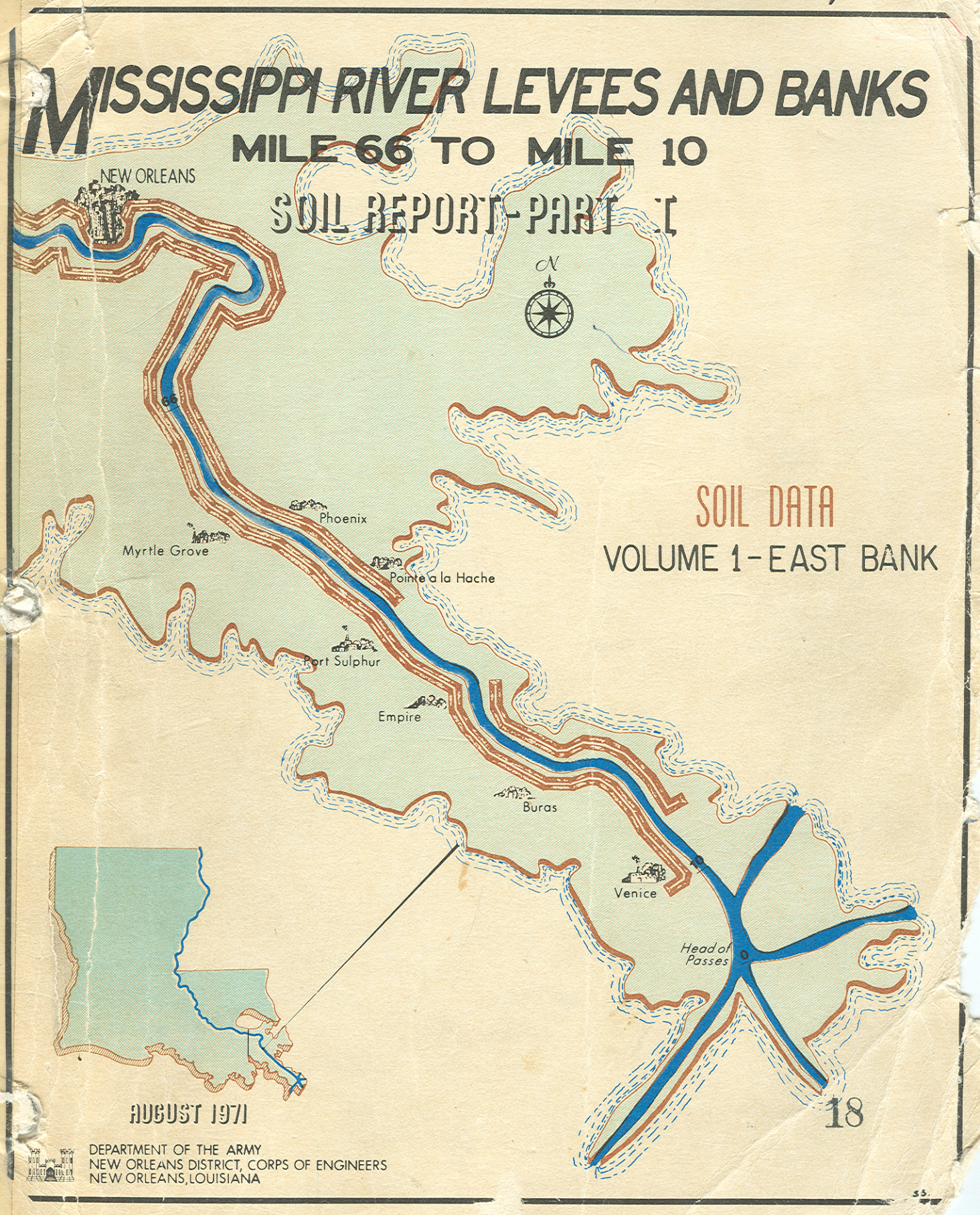
MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT-PART I



SOIL DATA

VOLUME 1 - EAST BANK

AUGUST 1971

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

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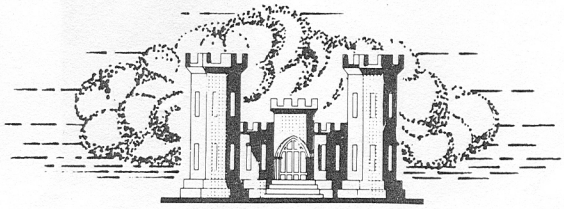

DEPARTMENT OF THE ARMY
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS
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MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT

PART INDEX

PREFACE

This report presents a compilation of available geology and soil data for the east bank of the Mississippi River from Belair, Louisiana, to a point opposite Venice, Louisiana, a distance of 56 river miles. The data presented include soil boring logs; results of laboratory tests; soil profiles; and soil stratification and shear strengths selected for design.

The design soil stratification and shear strengths presented in this report were selected by personnel of the New Orleans District and were reviewed and approved by representatives of the Mississippi River Commission.

The soil borings were made by field personnel of the New Orleans District under the supervision of Messrs. Roy V. Bankston (now retired) and Wayne W. Weiser, Field Investigations Section.

This report was prepared in the Structures Foundation Section by Mr. Rodney P. Picciola under the direction of Messrs. Herman A. Huesmann and Krum J. Cannon, Foundations and Materials Branch, New Orleans District. Geologic data presented were prepared by Mr. E. Burton Kemp III, Geologic Section.

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

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I - INTRODUCTION

1. Through the years, a voluminous amount of geologic and soil data has been collected from borings made on the banks of the Mississippi River below New Orleans, Louisiana, for revetment, levee, and various miscellaneous projects. In recent years, additional borings and soil data were obtained for use in study of hurricane protection projects.

2. This report presents a compilation of all available geologic and soil data for the east (left descending) bank of the Mississippi River between about river miles 10 and 66 AHP[1]. This data was used in design of the Mississippi River and Tributaries Project (MR&T) levees; the New Orleans to Venice, Louisiana, Mississippi River Hurricane Protection Project levees; and bank revetments required within this stretch of the Mississippi River.

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[1] All mileages in this report are those above Head of Passes of the Mississippi River.

II - GEOLOGY

Physiography

3. The study area is located within the Central Gulf Coastal Plain. Specifically, the area is located on the modern subdelta which projects gulfward from the deltaic plain of the Mississippi River. It is a region of extremely low relief. Dominant physiographic features are the natural levees of the Mississippi River and abandoned distributaries, and the marshlands and inland bodies of water that lie between the natural levee ridges. Elevations range from a maximum of about 5 feet along the crests of the natural levees to a minimum of sea level or slightly lower in the marshlands between the natural levee ridges. The numerous inland bodies of water vary in depth from 1 to 6 feet. The Mississippi River channel varies in depth from 65 to 190 feet below sea level.

General Geology

4. Only the geologic history since the end of the Pleistocene Epoch is significant for this project. At that time, with sea level about 450 feet below its present level, the Mississippi River began to aggrade the final entrenchment which it had cut to the west of the project area during the last glacial period. Initial alluvial sedimentation was confined to the central portion of the alluvial valley. This sedimentation was accompanied by downwarping of the Pleistocene Prairie surface and some faulting resulting in a gulfward dip of the Prairie surface averaging about 3 feet per mile and increasing towards the coastline. Only minor amounts of dissection occurred on the Pleistocene as a result of estuaries and small streams. Sedimentation was insignificant in the study area prior to the time sea level reached about 200 feet below its present elevation. Most of the study area stood above sea level and only coarse fluvial materials were deposited in the deep entrenchment to the

west of the study area. The continued rise in sea level resulted in the reworking and redepositing of minor amounts of fluvial sediments in the study area. When sea level reached within tens of feet of its present level, the first marine and fluvial marine sediments of any significance were carried into the study area. Deltaic marine sediments were first introduced into the study area about 3,500 years ago when the Mississippi occupied the Teche course to the west of the study area. The first major advance of sediments occurred approximately 2,800 years ago when the Mississippi River shifted eastward and began to develop the La Loutre-St. Bernard Delta. About 1500 years ago, the Mississippi River shifted westward to the Lafourche course and for a period of several hundred years the study area was subjected to only minor amounts of sedimentation and deltaic deterioration and subsidence became important. When the river again shifted eastward about 1,200 years ago and began to occupy the present Plaquemine course, sedimentation again became the predominant process in the study area. With the construction of levees along the Mississippi River, floodwaters have been eliminated from most of the area and at present only a small amount of sediments is being introduced into the area. The land mass along the edges of the study area is decreasing as a result of subsidence and erosion by wave action.

Subsidence and Erosion

5. Progressive subsidence and downwarping have been occurring in the study area since the end of the Pleistocene Epoch. The surface of the Pleistocene deposits have been downwarped toward the south and west to a maximum of about 500 feet at the edge of the continental shelf, which is 15 to 25 miles south of Venice, Louisiana. At present, the rate of subsidence in the study area varies between 0.5 and 1.0 foot per century.

6. As a result of subsidence and wave erosion, the seaward facing edges of the shoreline and the shorelines of the canals, ponds, lakes, and bays within the marshlands are retreating. Because of prevailing winds and littoral drift, the marshland area east of

the Mississippi River, below Bohemia to the vicinity of Baptiste Collette Bayou, has been subjected to strong wave attacks and erosion, resulting in a more rapid retreat and destruction of the marshlands than elsewhere in this region.

Mineral Resources

7. Extensive oil, gas, and sulphur production are found in the general vicinity of the study area. Exploration and production of these mineral resources will not adversely affect the levee and bank stabilization projects, nor will the projects adversely affect exploration and production of these resources.

III - SOIL DATA

8. Considerable soil and related data were obtained from the east bank of the Mississippi River between river miles 10 and 66 AHP to determine the characteristics of the subsurface materials for use in levee and bank revetment design. Undisturbed soil borings were made at numerous locations and were supplemented with general type borings. Samples from the undisturbed borings were subjected to various laboratory tests to determine the consolidation and strength characteristics of the subsurface soils. The methods used and the tests performed in the field and laboratory for collection of the soil data are discussed in the following paragraphs.

Borings

9. A total of 143 general type and undisturbed soil borings have been made on the east bank of the Mississippi River between miles 10 AHP and 66 AHP for the various levee and revetment projects. The type of project for which the soil data was required determined the depth to which each boring was made. Depths ranged down from the surface of the ground to about elevation -50 to -130 feet mean sea level[2] for borings made for levee projects, and down to about -80 to -210 for revetment projects. The undisturbed borings were made with a 5-inch diameter steel tube piston-type sampler and the general type borings with a 1-7/8 inch I.D. core barrel sampler. In addition to the 143 soil borings mentioned above, 251 auger borings to depths of 10 to 15 feet were made in the Pointe-a-la Hache Relief Outlet for investigation of this area as a possible source of borrow material for use in levee construction. The borrow borings were made by hand with a 4-inch diameter post hole auger. The locations of all the borings presented in this report are shown in plan on plates 2 to 15. In addition, a tabulated list of the locations of the general type and undisturbed

[2] Hereinafter, all elevations stated refer to feet mean sea level.

borings is presented in Table 1. Tabulation of the borrow boring locations is not presented.

Boring Numbers

10. Through the years, various numbering systems were used to identify the borings for the various projects. As a guide in identifying the different borings included within this report, the following should prove helpful:

a. All undisturbed borings are identified by the letter "U." (Example: 1-U or 25-MHUL). Boring numbers without the letter "U" indicate general type borings or auger borings.

b. The letters "MH" indicate borings made for the Mississippi River Hurricane Project. (Example: 19-MHUL).

c. The letter "R" as a prefix to the boring number indicates the boring was made for a revetment project. (Example: R-32.3-LU).

d. As a suffix, the letter "E" or "L" indicates that the boring was made on the east (left descending) bank. (Example: 56-UE, 53-MHUL, or R-65.6-LU). The letter "T" indicates a boring made at the levee toe. (Example: 25-MHULT).

e. The letter "B" indicates a borrow boring. (Example: 4-B or B-7).

Boring Logs

11. The borings made on the east bank consisted of 99 general type, 44 undisturbed, and 251 auger borings. The detailed logs of the general type borings are shown on plates 16 to 28; the undisturbed borings on plates 29 to 67; and the auger type borrow borings on plates 68 to 77.

Laboratory Tests

12. Visual classifications and water content determinations were made on all samples from the borings. Unconfined-compression (UC) shear tests were made on typical clay samples. Unconsolidated-undrained (Q) and consolidated-undrained (R) triaxial compression tests, consolidated-drained (S) direct shear tests, and consolidation tests were performed on selected samples from the undisturbed borings. In addition, Atterberg limit determinations were performed on each sample

subjected to a shear or consolidation test. Results of all laboratory tests performed are shown on the boring logs, plates 16 through 77. Detailed laboratory test data sheets for the (Q), (R), and (S) shear tests are shown in appendix A to this report.

Foundation Conditions

Soil Profiles

13. Generalized profiles of the subsurface soils and geologic deposits along the east bank of the river in the study area are shown on plates 78 and 79. It was impossible to show all available borings used in determining the profile in some areas because of the necessity for confining the horizontal scale; therefore, the profiles are based on the results of selected levee and revetment borings. The boring number of each boring used is shown on the profiles.

14. The subsurface on the east bank, as shown on plates 78 and 79, consists of Recent deposits varying in thickness from 100 feet at the upstream end of the project (mile 66 AHP) to 252 feet at the downstream end of the project (mile 10 AHP). The Recent deposits are underlain by Pleistocene materials. Generally, the Recent consists of a surface layer of soft to stiff natural levee clays with layers and lenses of silt, varying in thickness from a maximum of about 18 feet in the vicinity of station 1400+00 (mile 65.6) and station 2100+00 (mile 52.5), to a minimum of 4 to 8 feet between station 240+00 (mile 20.0) and station 880+00 (mile 10.1). In the vicinity of stations 1410+00 (mile 65.6); 190+00 through 235+00 (mile 40.5-39.8); 435+00 through 125+00 (mile 34.7-33.6); and 150+00 through 240+00 (mile 33.2 -31.6), the natural levee deposits are underlain by a discontinuous layer of very soft marsh clays with peat and organic matter. The marsh deposits vary in thickness from 2 feet between stations 190+00 and 235+50 (mile 40.5-39.8) to 6 feet in the vicinity of stations 200+00 (mile 32.3) and 240+00 (mile 31.6). Between stations 1380+00 (mile 66.2) and 1530+00 (mile 63.2); 1590+00 (mile 62.1) and 1767+00

