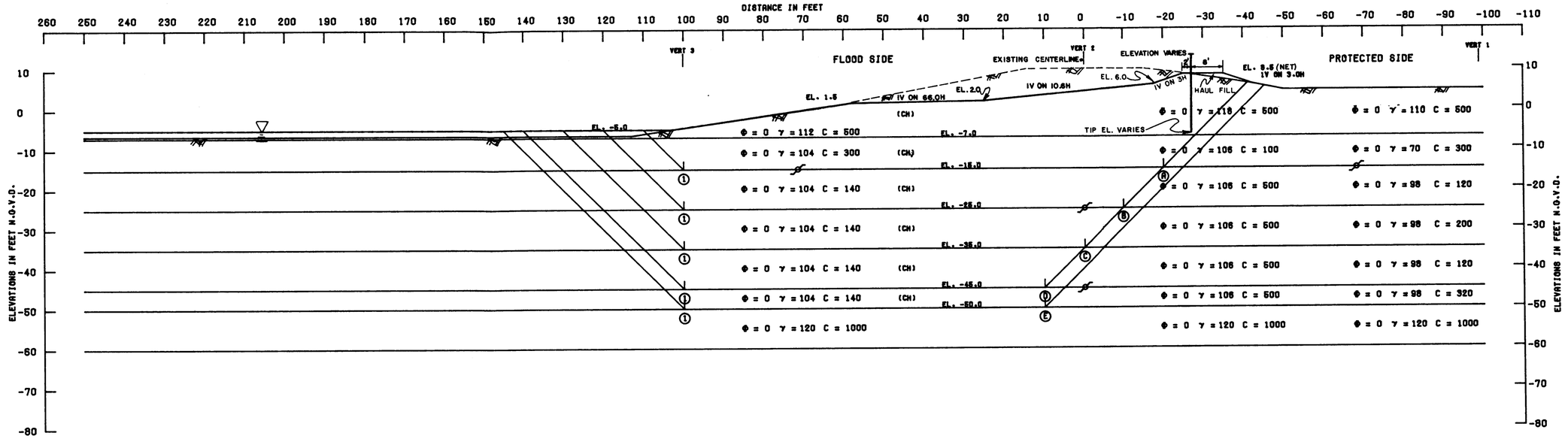
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽-- STATIC WATER SURFACE
D --- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A ---- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_a + R_b + R_f}{D_a - D_f}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
PUMPING STA. No. 1
WEST-PROTECTED SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO N-2-30148

PLATE 132



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 101,102,103

FOR I-WALL ANALYSIS SEE PLATES 148,149,150

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_B	$-D_P$	RESISTING	DRIVING	
(A) (1)	-15.0	15719	20118	5871	29762	5242	41708	24520	1.70
(B) (1)	-25.0	24567	36907	8100	58039	20323	69474	37716	1.84
(C) (1)	-35.0	34284	31999	10900	96115	45739	77183	50376	1.53
(D) (1)	-45.0	43904	27179	13700	143968	81556	84783	62312	1.36
(E) (1)	-50.0	47645	27179	15100	172320	103364	89924	68956	1.30

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
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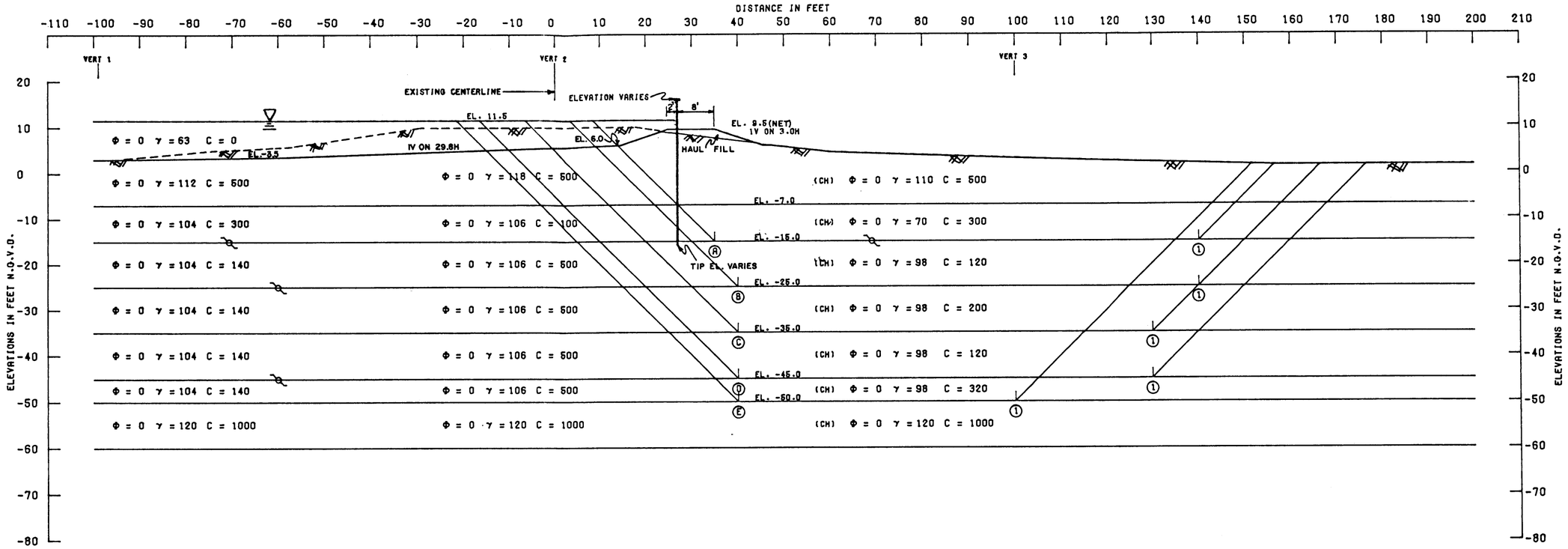
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_B - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
PUMPING STA. NO. 1
WEST- FLOOD SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
OCTOBER 1987 FILE NO. A-2-30148



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 101, 102, 103

FOR I-WALL ANALYSIS SEE PLATES 151, 152, 153

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
(A) (1)	-15.0	15579	17282	13314	34814	14143	46175	20671	2.23
(B) (1)	-25.0	22595	18840	15700	66743	33993	57135	31750	1.80
(C) (1)	-35.0	30609	17640	19700	107615	64327	67949	43288	1.57
(D) (1)	-45.0	38664	17640	22100	160092	103775	78404	56317	1.39
(E) (1)	-50.0	43727	22440	25451	190317	131056	91618	59261	1.55

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
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R -- HORIZONTAL RESISTING FORCE IN POUNDS
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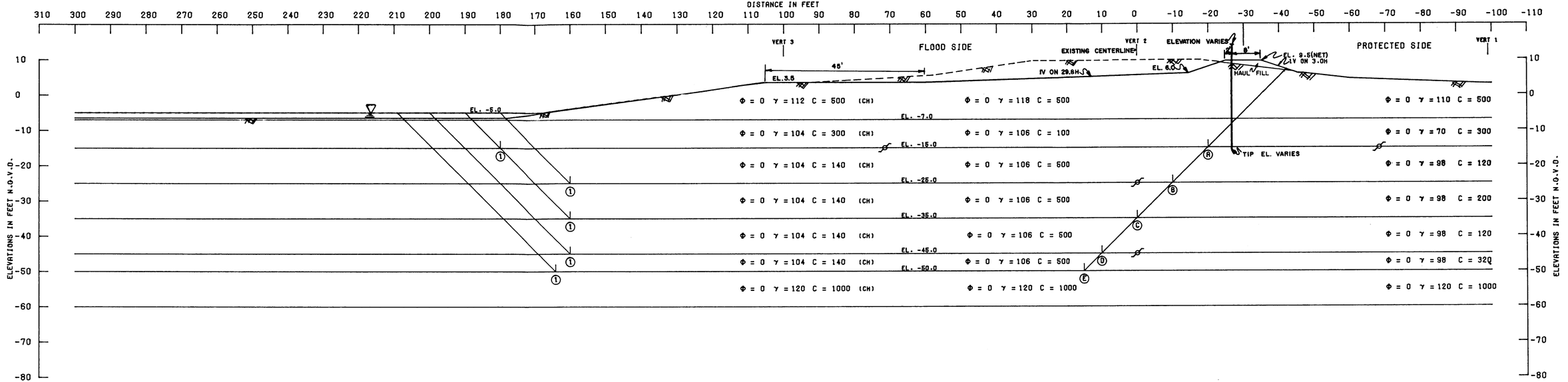
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
PUMPING STA. NO. 1
EAST-PROTECTED SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. N-2-30148



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 101,102,103

FOR I-WALL ANALYSIS SEE PLATES 151,152,153

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_R	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
(A) (1)	-15.0	16432	31318	6300	32212	4657	53050	27555	1.93
(B) (1)	-25.0	25280	45208	8100	61224	21034	78588	40190	1.96
(C) (1)	-35.0	34978	40399	10900	100310	46450	86277	53860	1.60
(D) (1)	-45.0	44618	35580	13700	149786	82267	93898	67519	1.39
(E) (1)	-50.0	49168	33876	15100	178289	103433	98144	74856	1.31

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
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R -- HORIZONTAL RESISTING FORCE IN POUNDS
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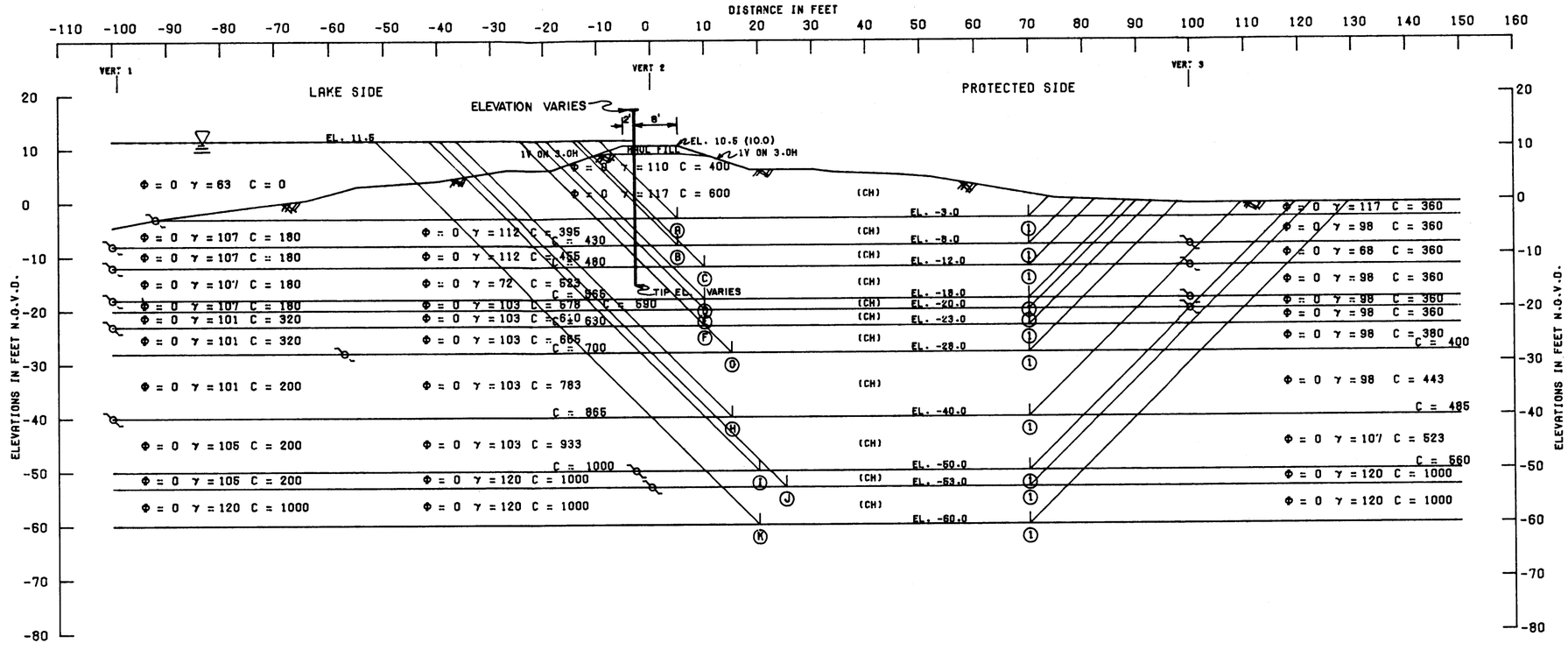
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
PUMPING STA. NO. 1.
EAST-FLOOD SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
OCTOBER 1967
FILE NO. H-2-30148



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 75,76,121

CROWN ELEVATIONS LISTED AS GROSS (NET).

FOR I-WALL ANALYSIS SEE PLATES 154,155,156,157

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
(R) (1)	-3.0	14800	26244	3182	10819	951	44226	9868	4.48
(B) (1)	-8.0	17045	26244	6496	19975	4264	49785	15711	3.17
(C) (1)	-12.0	20978	25920	9386	28909	8476	56284	20433	2.75
(D) (1)	-18.0	24948	28979	13896	45172	17209	67823	27963	2.43
(E) (1)	-20.0	26492	29879	15440	51143	20812	71811	30331	2.37
(F) (1)	-23.0	29085	31319	17780	60743	26922	78184	33821	2.31
(G) (1)	-28.0	35379	31487	21885	78158	38981	88751	39177	2.27
(H) (1)	-40.0	51477	38691	33381	131702	77661	123549	54041	2.29
(I) (1)	-50.0	67616	40098	44463	185968	121077	152177	64891	2.35
(J) (1)	-53.0	73975	45000	49865	203122	136220	168840	66902	2.52
(K) (1)	-60.0	84848	50000	62648	252360	175737	197496	76623	2.58

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
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R -- HORIZONTAL RESISTING FORCE IN POUNDS
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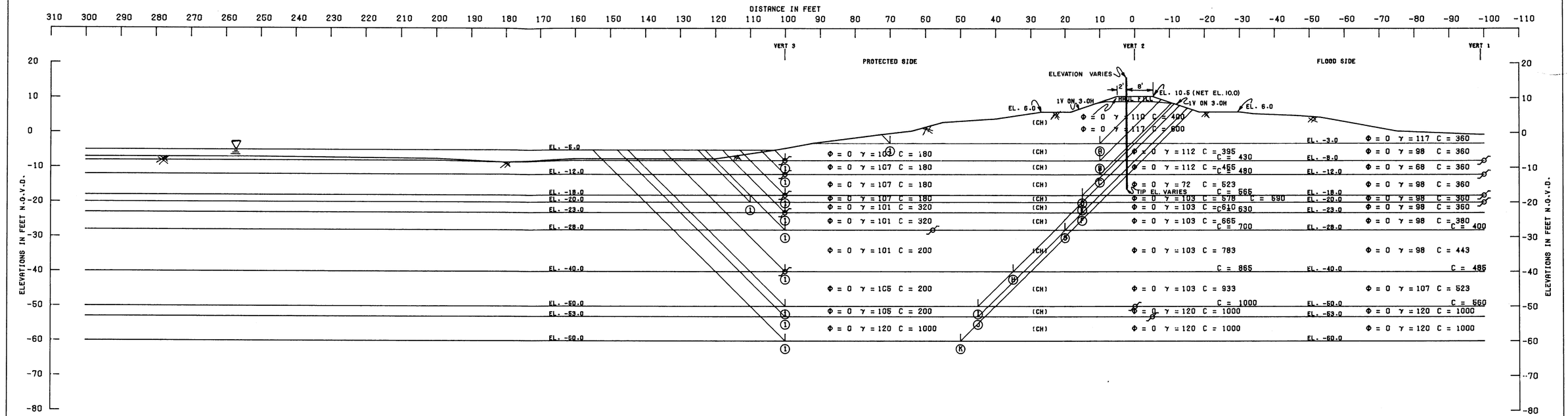
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
PUMPING STA. NO. 4
WEST-PROTECTED SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-2-30158



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 75,76,121
CROWN ELEVATIONS LISTED AS GROSS.(NET)

FOR I-WALL ANALYSIS SEE PLATES 154, 155, 156, 157

ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_R	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
(R) (1)	-3.0	15197	19800	1503	10036	383	36500	9653	3.78
(B) (1)	-8.0	18575	26325	1080	19090	569	45980	18521	2.48
(C) (1)	-12.0	20989	28349	2395	27866	2663	51679	25203	2.05
(D) (1)	-18.0	25503	29207	4218	42964	8843	58928	34121	1.76
(E) (1)	-20.0	28083	31910	4500	48701	10836	64493	37866	1.70
(F) (1)	-23.0	30746	38398	6628	57834	16752	75772	41082	1.84
(P) (1)	-28.0	36792	35232	9620	74459	27056	81644	47403	1.72
(H) (1)	-40.0	52133	27047	14420	123255	01948	93600	01307	1.53
(I) (1)	-50.0	64929	23098	18420	174068	102334	106447	71734	1.48
(J) (1)	-53.0	69094	23098	19620	192515	116498	111812	76017	1.47
(K) (1)	-60.0	83360	50000	33620	237326	153588	166980	83738	1.99

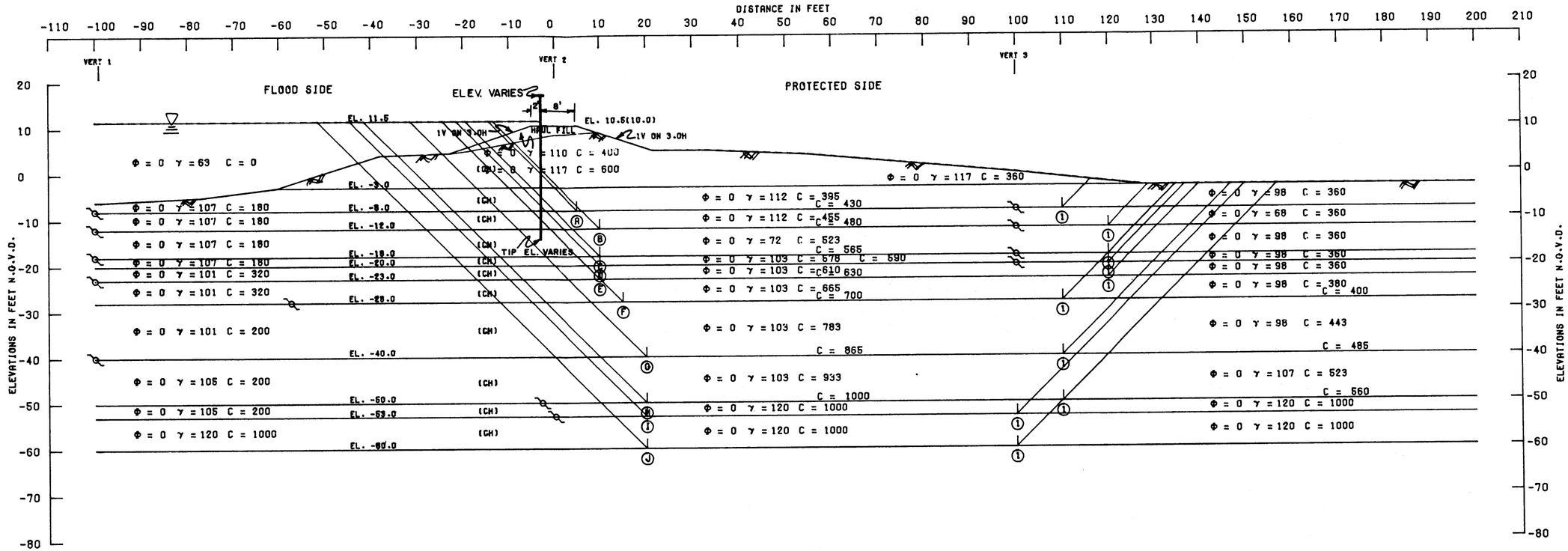
NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
PUMPING STA. NO. 4
WEST-FLOOD SIDE
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS
OCTOBER 1967 FILE NO h-2-30148

PLATE 137



ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_B	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
Ⓐ ①	-8.0	16527	40959	4495	19870	2289	61981	17581	3.53
Ⓑ ①	-12.0	20436	44460	6480	28817	4180	71376	24637	2.90
Ⓒ ①	-18.0	24617	47902	10800	45029	10516	83319	34513	2.41
Ⓓ ①	-20.0	26228	48914	12240	50987	13412	87382	37575	2.33
Ⓔ ①	-23.0	28780	50534	14400	60571	18490	93714	42081	2.23
Ⓕ ①	-28.0	35074	48837	18200	77987	30529	102111	47458	2.15
Ⓖ ①	-40.0	50831	55809	28832	129623	65544	135472	64079	2.11
Ⓗ ①	-50.0	67007	64478	39292	184787	105953	170777	78834	2.17
Ⓘ ①	-53.0	72769	80000	45292	203436	123097	198061	80339	2.47
Ⓙ ①	-60.0	83879	80000	59292	250880	160588	223171	90292	2.47

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 75,76,121

CROWN ELEVATIONS LISTED AS GROSS(NET).

