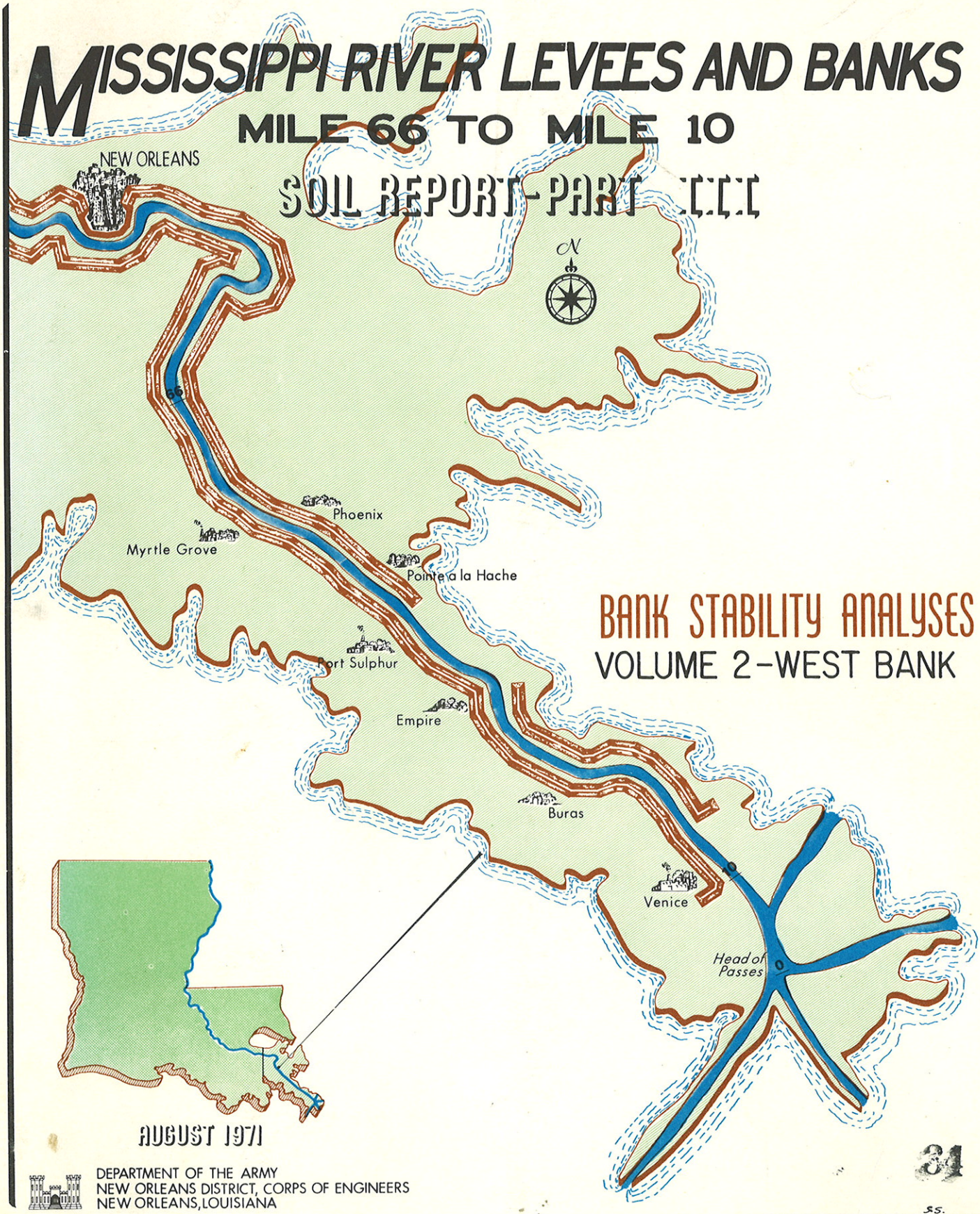
MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT-PART III



BANK STABILITY ANALYSES
VOLUME 2-WEST BANK

AUGUST 1971

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

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55.

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT-PART III

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VOLUME 2 - WEST BANK

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

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT

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II LEVEE STABILITY ANALYSIS

Volume 1 - East Bank

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Volume 1 - East Bank

Volume 2 - West Bank

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PART III - VOLUME 2

BANK STABILITY ANALYSES - WEST BANK

1. Introduction. This volume of the report presents the plan for bank protection on the West Bank of the Mississippi River from the vicinity of Jesuit Bend, (Mile 66) to Venice, Louisiana (Mile 10), a distance of approximately 56 miles. The data presented includes bank recession rates and stability analyses for bank revetment grading.

The stability analyses presented were performed by personnel of the New Orleans District and were reviewed and approved by representatives of the Mississippi River Commission, during the preparation of the report.

This part was prepared in the Dams, Levees, and Channel Slopes Section by Mr. Nathaniel T. Langlois under the direction of Messrs. Herman A. Huesmann and Stewart E. Worley, Foundations and Materials Branch, Engineering Division, New Orleans District.

District Engineer during the preparation of this report was Colonel Herbert R. Haar, Jr., CE. Chief of the Engineering Division was Mr. Jerome C. Baehr.

2. General. Survey data available prior to the preparation of the report included hydrographic surveys 1961-1963 and revetment surveys. Additional surveys were made at locations where coverage was not available to adequately define the shape of the banks. The bank surveys indicated that the existing riverbank slopes generally range from about 1 on 2 to 1 on 4. Concrete mattress revetment has been placed at four sites on the West Bank, namely; Port Sulphur, Tropical Bend, Buras, and Fort Jackson. For limits see Table 1.

3. Foundation Investigations. See Part I, Volume 2.

4. Laboratory Tests. See Part I, Volume 2 and Appendix A.

5. Soil Conditions. See Part I, Volume 2.

6. Design Shear Strengths. See Part I, Volume 2.

7. Stability analyses of bank slopes for revetment construction were performed in accordance with paragraphs 4 and 5 of LMVD letter dated 5 November 1963, subject "Analysis of Bank Slopes for Revetment Construction" and modifications in LMVD letter dated 27 January 1969. Stability analyses were performed using the soil stratifications and design shear strengths presented in Part 1, Volume 2 at various assumed depths of failure. The section used in each analysis was either a critical section within the reach or a composite section developed by overlaying the sections within the reach at a designated elevation. Various bank degrading slopes were analyzed until a minimum factor of safety of 1.30 was obtained for the "Q" construction case. It was

assumed that the river stage and ground water level in the bank soil were at mean low water elevation of 0.0. Only the "Q" construction case stability analysis was performed since the sudden drawdown and partial pool stability analyses were not critical for the low riverbanks that exist in the study area.

No additional stability analyses were performed for this report on reaches where revetment grading slopes had been previously approved by the Mississippi River Commission as shown on Table 1. Every attempt was made to use a degrading cut point commencing no deeper than elevation -20.0, but in three reaches cuts commencing at -30 and in one reach at -40 were necessary and more economical. The stability analyses are shown on plates 16 through 57 and 59 through 69. A special analysis as shown on plate 58 was made for a reservoir dike located at Tropical Bend, Louisiana. This analysis indicates that the reservoir dike along the riverbank will have to be set back. The bank degrading requirements are listed in Table 1.

8. Bank Recession. Bank recession rates were calculated using available caving bank surveys. Because of the time sequence of performing the construction of the slope protection and the availability of construction funds, bank recession was projected for a 10-year period to 1980, as shown on Table 2. Using this bank recession, a more realistic cost estimate would be made, which would include the need for levee setbacks, relocations and required rights-of-way. As plans and specifications are prepared for levee construction, bank recession will be adjusted to reflect the actual recession at the time the slope protection is installed. Bank recession was assumed to vary linearly between the levee stations shown on Table 2.

9. Recommendations. Based on the results of the stability analyses of the riverbanks presented in this report, the following are recommended:

a. The bank slopes should be degraded according to the slopes and cut points shown in Table 1. Where the existing bank slope has an adequate factor of safety, the bank slope need be dressed only to the extent necessary to facilitate the placing of the concrete mat.

b. The upper part of the bank should be degraded prior to any degrading of the underwater bank slope, and the degraded material should not be deposited on the existing underwater bank slope.

c. The degraded material should be deposited at the maximum distance possible from the bank within the stated limits.

d. Riprap paving will be needed for the degraded slope above the articulated concrete mattress.

TABLE 1
REVETMENTS
BANK DEGRADING REQUIREMENTS
MILE 66 TO MILE 10
WEST BANK

NAME OF REVETMENT	STATIONS AND RANGES	STRENGTH	CUT POINT	SLOPE	PLATE
Jesuit Bend	828+00 to 840+00	-	-25.0	1 on 3.0	Prev App
Alliance	U-139 to U-6 840+00 to 973+00	A	-	Existing*	16
	U-6 to D-41 973+00 to 1020+00	A	-20.0	1 on 2.0	17
	D-41 to D-66 1020+00 to 1045+00	B	-20.0	1 on 5.0	18
	D-66 to D-90 1045+00 to 1069+00	B	-20.0	1 on 3.5	19
	D-90 to D-115 1069+00 to 1094+00	B	-	Existing*	20
Myrtle Grove	U-117 to U-84 1094+00 to 1127+00	B	-	Existing*	21
	U-84 to U-60 1127+00 to 1153+30	B	-	Existing*	22
	U-60 to U-39 1153+30 to 1176+60	C-1	-	Existing*	23
	U-39 to D-38.2 1176+60 to 1255+00	C-1	-20.0	1 on 3.5	24
	D-38.2 to D-90 1255+00 to 1306+52	C-2	-20.0	1 on 3.0	25
	D-90 to D-117 1306+52 to 1333+92	C-2	-	Existing*	26
No Revetment Proposed	1333+92 to 1373+22	-	-	-	-
Junior	U-120 to U-96 1373+22 to 1397+22	D	-20.0	1 on 3.0	27
	U-96 to U-57 1397+22 to 1436+33	D	-20.0	1 on 4.0	28
	U-57 to D-9 1436+33 to 1503+60	D	-20.0	1 on 5.0	29
	D-9 to D-60 1503+60 to 1553+06	D	-20.0	1 on 6.0	30
	D-60 to D-82 1553+06 to 1575+00	D	-20.0	1 on 4.5	31
	D-82 to D-120 1575+00 to 1613+65.6	E	-	Existing*	32

*Existing Slope - No Degrading Required

TABLE 1
REVETMENTS
BANK DEGRADING REQUIREMENTS
MILE 66 TO MILE 10
WEST BANK

NAME OF REVETMENT	STATIONS AND RANGES	STRENGTH	CUT POINT	SLOPE	PLATE
No Revetment Proposed	1613+65.6 to 1656+00	-	-	-	-
Diamond	U-108 to U-86 1656+00 to 1678+00	E	-	Existing*	33
	U-86 to U-27 1678+00 to 1737+00	F	-	Existing*	34
	U-27 to D-24 1737+00 to 1788+00	F	-20.0	1 on 5	35
	D-24 to D-58 1788+00 to 1822+00	G	-20.0	1 on 4.5	36
	D-58 to D-99 1822+00 to 1863+00	G	-20.0	1 on 3.5	37
No Revetment Proposed	1863+00 to 1890+00	-	-	-	-
Point Michel	U-162 to U-132 1890+00 to 1920+00	H	-	Existing*	38
	U-132 to U-105 1920+00 to 1947+00	I	-	Existing*	39
	U-105 to U-81 1947+00 to 1971+00	I	-20.0	1 on 5.5	40
	U-81 to U-9 1971+00 to 2043+00	I	-30.0	1 on 5.0	41
	U-9 to D-9 2043+00 to 2061+00	I	-30.0	1 on 4.5	42
	D-9 to D-41 2061+00 to 2093+00	I	-	Existing*	43
	D-41 to D-78 2093+00 to 2130+00	J	-	Existing*	44
	D-78 to D-126 2130+00 to 2178+00	K	-	Existing*	45
	D-126 to D-162.1 2178+00 to 2214+12	K	-20.0	1 on 2.5	46
Port Sulphur	U-54 to U-36 2214+12 to 2253+12	K	-20.0	1 on 3.5	47
	U-36 to U-15 2232+12 to 2253+33	K	Existing Revetment** -20.0	1 on 3.5	
	U-15 to D-29 2253+33 to 2297+40	-	Existing Revetment		-
	D-29 to D-39 2297+40 to 2307+40	-	-26.0	1 on 4.0	Prev App

* Existing Slope - No Degrading Required
**Revetment Constructed During the Preparation of this Report

TABLE 1
REVETMENTS
BANK DEGRADING REQUIREMENTS
MILE 66 TO MILE 10
WEST BANK

NAME OF REVETMENT	STATIONS AND RANGES	STRENGTH	CUT POINT	SLOPE	PLATE
Port Sulphur (cont'd)	D-39 to D-61 2307+40 to 2329+40	-	-26.0	1 on 4.5	Prev App
	D-61 to D-91.7 2329+40 to 2360+00	-	Existing Revetment		-
	D-91.7 to D-230 2360+00 to 2500+00	-	-26.0	1 on 4.5	Prev App
No Revetment Proposed	2500+00 to 2606+32	-	-	-	-
Tropical Bend	U-117 to U-88.3 2606+32 to 2635+00	N-2	-20.0	1 on 2.0	48
	U-88.3 to U-72.0 2635+00 to 2651+32	0-1	-20.0	1 on 4.5	49
	U-72 to U-54 2651+32 to 2669+32	0-1	-30.0	1 on 4.5	50
	U-54 to U-30 2669+32 to 2693+12	0-1	-20.0	1 on 6.5	51
	U-30 to U-9 2693+12 to 2714+00	0-1	-20.0	1 on 5.0	52
	U-9 to D-27 2714+00 to 2750+00	0-1	-40.0	1 on 4.5	53
	D-27 to D-44 2750+00 to 2765+00	0-1	Existing Revetment** -20.0	1 on 3.5	54
	D-44 to D-66 2765+00 to 2784+07	0-2	Existing Revetment** -30.0	1 on 4.0	55
	D-66 to D-102 2784+07 to 2820+07	0-2	Existing Revetment** -30.0	1 on 4.0	56
	D-102 to D-122.52 2820+07 to 2840+00	0.2	Existing Revetment** -20.0	1 on 4.5	57
***	D-9 to D-25 2732+00 to 2748+00	0-1	-40.0	1 on 4.5	58
Buras	U-156.2 to U-50 2840+00 to 2950+00	-	-26.0	1 on 3.0	Prev App
	U-50 to D-6 2950+00 to 3018+00	-	Existing Revetment		-
	D-6 to D-35 3018+00 to 3050+00	-	-26.0	1 on 3.0	Prev App
No Revetment Proposed	3050+00 to 3101+82	-	-	-	-
Fort Jackson	U-93 to U-64.8 3101+82 to 3130+00	Q	-	Existing*	59
	U-64.8 to U-23 3130+00 to 3179+82	R	-	Existing*	60

*Existing Slope - No Degrading Required
**Revetment Constructed during the Preparation of this Report
***Reservoir Dike Setback

TABLE 1
REVETMENTS
BANK DEGRADING REQUIREMENTS
MILE 66 TO MILE 10
WEST BANK

NAME OF REVETMENT	STATIONS AND RANGES	STRENGTH	CUT POINT	SLOPE	PLATE
Fort Jackson (cont'd)	U-23 to D-28 3179+82 to 3255+81	-	Existing Revetment		-
	D-28 to D-39 3255+81 to 3267+81=0+00 0+00 to 3+00	S	-20.0	1 on 6.0	61
	D-39 to D-57 3+00 to 21+00	T-1	-20.0	1 on 5.0	62
	D-57 to D-69 21+00 to 33+00	T-1	-20.0	1 on 3.0	63
	D-69 to D-84 33+00 to 48+00=3318+00	T-2	-20.0	1 on 3.0	64
No Revetment Proposed	3318+00 to 3349+00	-	-	-	-
Venice	U-216 to U-189 3349+00 to 3370+00	T	-	Existing*	65
	U-189 to U-115 3370+00 to 3450+00	U-1	-	Existing*	66
	U-115 to D-75 3450+00 to 3640+00	U-2	-	Existing*	67
	D-75 to D-205.25 3640+00 to 3778+50	V-1	-	Existing*	68
	D-205.25 to D-225 3778+50 to 3790+00	V-2	-	Existing*	69

*Existing Slope - No Degrading Required

WEST BANK
RECESSION PROJECTED TO 1980

REACH	STATION	FEET
A	828+00	NONE
	965+00	NONE
	983+00	5
	1020+00	10
B	1035+00	10
	1045+00	NONE
	1153+30	NONE
C 1	1175+00	10
	1207+00	45
	1220+00	70
	1229+17.8=1225+75	50
	1255+00	30
C 2	1272+00	20
	1300+00	10
	1300+00	NONE
	1334+00	NONE
D	1400+00	NONE
	1440+00	5
	1456+00	10
	1460+00	10
	1480+00	30
	1490+00	30
	1508+00	35
	1540+00	40
	1572+00	20
	1575+00	20
E	1579+00	20
	1600+00	NONE
	1678+00	NONE
F	1738+00	NONE
	1770+00	10
	1788+00	10

REACH	STATION	FEET
G	1806+00	10
	1827+00	NONE
	1890+00	NONE
H	1893+00	NONE
	1920+00	NONE
I	1938+00	NONE
	1960+00	5
	1973+00	50
	1995+00	100
	2020+00	150
	2034+00	50
	2048+00	10
	2093+00	5
J	2130+00	NONE
K	2190+00	5
	2216+00	10
	2253+00	NONE
	2297+00	REVET
	2313+00	50
	2336+00	0
	2338+00	REVET
L	2366+00	REVET
	2383+00	20
M	2395+00	30
	2440+00	60
	2460+00	65
N 1	2504+00	70
	2522+00	15
	2570+00	NONE
N 2	2635+00	NONE

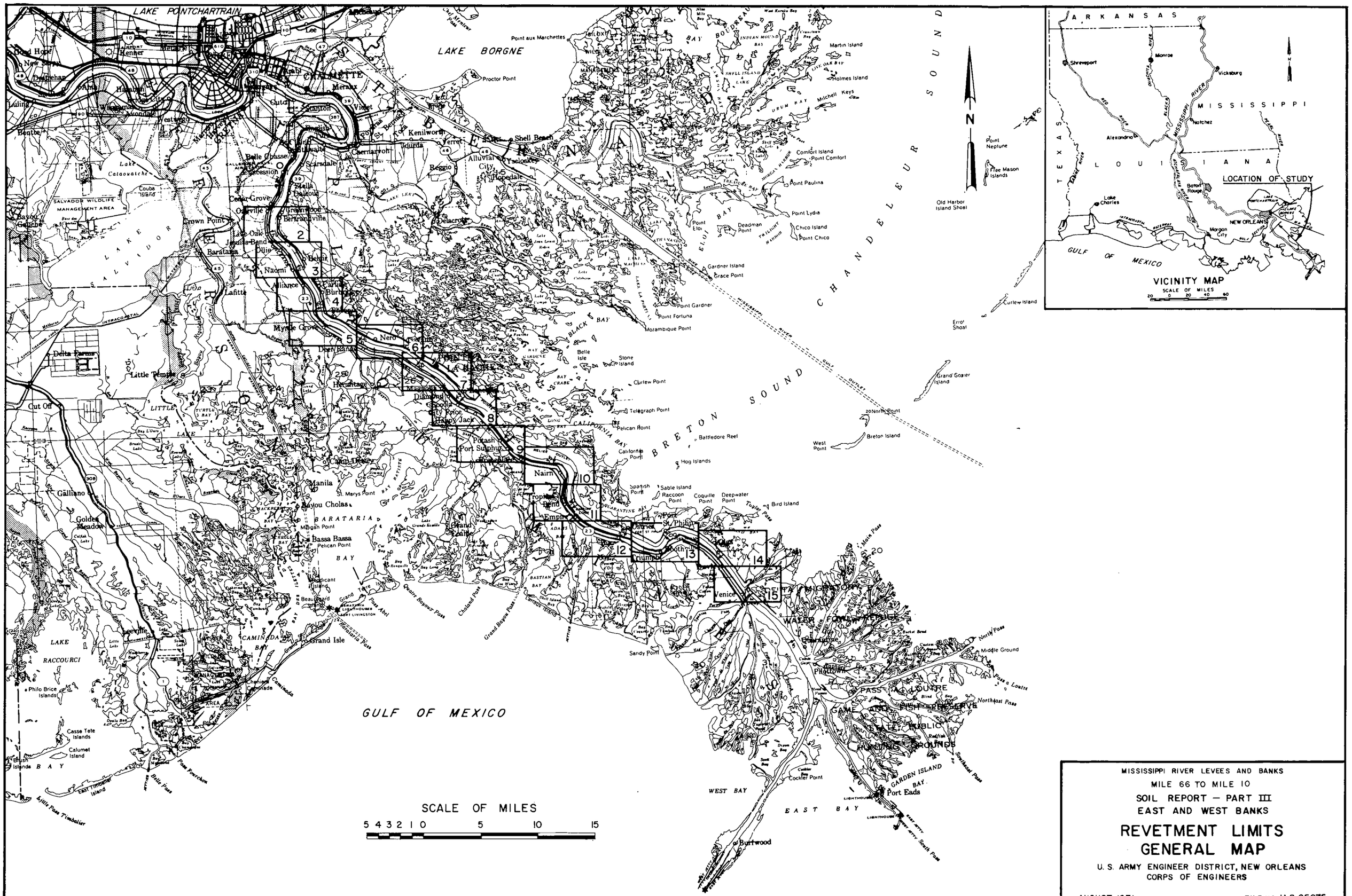
REACH	STATION	FEET
O 1	2666+00	20
	2683+00	50
	2728+00	60
	2765+00	55
O 2	2775+00	50
	2833+00	30
	2850+00	30
O 3	2885+00	30
	3000+00	REVET
P	3018+50	REVET
	3025+00	20
	3100+00	NONE
Q	3130+00	NONE
R	3180+00	NONE
	3218+00	REVET
S	3251+38	REVET
	3265+00	50
	3293+00	40
	3299+50	40
T	3305+00	40
	3308+00	35
	3350+00	NONE
	3370+00	NONE
U 1	3400+00	NONE
	3450+00	NONE
U 2	3600+00	NONE
	3640+00	10
V 1	3778+50	10
V 2	3797+64	5

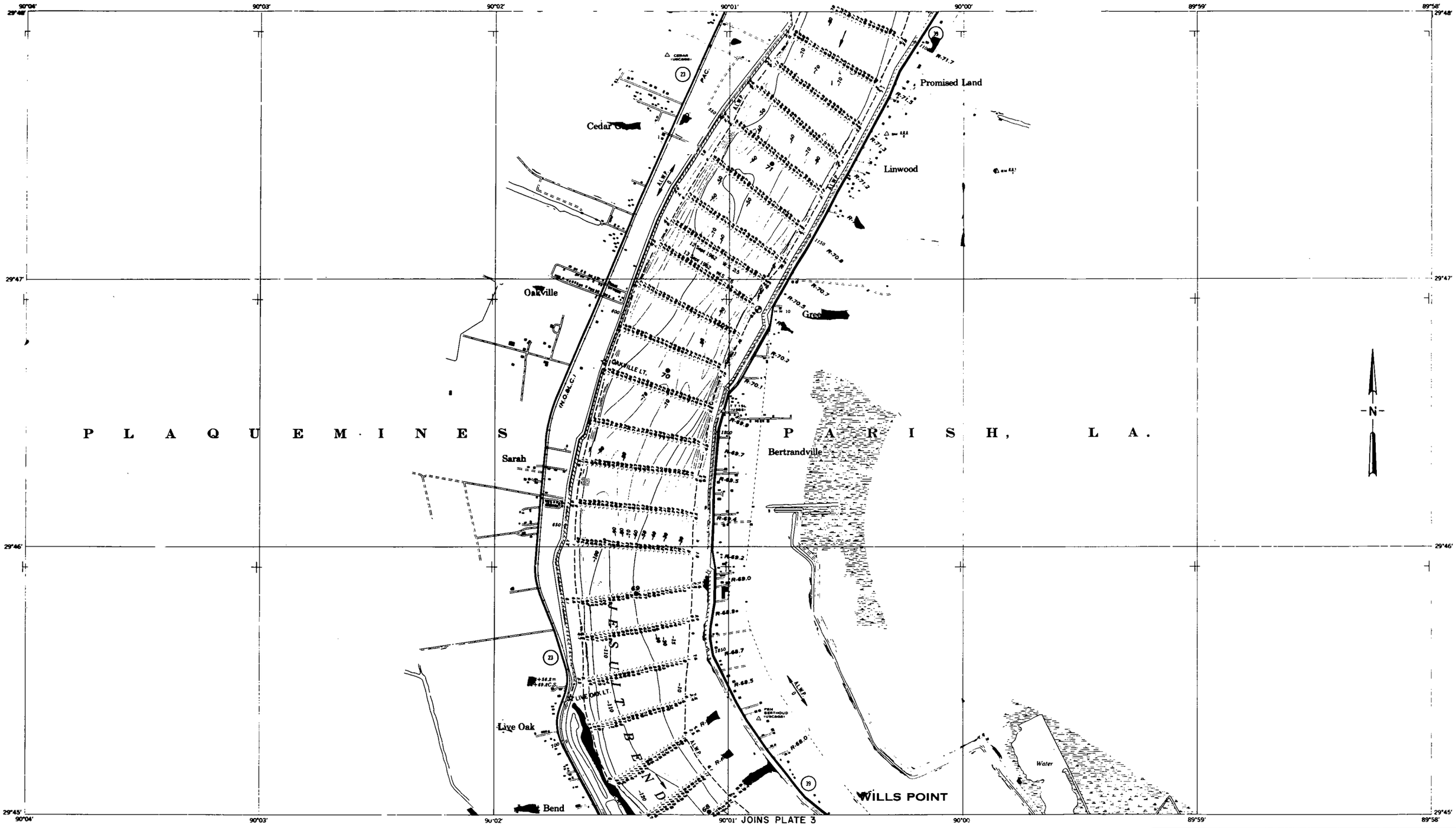
NOTE: Bank movement will vary linearly between levee stations

AUGUST 1971

TABLE 2

TABLE 2


LAKE PONTCHARTRAIN
LAKE BORGNE
LAKE SALVADOR
LAKE CATAOUATCHE
LAKE RACCOURCI
BARATARIA BAY
CAMINADA BAY
BLACK BAY
CALIFORNIA BAY
WEST BAY
EAST BAY
GULF OF MEXICO
BRETON SOUND
CHANDELEUR SOUND
MISSISSIPPI RIVER GULF OUTLET
MISSISSIPPI RIVER
INTRACOASTAL WATERWAY
SALVADOR WILDLIFE MANAGEMENT AREA
BARATARIA PRIMITIVE AREA
GAME AND FISH PRESERVE
PUBLIC HUNTING GROUNDS
Kenner
Metairie
Gretna
Westwego
Harvey
Marrero
Algiers
Lafitte
Crown Point
Cut Off
Galliano
Golden Meadow
Houma
Thibodaux
Raceland
Donaldsonville
Gonzales
Sorrento
Geismar
Sunshine
Plaquemine
Belle Chasse
Point aux Marchettes
Proctor Point
Shell Beach
Alluvial City
Hopedale
Kenilworth
Verret
Caernarvon
Reggio
Delacroix
Point Eloi
Deadman Point
Point Lydia
Point Paulina
Comfort Island
Point Comfort
Point Neptune
Free Mason Islands
Old Harbor Island Shoal
Martin Island
Holmes Island
Mitchell Keys
Gardner Island
Grace Point
Point Gardner
Point Fortuna
Mozambique Point
Curlew Island
Errol Shoal
Belle Isle
Stone Island
Curlew Point
Telegraph Point
Pelican Point
Battledore Reef
California Point
Hog Islands
Grand Gosier Island
North Point
West Point
Breton Island
Spanish Pass
Sable Island
Raccoon Point
Coquille Point
Deepwater Point
Bird Island
Trinity Pass
Main Pass
Northwest Pass
Middle Ground
North Pass a Loutre
Northeast Pass
Pass a Loutre
Southwest Pass
Garden Island Bay
Port Eads
Cobbler Point
Sandy Point
Bayou Cholas
Manila
St. Marys Point
Bassa Bassa
Pelican Point
Milligan Point
Grand Isle
Grand Terre
Grand Terre Pass
Barataria Pass
Caminada Pass
Chaland Pass
Quatre Bayouse Pass
Grand Bayou Pass
Abel Pass
Belle Pass
Four Fourchon
Timbalier Pass
Philo Brice Islands
Casse Tete Islands
Calumet Island
Raccoon Point
Bird Island
Isle Dernieres
Timbalier Island
East Timbalier Island
Bay Champagne
Bay Marmande
Bay Toulme
Bay Batiste
Bay Coquette
Bay Rondelet
Bay Long
Bay Round
Bay Gardene
Bay Penchant
Bay Decade
Bay Lafourche
Bay Jacques
Bay Terrebonne
Bay Boudreau
Bay Dupre
Bay Chaland
Bay Crabe
Bay Quarantine
Bay Adam
Bay Lonely
Bay Ronquille



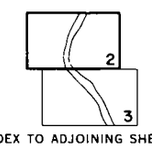
All elevations are expressed in feet and refer to Mean Sea Level
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft intervals.
Contours above Average Low Water Plane are expressed in feet at 5 ft intervals
Planimetry from aerial photographs flown November 1962.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals.
1962 and 1942 surveys
Polyconic Projection, North American Datum
Polyconic Projection, Gulf Coast Datum is indicated by ticks.
A L W P —Average Low Water Plane

SCALE 1:10,000

FEET
1000 0 1000 2000

METERS
100 0 100 500 1000

MILES
0 1/8 1/4 3/8 1/2 5/8 3/4 7/8 1



INDEX TO ADJOINING SHEETS

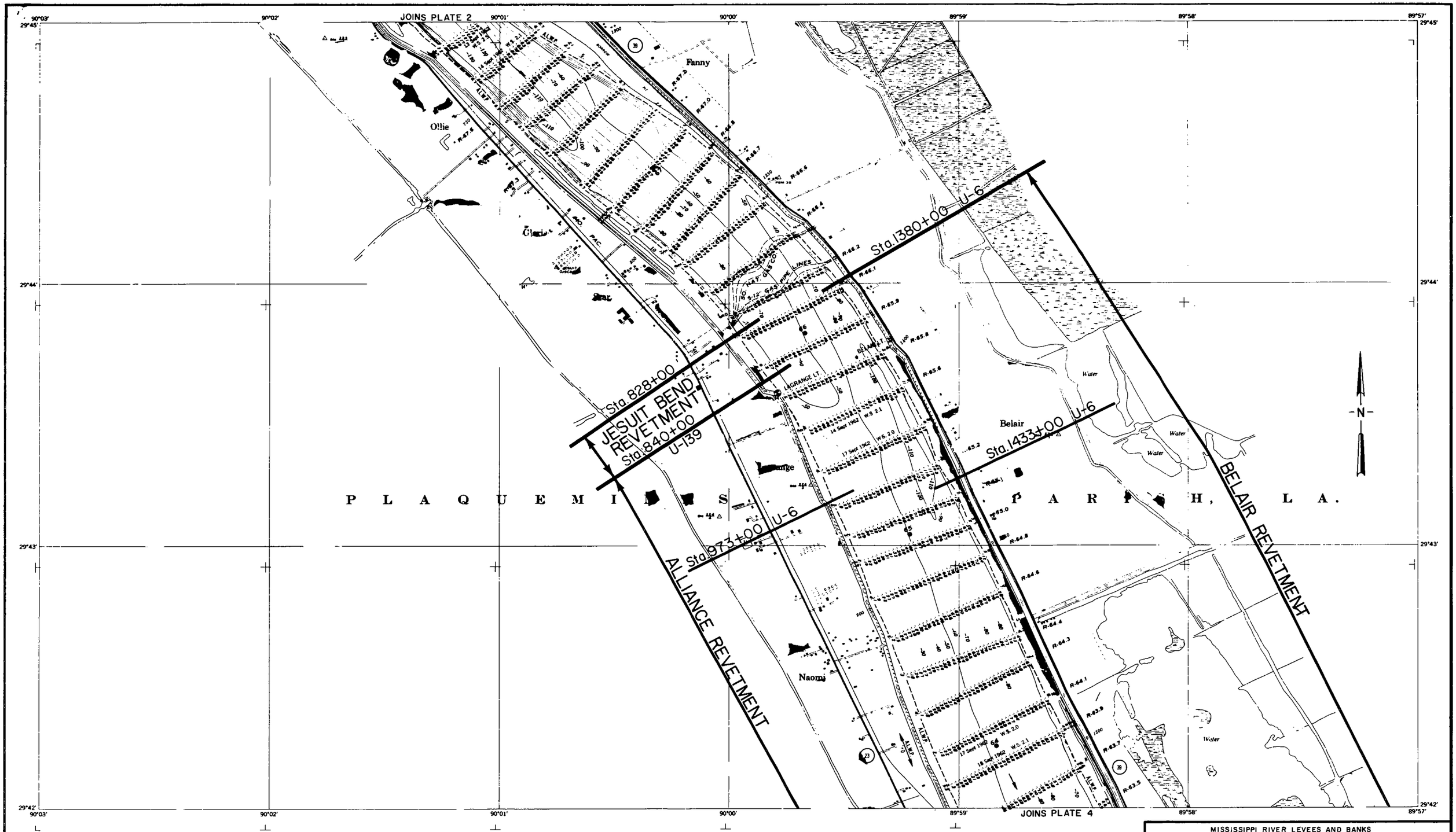
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART III
EAST & WEST BANKS

REVETMENT LIMITS
MILE 71.0 TO MILE 68.0

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

AUGUST 1971 FILE NO. H-2-25275

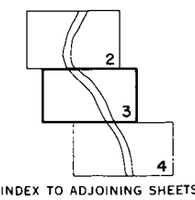
PLATE 2



All elevations are expressed in feet and refer to Mean Sea Level
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft intervals
Planimetry from aerial photographs flown November 1962
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals, 1962 and 1942 surveys
Polyconic Projection North American Datum
Polyconic Projection Gulf Coast Datum is indicated by ticks
A L W P —Average Low Water Plane

SCALE 1:10.000

FEET 1000 0 1000 2000
METERS 100 0 100 500 1000
MILES 0 1/8 1/4 3/8 1/2 5/8 3/4 7/8 1



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MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART III
EAST & WEST BANKS

REVETMENT LIMITS
MILE 66.3 TO MILE 63.7

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

AUGUST 1971 FILE NO. H-2-25275

JOINS PLATE 3

Sta. 1525+00 D-86

BELAIR REVETMENT

ALLIANCE REVETMENT

Reusite

Alliance

Sta. 1590+00 D-151 U-66

Sta. 1020+00 D-41

Sta. 1616+00 U-40

Sta. 1045+00 D-66

Bienbridge

Sta. 1069+00 D-90

MONSECOUR REVETMENT

Sta. 1094+00 D-115 U-117

St. Rosalie

Monsecour

Sta. 1685+00 D-29

Sta. 1715+00 D-59

MYRTLE GROVE REVETMENT

Sta. 1127+00 U-84

NO REVETMENT PROPOSED

POVERTY POINT

Sta. 1153+30 U-60

JOINS PLATE 5

P L A Q U E M I N E S P A R I S H, L A.

All elevations are expressed in feet and refer to Mean Sea Level.
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft. intervals.
Contours above Average Low Water Plane are expressed in feet at 5 ft. intervals
Planimetry from aerial photographs flown November 1962.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals.
1962 and 1942 surveys.
Polyconic Projection, North American Datum.
Polyconic Projection, Gulf Coast Datum is indicated by ticks.
A.L.W.P.—Average Low Water Plane.

SCALE 1:10.000

FEET 1000 0 1000 2000

METERS 100 0 100 500 1000

MILES 0 1/8 1/4 3/8 1/2 5/8 3/4 7/8 1

INDEX TO ADJOINING SHEETS

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART III
EAST & WEST BANKS

REVETMENT LIMITS
MILE 63.7 TO MILE 59.9

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 4

JOINS PLATE 4

PLAQUEMINES PARISH, LA.

PLAQUEMINES PARISH, LA.

Sta. 1153+30 U-60

Sta. 1176+60 U-39

Sta. 1255+00 D-38.2

Sta. 1306+52 D-90

Sta. 1333+92 D-117

Sta. 1373+22 U-120

Sta. 1397+22 U-96

Sta. 1748+00 U-126

Sta. 1815+00 U-59

Sta. 1893+00 D-19

Sta. 1919+00 D-45

NONE

NONE

HARLEM REVETMENT

MYRTLE GROVE REVETMENT

JUNIOR REVETMENT

Ironton

Phoen

Myrtle Grove

Harlem

Deer Range

Water

BACK LEVEE CANAL

JOINS PLATE 6

All elevations are expressed in feet and refer to Mean Sea Level.
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft. intervals.
Contours above Average Low Water Plane are expressed in feet at 5 ft. intervals
Planimetry from aerial photographs flown November 1962.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals, 1962 and 1942 surveys.
Polyconic Projection, North American Datum
Polyconic Projection, Gulf Coast Datum is indicated by ticks.
A.L.W.P. —Average Low Water Plane

SCALE 1:10.000

FEET 1000 0 1000 2000

METERS 100 0 100 500 1000

MILES 0 1/4 1/2 3/4 1 1 1/4 1 1/2

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MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
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REVETMENT LIMITS
MILE 59.9 TO MILE 55.3

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 5

89°53'30" 89°53' 89°52' 89°51' 89°50' 89°49' 89°48' 89°47'30"

29°38'

HARLEM REVETMENT

BACK LEVEE CANAL

P L A Q U E M I N E S

Bellevue

Sta.1978+00 D-104

Sta.2000+00 D-126

NO REVETMENT PROPOSED

Sta.2066+94 U-144

Sta.2087+00 U-123

Nero

Davant

Sta.2124+69 U-87

GRAVOLET REVETMENT

29°37'

JOINS PLATE 5

Sta.2155+29 U-57

Davant P.O.

Sta.1436+33 U-57

29°36'

Water

Sta.1503+60 D-9

Sta.1553+06 D-60

Sta.1575+00 D-82

POINTE CELESTE

DAVANT WHARF LT.

IN O.&L.C.

BACK LEVEE GRAVOLET CANAL

Sta.2218+74 D-9

Sta.2245+74 D-33

JUNIOR REVETMENT

P A R I S H , L A .

Sta.1613+65.6 D-120

NO REVETMENT PROPOSED

Sta.1656+00 U-108

29°35'

89°53'30" 89°53' 89°52' 89°51' 89°50' 89°49' 89°48' 89°47'30"

OVERLAPS PLATE 7

All elevations are expressed in feet and refer to Mean Sea Level
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft intervals
Planimetry from aerial photographs flown November 1962
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals.
1962 and 1942 surveys
Polyconic Projection North American Datum
Polyconic Projection Gulf Coast Datum is indicated by ticks
A L W P —Average Low Water Plane

SCALE 1:10,000

FEET 1000 0 1000 2000

METERS 100 0 100 500 1000

MILES 0 1/8 1/4 3/8 1/2 5/8 3/4 7/8 1

5 6 7

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REVETMENT LIMITS
MILE 55.3 TO MILE 50.0

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 6

GRAVOLET REVETMENT

DIAMOND REVETMENT

BOHEMIA REVETMENT

OVERLAPS PLATE 6

JOINS PLATE 8

Sta.1656+00 U-108

Sta.1678+00 U-86

Sta.1737+00 U-27

Sta.1788+00 D-24

Sta.1822+00 D-58

Sta.2218+74 D-6

Sta.2245+74 D-33

Sta.2274+00 D-60.5

Sta.2312+00 D-98.5

Sta.2351+00 D-137.3

Sta.2383+00 U-58

Sta.2432+00 U-9

Woodland

West Pointe a la Hache

Martin

Magnolia

P L A Q U E M I N E S P A R I S H, L A.