(mile 58.6); 1790+00 (mile 58.3) and 1900+00 (mile 56.1); 2086+00 (mile 52.6) and 2280+00 (mile 49.3); 2332+00 (mile 48.4) and 2455+00 (mile 46.0); 60+00 (mile 34.6) and 85+00 (mile 34.2); 165+00 (mile 33.0) and 252+00 (mile 31.4); 25+00 (mile 24.4) and 40+00 (mile 24.2); 240+00 (mile 20.4) and 590+00 (mile 14.1); and 740+00 (mile 11.5) and 879+00 (mile 10.1), the natural levee and marsh deposits are underlain by soft, alternating layers of intradelta clays and silts with layers of silty sand and sand. The thickness of the intradelta deposits varies from a minimum of 10 feet in the vicinity of station 2100+00 (mile 52.5) to a maximum of 87 feet in the general vicinity of station 850+00 (mile 10.8). The remaining reaches of natural levee and marsh deposits are underlain by point bar silts, silty sands, and sands with layers of clay, varying in thickness from 90 feet between stations 1530+00 (mile 63.2) and 590+00 (mile 62.1), where the deposits extend down to elevation -95, to 187 feet between stations 40+00 (mile 24.2) and 240+00 (mile 20.4), where these deposits extend down to elevation -197. Exceptions to this occur in the general vicinity of station 1767+00 (mile 58.6) to 1790+00 (mile 58.3), 226+00 (mile 40.0) to 232+00 (mile 39.7), and 85+00 (mile 34.2) to 165+00 (mile 33.0), where abandoned distributary silty sands and sands with clay layers are found with thicknesses of 55 feet (to elev. -65.0), 72 feet (to elev. -79.5), and 119 feet (to elev. -121.0), respectively, between stations 55+00 (mile 43.2) and 226+00 (mile 40.0) where a 38 to 65 foot zone of very soft to soft interdistributary clay with lenses and layers of silt and silty sand directly underlies natural levee and marsh deposits; and between stations 590+00 (mile 14.1) and 740+00 (mile 11.5) where accretionary silts, silty sands, and sands 60 feet thick underlie the natural levee deposits to an elev. of -64.5. The accretionary materials are underlain by a 12 to 20 foot wedge of intradelta deposits. The intradelta, interdistributary, point bar, and abandoned distributary deposits are underlain along the entire levee alignment by medium to stiff prodelta clays, except between stations 1530+00 (mile 63.2) and 1590+00 (mile 62.1), and stations 1900+00 (mile 56.1) and 2086+00 (mile 52.6) where

point bar deposits lie directly over Pleistocene clays and nearshore sands. The thickness of the prodelta clays vary from a minimum of 55 feet (to elev. -115.0) between stations 2100+00 (mile 52.5) and 2280+00 (mile 49.3) to a maximum of 135-140 feet (to elevations -205.0 and -225.0) between stations 240+00 (mile 20.4) and 879+00 (mile 10.1). Between stations 1590+00 (mile 62.1) and 2544+90 (mile 44.2), and stations 200+00 (mile 40.5) and 879+00 (mile 10.1), nearshore sands with shell and shell fragments underlie the prodelta at elevations varying between -100 in the vicinity of station 1590+00 (mile 62.1) to -225 at station 879+00 (mile 10.1). Elsewhere, the prodelta lies directly over the stiff to very stiff Pleistocene clays. The nearshore deposits between stations 1590+00 (mile 62.1) and 2544+90 (mile 44.2) vary in thickness from 2 to 25 feet, and between stations 200+00 (mile 40.5) and 879+00 (mile 10.1) thicken as a wedge in a downstream direction from a thin veneer to a maximum of 27 feet. Underlying the entire sequence of Recent deposits, at elevations varying from -93 at station 1380+00 (mile 66.2) to -252 at station 879+00 (mile 10.1), are stiff to very stiff Pleistocene clays.

Soil Stratification

15. To facilitate levee and bank revetment designs, the bank of the river was divided into soil reaches. The extent of each reach was determined from the soil profiles and was based on the stratification and types of subsurface soils, and the concept that each reach was generally uniform in composition and stratification. The reaches selected are shown on the soil profiles, plates 78 and 79.

Shear Strength Data

16. The results of all laboratory shear tests performed are shown on the boring logs. The shear strengths selected for use in levee and bank revetment design are shown on the undisturbed boring logs, plates 29 to 67. Also, the design shear strengths, together with the soil stratification selected for each soil reach, are shown tabulated in

Table 2. The design shear strengths and soil stratification for groups of reaches were reviewed and approved by representatives of the Mississippi River Commission, progressively as developed.

Clay Strengths

17. The shear strengths for clay soils selected for use in levee and bank revetment designs were based on the results of the unconsolidated-undrained (Q) triaxial compression shear tests. The preconsolidation pressures shown on the undisturbed boring logs agree closely with the overburden pressure, thus indicating that the clay soils are normally consolidated. It was determined that the undrained (Q) shear strengths of the normally consolidated clays above elevation -10 to -40 are essentially constant and range between 0.20 and 0.40 ton per sq ft beneath existing levee fill, and between 0.05 and 0.30 ton per sq ft beyond the influence of levee fill. Below these elevations, the shear strength increases with depth according to the relation defined by the ratio $c/\bar{p}=0.25$, where c is the undrained shear strength in tons per sq ft and $\bar{p}$ is the effective overburden pressure in tons per sq ft. Based on the above $c/\bar{p}$ ratio and the results of the (Q) shear tests, it was determined that with few exceptions, the undrained shear strength of the Recent clay soils below elevation -10 to -40 increases at a rate of 0.005 ton per sq ft per ft of depth.

Silt Strength

18. A shear strength value of $\phi=15°$, c=0.10 ton per sq ft, was selected for silt (ML). This value is based on the results of the unconsolidated-undrained (R) shear tests. In determining the shear strength, the strength envelopes used were based on the deviator stresses at maximum positive pore pressures.

Sand Strength

19. The shear strength selected for silty sand (SM) and sand (SP) was based on the results of the consolidated-drained (S) shear tests. A value of $\phi=30°$, c=0, was selected for levee and bank revetment designs.

NOTE

The back of all pages in the paper copy of the report from page 10 through 102 were intentionally left blank, but were included in the page numbering. There are no even numbered pages in the paper copy of the report after page 10.

TABLE 1

SOIL BORING LOCATIONS

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
EAST BANK

SOIL BORING LOCATIONS

SOIL BORING NO.	LEVEE B/L STATION	LEVEE B/L LOCATION	SOIL BORING NO.	LEVEE B/L STATION	LEVEE B/L LOCATION
R-65.6LU	1409+00	170'R.S.C/L	R-52.0	2130+50	28' R.S.C/L
R-62.6LU	1564+00	140'R.S.C/L	15-MHUL	2140+00	C/L Levee
R-62.0L	1600+00	110'R.S.C/L	15-MHULT	2140+00	41'L.S.C/L
26-MHL	1607+00	56'L.S.C/L	R-51.7 LU	2148+50	60'R.S.C/L
25-MHUL	1632+00	C/L Levee	14-MHL	2174+00	C/L Levee
25-MHULT	1632+00	L.S. Toe	13-MHL	2199+00	33'R.S.C/L
MS-28	1666+50	600'L.S.C/L	R-50.5L	2209+50	160'R.S.C/L
R-60.7-L	1670+00	210'R.S.C/L	12-MHL	2224+00	48'L.S.C/L
R-60.3LU	1695+00	152'R.S.C/L	R-49.7L	2251+00	285'R.S.C/L
30-MHL	1724+00	C/L	11-MHL	2259+00	38'R.S. C/L
29-MHL	1751+00	60'R.S.C/L	10-MHUL	2284+00	C/L Levee
28-MHL	1775+00	C/L	10-MHULT	2284+00	44'L.S.C/L
R-58.0LU	1800+00	100'R.S.C/L	3-W	2293+85	95'R.S.C/L
27-MHL	1826+00	50'R.S.C/L	4-W	2295+83	108'L.S.C/L
24-MHL	1857+00	C/L Levee	1-U	2296+25	122'R.S.C/L
23-MHL	1882+00	48'R.S. C/L	2-W	2298+50	125'R.S.C/L
56-UE	1907+00	C/L Levee	9-MHL	2327+00	40'L.S. C/L
56-UET	1907+50	88'L.S.C/L	8-MHL	2352+00	C/L Levee
22-MHL	1940+00	37'L.S.C/L	7-MHL	2377+00	52'R.S. C/L
21-MHL	1965+00	C/L Levee	47-UE	2402+40	C/L Levee
20-MHL	1990+00	45'L.S.C/L	47-UET	2402+40	57'L.S.
19-MHUL	2015+00	C/L Levee	R-46.95LU	2402+40	185'R.S.C/L
19-MHULT	2015+00	70'R.S.C/L	6-MHL	2418+00	C/L Levee
18-MHL	2053+00	43'L.S.C/L	5-MHL	2443+00	63'L.S.C/L
17-MHL	2078+00	41'R.S.C/L	4-MHL	2468+00	36'R.S.C/L
R-52.6L	2087+00	110'R.S.C/L	3-MHL	2493+00	C/L Levee
16-MHL	2103+00	C/L Levee	2-MHULT	2518+00	40'R.S.C/L

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
EAST BANK

SOIL BORING LOCATIONS

SOIL BORING NO.	LEVEE B/L STATION	LEVEE B/L LOCATION	SOIL BORING NO.	LEVEE B/L STATION	LEVEE B/L LOCATION
1-MHL	2543+00	C/L Levee	R-32.3LU	204+80	90'R.S.
			R-32.0L	223+70	25'R.S.
R-44.2 L	0+00	125' R.S.	R-31.6L	241+30	50'R.S.
R-43.7 L	18+00	225'R.S.	40-MHL	258+00	85'R.S.
R-43.2 L	60+00	370'R.S.	41-MHL	285+00	220'R.S.
R-42.5 L	99+00	345'R.S.	42-MHL	310+00	465'R.S.
R-41.8LU	137+00	300'R.S.	43-MHUL	330+00	525'R.S.
R-41.2L	170+00	253'R.S.	44-MHL	355+00	65'R.S.
R-40.5 L	195+00	100'R.S.	45-MHL	380+00	115'R.S.
R-39.8 L	235+00	360'R.S.	46-MHL	410+00	230'R.S.
5-BU	263+50	178'L.S.B/L	47-MHUL	430+00	60' R.S.
31-MHL	270+00	on B/L	48-MHL	455+00	150'R.S.
32-MHUL	297+00	80'L.S.	49-MHL	479+76	89'R.S.
33-MHL	324+00	20'L.S.	R-26.2 L	500+00	300'R.S.
34-MHL	351+00	47'L.S.	50-MHUL	533+75	365'L.S.
35-MHL	378+00	50'R.S.	R-25.6L	544+66	780'R.S.
36-MHUL	405+00	110'L.S.	51-MHL	558+12	187'R.S.
37-MHL	435+70	32'L.S.	R-24.8L	6+73	234'R.S.
R-35.1L	27+80	50'R.S.	R-24.0LU	53+00	125'R.S.
R-34.7L	48+80	100'R.S.	R-23.4L	82+50	190'R.S.
R-34.4LU	70+10	240'R.S.	R-22.8 L	118+50	178'R.S.
38-MHUL	75+00	152'L.S.	52-MHUL	140+00	30'L.S. C/L
R-34.0L	92+35	200'R.S.	R-21.9 L	155+50	186'R.S.
R-33.6L	118+00	90'R.S.	R-21.2L	181+50	400'R.S.
39-MHUL	135+00	357'L.S.	R-20.6L	210+00	67'R.S.
R-33.2L	148+20	150'R.S.	R-20.0 LU	255+50	20'R.S.
R-32.8L	179+00	40'L.S.	R-19.5 L	294+60	210'R.S.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
EAST BANK

SOIL BORING LOCATIONS

SOIL BORING NO.	LEVEE B/L STATION	LEVEE B/L LOCATION
R-18.9L	329+50	125'R.S.
R-18.4L	366+85	130'R.S.
R-17.7L	391+50	215'R.S.
53-MHUL	411+00	50'R.S.
R-17.0 L	430+50	265'R.S.
R-16.4L	468+00	110'R.S.
R-15.9 LU	487+00	175'R.S.
R-15.3L	531+50	375'R.S.
54-MHUL	545+50	50'L.S.
R-14.7L	562+00	394'R.S.
R-14.0L	602+00	52'R.S
R-13.4 L	633+50	250'R.S.
R-12.8L	666+00	13'L.S.
R-12.2L	693+00	375'R.S.
R-11.6LU	734+00	340'R.S.
55-MHL	750+60	21'L.S.
56-MHL	800+00	onB/L
57-MHL	814+00	on B/L
58-MHUL	843+00	200'R.S.
59-MHL	872+00	on B/L

SOIL BORING NO.	LEVEE B/L STATION	LEVEE B/L LOCATION
Bohemia Freshwater Structure (La. DPW)		
60-MHL	34+93	on B/L
61-MHUL	36+84	on B/L
62-MHL	38+93	on B/L
Bayou Lamoque Structure		
63-MHL	160+00	330' L.S.
64-MHUL	160+36	350' L.S.
65-MHL	163+00	330' L.S.
Ostrica Lock		
66-MHUL	553+00	360' L.S.
67-MHL	553+00	600' L.S.
68-MHUL	554+00	475' L.S.
69-MHL	555+35	380' L.S.
70-MHL	555+35	600' L.S.
Freshwater Culvert, Vicinity Mile 18.2 A.H.P.		
71-MHL	368+10	225' L.S.
72-MHL	371+00	140'L.S.
73-MHUL	371+00	275' L.S.
74-MHL	371+20	420'L.S.
75-MHL	372+50	250'L.S.

TABLE 2

DESIGN SHEAR STRENGTHS

AND

SOIL STRATIFICATION

(SOIL REACHES AE-1 THROUGH ZE)

EAST LEVEE REACH NO. AE-1 LOCATION STA 1380+00 to 1525+00

UNDIST. BORING NO. 25-MHUL UNDIST. BORING NO. 65.6-LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	*ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	*ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CL-CH	3.0	110	600	500	0						
CH	0.0	110	500	-	0	CH	0.0	110	500	-	0
CH	-6.0	48	500	-	0	CH	-6.0	48	500	-	0
CHO	-13.0	38	500	500	0	CHO	-13.0	30	500	500	0
ML	-19.0	55	200	600	15	ML	-19.0	55	200	600	15
CHO	-25.0	40	600	600	0	CHO	-25.0	40	600	600	0
ML	-30.0	55	200	600	15	ML	-30.0	55	200	600	15
CH	-35.0	48	600	600	0	CH	-35.0	48	600	600	0
CH	-50.0	48	675	750	0	CH	-50.0	48	600	600	0
CH	-94.0	43	970	1190	0	CH	-94.0	43	820	1040	0
PLEIST	-	60	1200	-	0	PLEIST.	-	60	1200	-	0

*Elevations denote bottom of each soil strata.