FOR I-WALL ANALYSIS SEE PLATES 158,159,160,161,162

NOTES

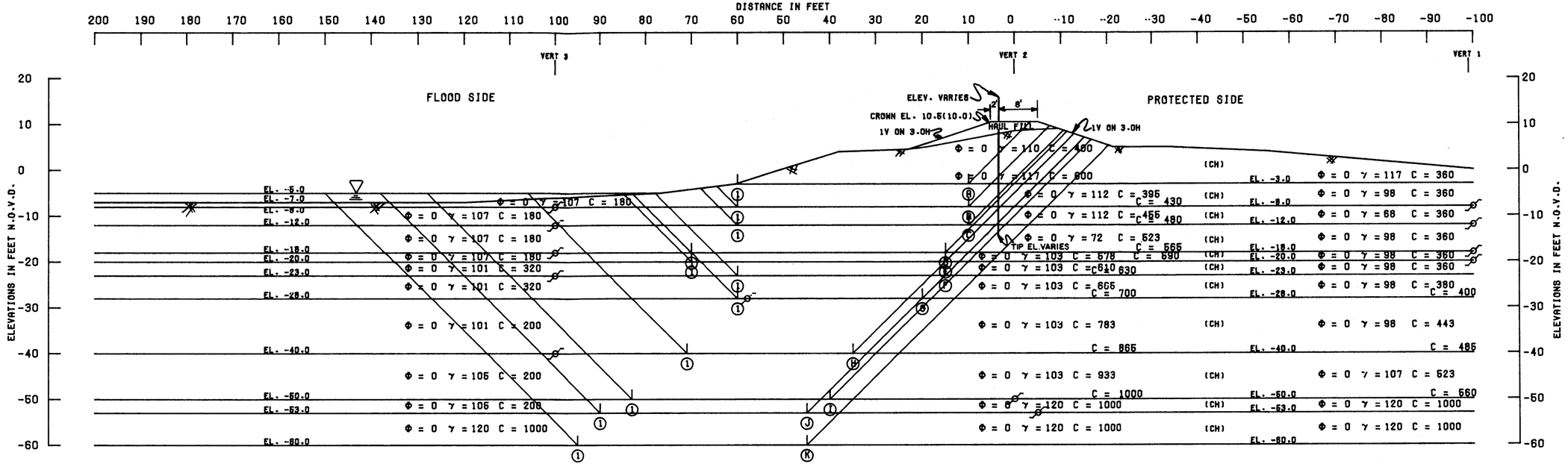
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_B - D_P}$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
PUMPING STA. NO. 4
EAST-PROTECTED SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-2-30148

PLATE 138



ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_B	$-D_P$	RESISTING	DRIVING	
(A) (1)	-3.0	15023	17125	83	9937	1	32231	9936	3.24
(B) (1)	-8.0	18581	17125	2357	18986	1246	38063	17740	2.15
(C) (1)	-12.0	21020	18750	4341	27768	3987	44111	23781	1.85
(D) (1)	-18.0	26503	22075	6405	42815	9241	54983	33574	1.64
(E) (1)	-20.0	28083	22865	7402	48551	12113	58350	36438	1.60
(F) (1)	-23.0	30745	23118	10758	57684	18772	64621	38912	1.66
(G) (1)	-28.0	36792	21913	14816	74237	29279	73321	44958	1.63
(H) (1)	-40.0	52133	18451	19067	120918	63129	89651	57789	1.55
(J) (1)	-50.0	66362	21842	20499	173345	103194	107693	70151	1.54
(J) (1)	-53.0	69093	20699	20501	189218	117067	110293	72151	1.53
(K) (1)	-60.0	83916	50000	33800	235292	154073	167716	81219	2.06

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 75,76,121

CROWN ELEVATIONS LISTED AS GROSS(NET).

FOR I-WALL ANALYSIS SEE PLATES 158,159,160,161,162

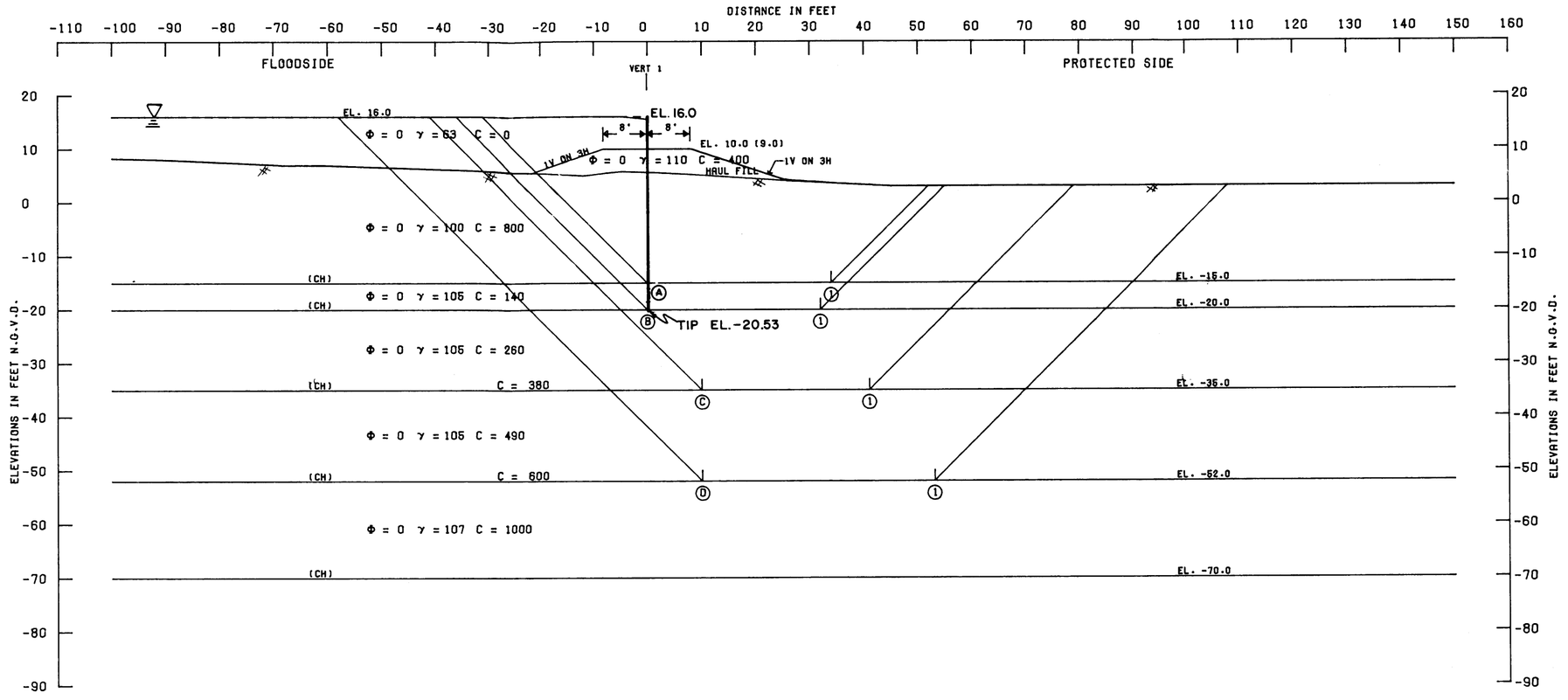
NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_B - D_P}$$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
PUMPING STA. NO.4
EAST-FLOOD SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-2-30148



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 98

CROWN ELEVATIONS LISTED AS GROSS(NET).

FOR I-WALL ANALYSIS SEE PLATE 147

ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_R	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ	①	-15.0	32922	4760	28800	40994	16518	66482	24476	2.72
Ⓑ	①	-20.0	34467	4480	30200	55860	26956	69147	28904	2.39
Ⓒ	①	-35.0	42647	11780	38000	114541	73240	92427	41301	2.24
Ⓓ	①	-52.0	60348	25800	54660	211889	154669	140808	57220	2.46

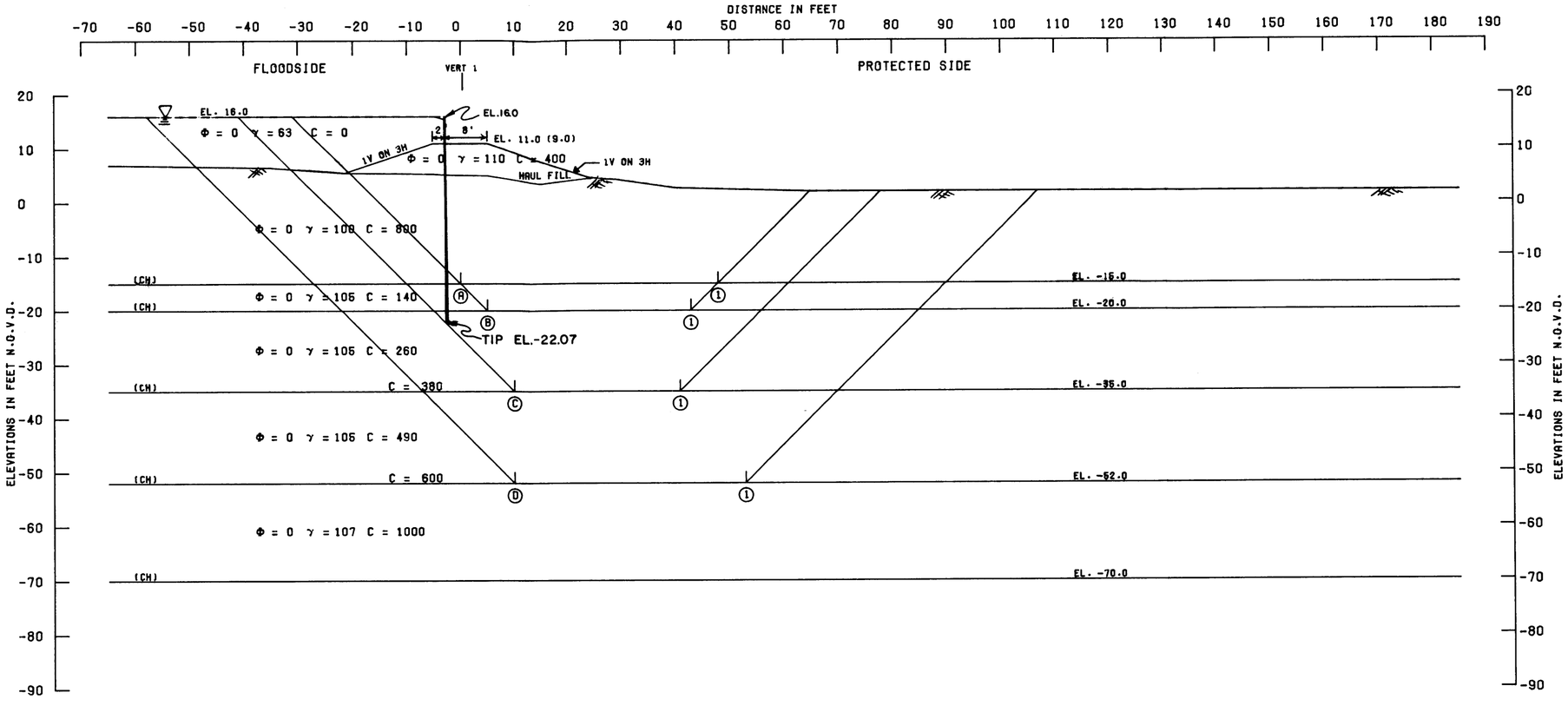
NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_R - D_P}$$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17—GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
CAUSEWAY
WEST CORNER
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-2-30148



ASSUMED FAILURE SURFACE NO.	ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_A	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
Ⓐ ①	-15.0	32997	6720	27200	40445	14854	66917	25591	2.61
Ⓑ ①	-20.0	34397	5320	28600	55053	24939	68317	30114	2.27
Ⓒ ①	-35.0	43153	11780	36400	114788	70254	91333	44534	2.05
Ⓓ ①	-52.0	60659	25800	53060	212346	149420	139519	62926	2.22

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 98

CROWN ELEVATIONS LISTED AS GROSS(NET).

FOR I-WALL ANALYSIS SEE PLATE 146

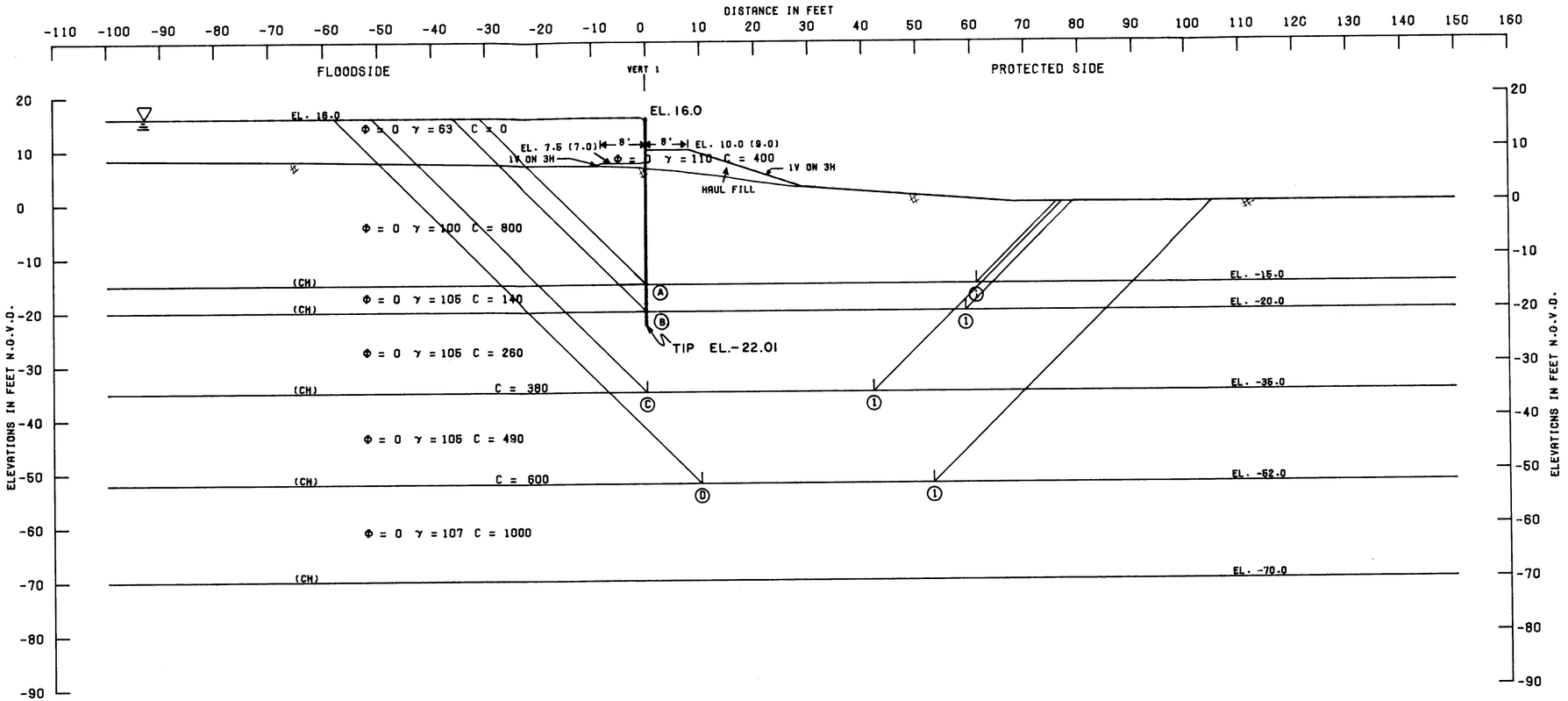
NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_B + R_B + R_P}{D_B - D_P}$$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 — GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
CAUSEWAY
WEST SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 98

CROWN ELEVATIONS LISTED AS GROSS(NET).

FOR I-WALL ANALYSIS SEE PLATE 145

ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ	①	-15.0	35582	8540	24000	39373	11438	68122	27935	2.44
Ⓑ	①	-20.0	37134	8260	25400	54552	20373	70794	34179	2.07
Ⓒ	①	-35.0	45389	15960	33200	116943	64848	94549	61095	1.85
Ⓓ	①	-52.0	62257	25800	49860	211663	139484	137917	72179	1.91

NOTES

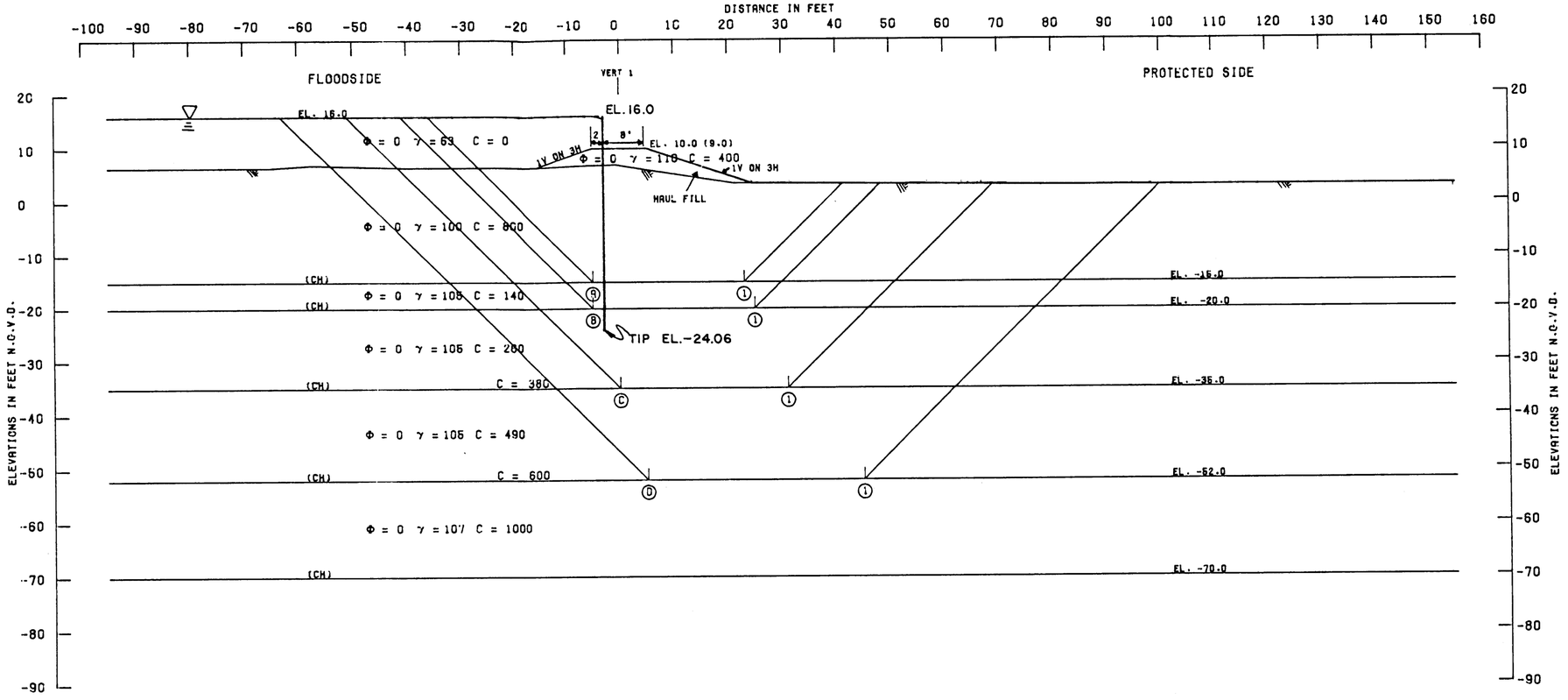
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17—GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
CAUSEWAY
EAST CORNER
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. M-2-80148

PLATE 142



CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 98

CROWN ELEVATIONS LISTED AS GROSS(NET).

FOR I-WALL ANALYSIS SEE PLATE 144

ASSUMED FAILURE SURFACE NO.		ASSUMED FAILURE SURFACE ELEV.	RESISTING FORCES R_A	RESISTING FORCES R_B	RESISTING FORCES R_P	DRIVING FORCES D_R	DRIVING FORCES $-D_P$	SUMMATION OF FORCES RESISTING	SUMMATION OF FORCES DRIVING	FACTOR OF SAFETY
(A)	(1)	-16.0	34402	3920	29377	39553	17036	67699	22518	3.01
(B)	(1)	-20.0	36801	4200	30686	54584	27438	70686	27146	2.60
(C)	(1)	-36.0	43673	11780	38210	115096	74298	93663	40798	2.30
(D)	(1)	-52.0	60914	24000	54660	211670	155330	139574	56340	2.48

NOTES

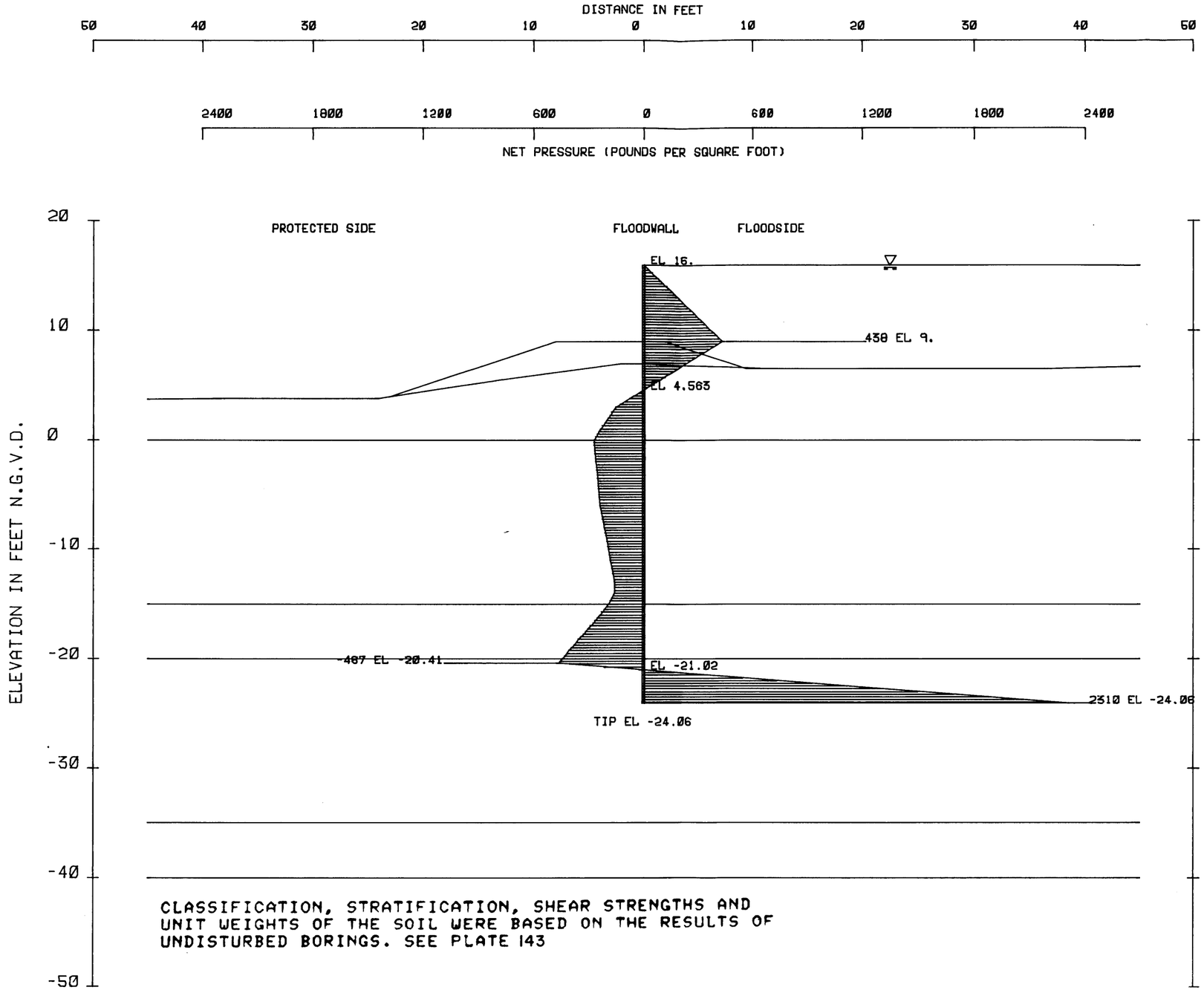
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_R - D_P}$$