All elevations are expressed in feet and refer to Mean Sea Level
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft intervals
Planimetry from aerial photographs flown November 1962.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals.
1962 and 1942 surveys
Polyconic Projection, North American Datum
Polyconic Projection. Golf Coast Datum is indicated by ticks
A L W P —Average Low Water Plane

SCALE 1:10.000

FEET 1000 0 1000 2000

METERS 100 0 100 500 1000

MILES 0 1/8 1/4 3/8 1/2 3/4 7/8 1

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6 7 8

MISSISSIPPI RIVER LEVEES AND BANKS
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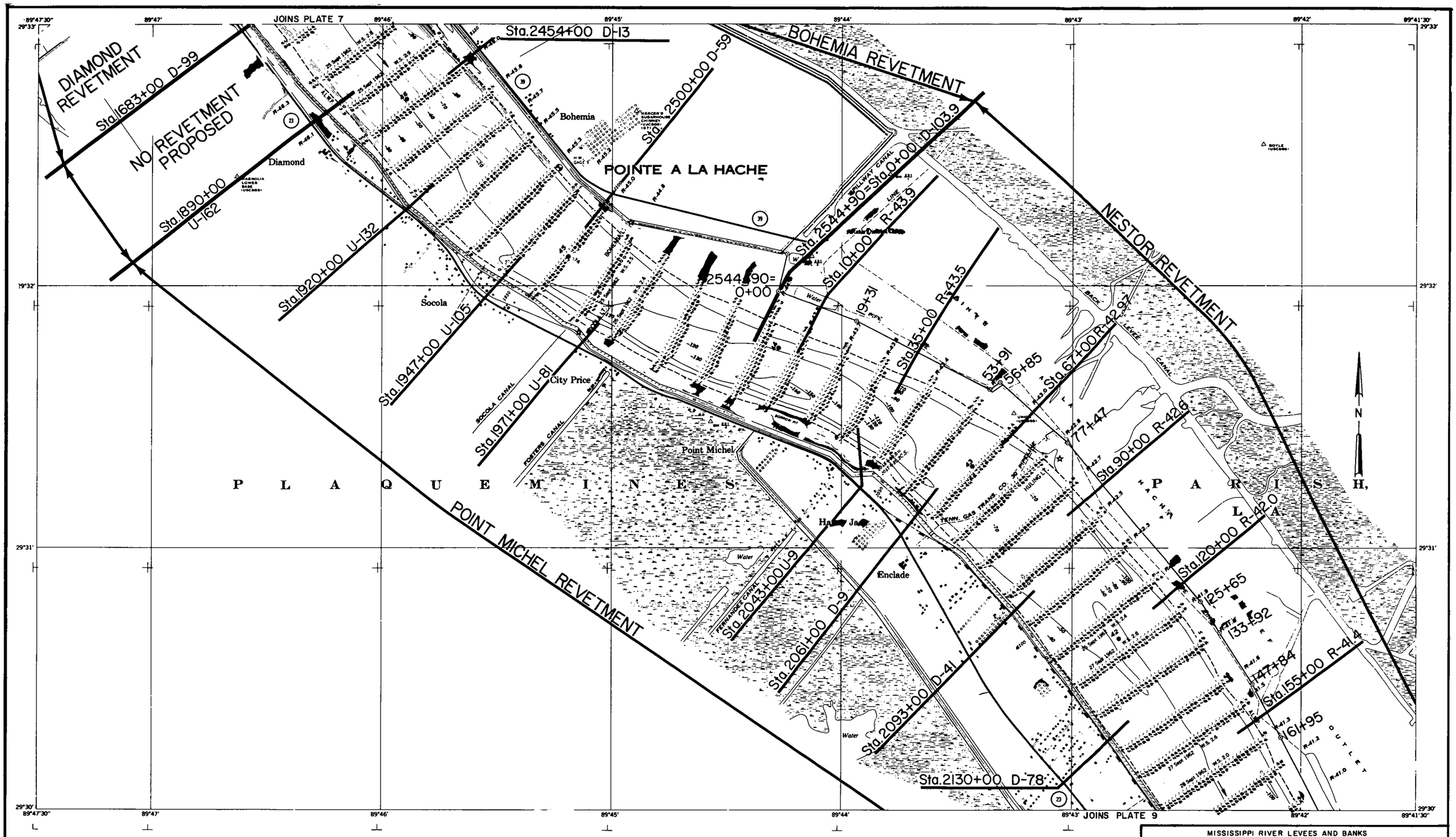
REVETMENT LIMITS
MILE 51.5 TO MILE 46.5

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 7



All elevations are expressed in feet and refer to Mean Sea Level.
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft intervals
Planimetry from aerial photographs flown November 1962.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals, 1962 and 1942 surveys.
Polyconic Projection, North American Datum
Polyconic Projection, Gulf Coast Datum is indicated by ticks.
A L W P —Average Low Water Plane

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
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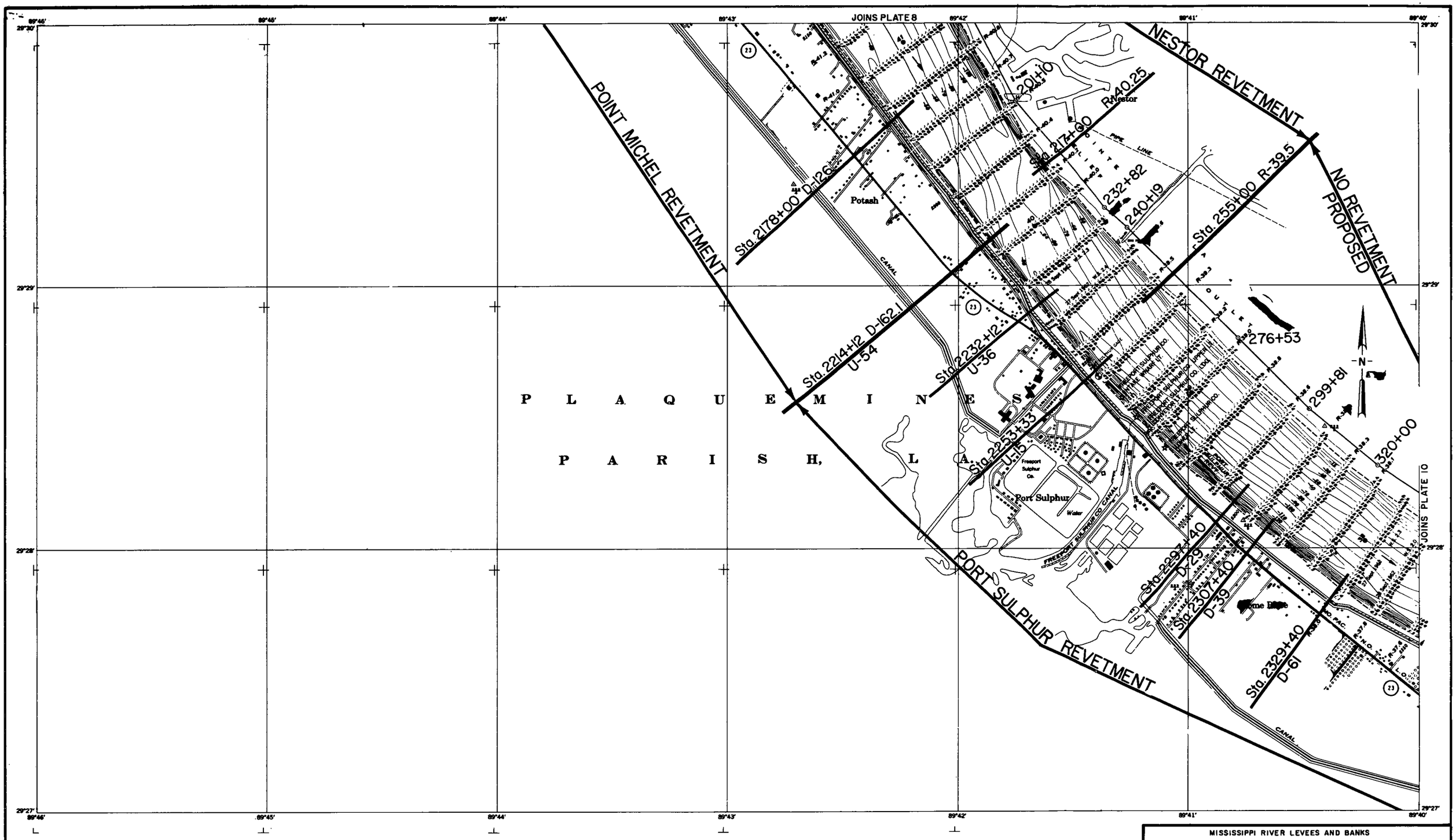
REVETMENT LIMITS
MILE 46.5 TO MILE 41.2

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

AUGUST 1971 FILE NO. H-2-25275



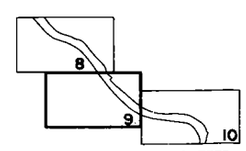
All elevations are expressed in feet and refer to Mean Sea Level.
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft. intervals.
Contours above Average Low Water Plane are expressed in feet at 5 ft. intervals.
Planimetry from aerial photographs flown November 1962.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals, 1962 and 1942 surveys.
Polyconic Projection, North American Datum.
Polyconic Projection, Gulf Coast Datum is indicated by ticks.
A.L.W.P.—Average Low Water Plane.

SCALE 1:10,000

FEET 1000 0 1000 2000

METERS 100 0 100 500 1000

MILES 0 1/8 1/4 3/8 1/2 5/8 3/4 7/8 1



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MISSISSIPPI RIVER LEVEES AND BANKS
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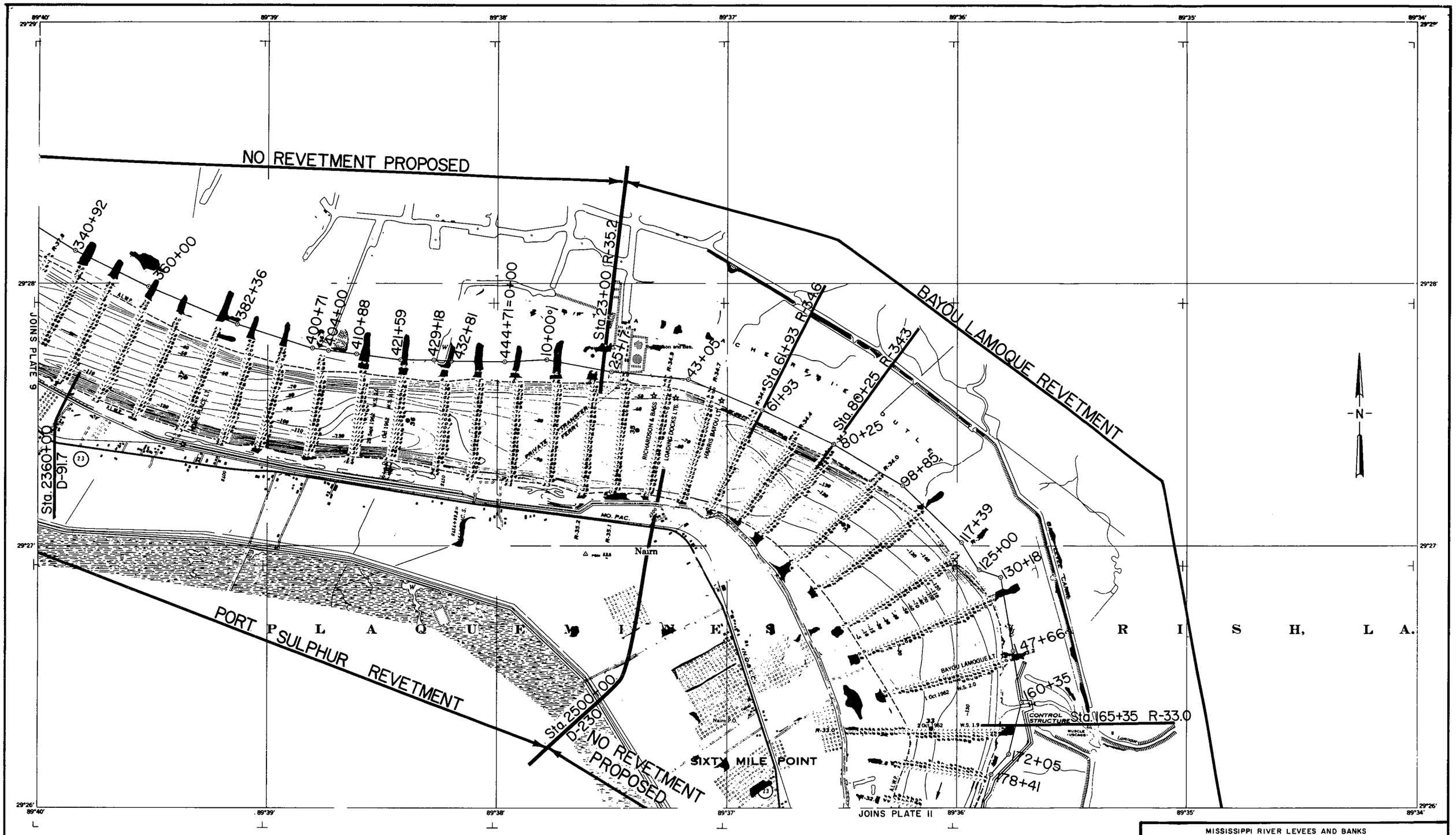
REVETMENT LIMITS
MILE 41.2 TO MILE 37.7

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

AUGUST 1971 FILE NO. H-2-25275



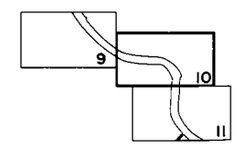
All elevations are expressed in feet and refer to Mean Sea Level.
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft. intervals.
Contours above Average Low Water Plane are expressed in feet at 5 ft. intervals
Planimetry from aerial photographs flown November 1962.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals.
1962 and 1942 surveys.
Polyconic Projection, North American Datum
Polyconic Projection, Gulf Coast Datum is indicated by ticks.
A.L.W.P.—Average Low Water Plane.

SCALE 1:10.000

FEET 1000 0 1000 2000

METERS 100 0 100 500 1000

MILES 0 1/8 1/4 3/8 1/2 5/8 3/4 7/8 1



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REVETMENT LIMITS
MILE 37.7 TO MILE 32.6

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 10

NO REVT. PROPOSED

JOINS PLATE 10

Sta. 2606+32
U-117

99+30

204+06

BAYOU LAMOQUE REVETMENT

Sta. 2635+00
U-88.3

230+05

Sta. 2651+32
U-72

Sta. 250+00 R-31.4

250+00

PT. PLEASANT

256+56

261+24

Sta. 2660+32
U-54

282+76

Sta. 2693+12
U-30

298+17

P L A Q U E M I N E S P A R I S H, L A.

TROPICAL BEND REVETMENT

Sta. 2714+00
U-9

318+90

335+62

NO REVETMENT PROPOSED

351+39

372+09

Sta. 2759+00
D-27

EMPIRE LOCK

Empire

Sta. 2765+00
D-44

Sta. 2784+00
D-66

406+47

JOINS PLATE 12

-N-

All elevations are expressed in feet and refer to Mean Sea Level.
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft. intervals.
Contours above Average Low Water Plane are expressed in feet at 5 ft. intervals
Planimetry from aerial photographs flown November 1962.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals.
1962 and 1942 surveys.
Polyconic Projection, North American Datum
Polyconic Projection, Gulf Coast Datum is indicated by bcks.
A.L.W.P.—Average Low Water Plane

SCALE 1:10.000

FEET
1000 0 1000 2000

METERS
100 0 100 500 1000

MILES
0 1/8 1/4 3/8 1/2 5/8 3/4 7/8 1

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11
12

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
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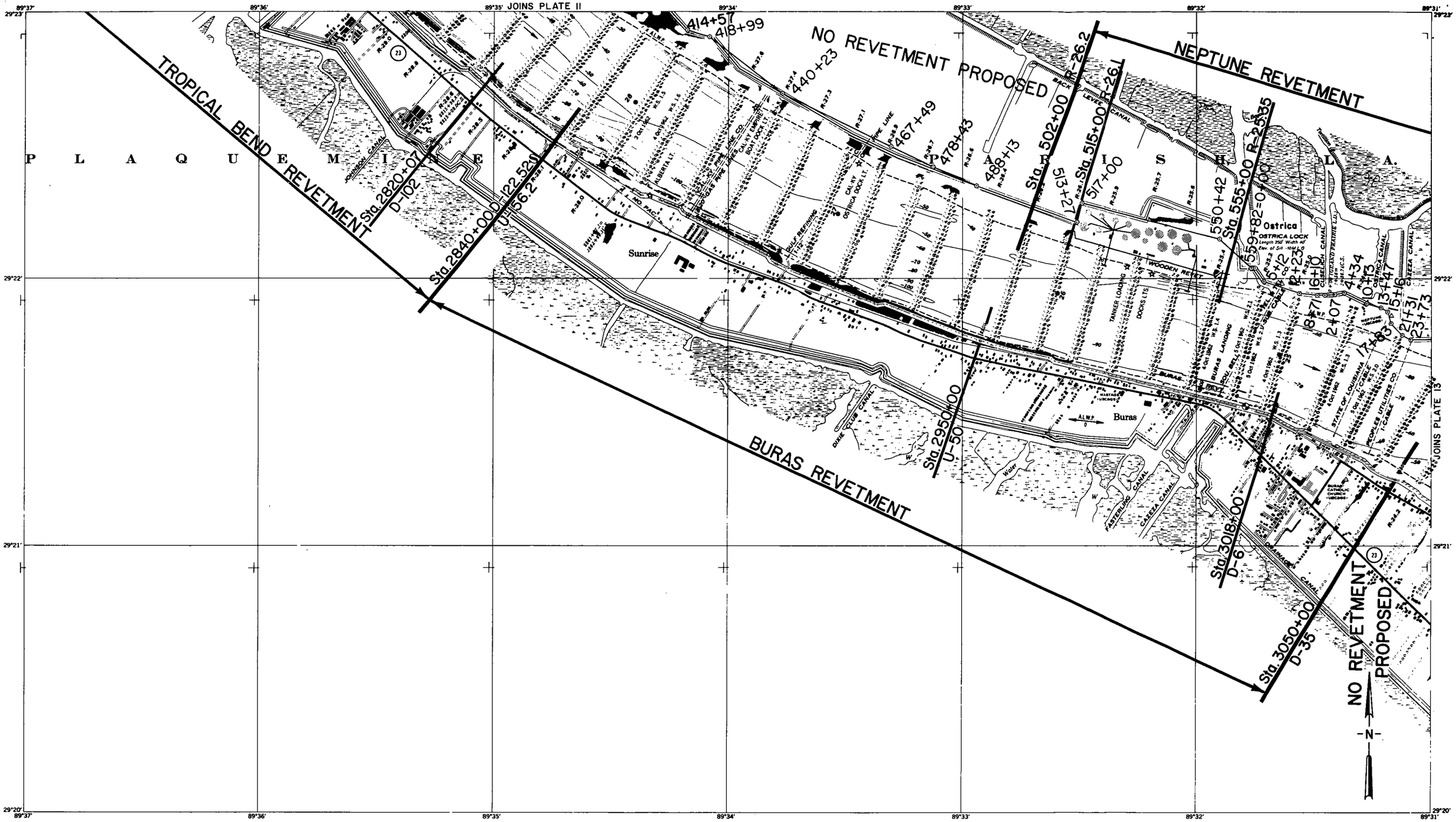
REVETMENT LIMITS
MILE 32.6 TO MILE 28.7

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

AUGUST 1971 FILE NO. H-2-25275

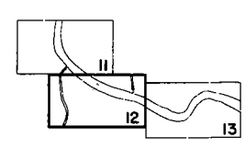
PLATE 11



All elevations are expressed in feet and refer to Mean Sea Level.
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft. intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft. intervals
Planimetry from aerial photographs flown November 1962.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals.
1962 and 1942 surveys.
Polyconic Projection, North American Datum
Polyconic Projection, Gulf Coast Datum is indicated by ticks.
A.L.W.P.—Average Low Water Plane

SCALE 1:10,000

FEET
1000 0 1000 2000
METERS
100 0 100 500 1000
MILES
0 ⅛ ¼ ⅜ ½ ⅝ ¾ ⅞ 1



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MISSISSIPPI RIVER LEVEES AND BANKS
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SOIL REPORT - PART III
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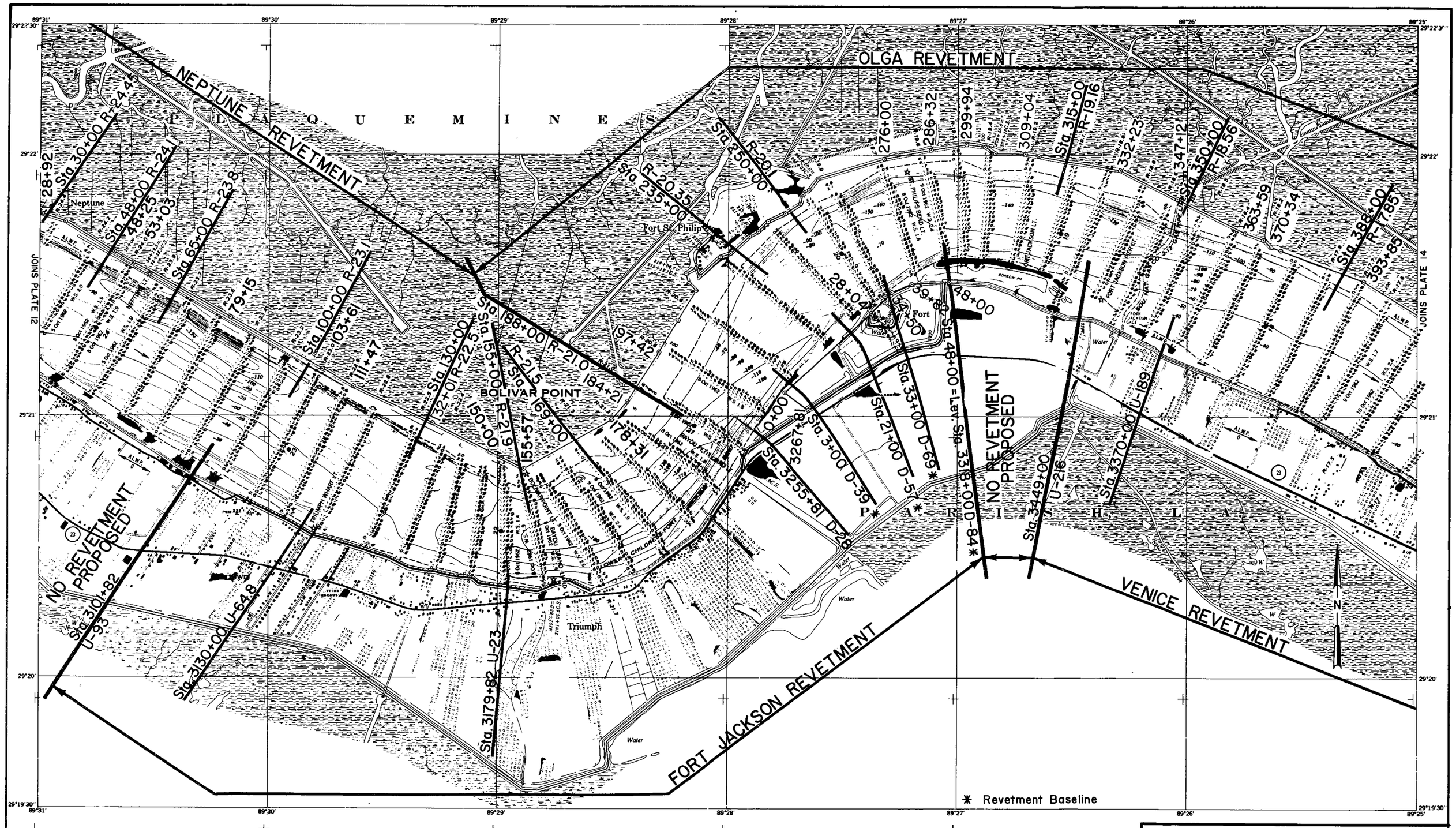
REVETMENT LIMITS
MILE 28.7 TO MILE 24.3

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

AUGUST 1971 FILE NO. H-2-25275



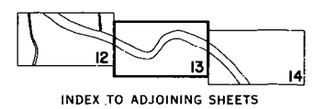
All elevations are expressed in feet and refer to Mean Sea Level
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft intervals
Planimetry from aerial photographs flown November 1962.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals.
1962 and 1942 surveys.
Polyconic Projection. North American Datum
Polyconic Projection. Gulf Coast Datum is indicated by ticks.
A L W P —Average Low Water Plane

SCALE 1:10,000

FEET 1000 0 1000 2000

METERS 100 0 100 500 1000

MILES 0 1/8 1/4 3/8 1/2 5/8 3/4 7/8



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REVETMENT LIMITS
MILE 24.3 TO MILE 17.2

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 13

89°25' 89°24' 89°23' 89°22' 89°21' 89°20' 89°19'

29°22'

29°21'

29°20'

25°19'

JOINS PLATE 13

Sta. 420+00 R-17.2

409+10

433+62

458.26

466.45

478.76

487.05

Olga

OLGA LANDING

Boothville

Sta. 3450+00 U-115

515.39

547+43

573+99

583+38

591+33

Sta. 525+00 R-15.37

OLGA REVETMENT

Sta. 615+00 R-13.74

VENICE REVETMENT

P A R I S H

L A.

Bay Carrion Crow

Duvic

JOINS PLATE 15

P I L O T E M I N E S

N

All elevations are expressed in feet and refer to Mean Sea Level
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft intervals
Planimetry from aerial photographs flown February 1963.
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals.
1962 and 1942 surveys
Polyconic Projection, North American Datum
Polyconic Projection, Gulf Coast Datum is indicated by ticks
A.L.W.P.—Average Low Water Plane

SCALE 1:10.000

FEET 1000 0 1000 2000

METERS 100 0 100 500 1000

MILES 0 1/4 1/4 3/8 1/2 5/8 3/4 7/8 1

13 14 15

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MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 1
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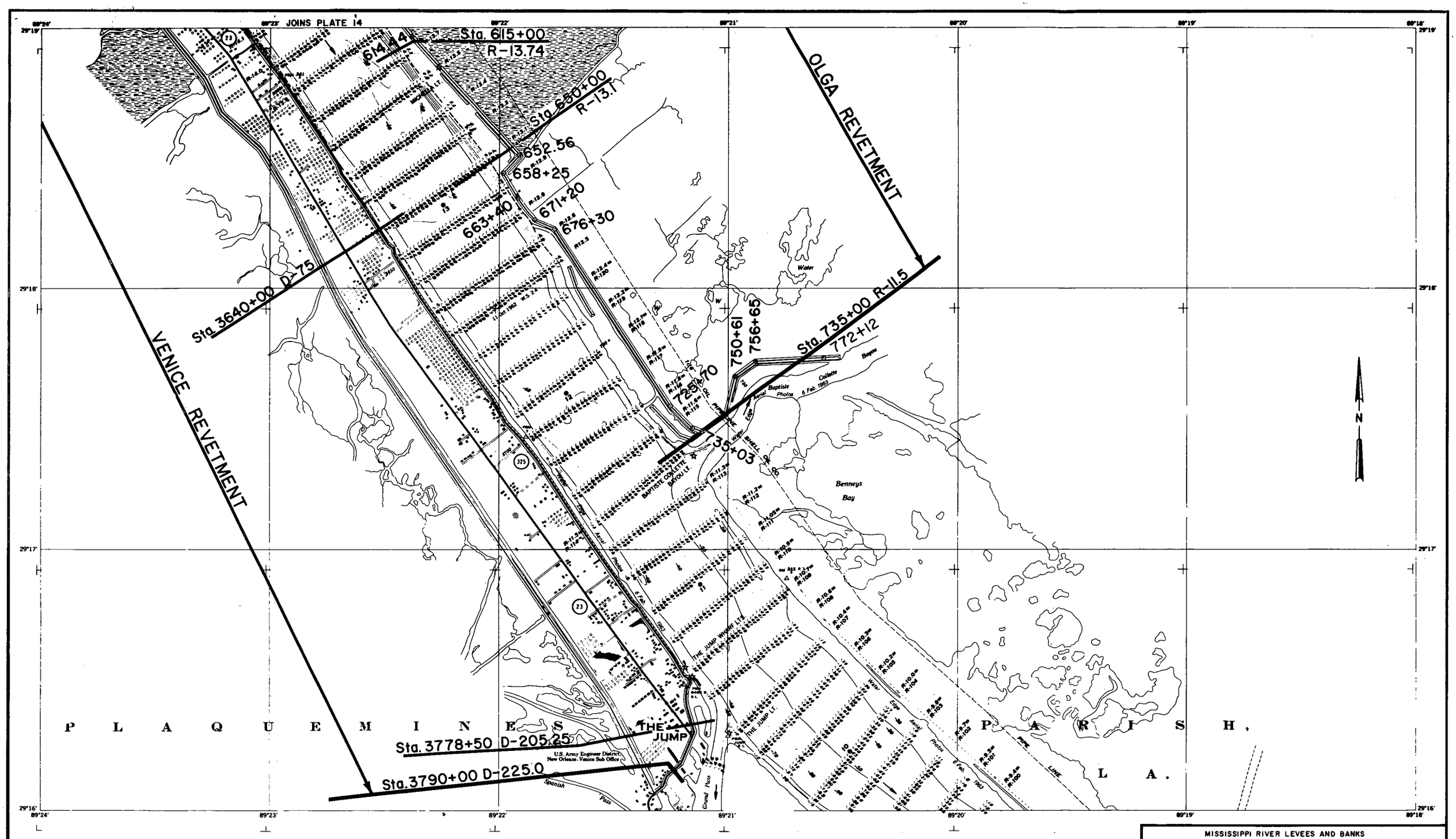
REVETMENT LIMITS
MILE 17.2 TO MILE 13.9

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

AUGUST 1971 FILE NO. H-2-25275

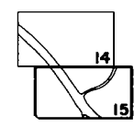
PLATE 14



All elevations are expressed in feet and refer to Mean Sea Level
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft intervals
Planimetry from aerial photographs flown February 1963
● Distances on Mississippi River above Head of Passes are shown at 1 mile intervals 1962 and 1942 surveys.
Polyconic Projection North American Datum
Polyconic Projection Gulf Coast Datum is indicated by ticks
A L W P —Average Low Water Plane

SCALE 1:10,000

FEET
1000 0 1000 2000
METERS
100 0 100 500 1000
MILES
0 1/8 1/4 1/2 1/4 1/8 1



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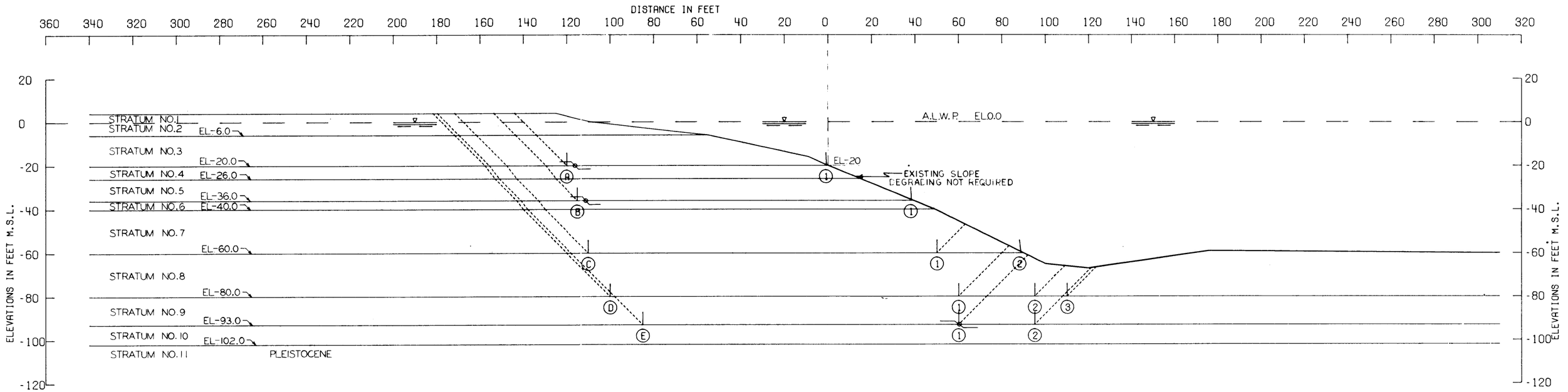
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART III
EAST & WEST BANKS

REVETMENT LIMITS
MILE 13.9 TO MILE 10.5

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 15



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 37 & 39, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	115.0	115.0	500.0	500.0	500.0	500.0	0.
2	CH	53.0	53.0	500.0	500.0	500.0	500.0	0.
3	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	43.0	43.0	610.0	610.0	660.0	660.0	0.
6	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
7	CH	43.0	43.0	800.0	800.0	900.0	900.0	0.
8	CH	43.0	43.0	1000.0	1000.0	1100.0	1100.0	0.
9	CH	50.0	50.0	1165.0	1165.0	1230.0	1230.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	60.0	60.0	≥1320.0	≥1320.0	≥1320.0	≥1320.0	0.

ASSUMED FAILURE SURFACE NO.		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	-20.00	24000	42900	307	19386	2	67208	19383	3.470
B	1	-36.00	41854	75290	424	46831	3	117569	46827	2.511
C	1	-60.00	78783	144000	20947	109839	5488	243730	104351	2.335
C	2	-60.00	78783	178200	947	109839	11	257931	109828	2.348
D	1	-80.00	118783	176000	45157	178018	17273	339941	160744	2.115
D	2	-80.00	118783	214500	28181	178018	4902	361465	173116	2.088
D	3	-80.00	118783	231000	27000	178018	3878	376783	174140	2.164
E	1	-93.00	149073	178350	68184	226928	33283	395608	193645	2.043
E	2	-93.00	149073	214101	56623	226928	16677	419798	210251	2.000

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

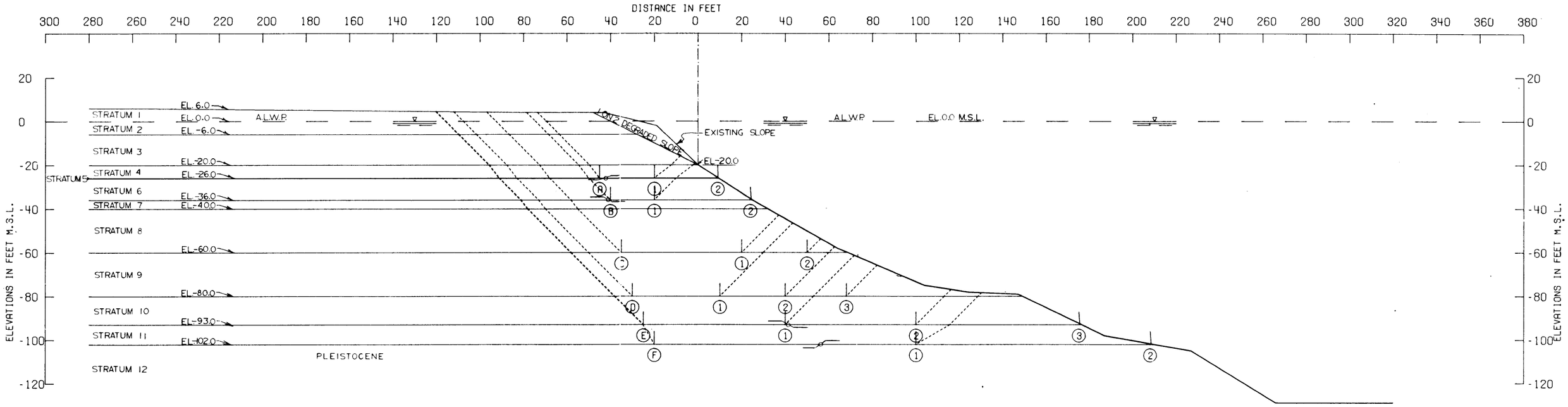
BANK STABILITY ANALYSIS

ALLIANCE, LOUISIANA
RANGE U-139 TO RANGE U-6
STA. 840+00 TO STA. 973+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 16



GENERAL NOTES

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SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	115.0	115.0	500.0	500.0	500.0	500.0	0.
2	CH	53.0	53.0	500.0	500.0	500.0	500.0	0.
3	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	43.0	43.0	560.0	560.0	560.0	560.0	0.
6	CH	43.0	43.0	610.0	610.0	660.0	660.0	0.
7	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
8	CH	43.0	43.0	800.0	800.0	900.0	900.0	0.
9	CH	43.0	43.0	1000.0	1000.0	1100.0	1100.0	0.
10	CH	50.0	50.0	1165.0	1165.0	1230.0	1230.0	0.
11	SP	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	60.0	60.0	≥1320.0	≥1320.0	≥1320.0	≥1320.0	0.