EAST LEVEE REACH NO. AE-2 LOCATION STA. 1525+00 to 1590+00

UNDIST. BORING NO. 25-MHUL UNDIST. BORING NO. 25-MHULT

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CL-CH	5.0	110	600	500	0						
CL	0.0	110	500	-	0	CL	0.0	110	400	-	0
CL	-2.0	48	500	500	0	CL	-2.0	48	400	400	0
ML	-8.0	55	200	600	15	ML	-8.0	55	200	500	15
CL	-12.0	43	600	600	0	CL	-12.0	43	500	500	0
ML	-20.0	55	200	600	15	ML	-20.0	55	200	500	15
CH	-23.0	48	600	600	0	CH	-23.0	48	500	500	0
ML	-27.0	55	200	600	15	ML	-27.0	55	200	520	15
CH	-35.0	48	600	600	0	CH	-35.0	43	560	600	0
CH	-40.0	48	625	650	0	CH	-40.0	48	625	650	0
ML	-57.0	55	200	820	15	ML	-57.0	55	200	820	15
CH	-65.0	43	860	900	0	CH	-65.0	43	860	900	0
SP-F	-97.0	60	0	1220	30	SP-F	-97.0	60	0	1220	30
PLEIST.	-	60	1220	-	0	PLEIST.	-	60	1220	-	0

EAST LEVEE REACH NO. AE-3 LOCATION STA. 1590+00 to 1685+00

UNDIST. BORING NO. 25-MHUL UNDIST. BORING NO. 25-MHULT

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	$\phi°$			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	$\phi°$
CL-CH	5.0	110	600	500	0						
CH	0.0	110	500	-	0	CH	0.0	110	400	-	0
CH	-5.0	48	500	-	0	CH	-5.0	48	400	-	0
CHO	-10.0	38	500	500	0	CHO	-10.0	28	400	400	0
CH	-25.0	48	600	600	0	CH	-25.0	43	500	500	0
ML	-33.0	55	200	-	15	ML	-33.0	55	200	-	15
SP-F	-38.0	60	0	630	30	SP-F	-38.0	60	0	630	30
CH	-60.0	48	740	850	0	CH	-60.0	48	740	850	0
CH	-101.0	43	1055	1260	0	CH	-101.0	43	1055	1260	0
SM	-110.0	60	0	1350	30	SM	-110.0	60	0	1350	30
PLEIST.	-	60	1350	-	0	PLEIST	-	60	1350	-	0

EAST LEVEE REACH NO. AE-4 LOCATION STA. 1685+00 to 1815+00

UNDIST. BORING NO. 25-MHUL UNDIST. BORING NO. 25-MHULT

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH-ML	5.0	110	600	500	0						
CH-CL	0.0	110	500	-	0	CH-CL	0.0	110	400	-	0
CH-CL	-10.0	48	500	500	0	CH-CL	-10.0	48	400	400	0
ML	-20.0	55	200	600	15	ML	-20.0	55	200	500	15
CH	-25.0	48	600	600	0	CH	-25.0	43	500	500	0
SP-F	-30.0	60	0	600	30	SP-F	-30.0	60	0	550	30
CH	-35.0	48	600	600	0	CH	-35.0	43	575	600	0
SM-SP	-45.0	60	0	700	30	SM-SP	-45.0	60	0	700	30
CH	-60.0	48	775	850	0	CH	-60.0	48	775	850	0
CH	-107.0	43	1085	1320	0	CH	-107.0	43	1085	1320	0
SM	-112.0	60	0	1370	30	SM	-112.0	60	0	1370	30
PLEIST.	-	60	1370	-	0	PLEIST.	-	60	1370	-	0

EAST LEVEE REACH NO. AE-5 LOCATION STA. 1815+00 to 1893+00

UNDIST. BORING NO. 25-MHUL UNDIST. BORING NO. 25-MHULT

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH-ML	4.0	110	600	500	0						
CH-CL	0.0	110	500	-	0	CH-CL	0.0	110	400	-	0
CH-CL	-7.0	48	500	400	0	CH-CL	-7.0	48	400	-	0
CHO	-10.0	38	400	400	0	CHO	-10.0	28	400	400	0
ML	-16.0	55	200	600	15	ML	-16.0	55	200	500	15
CH	-21.0	48	600	600	0	CH	-21.0	43	500	500	0
SP-F	-31.0	60	0	600	30	SP-F	-31.0	60	0	560	30
CH	-35.0	48	600	600	0	CH	-35.0	43	580	600	0
CH	-60.0	48	725	850	0	CH	-60.0	48	725	850	0
CH	-110.0	43	1,100	1,350	0	CH	-110.0	43	1,100	1,350	0
SM	-114.0	60	0	1390	30	SM	-114.0	60	0	1390	30
PLEIST.	-	60	1,390	-	0	PLEIST	-	60	1,390	-	0

EAST LEVEE REACH NO. BE LOCATION Sta. 1893+00 to 1978+00

UNDIST. BORING NO. 56-UE UNDIST. BORING NO. 56-UET; 88' L.S.

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ°
CL	3.0	112	800	400	0						
CH	0.0	112	400	-	0	CH	0.0	112	350	-	0
CH	-5.0	50	400	400	0	CH	-5.0	50	350	350	0
ML	-13.0	55	200	400	15	ML	-13.0	55	200	400	15
CH	-17.0	50	400	400	0	CH	-17.0	50	400	400	0
ML	-46.0	55	200	-	15	ML	-46.0	55	200	-	15
SM	-60.0	60	0	-	30	SM	-60.0	60	0	-	30
ML	-70.0	55	200	-	15	ML	-70.0	55	200	-	15
SM-SP	-78.0	60	0	780	30	SM-SP	-78.0	60	0	780	30
CH	-112.0	50	950	1120	0	CH	-112.0	50	950	1120	0
SP-F	-116.0	60	0	1500	30	SP-F	-116.0	60	0	1500	30
PLEIST.	-	60	1500	-	0	PLEIST.	-	60	1500	-	0

EAST LEVEE REACH NO. CE LOCATION STA. 1978+00 to 2087+00

UNDIST. BORING NO. 19-MHUL UNDIST. BORING NO. 19-MHULT

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH-CL	4.0	110	800	600	0						
CH-CL	0.0	110	600	-	0	CH-CL	0.0	110	500	-	0
CH-CL	-15.0	48	600	500	0	CH-CL	-15.0	48	500	300	0
CH	-30.0	43	500	500	0	CH	-30.0	43	300	300	0
SP-F	-118.0	60	0	1500	30	SP-F	-118.0	60	0	1500	30
PLEIST	-	60	1500	-	0	PLEIST.	-	60	1500	-	0

EAST LEVEE REACH NO. DE LOCATION STA. 2087+00 TO 2274+00

UNDIST. BORING NO. 15-MHUL UNDIST. BORING NO. 15-MHULT; 74' L.S.

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH	0.0	110	800	-	0	CH	0.0	108	400	-	0
CH	-6.0	48	800	600	0	CH	-6.0	46	400	-	0
CHO	-14.0	43	600	600	0	CHO	-14.0	38	400	400	0
ML	-20.0	55	200	600	15	ML	-20.0	55	200	400	15
CH	-40.0	48	600	-	0	CH	-40.0	43	400	400	0
CH	-50.0	48	600	600	0	CH	-50.0	48	450	500	0
CH	-130.0	48	920	1240	0	CH	-130.0	48	820	1140	0
Pleist.	-	60	1500	-	0	Pleist.	-	60	1500	-	0

EAST LEVEE REACH NO. EE LOCATION STA. 2274+00 TO 2312+00

UNDIST. BORING NO. 10-MHUL UNDIST. BORING NO. 10-MHULT; 44' L.S.

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ °			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ °
CH	0.0	114	800	-	0	CH	0.0	110	600	-	0
CH	-2.0	52	800	500	0	CH	-2.0	48	600	400	0
CL	-10.0	48	500	500	0	CL	-10.0	48	400	400	0
CL	-16.0	43	530	560	0	CL	-16.0	43	430	460	0
ML	-19.0	55	200	625	15	ML	-19.0	55	200	525	15
CH	-26.0	43	625	660	0	CH	-26.0	43	525	560	0
SM	-33.0	60	0	770	30	SM	-33.0	60	0	670	30
CH	-41.0	48	770	810	0	CH	-41.0	43	670	710	0
SM	-44.0	60	0	840	30	SM	-44.0	60	0	740	30
CH	-49.0	48	865	890	0	CH	-49.0	43	765	790	0
SM-SP	-104.0	60	0	1440	30	SM-SP	-104.0	60	0	1340	30
CH	-119.0	48	1515	1590	0	CH	-119.0	43	1415	1490	0
SP-F	-142.0	60	0	1720	30	SP-F	-142.0	60	0	1720	30
Pleist.	-	60	1720	-	0	Pleist.	-	60	1720	-	0

EAST LEVEE REACH NO. FE LOCATION STA 2312+00 TO 2454+00

UNDIST. BORING NO. 47-UE UNDIST. BORING NO. 47 UET: 57' L.S.

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CL & CH	4.0	110	600	-	0						
CH	0.0	102	600	-	0	CH	0.0	102	400	-	0
CH	-5.0	40	600	400	0	CH	-5.0	40	400	400	0
CHO	-15.0	33	400	400	0	CHO	-15.0	28	400	400	0
ML	-20.0	55	200	600	15	ML	-20.0	55	200	500	15
CH	-35.0	48	600	600	0	CH	-35.0	48	500	500	0
ML	-40.0	55	200	600	15	ML	-40.0	55	200	500	15
CH	-50.0	48	600	600	0	CH	-50.0	48	550	600	0
CH	-120.0	48	950	1300	0	CH	-120.0	48	950	1300	0
SP-F	-138.0	60	0	1480	30	SP-F	-138.0	60	0	1480	30
Pleist	-	60	1480	-	0	Pleist	-	60	1480	-	0

LMN Form 983 (O/T)
Oct 69

EAST LEVEE REACH NO. GE-1 LOCATION STA. 2454+00 TO 2500+00

UNDIST. BORING NO. 2-MHULT: 40' L.S. UNDIST. BORING NO. 2-MHULT; 40' L.S.

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH	0.0	112	750	-	0	CH	0.0	112	750	-	0
CH	-4.0	50	750	750	0	CH	-4.0	50	750	750	0
ML	-9.0	55	200	-	15	ML	-9.0	55	200	-	15
SM-SP	-16.0	60	0	400	30	SM-SP	-16.0	60	0	400	30
CH	-22.0	50	400	400	0	CH	-22.0	50	400	400	0
SP-SM	-30.0	60	0	400	30	SM-SP	-30.0	60	0	400	30
CH	-36.0	48	400	400	0	CH	-36.0	48	400	400	0
SP-SM	-60.0	60	0	-	30	SM-SP	-60.0	60	0	-	30
ML	-65.0	55	200	650	15	ML	-65.0	55	200	650	15
CH-CL	-84.0	48	745	840	0	CH	-84.0	48	45	40	0
SP-F	-91.0	60	0	910	30	SP-F	-91.0	60	0	910	30
CH	-120.0	50	975	1140	0	CH	-120.0	0	975	1140	0
SP-F	-134.0	60	0	1340	30	SP-F	-134.0	60	0	1340	30
Pleist	-	60	1340	-	0	Pleist	-	60	1340	-	0

LMM Form 983 (O/T)
Oct 69

EAST LEVEE REACH NO. GE-2 LOCATION STA. 2500+00 TO 2544+90= 0+00 to 10+00

UNDIST. BORING NO. 2-MHULT; 40' L.S. UNDIST. BORING NO. 2-MHULT; 40' L.S.

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ			γ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ
CH	0.0	112	750	-	0	CH	0.0	112	750	-	0
CH	-5.0	50	750	550	0	CH	-5.0	50	750	550	0
CH	-10.0	50	550	550	0	CH	-10.0	50	550	550	0
ML	-15.0	55	200	400	15	ML	-15.0	55	200	400	15
CL	-21.0	50	400	400	0	CL	-21.0	50	400	400	0
ML	-35.0	55	200	-	15	ML	-35.0	55	200	-	15
SM	-48.0	60	0	-	30	SM	-48.0	60	0	-	30
ML	-65.0	55	200	650	15	ML	-65.0	55	200	650	15
CH	-84.0	48	745	840	0	CH	-84.0	48	745	840	0
SP-F	-91.0	60	0	910	30	SP-F	-91.0	60	0	910	30
CH	-124.0	50	1075	1240	0	CH	-124.0	50	1075		0
SP-F	-136.0	60	0	1360	30	SP-F	-136.0	60	0	1360	30
Pleist.	-	60	1360	-	0	Pleist.	-	60	1360	-	0

EAST LEVEE REACH NO. HE-1 LOCATION STA. 10+00 to 120+00

UNDIST. BORING NO. No existing levee UNDIST. BORING NO. R-41.8LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	2.0	117	200	700	15
						CH	0.0	110	700	-	0
						CH	-3.0	48	700	400	0
						CH	-15.0	38	400	400	0
						SM	-19.0	60	0	440	30
						CH	-45.0	43	570	700	0
						ML	-49.0	55	200	740	15
						CH	-52.0	48	755	770	0
						SM	-57.0	60	0	820	30
						CH	-90.0	48	985	1150	0
						CH	-110.0	53	1250	1350	0
						CH	-130.0	48	1450	1550	0
						PLEIST.	-	60	1550	-	0

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EAST LEVEE REACH NO. HE-2 LOCATION STA. 120+00 to 155+00

UNDIST. BORING NO. No existing levee UNDIST. BORING NO. R-41.8LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	0.0	117	200	700	15
						CL	-3.0	48	700	400	0
						CH	-15.0	38	400	400	0
						CH	-23.0	43	440	480	0
						SP-F	-43.0	60	0	680	30
						CH	-50.0	48	715	750	0
						ML	-56.0	55	200	-	15
						SM	-66.0	60	0	910	30
						CH	-75.0	48	955	1000	0
						ML	-86.0	55	200	1110	15
						CH	-90.0	48	1130	1150	0
						ML	-104.0	55	200	1290	15
						CH	-133.0	48	1435	1580	0
						PLEIST.	-	60	1580	-	0

EAST LEVEE REACH NO. HE-3 LOCATION STA. 155+00 to 217+00

UNDIST. BORING NO. No existing levee UNDIST. BORING NO. R-41.8 LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	2.0	117	200	700	15
						CL	0.0	110	700	-	0
						CL	-3.0	48	700	400	0
						CH	-15.0	38	400	400	0
						CH	-37.0	43	510	620	0
						SP-F	-43.0	60	0	680	30
						CH	-90.0	48	915	1150	0
						CH	-110.0	53	1250	1350	0
						CH	-137.0	48	1485	1620	0
						PLEIST.	-	60	1620	-	0

EAST LEVEE REACH NO. HE-4 LOCATION STA. 217+00 to 255+00

UNDIST. BORING NO. No existing levee UNDIST. BORING NO. R-41.8LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						CH	0.0	110	700	700	0
						ML	-3.0	55	200	400	15
						CH	-15.0	38	400	400	0
						CH	-28.0	43	465	530	0
						SP-F	-80.0	60	0	1050	30
						CH	-90.0	48	1100	1150	0
						CH	-110.0	53	1250	1350	0
						CH	-140.0	48	1500	1650	0
						PLEIST.	-	60	1650	-	0

EAST LEVEE REACH NO. IE LOCATION STA. 255+00 TO 360+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 32-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	2.0	117	200	300	15
						CH&CL	0.0	110	300	-	0
						CH&CL	-5.0	48	300	300	0
						ML	-10.0	55	200	350	15
						CL	-20.0	48	350	400	0
						ML	-24.0	55	200	440	15
						CH	-35.0	48	495	550	0
						SP-F	-58.0	60	0	780	30
						CH	-64.0	48	810	840	0
						SP-F	-72.0	60	0	920	30
						CH	-88.0	48	1005	1080	0
						SP-F	-115.0	60	0	1350	30
						CH	-137.0	48	1460	1570	0
						SP-F	-145.0	60	0	1650	30
						PLEIST	-	60	1650	-	0

STA. 360+00 to 444+70 = 0+00

EAST LEVEE REACH NO. JE LOCATION STA. 0+00 to 10+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 36-MHUT

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ °			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ °
						CH	0.0	110	350	350	0
						CL&CH	-19.0	48	445	540	0
						ML	-28.0	55	200	630	15
						CL	-33.0	48	655	680	0
						ML	-69.0	55	200	-	15
						SM	-115.0	60	0	1500	30
						CH	-142.0	48	1635	1770	0
						SP-F	-150.0	60	0	1850	30
						PLEIST	-	60	1850	-	0

EAST LEVEE REACH NO. KE LOCATION STA. 10+00 to 73+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. R-34.4 LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	0.0	117	200	500	15
						CL	-6.0	38	500	250	0
						CHO	-12.0	28	250	250	0
						CH	-34.0	38	400	400	0
						ML	-66.0	55	200	660	15
						CH	-125.0	58	955	1250	0
						CH	-145.0	48	1350	1450	0
						SP-F	-155.0	60	0	1550	30
						PLEIST	-	60	1550	-	0