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
STABILITY ANALYSIS
CAUSEWAY
EASTSIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-2-30148

PLATE 143



ELEVATION	PRESSURE
16.00	0.0
9.00	437.5
7.00	232.8
6.00	140.4
4.56	0.0
3.00	-154.1
0.00	-276.5
-6.00	-240.3
-13.00	-161.9
-14.00	-162.0
-15.00	-193.6
-20.41	-467.3
-21.02	0.0
-24.06	2310.3
-24.06	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 143

NET DIAGRAM

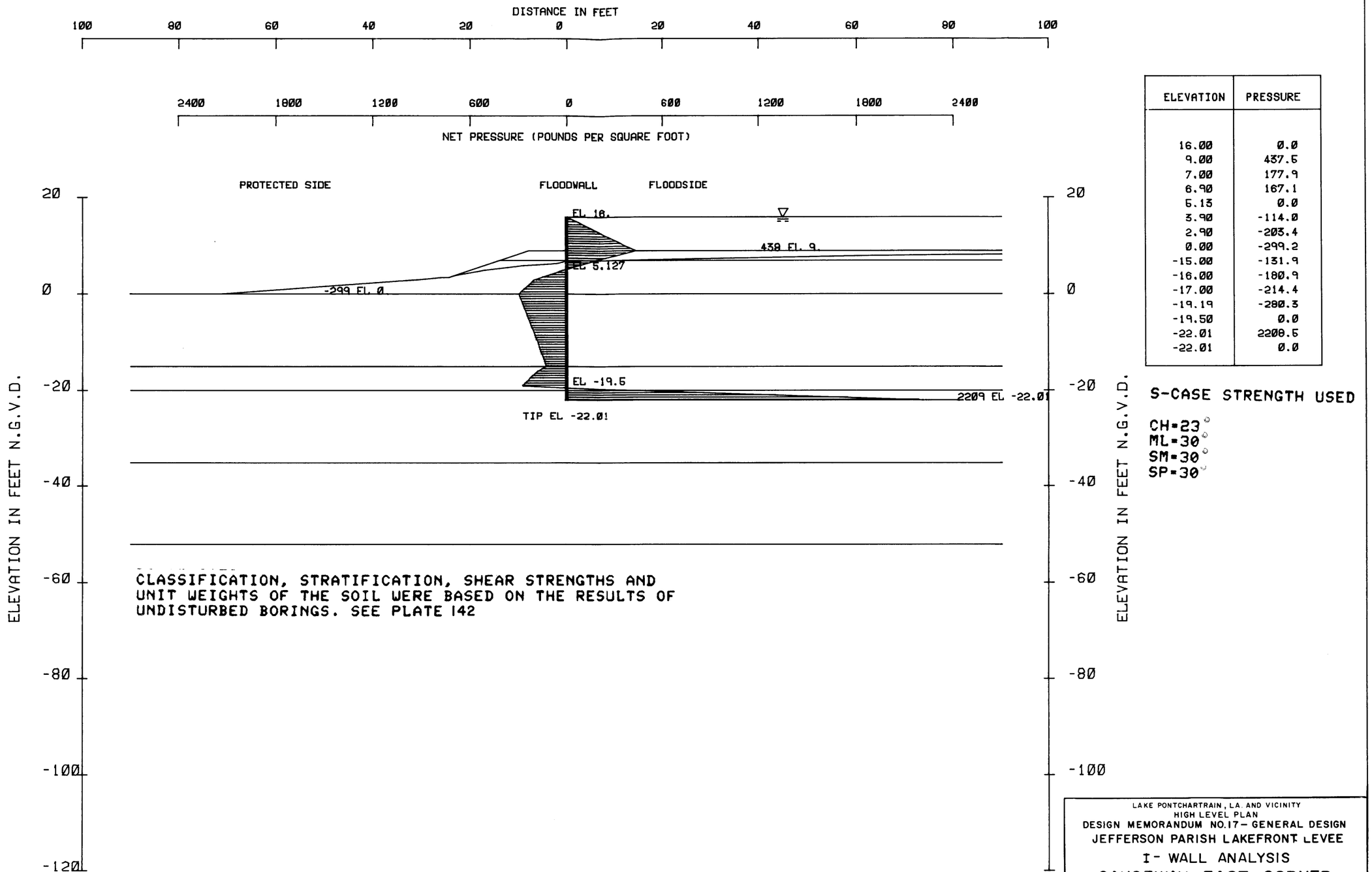
(S) CASE F.S.=1.5

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I- WALL ANALYSIS
CAUSEWAY EAST SIDE

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 144



ELEVATION	PRESSURE
16.00	0.0
9.00	437.5
7.00	177.9
6.90	167.1
5.13	0.0
3.90	-114.0
2.90	-203.4
0.00	-299.2
-15.00	-131.9
-16.00	-180.9
-17.00	-214.4
-19.19	-280.3
-19.50	0.0
-22.01	2208.5
-22.01	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 142

NET DIAGRAM

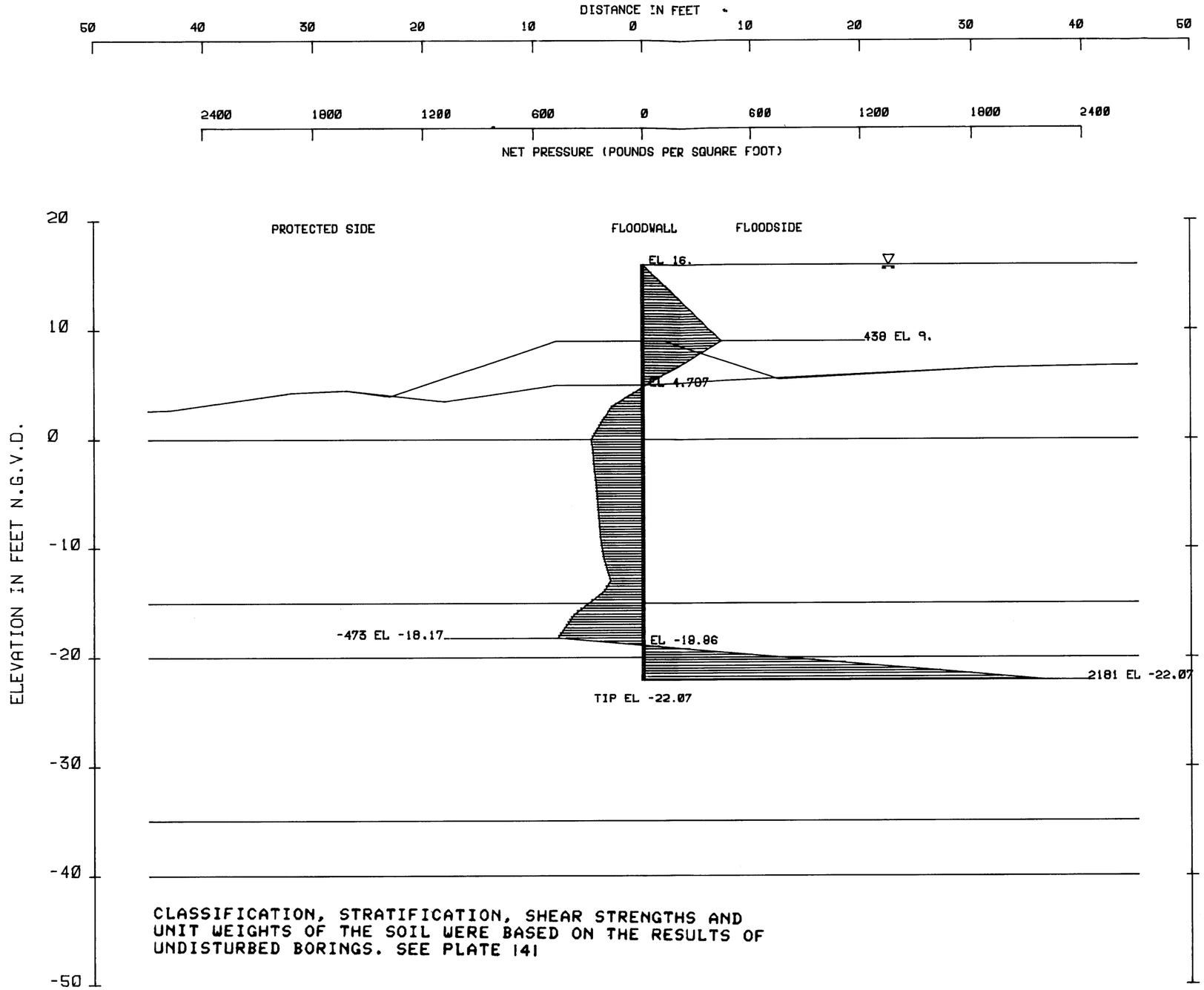
(S) CASE F.S.=1.5

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I- WALL ANALYSIS
CAUSEWAY EAST CORNER

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

OCTOBER 1987 FILE NO H-2-30148

PLATE 145



ELEVATION	PRESSURE
16.00	0.0
9.00	437.5
6.00	128.4
5.00	20.6
4.79	0.0
3.00	-172.2
0.00	-287.8
-10.00	-229.9
-11.00	-219.2
-13.00	-183.2
-14.00	-223.9
-16.00	-383.9
-18.17	-472.6
-18.86	0.0
-22.07	2181.3
-22.07	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 141

NET DIAGRAM

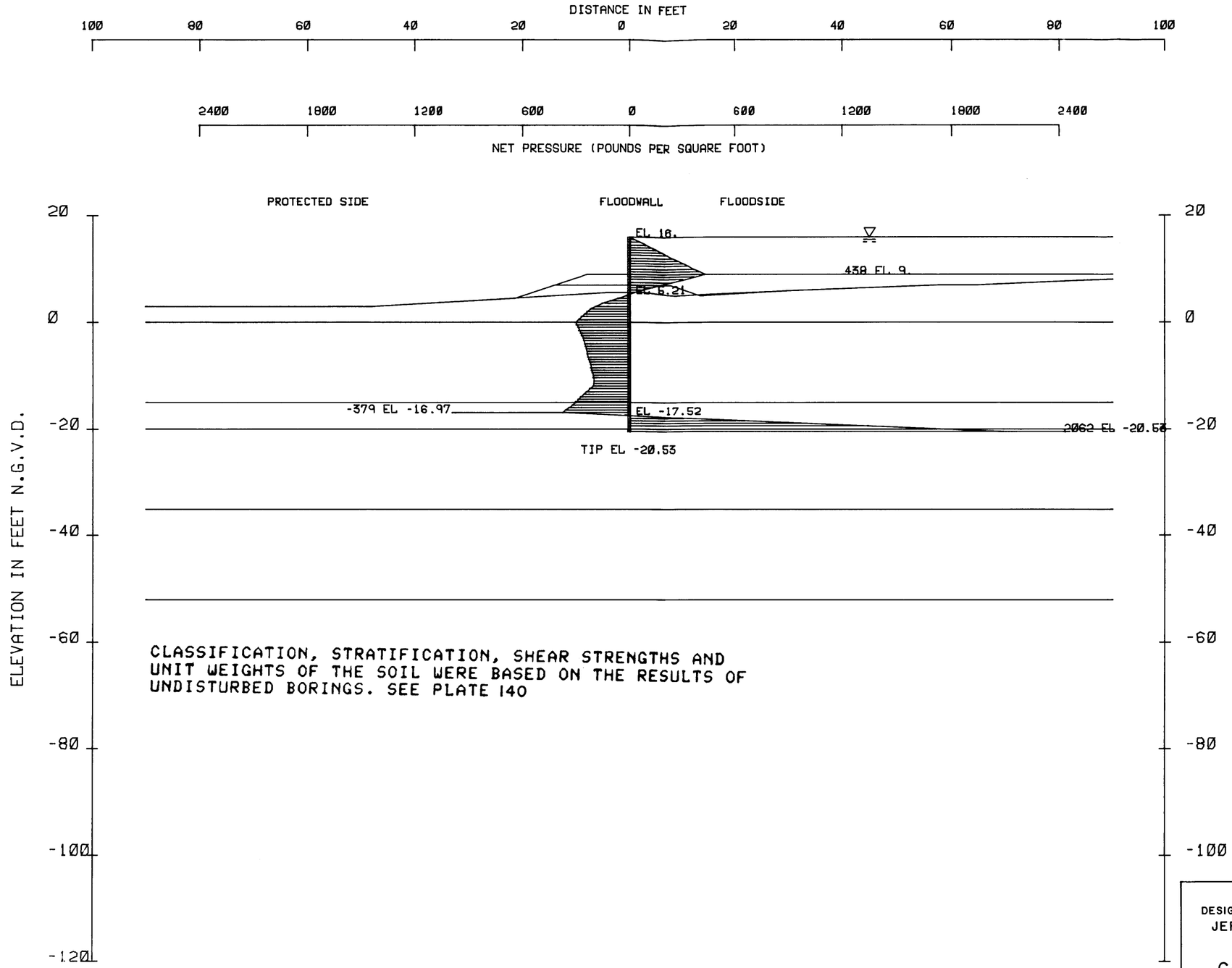
(S) CASE F.S.=1.5

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I- WALL ANALYSIS
CAUSEWAY WEST SIDE

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

OCTOBER 1987 FILE NO. H-2-30148

PLATE 146



ELEVATION	PRESSURE
16.00	0.0
9.00	437.5
7.00	177.9
5.70	44.8
5.21	0.0
3.70	-138.0
2.70	-214.4
0.00	-302.2
-4.00	-251.3
-11.00	-199.5
-12.00	-203.3
-13.00	-241.6
-15.00	-304.9
-16.97	-378.7
-17.52	0.0
-20.53	2062.1
-20.53	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 140

NET DIAGRAM

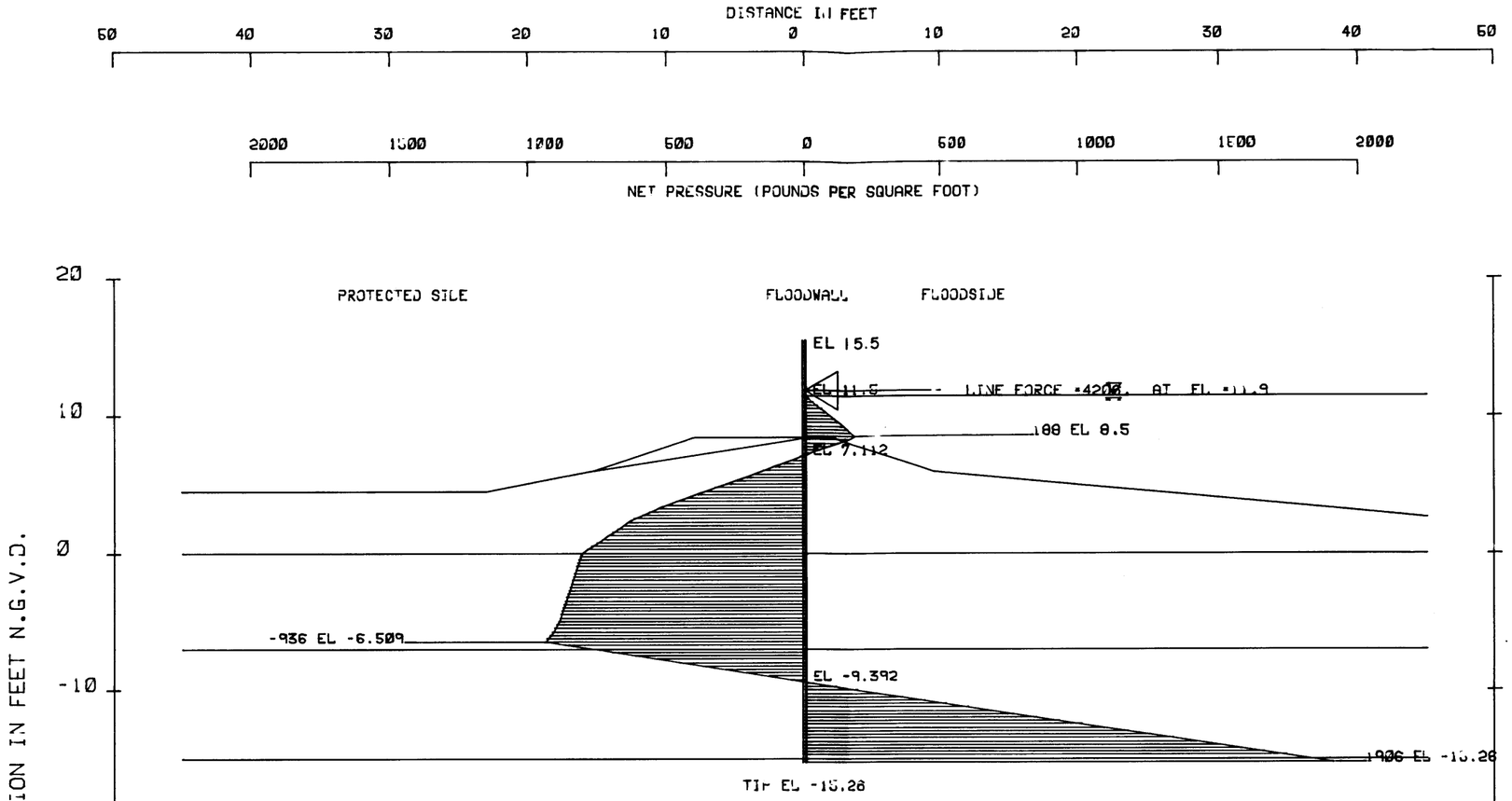
(S) CASE F.S.=1.5

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I- WALL ANALYSIS
CAUSEWAY WEST CORNER

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

OCTOBER 1987 FILE NO H-2-30148

PLATE 147



ELEVATION	PRESSURE
11.50	0.0
8.50	187.5
8.40	174.8
7.11	0.0
5.40	-234.0
3.40	-516.8
2.40	-633.1
0.00	-809.1
-5.00	-884.5
-6.51	-936.2
-9.39	0.0
-15.26	1905.9
-15.26	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 132

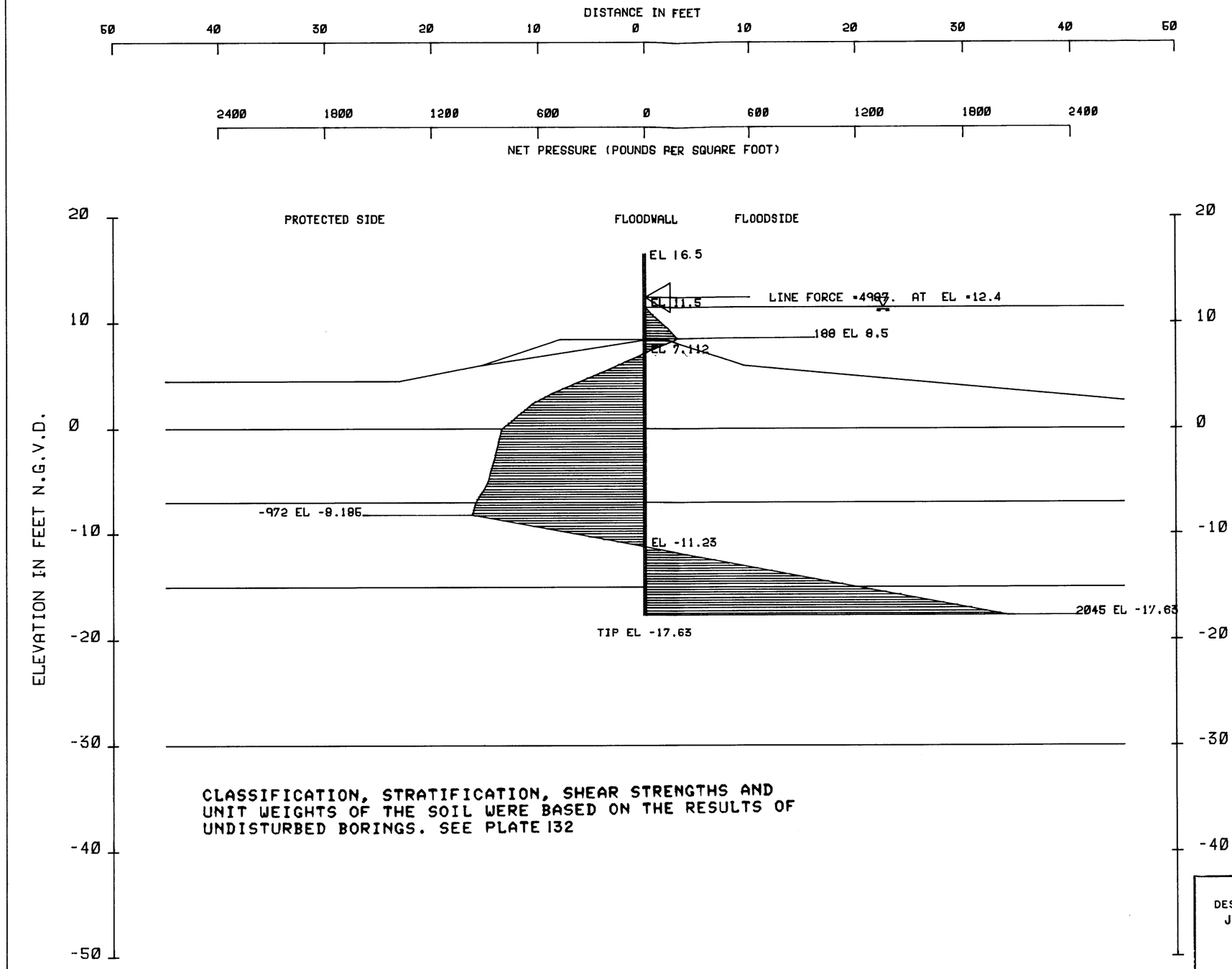
NET DIAGRAM

(S) CASE F.S.=1.25

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 – GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I–WALL ANALYSIS
PUMPING STA.# 1 WEST
TOP OF WALL EL. 15.5
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 148