ASSUMED FAILURE SURFACE NO.		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	-26.00	29515	12101	9327	28680	3594	50944	25085	2.031
A	2	-26.00	29515	21235	68	28680	.0	50819	28679	1.772
B	1	-36.00	41844	11625	17283	46428	10463	70753	35965	1.967
B	2	-36.00	41844	28042	476	46428	5	70362	46422	1.516
C	1	-60.00	78998	49500	27435	108781	10333	155934	98447	1.584
C	2	-60.00	78998	76500	10124	108781	1344	165622	107436	1.542
D	1	-80.00	119217	44000	61665	178968	39079	224882	139889	1.608
D	2	-80.00	119217	77000	44353	178968	17354	240571	161614	1.489
D	3	-80.00	119217	107800	28491	178968	6213	255508	172754	1.479
E	1	-93.00	149641	79950	67728	232685	33130	297319	199555	1.490
E	2	-93.00	149641	132406	36637	232685	7150	318685	225535	1.413
E	3	-93.00	149641	159156	1105	232685	8	309903	232677	1.332
F	1	-102.00	174282	148170	53836	269817	15663	376288	254154	1.481
F	2	-102.00	174282	202720	4	269817	2	377007	269814	1.397

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

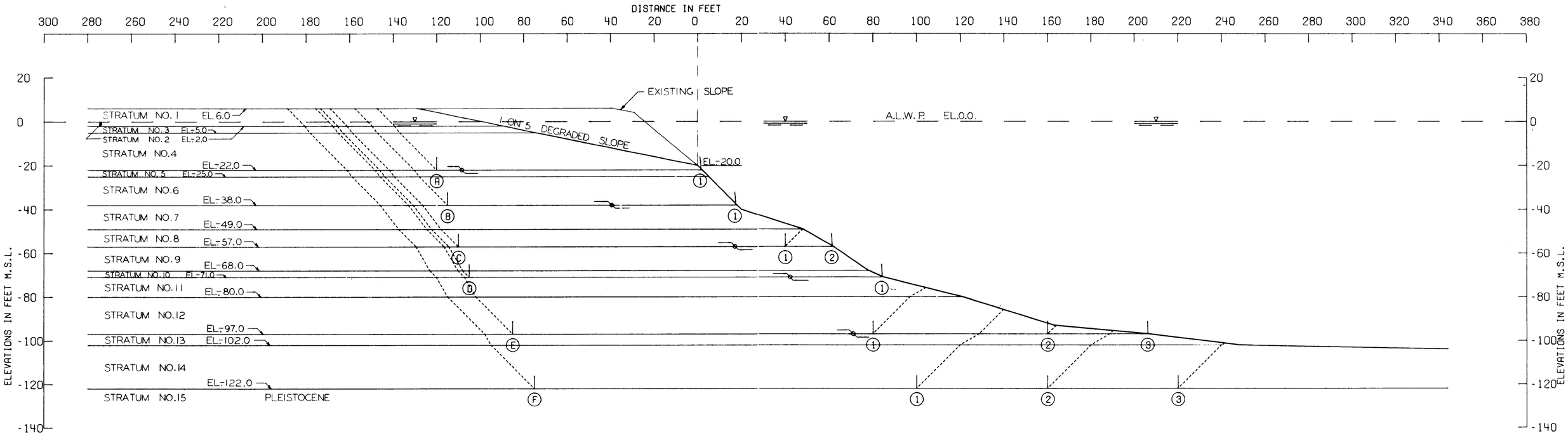
ALLIANCE, LOUISIANA
RANGE U-6 TO RANGE D-41
STA. 973+00 TO STA. 1020+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 17



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES 39 & 41, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	500.0	500.0	500.0	500.0	0.
2	CH	48.0	48.0	500.0	500.0	500.0	500.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	40.0	40.0	500.0	500.0	500.0	500.0	0.
5	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
6	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
7	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
8	CL	43.0	43.0	530.0	530.0	570.0	570.0	0.
9	SM	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	43.0	43.0	695.0	695.0	710.0	710.0	0.
11	SP	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	43.0	43.0	885.0	885.0	970.0	970.0	0.
13	SM	60.0	60.0	0.	0.	0.	0.	30.0
14	CH	43.0	43.0	1120.0	1120.0	1220.0	1220.0	0.
15	CH	60.0	60.0	≥1500.0	≥1500.0	≥1550.0	≥1550.0	0.

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
(A) (1)	-22.00	26955	43247	500	26457	9	70703	26447	2.673
(B) (1)	-38.00	42947	61137	500	56824	10	104585	56813	1.841
(C) (1)	-57.00	66016	81629	8480	108336	1939	156125	106397	1.467
(C) (2)	-57.00	66016	84927	385	108336	4	151329	108332	1.397
(D) (1)	-71.00	94137	120740	417	155996	2	215294	155994	1.380
(E) (1)	-97.00	147484	159156	31595	263891	15292	338236	248598	1.361
(E) (2)	-97.00	147484	194379	6932	263891	401	348796	263490	1.324
(E) (3)	-97.00	147484	196895	147	263891	0	344527	263891	1.306
(F) (1)	-122.00	212200	213500	72938	405034	40209	498639	364824	1.367
(F) (2)	-122.00	212200	286700	49889	405034	18778	548790	386256	1.421
(F) (3)	-122.00	212200	359900	44847	405034	11253	616948	393780	1.567

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
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P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

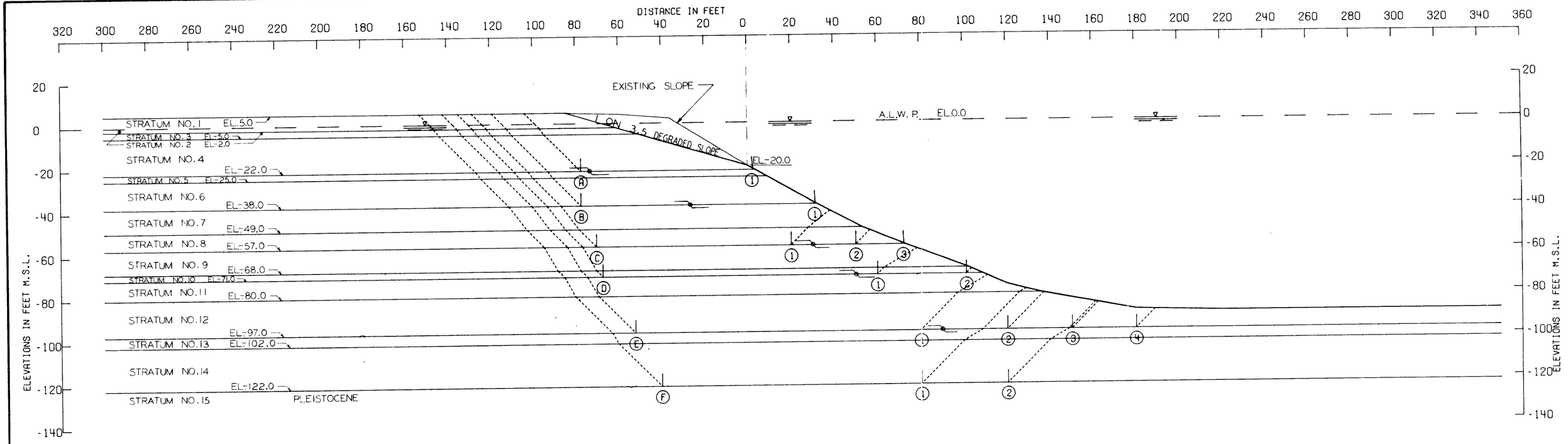
BANK STABILITY ANALYSIS

ALLIANCE, LOUISIANA
RANGE D-41 TO RANGE D-66
STA. 1020+00 TO STA. 1045+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 18



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES **39 & 41, PART I, VOL. II.**

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	500.0	500.0	500.0	500.0	0.
2	CH	48.0	48.0	500.0	500.0	500.0	500.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	40.0	40.0	500.0	500.0	500.0	500.0	0.
5	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
6	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
7	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
8	CL	43.0	43.0	530.0	530.0	570.0	570.0	0.
9	SM	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	43.0	43.0	695.0	695.0	710.0	710.0	0.
11	SM	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	43.0	43.0	885.0	885.0	970.0	970.0	0.
13	SM	60.0	60.0	0.	0.	0.	0.	30.0
14	CH	43.0	43.0	1120.0	1120.0	1220.0	1220.0	0.
15	CH	60.0	60.0	≥1500.0	≥1500.0	≥1500.0	≥1550.0	0.

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	-22.00	25819	27602	560	23443	9	53982	23433	2.304
B 1	-38.00	41682	47237	360	53329	4	89280	53324	1.674
C 1	-57.00	64560	51585	14472	102239	10533	130618	91705	1.424
C 2	-57.00	64560	65575	6965	102239	1350	137101	100888	1.359
C 3	-57.00	64560	68227	302	102239	2	133090	102236	1.302
D 1	-71.00	92059	89867	11769	149367	6565	193696	142801	1.356
D 2	-71.00	92059	104232	3314	149367	177	199607	149189	1.338
E 1	-97.00	146711	128622	36394	259483	25957	311728	233526	1.335
E 2	-97.00	146711	161452	29817	259483	8126	337982	251357	1.345
E 3	-97.00	146711	174780	21648	259483	3798	343140	255684	1.342
E 4	-97.00	146711	183514	15541	259483	1697	345767	257785	1.341
F 1	-122.00	210352	147010	90230	395585	67490	447592	328094	1.364
F 2	-122.00	210352	195810	74970	395585	39079	481132	356505	1.350

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
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B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE WEDGE

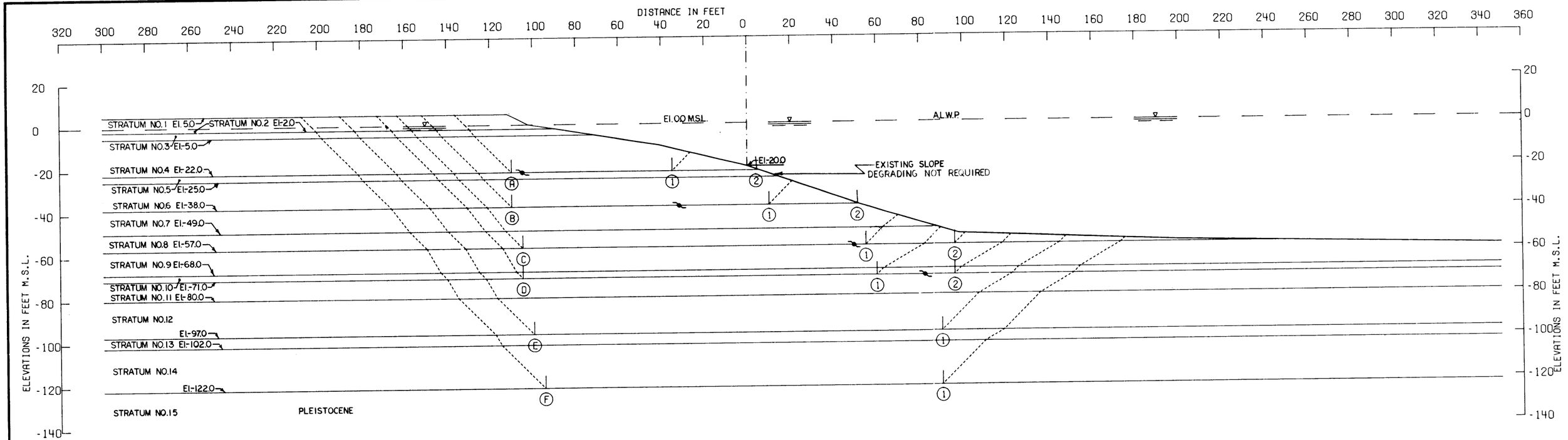
$$\text{FACTOR OF SAFETY} = \frac{R_A + R_B + R_P}{D_A - D_P}$$

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

ALLIANCE, LOUISIANA
RANGE D-66 TO RANGE D-90
STA. 1045+00 TO STA. 1069+00
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 19



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 39 & 41, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	500.0	500.0	500.0	500.0	0.
2	CH	48.0	48.0	500.0	500.0	500.0	500.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	40.0	40.0	500.0	500.0	500.0	500.0	0.
5	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
6	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
7	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
8	CL	43.0	43.0	530.0	530.0	570.0	570.0	0.
9	SM	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	43.0	43.0	695.0	695.0	710.0	710.0	0.
11	SP	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	43.0	43.0	885.0	885.0	970.0	970.0	0.
13	SM	60.0	60.0	0.	0.	0.	0.	30.0
14	CH	43.0	43.0	1120.0	1120.0	1220.0	1220.0	0.
15	CH	60.0	60.0	≈1500.0	≈1500.0	≈1500.0	≈1500.0	0.

ASSUMED FAILURE SURFACE NO.	ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ ①	-22.00	25819	29445	8470	24220	1783	63735	22436	2.841
Ⓐ ②	-22.00	25819	39652	457	24220	5	65929	24214	2.723
Ⓑ ①	-38.00	41682	57588	10800	54105	3414	110070	50691	2.171
Ⓑ ②	-38.00	41682	69315	257	54105	1	111254	54103	2.056
Ⓒ ①	-57.00	64927	91061	12140	104500	6428	168129	98072	1.714
Ⓒ ②	-57.00	64927	104279	5180	104500	555	174386	103945	1.678
Ⓓ ①	-71.00	94214	117150	32752	154283	16496	244116	137787	1.772
Ⓓ ②	-71.00	94214	141876	20064	154283	9007	256155	145275	1.763
Ⓔ ①	-97.00	150154	184300	70524	272696	52217	404978	220479	1.837
Ⓕ ①	-122.00	212870	225700	136217	415726	122179	574787	293546	1.958

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

BANK STABILITY ANALYSIS

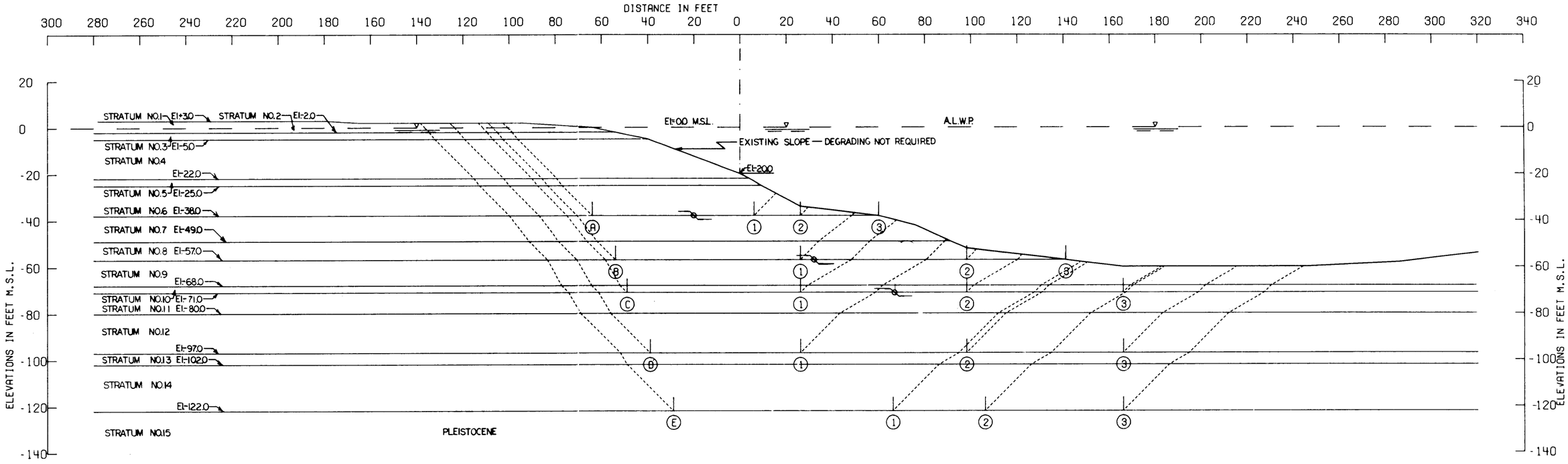
ALLIANCE, LOUISIANA
RANGE D-90 TO RANGE D-115
STA. 1069+00 TO STA. 1094+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 20



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 39 & 41, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	500.0	500.0	500.0	500.0	0.
2	CH	48.0	48.0	500.0	500.0	500.0	500.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	40.0	40.0	500.0	500.0	500.0	500.0	0.
5	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
6	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
7	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
8	CL	43.0	43.0	530.0	530.0	570.0	570.0	0.
9	SM & SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	43.0	43.0	695.0	695.0	710.0	710.0	0.
11	SP	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	43.0	43.0	885.0	885.0	970.0	970.0	0.
13	SM	60.0	60.0	0.	0.	0.	0.	30.0
14	CH	43.0	43.0	1120.0	1120.0	1220.0	1220.0	0.
15	CH	60.0	60.0	≥1500.0	≥1500.0	≥1500.0	≥1500.0	0.

ASSUMED FAILURE SURFACE NO.	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	-38.00	37724	33499	9538	37137	3034	80762	34102	2.368
A 2	-38.00	37724	39653	3579	37137	307	80957	36830	2.198
A 3	-38.00	37724	47217	10	37137	0.	84952	37137	2.288
B 1	-57.00	58611	45600	18496	79330	11837	122707	67492	1.818
B 2	-57.00	58611	78422	4747	79330	480	141781	78850	1.798
B 3	-57.00	58611	81091	11	79330	0.	139713	79330	1.761
C 1	-71.00	83933	53250	49931	121773	30237	187114	91536	2.044
C 2	-71.00	83933	103613	17091	121773	8213	204638	113560	1.802
C 3	-71.00	83933	135958	8007	121773	3551	227900	118222	1.928
D 1	-97.00	137011	63050	104713	229195	85638	304774	143556	2.123
D 2	-97.00	137011	132890	61906	229195	47865	331808	181329	1.830
D 3	-97.00	137011	198850	53917	229195	37205	389778	191989	2.030
E 1	-122.00	199126	115900	133177	361483	131289	448203	230193	1.947
E 2	-122.00	199126	164700	122203	361483	109996	486030	251487	1.933
E 3	-122.00	199126	237900	119016	361483	99552	556042	261931	2.123

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

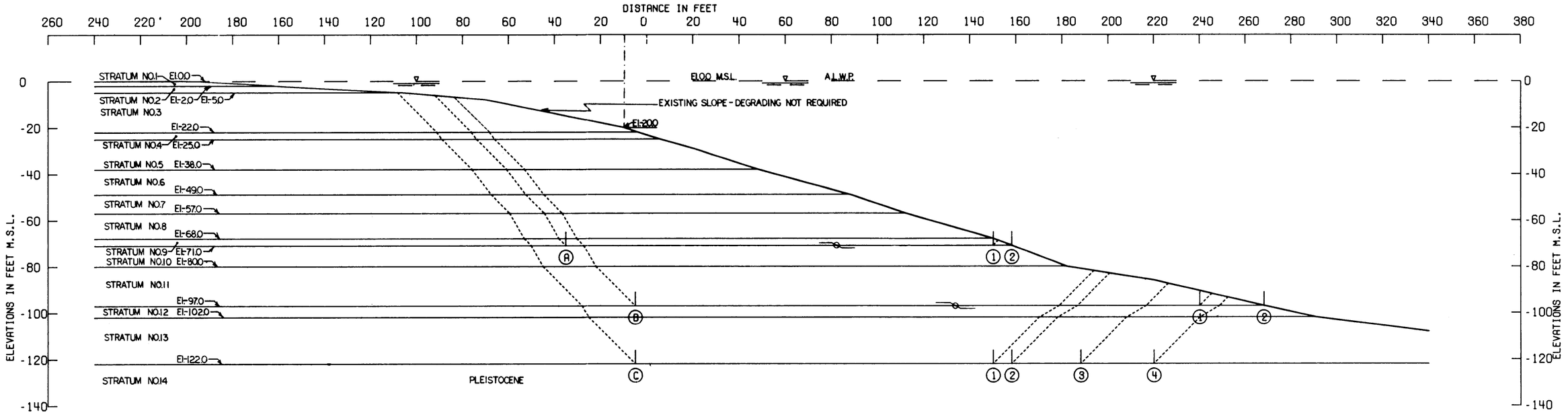
MYRTLE GROVE, LOUISIANA
RANGE U-117 TO RANGE U-84
STA. 1094+00 TO STA. 1127+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 21



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 39 & 41, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	48.0	48.0	500.0	500.0	500.0	500.0	0.
2	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
3	CH	40.0	40.0	500.0	500.0	500.0	500.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
6	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
7	CL	43.0	43.0	530.0	530.0	570.0	570.0	0.
8	SM	60.0	60.0	0.	0.	0.	0.	30.0
9	CH	43.0	43.0	695.0	695.0	710.0	710.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	43.0	43.0	885.0	885.0	970.0	970.0	0.
12	SM	60.0	60.0	0.	0.	0.	0.	30.0
13	CH	43.0	43.0	1120.0	1120.0	1220.0	1220.0	0.
14	CH	60.0	60.0	≥1500.0	≥1500.0	≥1500.0	≥1500.0	0.

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	-71.00	70386	110537	3032	84425	140	183956	84284	2.183
A 2	-71.00	70386	110835	0	84425	0	181221	84425	2.147
B 1	-97.00	116553	186616	9240	166441	719	312409	165722	1.885
B 2	-97.00	116553	188846	0	166441	0	305399	166441	1.835
C 1	-122.00	180260	189100	82126	292415	49966	451487	242448	1.862
C 2	-122.00	180260	198860	78592	292415	44889	457713	247525	1.849
C 3	-122.00	180260	235460	68491	292415	32820	484211	259594	1.865
C 4	-122.00	180260	274500	55012	292415	24343	509773	268071	1.902

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

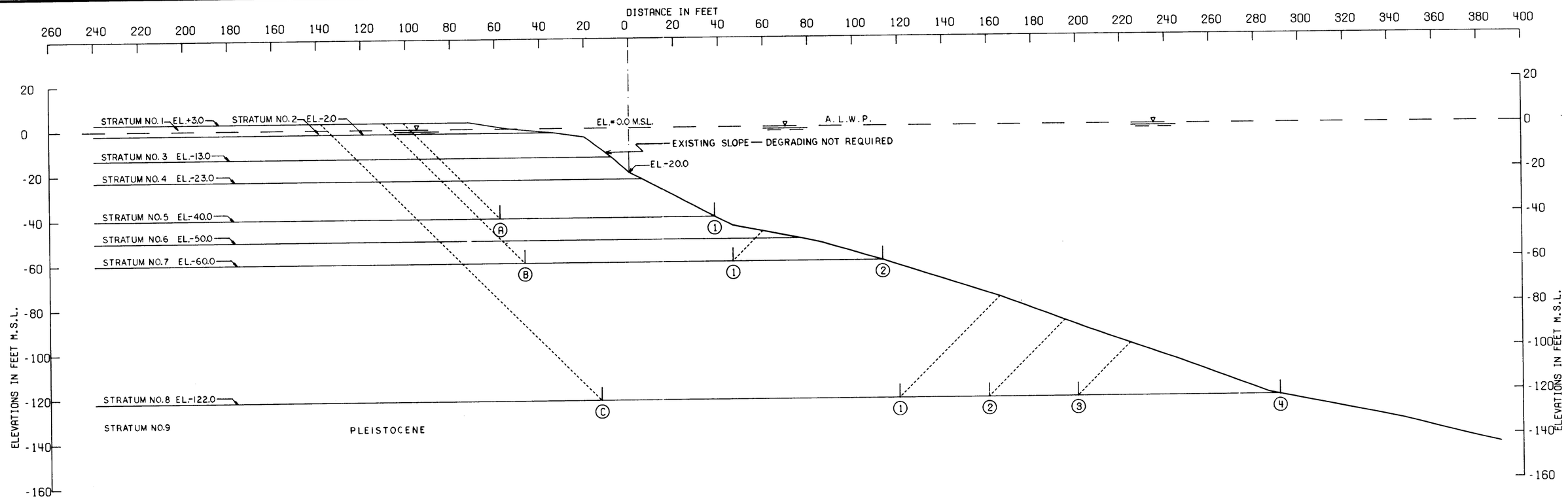
MYRTLE GROVE, LOUISIANA
RANGE U-84 TO RANGE U-60
STA. 1127+00 TO STA. 1153+30

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 22



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 39, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATIÓN -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	500.0	500.0	500.0	500.0	0.
2	CH	48.0	48.0	500.0	500.0	500.0	500.0	0.
3	CH	40.0	40.0	500.0	500.0	500.0	500.0	0.
4	CH	28.0	28.0	500.0	500.0	500.0	500.0	0.
5	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
6	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
7	CH	43.0	43.0	550.0	550.0	600.0	600.0	0.
8	CH	43.0	43.0	910.0	910.0	1220.0	1220.0	0.
9	CH	60.0	60.0	≥1500.0	≥1500.0	≥1500.0	≥1500.0	0.

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	
Ⓐ ①	-40.00	43000	47950	34	42323	0	90984	42323	2.150
Ⓑ ①	-60.00	64000	55800	14405	84865	4608	134205	80257	1.672
Ⓑ ②	-60.00	64000	95940	25	84865	0	159965	84865	1.885
Ⓒ ①	-122.00	176840	162260	82341	321282	58114	421442	263167	1.601
Ⓒ ②	-122.00	176840	211060	62541	321282	34859	450441	286423	1.573
Ⓒ ③	-122.00	176840	259860	43275	321282	16424	479975	304858	1.574
Ⓒ ④	-122.00	176840	370758	30	321282	0	547628	321282	1.705

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

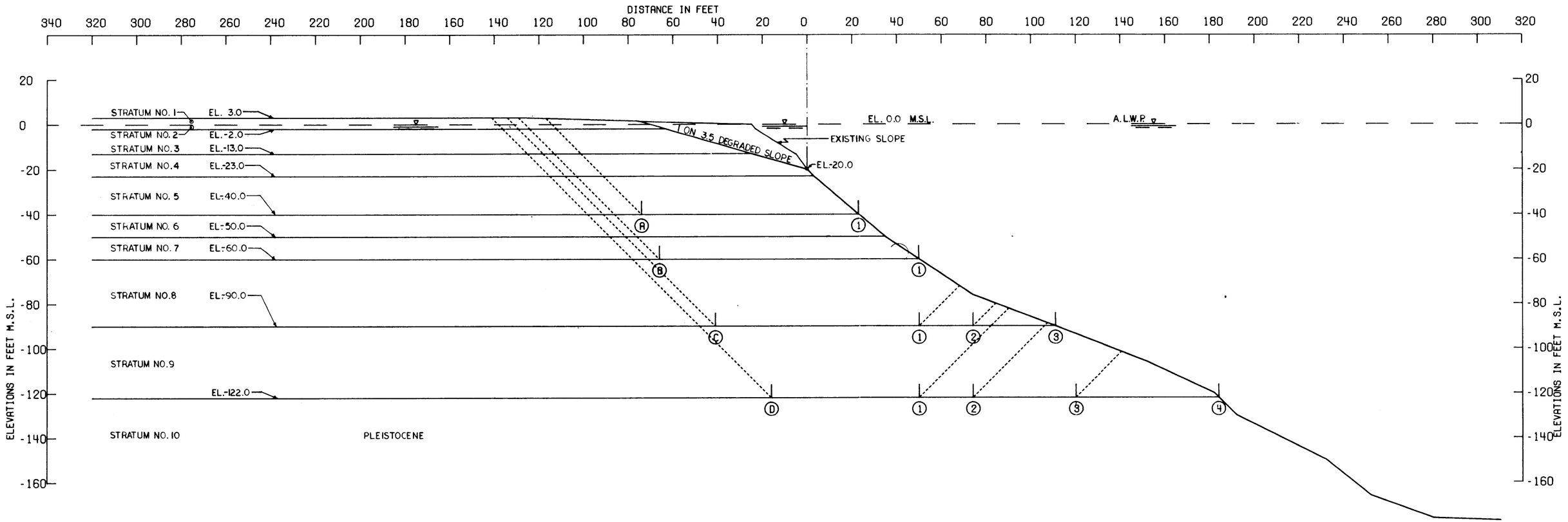
BANK STABILITY ANALYSIS

MYRTLE GROVE, LOUISIANA
RANGE U-60 TO RANGE U-39
STA. 1153+30 TO STA. 1176+60

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 23



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 39, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	500.0	500.0	500.0	500.0	0.
2	CH	48.0	48.0	500.0	500.0	500.0	500.0	0.
3	CH	40.0	40.0	500.0	500.0	500.0	500.0	0.
4	CH	28.0	28.0	500.0	500.0	500.0	500.0	0.
5	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
6	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
7	CH	43.0	43.0	550.0	550.0	600.0	600.0	0.
8	CH	43.0	43.0	750.0	750.0	900.0	900.0	0.
9	CH	43.0	43.0	1060.0	1060.0	1220.0	1220.0	0.
10	CH	60.0	60.0	≈1500.0	≈1500.0	≈1500.0	≈1500.0	0.

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
Ⓐ ①	-40.00	42679	48450	45	39749	0	91175	39748	2.294
Ⓑ ①	-60.00	64000	69540	44	83206	0	133584	83206	1.605
Ⓒ ①	-90.00	109000	81900	26999	171280	11604	217900	159676	1.365
Ⓒ ②	-90.00	109000	103500	15235	171280	3054	227735	168226	1.354
Ⓒ ③	-90.00	109000	136710	41	171280	0	245751	171280	1.435
Ⓓ ①	-122.00	176840	80520	79761	301680	50883	337141	250797	1.344
Ⓓ ②	-122.00	176840	109800	69898	301680	32997	356539	268682	1.327
Ⓓ ③	-122.00	176840	165920	43441	301680	12545	386201	269134	1.396
Ⓓ ④	-122.00	176840	243878	106	301680	0	420824	301680	1.395

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

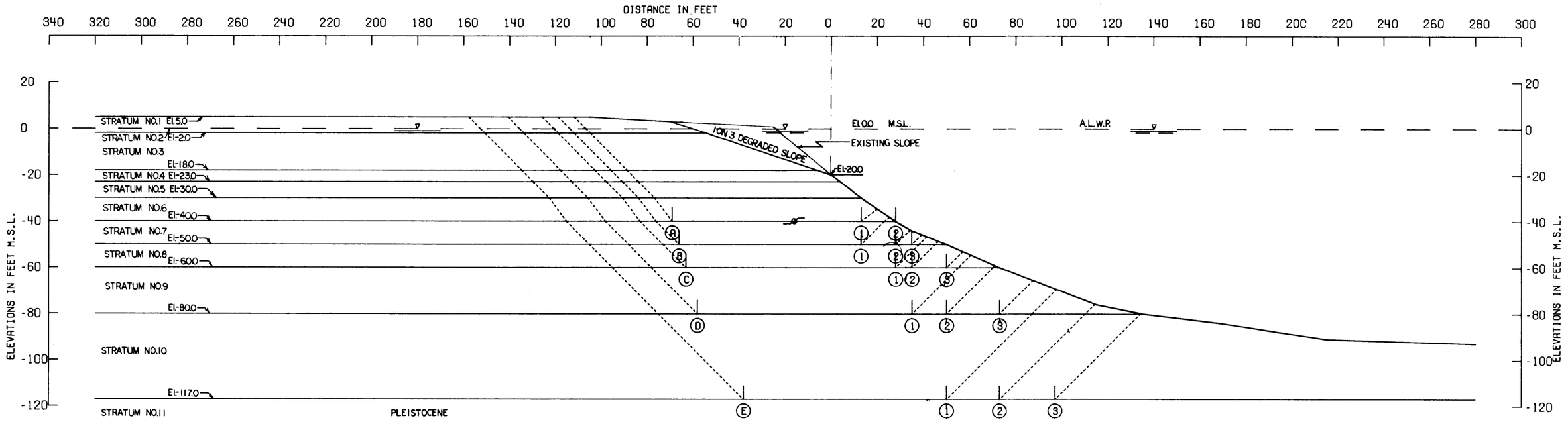
BANK STABILITY ANALYSIS

MYRTLE GROVE, LOUISIANA
RANGE U-39 TO RANGE D-38.2
STA. 1176+60 TO STA. 1255+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 24



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 39, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	500.0	500.0	500.0	500.0	0.
2	CH	48.0	48.0	500.0	500.0	500.0	500.0	0.
3	CH	40.0	40.0	500.0	500.0	500.0	500.0	0.
4	CHO	28.0	28.0	500.0	500.0	500.0	500.0	0.
5	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
6	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
7	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
8	CH	43.0	43.0	550.0	550.0	600.0	600.0	0.
9	CH	43.0	43.0	700.0	700.0	800.0	800.0	0.
10	CH	43.0	43.0	985.0	985.0	1,170.0	1170.0	0.
11	CH	60.0	60.0	≥1500.0	≥1500.0	≥1500.0	≥1500.0	0.

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)	-40.00	45464	39328	3815	51311	1469	88608	49841	1.778
(A) (2)	-40.00	45464	43438	0	51311	0	88898	51311	1.733
(B) (1)	-50.00	55652	39500	11043	75432	5976	106196	69455	1.529
(B) (2)	-50.00	55652	47000	6363	75432	1366	109016	74065	1.472
(B) (3)	-50.00	55652	50500	4285	75432	551	110438	74880	1.475
(C) (1)	-60.00	66833	54600	14428	103551	5604	135862	97946	1.387
(C) (2)	-60.00	66833	58800	12428	103551	3928	138062	99622	1.386
(C) (3)	-60.00	66833	67800	7666	103551	1496	142300	102054	1.394
(D) (1)	-80.00	95220	74400	33999	172480	19812	203620	152667	1.334
(D) (2)	-80.00	95220	86400	28999	172480	13481	210620	158999	1.325
(D) (3)	-80.00	95220	104800	20275	172480	6224	220296	166256	1.325
(E) (1)	-117.00	168193	102960	87758	335356	67931	358912	267425	1.342
(E) (2)	-117.00	168193	129870	78876	335356	50574	376939	284782	1.324
(E) (3)	-117.00	168193	157950	73123	335356	36891	399266	298465	1.338

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

MISSISSIRPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

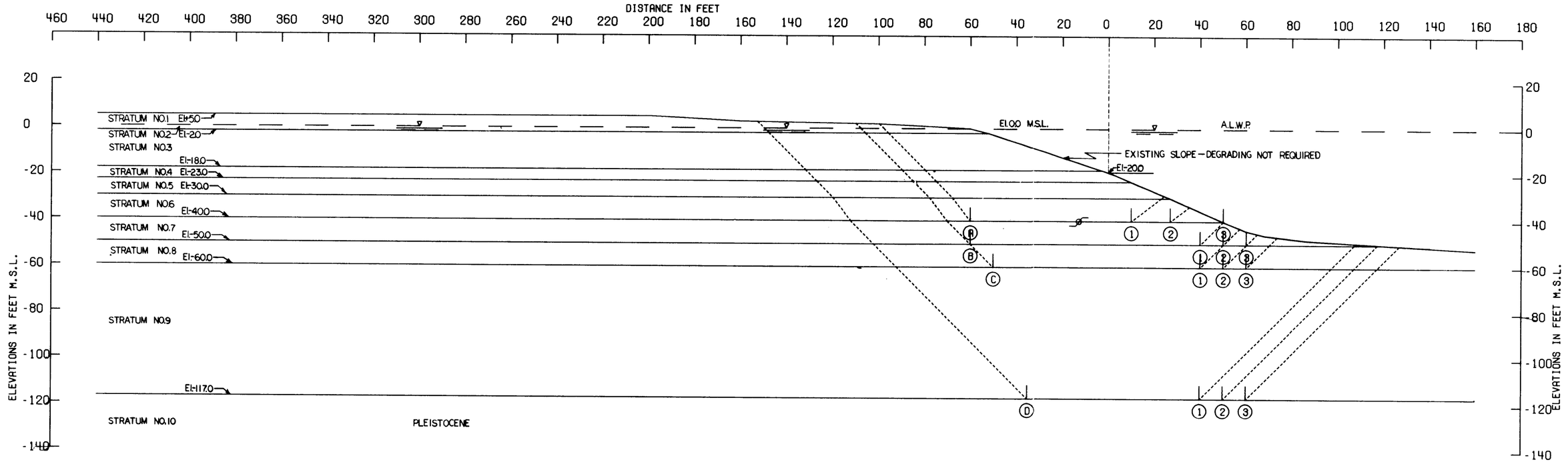
BANK STABILITY ANALYSIS

MYRTLE GROVE, LOUISIANA
RANGE D-38.2 TO RANGE D-90
STA. 1255+00 TO STA. 1306+52

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 25



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATE 39, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	500.0	500.0	500.0	500.0	0.
2	CH	48.0	48.0	500.0	500.0	500.0	500.0	0.
3	CH	40.0	40.0	500.0	500.0	500.0	500.0	0.
4	CH	28.0	28.0	500.0	500.0	500.0	500.0	0.
5	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
6	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
7	CH	43.0	43.0	500.0	500.0	500.0	500.0	0.
8	CH	43.0	43.0	550.0	550.0	600.0	600.0	0.
9	CH	43.0	43.0	885.0	885.0	1170.0	1170.0	0.
10	CH	60.0	60.0	+1500.0	+1500.0	+1500.0	+1500.0	0.

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)	-40.00	41110	34153	9585	36653	4644	84849	32009	2.651
(A) (2)	-40.00	41110	40744	4552	36653	1753	86407	34900	2.476
(A) (3)	-40.00	41110	47039	0	36653	0	88150	36653	2.405
(B) (1)	-50.00	51518	50000	10000	58490	3342	111518	55147	2.022
(B) (2)	-50.00	51518	55000	7142	58490	1533	113661	56956	1.996
(B) (3)	-50.00	51518	60000	4800	58490	618	116318	57872	2.010
(C) (1)	-60.00	62518	54000	18142	81609	9176	134661	72432	1.859
(C) (2)	-60.00	62518	60000	15800	81609	6205	138318	75404	1.834
(C) (3)	-60.00	62518	66000	14400	81609	4477	142918	77131	1.853
(D) (1)	-117.00	164831	87750	112612	307675	110737	365193	196937	1.854
(D) (2)	-117.00	164831	99450	112056	307675	105434	376338	202241	1.861
(D) (3)	-117.00	164831	111150	111523	307675	101955	387505	205719	1.884

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

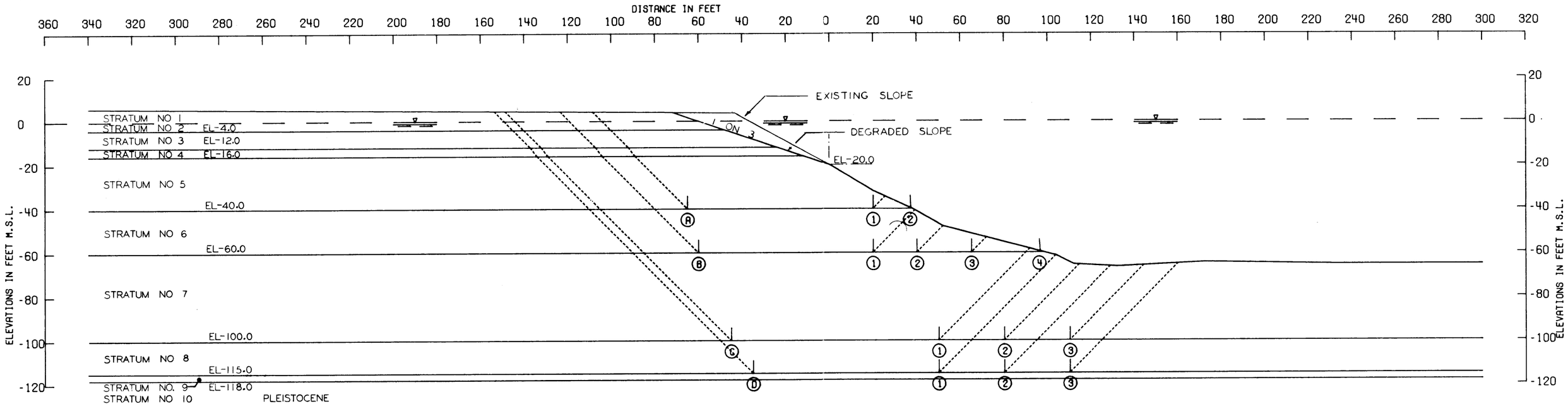
BANK STABILITY ANALYSIS

MYRTLE GROVE, LOUISIANA
RANGE D-90 TO RANGE D-117
STA. 1306+52 TO STA. 1333+92

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 26



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES 43 & 44, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL THE SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	400.0	400.0	400.0	400.0	0.
2	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
3	CHO	28.0	28.0	300.0	300.0	300.0	300.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	43.0	43.0	400.0	400.0	400.0	400.0	0.
6	CH	43.0	43.0	500.0	500.0	600.0	600.0	0.
7	CH	34.0	34.0	800.0	800.0	1000.0	1000.0	0.
8	CH	48.0	48.0	1075.0	1075.0	1150.0	1150.0	0.
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	60.0	60.0	≥180.0	≥180.0	≥180.0	≥180.0	0.