EAST LEVEE REACH NO. LE LOCATION STA. 73+00 to 130+00

UNDIST. BORING NO. No existing levee UNDIST. BORING NO. 38-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						CH	2.0	100	500	500	0
						ML	0.0	117	200	-	15
						ML	-2.0	55	200	-	15
						CH	-5.0	38	500	250	0
						CHO	-10.0	28	250	250	0
						CH	-20.0	38	400	400	0
						SM	-24.0	60	0	400	30
						CH	-30.0	38	400	400	0
						SP-F	-57.0	60	0	-	30
						ML	-91.0	55	200	910	15
						CH	-145.0	48	1180	1450	0
						SP-F	-160.0	60	0	1600	30
						PLEIST.	-	60	1600	-	0

EAST LEVEE REACH NO. ME LOCATION STA. 130+00 to 165+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 39-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	0.0	117	200	400	15
						CH	-4.0	38	400	250	0
						CHO	-10.0	33	250	250	0
						ML	-16.0	55	200	350	15
						CH	-30.0	38	350	350	0
						ML	-59.0	55	200	590	15
						CH	-64.0	43	615	640	0
						SP-F	-90.0	60	0	900	30
						CH	-162.0	53	1260	1620	0
						PLEIST	-	60	1620	-	0

EAST LEVEE REACH NO. NE LOCATION STA. 165+00 to 255+00

UNDIST. BORING NO. No Existing Levee UNDIST. BORING NO. R-32.3 LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						CH	0.0	115	600	600	0
						CH	-4.0	53	600	250	0
						CHO	-10.0	23	250	250	0
						CH	-13.0	38	350	350	0
						ML	-20.0	55	200	350	15
						CH	-30.0	38	350	350	0
						CH	-46.0	43	500	500	0
						ML	-56.0	55	200	560	15
						CH	-80.0	53	680	800	0
						CH	-105.0	58	925	1050	0
						CH	-157.0	53	1310	1570	0
						PLEIST.	-	60	1570	-	0

EAST LEVEE REACH NO. OE-1 LOCATION STA. 255+00 to 320+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 43-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	$\phi°$			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	$\phi°$
						CH	0.0	115	400	250	0
						CL&CH	-6.0	38	250	250	0
						ML	-20.0	55	200	-	15
						SP-F	-120.0	60	0	1200	30
						CH	-160.0	48	1400	1600	0
						PLEIST	-	60	1600	-	0

EAST LEVEE REACH NO. OE-2 LOCATION STA. 320+00 TO 390+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 43-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ°
						CH	0.0	115	400	250	0
						CH&CL	-10.0	38	250	250	0
						ML	-15.0	55	200	300	15
						CH&CL	-19.0	38	300	300	0
						ML	-22.0	55	200	300	15
						CH	-31.0	38	300	300	0
						SP-F	-128.0	60	0	1280	30
						CH	-166.0	48	1470	1660	0
						SP-F	-170.0	60	0	1700	30
						PLEIST	-	60	1700	-	0

EAST LEVEE REACH NO. PE-1 LOCATION STA. 390+00 to 460+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 47-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	2.0	117	200	250	15
						CL&CH	0.0	100	250	-	0
						CL&CH	-12.0	38	250	250	0
						ML	-17.0	55	200	250	15
						CH	-20.0	38	250	250	0
						SM	-25.0	60	0	300	30
						CH	-30.0	38	325	350	0
						SP-F	-78.0	60	0	830	30
						CH	-164.0	45	1260	1690	0
						SP-F	-174.0	60	0	1790	30
						PLEIST	-	60	1790	-	0

EAST LEVEE REACH NO. PE-2 LOCATION STA. 460+00 to 515+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 47-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ °			γ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ °
						CH	0.0	115	400	250	0
						CH&CL	-12.0	38	250	250	0
						ML	-22.0	55	200	250	15
						CH	-33.0	38	250	250	0
						SP-F	-37.0	60	0	420	30
						CH&CL	-42.0	45	495	470	0
						SP-F	-47.0	60	0	520	30
						CH	-51.0	45	540	560	0
						SP-F	-73.0	60	0	780	30
						CH	-78.0	45	805	830	0
						SP-F	-98.0	60	0	1030	30
						CH	-180.0	45	1440	1850	0
						SP-F	-195.0	60	0	2000	30
						PLEIST	-	60	2000	-	0
								60			

EAST LEVEE REACH NO. QE-1 LOCATION STA. 515+00 to 555+00

UNDIST. BORING NO. No Existing Levee UNDIST. BORING NO. 50-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	0.0	117	200	400	15
						CH	-8.0	43	400	400	0
						CL	-24.0	48	400	400	0
						ML	-68.0	55	200	680	15
						CH	-110.0	43	895	1100	0
						CH	-184.0	48	1470	1840	0
						SP-F	-208.0	60	0	2080	30
						Pleist	-	60	2080	-	0

EAST LEVEE REACH NO. QE-2 LOCATION STA. 555+00 to 559+81.93 =0+00 to 19+06.01=0+00 to 30+00

UNDIST. BORING NO. No Existing Levee UNDIST. BORING NO. 50-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	0.0	117	200	400	15
						CH	-22.0	43	400	400	0
						ML	-29.0	55	200	400	15
						CL	-32.0	48	400	400	0
						ML	-43.0	55	200	-	15
						SM	-47.0	60	0	470	30
						CH	-110.0	43	790	1100	0
						CH	-189.0	48	1495	1890	0
						SP-F	-209.0	60	0	2090	30
						PLEIST.	-	60	2090	-	0

EAST LEVEE REACH NO. RE-1 LOCATION STA. 30+00 to 65+00

UNDIST. BORING NO. No Existing Levee UNDIST. BORING NO. R-24.0-LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						CH	0.0	115	300	300	0
						ML	-3.0	55	200	300	15
						CHO	-10.0	33	300	300	0
						CH	-15.0	38	300	300	0
						CH	-21.0	38	330	360	0
						SM	-35.0	60	0	500	30
						CH	-55.0	43	600	700	0
						SP-F	-95.0	60	0	1100	30
						CH	-192.0	48	1585	2070	0
						SP-F	-209.0	60	0	2240	30
						Pleist	-	60	2240	-	0

EAST LEVEE REACH NO. RE-2 LOCATION STA. 65+00 to 100+00

UNDIST. BORING NO. No Existing Levee UNDIST. BORING NO. R-24.0-LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	0.0	117	200	300	15
						CHO	-5.0	33	300	300	0
						ML	-13.0	55	200	-	15
						SM	-19.0	60	0	340	30
						CH	-23.0	38	360	380	0
						SP-F	-28.0	60	0	430	30
						CH	-31.0	43	445	460	0
						SM	-39.0	60	0	540	30
						CL&CH	-58.0	43	635	730	0
						SP-F	-64.0	60	0	790	30
						CL&CH	-197.0	48	1455	2120	0
						SP-F	-208.0	60	0	2230	30
						PLEIST	-	60	2230	-	0

EAST LEVEE REACH NO. SE-1 LOCATION STA. 100+00 TO 130+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 52-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	0.0	117	200	250	15
						CH	-7.0	38	250	250	0
						ML	-14.0	55	200	-	15
						SM	-18.0	60	0	330	30
						CH	-23.0	38	355	380	0
						SP-F	-34.0	60	0	490	30
						CH	-38.0	48	510	530	0
						SP-F	-83.0	60	0	980	30
						CH	-93.0	48	1030	1080	0
						SP-F	-115.0	60	0	-	30
						ML	-121.0	55	200	-	15
						SP-F	-207.0	60	0	2220	30
						PLEIST	-	60	2220	-	0

EAST LEVEE REACH NO. SE-2 LOCATION STA. 130+00 to 155+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 52-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ			σ (P.C.F.)	C (P.S.F.) AVG,	BASE	ϕ
						CH	0.0	100	250	-	0
						CH	-10.0	38	250	250	0
						CH	-14.0	38	270	290	0
						ML	-30.0	55	200	450	15
						CL	-34.0	48	470	490	0
						ML	-111.0	55	200	-	15
						SP-F	-125.0	60	0	1400	30
						CH	-128.0	48	1415	1430	0
						SP-F	-149.0	60	0	1640	30
						CH	-153.0	48	1660	1680	0
						SP-F	-197.0	60	0	2120	30
						CH	-205.0	48	2160	2200	0
						SP-F	-208.0	60	0	2230	30
						PLEIST	-	60	2230	-	0

EAST LEVEE REACH NO. SE-3 LOCATION STA. 155+00 to 235+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 52-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ°
						ML	0.0	117	200	-	15
						ML	-18.0	55	200	330	15
						CL	-24.0	48	360	390	0
						ML	-45.0	55	200	600	15
						CH&CL	-58.0	48	665	730	0
						ML	-71.0	55	200	860	15
						CH&CL	-77.0	48	890	920	0
						ML	-86.0	55	200	1010	15
						CH	-90.0	48	1030	1050	0
						SM&SP	-105.0	60	0	1200	30
						CH&CL	-109.0	48	1220	1240	0
						SP-F	-197.0	60	0	2120	30
						CH	-208.0	48	2175	2230	0
						SP-F	-212.0	60	0	2270	30
						Pleist	-	60	2270	-	0

EAST LEVEE REACH NO. TE-1 LOCATION STA. 235+00 to 315+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. R-20.0 - LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						CH	0.0	105	200	-	0
						CH	-5.0	43	200	200	0
						CH	-10.0	43	300	-	0
						CHO	-15.0	28	300	-	0
						CH	-25.0	43	300	300	0
						SM	-42.0	60	0	420	30
						CH	-130.0	43	860	1300	0
						CH	-205.0	48	1675	2050	0
						SP-F	-211.0	60	0	2110	30
						PLEIST	-	60	2110	-	0

EAST LEVEE REACH NO. TE-2 LOCATION STA 315+00 TO 350+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. R-20.0-LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ °			γ (P.C.F.)	C (P.S.F.) AVG,	BASE	ϕ °
						ML	0.0	117	200	200	15
						CH	-3.0	43	200	-	0
						CHO	-7.0	28	200	200	0
						CL	-10.0	43	300	300	0
						ML	-13.0	55	200	300	15
						CHO	-17.0	43	300	300	0
						ML	-25.0	55	200	300	15
						CH	-30.0	43	300	300	0
						CH	-68.0	43	490	680	0
						ML	-73.0	55	200	730	15
						CH	-130.0	43	1015	1300	0
						CH	-203.0	48	1665	2030	0
						SP-F	-209.0	60	0	2090	30
						Pleist	-	60	2090	-	0

LMN Form 983 (O/T)
Oct 69

EAST LEVEE REACH NO. UE LOCATION STA. 350+00 to STA 420+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 53-MHUL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						-					
						ML	0.0	117	200	100	15
						CH	-7.0	23	100	100	0
						CHO	-16.0	23	200	200	0
						ML	-30.0	55	200	300	15
						CL	-34.0	43	320	340	0
						ML	-46.0	55	200	460	15
						CH	-70.0	43	580	700	0
						ML	-83.0	55	200	830	15
						CH	-202.0	48	1425	2020	0
						SP-F	-212.0	60	0	2120	30
						PLEIST	-	60	2120	-	0

EAST LEVEE REACH NO. VE LOCATION STA. 420+00 to 525+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. R-15.9-LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	BASE	$\phi°$			γ (P.C.F.)	C (P.S.F.) AVG.	BASE	$\phi°$
						ML	0.0	117	200	-	15
						ML	-2.0	55	200	300	15
						CH	-8.0	38	300	-	0
						CHO	-16.0	28	300	300	0
						ML	-19.0	55	200	-	15
						SM	-23.0	60	0	-	30
						ML	-27.0	55	200	-	15
						SM	-40.0	60	0	-	30
						ML	-46.0	55	200	610	15
						CH	-65.0	43	705	800	0
						CH	-80.0	43	800	800	0
						CH	-202.0	48	1410	2020	0
						SP-F	-214.0	60	0	2140	30
						PLEIST	-	60	2140	-	0

EAST LEVEE REACH NO. WE LOCATION STA 525+00 to 615+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 54-MHDL

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ °			γ (P.C.F.)	C (P.S.F.) AVG,	BASE	ϕ °
							0.0				
						CH	-14.0	23	150	150	0
						SM	-29.0	60	0	-	30
						ML	-32.0	55	200	320	15
						CH	-49.0	43	405	490	0
						ML	-52.0	55	200	520	15
						CH	-70.0	48	610	700	0
						CH	-85.0	43	775	850	0
						ML	-89.0	55	200	890	15
						CH	-202.0	48	1455	2020	0
						SP-F	-220.0	60	0	2200	30
						PLEIST.	-	60	2200	-	0

EAST LEVEE REACH NO. XE-1 LOCATION Sta. 615+00 to 650+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. R-11.6-LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ			σ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ
						ML	0.0	117	200	200	15
						CH	-5.0	38	200	200	0
						ML	-22.0	55	200	-	15
						SP-F	-61.0	60	0	812	30
						CH	-207.0	48	1688	2564	0
						SP-F	-227.0	60	0	2804	30
						PLEIST	-	60	2804	-	0

97

EAST LEVEE REACH NO. XE-2 LOCATION STA.650+00 to 735+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. R-11.6-LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						ML	0.0	117	200	200	15
						CH	-10.0	33	200	200	0
						CH	-22.0	33	272	344	0
						SP-F	-64.0	60	0	848	30
						CH	-210.0	48	1724	2600	0
						SP-F	-231.0	60	0	2850	30
						PLEIST	-	60	2850	-	0

EAST LEVEE REACH NO. YE LOCATION STA. 735+00 to 811+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. R-11.6-LU

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
						CL-CH	0.0	110	300	-	0
						CL-CH	-7.0	48	300	200	0
						CHO	-13.0	28	200	200	0
						CH-CHO	-31.0	33	290	380	0
						SM	-34.0	60	0	410	30
						CH	-217.0	48	1325	2240	0
						SP-F	-241.0	60	0	2480	30
						PLEIST	-	60	2480	-	0

EAST LEVEE REACH NO. ZE LOCATION STA. 811+00 to 879+00

UNDIST. BORING NO. NO EXISTING LEVEE UNDIST. BORING NO. 58-MHUT.