ELEVATION	PRESSURE
11.50	0.0
8.50	187.5
8.40	174.8
7.11	0.0
6.40	-234.0
3.40	-516.8
2.40	-633.1
0.00	-809.1
-5.00	-884.5
-7.00	-953.7
-8.19	-972.2
-11.23	0.0
-17.63	2045.3
-17.63	0.0

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 132

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

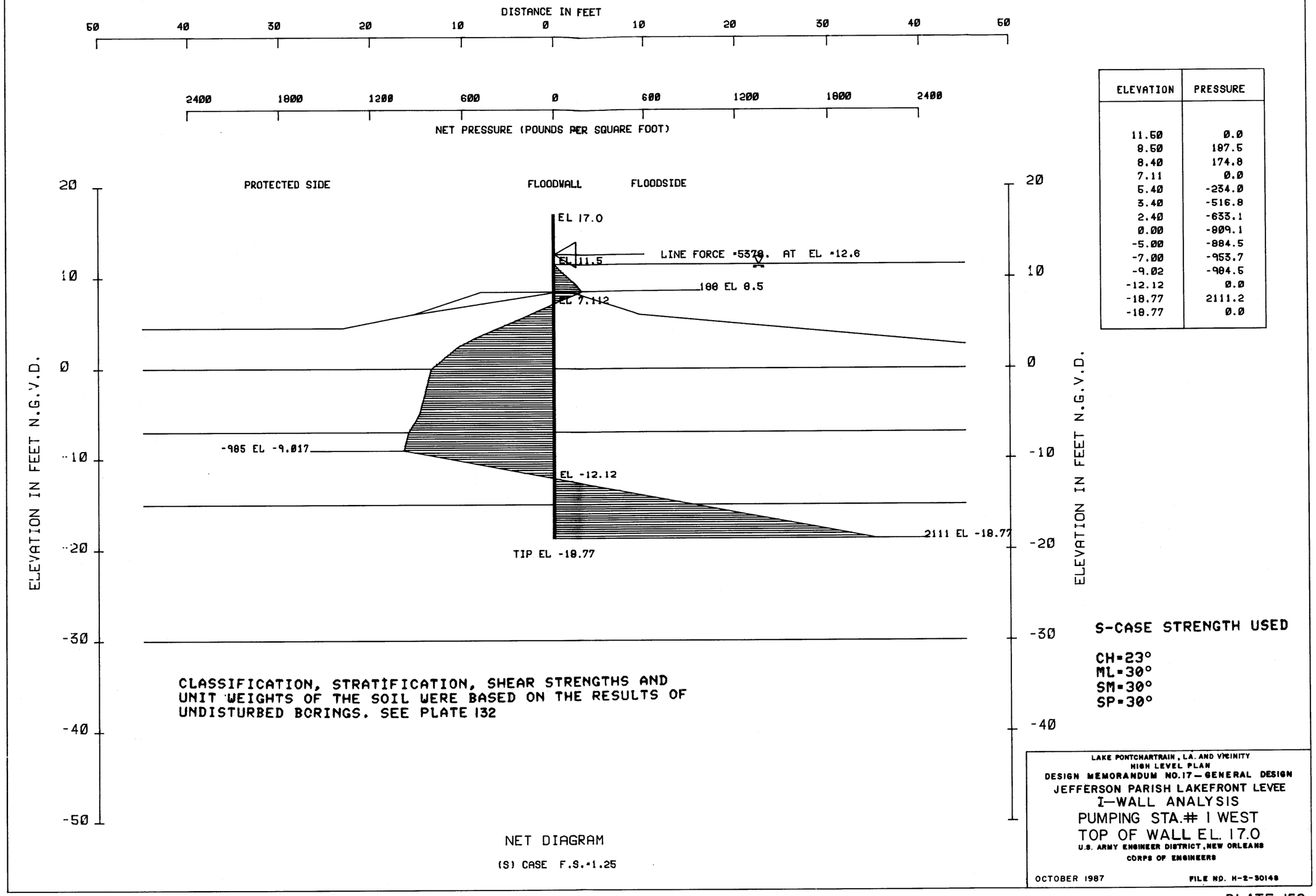
NET DIAGRAM

(S) CASE F.S.=1.25

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.# 1 WEST
TOP OF WALL EL. 16.5
U.S ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 149



ELEVATION	PRESSURE
11.50	0.0
8.50	187.5
8.40	174.8
7.11	0.0
5.40	-234.0
3.40	-516.8
2.40	-633.1
0.00	-809.1
-5.00	-884.5
-7.00	-953.7
-9.02	-984.5
-12.12	0.0
-18.77	2111.2
-18.77	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 132

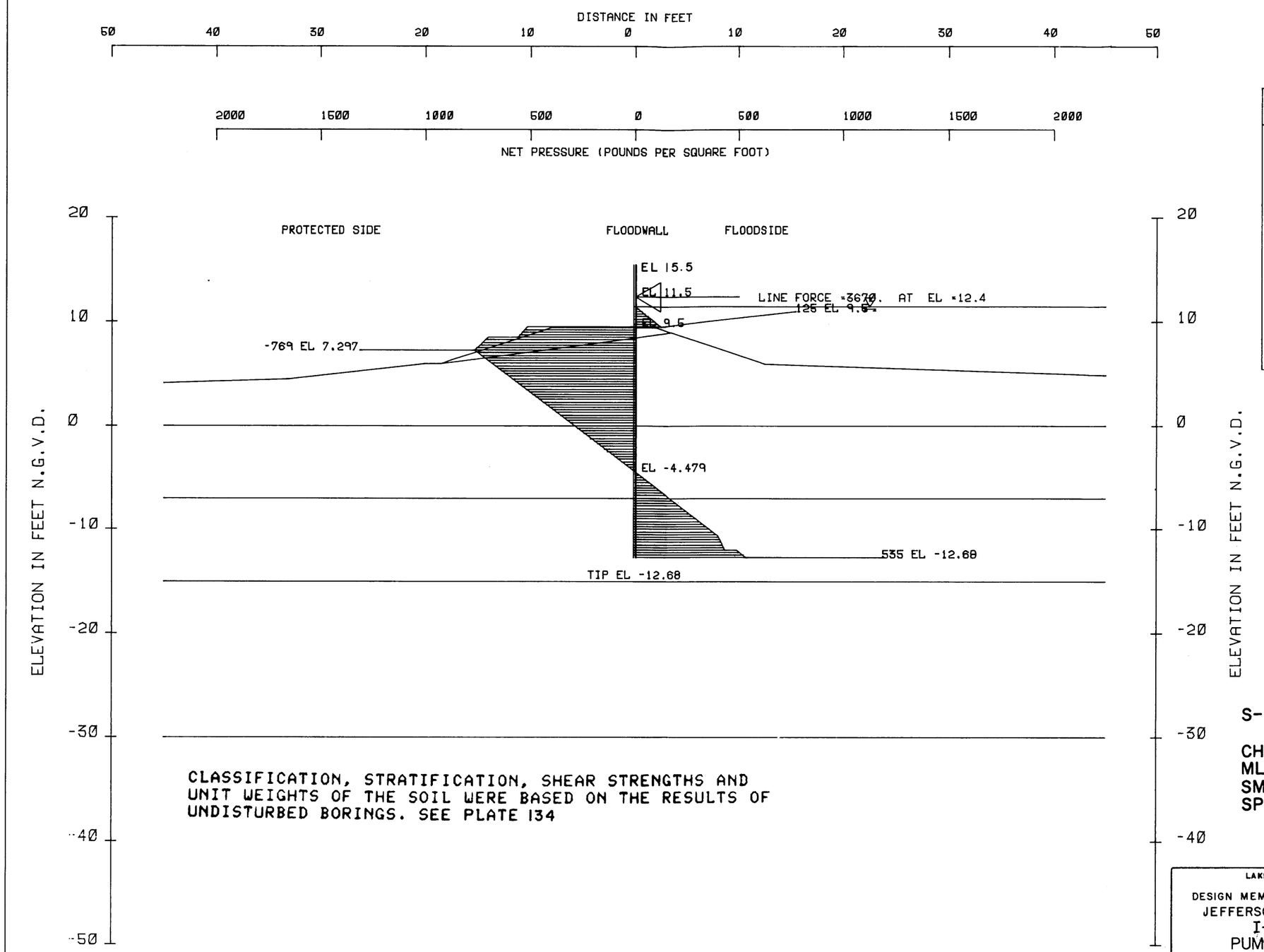
NET DIAGRAM

(S) CASE F.S.=1.25

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17—GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I—WALL ANALYSIS
PUMPING STA.# 1 WEST
TOP OF WALL EL. 17.0
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 150



ELEVATION	PRESSURE
11.50	0.0
9.50	125.0
9.50	0.0
9.50	-515.0
8.50	-562.5
8.50	-703.5
7.30	-769.1
-4.48	0.0
-10.61	400.5
-12.00	437.5
-12.00	491.2
-12.68	535.4
-12.68	0.0

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 134

NET DIAGRAM

(Q) CASE F.S.=1.25

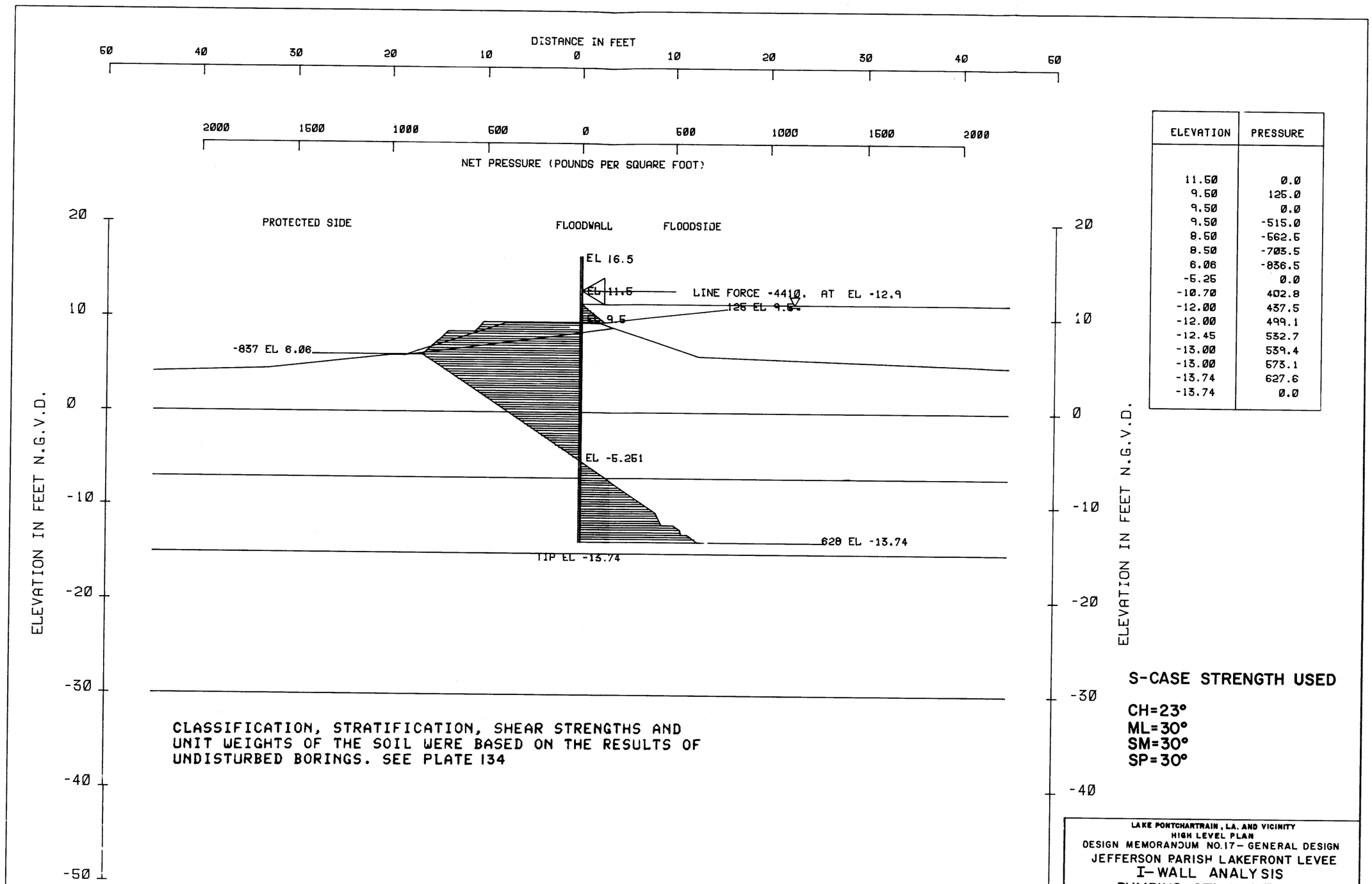
S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 – GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.# 1 EAST
TOP OF WALL EL. 15.5
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 151



ELEVATION	PRESSURE
11.50	0.0
9.50	125.0
9.50	0.0
9.50	-515.0
8.50	-562.5
8.50	-703.5
6.06	-836.5
-5.25	0.0
-10.70	402.8
-12.00	437.5
-12.00	499.1
-12.45	532.7
-13.00	539.4
-13.00	573.1
-13.74	627.6
-13.74	0.0

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 134

NET DIAGRAM

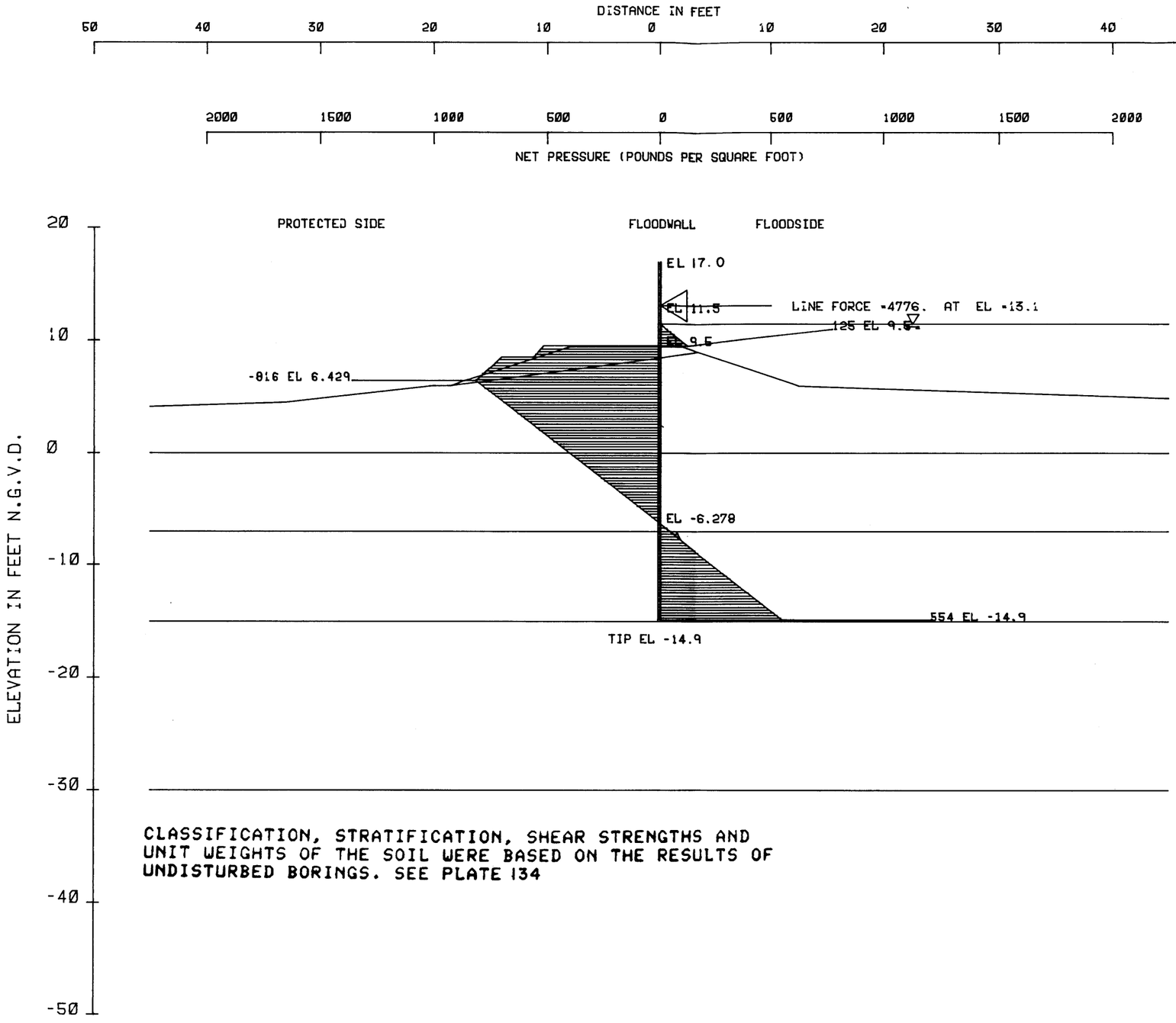
(Q) CASE F.S.=1.25

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.# 1 EAST
TOP OF WALL EL. 16.5
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148



ELEVATION	PRESSURE
11.50	0.0
9.50	125.0
9.50	0.0
9.50	-515.0
8.50	-562.5
8.50	-703.5
6.43	-816.4
-7.00	46.4
-7.00	74.4
-7.74	94.2
-6.28	0.0
-14.90	553.7
-14.90	0.0

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 134

NET DIAGRAM

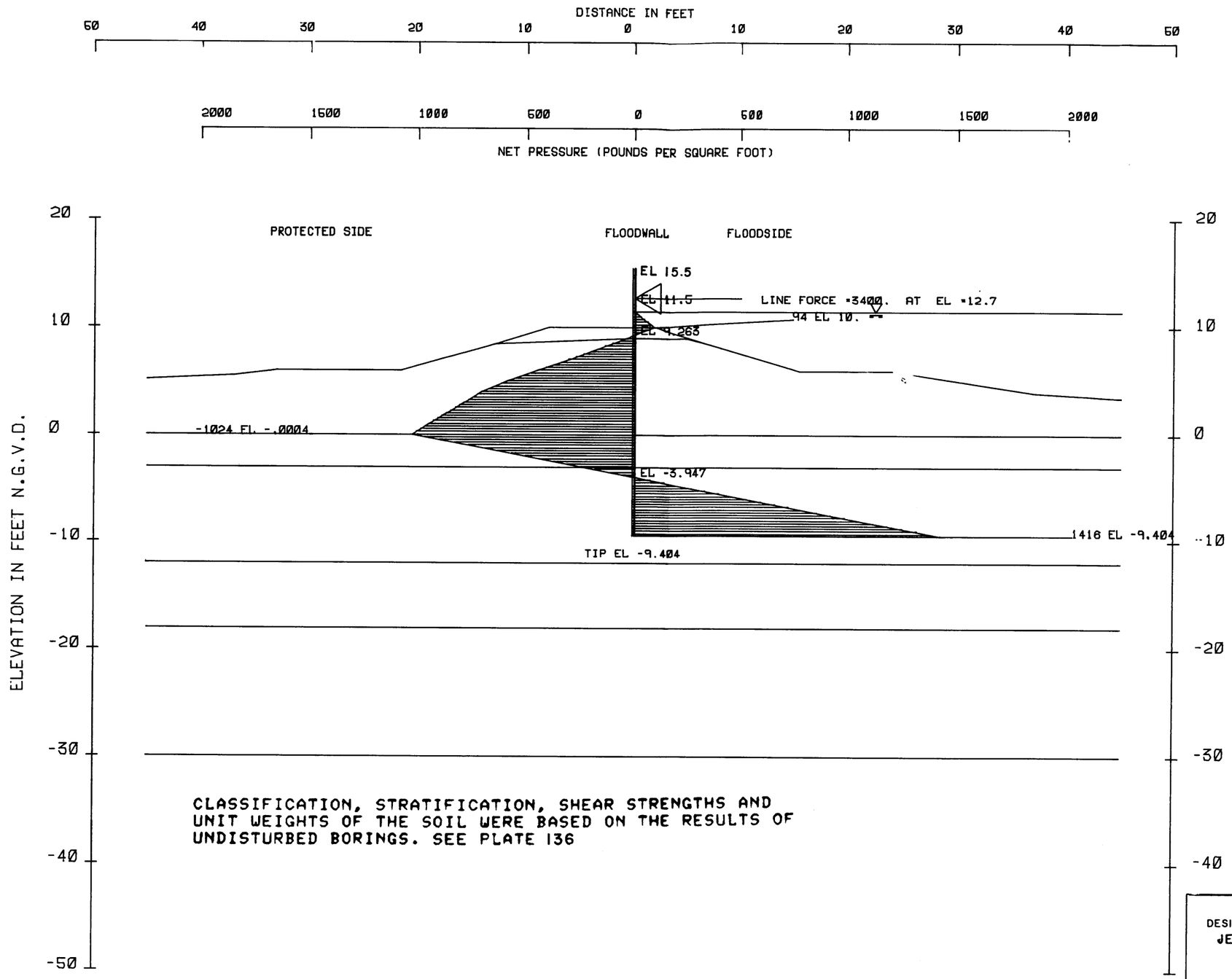
(Q) CASE F.S.=1.25

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.# 1 EAST
TOP OF WALL EL. 17.0
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. N-2-30148



ELEVATION	PRESSURE
11.50	0.0
10.00	93.8
9.26	0.0
9.00	-33.4
7.00	-307.2
5.00	-588.9
4.00	-712.8
0.00	-1024.3
-3.95	0.0
-9.40	1416.0
-9.40	0.0