ASSUMED FAILURE SURFACE NO.		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	-40.00	33459	34000	4430	50710	951	71889	49759	1.445
A	2	-40.00	33459	40800	246	50710	2	74505	50707	1.469
B	1	-60.00	53569	48000	19272	100283	11659	120842	88624	1.364
B	2	-60.00	53569	60000	12000	100283	4861	125569	95422	1.316
B	3	-60.00	53569	75000	6847	100283	1268	135417	99015	1.368
B	4	-60.00	53569	93600	458	100283	5	147627	100278	1.472
C	1	-100.00	117754	95000	65694	239172	39699	278448	199273	1.397
C	2	-100.00	117754	125000	55009	239172	26961	297763	212211	1.403
C	3	-100.00	117754	155000	54568	239172	19633	327322	219538	1.491
D	1	-115.00	150040	97750	94014	302757	65835	341805	236922	1.443
D	2	-115.00	150040	132250	86116	302757	49710	368407	253046	1.456
D	3	-115.00	150040	166678	88081	302757	42626	404801	260131	1.556

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

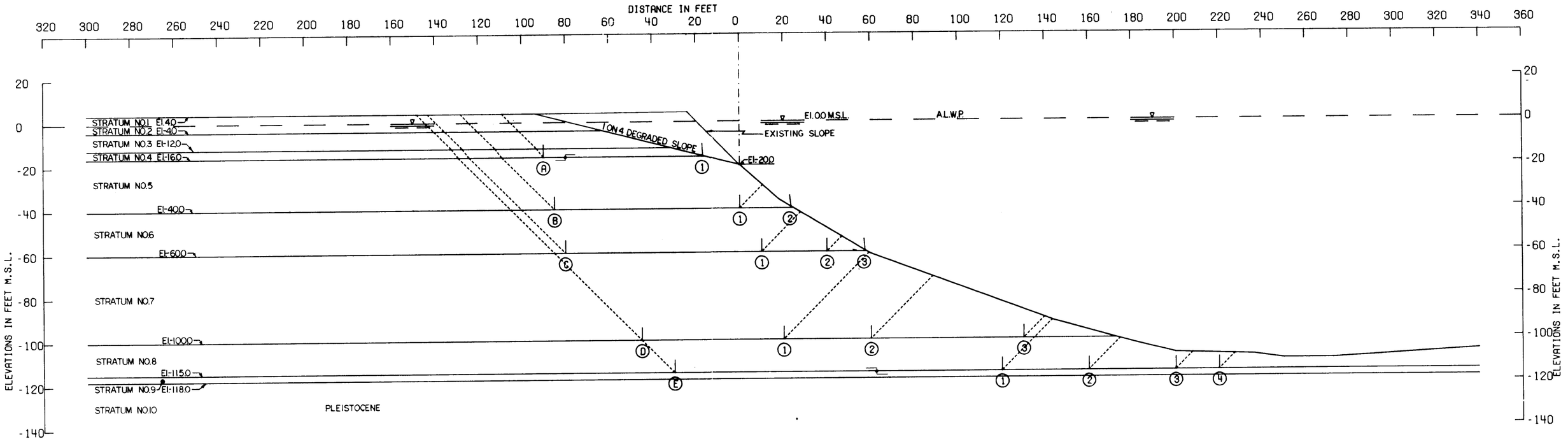
BANK STABILITY ANALYSIS

JUNIOR, LOUISIANA
RANGE U-120 TO RANGE U-96
STA. 1373+22 TO STA. 1397+22

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 27



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES 43 & 44, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -200.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	400.0	400.0	400.0	400.0	0.
2	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
3	CHO	28.0	28.0	300.0	300.0	300.0	300.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	43.0	43.0	400.0	400.0	400.0	400.0	0.
6	CH	43.0	43.0	500.0	500.0	600.0	600.0	0.
7	CH	34.0	34.0	800.0	800.0	1000.0	1000.0	0.
8	CH	48.0	48.0	1075.0	1075.0	1150.0	1150.0	0.
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	60.0	60.0	=1180.0	=1180.0	=1180.0	=1180.0	0.

ASSUMED FAILURE SURFACE NO.	ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ ①	-16.00	13903	22387	134	12555	2	36425	12553	2.902
Ⓑ ①	-40.00	33217	34000	8470	49919	4549	75687	45370	1.668
Ⓑ ②	-40.00	33217	43200	513	49919	14	76930	49905	1.542
Ⓒ ①	-60.00	53217	54000	18029	99067	11547	125247	87520	1.431
Ⓒ ②	-60.00	53217	72000	6835	99067	1600	132053	97467	1.355
Ⓒ ③	-60.00	53217	82200	492	99067	8	135909	99059	1.372
Ⓓ ①	-100.00	117217	65000	62996	223619	45964	245214	177654	1.380
Ⓓ ②	-100.00	117217	105000	45579	223619	18881	267796	204738	1.308
Ⓓ ③	-100.00	117217	175000	15387	223619	2150	307605	221468	1.389
Ⓔ ①	-115.00	149467	161268	45481	281757	14172	356216	267585	1.331
Ⓔ ②	-115.00	149467	185565	31221	281757	6145	366255	275612	1.329
Ⓔ ③	-115.00	149467	199946	16735	281757	1493	366149	280264	1.306
Ⓔ ④	-115.00	149467	204226	15573	281757	1292	369267	280464	1.317

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

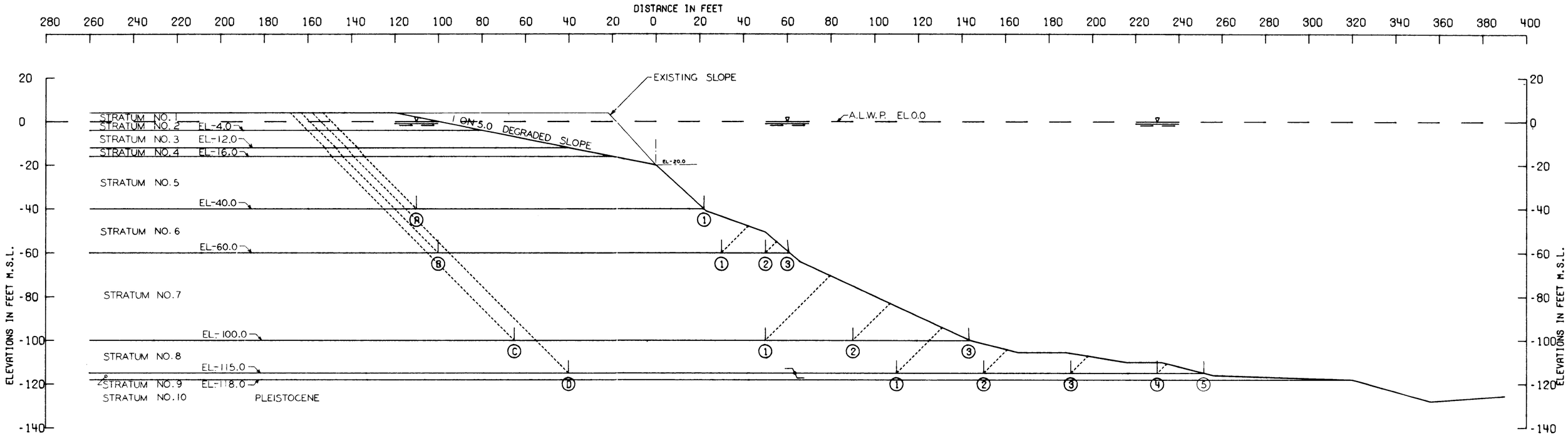
JUNIOR, LOUISIANA
RANGE U-96 TO RANGE U-57
STA. 1397+22 TO STA. 1436+33

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 28



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES 43 & 44, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL THE SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	400.0	400.0	400.0	400.0	0.
2	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
3	CHO	28.0	28.0	300.0	300.0	300.0	300.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	43.0	43.0	400.0	400.0	400.0	400.0	0.
6	CH	43.0	43.0	500.0	500.0	600.0	600.0	0.
7	CH	34.0	34.0	800.0	800.0	1000.0	1000.0	0.
8	CH	48.0	48.0	1075.0	1075.0	1150.0	1150.0	0.
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	60.0	60.0	≠180.0	≠180.0	≠180.0	≠180.0	0.

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	
(R) (1)	-40.00	33217	52800	-36	49956	0	85980	49956	1.721
(B) (1)	-60.00	53217	78000	12232	97419	4346	143450	93073	1.541
(B) (2)	-60.00	53217	90000	5152	97419	1050	148369	96369	1.540
(B) (3)	-60.00	53217	96000	576	97419	13	149793	97406	1.538
(C) (1)	-100.00	117217	115000	47494	222514	24030	279711	198484	1.409
(C) (2)	-100.00	117217	155000	27284	222514	7221	299501	215293	1.391
(C) (3)	-100.00	117217	208000	505	222514	2	325722	222512	1.464
(D) (1)	-115.00	149467	162491	41849	273187	12527	353808	260660	1.357
(D) (2)	-115.00	149467	184230	23220	273187	3496	356918	269690	1.323
(D) (3)	-115.00	149467	195639	17091	273187	1740	362108	271447	1.334
(D) (4)	-115.00	149467	202687	9460	273187	555	361615	272631	1.326
(D) (5)	-115.00	149467	204343	0	273187	0	353810	273187	1.295

NOTES

Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
∂ -- 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 = $\frac{R_A + R_B + R_P}{D_A - D_P}$

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

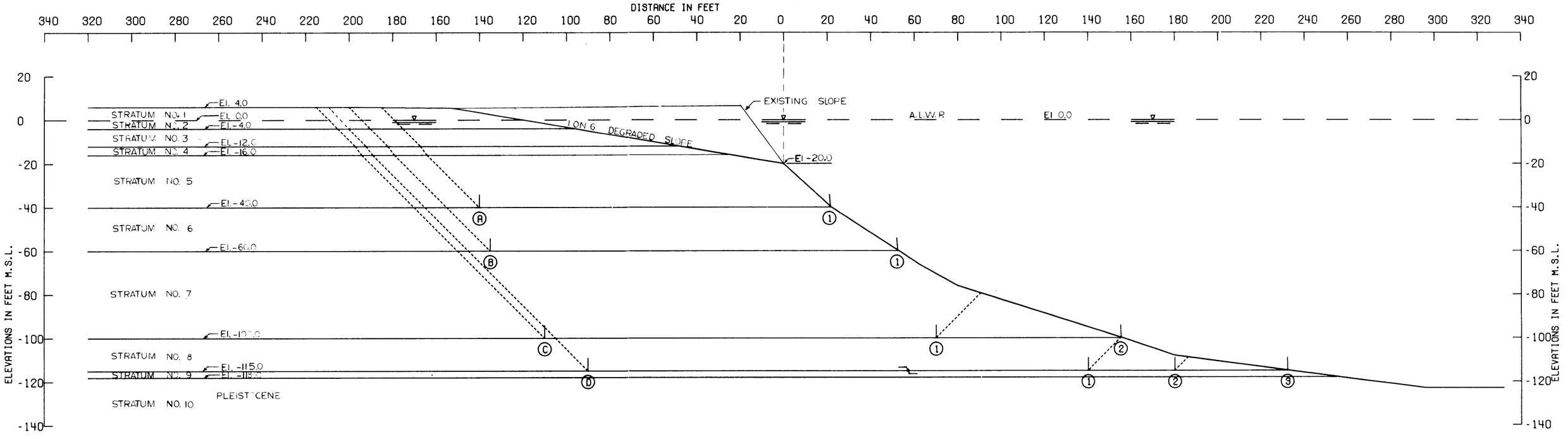
BANK STABILITY ANALYSIS

JUNIOR, LOUISIANA
RANGE U-57 TO RANGE D-9
STA. 1436+33 TO STA. 1503+60

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 29



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES 43 & 44, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL THE SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	400.0	400.0	400.0	400.0	0.
2	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
3	CHO	28.0	28.0	300.0	300.0	300.0	300.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	43.0	43.0	400.0	400.0	400.0	400.0	0.
6	CH	43.0	43.0	500.0	500.0	600.0	600.0	0.
7	CH	34.0	34.0	800.0	800.0	1000.0	1000.0	0.
8	CH	48.0	48.0	1075.0	1075.0	1150.0	1150.0	0.
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	60.0	60.0	≈1180.0	≈1180.0	≈1180.0	≈1180.0	0.

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	
Ⓐ ①	-40.00	34984	64400	381	57495	9	99765	57486	1.735
Ⓑ ①	-60.00	55141	112200	392	110847	5	167733	110842	1.513
Ⓒ ①	-100.00	119170	180000	33023	250750	9932	332194	240818	1.379
Ⓒ ②	-100.00	119170	265000	384	250750	1	384554	250749	1.534
Ⓓ ①	-115.00	151411	234408	32633	308028	6766	418453	301261	1.389
Ⓓ ②	-115.00	151411	249169	13294	308028	1037	413874	306990	1.348
Ⓓ ③	-115.00	151411	254308	250	308028	0	405970	308027	1.318

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

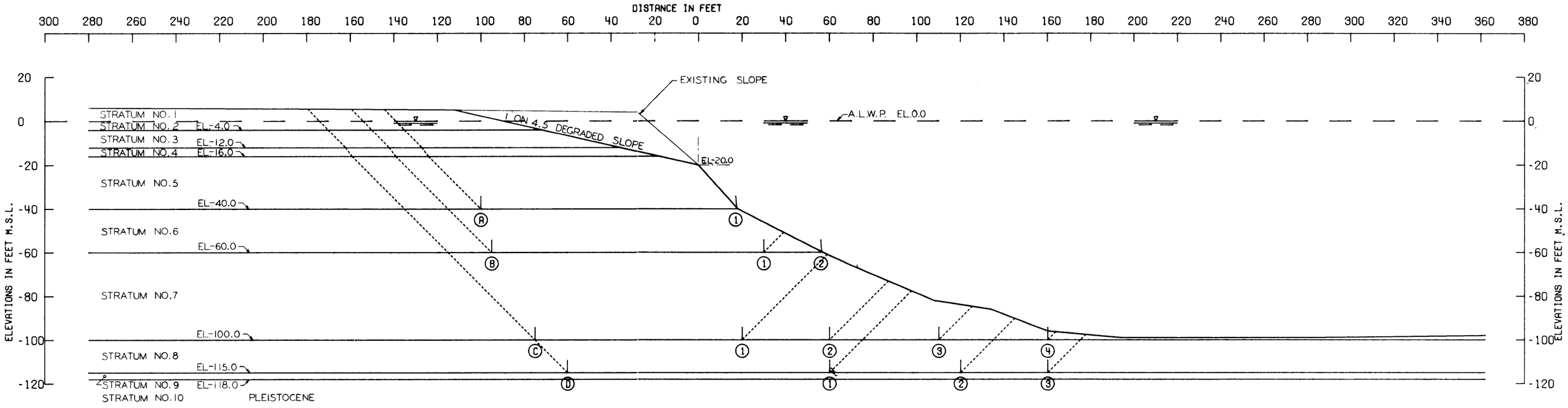
BANK STABILITY ANALYSIS

JUNIOR, LOUISIANA
RANGE D-9 TO RANGE D-60
STA. 1503+60 TO STA. 1553+06

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 30



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 43 & 44, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL THE SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	400.0	400.0	400.0	400.0	0.
2	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
3	CHO	28.0	28.0	300.0	300.0	300.0	300.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	43.0	43.0	400.0	400.0	400.0	400.0	0.
6	CH	43.0	43.0	500.0	500.0	600.0	600.0	0.
7	CH	34.0	34.0	800.0	800.0	1000.0	1000.0	0.
8	CH	48.0	48.0	1075.0	1075.0	1150.0	1150.0	0.
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	60.0	60.0	≒1180.0	≒1180.0	≒1180.0	≒1180.0	0.

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	
Ⓐ	①	-40.00	34363	46800	421	54379	12	81585	54367	1.501
Ⓑ	①	-60.00	54452	75000	9152	105905	2722	138604	103183	1.343
Ⓑ	②	-60.00	54452	90600	339	105905	3	145391	105902	1.373
Ⓒ	①	-100.00	118570	95000	62484	245096	42236	276054	202859	1.361
Ⓒ	②	-100.00	118570	135000	43022	245096	17530	296592	227566	1.303
Ⓒ	③	-100.00	118570	185000	24533	245096	4609	328103	240486	1.364
Ⓒ	④	-100.00	118570	235000	5881	245096	249	359451	244846	1.468
Ⓓ	①	-115.00	150820	138000	68160	305538	35507	356981	270031	1.322
Ⓓ	②	-115.00	150820	193454	47983	305538	15317	392258	290221	1.352
Ⓓ	③	-115.00	150820	218819	36185	305538	7211	405824	298327	1.360

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

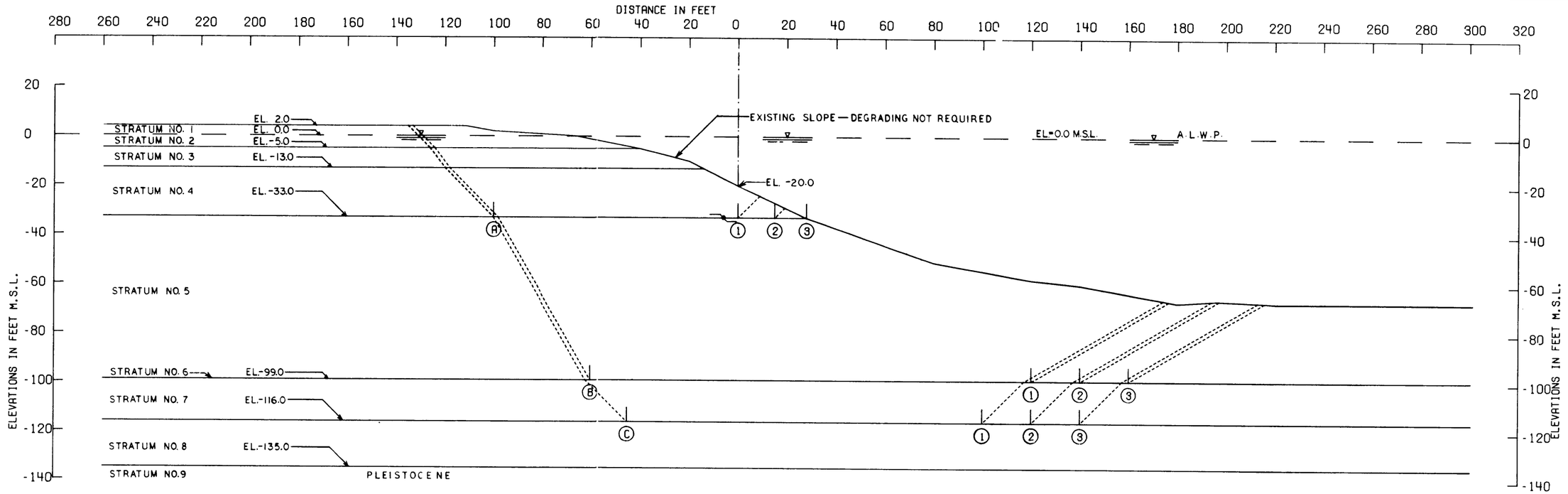
JUNIOR, LOUISIANA
RANGE D-60 TO RANGE D-82
STA. 1553+06 — STA. 1575+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 31



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 45, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F. CENTER OF STRATUM		C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM		FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	100.0	400.0	400.0	400.0	400.0	0.
2	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	43.0	43.0	400.0	400.0	400.0	400.0	0.
5	SP	60.0	60.0	0.	0.	0.	0.	30.0
6	CH	0.	0.	0.	0.	990.0	990.0	0.
7	CH	48.0	48.0	1075.0	1075.0	1160.0	1160.0	0.
8	SP	60.0	60.0	0.	0.	0.	0.	30.0
9	CH	60.0	60.0	≥1500.0	≥1500.0	≥1500.0	≥1500.0	0.

ASSUMED FAILURE SURFACE NO.		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	-33.00	28617	39759	7102	40568	2479	75479	38089	1.982
A	2	-33.00	28617	43303	3297	40568	533	75218	40034	1.879
A	3	-33.00	28617	44277	0	40568	0	72895	40568	1.797
B	1	-99.00	187176	178200	82116	277979	41058	447492	236921	1.889
B	2	-99.00	187176	198000	71701	277979	35850	456878	242128	1.887
B	3	-99.00	187176	217800	65212	277979	32606	470189	245373	1.916
C	1	-116.00	224328	168200	120421	377810	92741	512949	285069	1.799
C	2	-116.00	224328	191400	109539	377810	84380	525267	293430	1.790
C	3	-116.00	224328	214600	102495	377810	78168	541423	299642	1.807

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

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

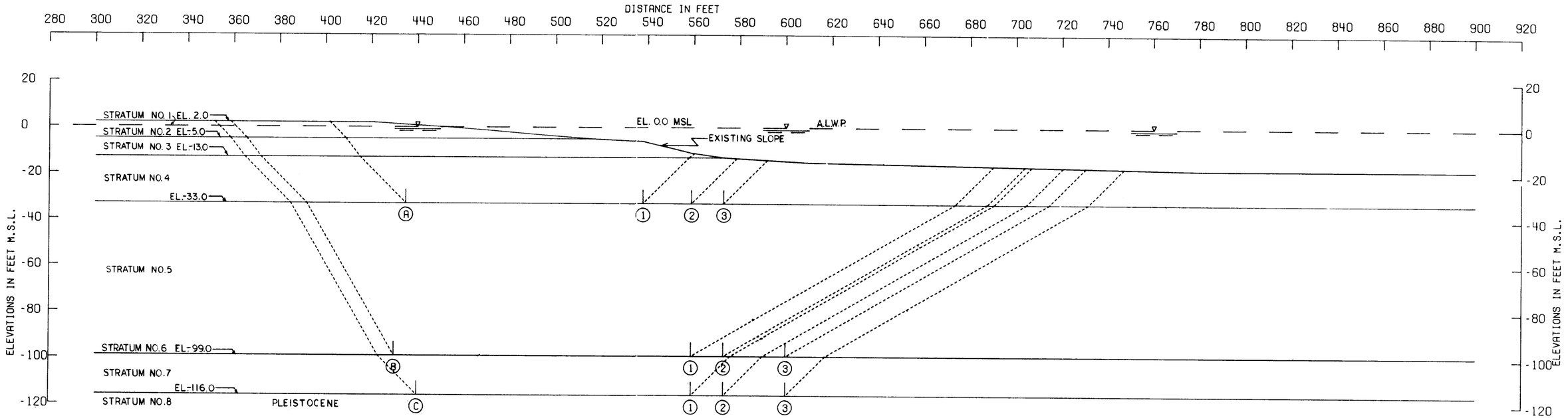
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

JUNIOR, LOUISIANA
RANGE D-82 TO RANGE D-120
STA.1575+00 - STA.1613+65.6

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

AUGUST 1971 FILE NO. H-2-25275



SECTION U-90 STA 1674+00

GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATE 45, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS THE MOST CRITICAL WITHIN THE LIMITS OF THIS REACH.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	400.0	400.0	400.0	400.0	0.
2	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	43.0	43.0	400.0	400.0	400.0	400.0	0.
5	SP	60.0	60.0	0.	0.	0.	0.	30.0
6	CH	0.	0.	0.	0.	990.0	990.0	0.
7	CH	48.0	48.0	1075.0	1075.0	1,160.0	1160.0	0.
8	CH	60.0	60.0	1500.0	1500.0	1500.0	1500.0	0.

ASSUMED FAILURE SURFACE NO.		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	-33.00	26293	41200	17017	33194	13784	84510	19410	4.354
A	2	-33.00	26293	49600	15753	33194	9326	91647	23868	3.840
A	3	-33.00	26293	55200	15179	33194	8155	96673	25039	3.861
B	1	-99.00	190478	127710	379142	280246	188954	697330	91292	7.638
B	2	-99.00	190478	141570	375806	280246	187208	707855	93037	7.608
B	3	-99.00	190478	168300	371581	280246	184952	730359	95293	7.664
C	1	-116.00	227389	138040	411822	383623	276557	777252	107065	7.260
C	2	-116.00	227389	154280	409542	383623	274248	791212	109375	7.234
C	3	-116.00	227389	185600	406102	383623	271363	819092	112260	7.296

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

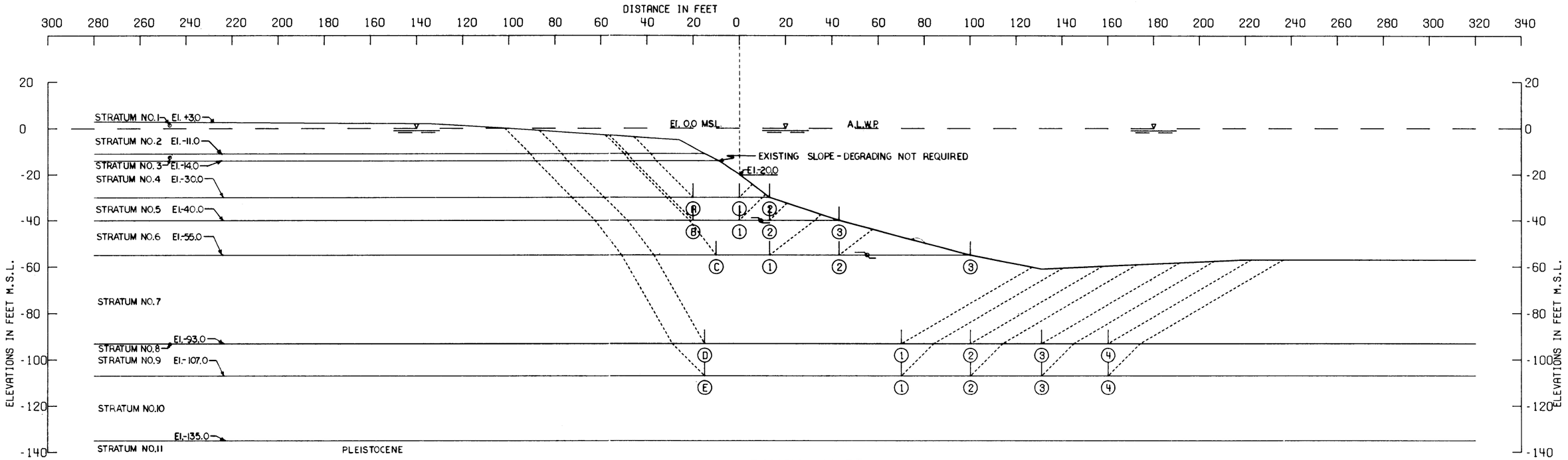
FACTOR OF SAFETY = $\frac{R_A + R_B + R_P}{D_A - D_P}$

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 40
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

DIAMOND, LOUISIANA
RANGE U-108 TO RANGE U-86
STA. 1656+00 TO STA. 1678+00
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 33



RANGE U-27

GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 46 & 48, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS THE MOST CRITICAL WITHIN THE LIMITS OF THIS REACH.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F. CENTER OF STRATUM		BOTTOM OF STRATUM		FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	300.0	300.0	300.0	300.0	0.
2	CH	48.0	48.0	300.0	300.0	300.0	300.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	43.0	43.0	300.0	300.0	300.0	300.0	0.
5	CH	43.0	43.0	350.0	350.0	350.0	350.0	0.
6	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
7	SP	60.0	60.0	0.	0.	0.	0.	30.0
8	CH	0.	0.	0.	0.	930.0	930.0	0.
9	CH	53.0	53.0	1000.0	1000.0	1070.0	1070.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	60.0	60.0	≅1500.0	≅1500.0	≅1500.0	≅1500.0	0.

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)	-30.00	15406	6000	3391	14860	1213	24797	13646	1.817
(A) (2)	-30.00	15406	9900	0	14860	0	25306	14860	1.703
(B) (1)	-40.00	22874	7000	7782	29243	4857	37657	24386	1.544
(B) (2)	-40.00	22874	11481	5250	29243	1610	39606	27632	1.433
(B) (3)	-40.00	22874	19210	0	29243	.0	42084	29243	1.439
(C) (1)	-55.00	38121	14619	17004	55315	10727	69745	44587	1.564
(C) (2)	-55.00	38121	28979	9038	55315	4604	76139	50710	1.501
(C) (3)	-55.00	38121	42213	0	55315	0	80335	55315	1.452
(D) (1)	-93.00	129357	79057	87706	195651	43853	296113	151798	1.951
(D) (2)	-93.00	129357	106950	68892	195651	34446	305200	161205	1.893
(D) (3)	-93.00	129357	135780	66682	195651	33341	331819	162310	2.044
(D) (4)	-93.00	129357	162750	72270	195651	36135	364377	159516	2.284
(E) (1)	-107.00	161028	90950	104783	271300	80162	356761	191137	1.867
(E) (2)	-107.00	161028	123050	93891	271300	68918	377969	202381	1.868
(E) (3)	-107.00	161028	156220	97360	271300	67019	414608	204280	2.030
(E) (4)	-107.00	161028	187250	102562	271300	70727	450840	200572	2.248

NOTES

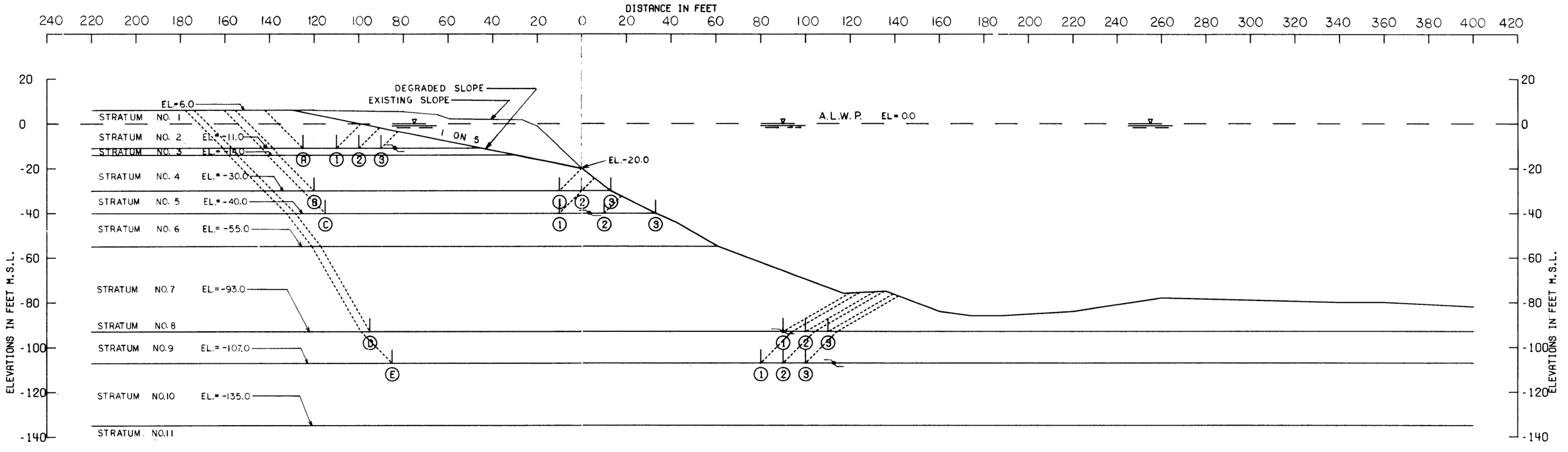
Φ -- ANGLE OF INTERNAL FRICTION, DEGREES
C -- UNIT COHESION, P.S.F.
▽ -- STATIC WATER SURFACE
D -- HORIZONTAL DRIVING FORCE IN POUNDS
R -- HORIZONTAL RESISTING FORCE IN POUNDS
A -- AS A SUBSCRIPT, REFERS TO ACTIVE WEDGE
B -- AS A SUBSCRIPT, REFERS TO CENTRAL BLOCK
P -- AS A SUBSCRIPT, REFERS TO PASSIVE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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

DIAMOND, LOUISIANA
RANGE U-86 TO RANGE U-27
STA. 1678+00 TO STA. 1737+00
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 46 & 48, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE DEGREES
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	
1	CH	110.0	110.0	300.0	300.0	300.0	300.0	0.
2	CH	48.0	48.0	300.0	300.0	300.0	300.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	43.0	43.0	300.0	300.0	300.0	300.0	0.
5	CH	43.0	43.0	350.0	350.0	400.0	400.0	0.
6	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
7	SP	60.0	60.0	0.	0.	0.	0.	30.0
8	CH	0.	0.	0.	0.	930.0	930.0	0.
9	CH	53.0	53.0	1000.0	1000.0	1070.0	1070.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	60.0	60.0	≥1500.0	≥1500.0	≥1500.0	≥1500.0	0.

ASSUMED FAILURE SURFACE NO.	ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ ①	-11.00	10200	4500	6500	11873	3396	21200	7877	2.691
Ⓐ ②	-11.00	10200	7500	5500	11873	2417	23200	9455	2.453
Ⓐ ③	-11.00	10200	10500	4500	11873	1618	25200	10255	2.457
Ⓑ ①	-30.00	22288	33000	6000	42016	2577	61288	39438	1.554
Ⓑ ②	-30.00	22288	36000	3391	42016	1213	61679	40802	1.512
Ⓑ ③	-30.00	22288	39900	0	42016	0	62188	42016	1.480
Ⓒ ①	-40.00	29288	42000	10391	63202	8091	81679	55111	1.482
Ⓒ ②	-40.00	29288	49809	5366	63202	1945	84454	61257	1.379
Ⓒ ③	-40.00	29288	55946	0	63202	0	85235	63202	1.349
Ⓓ ①	-93.00	149863	172050	26814	255260	13407	348727	241853	1.442
Ⓓ ②	-93.00	149863	180793	21398	255260	10639	352055	244561	1.440
Ⓓ ③	-93.00	149863	188241	18716	255260	9358	356821	245302	1.451
Ⓔ ①	-107.00	180428	176550	52288	332553	41064	409266	291489	1.404
Ⓔ ②	-107.00	180428	187250	48071	332553	35805	415750	296747	1.401
Ⓔ ③	-107.00	180428	197950	46022	332553	31631	424401	300921	1.410

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

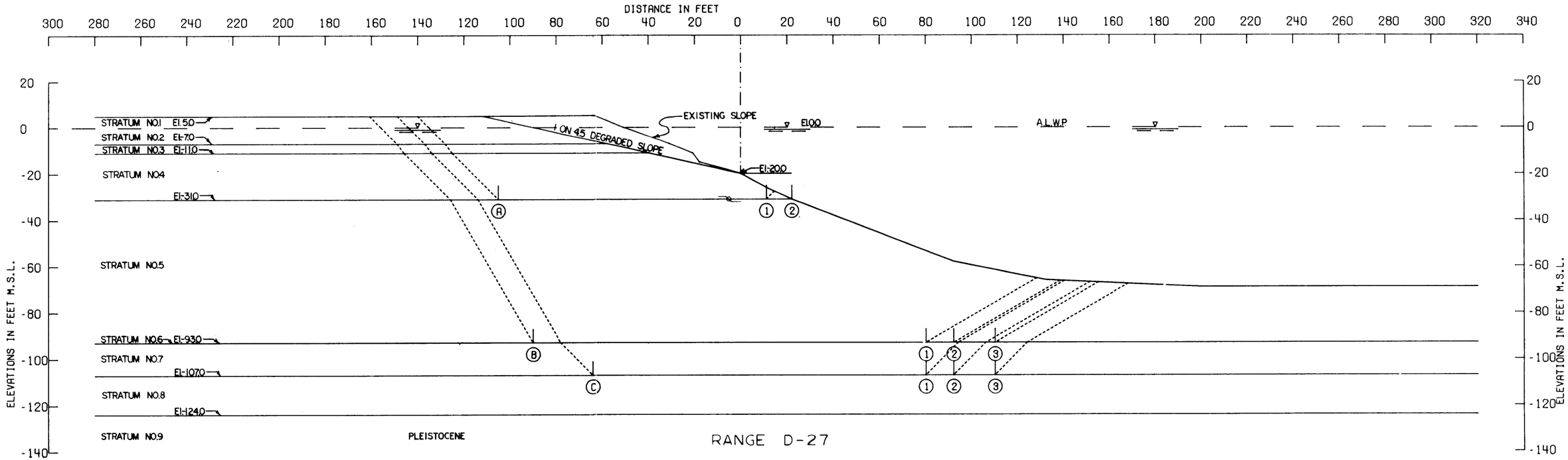
BANK STABILITY ANALYSIS

DIAMOND, LOUISIANA
RANGE U-27 TO RANGE D-24
STA.1737+00 TO STA.1788+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 35



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES **46 & 48, PART** I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS THE MOST CRITICAL WITHIN THE LIMITS OF THIS REACH.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	300.0	300.0	300.0	300.0	0.
2	CH	48.0	48.0	300.0	300.0	300.0	300.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	43.0	43.0	300.0	300.0	300.0	300.0	0.
5	SP	60.0	60.0	0.	0.	0.	0.	30.0
6	CH	0.	0.	0.	0.	930.0	930.0	0.
7	CH	53.0	53.0	1000.0	1000.0	1070.0	1070.0	0.
8	SP	60.0	60.0	0.	0.	0.	0.	30.0
9	CH	60.0	60.0	≥1500.0	≥1500.0	≥1500.0	≥1500.0	0.

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)	-31.00	22066	33619	2062	40501	368	57748	40132	1.439
(A) (2)	-31.00	22066	34302	0	40501	0	56369	40501	1.392
(B) (1)	-93.00	173239	158100	63248	267874	31624	394587	236250	1.670
(B) (2)	-93.00	173239	169260	54750	267874	27375	397250	240499	1.652
(B) (3)	-93.00	173239	186000	46213	267874	23106	405453	244767	1.656
(C) (1)	-107.00	164745	133920	53625	324243	57854	352290	266389	1.322
(C) (2)	-107.00	164745	145080	47802	324243	52124	357627	272118	1.314
(C) (3)	-107.00	164745	161820	42041	324243	46220	368606	278022	1.326

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

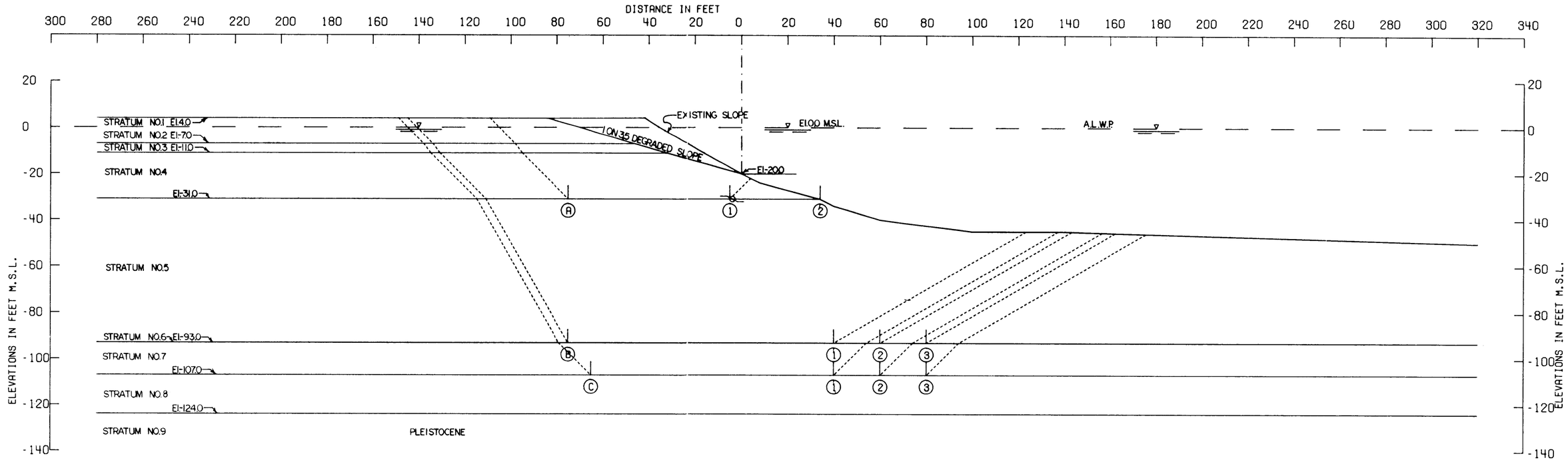
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

DIAMOND, LOUISIANA
RANGE D-24 TO RANGE D-58
STA. 1788+00 TO STA. 1822+00

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

AUGUST 1971 FILE NO. H-2-25275



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 46 & 48, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION −20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F. CENTER OF STRATUM		C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM		FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	300.0	300.0	300.0	300.0	0.
2	CH	48.0	48.0	300.0	300.0	300.0	300.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	43.0	43.0	300.0	300.0	300.0	300.0	0.
5	SP	60.0	60.0	0.	0.	0.	0.	30.0
6	CH	0.	0.	0.	0.	930.0	930.0	0.
7	CH	53.0	53.0	1000.0	1000.0	1070.0	1070.0	0.
8	SP	60.0	60.0	0.	0.	0.	0.	30.0
9	CH	60.0	60.0	≥1500.0	≥1500.0	≥1500.0	≥1500.0	0.