BENEATH C/L OF LEVEE						BENEATH TOE OF LEVEE					
SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS				SOIL TYPE	ELEV. (M.S.L.)	STRENGTH PARAMETERS			
		γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ °			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ °
						CH	0.0	100	250	250	0
						ML	-3.0	55	200	250	15
						CH	-28.0	38	250	250	0
						ML	-33.0	55	200	-	15
						SM	-85.0	60	0	-	30
						ML	-88.0	55	200	630	15
						CH	-223.0	48	1305	1980	0
						SP-F	-249.0	60	0	2240	30
						PLEIST.	-	60	2240	-	0

LAKE PONTCHARTRAIN

LAKE BORGNE

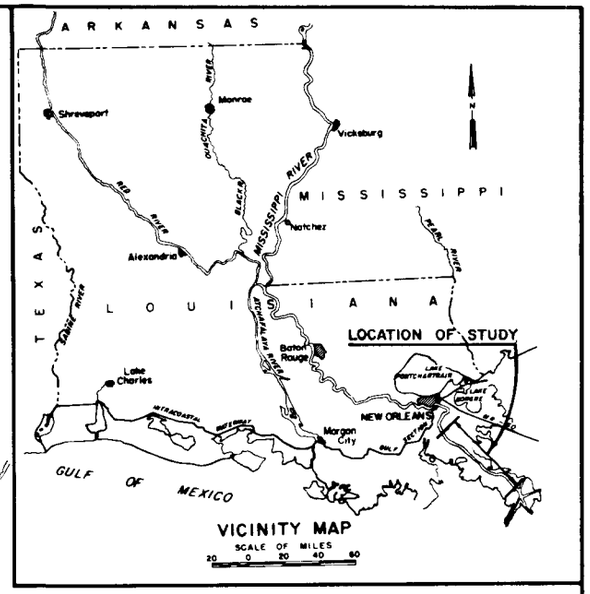
BRETON SOUND

CHANDELEUR SOUND

GULF OF MEXICO

SCALE OF MILES

5 4 3 2 1 0 5 10 15



MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT – PART I

EAST AND WEST BANKS

SOIL BORING DATA

GENERAL MAP

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

AUGUST 1971

FILE NO. H-2-25275

PLATE I

90°04' 90°03' 90°02' 90°01' 90°00' 89°59' 89°58'
29°48' 29°47'

Cedar Grove
Promised Land
Linwood
Oakville
Greenwood
Sarah
Bertrandville
Live Oak
Jesuit Bend
WILLS POINT

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

87-MHU
86-MH
85-MH

JESUIT BEND

29°46'
29°45'

90°04' 90°03' 90°02' 90°01' JOINS PLATE 3 90°00' 89°59' 89°58'

N

LEGEND

- 86-MH — General Type Boring
- 87-MHU— Undisturbed Boring
- — River Miles above Head of Passes

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

SCALES

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

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BORING LOCATIONS
MILE 71.7 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 [illegible] intervals.
Contours above Average Low Water Plane are expressed in feet at [illegible] 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.

SCALES

FEET

METERS

MILES

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2
3
4

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BORING LOCATIONS
MILE 68.0 TO MILE 63.7

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

AUGUST 1971 | FILE NO. H-2-25275

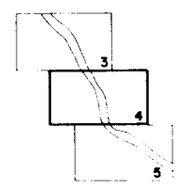
All elevations are expressed in feet and refer to Mean Sea Level
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft. intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft. intervals
Planimetry from aerial photographs flown November 1962
Distances on Mississippi 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

SCALES

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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BORING LOCATIONS
MILE 63.7 TO MILE 60.0

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 4

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

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

JOINS PLATE 4

JOINS PLATE 6

Ironton
67-MHUT
30-MHL
Phoenix
29-MHL
28-MHL
R-59.7-R
66-MH
R-59.5-UR
8
65-MH
R-58.8-RU
64-MH
63-MH
R-57.1-R
62-MHU
61-MH
60-MH
59-MH
R-55.9-R
58-MH
57-MHU
57-MHUT
R-58.0-LU
27-MHL
24-MHL
23-MHL
56-UE
56-UET
22-MHL
Harlem
Myrtle Grove
BACK LEVEE CANAL
-N-
Water

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

SCALES

FEET
1000 0 1000 2000

METERS
100 0 100 500 1000

MILES
1/2 0 1/2 1

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BORING LOCATIONS
MILE 60.0 TO MILE 55.2

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 5

All elevations are expressed in feet and refer to Mean Sea Level.
[illegible] below Average Low Water Plane are expressed in feet [illegible]
[illegible] above Average Low Water Plane are expressed in feet [illegible]
[illegible] from aerial photographs flown November 1962
[illegible] Distances in Mississippi River above Head of Passes [illegible]
1962 and 1942 surveys
[illegible] Projection North American Datum
[illegible] Projection Gulf Coast Datum is indicated by ticks
A.L.W.P. Average Low Water Plane

SCALES

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BORING LOCATIONS
MILE 55.2 TO MILE 50.0

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

AUGUST 1971 FILE NO H-2-25275

PLATE 6


OVERLAPS PLATE 5
OVERLAPS SHEET 6
JOINS PLATE 8
14-MHL
13-MHL
R-50.5-L
12-MHL
R-50.9-R
R-49.7-L
11-MHL
10-MHUL
10-MHUL
Pointe a la Hache
4 W
1 U
2 W
3-W
49-MH
Woodland
R-50.2-R
48-MH
R-49.7-RU
47-MH
R-49.2-R
46-MH
9-MHL
8-MHL
R-48.6-R
West Pointe a la Hache
45-MH
R-48.0-R
44-MH
1-U
7-MHL
Martin
47-UET
47-UE
R-46.95-LU
43-MHUT
6-MHL
42-MH
R-46.7-R
Magnolia
5-MHL
UNITED GAS PIPE LINE CO
UNITED GAS PIPE LINE CO
FERRY
BACK LEVEE CANAL
P L A Q U E M I N E S P A R I S H, L A.
N
89°50'
89°49'
89°48'
89°47'
89°46'
89°45'
89°44'
29°36'
29°35'
29°34'
29°33'

SCALES

FEET

METERS

MILES

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BORING LOCATIONS

MILE 51.4 TO MILE 46.3

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

AUGUST 1971

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PLATE 7

SCALES

FEET

METERS

MILES

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BORING LOCATIONS
MILE 46.3 TO MILE 41.2

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

AUGUST 1971 FILE NO H-2-25275

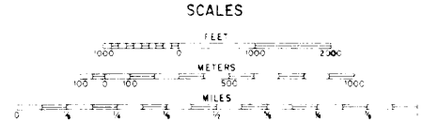
PLATE 8

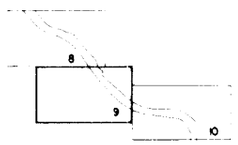
P L A Q U E M I N E S

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

SCALES





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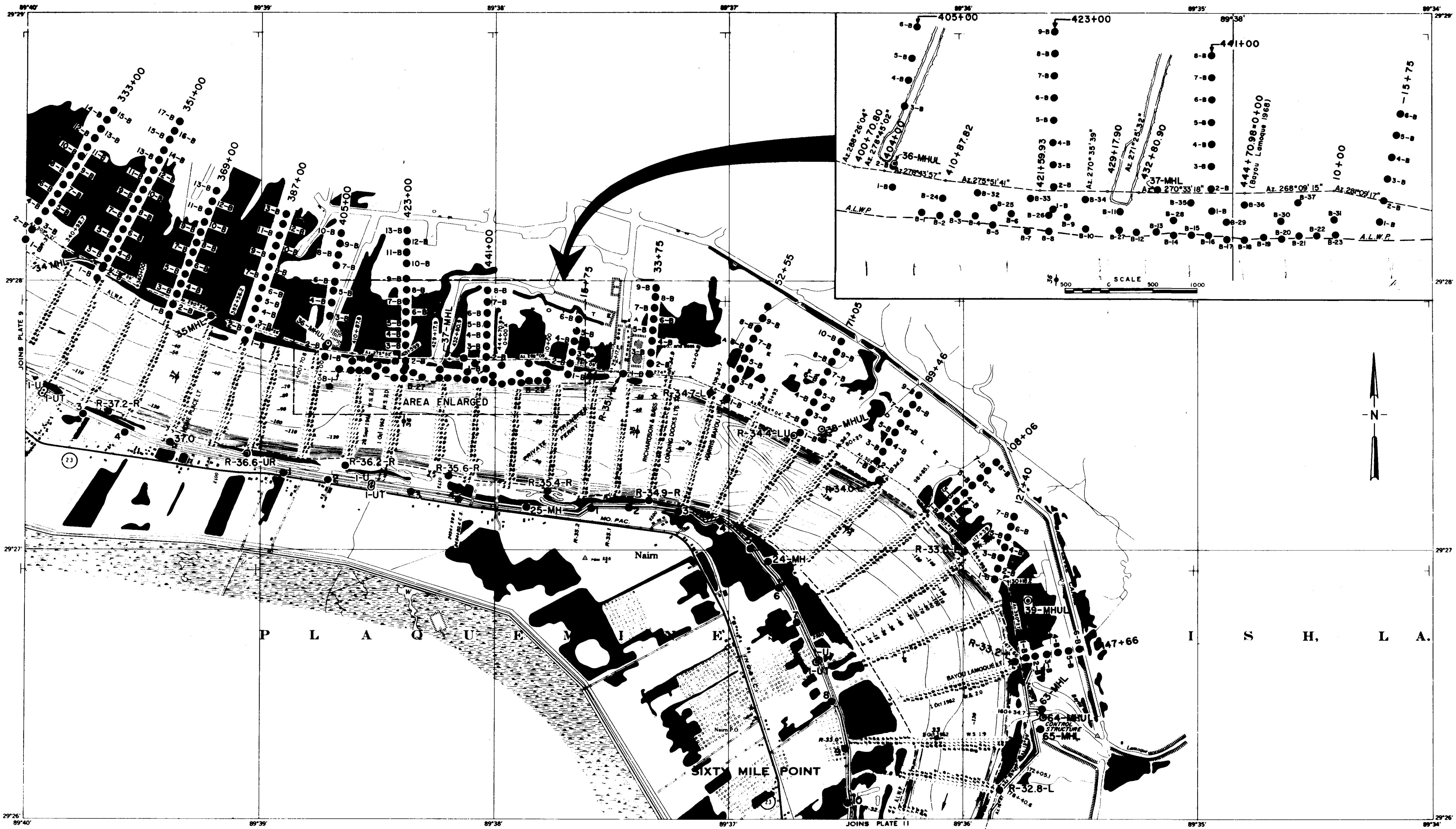
BORING LOCATIONS
MILE 41.2 TO MILE 37.8

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

AUGUST 1971 FILE NO. H-2-23275

PLATE 9



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

SCALES

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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BORING LOCATIONS
MILE 37.8 TO MILE 32.6

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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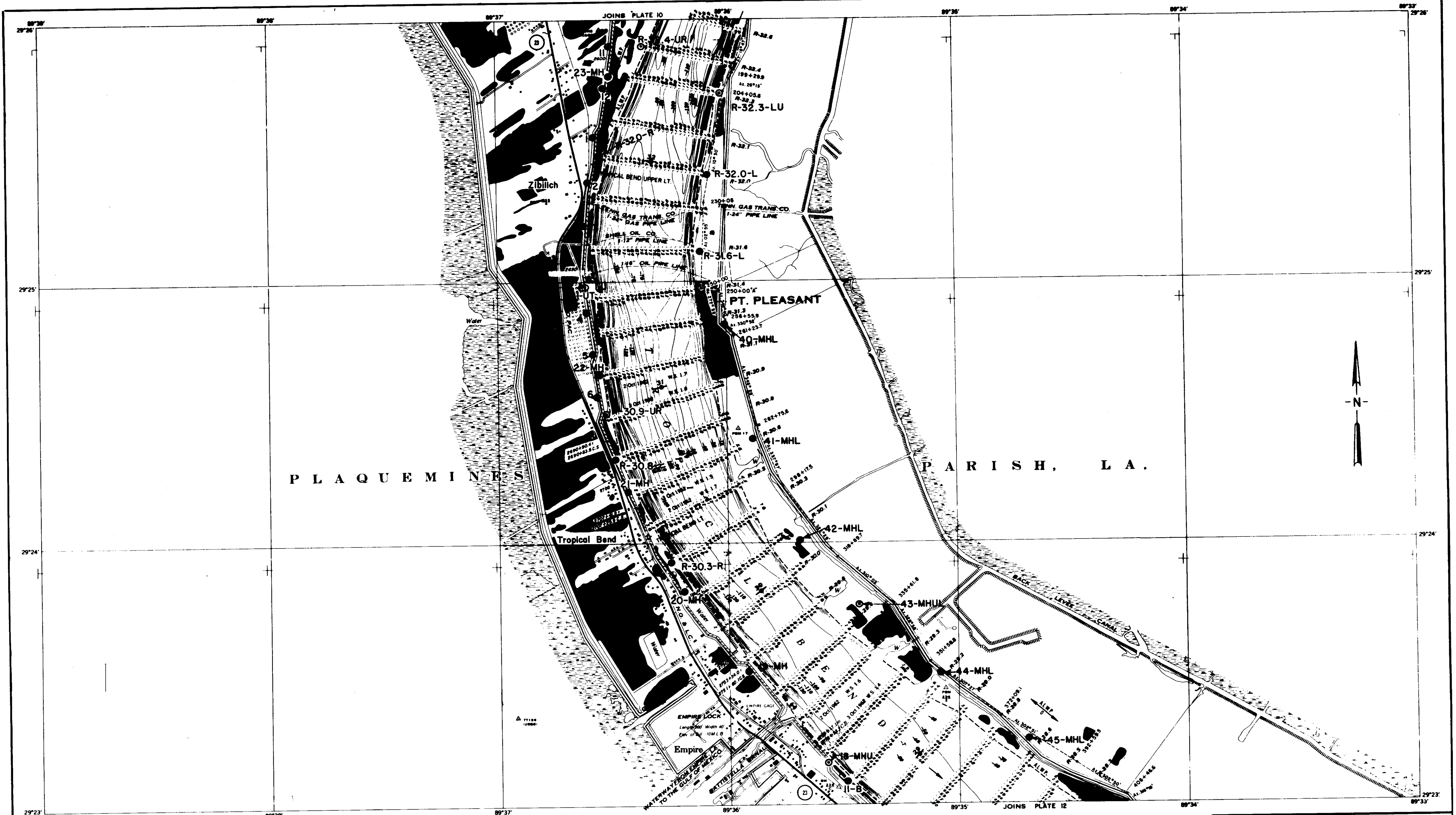
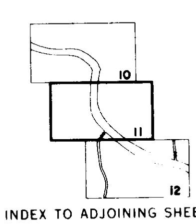
PLATE 10



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

SCALES

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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BORING LOCATIONS
MILE 32.6 TO MILE 28.5

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

SCALES

FEET
METERS
MILES

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MISSISSIPPI RIVER LEVEES AND BANKS
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BORING LOCATIONS
MILE 28.5 TO MILE 24.2

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

AUGUST 1971 FILE NO H-2-25275

PLATE 12

89°31' 89°30' 89°29' 89°28' 89°27' 89°26' 89°25'
29°22'30" 29°22' 29°21' 29°20' 29°19'30"

P L A Q U E M I N E S

P A R I S H L A

JOINS PLATE 12

JOINS PLATE 14

Fort Neptune

Fort St. Philip

BOLIVAR POINT

Fort Jackson

Gulftown

Triumph

Water

R-24.0-LU
R-24.0 I-S
R-23.4-L
R-22.8-L
R-21.9-L
R-21.2-L
R-20.8-R
R-20.6-L
R-20.2-R
R-20.0-LU
R-19.6-R
R-19.5-L
R-18.9-L
R-18.4-L
R-17.7-L
R-23.4
R-23.05-RU

7-MH
6-MH
5-MHU
5-MHUT
5-MH
4-MH
3-MHU
3-MHUT
52-MHU
2-U
2-MH
1-U
1-UT
1-MH
74-MHL
73-MHU
72-MHL

1-S 2-S 3-S 4-S 5-S
1-B 2-B 3-B 4-B 5-B 6-B 7-B 8-B 9-B 10-B 11-B 12-B 13-B 14-B 14-BA
1-BC 2-BC

4-M1

NOTE

Borings 1 through 8 and 1-S through 5-S located in the river between miles 22.0 and 24.0 A.H.P were made to determine possible sources of sand borrow.

Borings 1 through 8 were made in December 1969 by the State of Louisiana, Department of Highways. Borings 1-S through 5-S were made in April 1970 by the Corps of Engineers. Logs of these borings are shown on plates 149 and 150.

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
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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

SCALES

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

12 13 14

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 86 TO MILE 10
SOIL REPORT - PART I
EAST AND WEST BANKS
SOIL BORING DATA

BORING LOCATIONS
MILE 24.2 TO MILE 17.1

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

AUGUST 1971 FILE NO H-2-25275

PLATE 13

P L A Q U E M I N E S

P A R I S H

L A.