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 136

NET DIAGRAM

(S) CASE F.S.=1.25

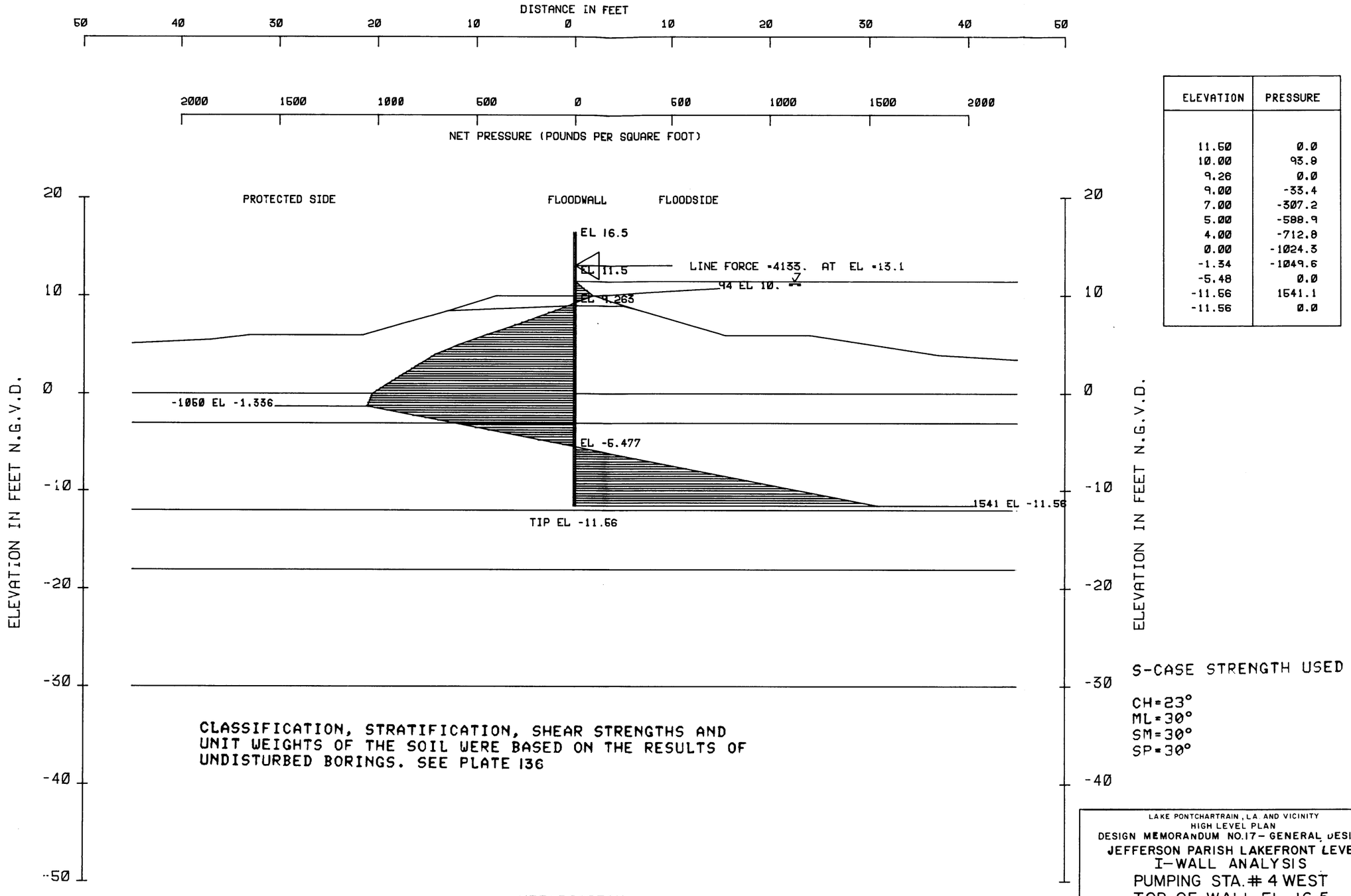
S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.# 4WEST
TOP OF WALL EL. 15.5
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 154



ELEVATION	PRESSURE
11.50	0.0
10.00	93.8
9.26	0.0
9.00	-33.4
7.00	-307.2
5.00	-588.9
4.00	-712.8
0.00	-1024.3
-1.34	-1049.6
-5.48	0.0
-11.56	1541.1
-11.56	0.0

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 136

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

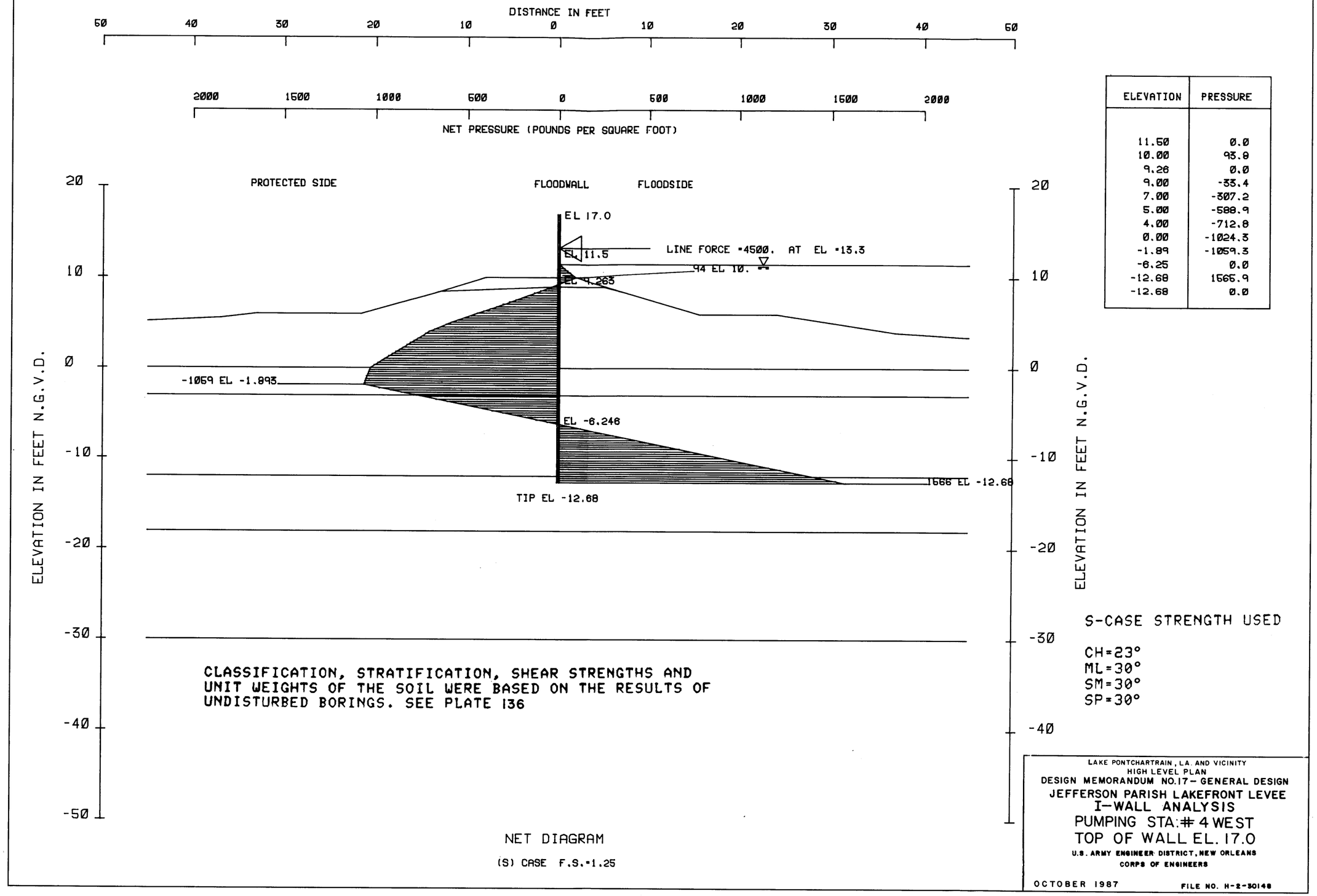
NET DIAGRAM

(S) CASE F.S.=1.25

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.# 4 WEST
TOP OF WALL EL. 16.5
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 155



ELEVATION	PRESSURE
11.50	0.0
10.00	93.9
9.26	0.0
9.00	-33.4
7.00	-307.2
5.00	-588.9
4.00	-712.8
0.00	-1024.3
-1.89	-1059.3
-6.25	0.0
-12.68	1565.9
-12.68	0.0

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 136

NET DIAGRAM

(S) CASE F.S.=1.25

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

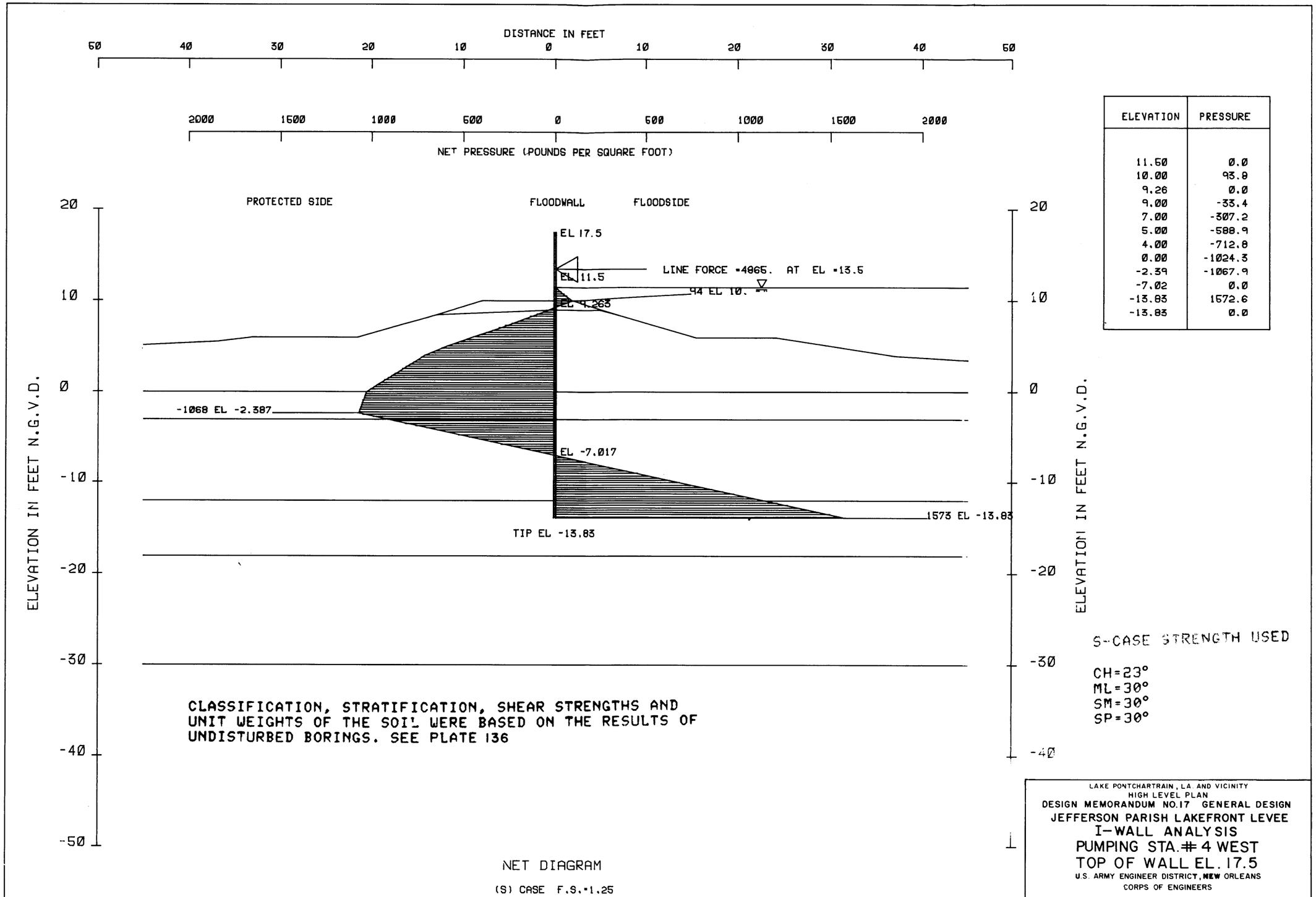
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.#4 WEST
TOP OF WALL EL. 17.0

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

OCTOBER 1987

FILE NO. H-2-30148

PLATE 156



ELEVATION	PRESSURE
11.50	0.0
10.00	93.8
9.26	0.0
9.00	-33.4
7.00	-307.2
5.00	-588.9
4.00	-712.8
0.00	-1024.3
-2.39	-1067.9
-7.02	0.0
-13.83	1572.6
-13.83	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

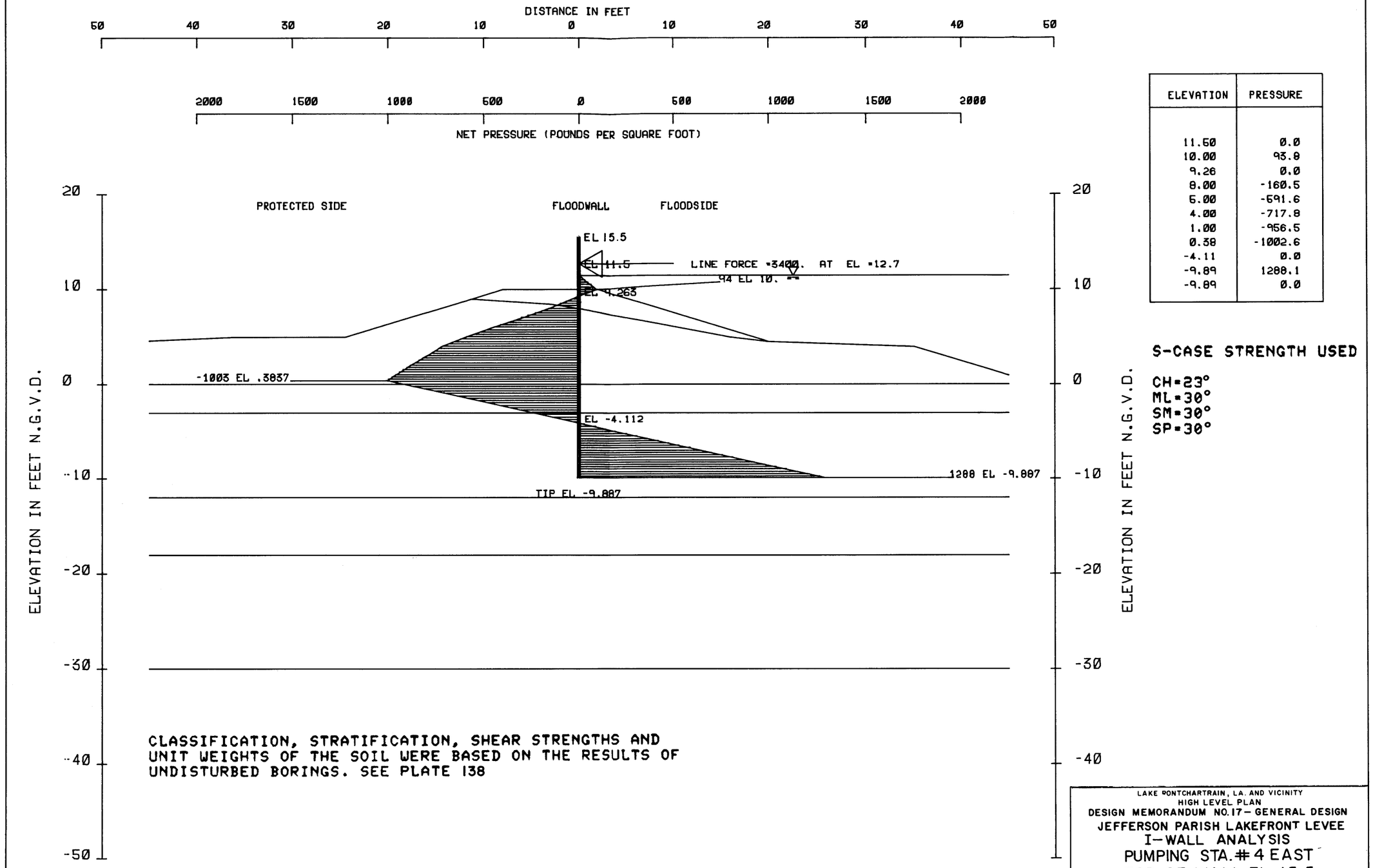
CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 136

NET DIAGRAM

(S) CASE F.S.=1.25

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.# 4 WEST
TOP OF WALL EL. 17.5
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO H-2-30148



ELEVATION	PRESSURE
11.50	0.0
10.00	93.8
9.26	0.0
8.00	-160.5
6.00	-691.6
4.00	-717.8
1.00	-956.5
0.38	-1002.6
-4.11	0.0
-9.89	1288.1
-9.89	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 138

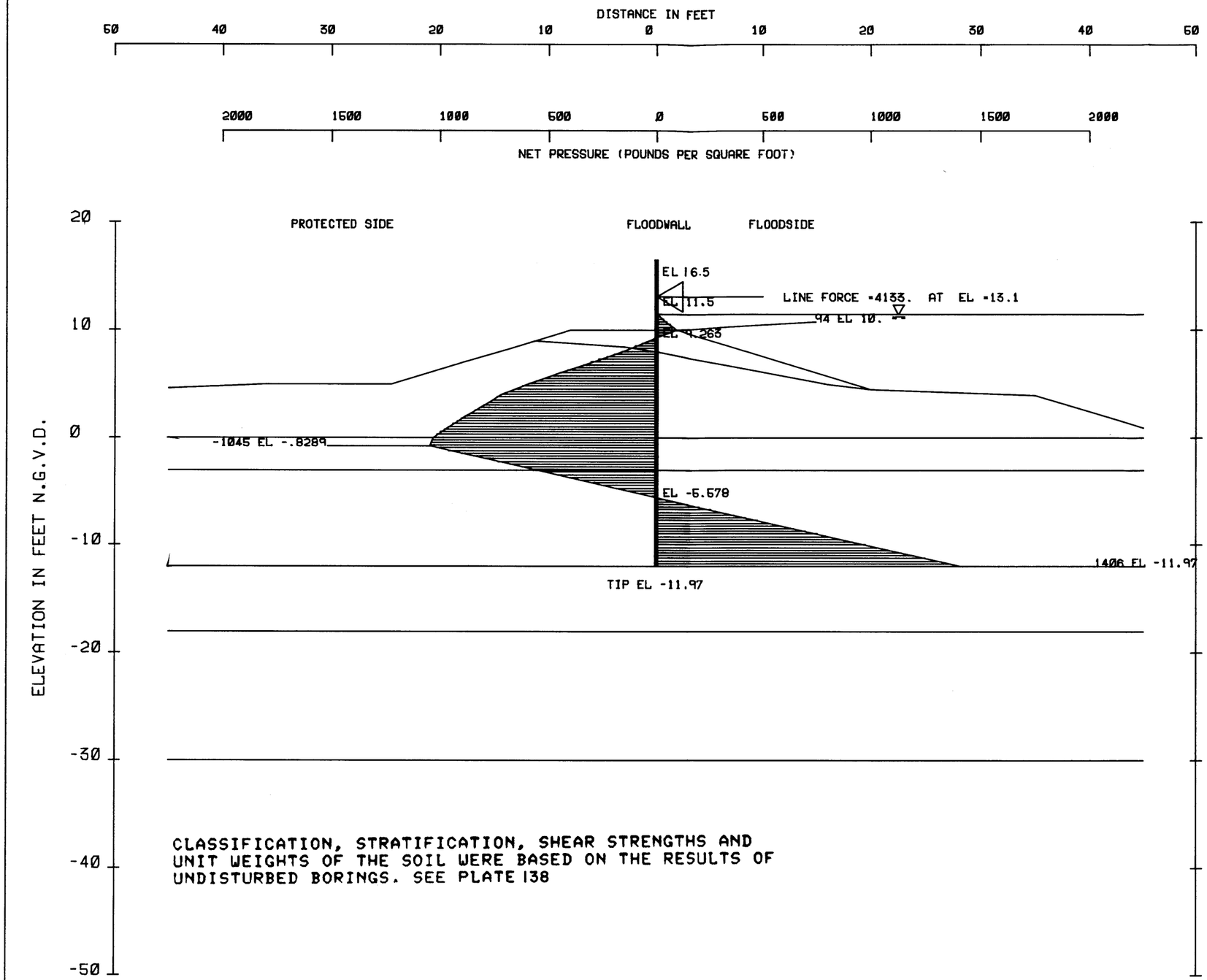
NET DIAGRAM

(S) CASE F.S.=1.25

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 – GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I–WALL ANALYSIS
PUMPING STA. # 4 EAST
TOP OF WALL EL. 15.5
U.S. ARMY ENGINEER DISTRICT NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148

PLATE 158



ELEVATION	PRESSURE
11.50	0.0
10.00	93.8
9.26	0.0
8.00	-160.5
5.00	-591.6
4.00	-717.8
1.00	-956.5
0.00	-1031.3
-0.83	-1044.6
-5.58	0.0
-11.97	1406.7
-11.97	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