ASSUMED FAILURE SURFACE NO.		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	-31.00	21285	21000	5400	35934	2492	47685	33442	1.426
A	2	-31.00	21285	26494	0	35934	0	47780	35934	1.330
B	1	-93.00	173429	106950	156237	265425	78118	436616	187306	2.331
B	2	-93.00	173429	125550	145144	265425	72572	444124	192852	2.303
B	3	-93.00	173429	144150	139467	265425	69733	457046	195691	2.336
C	1	-107.00	174446	97650	147605	339951	121598	419702	218352	1.922
C	2	-107.00	174446	116250	140864	339951	114227	431580	225724	1.912
C	3	-107.00	174446	134850	137116	339951	110243	446413	229707	1.943

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

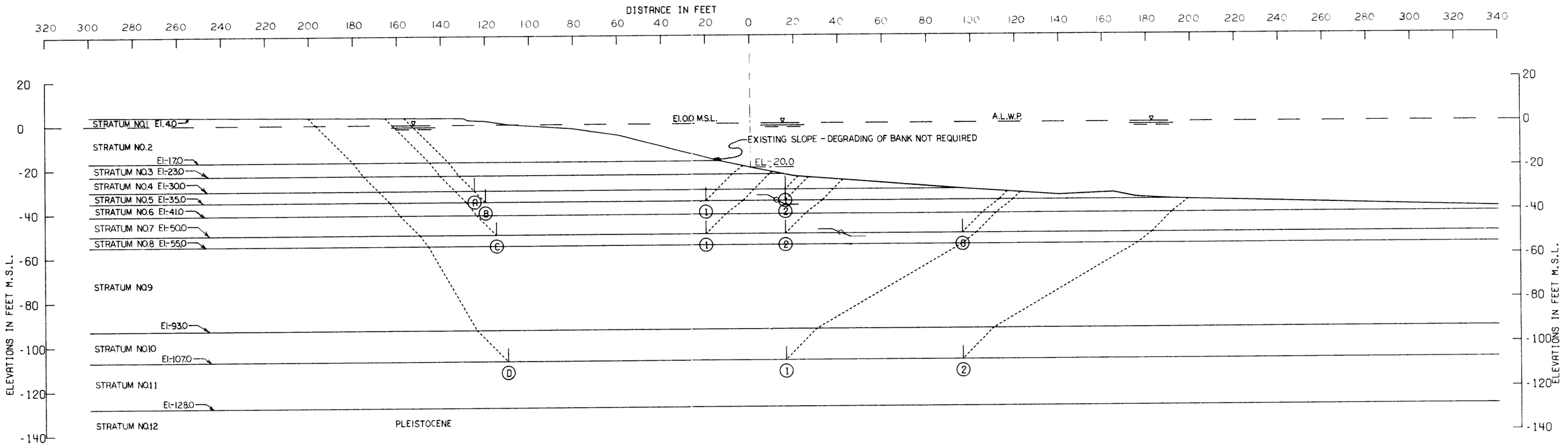
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

DIAMOND, LOUISIANA
RANGE D-58 TO RANGE D-99
STA. 1822+00 TO STA. 1863+00

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

AUGUST 1971 FILE NO. H-2-25275



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES **46 & 48, PART I, VOL. II**.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE DEGREES
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	
1	CH	110.0	110.0	300.0	300.0	300.0	300.0	0.
2	CH	48.0	48.0	300.0	300.0	300.0	300.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CH	43.0	43.0	300.0	300.0	300.0	300.0	0.
5	CH	43.0	43.0	325.0	325.0	350.0	350.0	0.
6	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
7	CH	43.0	43.0	455.0	455.0	500.0	500.0	0.
8	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	53.0	53.0	1000.0	1000.0	1070.0	1070.0	0.
11	SP	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	60.0	60.0	>1500.0	>1500.0	>1500.0	>1500.0	0.

ASSUMED FAILURE SURFACE NO.	ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ ①	-30.00	21378	42300	3512	32070	835	67190	31234	2.151
Ⓑ ①	-35.00	24628	35000	9704	40792	7543	69332	33248	2.085
Ⓑ ②	-35.00	24628	47563	6542	40792	2591	78734	38201	2.061
Ⓒ ①	-50.00	39737	47500	23196	75423	22810	110433	52613	2.099
Ⓒ ②	-50.00	39737	65500	19668	75423	14624	124905	60799	2.054
Ⓒ ③	-50.00	39737	104110	15095	75423	8876	158943	66547	2.388
Ⓓ ①	-107.00	179562	134820	235962	324964	164805	550345	160159	3.436
Ⓓ ②	-107.00	179562	220420	216255	324964	149276	616237	175688	3.508

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

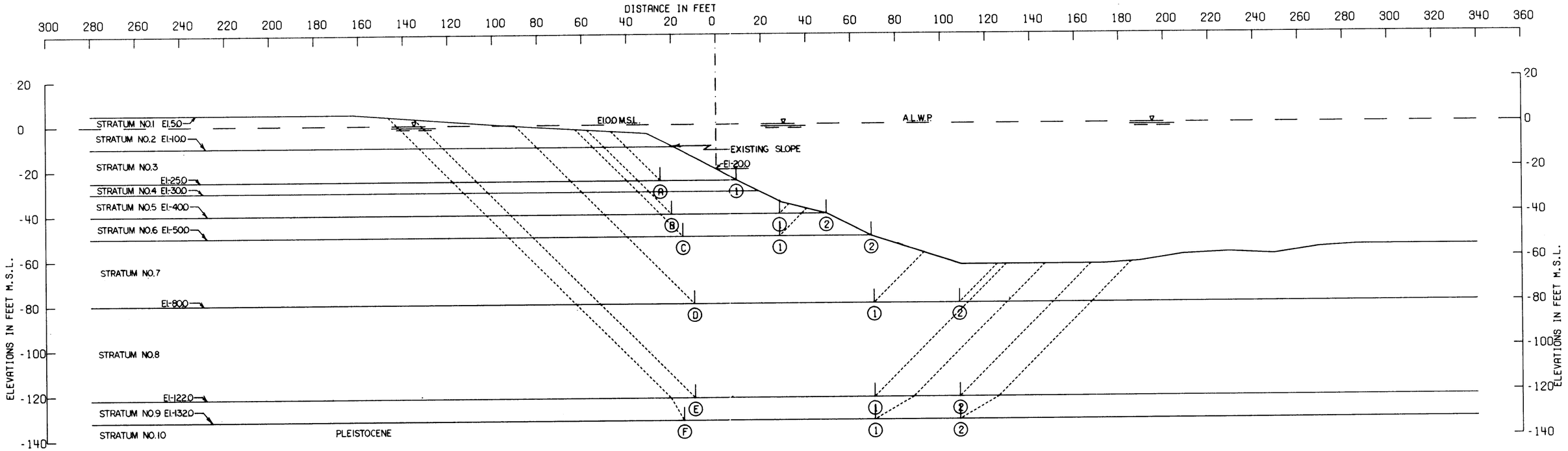
BANK STABILITY ANALYSIS

POINT MICHEL, LOUISIANA
RANGE U-162 TO RANGE U-132
STA. 1890+00 TO STA. 1920+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 38



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 48 & 50, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS IN THE REACH OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	90.0	90.0	300.0	300.0	300.0	300.0	0.
2	CH	28.0	28.0	300.0	300.0	300.0	300.0	0.
3	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
4	CHO	33.0	33.0	400.0	400.0	400.0	400.0	0.
5	CH	45.0	45.0	400.0	400.0	400.0	400.0	0.
6	CH	45.0	45.0	450.0	450.0	500.0	500.0	0.
7	CH	45.0	45.0	650.0	650.0	800.0	800.0	0.
8	CH	45.0	45.0	1010.0	1010.0	1220.0	1220.0	0.
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	60.0	60.0	≥1320.0	≥1320.0	≥1320.0	≥1320.0	0.

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	
Ⓐ ①	-25.00	16190	13560	28	8382	0	29778	8382	3.553
Ⓑ ①	-40.00	28583	19200	3360	25789	500	51143	25288	2.022
Ⓑ ②	-40.00	28583	27560	16	25789	0	56159	25789	2.178
Ⓒ ①	-50.00	37780	21500	10760	42288	4188	70040	38099	1.838
Ⓒ ②	-50.00	37780	41950	30	42288	0	79760	42288	1.886
Ⓓ ①	-80.00	77764	64000	29115	121423	14948	170879	106475	1.605
Ⓓ ②	-80.00	77764	94400	22100	121423	6506	194264	114916	1.690
Ⓔ ①	-122.00	164582	97600	106940	309222	89432	369122	219789	1.679
Ⓔ ②	-122.00	164582	143960	106940	309222	78320	415482	230902	1.799
Ⓕ ①	-132.00	200398	112200	174911	369419	115733	487509	253685	1.922
Ⓕ ②	-132.00	200398	162360	157027	369419	108058	529785	261361	2.027

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

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

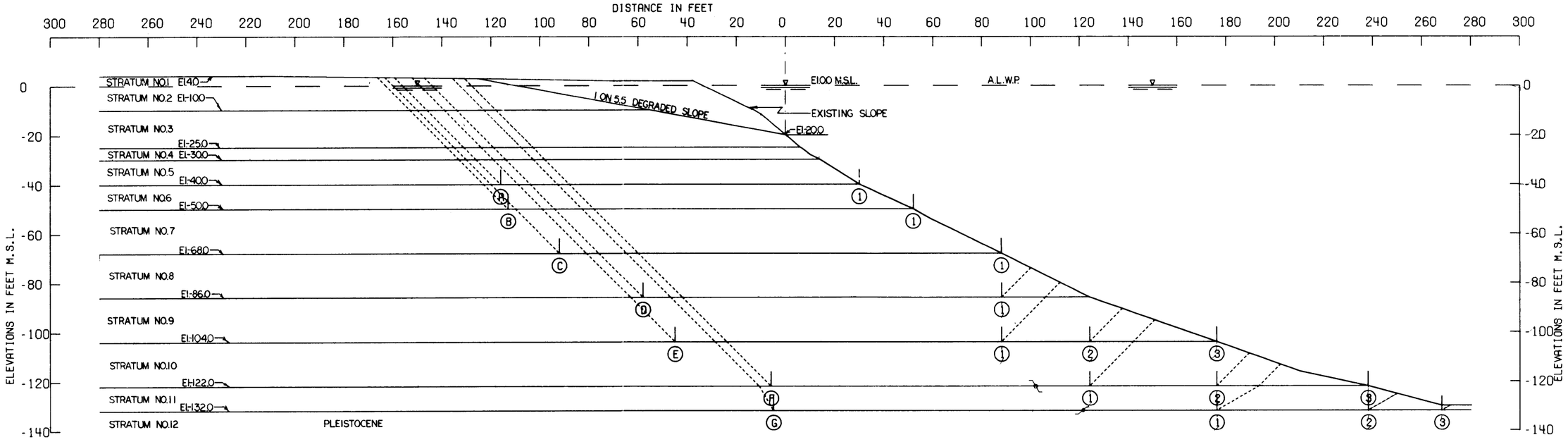
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

POINT MICHEL, LOUISIANA
RANGE U-132 TO RANGE U-105
STA. 1920+00 TO STA. 1947+00

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

AUGUST 1971 FILE NO. H-2-25275



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 48 & 50, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION-200.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F. CENTER OF STRATUM		C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM		FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	90.0	90.0	300.0	300.0	300.0	300.0	0.
2	CH	28.0	28.0	300.0	300.0	300.0	300.0	0.
3	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
4	CHO	33.0	33.0	400.0	400.0	400.0	400.0	0.
5	CH	45.0	45.0	400.0	400.0	400.0	400.0	0.
6	CH	45.0	45.0	450.0	450.0	500.0	500.0	0.
7	CH	45.0	45.0	590.0	590.0	680.0	680.0	0.
8	CH	45.0	45.0	770.0	770.0	860.0	860.0	0.
9	CH	45.0	45.0	950.0	950.0	1040.0	1040.0	0.
10	CH	45.0	45.0	1130.0	1130.0	1220.0	1220.0	0.
11	SP	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	60.0	60.0	≒1320.0	≒1320.0	≒1320.0	≒1320.0	0.

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
(A) (1)	-40.00	31968	58360	30	40766	0	90359	40766	2.217
(B) (1)	-50.00	41029	82450	28	61489	0	123507	61489	2.009
(C) (1)	-68.00	62243	122332	38	104294	0	184613	104294	1.770
(D) (1)	-86.00	89825	125560	18479	152636	4856	233865	147780	1.583
(E) (1)	-104.00	124068	138320	43439	223621	19433	305828	204188	1.498
(E) (2)	-104.00	124068	175760	25405	223621	5412	325234	218209	1.490
(E) (3)	-104.00	124068	229736	48	223621	0	353853	223621	1.582
(F) (1)	-122.00	164567	155480	57291	285136	21655	377339	263481	1.432
(F) (2)	-122.00	164567	191957	30067	285136	5385	386592	279751	1.382
(F) (3)	-122.00	164567	204739	39	285136	0	369347	285136	1.295
(G) (1)	-132.00	197370	224713	39301	338809	12070	461386	326739	1.412
(G) (2)	-132.00	197370	258973	4101	338809	2050	460446	336758	1.367
(G) (3)	-132.00	197370	265209	239	338809	119	462819	338690	1.366

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

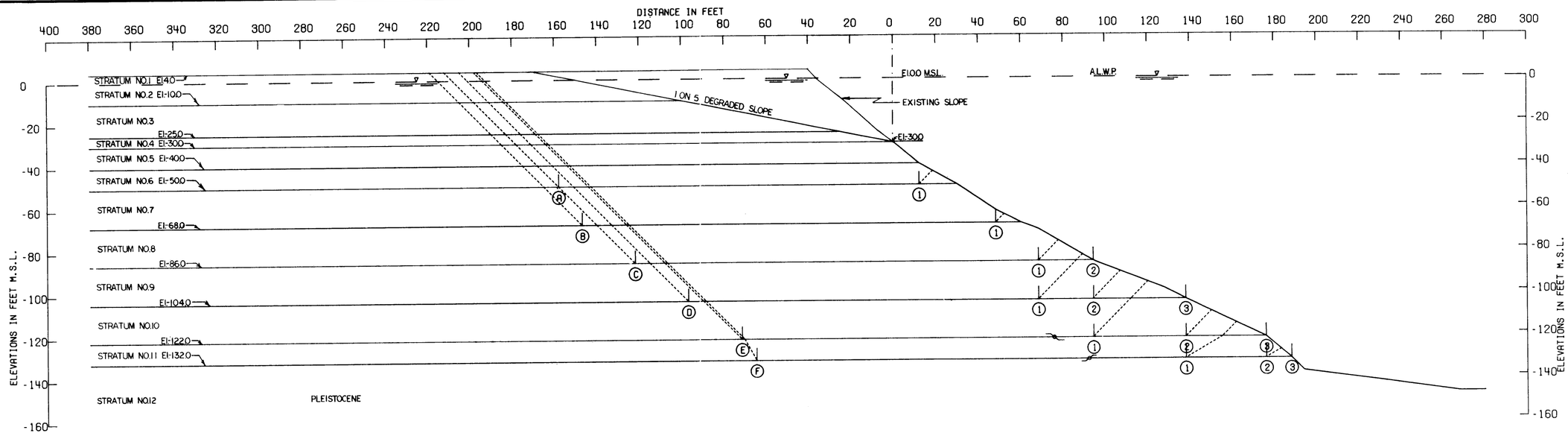
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

BANK STABILITY ANALYSIS

POINT MICHEL, LOUISIANA
RANGE U-105 TO RANGE U-81
STA. 1947+00 TO STA. 1971+00

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 40



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 48 & 50, PART I, VOL.II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -300.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F. VERT. 1	EFFECTIVE UNIT WT. P.C.F. VERT. 2	C - UNIT COHE ON - P.S.F. CENTER OF STRATUM VERT. 1	CENTER OF STRATUM VERT. 2	BOTTOM OF STRATUM VERT. 1	BOTTOM OF STRATUM VERT. 2	FRICTION ANGLE DEGREES
1	CH	90.0	90.0	300.0	300.0	300.0	300.0	0.
2	CH	28.0	28.0	300.0	300.0	300.0	300.0	0.
3	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
4	CHO	33.0	33.0	400.0	400.0	400.0	400.0	0.
5	CH	45.0	45.0	400.0	400.0	400.0	400.0	0.
6	CH	45.0	45.0	450.0	450.0	500.0	500.0	0.
7	CH	45.0	45.0	590.0	590.0	680.0	680.0	0.
8	CH	45.0	45.0	770.0	770.0	860.0	860.0	0.
9	CH	45.0	45.0	950.0	950.0	1040.0	1040.0	0.
10	CH	45.0	45.0	1150.0	1150.0	1220.0	1220.0	0.
11	SP	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	60.0	60.0	=1320.0	=1320.0	=1320.0	=1320.0	0.

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	-50.00	41400	85000	5785	66146	1444	132185	64702	2.043
B 1	-68.00	62640	132600	4720	113680	538	199960	113141	1.767
C 1	-86.00	90360	163400	14648	168033	3207	268408	164825	1.628
C 2	-86.00	90360	185674	56	168033	0	276090	168033	1.643
D 1	-104.00	124560	171600	38707	233448	15532	334867	217915	1.537
D 2	-104.00	124560	198640	24740	233448	5270	347940	228177	1.525
D 3	-104.00	124560	244296	63	233448	0	368919	233448	1.580
E 1	-122.00	165960	199816	56680	308410	21088	422457	287322	1.470
E 2	-122.00	165960	231201	28092	308410	4943	425254	303467	1.401
E 3	-122.00	165960	240086	73	308410	0	406120	308410	1.317
F 1	-132.00	199408	256457	33791	357460	10715	489657	346745	1.412
F 2	-132.00	199408	278507	2453	357460	1226	480368	356234	1.348
F 3	-132.00	199408	280585	0	357460	0	479993	357460	1.343

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

BANK STABILITY ANALYSIS

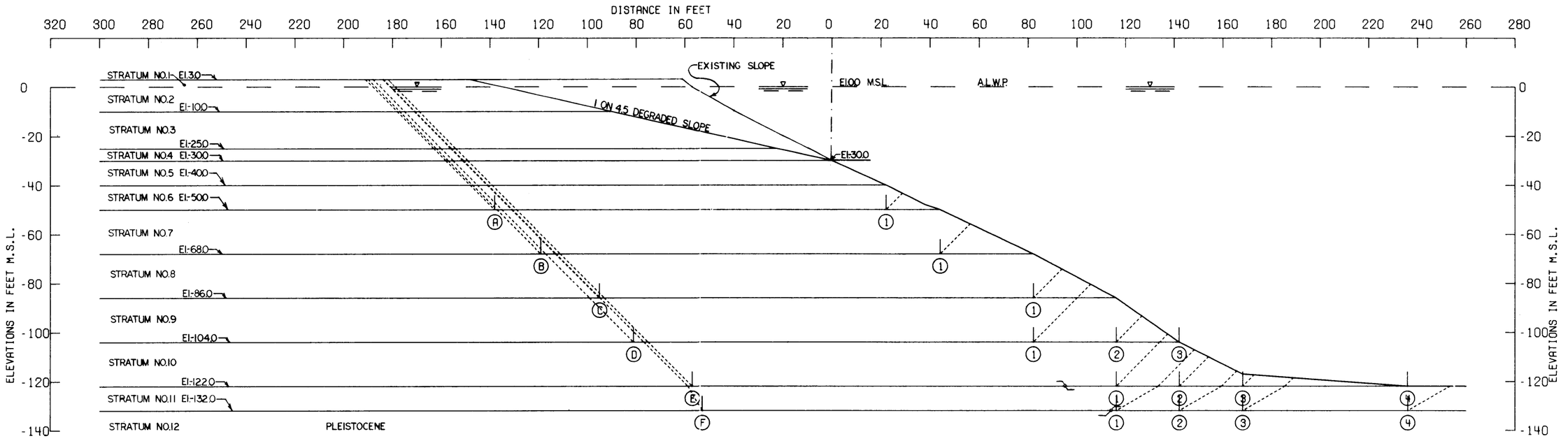
POINT MICHEL, LOUISIANA
RANGE U-81 TO RANGE U-9
STA. 1971+00 TO STA. 2043+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 41



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 48 & 50, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION-300.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	90.0	90.0	300.0	300.0	300.0	300.0	0.
2	CH	28.0	28.0	300.0	300.0	300.0	300.0	0.
3	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
4	CHO	33.0	33.0	400.0	400.0	400.0	400.0	0.
5	CH	45.0	45.0	400.0	400.0	400.0	400.0	0.
6	CH	45.0	45.0	450.0	450.0	500.0	500.0	0.
7	CH	45.0	45.0	590.0	590.0	680.0	680.0	0.
8	CH	45.0	45.0	770.0	770.0	860.0	860.0	0.
9	CH	45.0	45.0	950.0	950.0	1040.0	1040.0	0.
10	CH	45.0	45.0	1130.0	1130.0	1220.0	1220.0	0.
11	SP	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	60.0	60.0	≥1320.0	≥1320.0	≥1320.0	≥1320.0	0.

ASSUMED FAILURE SURFACE NO.		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	-50.00	40800	80000	6000	61524	1498	126800	60026	2.112
B	1	-68.00	62040	110840	14412	105011	4943	187292	100067	1.872
C	1	-86.00	89760	152220	18124	158252	4763	260104	153489	1.695
D	1	104.00	123960	169520	42729	228681	19059	336209	209621	1.604
D	2	-104.00	123960	204880	20209	228681	4304	349049	224377	1.556
D	3	-104.00	123960	231816	77	228681	0	355853	228681	1.556
E	1	-122.00	164640	208113	46898	303168	17224	419652	285943	1.468
E	2	-122.00	164640	226352	27119	303168	4856	418112	298311	1.402
E	3	-122.00	164640	234120	10526	303168	523	409286	302644	1.352
E	4	-122.00	164640	238537	15	303168	0	403192	303167	1.330
F	1	-132.00	197717	223026	66657	354366	24307	487401	330059	1.477
F	2	-132.00	197717	250271	32370	354366	10456	480359	343910	1.397
F	3	-132.00	197717	267046	17768	354366	5252	482533	349114	1.382
F	4	-132.00	197717	295019	5997	354366	2998	498734	351368	1.419

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

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

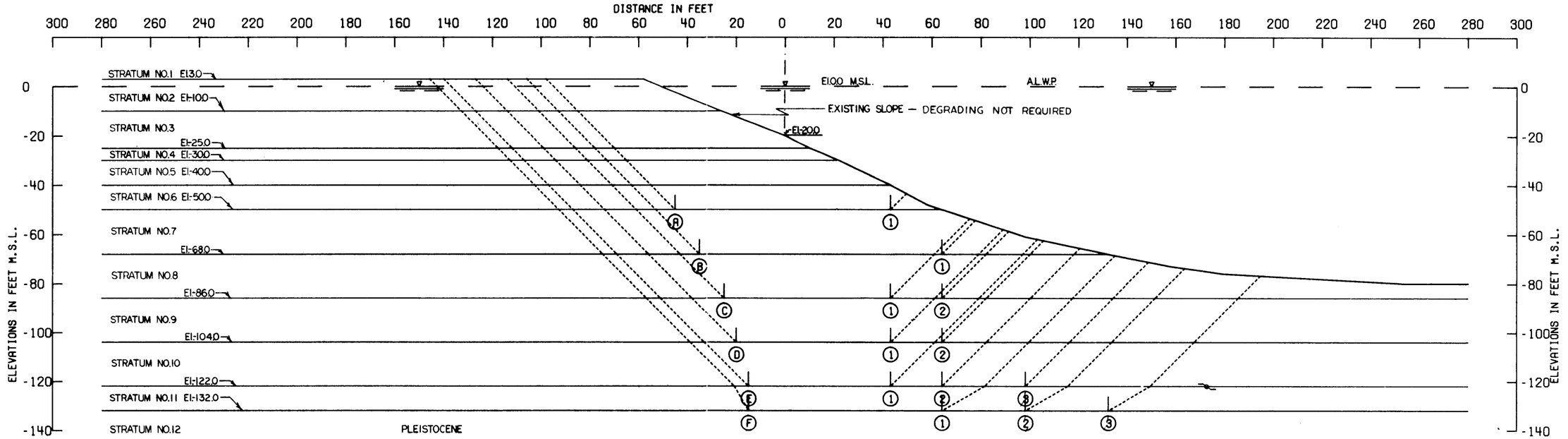
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

POINT MICHEL, LOUISIANA
RANGE U-9 TO RANGE D-9
STA. 2043+00 TO STA. 2061+00

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

AUGUST 1971 FILE NO. H-2-25275



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 48 & 50, PART I, VOL.II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -200.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	90.0	90.0	300.0	300.0	300.0	300.0	0.
2	CH	28.0	28.0	300.0	300.0	300.0	300.0	0.
3	CH	48.0	48.0	400.0	400.0	400.0	400.0	0.
4	CHO	33.0	33.0	400.0	400.0	400.0	400.0	0.
5	CH	45.0	45.0	400.0	400.0	400.0	400.0	0.
6	CH	45.0	45.0	450.0	450.0	500.0	500.0	0.
7	CH	45.0	45.0	590.0	590.0	680.0	680.0	0.
8	CH	45.0	45.0	770.0	770.0	860.0	860.0	0.
9	CH	45.0	45.0	950.0	950.0	1040.0	1040.0	0.
10	CH	45.0	45.0	1150.0	1150.0	1220.0	1220.0	0.
11	SP	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	60.0	60.0	≥1320.0	≥1320.0	≥1320.0	≥1320.0	0.

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	
Ⓐ ①	-50.00	40800	44000	5869	59859	1465	90669	58394	1.553
Ⓑ ①	-68.00	62040	67320	16048	105251	5504	145408	99746	1.458
Ⓒ ①	-86.00	89760	58480	44633	164098	32234	192873	131864	1.463
Ⓒ ②	-86.00	89760	76540	38575	164098	22025	204876	142073	1.442
Ⓓ ①	-104.00	123960	65520	73641	239508	63929	263121	175579	1.499
Ⓓ ②	-104.00	123960	87360	68366	239508	49696	279687	189811	1.473
Ⓔ ①	-122.00	165360	70760	110371	329037	106700	346491	222337	1.558
Ⓔ ②	-122.00	165360	96380	106140	329037	89324	367880	239712	1.535
Ⓔ ③	-122.00	165360	137860	98352	329037	69503	401572	259534	1.547
Ⓕ ①	-132.00	199864	104280	170769	384834	112330	474914	272504	1.743
Ⓕ ②	-132.00	199864	149160	153695	384834	91513	502719	293321	1.714
Ⓕ ③	-132.00	199864	194040	142825	384834	76762	536730	308072	1.742

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

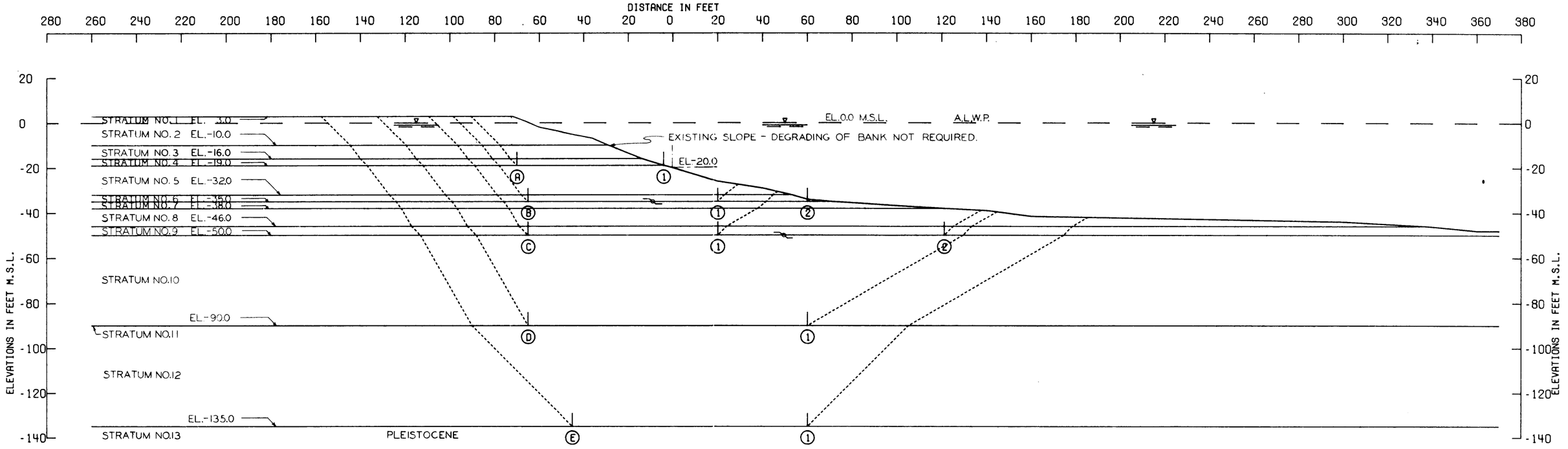
BANK STABILITY ANALYSIS

POINT MICHEL, LOUISIANA
RANGE D-9 TO RANGE D-41
STA.2061+00 TO STA. 2095+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 43



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 52, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	200.0	200.0	200.0	200.0	0.
2	CH	48.0	48.0	200.0	200.0	200.0	200.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	CL	48.0	48.0	275.0	275.0	290.0	290.0	0.
5	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
6	CH	48.0	48.0	435.0	435.0	450.0	450.0	0.
7	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
8	SM	60.0	60.0	0.	0.	0.	0.	30.0
9	CH	48.0	48.0	580.0	580.0	600.0	600.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	0.	0.	0.	0.	1000.0	1000.0	0.
12	CH	53.0	53.0	1225.0	1225.0	1450.0	1450.0	0.
13	CH	60.0	60.0	≥1500.0	≥1500.0	≥1500.0	≥1500.0	0.

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
A	1	-19.00	11098	18188	12	15598	0	29299	15598	1.878
B	1	-35.00	26285	36514	5524	42058	1875	68324	40182	1.700
B	2	-35.00	26285	47581	797	42058	21	74665	42036	1.776
C	1	-50.00	48144	51000	23066	80622	12937	122210	67684	1.806
C	2	-50.00	48144	101742	7974	80622	3945	157860	76677	2.059
D	1	-90.00	158607	125000	164343	247198	82024	447950	165173	2.712
E	1	-135.00	270103	152250	258773	534385	271011	681126	263373	2.586

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

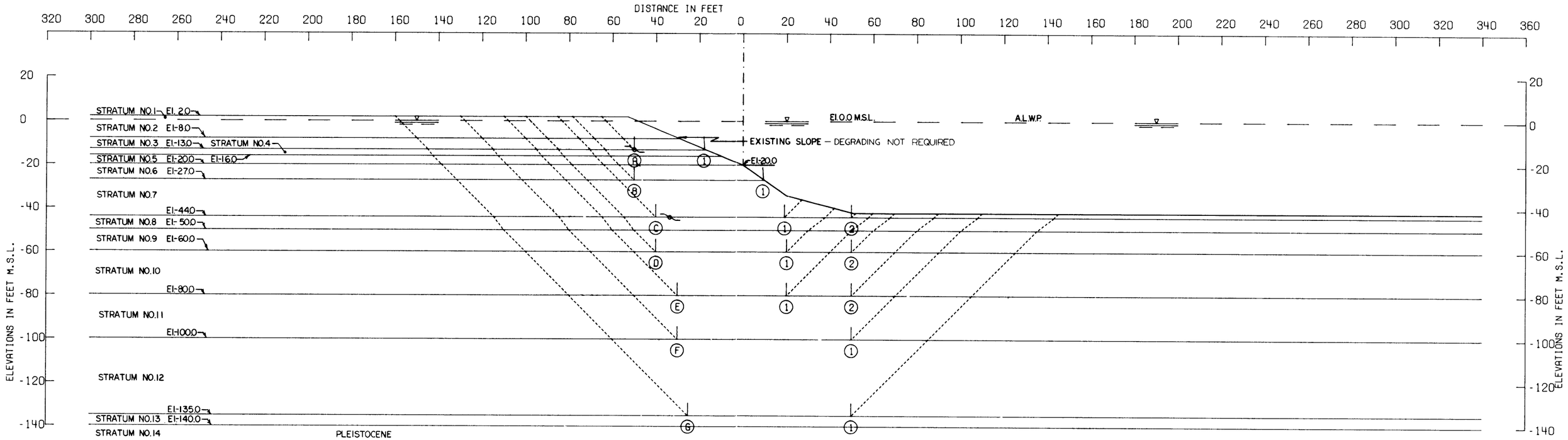
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

POINT MICHEL, LOUISIANA
RANGE D-41 TO RANGE D-78
STA. 2093+00 TO STA. 2130+00

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

AUGUST 1971 FILE NO. H-2-25275



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 53 & 54, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F. CENTER OF STRATUM		C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM		FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	100.0	100.0	350.0	350.0	350.0	350.0	0.
2	CH	38.0	38.0	350.0	350.0	350.0	350.0	0.
3	CHO	38.0	38.0	350.0	350.0	350.0	350.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	38.0	38.0	350.0	350.0	350.0	350.0	0.
6	CH	38.0	38.0	350.0	350.0	350.0	350.0	0.
7	CH	38.0	38.0	600.0	600.0	600.0	600.0	0.
8	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
9	CH	48.0	48.0	600.0	600.0	600.0	600.0	0.
10	CH	48.0	48.0	700.0	700.0	800.0	800.0	0.
11	CH	43.0	43.0	900.0	900.0	1000.0	1000.0	0.
12	CH	48.0	48.0	1175.0	1175.0	1350.0	1350.0	0.
13	SP	60.0	60.0	0.	0.	0.	0.	30.0
14	CH	60.0	60.0	≥1400.0	≥1400.0	≥1400.0	≥1400.0	0.

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
A	1	-13.00	10500	8728	233	5826	2	19462	5823	3.342
B	1	-27.00	20079	20650	288	19907	5	41017	19901	2.061
C	1	-44.00	40479	28591	9784	44649	1596	78855	43053	1.832
C	2	-44.00	40479	36768	2400	44649	80	79648	44569	1.787
D	1	-60.00	59372	36000	21991	82055	11897	117363	70157	1.673
D	2	-60.00	59372	54000	18536	82055	7983	131909	74071	1.781
E	1	-80.00	87473	40000	46539	142296	40004	174012	102291	1.701
E	2	-80.00	87473	64000	46537	142296	35300	198010	106996	1.851
F	1	-100.00	123473	80000	82537	224760	80817	286010	143943	1.987
G	1	-135.00	205723	101250	164787	410891	204922	471760	205969	2.290

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

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

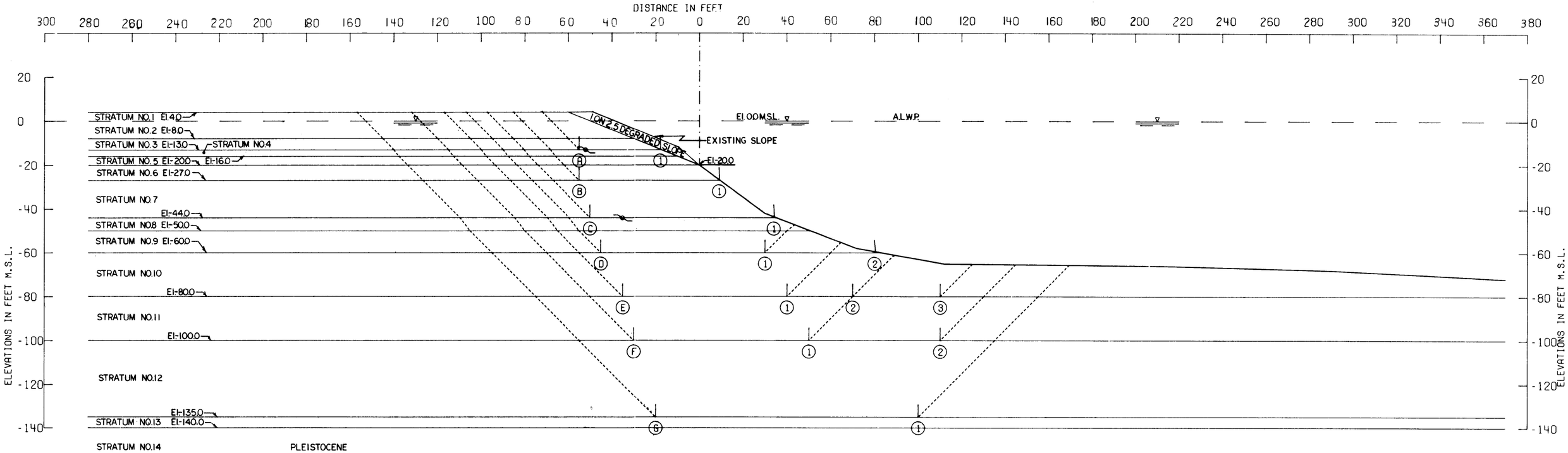
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

BANK STABILITY ANALYSIS

POINT MICHEL, LOUISIANA
RANGE D-78 TO RANGE D-126
STA. 2130+00 TO STA. 2178+00

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

AUGUST 1971 FILE NO. H-2-25275



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES 53 & 54, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F. CENTER OF STRATUM		C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM		FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	100.0	100.0	350.0	350.0	350.0	350.0	0.
2	CH	38.0	38.0	350.0	350.0	350.0	350.0	0.
3	CHO	38.0	38.0	350.0	350.0	350.0	350.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	38.0	38.0	350.0	350.0	350.0	350.0	0.
6	CH	38.0	38.0	350.0	350.0	350.0	350.0	0.
7	CH	38.0	38.0	600.0	600.0	600.0	600.0	0.
8	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
9	CH	48.0	48.0	600.0	600.0	600.0	600.0	0.
10	CH	48.0	48.0	700.0	700.0	800.0	800.0	0.
11	CH	43.0	43.0	900.0	900.0	1000.0	1000.0	0.
12	CH	48.0	48.0	1175.0	1175.0	1350.0	1350.0	0.
13	SP	60.0	60.0	0.	0.	0.	0.	30.0
14	CH	60.0	60.0	≥1400.0	≥1400.0	≥1400.0	≥1400.0	0.