JOINS PLATE 13

JOINS PLATE 15

Boothville

Duvic

Carrion Crow Bay

Olga

R-16.9-RU

R-15.9-LU

R-14.0-L

3-BC

3-BC(A)

5-BC

5-BC(A)

6-BC

7-BC

8-BC

9-BC

10-BC

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

29°22' 29°21' 29°20' 29°19'

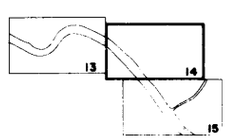
All elevations are expressed in feet and refer to Mean Sea Level
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft. intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft. intervals
Planimetry from aerial photographs flown February 1963
Distances on Mississippi 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

SCALES

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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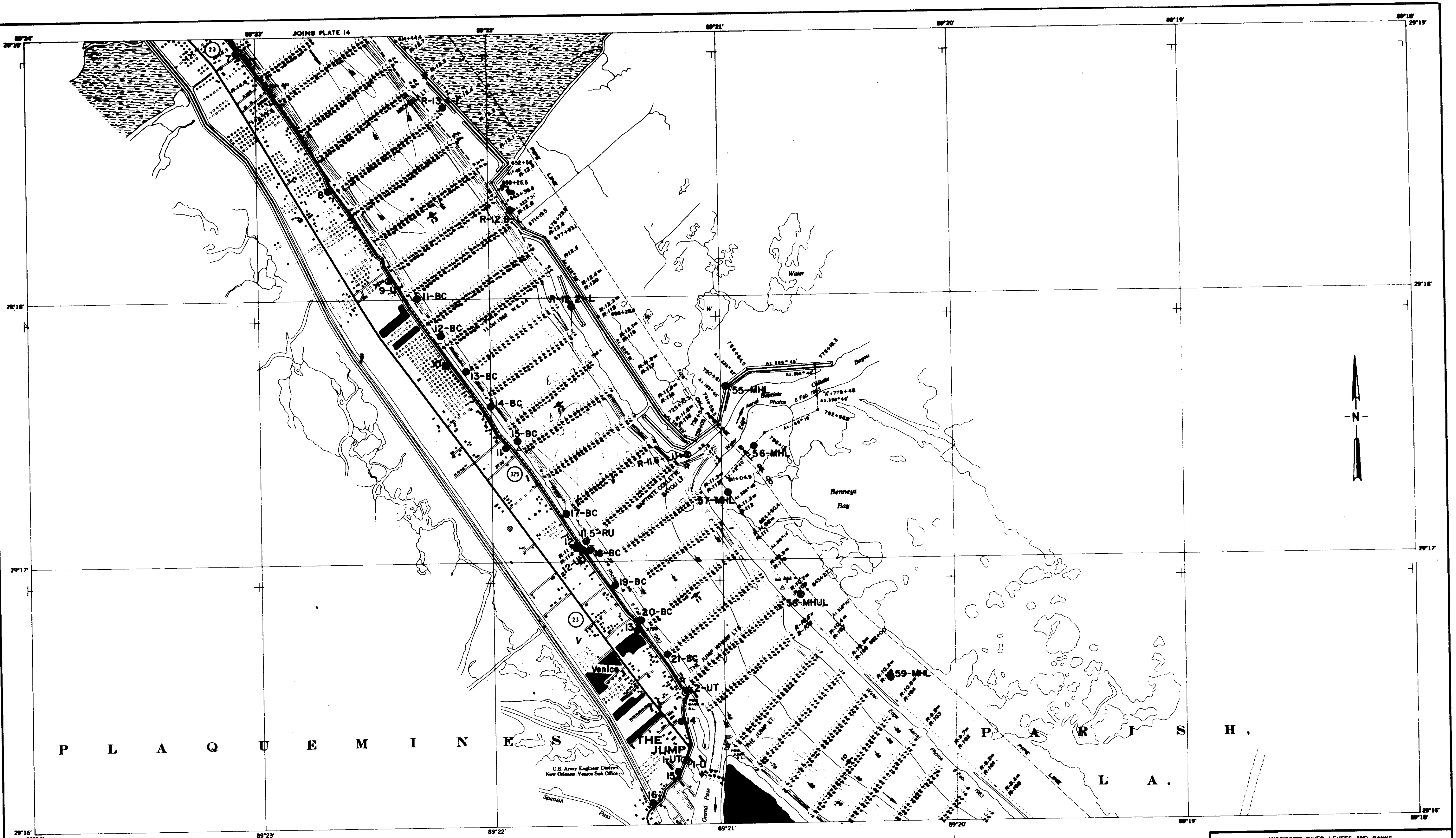
BORING LOCATIONS
MILE 17.1 TO MILE 14.0

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

SCALES

FEET: 1000 0 1000 2000

METERS: 100 0 100 500 1000

MILES: 0 ⅛ ¼ ⅜ ½ ⅝ ¾ ⅞ 1

14 | 15

INDEX TO ADJOINING SHEETS

MISSISSIPPI RIVER LEVEES AND BANKS
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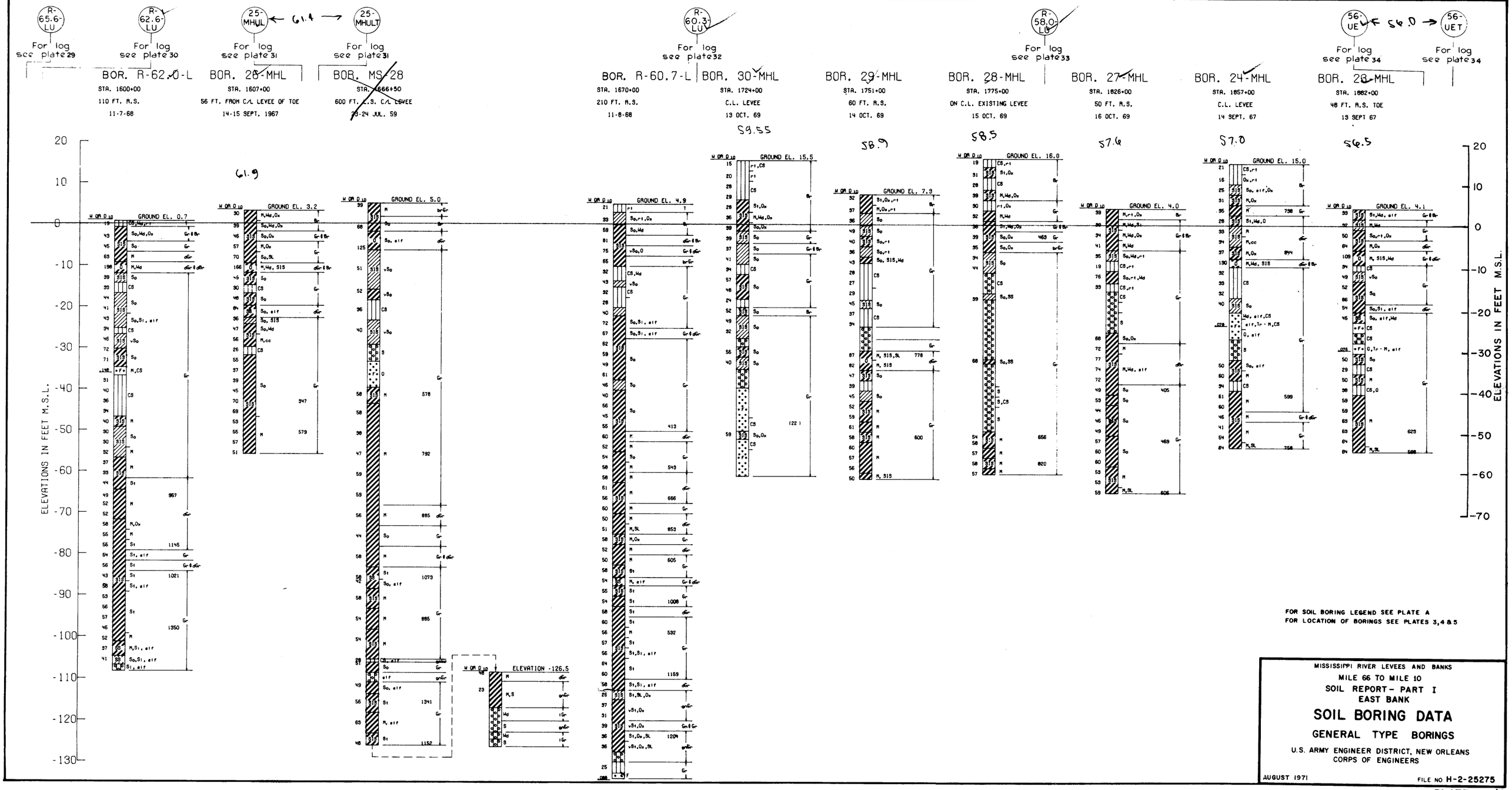
MILE 14.0 TO MILE 10.0