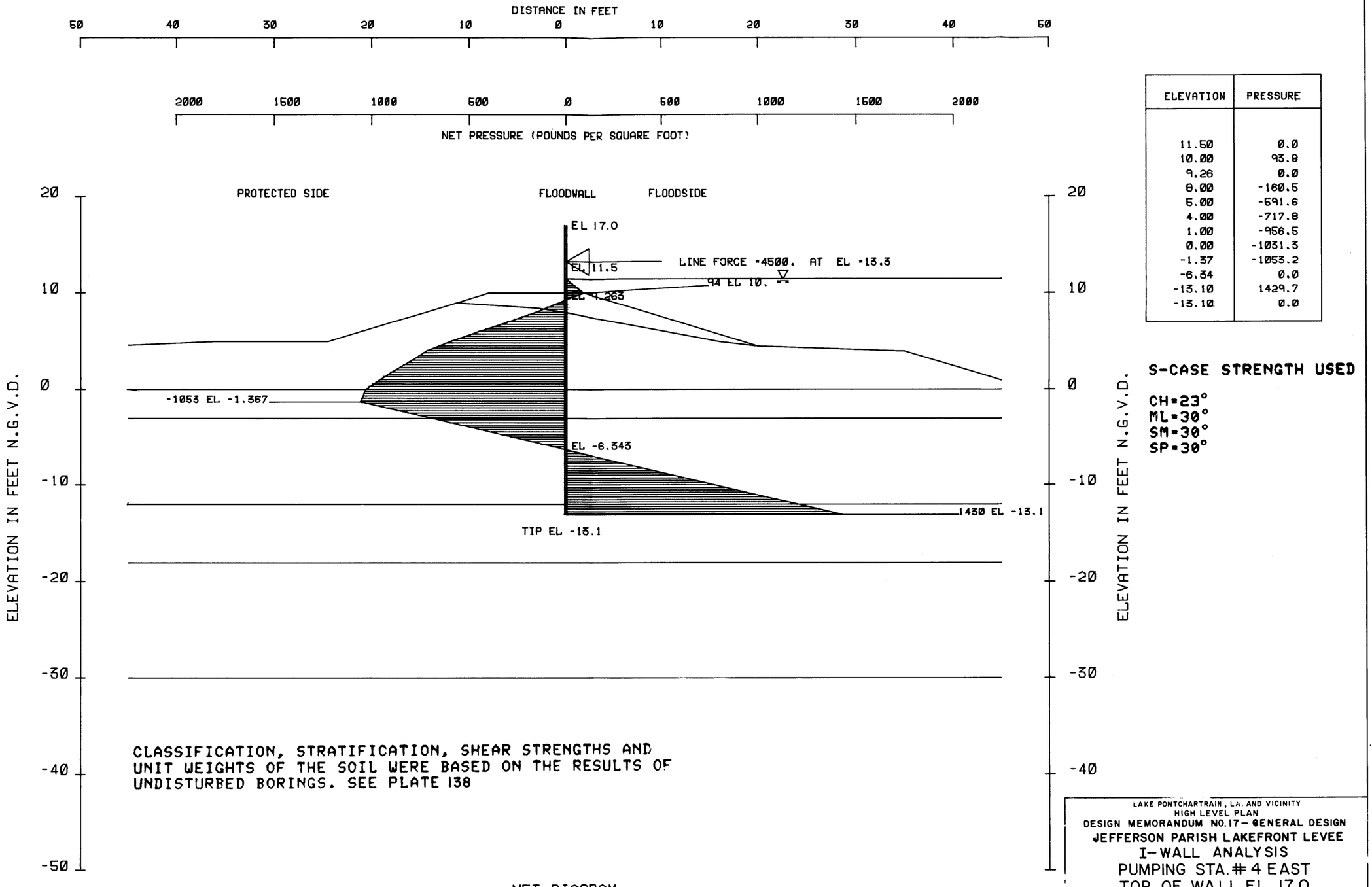
CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 138

NET DIAGRAM

(S) CASE F.S.=1.25

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.# 4 EAST
TOP OF WALL EL. 16.5
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. H-2-30148



ELEVATION	PRESSURE
11.50	0.0
10.00	93.8
9.26	0.0
8.00	-160.5
5.00	-591.6
4.00	-717.8
1.00	-956.5
0.00	-1031.3
-1.37	-1053.2
-6.34	0.0
-13.10	1429.7
-13.10	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 138

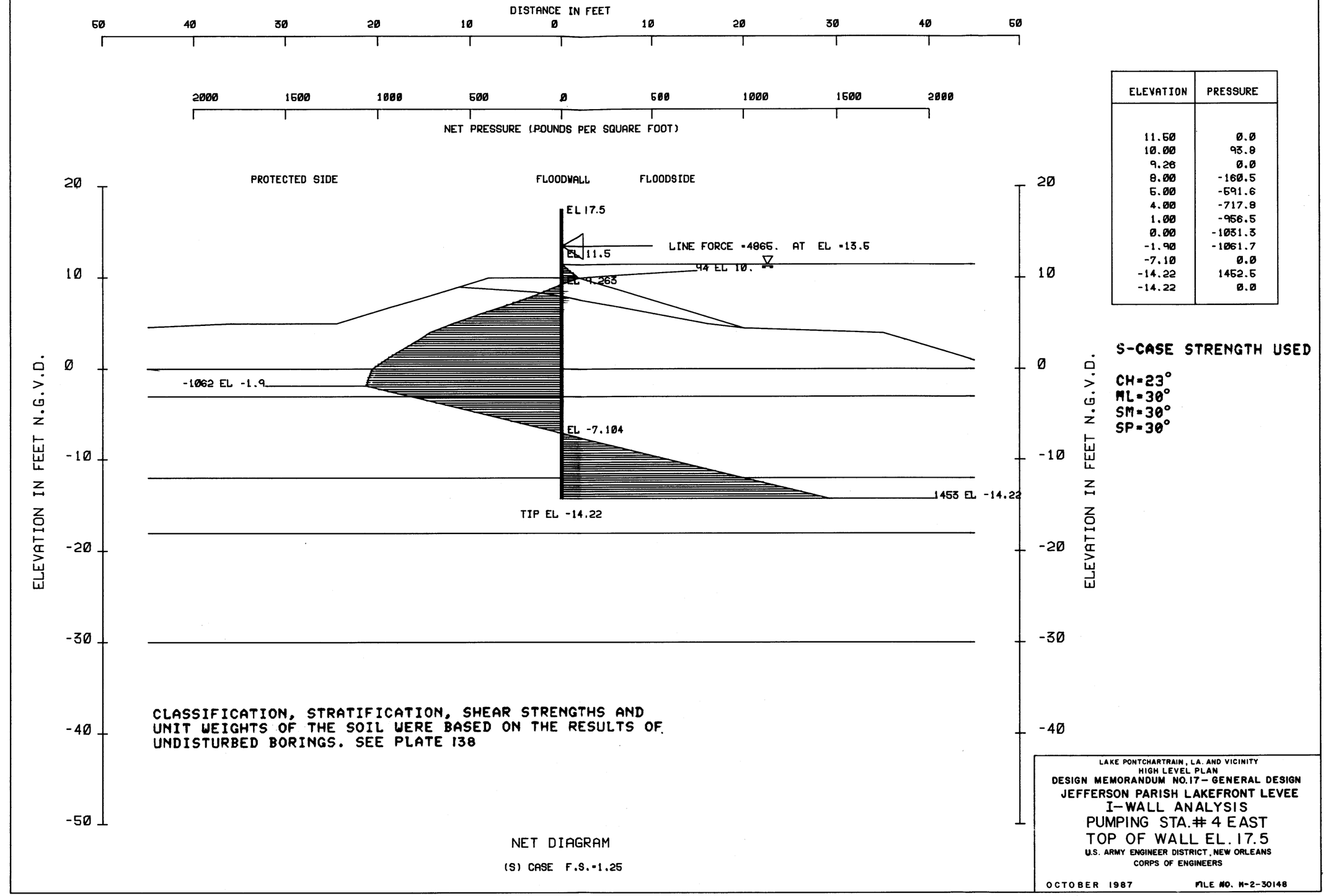
NET DIAGRAM

(S) CASE F.S.=1.25

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.#4 EAST
TOP OF WALL EL. 17.0
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO H-2-30148

PLATE 160



ELEVATION	PRESSURE
11.50	0.0
10.00	93.8
9.26	0.0
8.00	-160.5
5.00	-591.6
4.00	-717.8
1.00	-956.5
0.00	-1031.3
-1.90	-1061.7
-7.10	0.0
-14.22	1452.5
-14.22	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 138

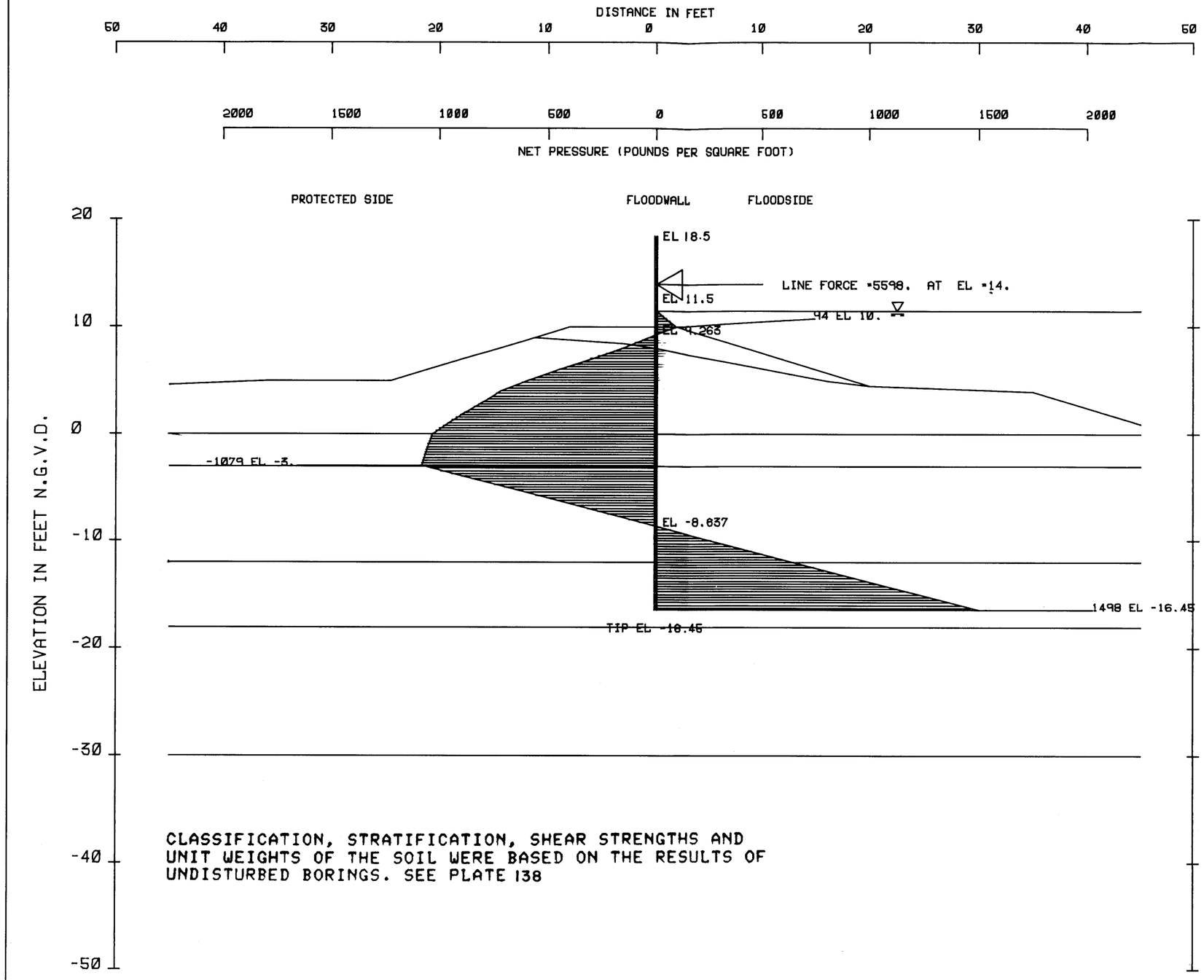
NET DIAGRAM

(S) CASE F.S.=1.25

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.#4 EAST
TOP OF WALL EL. 17.5
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. M-2-30148

PLATE 161



ELEVATION	PRESSURE
11.50	0.0
10.00	93.8
9.26	0.0
8.00	-160.5
5.00	-591.6
4.00	-717.8
1.00	-956.5
0.00	-1031.3
-3.00	-1079.3
-8.64	0.0
-16.45	1497.8
-16.45	0.0

S-CASE STRENGTH USED

CH=23°
ML=30°
SM=30°
SP=30°

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATE 138

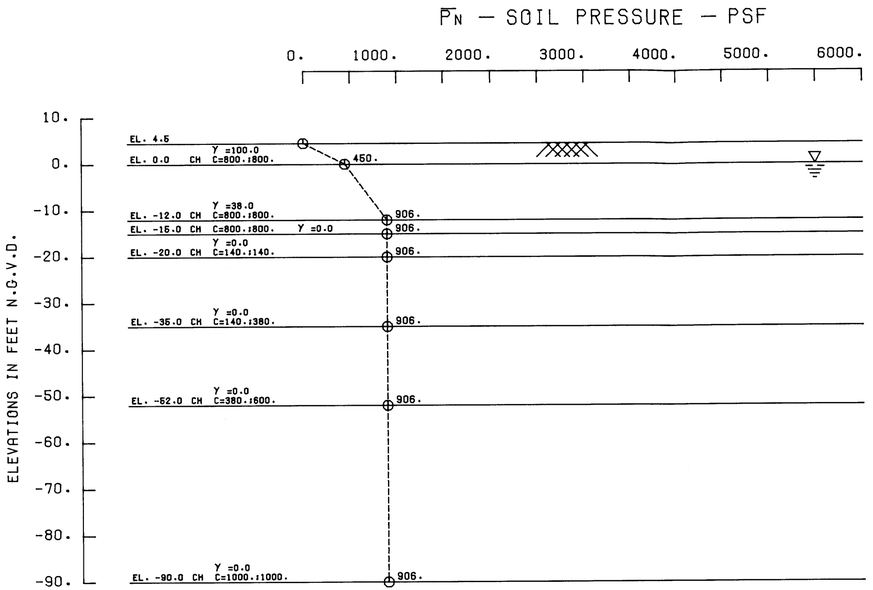
NET DIAGRAM

(S) CASE F.S.=1.25

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
I-WALL ANALYSIS
PUMPING STA.# 4 EAST
TOP OF WALL EL. 18.5
U.S ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO H-2-30148

PLATE 162



S-CASE

CH,CL- Φ=23°

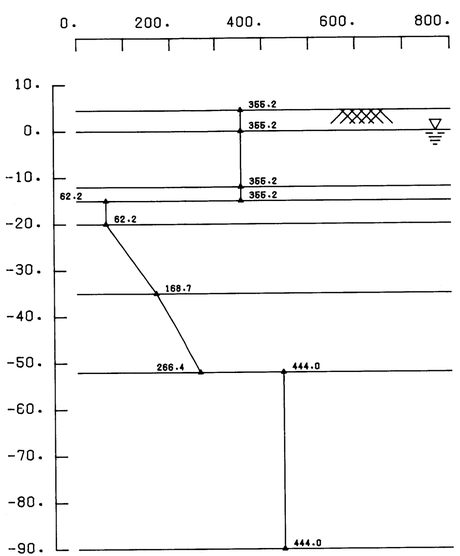
SM,SP- Φ=30°

TYPICAL SOIL PROFILE

SOIL STRATIFICATION IS BASED ON GEOLOGIC PROFILE

SHEAR STRENGTH AND WET DENSITIES SEE PLATE 98

D	PILE SPACING IN DIRECTION OF LOADING
1.00	8B
0.85	7B
0.70	6B
0.55	5B
0.40	4B
0.25	3B
C	LOADING CONDITION
1.00	INITIAL LOADING
0.30	CYCLIC LOADING



NOTES: $K_H = \alpha K_1/B = (0.2222\,q_u/B)(C)(D)$ COHESIVE

α = 0.4 = Factor of material properties of soil and pile

k_1 = Modulus of subgrade reaction for test plate (pci)

B_1 = Width or diameter of test plate (in)

$K_1 = k_1 B_1 = 80\,q_u$ (psf) = $0.5556\,q_u$ (psi)

q_u = 2·c = Unconfined compressive strength (psf)

C = Reduction for cyclic loading-not applicable

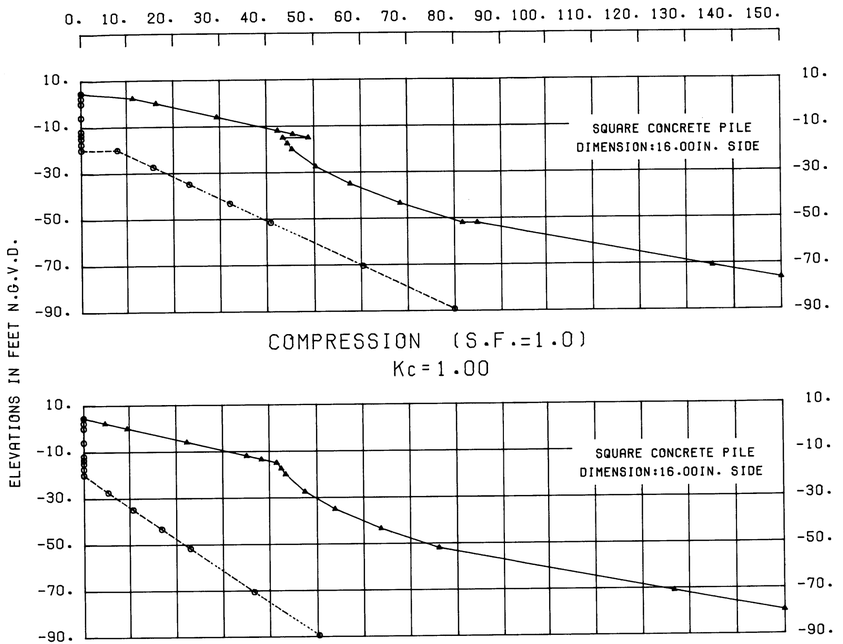
D = Group effect reduction factor

B = Width of pile measured at right angles to the direction of displacement (in)

$K_H = (nh)(Z/B)(C)(D)$ COHESIONLESS

nh = Coefficient of horizontal subgrade reaction (pci)

Z = Depth below equivalent ground surface (in)



THE FACTOR SHOWN, (MODULUS OF HORIZONTAL SUBGRADE K_h, TIMES THE PILE WIDTH IN INCHES (B), MEASURED AT RIGHT ANGLES TO THE DIRECTION OF DISPLACEMENT) MUST BE MODIFIED BY A REDUCTION FACTOR FOR THE EFFECT OF GROUP ACTION (D) AND A REDUCTION FACTOR FOR CYCLIC LOADING (C) EX: $K_h = \frac{0.2222\,q_u\,(C)(D)}{(B)}$

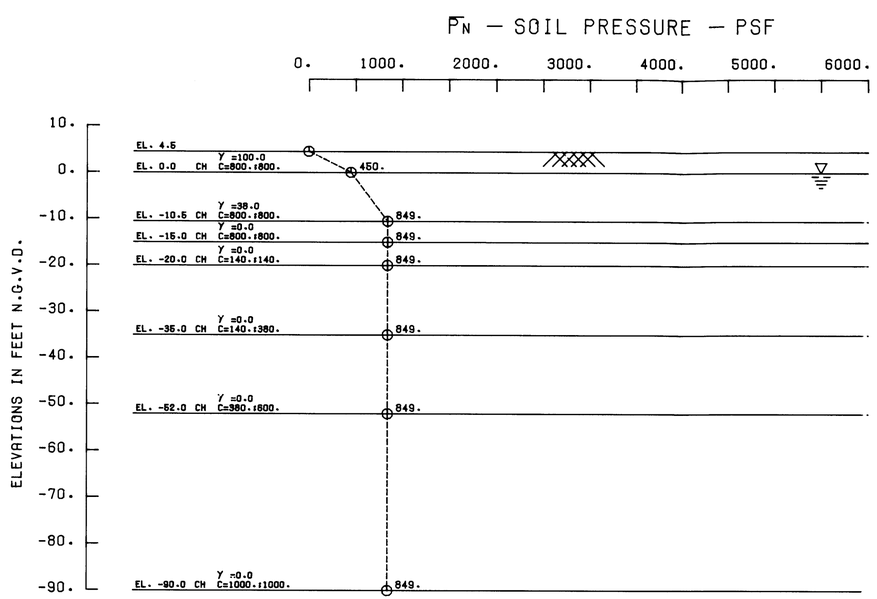
----- S-CASE

——— Q-CASE

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17—GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
CONCRETE PILE
16 IN. SQ.
CAUSEWAY FLOODGATES
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1987 FILE NO. N-2-30148

PLATE 163



S-CASE

CH.CL- Φ=23°

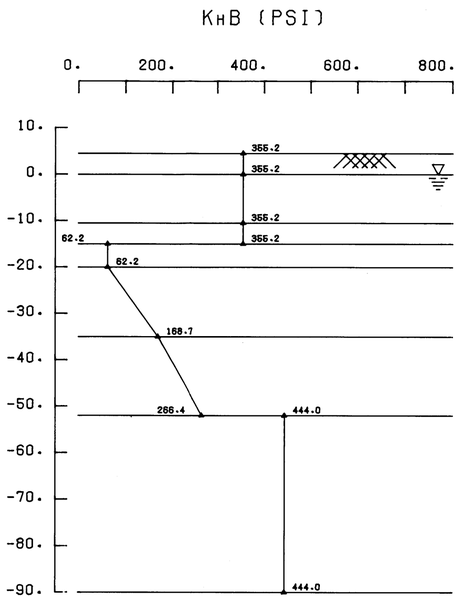
SM.SP- Φ=30°

TYPICAL SOIL PROFILE

SOIL STRATIFICATION IS BASED ON GEOLOGIC PROFILE

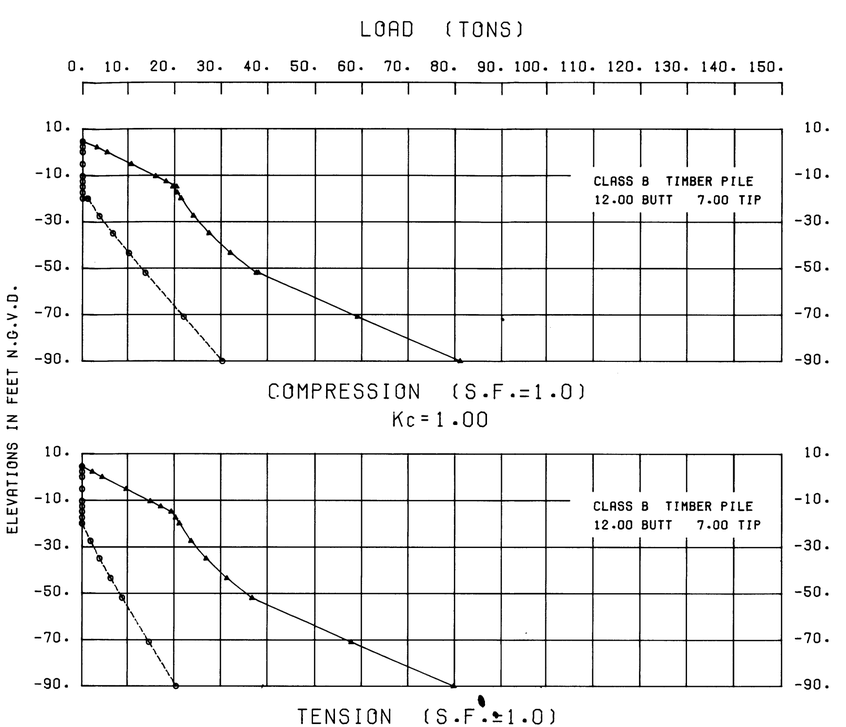
SHEAR STRENGTH AND WET DENSITIES SEE PLATE 98

D	PILE SPACING IN DIRECTION OF LOADING
1.00	8B
0.85	7B
0.70	6B
0.55	5B
0.40	4B
0.25	3B
C	LOADING CONDITION
1.00	INITIAL LOADING
0.30	CYCLIC LOADING