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
(A) (1)	-13.00	11900	10285	100	8714	0	22286	8713	2.558
(B) (1)	-27.00	21725	22400	161	25594	1	44287	25592	1.730
(C) (1)	-44.00	42125	38159	413	54696	3	80699	54693	1.475
(D) (1)	-60.00	61346	45000	13684	93017	5982	120031	87035	1.379
(D) (2)	-60.00	61346	75000	612	93017	7	136959	93010	1.473
(E) (1)	-80.00	89613	60000	33710	155912	20470	183323	135441	1.354
(E) (2)	-80.00	89613	84000	26629	155912	10218	200243	145693	1.374
(E) (3)	-80.00	89613	116000	20819	155912	5373	226433	150538	1.504
(F) (1)	-100.00	125613	80000	62629	239045	44323	268243	194722	1.378
(F) (2)	-100.00	125613	140000	56542	239045	28151	322156	210893	1.528
(G) (1)	-135.00	207863	162000	138446	427007	112893	508309	314113	1.618

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

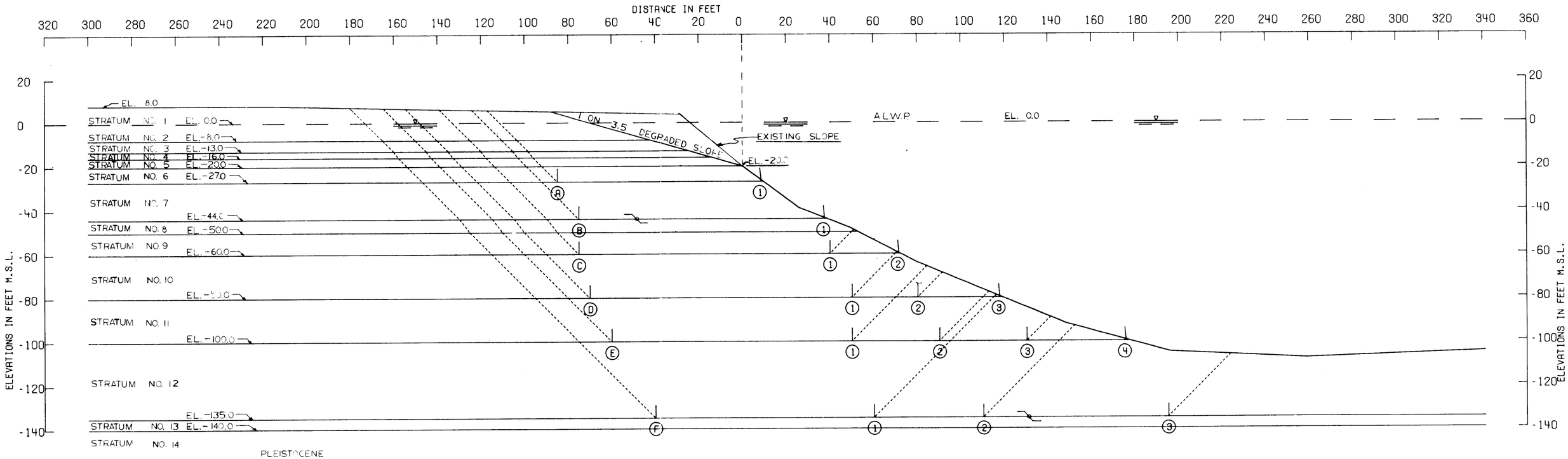
BANK STABILITY ANALYSIS

POINT MICHEL, LOUISIANA
RANGE D-126 TO RANGE D-162.1
STA. 2178+00 TO STA. 2214+12

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 46



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATES 53 & 54, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL THE SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	100.0	100.0	350.0	350.0	350.0	350.0	0.
2	CH	38.0	38.0	350.0	350.0	350.0	350.0	0.
3	CHO	38.0	38.0	350.0	350.0	350.0	350.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	38.0	38.0	350.0	350.0	350.0	350.0	0.
6	CH	38.0	38.0	350.0	350.0	350.0	350.0	0.
7	CH	38.0	38.0	600.0	600.0	600.0	600.0	0.
8	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
9	CH	48.0	48.0	600.0	600.0	600.0	600.0	0.
10	CH	48.0	48.0	700.0	700.0	800.0	800.0	0.
11	CH	43.0	43.0	900.0	900.0	1000.0	1000.0	0.
12	CH	48.0	48.0	1175.0	1175.0	1350.0	1350.0	0.
13	SP	60.0	60.0	0.	0.	0.	0.	30.0
14	CH	60.0	60.0	≥1400.0	≥1400.0	≥1400.0	≥1400.0	0.

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)	-27.00	23103	32550	466	30357	14	56119	30343	1.849
(B) (1)	-44.00	43632	52824	600	61060	6	97056	61053	1.590
(C) (1)	-60.00	63592	69000	12487	104867	4390	145080	100476	1.444
(C) (2)	-60.00	63592	87600	510	104867	6	151703	104860	1.447
(D) (1)	-80.00	92014	96000	28919	175163	15699	216933	159463	1.360
(D) (2)	-80.00	92014	120000	15866	175163	4348	227880	170814	1.334
(D) (3)	-80.00	92014	149600	758	175163	9	242372	175153	1.384
(E) (1)	-100.00	128252	110000	55949	259790	41005	294202	218784	1.345
(E) (2)	-100.00	128252	150000	39616	259790	16274	317869	243515	1.305
(E) (3)	-100.00	128252	190000	19649	259790	3614	337902	256175	1.319
(E) (4)	-100.00	128252	235000	973	259790	7	364226	259782	1.402
(F) (1)	-135.00	210860	135000	119824	447689	103217	465685	344472	1.352
(F) (2)	-135.00	210860	202500	94731	447689	55555	508092	392134	1.296
(F) (3)	-135.00	210860	299566	67402	447689	20683	577829	427005	1.353

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

BANK STABILITY ANALYSIS

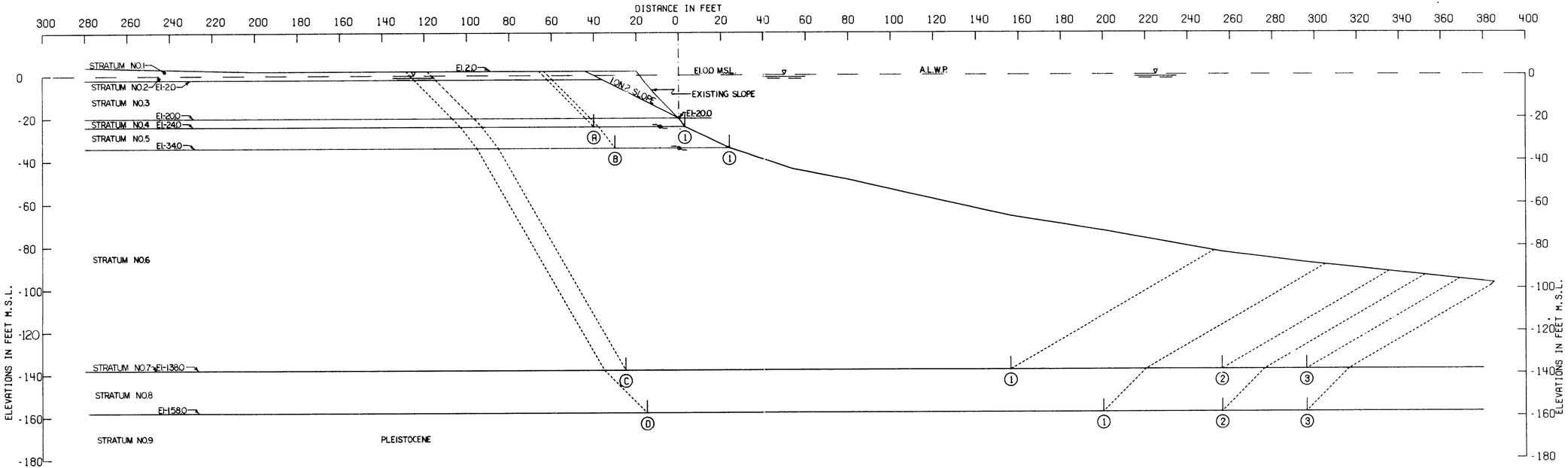
PORT SULPHUR, LOUISIANA
RANGE U-54 TO RANGE U-15
STA. 2214+12 TO STA. 2253+33

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 47



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 59 & 60, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -200.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	115.0	115.0	400.0	400.0	400.0	400.0	0.
2	CH	53.0	53.0	400.0	400.0	400.0	400.0	0.
3	CH	48.0	48.0	300.0	300.0	300.0	300.0	0.
4	CH	48.0	48.0	300.0	300.0	300.0	300.0	0.
5	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
6	SP	60.0	60.0	0.	0.	0.	0.	30.0
7	CH	0	0	0	0	1380.0	1380.0	0.
8	CH	48.0	48.0	1480.0	1480.0	1580.0	1580.0	0.
9	CH	60.0	60.0	≥1580.0	≥1580.0	≥1580.0	≥1580.0	0.

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	
Ⓐ ①	-24.00	16400	12493	0	19349	0	28893	19349	1.493
Ⓑ ①	-34.00	24731	19289	0	31539	0	44021	31539	1.396
Ⓒ ①	-138.00	369540	249780	241927	551307	120964	861248	430343	2.001
Ⓒ ②	-138.00	369540	387780	150115	551307	75057	907435	476249	1.905
Ⓒ ③	-138.00	369540	442980	126507	551307	63254	939028	488053	1.924
Ⓓ ①	-158.00	434284	339700	236247	720865	173977	1010232	546887	1.847
Ⓓ ②	-158.00	434284	428180	197031	720865	143012	1059496	577852	1.834
Ⓓ ③	-158.00	434284	491380	176077	720865	126306	1101742	594559	1.853

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

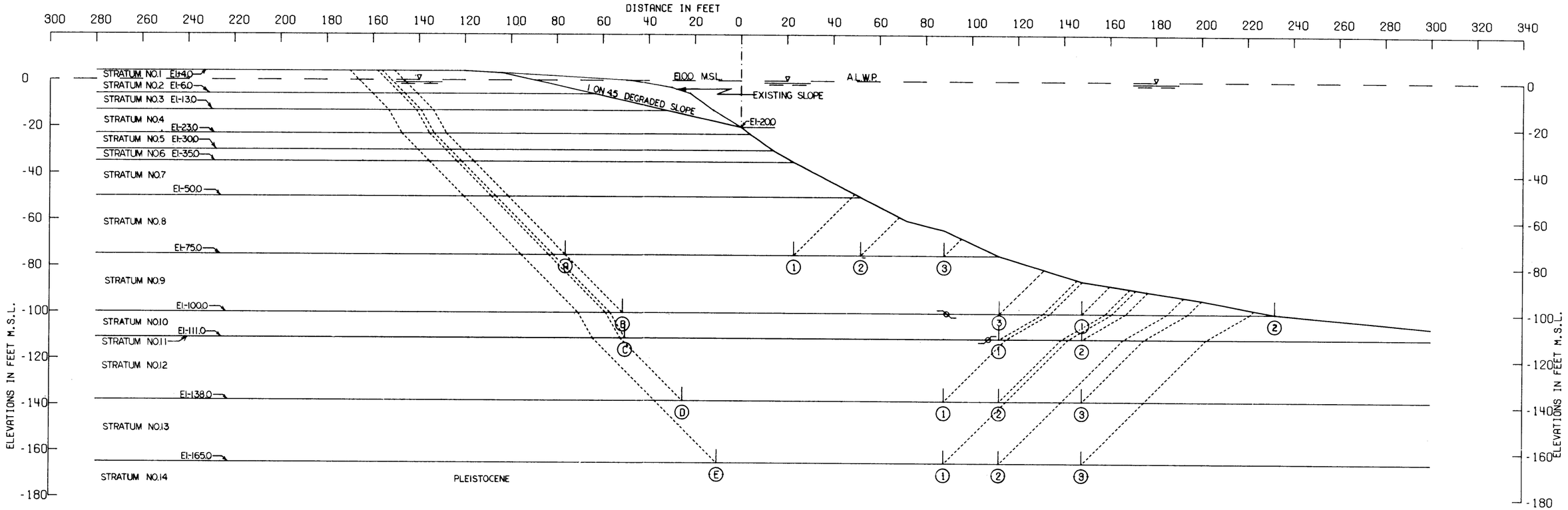
BANK STABILITY ANALYSIS

TROPICAL BEND, LOUISIANA
RANGE U-117 TO RANGE U-88.3
STA. 2606+32 TO STA. 2635+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 48



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 62,63 & 64, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -20.0 .

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	350.0	350.0	350.0	350.0	0.
2	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
3	CH	28.0	28.0	350.0	350.0	350.0	350.0	0.
4	SP	60.0	60.0	0.	0.	0.	0.	30.0
5	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
6	CH	48.0	48.0	375.0	375.0	400.0	400.0	0.
7	CH	43.0	43.0	475.0	475.0	550.0	550.0	0.
8	CH	48.0	48.0	675.0	675.0	800.0	800.0	0.
9	CH	53.0	53.0	925.0	925.0	1050.0	1050.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	0.	0.	0.	0.	1200.0	1200.0	0.
12	CH	53.0	53.0	1325.0	1325.0	1450.0	1450.0	0.
13	CH	53.0	53.0	1575.0	1575.0	1700.0	1700.0	0.
14	CH	60.0	60.0	≥1700.0	≥1700.0	≥1700.0	≥1700.0	0.

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)	-75.00	76713	79200	35045	152194	24227	190958	127966	1.492
(A) (2)	-75.00	76713	102400	22499	152194	9995	201613	142199	1.418
(A) (3)	-75.00	76713	131200	10182	152194	1989	218096	150205	1.452
(B) (1)	-100.00	122963	189433	22446	249633	4498	334843	245134	1.366
(B) (2)	-100.00	122963	208282	0	249633	0	331246	249633	1.327
(B) (3)	-100.00	122963	167952	35426	249633	12681	326341	236952	1.377
(C) (1)	-111.00	158239	194285	60187	306758	23967	412712	282790	1.459
(C) (2)	-111.00	158239	229484	39618	306758	13747	427341	293010	1.458
(D) (1)	-138.00	229882	163850	129379	463853	101906	523111	361947	1.445
(D) (2)	-138.00	229882	198650	115378	463853	82494	543910	381359	1.426
(D) (3)	-138.00	229882	250850	99662	463853	63805	580394	400048	1.451
(E) (1)	-165.00	315621	166600	198941	665647	198356	681163	467290	1.458
(E) (2)	-165.00	315621	207400	188549	665647	173044	711571	492602	1.445
(E) (3)	-165.00	315621	268600	171529	665647	147038	755751	518608	1.457

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

BANK STABILITY ANALYSIS

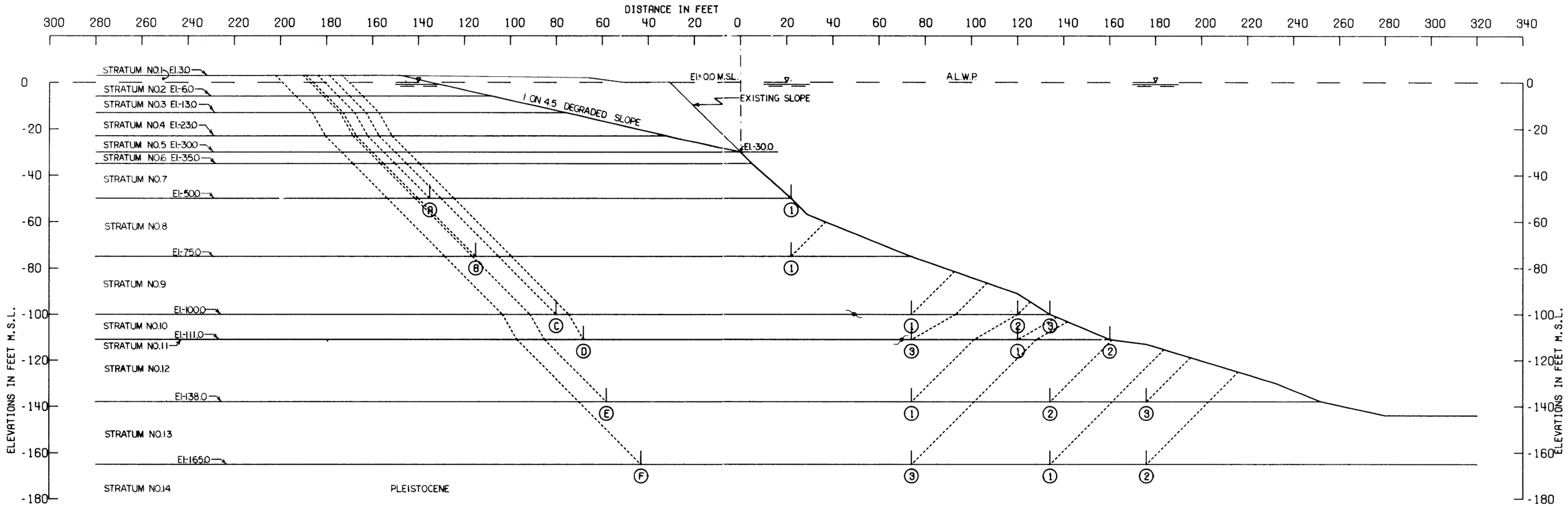
TROPICAL BEND, LOUISIANA
RANGE U-88.3 TO RANGE U-72
STA. 2635+00 TO STA. 2651+32

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 49



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 62,63 & 64, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT ELEVATION -30.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	350.0	350.0	350.0	350.0	0.
2	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
3	CH	28.0	28.0	350.0	350.0	350.0	350.0	0.
4	SP	60.0	60.0	0.	0.	0.	0.	30.0
5	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
6	CH	48.0	48.0	375.0	375.0	400.0	400.0	0.
7	CH	43.0	43.0	475.0	475.0	550.0	550.0	0.
8	CH	48.0	48.0	675.0	675.0	800.0	800.0	0.
9	CH	53.0	53.0	925.0	925.0	1050.0	1050.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	0.	0.	0.	0.	1200.0	1200.0	0.
12	CH	53.0	53.0	1325.0	1325.0	1450.0	1450.0	0.
13	CH	53.0	53.0	1575.0	1575.0	1700.0	1700.0	0.
14	CH	60.0	60.0	≥1700.0	≥1700.0	≥1700.0	≥1700.0	0.

ASSUMED FAILURE SURFACE NO.	ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ ①	-50.00	41529	86350	0	72470	0	127879	72470	1.765
Ⓑ ①	-75.00	75280	109600	20057	144616	8117	204937	136498	1.501
Ⓒ ①	-100.00	121530	158036	34314	233288	12283	313880	221005	1.420
Ⓒ ②	-100.00	121530	181964	10134	233288	1304	313629	231984	1.352
Ⓒ ③	-100.00	121530	183892	0	233288	0	305422	233288	1.309
Ⓓ ①	-111.00	155341	211725	10894	279437	5447	377961	273990	1.379
Ⓓ ②	-111.00	155341	223942	0	279437	0	379283	279437	1.357
Ⓓ ③	-111.00	155341	170268	57760	279437	22904	383370	256533	1.494
Ⓔ ①	-138.00	227921	191400	103237	446642	78277	522558	368364	1.419
Ⓔ ②	-138.00	227921	278400	71255	446642	27887	577576	418754	1.379
Ⓔ ③	-138.00	227921	339300	50821	446642	12700	618043	433941	1.424
Ⓕ ①	-165.00	313510	300900	145128	644658	83210	759538	561448	1.353
Ⓕ ②	-165.00	313510	372300	119209	644658	54959	805019	589699	1.365
Ⓕ ③	-165.00	313510	198900	163123	644658	160333	675533	484325	1.395

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

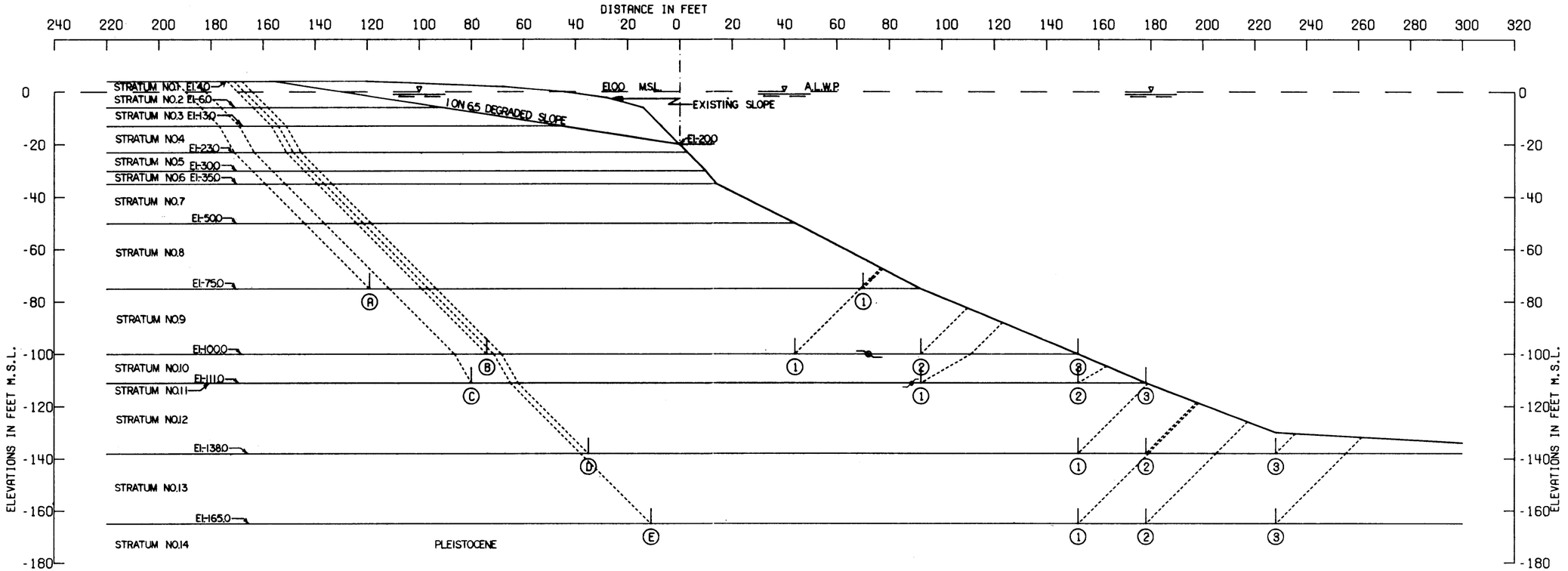
TROPICAL BEND, LOUISIANA
RANGE U-72 TO RANGE U-54
STA. 2651+32 TO STA. 2669+32

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 50



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 62, 63 & 64, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	350.0	350.0	350.0	350.0	0.
2	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
3	CH	28.0	28.0	350.0	350.0	350.0	350.0	0.
4	SP	60.0	60.0	0.	0.	0.	0.	30.0
5	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
6	CH	48.0	48.0	375.0	375.0	400.0	400.0	0.
7	CH	43.0	43.0	475.0	475.0	550.0	550.0	0.
8	CH	48.0	48.0	675.0	675.0	800.0	800.0	0.
9	CH	53.0	53.0	925.0	925.0	1050.0	1050.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	0.	0.	0.	0.	1200.0	1200.0	0.
12	CH	53.0	53.0	1325.0	1325.0	1450.0	1450.0	0.
13	CH	53.0	53.0	1575.0	1575.0	1700.0	1700.0	0.
14	CH	60.0	60.0	≥1700.0	≥1700.0	≥1700.0	≥1700.0	0.

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_R	$-D_P$	RESISTING	DRIVING	
Ⓐ ①	-75.00	76713	151200	10171	153123	2069	238084	151053	1.576
Ⓑ ①	-100.00	122718	123900	56883	237672	41004	303502	196668	1.543
Ⓑ ②	-100.00	122718	171486	32647	237672	11685	326851	225986	1.446
Ⓑ ③	-100.00	122718	194435	0	237672	0	317154	237672	1.334
Ⓒ ①	-111.00	158447	206400	54057	300622	21330	418904	279292	1.500
Ⓒ ②	-111.00	158447	278400	4186	300622	2093	441034	298528	1.477
Ⓒ ③	-111.00	158447	309600	0	300622	0	468047	300622	1.557
Ⓓ ①	-138.00	228553	271150	70820	439614	27883	570523	411731	1.386
Ⓓ ②	-138.00	228553	308850	51847	439614	13993	589250	425621	1.384
Ⓓ ③	-138.00	228553	381350	20084	439614	1605	629987	438009	1.438
Ⓔ ①	-165.00	314036	277100	136167	630800	80120	727303	550680	1.321
Ⓔ ②	-165.00	314036	321300	117195	630800	55985	752531	574815	1.309
Ⓔ ③	-165.00	314036	406300	101368	630800	30747	821704	600053	1.369

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

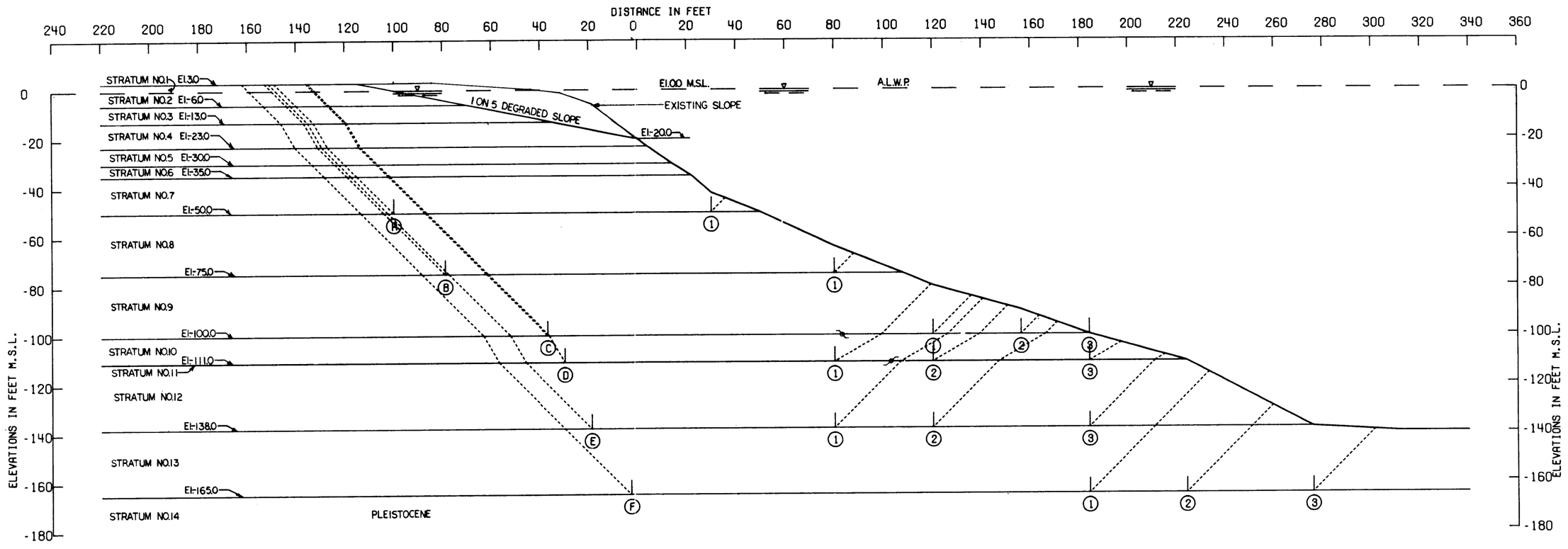
TROPICAL BEND, LOUISIANA
RANGE U-54 TO RANGE U-30
STA. 2669+32 TO STA. 2693+12

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 51



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 62, 63 & 64, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -200.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	350.0	350.0	350.0	350.0	0.
2	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
3	CH	28.0	28.0	350.0	350.0	350.0	350.0	0.
4	SP	60.0	60.0	0.	0.	0.	0.	30.0
5	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
6	CH	48.0	48.0	375.0	375.0	400.0	400.0	0.
7	CH	43.0	43.0	475.0	475.0	550.0	550.0	0.
8	CH	48.0	48.0	675.0	675.0	800.0	800.0	0.
9	CH	53.0	53.0	925.0	925.0	1050.0	1050.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	0.	0.	0.	0.	1200.0	1200.0	0.
12	CH	53.0	53.0	1325.0	1325.0	1450.0	1450.0	0.
13	CH	53.0	53.0	1575.0	1575.0	1700.0	1700.0	0.
14	CH	60.0	60.0	≥1700.0	≥1700.0	≥1700.0	≥1700.0	0.

ASSUMED FAILURE SURFACE NO.	ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ ①	-50.00	41529	71500	5428	72140	981	118458	71158	1.665
Ⓑ ①	-75.00	75280	127200	10661	143972	2082	213141	141890	1.502
Ⓒ ①	-100.00	121517	156781	28956	227790	8291	307255	219498	1.400
Ⓒ ②	-100.00	121517	173905	13631	227790	1950	308453	225839	1.366
Ⓒ ③	-100.00	121517	177589	48	227790	0	299154	227790	1.313
Ⓓ ①	-111.00	155622	132000	81584	278444	37337	369206	241106	1.531
Ⓓ ②	-111.00	155622	178300	48784	278444	18228	382707	260216	1.471
Ⓓ ③	-111.00	155622	223495	4914	278444	2457	384032	275986	1.391
Ⓔ ①	-138.00	227956	143550	130488	445065	103453	501995	341612	1.469
Ⓔ ②	-138.00	227956	201550	98786	445065	70436	528293	374629	1.410
Ⓔ ③	-138.00	227956	294350	72068	445065	31376	594375	413689	1.437
Ⓕ ①	-165.00	313458	317900	143919	642821	88686	775278	554135	1.399
Ⓕ ②	-165.00	313458	385900	107692	642821	50853	807050	591968	1.363
Ⓕ ③	-165.00	313458	474300	80573	642821	18296	868332	624524	1.390

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

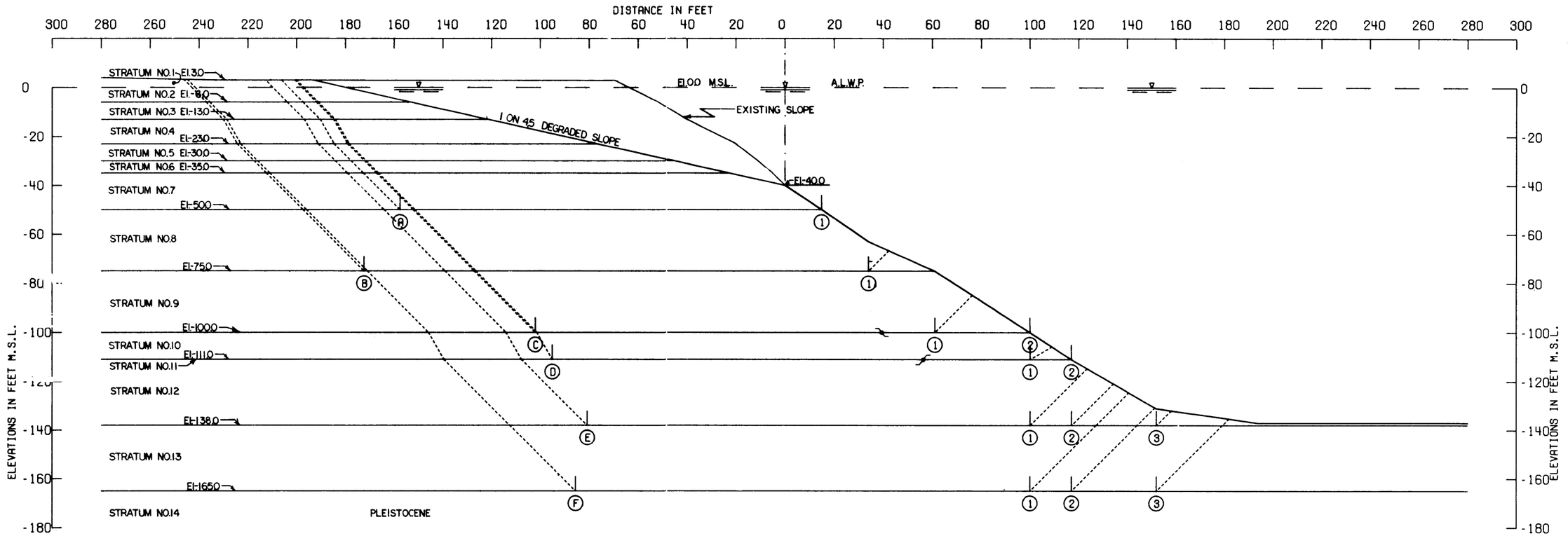
BANK STABILITY ANALYSIS

TROPICAL BEND, LOUISIANA
RANGE U-30 TO RANGE U-9
STA. 2693+12 TO STA. 2714+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 52



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 62, 63 & 64, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -400.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION P.S.F. CENTER OF STRATUM		BOTTOM OF STRATUM		FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	350.0	350.0	350.0	350.0	0.
2	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
3	CH	28.0	28.0	350.0	350.0	350.0	350.0	0.
4	SP	60.0	60.0	0.	0.	0.	0.	30.0
5	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
6	CH	48.0	48.0	375.0	375.0	400.0	400.0	0.
7	CH	43.0	43.0	475.0	475.0	550.0	550.0	0.
8	CH	48.0	48.0	675.0	675.0	800.0	800.0	0.
9	CH	53.0	53.0	925.0	925.0	1050.0	1050.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	0	0	0	0	1200.0	1200.0	0.
12	CH	53.0	53.0	1325.0	1325.0	1450.0	1450.0	0.
13	CH	53.0	53.0	1575.0	1575.0	1700.0	1700.0	0.
14	CH	60.0	60.0	≥1700.0	≥1700.0	≥1700.0	≥1700.0	0.

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	-50.00	37229	94820	38	54918	0	132087	54918	2.405
Ⓑ	①	-75.00	74963	165000	11215	139604	2390	251178	137214	1.831
Ⓒ	①	-100.00	117224	167904	28183	206453	10087	313312	196366	1.596
Ⓒ	②	-100.00	117224	182822	72	206453	0	300118	206453	1.454
Ⓓ	①	-111.00	149226	216860	3420	253943	1710	369506	252233	1.465
Ⓓ	②	-111.00	149226	220096	0	253943	0	369325	253943	1.454
Ⓔ	①	-138.00	222484	261986	61913	409142	23956	546384	385185	1.418
Ⓔ	②	-138.00	222484	286636	45531	409142	12288	554652	396854	1.398
Ⓔ	③	-138.00	222484	337386	16231	409142	1134	576101	408007	1.412
Ⓕ	①	-165.00	312943	315265	120945	630242	69678	749153	560564	1.336
Ⓕ	②	-165.00	312943	344165	104563	630242	49163	761671	581079	1.311
Ⓕ	③	-165.00	312943	403665	92337	630242	26798	808945	603444	1.341

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

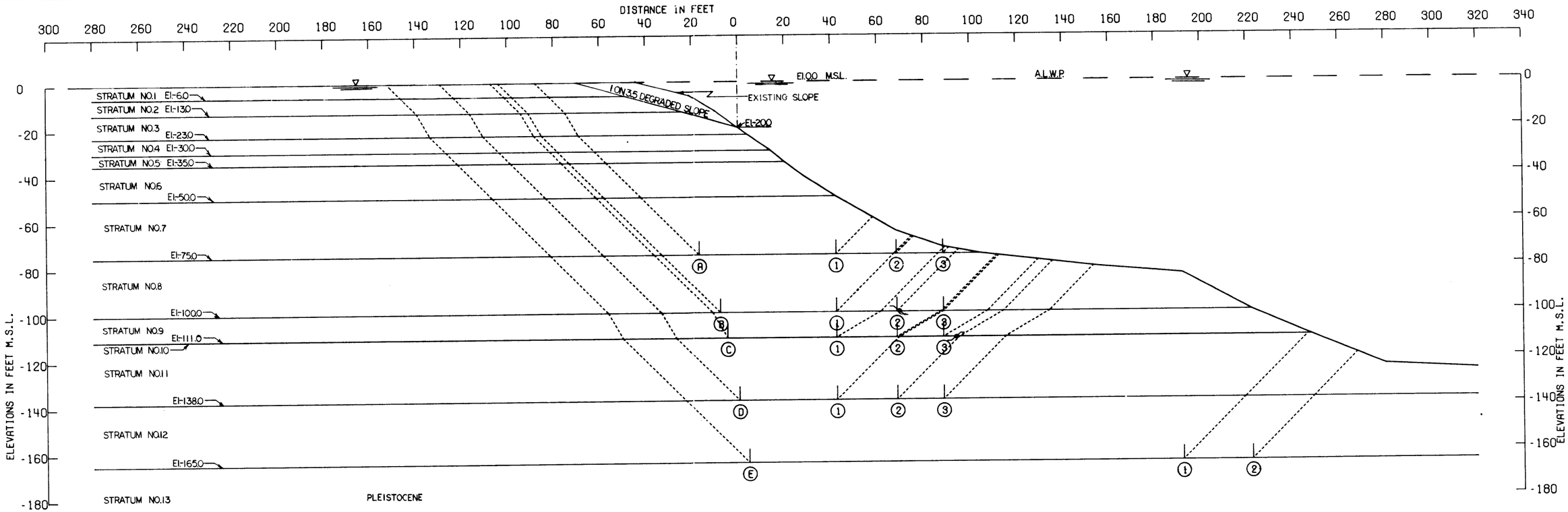
BANK STABILITY ANALYSIS

TROPICAL BEND, LOUISIANA
RANGE U-9 TO RANGE D-27
STA. 2714+00 TO STA. 2750+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 53



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 62, 63 & 64, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -200.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
2	CH	28.0	28.0	350.0	350.0	350.0	350.0	0.
3	SP	60.0	60.0	0.	0.	0.	0.	30.0
4	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
5	CH	48.0	48.0	375.0	375.0	400.0	400.0	0.
6	CH	43.0	43.0	475.0	475.0	550.0	550.0	0.
7	CH	48.0	48.0	675.0	675.0	800.0	800.0	0.
8	CH	53.0	53.0	925.0	925.0	1050.0	1050.0	0.
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	0.	0.	0.	0.	1200.0	1200.0	0.
11	CH	53.0	53.0	1325.0	1325.0	1450.0	1450.0	0.
12	CH	53.0	53.0	1575.0	1575.0	1700.0	1700.0	0.
13	CH	60.0	60.0	≥1700.0	≥1700.0	≥1700.0	≥1700.0	0.