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 15



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 3,4 & 5

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

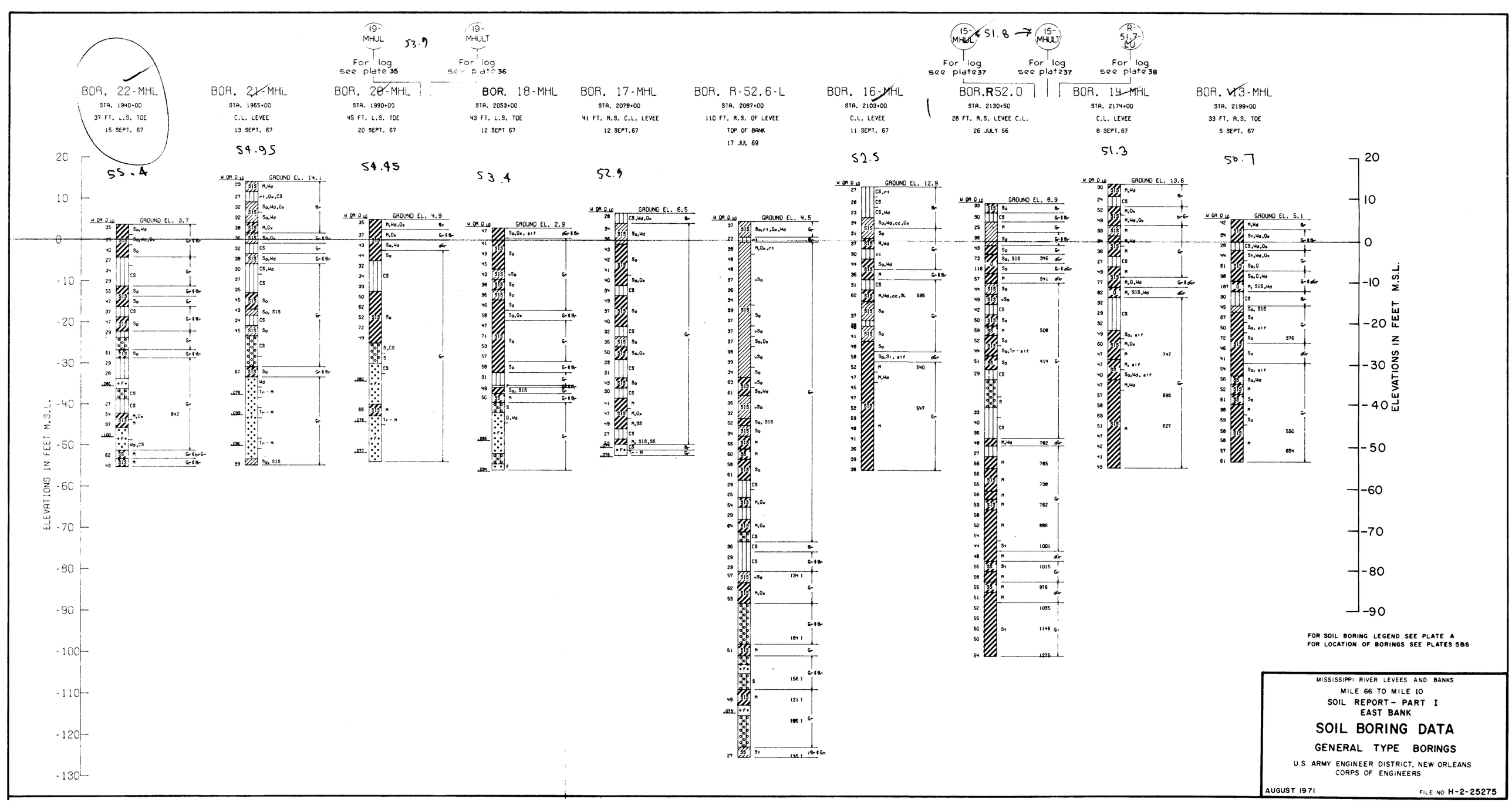
GENERAL TYPE BORINGS

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 16



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 586

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

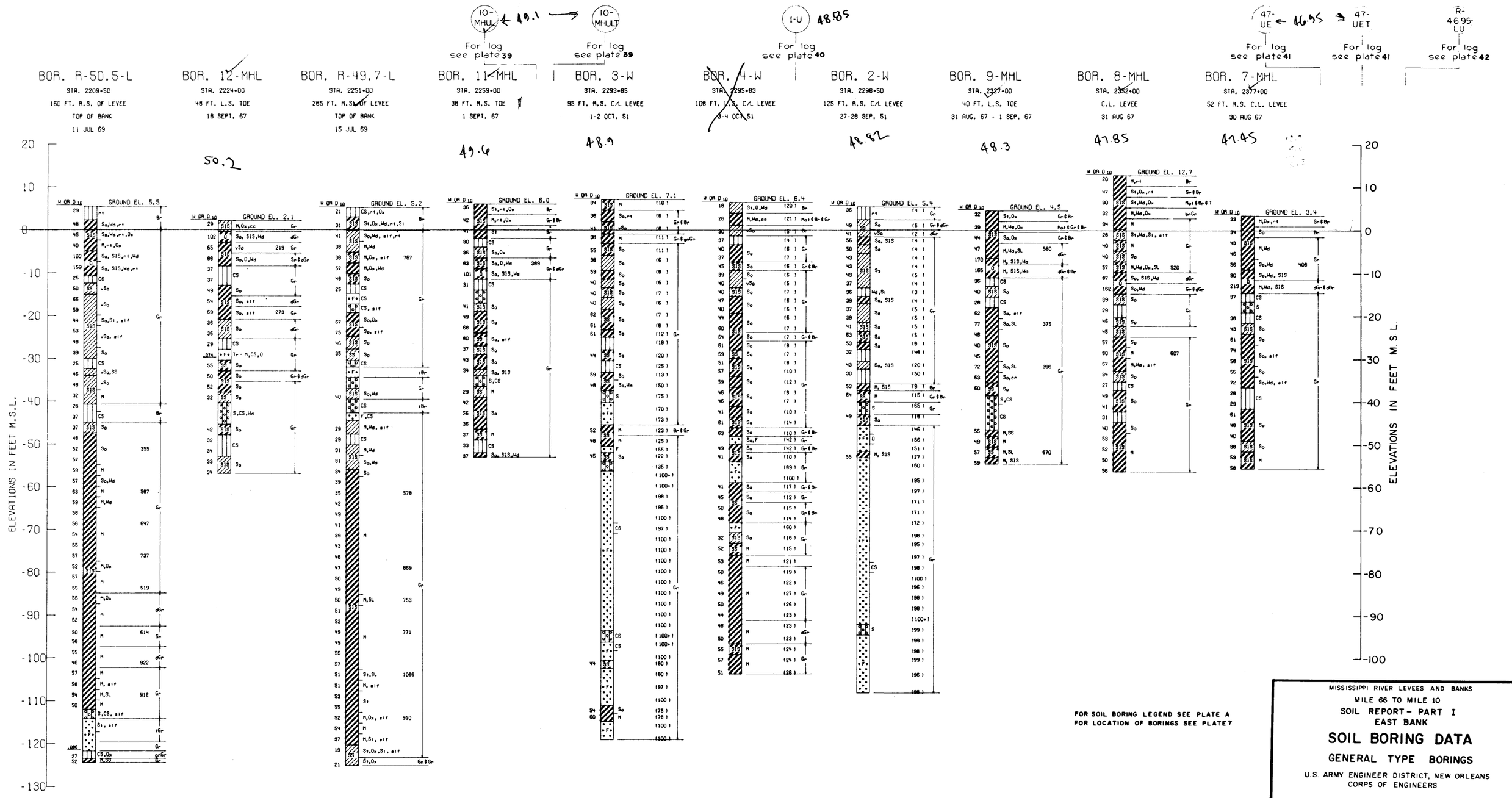
GENERAL TYPE BORINGS

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

AUGUST 1971

FILE NO H-2-25275

PLATE 17



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 7

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

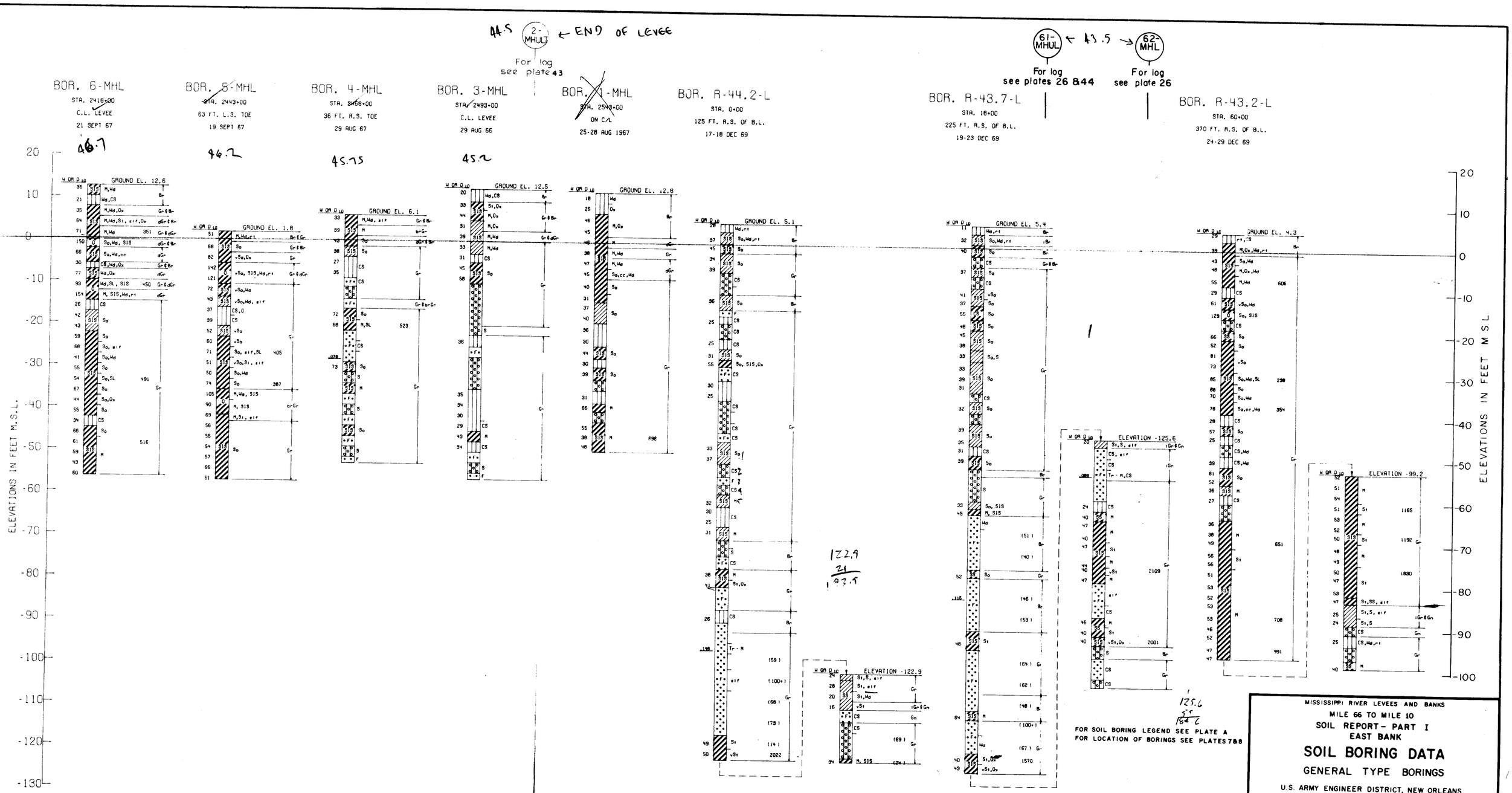
GENERAL TYPE BORINGS

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

AUGUST 1971

FILE NO H-2-25275

PLATE 18



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 7 & 8

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

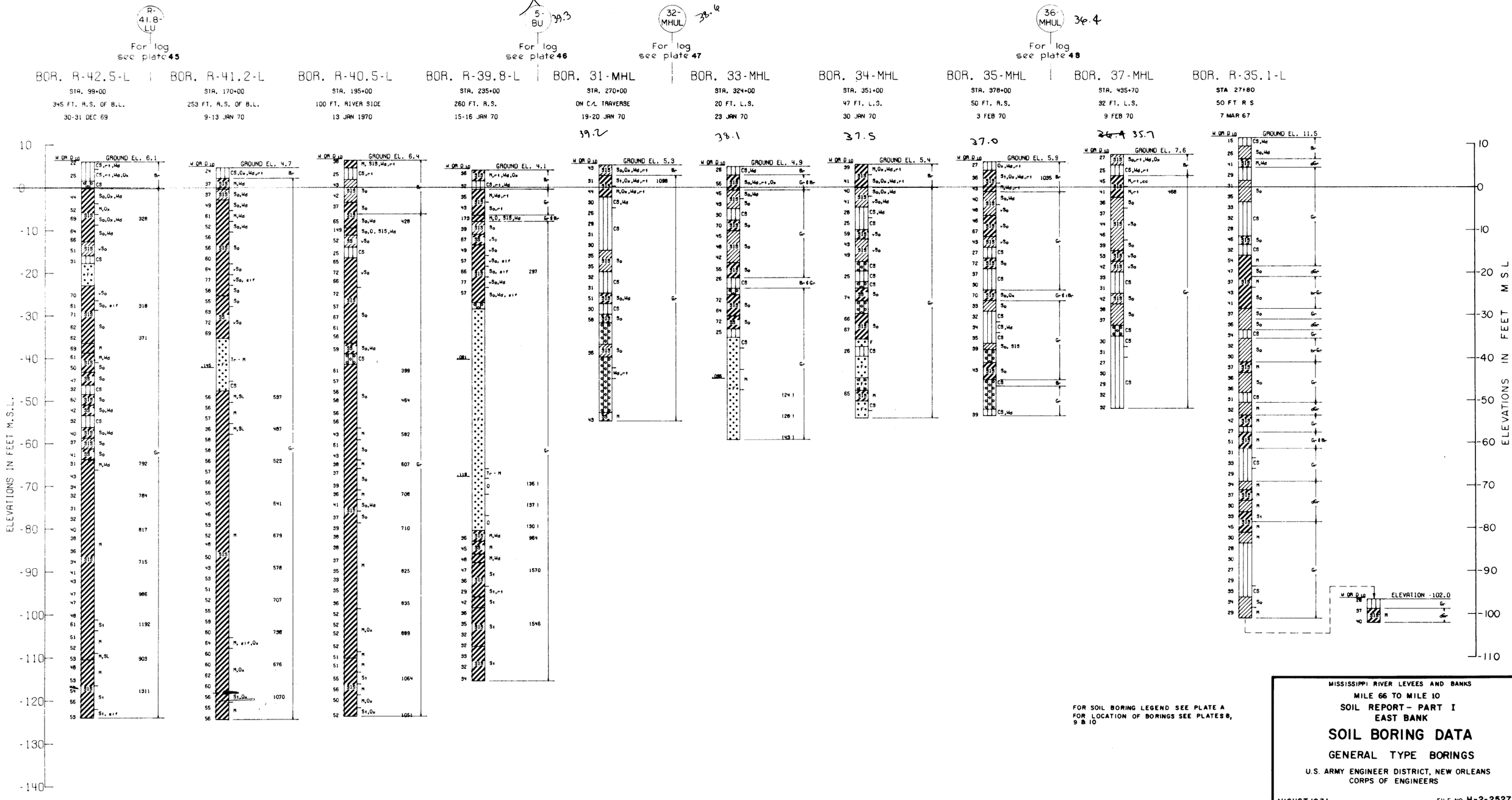
GENERAL TYPE BORINGS

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

AUGUST 1971

FILE NO H-2-25275

PLATE 19



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 8, 9 & 10

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

GENERAL TYPE BORINGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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FILE NO H-2-25275

PLATE 20

R-34.4-LU — For log see plate 49

38-MHUL 34.35 — For log see plate 50

39-MHUL 33.4 — For log see plate 51

63-MHL 33.1 — For log see plate 26

64-MHL 33.05 — For log see plates 26 & 52

65-MHL 33.08 — For log see plate 26

R-32.3-LU — For log see plate 53

BOR. R-34.7-L

STA 48+80
100 FT R S
10 APR 67

BOR. R-34.0-L

STA 92+35
200 FT R S
11 APR 67

BOR. R-33.6-L

STA. 118+00
90 FT. R.S.
13 APR. 67

BOR. R-33.2-L

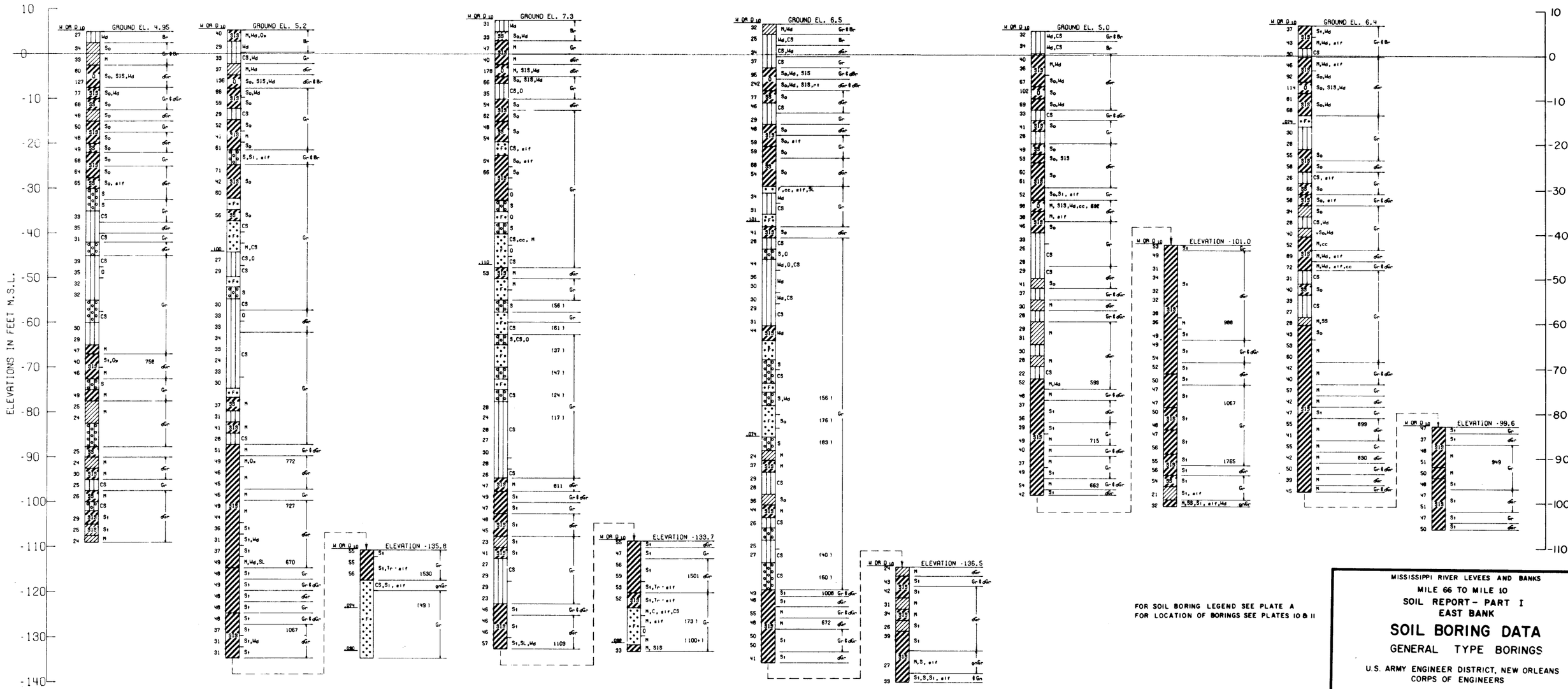
STA. 148+20
150 FT. R.S.
13 APR. 67

BOR. R-32.8-L

STA. 179+00
40 FT. L.S.
12 APR. 67

BOR. R-32.0-L

STA. 223+70
25 FT. R.S.
14 APR. 67



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 10 & 11

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

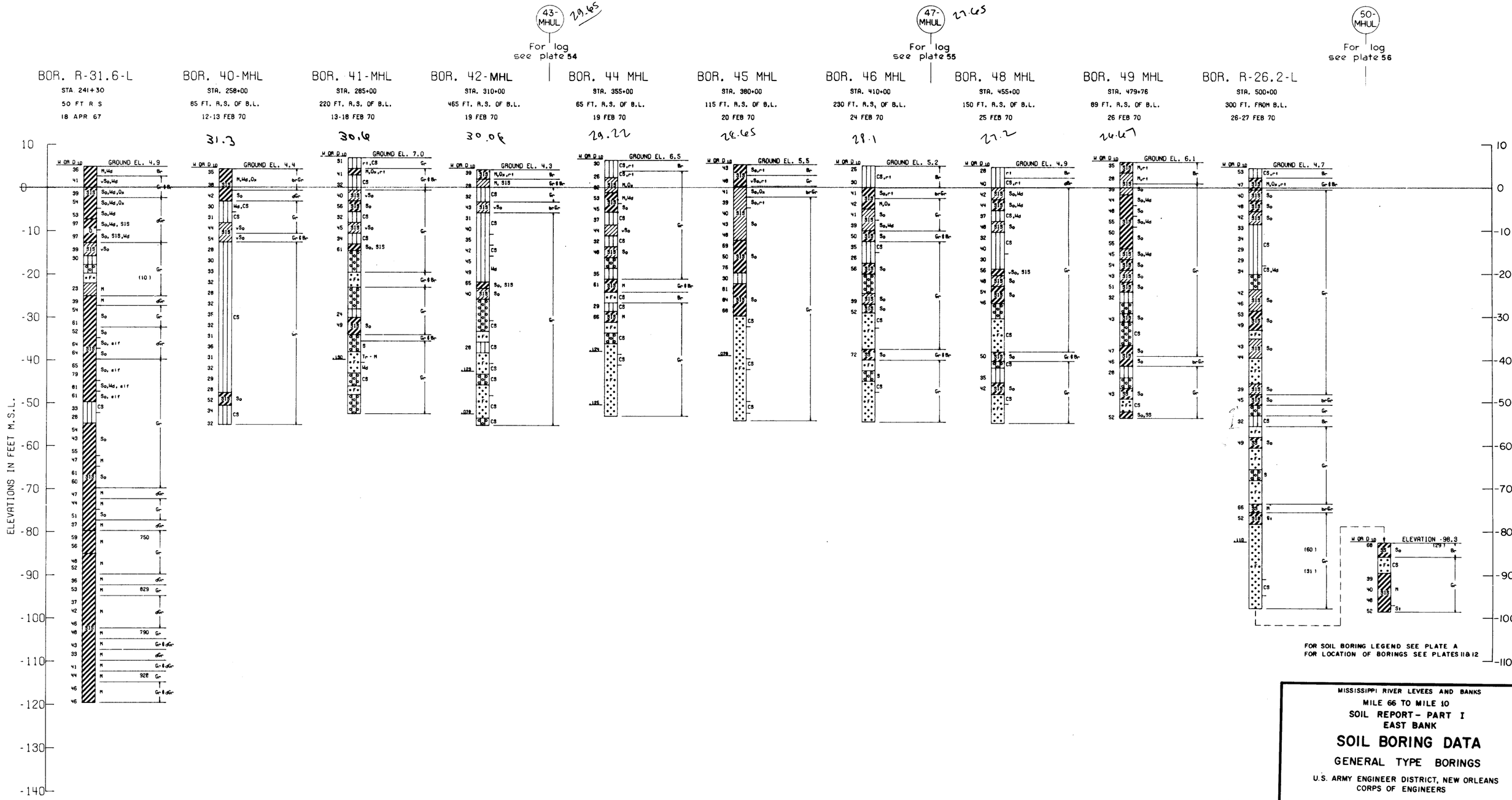
GENERAL TYPE BORINGS

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

AUGUST 1971

FILE NO H-2-25275

PLATE 21



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 11 & 12

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

GENERAL TYPE BORINGS

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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FILE NO. H-2-25275