NOTES: $K_H = \alpha K_1/B = (0.2222 q_u/B)(C)(D)$ COHESIVE

- α = 0.4 = Factor of material properties of soil and pile
- k_1 = Modulus of subgrade reaction for test plate (pci)
- B_1 = Width or diameter of test plate (in)
- $K_1 = k_1 B_1 = 80 q_u$ (psf) = 0.5556 q_u (psi)
- $q_u = 2 \cdot c$ = Unconfined compressive strength (psf)
- C = Reduction for cyclic loading-not applicable
- D = Group effect reduction factor
- B = Width of pile measured at right angles to the direction of displacement (in)
- $K_H = (nh)(Z/B)(C)(D)$ COHESIONLESS
- nh = Coefficient of horizontal subgrade reaction (pci)
- Z = Depth below equivalent ground surface (in)



THE FACTOR SHOWN, (MODULUS OF HORIZONTAL SUBGRADE K_H, TIMES THE PILE WIDTH IN INCHES (B), MEASURED AT RIGHT ANGLES TO THE DIRECTION OF DISPLACEMENT) MUST BE MODIFIED BY A REDUCTION FACTOR FOR THE EFFECT OF GROUP ACTION (D) AND A REDUCTION FACTOR FOR CYCLIC LOADING (C) EX: $K_H = \frac{0.2222\, q_u (C)(D)}{(B)}$

----- S-CASE

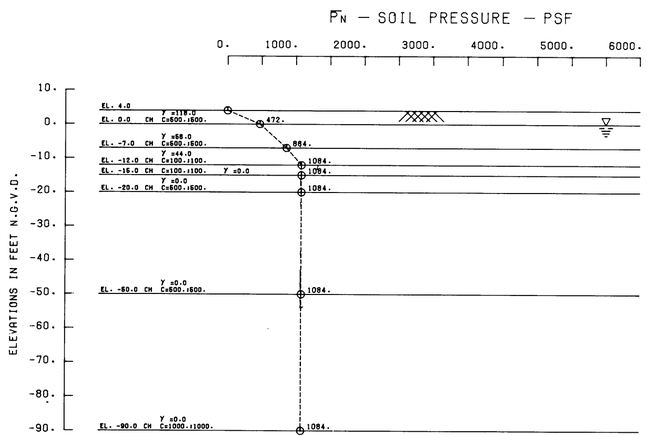
——— Q-CASE

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
12"TIMBER PILE
CAUSEWAY FLOODGATES

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

OCTOBER 1967 FILE NO. H-2-30148

PLATE 164



S-CASE

CH,CL- ϕ=23°

SM,SP- ϕ=30°

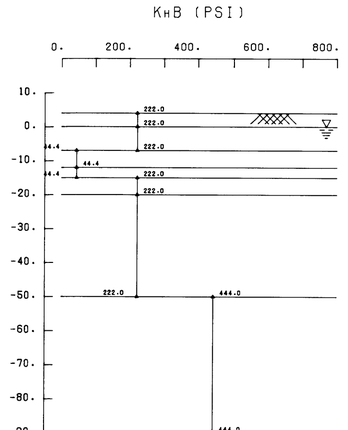
TYPICAL SOIL PROFILE

SOIL STRATIFICATION IS BASED ON GEOLOGIC PROFILE

SHEAR STRENGTH AND WET DENSITIES SEE PLATE 102

D	PILE SPACING IN DIRECTION OF LOADING
1.00	8B
0.85	7B
0.70	6B
0.55	5B
0.40	4B
0.25	3B

C	LOADING CONDITION
1.00	INITIAL LOADING
0.30	CYCLIC LOADING



NOTES: K_H = $=K_I/B=(0.2222\,q_u/B)(C)(D)$ COHESIVE

α = 0.4 = Factor of material properties of soil and pile

k_I = Modulus of subgrade reaction for test plate (pci)

B_I = Width or diameter of test plate (in)

K_I = $k_I B_I$ = 80 q_u (psf) = 0.5556 q_u (psi)

q_u = 2-c = Unconfined compressive strength (psf)

C = Reduction for cyclic loading-not applicable

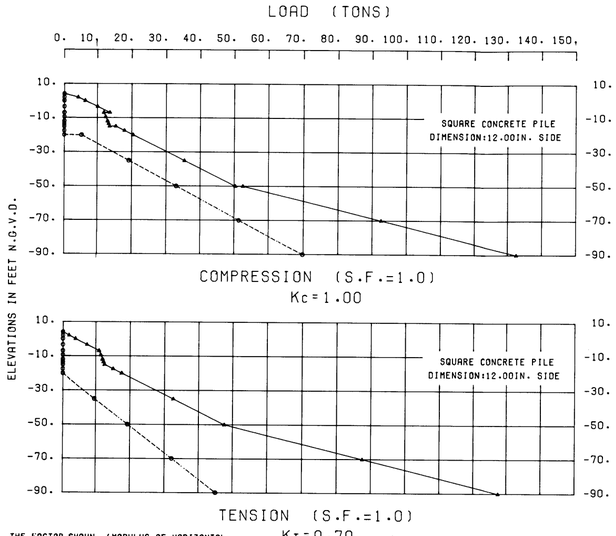
D = Group effect reduction factor

B = Width of pile measured at right angles to the direction of displacement (in)

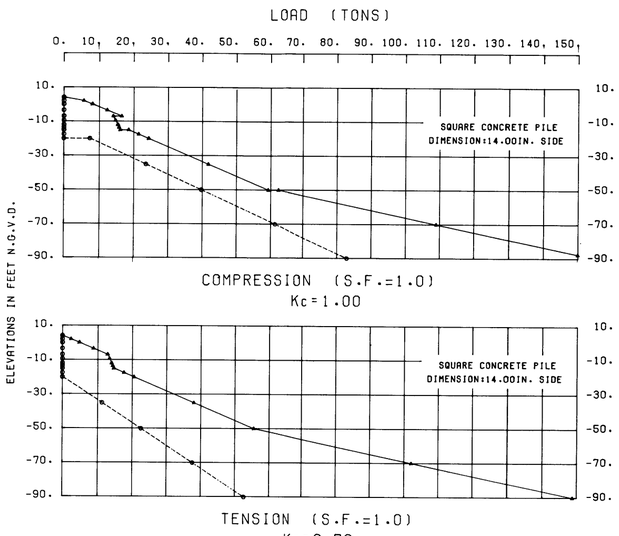
K_H = (nh)(Z/B)(C)(D) COHESIONLESS

nh = Coefficient of horizontal subgrade reaction (pci)

Z = Depth below equivalent ground surface (in)



THE FACTOR SHOWN, (MODULUS OF HORIZONTAL SUBGRADE K_H, TIMES THE PILE WIDTH IN INCHES (B), MEASURED AT RIGHT ANGLES TO THE DIRECTION OF DISPLACEMENT) MUST BE MODIFIED BY A REDUCTION FACTOR FOR THE EFFECT OF GROUP ACTION (D) AND A REDUCTION FACTOR FOR CYCLIC LOADING (C) EX: $K_H = \frac{0.2222\,q_u\,(C)(D)}{(B)}$



LOAD VS. TIP ELEVATION

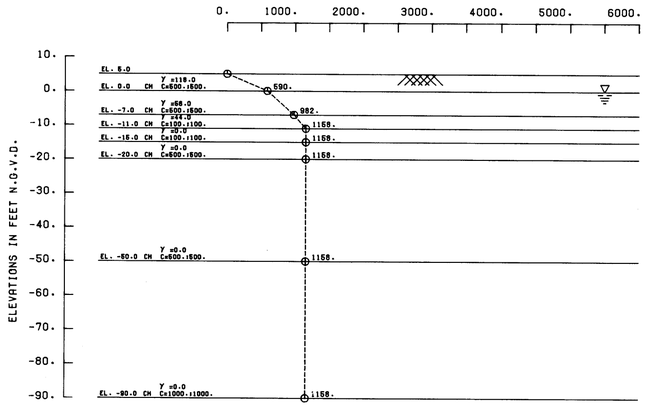
----- S-CASE

——— Q-CASE

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17— GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
PUMPING STA. NO.1
T-WALL
CONCRETE PILE WEST SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-2-50148

PLATE 165



S-CASE

CH.CL- ϕ=23°

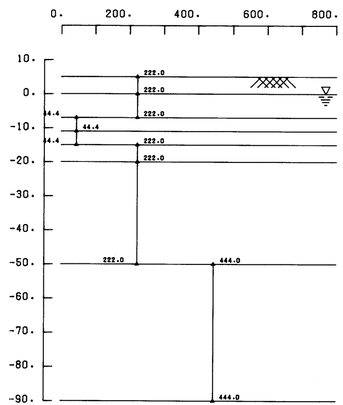
SM.SP- ϕ=30°

TYPICAL SOIL PROFILE

SOIL STRATIFICATION IS BASED ON GEOLOGIC PROFILE

SHEAR STRENGTH AND WET DENSITIES SEE PLATE 102

D	PILE SPACING IN DIRECTION OF LOADING
1.00	8B
0.85	7B
0.70	6B
0.55	5B
0.40	4B
0.25	3B
C	LOADING CONDITION
1.00	INITIAL LOADING
0.30	CYCLIC LOADING



NOTES: $K_H = \alpha K_1/B = (0.2222\,q_u/B)(C)(D)$ COHESIVE

α = 0.4 = Factor of material properties of soil and pile

k_1 = Modulus of subgrade reaction for test plate (pci)

B_1 = Width or diameter of test plate (in)

$K_1 = k_1 B_1 = 80\,q_u$ (psf) = 0.5556 q_u (psi)

q_u = 2·0 = Unconfined compressive strength (psf)

C = Reduction for cyclic loading-not applicable

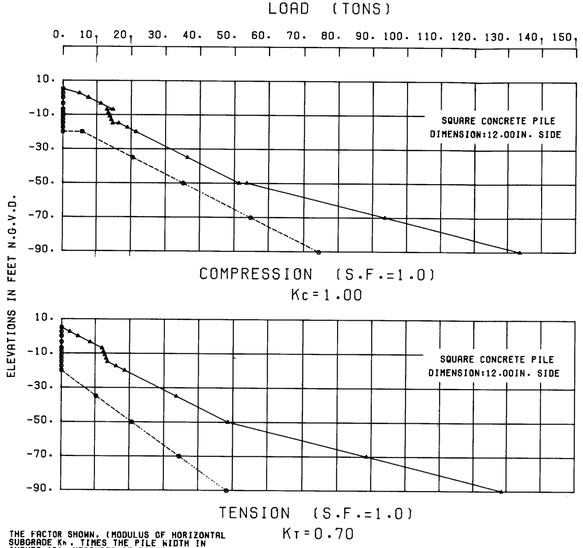
D = Group effect reduction factor

B = Width of pile measured at right angles to the direction of displacement (in)

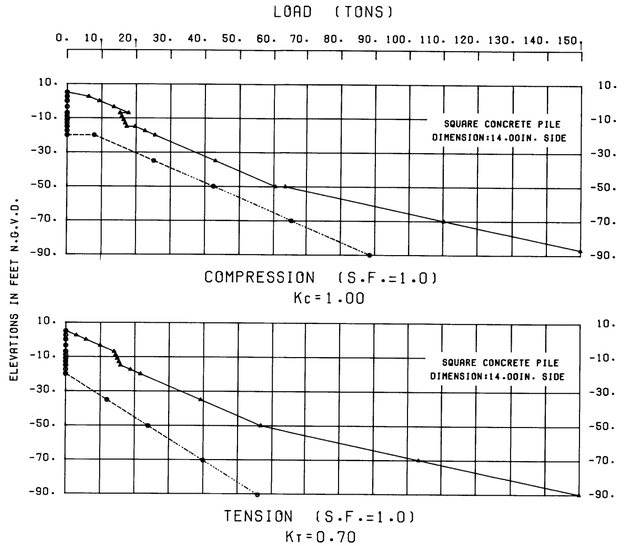
$K_H = (nh)(Z/B)(C)(D)$ COHESIONLESS

nh = Coefficient of horizontal subgrade reaction (pci)

Z = Depth below equivalent ground surface (in)



THE FACTOR SHOWN, (MODULUS OF HORIZONTAL SUBGRADE K_H, TIMES THE PILE WIDTH IN INCHES (B), MEASURED AT RIGHT ANGLES TO THE DIRECTION OF DISPLACEMENT) MUST BE MODIFIED BY A REDUCTION FACTOR FOR THE EFFECT OF GROUP ACTION (D) AND A REDUCTION FACTOR FOR CYCLIC LOADING (C) EX: $K_H = \frac{0.2222\,q_u\,(C)(D)}{(B)}$



LOAD VS. TIP ELEVATION

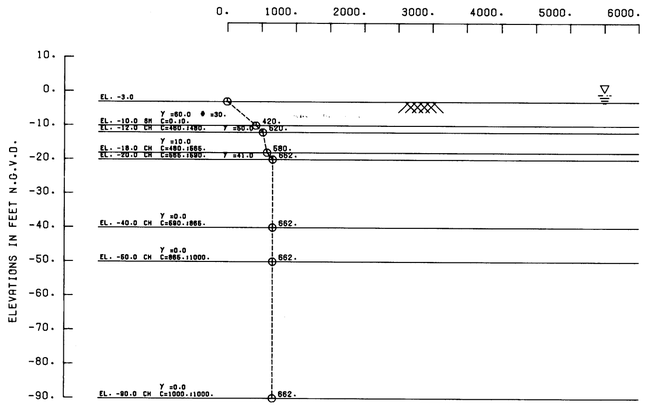
----- S-CASE

——— Q-CASE

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
PUMPING STA. NO.1
T-WALL
CONCRETE PILE EAST SIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. H-2-30140

PLATE 166



S-CASE

CH.CL- ϕ=23°

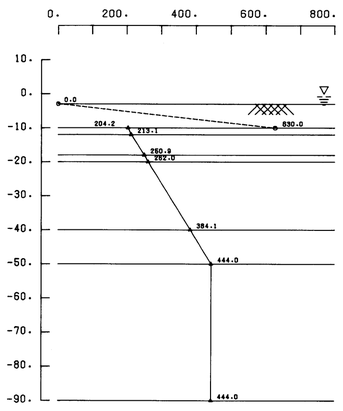
SM.SP- ϕ=30°

TYPICAL SOIL PROFILE

SOIL STRATIFICATION IS RASED ON GEOLOGIC PROFILE

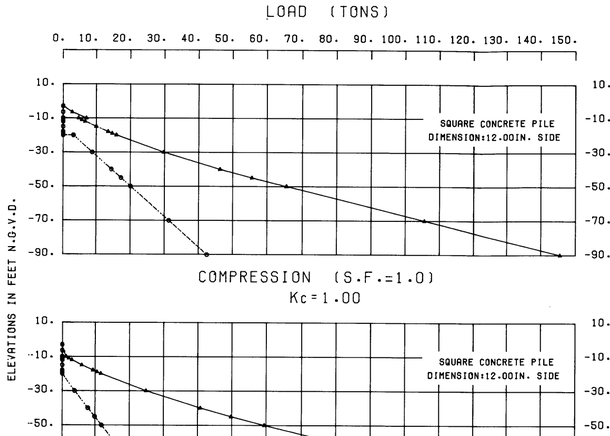
SHEAR STRENGTH AND WET DENSITIES SEE PLATE 76

D	PILE SPACING IN DIRECTION OF LOADING
1.00	8B
0.85	7B
0.70	6B
0.55	5B
0.40	4B
0.25	3B
C	LOADING CONDITION
1.00	INITIAL LOADING
0.30	CYCLIC LOADING

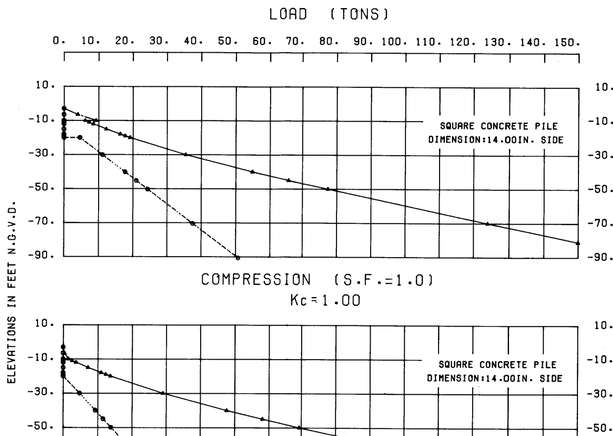


NOTES: $K_H = \phi K_1 / B = (0.2222\, q_u / B)(C)(D)$ COHESIVE

- ϕ = 0.4 = Factor of material properties of soil and pile
- K_1 = Modulus of subgrade reaction for test plate (pci)
- B_1 = Width or diameter of test plate (in)
- $K_1 = K_1 B_1 = 80\, q_u$ (psf) = 0.5555 q_u (psi)
- q_u = 2·0 = Unconfined compressive strength (psf)
- C = Reduction for cyclic loading-not applicable
- D = Group effect reduction factor
- B = Width of pile measured at right angles to the direction of displacement (in)
- $K_H = (nh)(Z/B)(C)(D)$ COHESIONLESS
- nh = Coefficient of horizontal subgrade reaction (pci)
- Z = Depth below equivalent ground surface (in)



THE FACTOR SHOWN, (MODULUS OF HORIZONTAL SUBGRADE K_H, TIMES THE PILE WIDTH IN INCHES (B), MEASURED AT RIGHT ANGLES TO THE DIRECTION OF DISPLACEMENT) MUST BE MODIFIED BY A REDUCTION FACTOR FOR THE EFFECT OF GROUP ACTION (D) AND A REDUCTION FACTOR FOR CYCLIC LOADING (C) EX: $K_H = \frac{0.2222\, q_u (C)(D)}{(B)}$



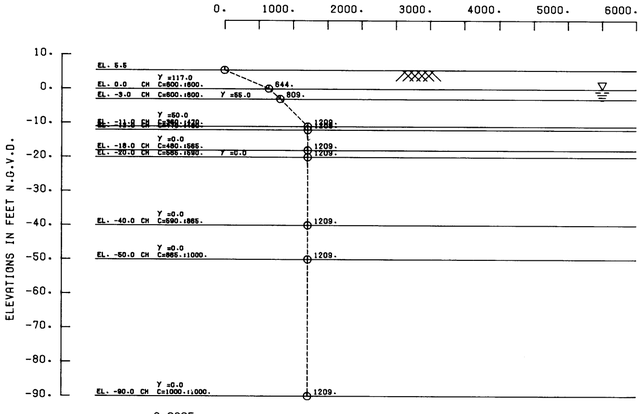
LOAD VS. TIP ELEVATION

- - - - - S-CASE

——— Q-CASE

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
T-WALL CONCRETE PILE
OLD PUMPING STA. NO.4
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
OCTOBER 1967 FILE NO. M-2-20146

PLATE 167



S-CASE

CH.CL- ϕ=23°

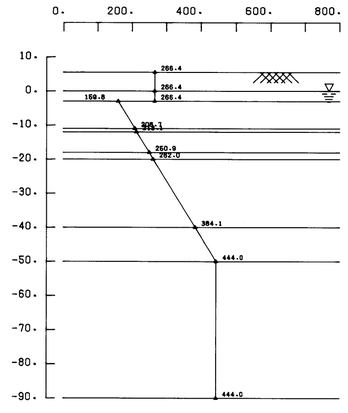
SM.SP- ϕ=30°

TYPICAL SOIL PROFILE

SOIL STRATIFICATION IS BASED ON GEOLOGIC PROFILE

SHEAR STRENGTH AND WET DENSITIES SEE PLATE 76

D	PILE SPACING IN DIRECTION OF LOADING
1.00	8B
0.85	7B
0.70	6B
0.55	5B
0.40	4B
0.25	3B
C	LOADING CONDITION
1.00	INITIAL LOADING
0.30	CYCLIC LOADING



NOTES: $K_H = \alpha K_1/B = (0.2222\,q_u/B)(C)(D)$ COHESIVE

α = 0.4 = Factor of material properties of soil and pile

k_1 = Modulus of subgrade reaction for test plate (pci)

B_1 = Width or diameter of test plate (in)

$K_1 = k_1 B_1 = 80\,q_u$ (psf) = 0.5556 q_u (psi)

q_u = 2-0 = Unconfined compressive strength (psf)

C = Reduction for cyclic loading-not applicable

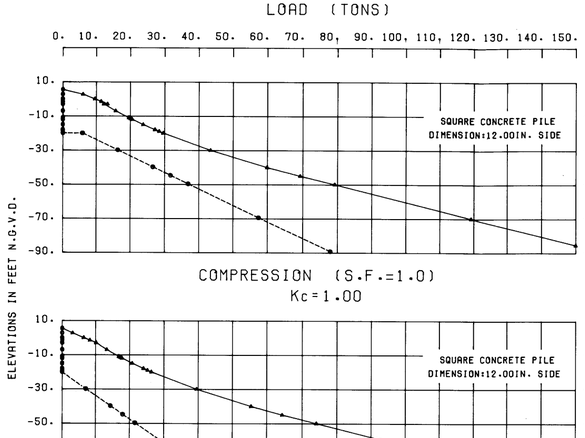
D = Group effect reduction factor

B = Width of pile measured at right angles to the direction of displacement (in)