ASSUMED FAILURE SURFACE NO.	ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ ①	-75.00	70971	47200	21402	113751	9507	139574	104244	1.339
Ⓐ ②	-75.00	70971	68000	10000	113751	1775	148971	111975	1.330
Ⓐ ③	-75.00	70971	84000	3410	113751	181	158382	113570	1.395
Ⓑ ①	-100.00	117230	52500	56599	211782	39808	226329	171973	1.316
Ⓑ ②	-100.00	117230	79798	48594	211782	23488	245622	188293	1.304
Ⓑ ③	-100.00	117230	98700	44527	211782	17486	260458	194295	1.341
Ⓒ ①	-111.00	149492	56400	107076	262638	55229	312969	207409	1.509
Ⓒ ②	-111.00	149492	87600	P8153	262638	39397	325246	223241	1.457
Ⓒ ③	-111.00	149492	111600	78585	262638	33280	339677	229358	1.481
Ⓓ ①	-138.00	223429	60900	159142	427404	134231	443471	293173	1.513
Ⓓ ②	-138.00	223429	98600	147562	427404	111668	469591	315736	1.487
Ⓓ ③	-138.00	223429	127600	140909	427404	101523	491938	325881	1.510
Ⓔ ①	-165.00	309981	319600	156624	630572	118319	786206	512252	1.535
Ⓔ ②	-165.00	309981	370600	135164	630572	79839	815745	550733	1.481

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

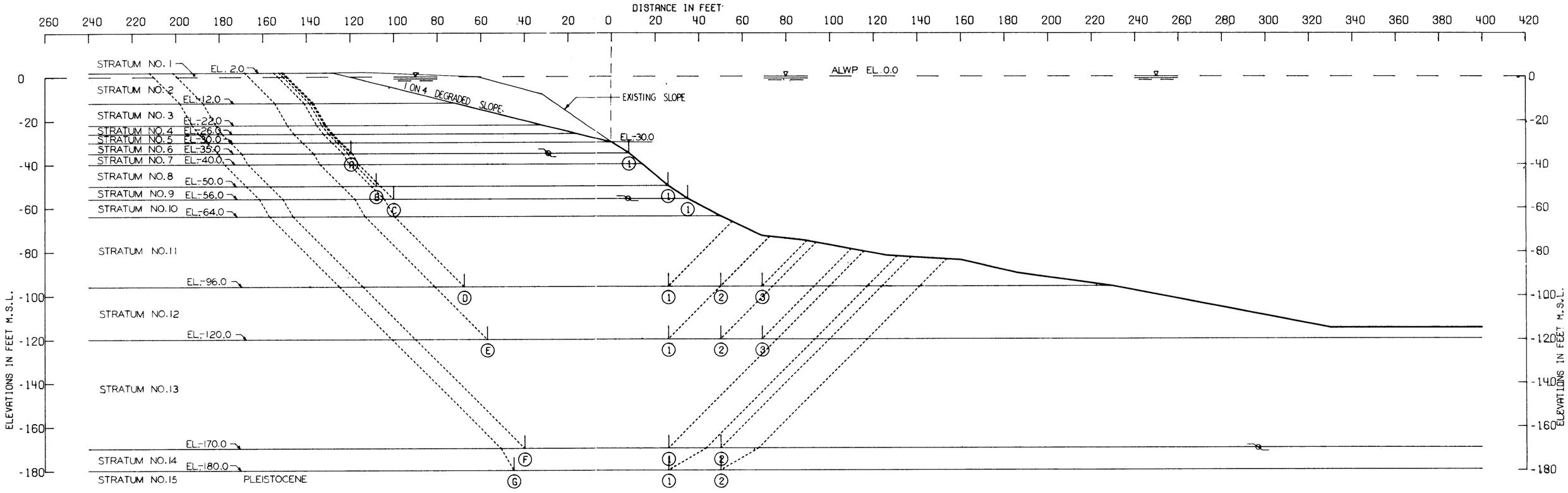
TROPICAL BEND, LOUISIANA
RANGE D-27 TO RANGE D-44
STA. 2750+00 TO STA. 2765+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 54



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 64, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -30.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F. CENTER OF STRATUM		C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM		FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	102.0	102.0	300.0	300.0	300.0	300.0	0.
2	CH	40.0	40.0	300.0	300.0	300.0	300.0	0.
3	SP	60.0	60.0	0.	0.	0.	0.	30.0
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	48.0	48.0	300.0	300.0	300.0	300.0	0.
6	CH	48.0	48.0	325.0	325.0	350.0	350.0	0.
7	SP	60.0	60.0	0.	0.	0.	0.	30.0
8	CH	38.0	38.0	450.0	450.0	500.0	500.0	0.
9	CL	48.0	48.0	530.0	530.0	560.0	560.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	48.0	48.0	800.0	800.0	960.0	960.0	0.
12	CH	48.0	48.0	1080.0	1080.0	1200.0	1200.0	0.
13	CH	48.0	48.0	1450.0	1450.0	1700.0	1700.0	0.
14	SP	60.0	60.0	0.	0.	0.	0.	30.0
15	CH	60.0	60.0	≥1800.0	≥1800.0	≥1800.0	≥1800.0	0.

ASSUMED FAILURE SURFACE NO.	ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ ①	-35.00	24134	39266	25	35531	0	63426	35531	1.785
Ⓑ ①	-50.00	39394	66920	40	66688	0	106355	66687	1.595
Ⓒ ①	-56.00	45683	67373	42	80311	0	113099	80311	1.408
Ⓓ ①	-96.00	111834	89904	47085	218833	33288	248824	185544	1.341
Ⓓ ②	-96.00	111834	112944	36190	218833	16757	260969	202076	1.291
Ⓓ ③	-96.00	111834	131184	33102	218833	11476	276121	207357	1.332
Ⓔ ①	-120.00	164924	99672	88030	342759	76653	352627	266105	1.325
Ⓔ ②	-120.00	164924	128472	83697	342759	55246	377094	287512	1.312
Ⓔ ③	-120.00	164924	151272	78968	342759	46979	395165	295779	1.336
Ⓕ ①	-170.00	311260	112200	222226	689540	241241	645687	448299	1.440
Ⓕ ②	-170.00	311260	153000	218173	689540	211638	682434	477902	1.428
Ⓖ ①	-180.00	362772	127800	336340	778478	277062	826912	501416	1.649
Ⓖ ②	-180.00	362772	171000	320451	778478	251040	854223	527438	1.620

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

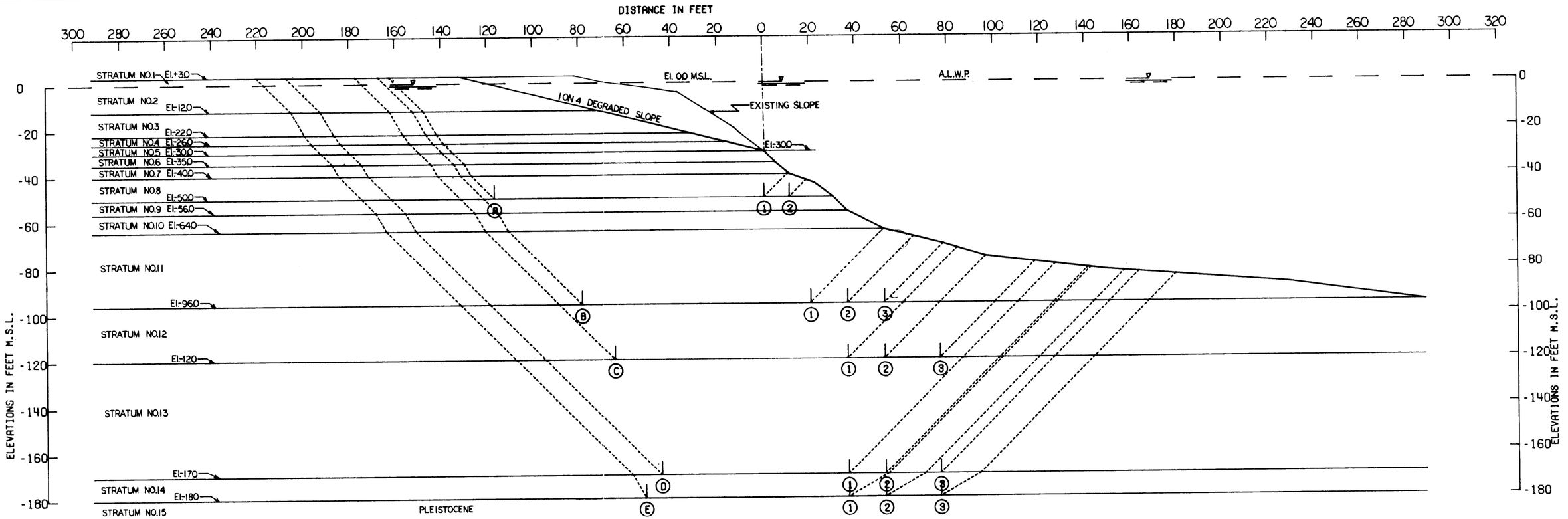
TROPICAL BEND, LOUISIANA
RANGE D-44 TO RANGE D-66
STA. 2765+00 TO STA. 2784+07

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 55



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 64, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION-300.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	102.0	102.0	300.0	300.0	300.0	300.0	0.
2	CH	40.0	40.0	300.0	300.0	300.0	300.0	0.
3	SP	60.0	60.0	0.	0.	0.	0.	30.0
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	48.0	48.0	300.0	300.0	300.0	300.0	0.
6	CH	48.0	48.0	325.0	325.0	350.0	350.0	0.
7	SP	60.0	60.0	0.	0.	0.	0.	30.0
8	CH	38.0	38.0	450.0	450.0	500.0	500.0	0.
9	CH	48.0	48.0	530.0	530.0	560.0	560.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	48.0	48.0	800.0	800.0	960.0	960.0	0.
12	CH	48.0	48.0	1080.0	1080.0	1200.0	1200.0	0.
13	CH	48.0	48.0	1450.0	1450.0	1700.0	1700.0	0.
14	SP	60.0	60.0	0.	0.	0.	0.	30.0
15	CH	60.0	60.0	≥1800.0	≥1800.0	≥1800.0	≥1800.0	0.

ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_R	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
(A)	(1)	-50.00	41574	58500	9016	73496	4879	109091	68616	1.590
(A)	(2)	-50.00	41574	64000	6600	73496	1391	112174	72104	1.556
(B)	(1)	-96.00	114760	96960	50560	231716	39187	262280	192529	1.362
(B)	(2)	-96.00	114760	110400	46079	231716	27179	271240	204537	1.326
(B)	(3)	-96.00	114760	125760	40861	231716	19651	281382	212064	1.327
(C)	(1)	-120.00	167409	121200	89747	355459	71337	378356	284121	1.332
(C)	(2)	-120.00	167409	140400	83840	355459	59701	391649	295757	1.324
(C)	(3)	-120.00	167409	169200	79867	355459	47904	416476	307554	1.354
(D)	(1)	-170.00	313592	137700	223212	704098	235478	674504	468620	1.439
(D)	(2)	-170.00	313592	164900	220564	704098	219087	699056	485010	1.441
(D)	(3)	-170.00	313592	205700	217454	704098	201539	736746	502559	1.466
(E)	(1)	-180.00	365803	158400	332523	796406	274094	856727	522312	1.640
(E)	(2)	-180.00	365803	187200	323878	796406	258776	876882	537630	1.631
(E)	(3)	-180.00	365803	230400	315023	796406	242044	911227	554362	1.644

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 = $\frac{R_A + R_B + R_P}{D_R - D_P}$

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

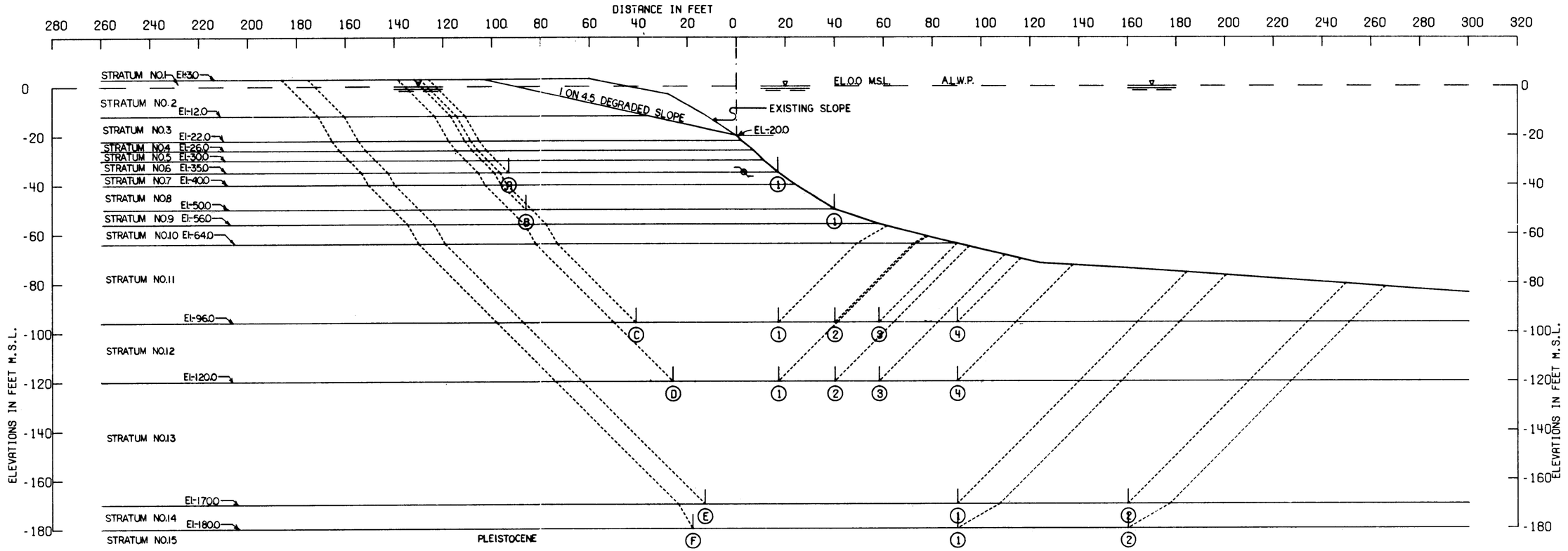
TROPICAL BEND, LOUISIANA
RANGE D-66 TO RANGE D-102
STA. 2784+07 TO STA. 2820+07

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 56



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 64, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH OVERLAID AT ELEVATION -200.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	102.0	102.0	300.0	300.0	300.0	300.0	0.
2	CH	40.0	40.0	300.0	300.0	300.0	300.0	0.
3	SP	60.0	60.0	0.	0.	0.	0.	30.0
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	48.0	48.0	300.0	300.0	300.0	300.0	0.
6	CH	48.0	48.0	325.0	325.0	350.0	350.0	0.
7	SP	60.0	60.0	0.	0.	0.	0.	30.0
8	CH	38.0	38.0	450.0	450.0	500.0	500.0	0.
9	CL	48.0	48.0	530.0	530.0	560.0	560.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	48.0	48.0	800.0	800.0	960.0	960.0	0.
12	CH	48.0	48.0	1080.0	1080.0	1200.0	1200.0	0.
13	CH	48.0	48.0	1450.0	1450.0	1700.0	1700.0	0.
14	SP	60.0	60.0	0.	0.	0.	0.	30.0
15	CH	60.0	60.0	≥1800.0	≥1800.0	≥1800.0	≥1800.0	0.

ASSUMED FAILURE SURFACE		RESISTING FORCES			DRIVING FORCES		SUMMATION OF FORCES		FACTOR OF SAFETY
NO.	ELEV.	R_A	R_B	R_P	D_R	$-D_P$	RESISTING	DRIVING	
(A) (1)	-35.00	25568	35992	29	39006	0.	61590	39006	1.579
(B) (1)	-50.00	41419	62950	34	72836	0.	104403	72836	1.433
(C) (1)	-96.00	113785	55680	55642	226154	57465	225107	168688	1.334
(C) (2)	-96.00	113785	77760	52046	226154	41473	243591	184681	1.319
(C) (3)	-96.00	113785	95040	51199	226154	32248	260025	193906	1.341
(C) (4)	-96.00	113785	125760	41447	226154	19888	280992	206265	1.362
(D) (1)	-120.00	166679	51600	103795	348833	116784	322074	232048	1.388
(D) (2)	-120.00	166679	79200	101211	348833	93998	347091	254835	1.362
(D) (3)	-120.00	166679	100800	95725	348833	80298	363205	268534	1.353
(D) (4)	-120.00	166679	139200	89061	348833	61566	394940	287267	1.375
(E) (1)	-170.00	313592	175100	229266	705678	231605	717959	474072	1.514
(E) (2)	-170.00	313592	294100	221800	705678	206423	829492	499255	1.661
(F) (1)	-180.00	366171	194400	333220	795546	275965	893792	519580	1.720
(F) (2)	-180.00	366171	320400	317516	795546	249918	1004088	545627	1.840

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 = $\frac{R_A + R_B + R_P}{D_R - D_P}$

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

BANK STABILITY ANALYSIS

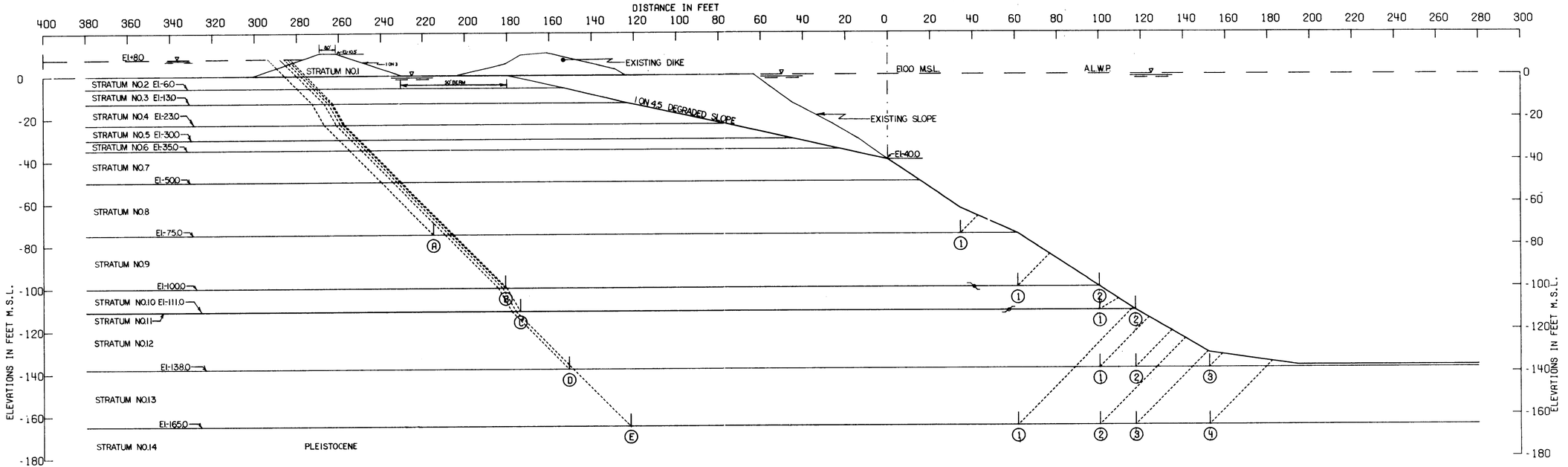
TROPICAL BEND, LOUISANA
RANGE D-102 TO RANGE D-122.52
STA. 2820+07 TO STA. 2840+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 57



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 62, 63 & 64, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF SECTIONS D-12 & D-15 OVERLAID AT ELEVATION-400.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	110.0	110.0	400.0	400.0	400.0	400.0	0.
2	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
3	CH	28.0	28.0	350.0	350.0	350.0	350.0	0.
4	SP	60.0	60.0	0.	0.	0.	0.	30.0
5	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
6	CH	48.0	48.0	375.0	375.0	400.0	400.0	0.
7	CH	43.0	43.0	475.0	475.0	550.0	550.0	0.
8	CH	48.0	48.0	675.0	675.0	800.0	800.0	0.
9	CH	53.0	53.0	925.0	925.0	1050.0	1050.0	0.
10	SP	60.0	60.0	0.	0.	0.	0.	30.0
11	CH	0.	0.	0.	0.	1200.0	1200.0	0.
12	CH	53.0	53.0	1325.0	1325.0	1450.0	1450.0	0.
13	CH	53.0	53.0	1575.0	1575.0	1700.0	1700.0	0.
14	CH	60.0	60.0	≥1700.0	≥1700.0	≥1700.0	≥1700.0	0.

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	
Ⓐ ①	-75.00	81499	199200	11215	177423	2390	291914	175033	1.668
Ⓑ ①	-100.00	129515	250802	28183	276713	10087	408501	266625	1.532
Ⓑ ②	-100.00	129515	265719	72	276713	0	395307	276713	1.429
Ⓒ ①	-111.00	167161	311660	3420	332640	1710	482242	330930	1.457
Ⓒ ②	-111.00	167161	314898	0	332640	0	482060	332640	1.449
Ⓓ ①	-138.00	238473	363950	61913	498782	23956	664337	474825	1.399
Ⓓ ②	-138.00	238473	388600	45531	498782	12288	672605	486494	1.383
Ⓓ ③	-138.00	238473	439350	16231	498782	1134	694055	497647	1.395
Ⓔ ①	-165.00	323752	311100	156647	692123	134389	791499	557733	1.419
Ⓔ ②	-165.00	323752	377400	120945	692123	69678	822097	622444	1.321
Ⓔ ③	-165.00	323752	406300	104563	692123	49163	834615	642959	1.298
Ⓔ ④	-165.00	323752	465800	92337	692123	26798	881889	665324	1.326

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

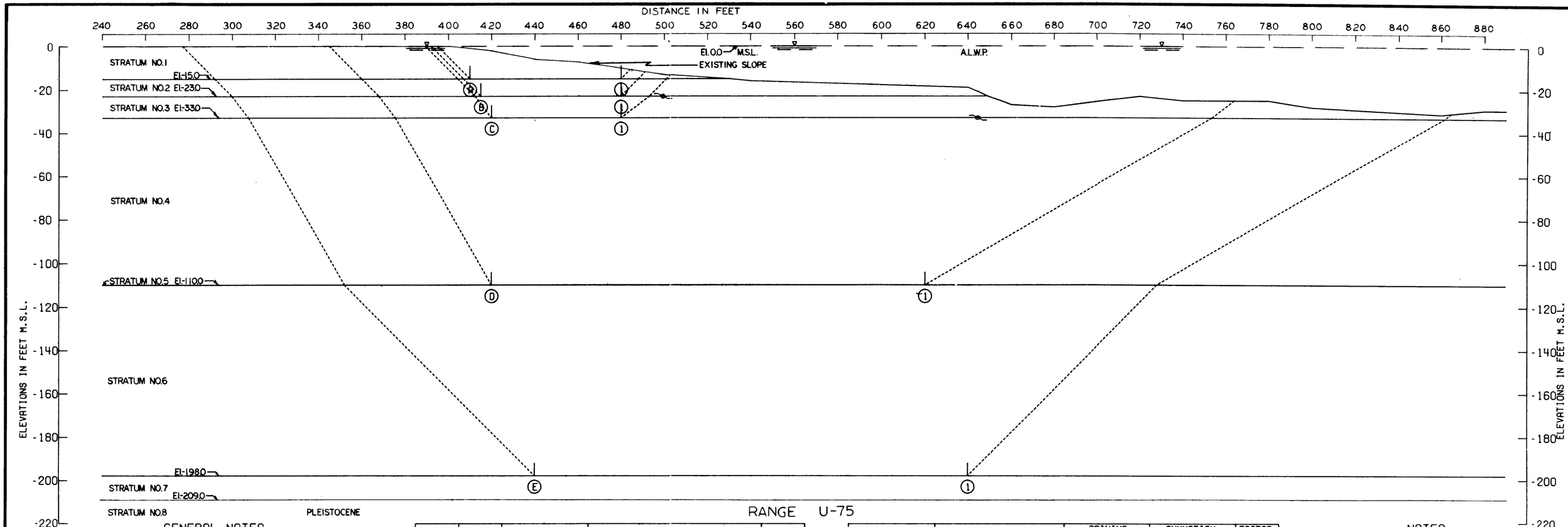
DIKE RESERVOIR STABILITY ANALYSIS

TROPICAL BEND, LOUISIANA
RANGE D-9 TO RANGE D-25
STA. 2732+00 TO STA. 2748+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 58



RANGE U-75

GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 67, 69 & 70, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS THE MOST CRITICAL WITHIN THE LIMITS OF THIS REACH.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F. CENTER OF STRATUM		C - UNIT COHESION - P.S.F. BOTTOM OF STRATUM		FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	48.0	48.0	250.0	250.0	250.0	250.0	0.
2	CH	48.0	48.0	290.0	290.0	330.0	330.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	SP	60.0	60.0	0.	0.	0.	0.	30.0
5	CH	0.	0.	0.	0.	950.0	950.0	0.
6	CH	53.0	53.0	1390.0	1390.0	1830.0	1830.0	0.
7	SP	60.0	60.0	0.	0.	0.	0.	30.0
8	CH	60.0	60.0	≥1940.0	≥1940.0	≥1940.0	≥1940.0	0.

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	-15.00	7500	17500	2173	5163	520	27173	4642	5.854
Ⓑ ①	-23.00	12140	21450	6292	12160	3524	39882	8636	4.618
Ⓒ ①	-33.00	20562	33703	16707	25353	11077	70973	14275	4.972
Ⓓ ①	-110.00	223283	190000	435150	330098	216634	848433	113463	7.478
Ⓔ ①	-198.00	469033	366000	650389	1084310	851522	1485422	232787	6.381

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

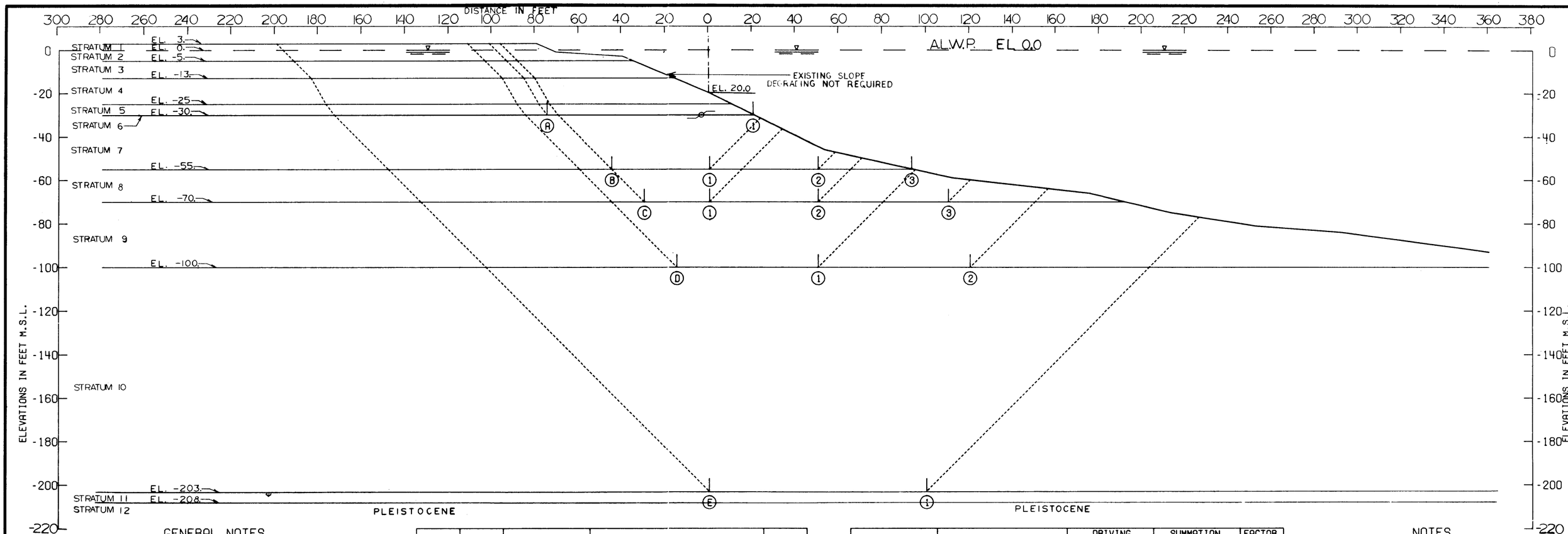
BANK STABILITY ANALYSIS

FORT JACKSON, LOUISIANA
RANGE U-93 TO RANGE U-64.8
STA. 3101+82 TO STA. 3130+00

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

AUGUST 1971

FILE NO. H-2-25275



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 72, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -20.0

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	102.0	102.0	200.0	200.0	200.0	200.0	0.
2	CH	40.0	40.0	200.0	200.0	200.0	200.0	0.
3	CH	28.0	28.0	200.0	200.0	200.0	200.0	0.
4	SM	60.0	60.0	0.	0.	0.	0.	30.0
5	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
6	CH	48.0	48.0	370.0	370.0	370.0	370.0	0.
7	CH	48.0	48.0	495.0	495.0	620.0	620.0	0.
8	CH	43.0	43.0	695.0	695.0	770.0	770.0	0.
9	CH	48.0	48.0	920.0	920.0	1070.0	1070.0	0.
10	CH	48.0	48.0	1585.0	1585.0	2100.0	2100.0	0.
11	SP	60.0	60.0	0.	0.	0.	0.	30.0
12	CH	60.0	60.0	≥2300.0	≥2300.0	≥2300.0	≥2300.0	0.

ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ	①	-30.00	19599	33267	60	27708	.0	52927	27707	1.910
Ⓑ	①	-55.00	42981	27900	23246	73944	20557	94127	53386	1.763
Ⓑ	②	-55.00	42981	58900	7837	73944	1891	109718	72052	1.523
Ⓑ	③	-55.00	42981	85560	151	73944	.0	128692	73943	1.740
Ⓒ	①	-70.00	63831	23100	39208	115522	40521	126139	75001	1.682
Ⓒ	②	-70.00	63831	61600	26006	115522	11451	151437	104070	1.455
Ⓒ	③	-70.00	63831	107800	14039	115522	2444	185670	113078	1.642
Ⓓ	①	-100.00	120698	69550	75760	235350	55996	266008	179353	1.483
Ⓓ	②	-100.00	120698	144450	63679	235350	33375	328827	201975	1.628
Ⓔ	①	-203.00	447208	210000	368830	991636	445188	1026038	546447	1.878

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

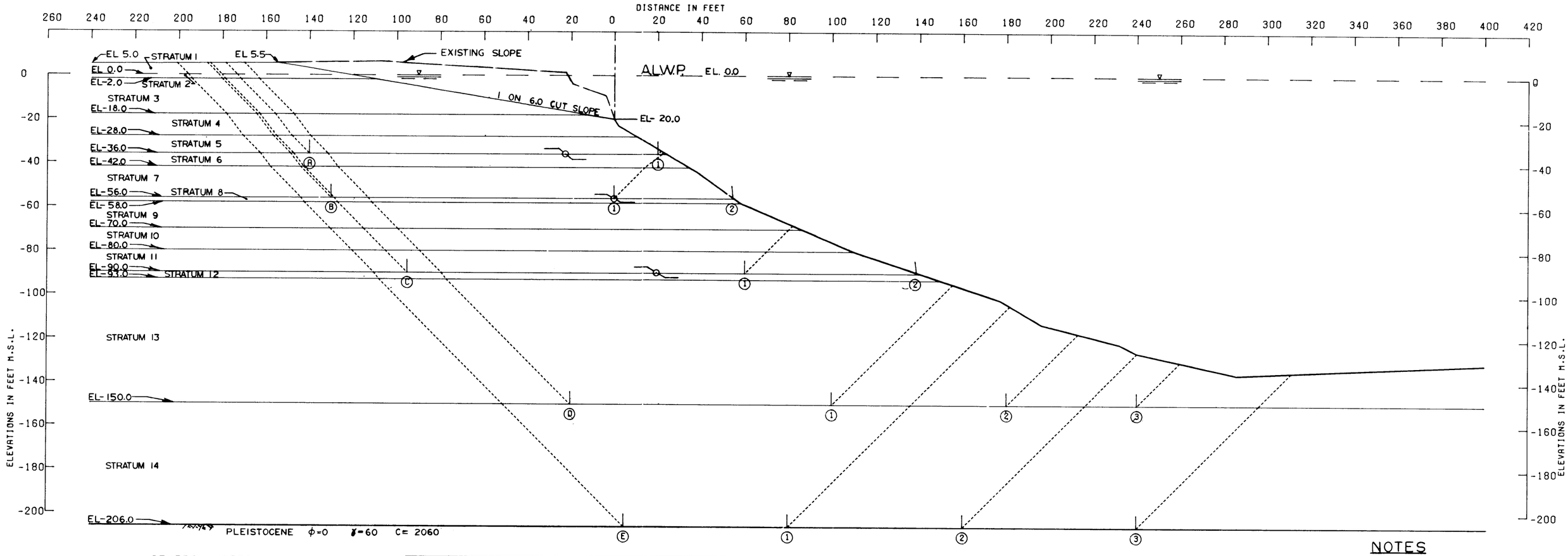
BANK STABILITY ANALYSIS

FORT JACKSON, LOUISIANA
RANGE U-64.8 TO RANGE U-23
STA. 3130+00 TO STA. 3179+82

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 60



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS. SEE BORING DATA PLATE 76, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THIS REACH OVERLAID AT EL-20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	95.0	95.0	200.0	200.0	200.0	200.0	0.0
2	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
3	CH	33.0	33.0	200.0	200.0	200.0	200.0	0.0
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	CH	45.0	45.0	380.0	380.0	460.0	460.0	0.0
6	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
7	CH	45.0	45.0	590.0	590.0	660.0	660.0	0.0
8	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
9	CH	45.0	45.0	740.0	740.0	800.0	800.0	0.0
10	CH	45.0	45.0	800.0	800.0	800.0	800.0	0.0
11	CH	45.0	45.0	850.0	850.0	900.0	900.0	0.0
12	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
13	CH	45.0	45.0	1215.0	1215.0	1500.0	1500.0	0.0
14	CH	45.0	45.0	1780.0	1780.0	2060.0	2060.0	0.0

ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_A	R_B	R_P	DRIVING FORCES D_A	$-D_P$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ	①	-36.00	24474	70059	1200	44389	88	95732	44301	2.161
Ⓑ	①	-56.00	48185	85800	21730	92481	17826	155715	74655	2.086
Ⓑ	②	-56.00	48185	108996	555	92481	8	157736	92472	1.706
Ⓒ	①	-90.00	101698	133137	35800	201442	15340	270634	186102	1.454
Ⓒ	②	-90.00	101698	162967	1032	201442	11	265696	201431	1.319
Ⓓ	①	-150.00	244436	180000	134059	489258	92518	558495	396741	1.408
Ⓓ	②	-150.00	244436	300000	79704	489258	32145	624139	457113	1.365
Ⓓ	③	-150.00	244436	390000	47906	489258	10642	682341	478617	1.426
Ⓔ	①	-206.00	445964	154500	309762	939087	316317	910226	622770	1.462
Ⓔ	②	-206.00	445964	319300	259660	939087	194786	1022944	744302	1.374
Ⓔ	③	-206.00	445964	484100	236056	939087	121183	1166120	817905	1.426

NOTES

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

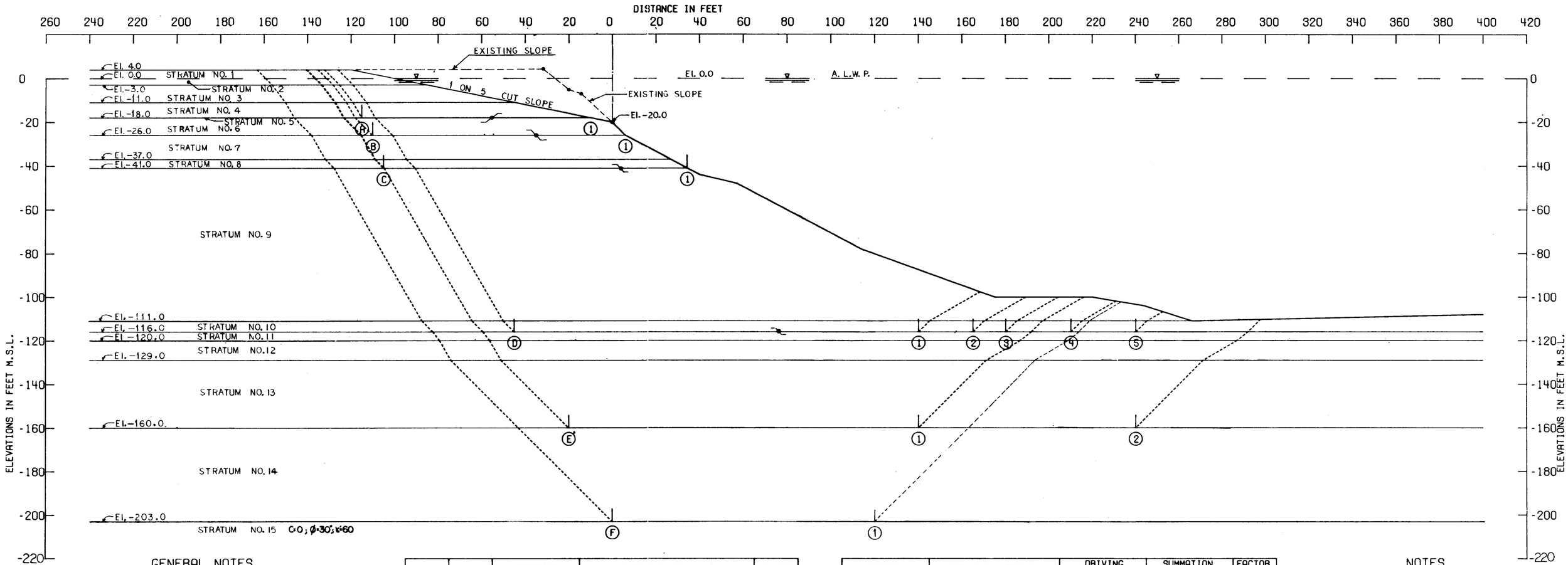
FORT JACKSON, LOUISIANA
RANGE D-28 TO RANGE D-39
STA. 3255+81 TO STA. 3267+81=0+00 TO 3+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 61



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 78, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THIS REACH OVERLAID AT EL.-20.0.

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

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	105.0	105.0	300.0	300.0	300.0	300.0	0.
2	CH	43.0	43.0	300.0	300.0	300.0	300.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	SP	60.0	60.0	0.	0.	0.	0.	30.0
5	CH	0.	0.	0.	0.	300.0	300.0	0.
6	CH	43.0	43.0	340.0	340.0	380.0	380.0	0.
7	SP	60.0	60.0	0.	0.	0.	0.	30.0
8	CH	43.0	43.0	510.0	510.0	530.0	530.0	0.
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	43.0	43.0	1085.0	1085.0	1110.0	1110.0	0.
11	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
12	SP	60.0	60.0	0.	0.	0.	0.	30.0
13	CH	43.0	43.0	1395.0	1395.0	1550.0	1550.0	0.
14	CH	43.0	43.0	1765.0	1765.0	1980.0	1980.0	0.