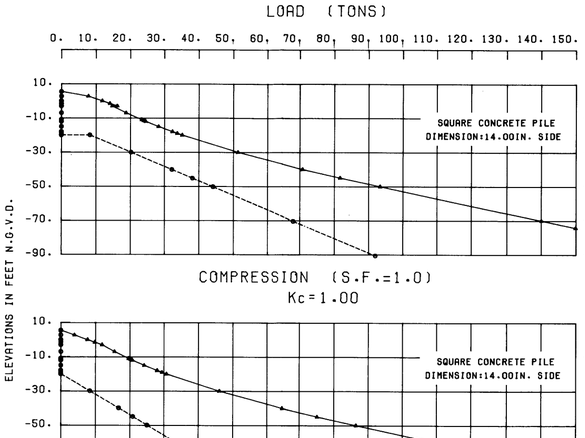
$K_H = (nh)(Z/B)(C)(D)$ COHESIONLESS

nh = Coefficient of horizontal subgrade reaction (pci)

Z = Depth below equivalent ground surface (in)



THE FACTOR SHOWN, (MODULUS OF HORIZONTAL SUBGRADE K_H, TIMES THE PILE WIDTH IN INCHES (B), MEASURED AT RIGHT ANGLES TO THE DIRECTION OF DISPLACEMENT) MUST BE MODIFIED BY A REDUCTION FACTOR FOR THE EFFECT OF GROUP ACTION (D) AND A REDUCTION FACTOR FOR CYCLIC LOADING (C) EX: $K_H = \frac{0.2222\,q_u\,(C)(D)}{(B)}$



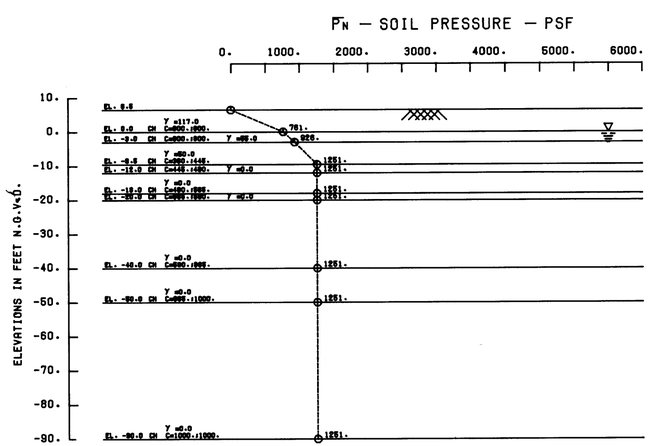
LOAD VS. TIP ELEVATION

----- S-CASE

——— Q-CASE

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
T-WALL CONCRETE PILE
PUMPING STA. NO. 4
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
OCTOBER 1967 FILE NO. N-2-30148

PLATE 168



S-CASE

CH.CL- ϕ=23°

SM.SP- ϕ=30°

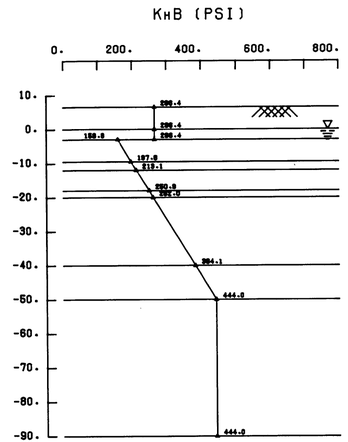
TYPICAL SOIL PROFILE

SOIL STRATIFICATION IS BASED ON GEOLOGIC PROFILE

SHEAR STRENGTH AND WET DENSITIES SEE PLATE 76

D	PILE SPACING IN DIRECTION OF LOADING
1.00	8B
0.85	7B
0.70	6B
0.55	5B
0.40	4B
0.25	3B

C	LOADING CONDITION
1.00	INITIAL LOADING
0.30	CYCLIC LOADING



NOTES: $K_B = \alpha K_1/B = (0.2222\,a_u/B)(C)(D)$ COHESIVE

α = 0.4 = Factor of material properties of soil and pile

K_1 = Modulus of subgrade reaction for test plate (psi)

B_1 = Width or diameter of test plate (in)

$K_1 = K_1 B_1 = 80\,a_u$ (psf) = 0.5556 a_u (psi)

a_u = 2·c = Unconfined compressive strength (psf)

C = Reduction for cyclic loading-not applicable

D = Group effect reduction factor

B = Width of pile measured at right angles to the direction of displacement (in)

$K_B = (nh)(Z/B)(C)(D)$ COHESIONLESS

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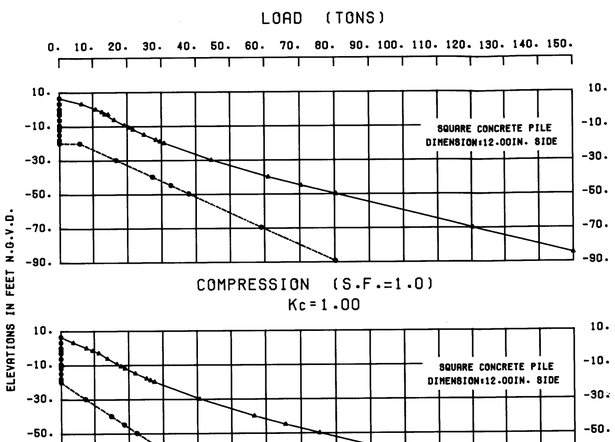

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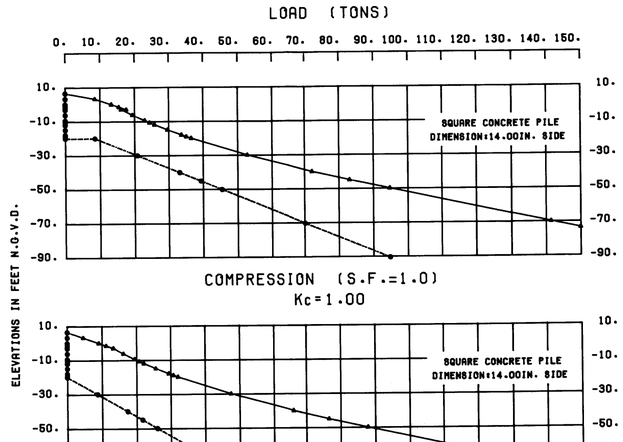


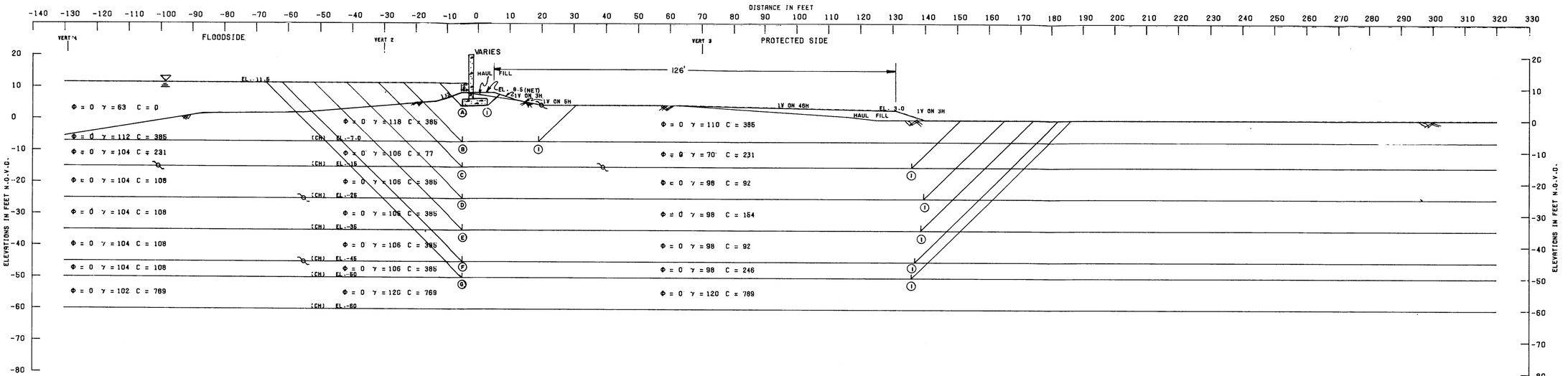
LOAD VS. TIP ELEVATION

----- S-CASE

——— Q-CASE

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17- GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
CONCRETE PILE FLOODGATE
PUMPING STA. NO. 4
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
OCTOBER 1967 FILE NO. H-S-58668

PLATE 169



NO.	EL.	$U_A = D_A - R_A$		$U_P = R_B + R_P + D_P$			U_A	U_P	$U_A - U_P$
		D_A	R_A	R_B	R_P	D_P			
A	4.0	2160	2579	3080	2846	1054	-419	6980	-7399
B	-7.0	15713	9775	3216	8855	7524	5938	19595	-13657
C	-15	33530	11182	16905	9086	11388	22348	37379	-15031
D	-25	64917	17036	21580	10926	29294	47881	61800	-13919
E	-35	106775	23724	21488	14006	57312	83051	92806	-9755
F	-45	159036	31071	21304	15846	95257	127965	132407	-4442
G	-50	188908	34759	38595	18306	117960	154149	174861	-20712

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF UNDISTURBED BORINGS. SEE PLATES 101,102,103

ANALYSIS WAS PERFORMED WITH A FACTOR OF SAFETY OF 1.3 INCORPORATED INTO THE SOIL PARAMETERS. U_A-U_P ARE NEGATIVE AT ALL FAILURE SURFACE THEREFORE NO OTHER LOADS NEED BE APPLIED BENEATH THE BASE.

NOTES

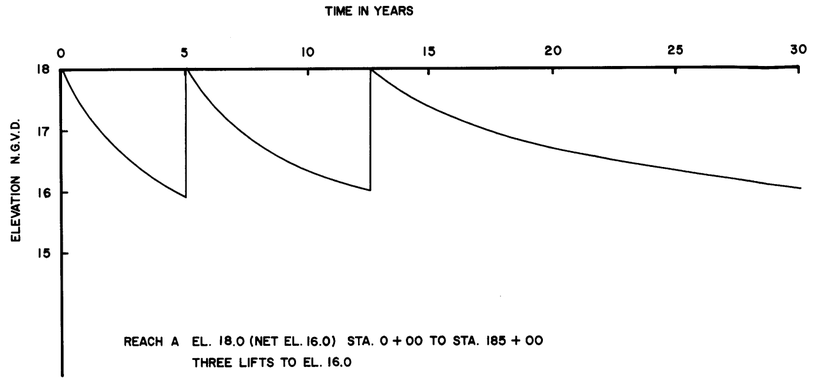
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

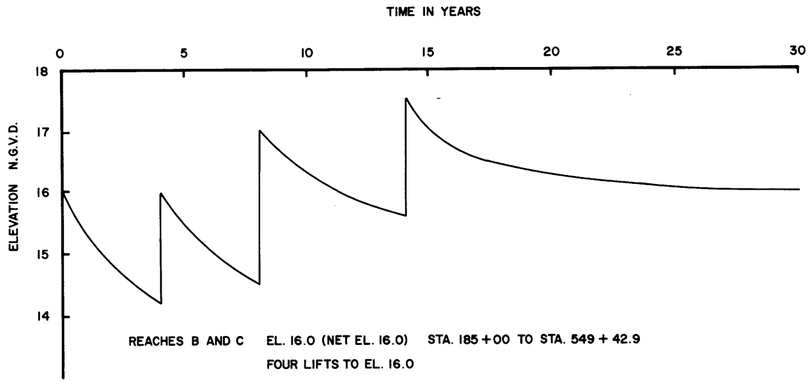
LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO.17-GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE
T-WALL DEEPSEAT ANALYSIS
PUMPING STA. NO.1
WESTSIDE
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

OCTOBER 1967 FILE NO. M-2-30148

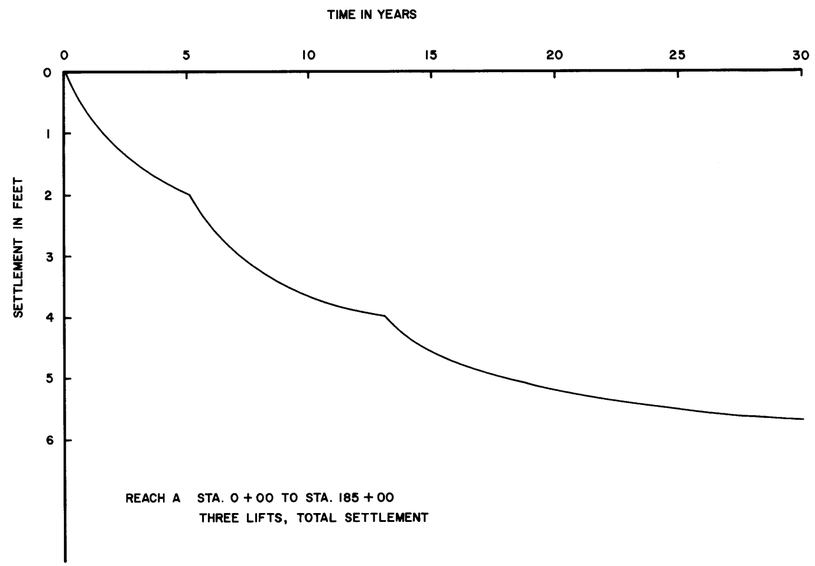
PLATE 170



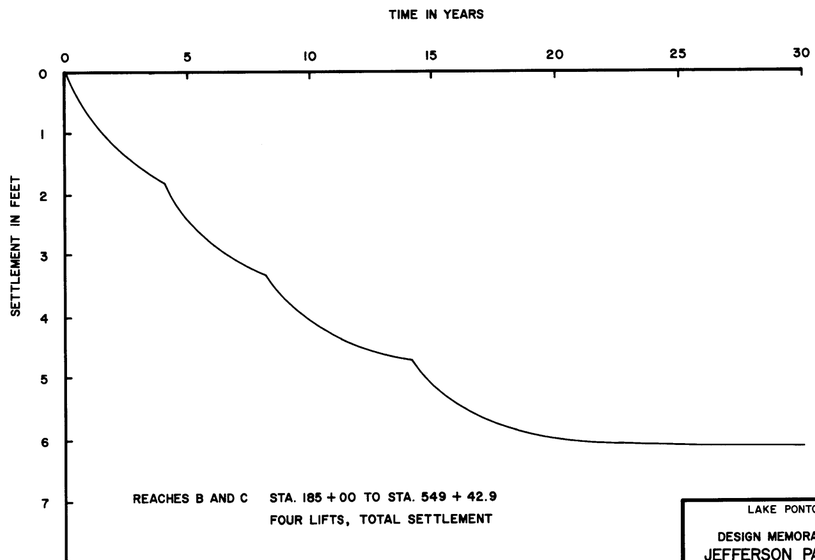
REACH A EL. 18.0 (NET EL. 16.0) STA. 0 + 00 TO STA. 185 + 00
THREE LIFTS TO EL. 16.0



REACHES B AND C EL. 16.0 (NET EL. 16.0) STA. 185 + 00 TO STA. 549 + 42.9
FOUR LIFTS TO EL. 16.0



REACH A STA. 0 + 00 TO STA. 185 + 00
THREE LIFTS, TOTAL SETTLEMENT



REACHES B AND C STA. 185 + 00 TO STA. 549 + 42.9
FOUR LIFTS, TOTAL SETTLEMENT

LAKE PONTCHARTRAIN, LA. AND VICINITY
HIGH LEVEL PLAN
DESIGN MEMORANDUM NO. 17 - GENERAL DESIGN
JEFFERSON PARISH LAKEFRONT LEVEE

SETTLEMENT VS. TIME CURVES
REACHES A, B AND C

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
OCTOBER 1987 FILE NO. H-2-30148

PLATE 171

UNIFIED SOIL CLASSIFICATION

MAJOR DIVISION		TYPE	LETTER SYMBOL	SYMBOL	TYPICAL NAMES
COARSE - GRAINED SOILS More than half of material is larger than No. 200 sieve size	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size.	CLEAN GRAVEL (Little or No Fines)	GW		GRAVEL, Well Graded, gravel-sand mixtures, little or no fines
			GP		GRAVEL, Poorly Graded, gravel-sand mixtures, little or no fines
		GRAVEL WITH FINES (Appreciable Amount of Fines)	GM		SILTY GRAVEL, gravel-sand-silt mixtures
			GC		CLAYEY GRAVEL, gravel-sand-clay mixtures
	SANDS More than half of coarse fraction is smaller than No. 4 sieve size.	CLEAN SAND (Little or No Fines)	SW		SAND, Well-Graded, gravelly sands
			SP		SAND, Poorly-Graded, gravelly sands
		SANDS WITH FINES (Appreciable Amount of Fines)	SM		SILTY SAND, sand-silt mixtures
			SC		CLAYEY SAND, sand-clay mixtures
FINE - GRAINED SOILS More than half the material is smaller than No. 200 sieve size		SILTS AND CLAYS (Liquid Limit <50)	ML		SILT & very fine sand, silty or clayey fine sand or clayey silt with slight plasticity
			CL		LEAN CLAY; Sandy Clay; Silty Clay; of low to medium plasticity
			OL		ORGANIC SILTS and organic silty clays of low plasticity
		SILTS AND CLAYS (Liquid Limit >50)	MH		SILT, fine sandy or silty soil with high plasticity
			CH		FAT CLAY, inorganic clay of high plasticity
			OH		ORGANIC CLAYS of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			Pt		PEAT, and other highly organic soil
WOOD			Wd		WOOD
SHELLS			Sl		SHELLS
NO SAMPLE					

NOTE: Soils possessing characteristics of two groups are designated by combinations of group symbols

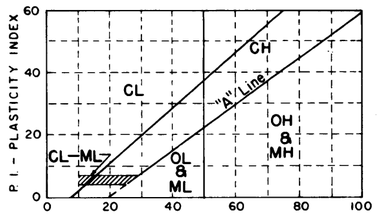
DESCRIPTIVE SYMBOLS

COLOR

COLOR	SYMBOL
TAN	T
YELLOW	Y
RED	R
BLACK	BK
GRAY	Gr
LIGHT GRAY	lGr
DARK GRAY	dGr
BROWN	Br
LIGHT BROWN	lBr
DARK BROWN	dBr
BROWNISH-GRAY	br Gr
GRAYISH-BROWN	gy Br
GREENISH-GRAY	gn Gr
GRAYISH-GREEN	gy Gn
GREEN	Gn
BLUE	Bl
BLUE-GREEN	Bl Gn
WHITE	Wh
MOTTLED	Mot

CONSISTENCY FOR COHESIVE SOILS

CONSISTENCY	COHESION IN LBS./SQ. FT. FROM UNCONFINED COMPRESSION TEST	SYMBOL
VERY SOFT	< 250	vSo
SOFT	250 - 500	So
MEDIUM	500 - 1000	M
STIFF	1000 - 2000	St
VERY STIFF	2000 - 4000	vSt
HARD	> 4000	H



PLASTICITY CHART
For classification of fine-grained soils

MODIFICATIONS

MODIFICATION	SYMBOL
Traces	Tr-
Fine	F
Medium	M
Coarse	C
Concretions	cc
Rootlets	rt
Lignite fragments	lg
Shale fragments	sh
Sandstone fragments	sds
Shell fragments	slf
Organic matter	O
Clay strata or lenses	CS
Silt strata or lenses	SIS
Sand strata or lenses	SS
Sandy	S
Gravelly	G
Boulders	B
Slickensides	SL
Wood	Wd
Oxidized	Ox

NOTES:

FIGURES TO LEFT OF BORING UNDER COLUMN "W OR D_{10}"

Are natural water contents in percent dry weight

When underlined denotes D_{10} size in mm*

FIGURES TO LEFT OF BORING UNDER COLUMNS "LL" AND "PL"

Are liquid and plastic limits, respectively

SYMBOLS TO LEFT OF BORING

▽ Ground-water surface and date observed

Ⓒ Denotes location of consolidation test**

Ⓢ Denotes location of consolidated-drained direct shear test**

Ⓡ Denotes location of consolidated-undrained triaxial compression test**

Ⓠ Denotes location of unconsolidated-undrained triaxial compression test**

Ⓣ Denotes location of sample subjected to consolidation test and each of the above three types of shear tests**

FW Denotes free water encountered in boring or sample

FIGURES TO RIGHT OF BORING

Are values of cohesion in lbs./sq. ft. from unconfined compression tests

In parenthesis are driving resistances in. blows per foot determined with a standard split spoon sampler ($1\frac{3}{8}$" I.D., 2" O.D.) and a 140 lb. driving hammer with a 30" drop

Where underlined with a solid line denotes laboratory permeability in centimeters per second of undisturbed sample

Where underlined with a dashed line denotes laboratory permeability in centimeters per second of sample remoulded to the estimated natural void ratio

*The D_{10} size of a soil is the grain diameter in millimeters of which 10% of the soil is finer, and 90% coarser than D_{10}

**Results of these tests are available for inspection in the U.S. Army Engineer District Office, if these symbols appear beside the boring logs on the drawings

TYPICAL NOTES

While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristic of the subsurface materials of the region are anticipated and, if encountered, such variations will not be considered as differing materially within the purview of the contract clause entitled "Differing Site Conditions".

Ground-water elevations shown on the boring logs represents ground-water surfaces encountered in such borings on the dates shown. Absence of water surface data on certain borings indicates that no ground-water data are available from the boring but does not necessarily mean that ground-water will not be encountered at the locations or within the vertical reaches of such borings.

Consistency of cohesive soils shown on the boring logs is based on driller's log and visual examination and is approximate, except within those vertical reaches of the borings where shear strengths from unconfined compression tests are shown.

SOIL BORING LEGEND

U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
1 JUNE 1987
FILE NO. H-2-21800

PLATE A