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	
Ⓐ ①	-18.00	14486	24983	0	16395	0	39469	16395	2.407
Ⓑ ①	-26.00	20175	37810	0	28414	0	57985	28414	2.041
Ⓒ ①	-41.00	38377	65177	11	59283	0	103566	59283	1.747
Ⓓ ①	-116.00	231416	188900	28426	358764	16140	448743	342623	1.310
Ⓓ ②	-116.00	231416	203023	18418	358764	8432	452859	350332	1.293
Ⓓ ③	-116.00	231416	209830	18107	358764	7465	459354	351299	1.308
Ⓓ ④	-116.00	231416	222864	17222	358764	7022	471502	351741	1.340
Ⓓ ⑤	-116.00	231416	235362	12575	358764	3569	479353	355195	1.350
Ⓔ ①	-160.00	379155	248000	134200	689592	108208	761355	581383	1.310
Ⓔ ②	-160.00	379155	403000	114835	689592	65799	896990	623793	1.438
Ⓕ ①	-203.00	548573	237600	264199	1103490	294332	1070372	809158	1.323

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

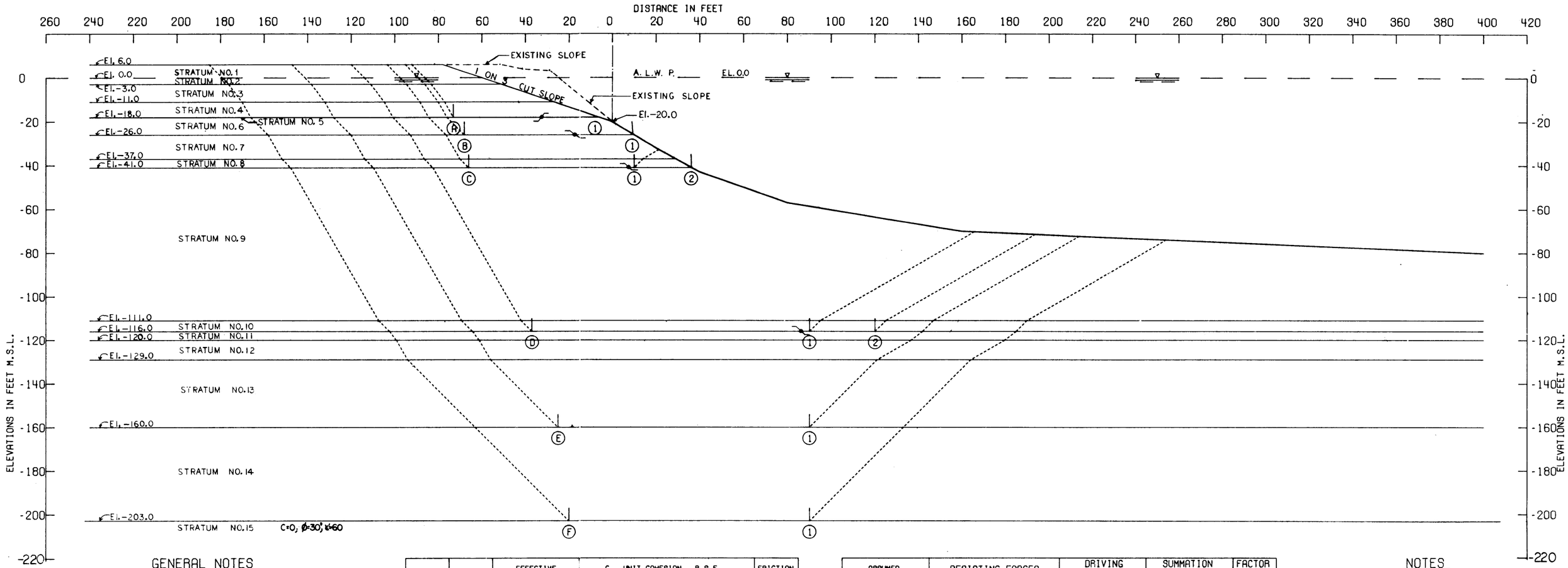
FORT JACKSON, LOUISIANA
RANGE D-39 TO RANGE D-57
STA. 3+00 TO STA. 21+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 62



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 78, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT EL.-20.0.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F. CENTER OF STRATUM		BOTTOM OF STRATUM		FRICTION ANGLE
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	105.0	105.0	300.0	300.0	300.0	300.0	0.
2	CH	43.0	43.0	300.0	300.0	300.0	300.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	SP	60.0	60.0	0.	0.	0.	0.	30.0
5	CH	0.	0.	0.	0.	300.0	300.0	0.
6	CH	43.0	43.0	340.0	340.0	380.0	380.0	0.
7	SP	60.0	60.0	0.	0.	0.	0.	30.0
8	CH	43.0	43.0	510.0	510.0	530.0	530.0	0.
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	CH	43.0	43.0	1085.0	1085.0	1110.0	1110.0	0.
11	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
12	SP	60.0	60.0	0.	0.	0.	0.	30.0
13	CH	43.0	43.0	1395.0	1395.0	1550.0	1550.0	0.
14	CH	43.0	43.0	1765.0	1765.0	1980.0	1980.0	0.

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
(A) (1)	-18.00	17158	16166	16	20925	8	33342	20917	1.594
(B) (1)	-26.00	23013	23915	255	34204	4	47183	34199	1.380
(C) (1)	-41.00	42754	40197	6256	68765	3783	89208	64982	1.373
(C) (2)	-41.00	42754	46011	131	68765	0	88897	68764	1.293
(D) (1)	-116.00	260786	140949	135430	411651	78417	537166	333233	1.612
(D) (2)	-116.00	260786	172763	116847	411651	67663	550396	343987	1.600
(E) (1)	-160.00	422956	178250	267544	774798	249053	868750	525744	1.652
(F) (1)	-203.00	581053	217800	403725	1212083	491637	1202579	720445	1.669

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

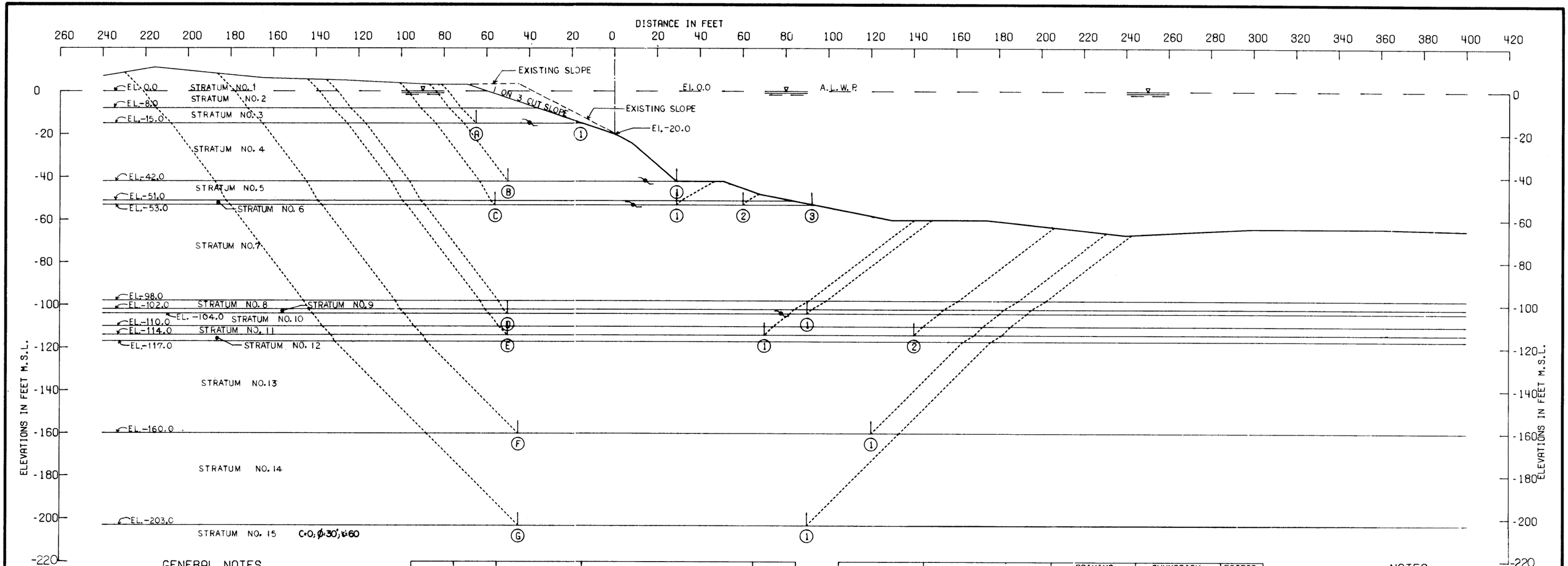
BANK STABILITY ANALYSIS

FORT JACKSON, LOUISIANA
RANGE D-57 TO RANGE D-69
STA. 21+00 TO STA. 33+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 63



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 78, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THIS REACH, OVERLAID AT EL.-20.0.

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

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	105.0	105.0	300.0	300.0	300.0	300.0	0.
2	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
3	CH	43.0	43.0	300.0	300.0	300.0	300.0	0.
4	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
5	SP	60.0	60.0	0.	0.	0.	0.	30.0
6	CH	43.0	43.0	620.0	620.0	630.0	630.0	0.
7	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
8	SP	60.0	60.0	0.	0.	0.	0.	30.0
9	CH	43.0	43.0	980.0	980.0	990.0	990.0	0.
10	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
11	CH	43.0	43.0	1070.0	1070.0	1090.0	1090.0	0.
12	SP	60.0	60.0	0.	0.	0.	0.	30.0
13	CH	43.0	43.0	1335.0	1335.0	1550.0	1550.0	0.
14	CH	43.0	43.0	1765.0	1765.0	1980.0	1980.0	0.

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)	-15.00	10216	13506	150	10815	1	23873	10814	2.208
(B) (1)	-42.00	35562	41372	0	52516	0	76934	52516	1.465
(C) (1)	-53.00	56362	50827	7337	87740	3594	114527	84146	1.361
(C) (2)	-53.00	56362	61997	3453	87740	1228	121814	86511	1.408
(C) (3)	-53.00	56362	69995	368	87740	2	126727	87738	1.444
(D) (1)	-104.00	172845	138402	74826	324227	59516	386074	264710	1.458
(E) (1)	-114.00	200627	130800	101788	389931	94733	433215	295198	1.468
(E) (2)	-114.00	200627	207100	88071	389931	77515	495798	312416	1.587
(F) (1)	-160.00	338621	255750	215415	751582	254517	809787	497065	1.629
(G) (1)	-203.00	502021	267300	364022	1193394	511381	1133343	682013	1.662

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

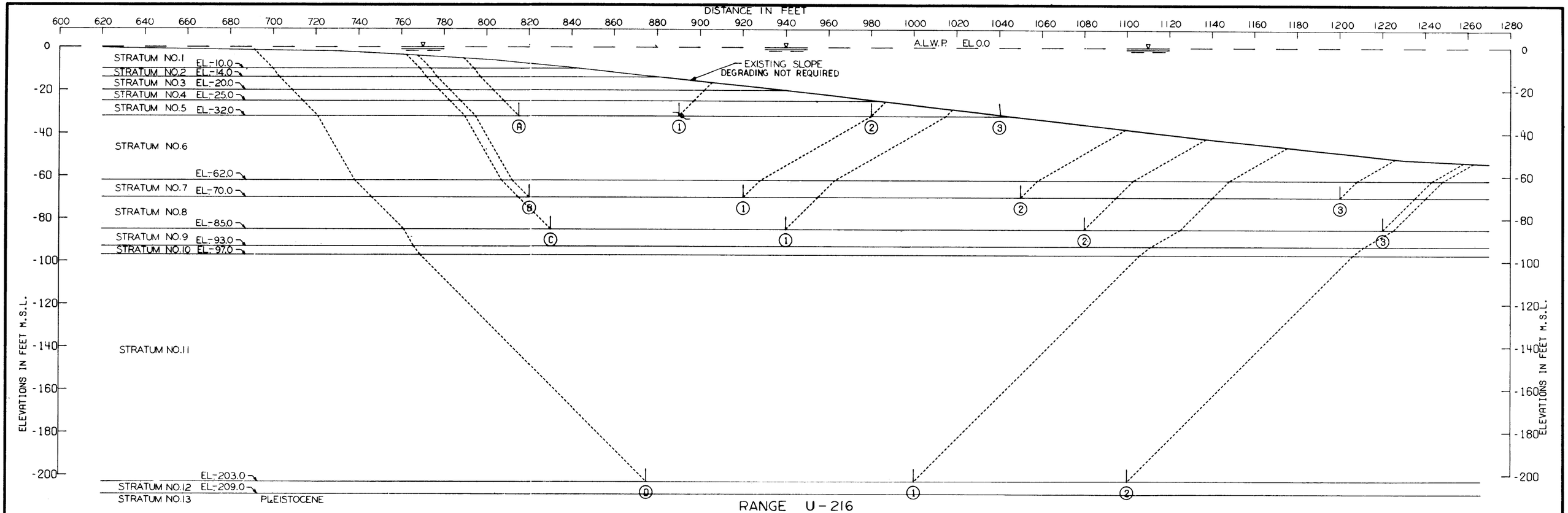
FORT JACKSON, LOUISIANA
RANGE D-69 TO RANGE D-84
STA. 33+00 TO STA. 48+00=3318+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 64



RANGE U-216

GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 78, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS THE MOST CRITICAL WITHIN THE LIMITS OF THIS REACH.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C - UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	43.0	43.0	300.0	300.0	300.0	300.0	0.
2	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
3	CH	43.0	43.0	300.0	300.0	300.0	300.0	0.
4	CH	43.0	43.0	325.0	325.0	350.0	350.0	0.
5	CH	43.0	43.0	385.0	385.0	420.0	420.0	0.
6	SP	60.0	60.0	0.	0.	0.	0.	30.0
7	CH	43.0	43.0	760.0	760.0	800.0	800.0	0.
8	CH	43.0	43.0	800.0	800.0	800.0	800.0	0.
9	SP	60.0	60.0	0.	0.	0.	0.	30.0
10	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
11	CH	48.0	48.0	1450.0	1450.0	1980.0	1980.0	0.
12	SP	60.0	60.0	0.	0.	0.	0.	30.0
13	CH	60.0	60.0	≥2040.0	≥2040.0	≥2040.0	≥2040.0	0.

ASSUMED FAILURE SURFACE NO.	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)	-32.00	16885	31500	10751	15573	5703	59136	9871	5.991
(A) (2)	-32.00	16885	59222	5161	15573	1074	81269	14499	5.605
(A) (3)	-32.00	16885	65272	456	15573	8	82614	15565	5.307
(B) (1)	-70.00	71164	80000	98144	103706	61949	249308	41756	5.971
(B) (2)	-70.00	71164	184000	53225	103706	35861	308390	67844	4.546
(B) (3)	-70.00	71164	304000	19836	103706	11312	395000	92393	4.275
(C) (1)	-85.00	95644	88000	109199	157956	98893	292843	59062	4.958
(C) (2)	-85.00	95644	200000	63887	157956	59484	359532	98471	3.651
(C) (3)	-85.00	95644	312000	40984	157956	27640	448628	130315	3.443
(D) (1)	-203.00	439574	247500	411934	976453	711730	1099008	264723	4.152
(D) (2)	-203.00	439574	445500	387119	976453	615128	1272193	361325	3.521

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

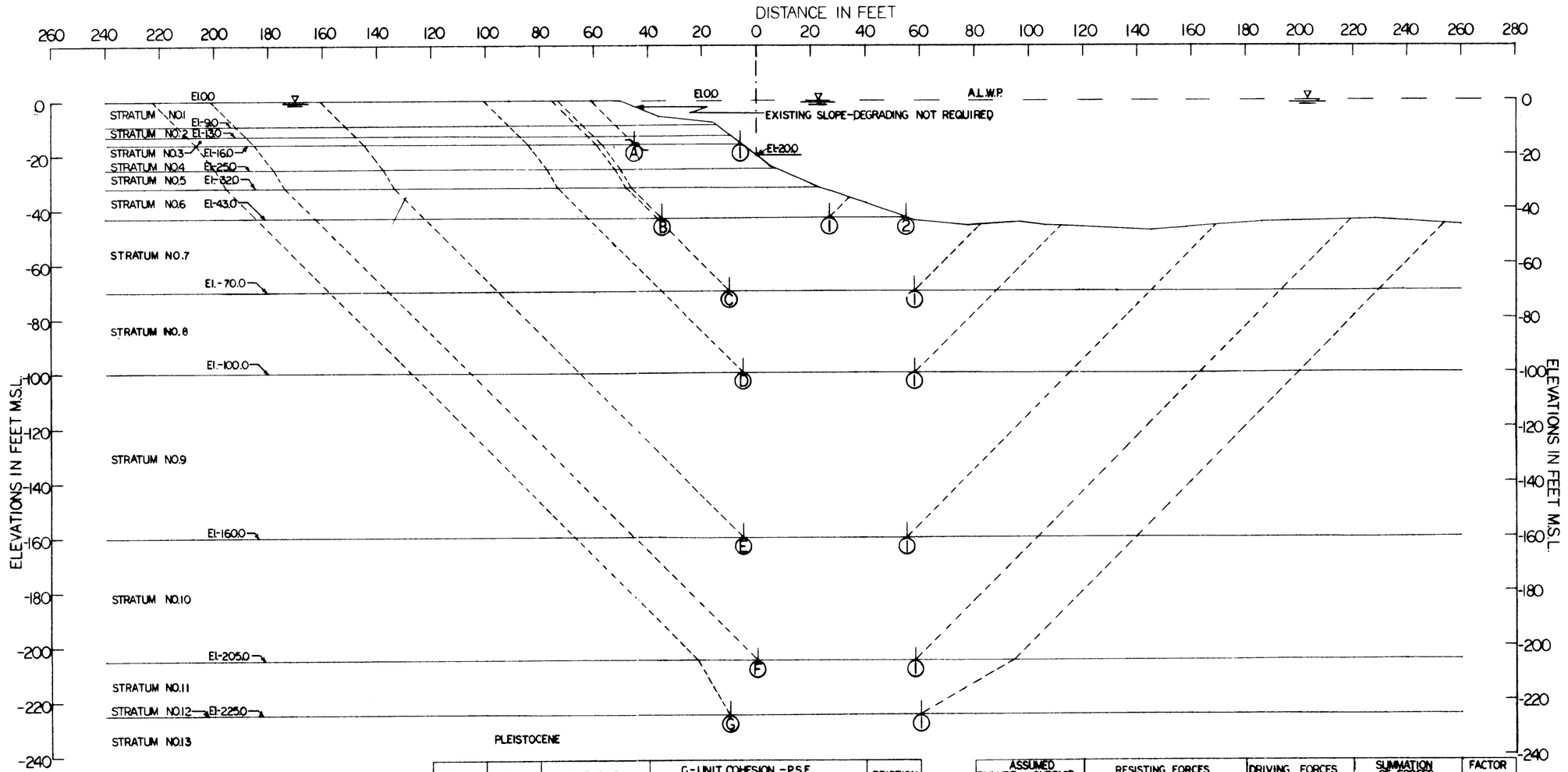
BANK STABILITY ANALYSIS

VENICE, LOUISIANA
RANGE U-216 TO RANGE U-189
STA. 3349+00 TO STA. 3370+00

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

AUGUST 1971

FILE NO. H-2-25275



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 79 & 80, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -20.0

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F.		C-UNIT COHESION - P.S.F.				FRICTION ANGLE
				CENTER OF STRATUM		BOTTOM OF STRATUM		
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	DEGREES
1	CH	48.00	48.00	350.00	350.00	350.00	350.00	0
2	CH	33.00	33.00	350.00	350.00	350.00	350.00	0
3	CH	40.00	40.00	350.00	350.00	350.00	350.00	0
4	ML	55.00	55.00	200.00	200.00	200.00	200.00	15.0
5	SP	60.00	60.00	0	0	0	0	30.0
6	CH	53.00	53.00	525.00	525.00	580.00	580.00	0
7	CH	48.00	48.00	715.00	715.00	850.00	850.00	0
8	CH	53.00	53.00	1000.00	1000.00	1150.00	1150.00	0
9	CH	53.00	53.00	1450.00	1450.00	1750.00	1750.00	0
10	CH	53.00	53.00	1975.00	1975.00	2200.00	2200.00	0
11	SP	60.00	60.00	0	0	0	0	30.0
12	CH	0	0	0	0	2400.00	2400.00	0
13	CH	60.00	60.00	≥2400.00	≥2400.00	≥2400.00	≥2400.00	0

ASSUMED FAILURE SURFACE NO.		ELEV.	RESISTING FORCES R_a	R_b	R_p	DRIVING FORCES D_a	$-D_p$	SUMMATION OF FORCES RESISTING	DRIVING	FACTOR OF SAFETY
Ⓐ	①	-16.00	11200	11268	162	5553	2	22630	5551	4.076
Ⓑ	①	-43.00	35255	35960	7737	42294	1950	78952	40343	1.957
Ⓑ	②	-43.00	35255	52142	27	42293	0	87424	42293	2.067
Ⓒ	①	-70.00	74007	57800	34638	109526	14800	166445	94726	1.757
Ⓓ	①	-100.00	134055	72450	93902	234669	73813	300407	160856	1.868
Ⓔ	①	-160.00	308055	105000	267991	634163	330999	681046	303164	2.246
Ⓕ	①	-205.00	485806	127600	448617	1054976	653219	1062023	401757	2.643
Ⓖ	①	-225.00	629929	168000	804184	1283166	833091	1602113	450075	3.560

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART III
WEST BANK

BANK STABILITY ANALYSIS

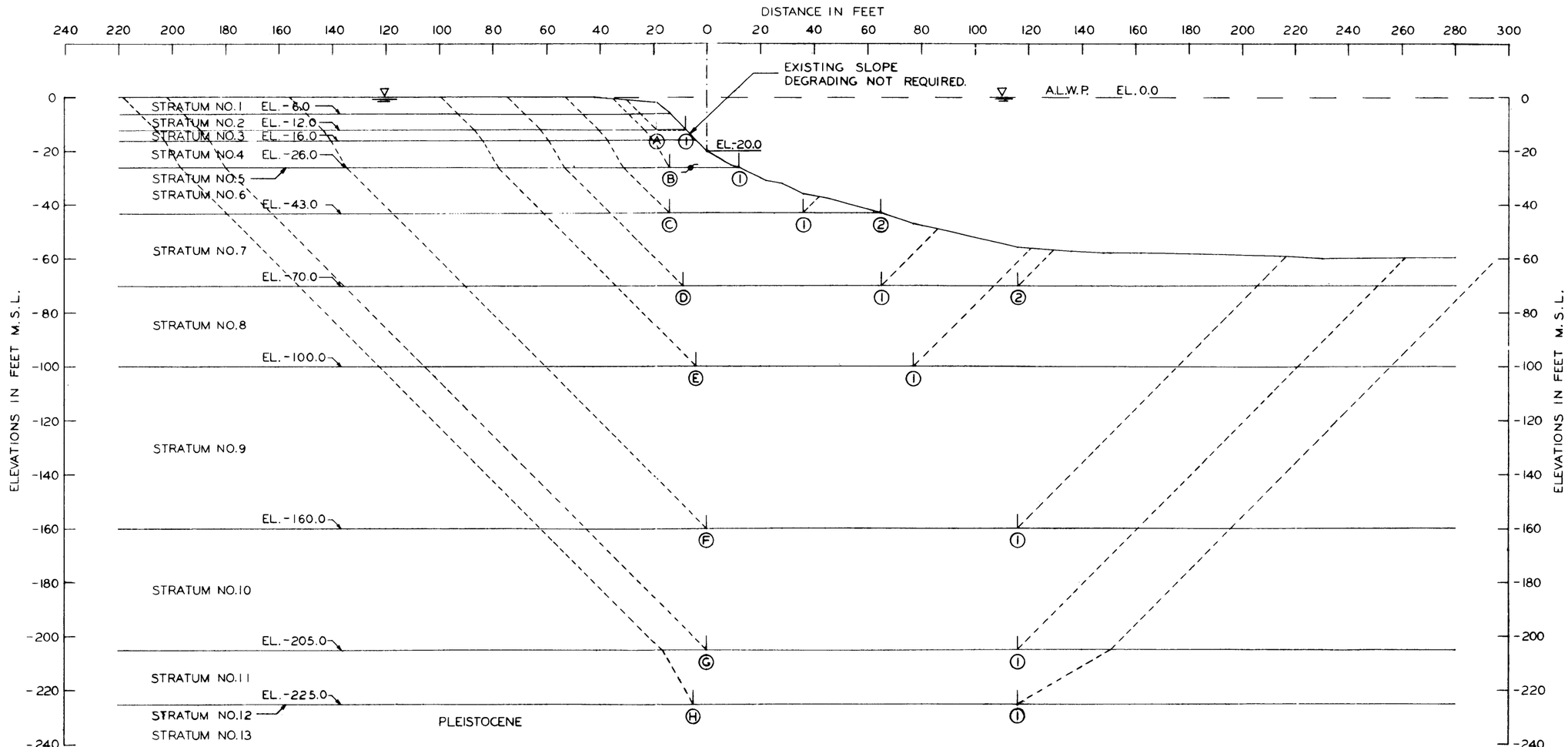
VENICE, LOUISIANA
RANGE U-189 TO RANGE U-115
STA. 3370+00 TO STA. 3450+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 66



GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 79 & 80, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN, IS A COMPOSITE OF ALL SECTIONS WITHIN THE LIMITS OF THE REACH, OVERLAID AT ELEVATION -20.0

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F. VERT. 1	EFFECTIVE UNIT WT. P.C.F. VERT. 2	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	CENTER OF STRATUM VERT. 2	BOTTOM OF STRATUM VERT. 1	BOTTOM OF STRATUM VERT. 2	FRICTION ANGLE. DEGREES
1	CH	48.0	48.0	350.0	350.0	350.0	350.0	0.
2	CH	33.0	33.0	350.0	350.0	350.0	350.0	0.
3	ML	55.0	55.0	200.0	200.0	200.0	200.0	15.0
4	SM	60.0	60.0	0.0	0.0	0.0	0.0	30.0
5	CL	0.0	0.0	0.0	0.0	410.0a	410.0	0.
6	CL	53.0	53.0	495.0	495.0	580.0	580.0	0.
7	CH	48.0	48.0	715.0	715.0	850.0	850.0	0.
8	CH	53.0	53.0	1000.0	1000.0	1150.0	1150.0	0.
9	CH	53.0	53.0	1450.0	1450.0	1750.0	1750.0	0.
10	CH	53.0	53.0	1975.0	1975.0	2200.0	2200.0	0.
11	SP	60.0	60.0	0.0	0.0	0.0	0.0	30.0
12	CH	0.0	0.0	0.0	0.0	2400.0	2400.0	0.
13	CH	60.0	60.0	≥2400.0	≥2400.0	≥2400.0	≥2400.0	0.

ASSUMED FAILURE 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	-12.00	7667	2751	4	2360	0	10422	2360	4.415
Ⓑ ①	-26.00	15505	6288	0	12852	0	21793	12852	1.696
Ⓒ ①	-43.00	33897	29000	5775	43280	1081	68672	42199	1.627
Ⓒ ②	-43.00	33897	45762	21	43280	0	79680	43280	1.841
Ⓓ ①	-70.00	72759	62900	29940	118675	13298	165599	105377	1.571
Ⓓ ②	-70.00	72759	106250	19067	118675	4477	198076	114198	1.734
Ⓔ ①	-100.00	132759	93150	79679	244767	57099	305588	187668	1.628
Ⓕ ①	-160.00	306759	203000	249478	642457	270227	759237	372230	2.040
Ⓖ ①	-205.00	484509	255200	426394	1068415	560591	1186103	507824	2.296
Ⓗ ①	-225.00	629267	290400	762011	1294175	723777	1681678	570398	2.948

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

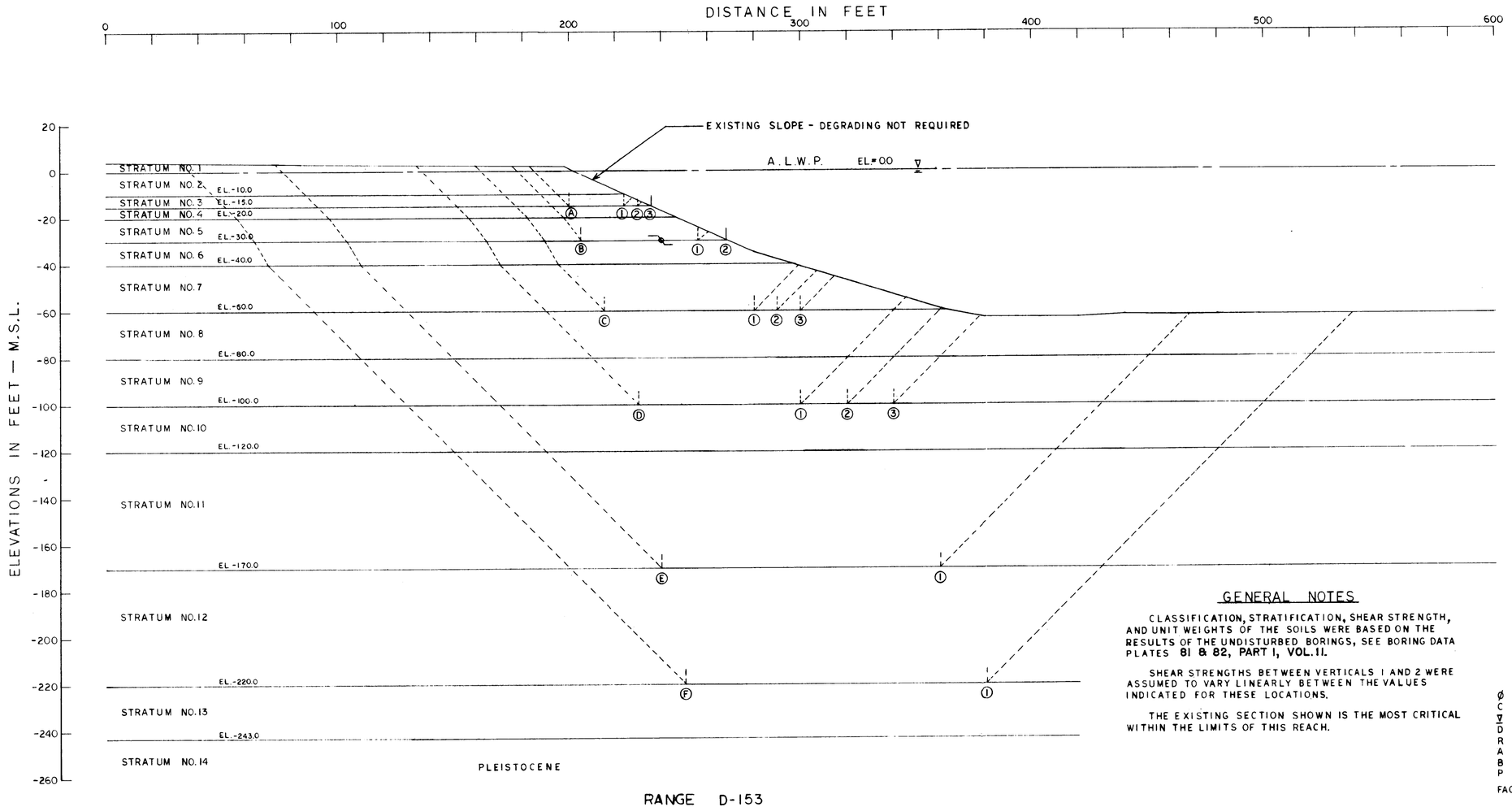
VENICE, LOUISIANA
RANGE U-115 TO RANGE D-75
STA. 3450+00 TO STA. 3640+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 67



RANGE D-153

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WEIGHT P.C.F.		C-UNIT COHESION - P.S.F. CENTER OF STRATUM		C-UNIT COHESION - P.S.F. BOTTOM OF STRATUM		FRICTION ANGLE DEGREES
		VERT. 1	VERT. 2	VERT. 1	VERT. 2	VERT. 1	VERT. 2	
1	CH	102	102	400	400	400	400	0
2	CH	40	40	400	400	400	400	0
3	CHO	33	33	200	200	200	200	0
4	CH&CHO	33	33	260	260	315	315	0
5	ML&SM	55	55	200	200	200	200	15
6	SM	60	60	0	0	0	0	30
7	CH	48	48	600	600	715	715	0
8	CH	48	48	830	830	945	945	0
9	CH	48	48	1060	1060	1170	1170	0
10	CH	48	48	1285	1285	1400	1400	0
11	CH	48	48	1687	1687	1973	1973	0
12	CH	48	48	2259	2259	2545	2545	0
13	SP	60	60	0	0	0	0	30
14	CH	60	60	≥2830	≥2830	≥2630	≥2830	0

ASSUMED FAILURE SURFACE NO.		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	11678	4800	1416	7653	299	17894	7354	2.433
Ⓐ	②	-15	11678	6000	673	7653	67	18351	7586	2.419
Ⓐ	③	-15	11678	6800	178	7653	5	18656	7648	2.439
Ⓑ	①	-30	21770	20289	2300	22767	577	44359	22190	1.999
Ⓑ	②	-30	21770	21462	128	22767	3	43360	22764	1.905
Ⓒ	①	-60	58400	46475	22991	89110	11982	127866	101092	1.658
Ⓒ	②	-60	58400	53625	20187	89110	8933	132212	80178	1.649
Ⓒ	③	-60	58400	60775	17383	89110	6566	136558	82542	1.654
Ⓓ	①	-100	134309	81900	81768	241708	63802	297977	177906	1.675
Ⓓ	②	-100	134309	105300	76161	241708	51275	315770	190433	1.658
Ⓓ	③	-100	134309	126700	71331	241708	40822	334340	200886	1.664
Ⓔ	①	-170	355152	236760	292380	703174	278172	884292	425002	2.081
Ⓕ	①	-200	490939	330850	427921	967200	454637	1249710	512563	2.438

GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTH, AND UNIT WEIGHTS OF THE SOILS WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATES 81 & 82, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS THE MOST CRITICAL WITHIN THE LIMITS OF THIS REACH.

NOTES

ϕ — ANGLE OF INTERNAL FRICTION, DEGREES
C — UNIT OF COHESION P.S.F.
$\bar{V}$ — 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 $= \frac{R_A + R_B + R_P}{D_A - D_P}$

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

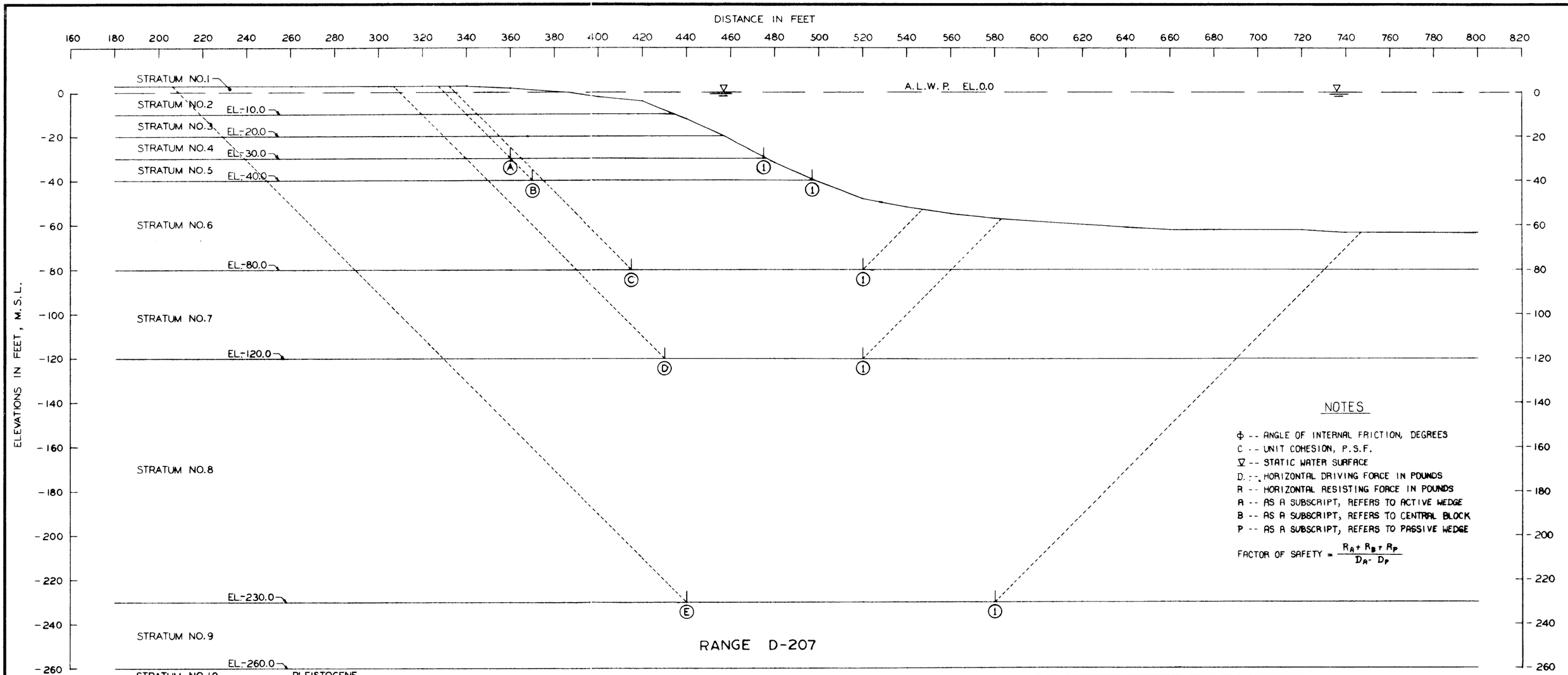
BANK STABILITY ANALYSIS

VENICE, LOUISIANA
RANGE D-75 TO RANGE D-205.25
STA. 3640+00 TO STA. 3778+50

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 68



RANGE D-207

GENERAL NOTES

CLASSIFICATION, STRATIFICATION, SHEAR STRENGTHS, AND UNIT WEIGHTS OF THE SOIL WERE BASED ON THE RESULTS OF THE UNDISTURBED BORINGS, SEE BORING DATA PLATE 86, PART I, VOL. II.

SHEAR STRENGTHS BETWEEN VERTICALS 1 AND 2 WERE ASSUMED TO VARY LINEARLY BETWEEN THE VALUES INDICATED FOR THESE LOCATIONS.

THE EXISTING SECTION SHOWN IS THE MOST CRITICAL WITHIN THE LIMITS OF THIS REACH.

STRATUM NO.	SOIL TYPE	EFFECTIVE UNIT WT. P.C.F. VERT. 1	EFFECTIVE UNIT WT. P.C.F. VERT. 2	C - UNIT COHESION - P.S.F. CENTER OF STRATUM VERT. 1	CENTER OF STRATUM VERT. 2	BOTTOM OF STRATUM VERT. 1	BOTTOM OF STRATUM VERT. 2	FRICTION ANGLE DEGREES
1	CH	110.0	110.0	400.0	400.0	400.0	400.0	0.0
2	CL	48.0	48.0	300.0	300.0	300.0	300.0	0.0
3	CH	38.0	38.0	300.0	300.0*	300.0	300.0	0.0
4	CH	38.0	38.0	300.0	300.0	300.0	300.0	0.0
5	CH	38.0	38.0	350.0	350.0	400.0	400.0	0.0
6	CH	43.0	43.0	600.0	600.0	800.0	800.0	0.0
7	CH	43.0	43.0	1000.0	1000.0	1200.0	1200.0	0.0
8	CH	43.0	43.0	1750.0	1750.0	2300.0	2300.0	0.0
9	SP	60.0	60.0	0.0	0.0	0.0	0.0	30.0
10	CH	60.0	60.0	≥2600.0	≥2600.0	≥2600.0	≥2600.0	0.0

ASSUMED FAILURE SURFACE NO.	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)	-30.00	20400	34500	207	28566	3	55107	28563	1.929
(B) (1)	-40.00	27400	50800	218	44374	2	78418	44372	1.767
(C) (1)	-80.00	75400	84000	32639	140197	18708	192039	121489	1.581
(D) (1)	-120.00	155400	108000	107388	312674	95759	370788	216915	1.709
(E) (1)	-230.00	540400	322000	485400	1157669	614643	1347800	543026	2.482

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART III
WEST BANK

BANK STABILITY ANALYSIS

VENICE, LOUISIANA
RANGE D-205.25 TO RANGE D-225
STA. 3778+50 TO STA. 3790+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 69