66-MHUL
For log see plates 27 & 57

58-MHUL
For log see plates 27 & 58

67, 68 & 70 MHL
For log see plate 70

R-24.0-LU
For log see plate 59

52-MHUL 22.3
For log see plate 60

BOR. R-25.6-L
STA. 544+66
780 FT. R.S. FROM B.L.
4-5 MAR 70

BOR. 51 MHL
STA. 558+12
187 FT. R.S. FROM B.L.
6 MAR 70

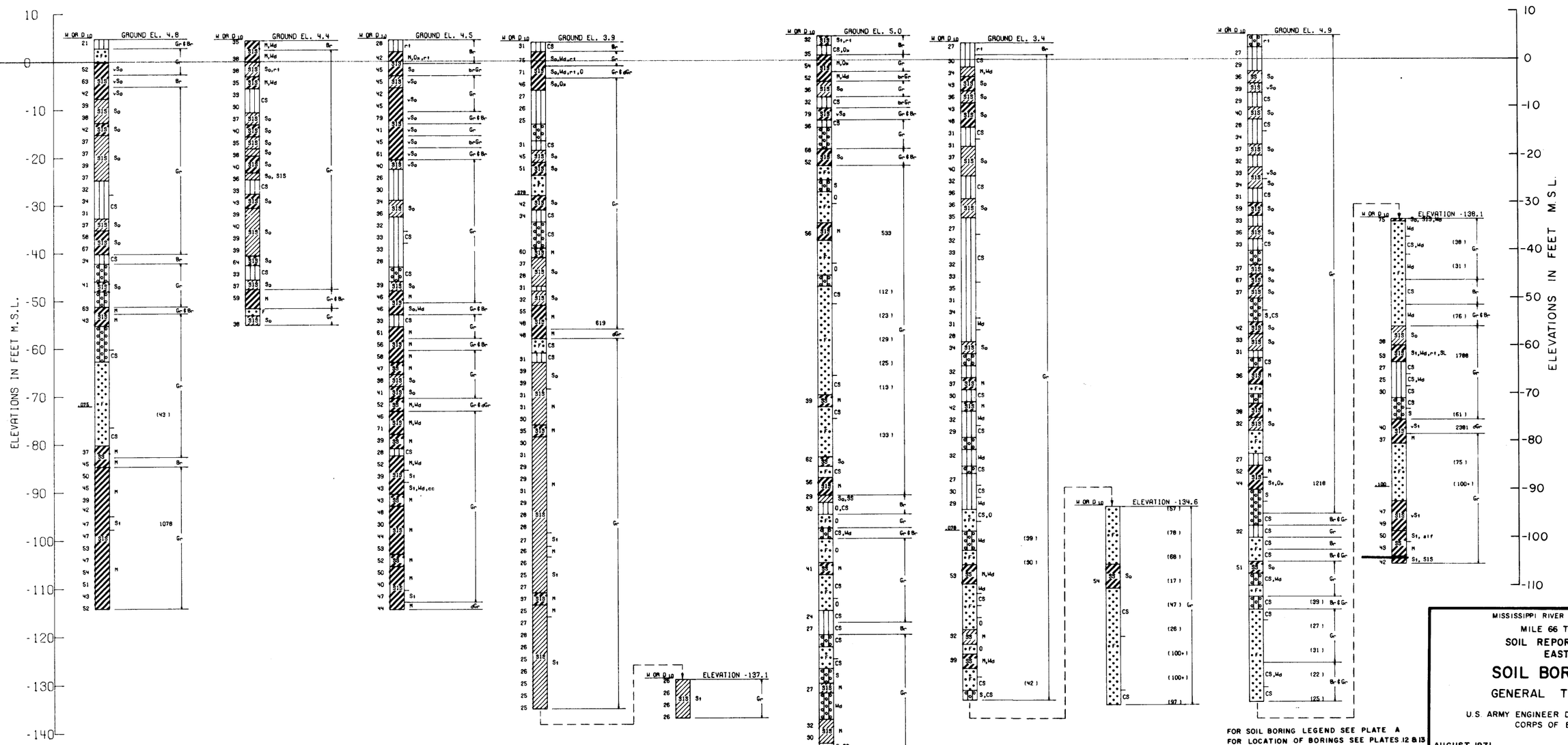
BOR. R-24.8-L
STA. 6+73
234 FT. R.S. OF B.L.
10 MAR 70

BOR. R-23.4-L
STA. 82+50
190 FT. R.S. FROM B.L.
16-17 MAR 70

BOR. R-22.8-L
STA. 116+50
178 FT. R.S. B.L.
18-20 MAR 70

BOR. R-21.9-L
STA. 155+50
186 FT R.S. B.L.
23-25 MAR 70

BOR. R-21.2-L
STA 181+50
400 FT. R.S. OF B.L.
26-30 MAR 70



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 12 & 13

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

GENERAL TYPE BORINGS

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

AUGUST 1971

FILE NO H-2-25275

PLATE 23

R-20.0-LU

For log see plate 61

BOR. R-20.6-L

STA. 210+00

67 FT. R.S. OF B.L.

19-23 MAR 70

BOR. R-19.5-L

STA. 294+60

210 FT. R.S. OF B.L.

24 MARCH 70

73-MHUL

For log see plates 28 & 62

BOR. R-18.9-L

STA. 329+50

125 FT. R.S. OF B.L.

25 MARCH 70

7172,74,75-MHUL

For log see plate 28

BOR. R-18.4-L

STA. 366+85

130 FT. R.S. OF B.L.

27-31 MAR 70

53-MHUL 17.4

For log see plate 63

BOR. R-17.7-L

STA. 391+50

215 FT. R.S. OF B.L.

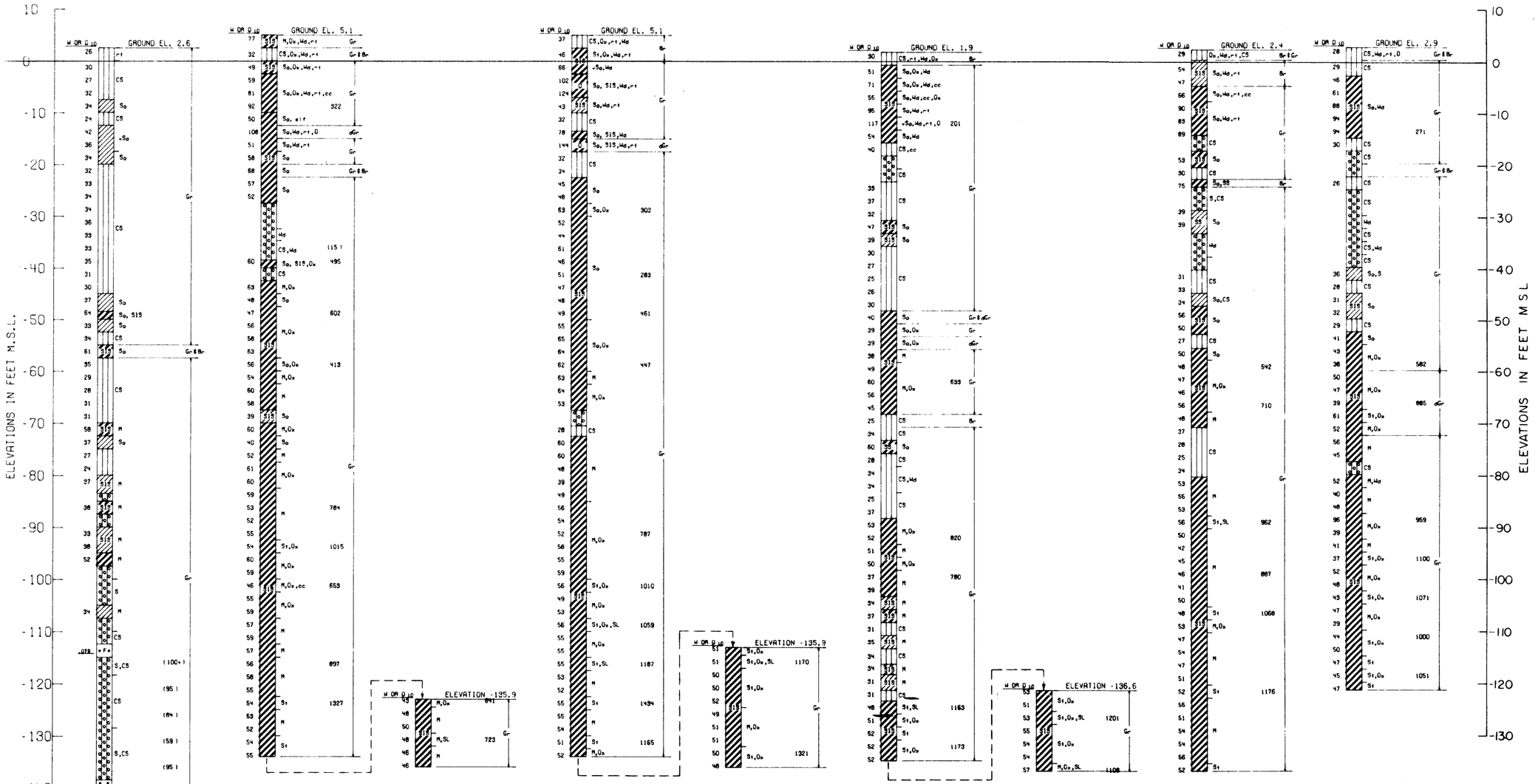
1 APR 70

BOR. R-17.0-L

STA. 430+50

265 FT. R.S. OF B.L.

2 APR 70



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 13 & 14

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

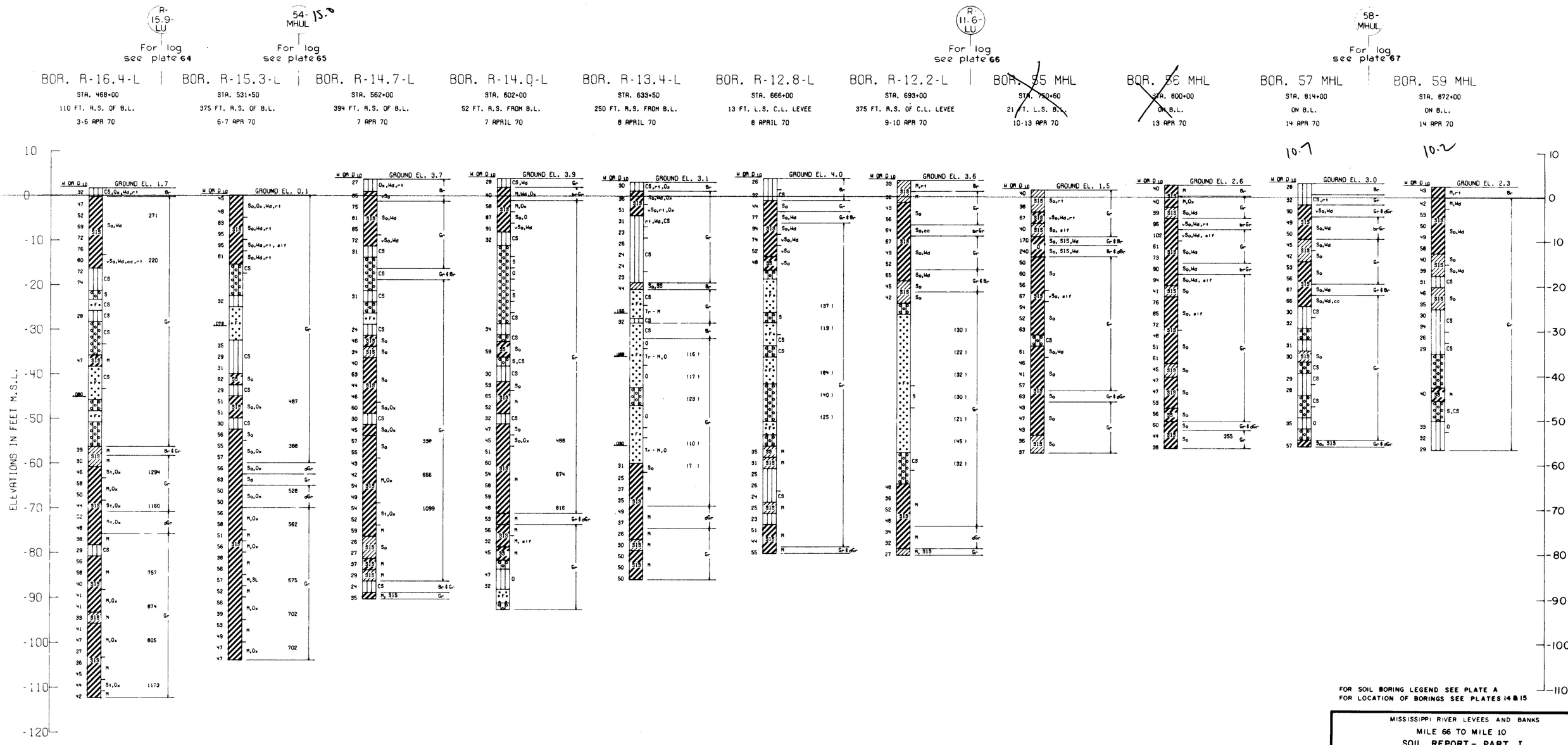
GENERAL TYPE BORINGS

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

AUGUST 1971

FILE NO H-2-25275

PLATE 24



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 14 & 15

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

GENERAL TYPE BORINGS

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

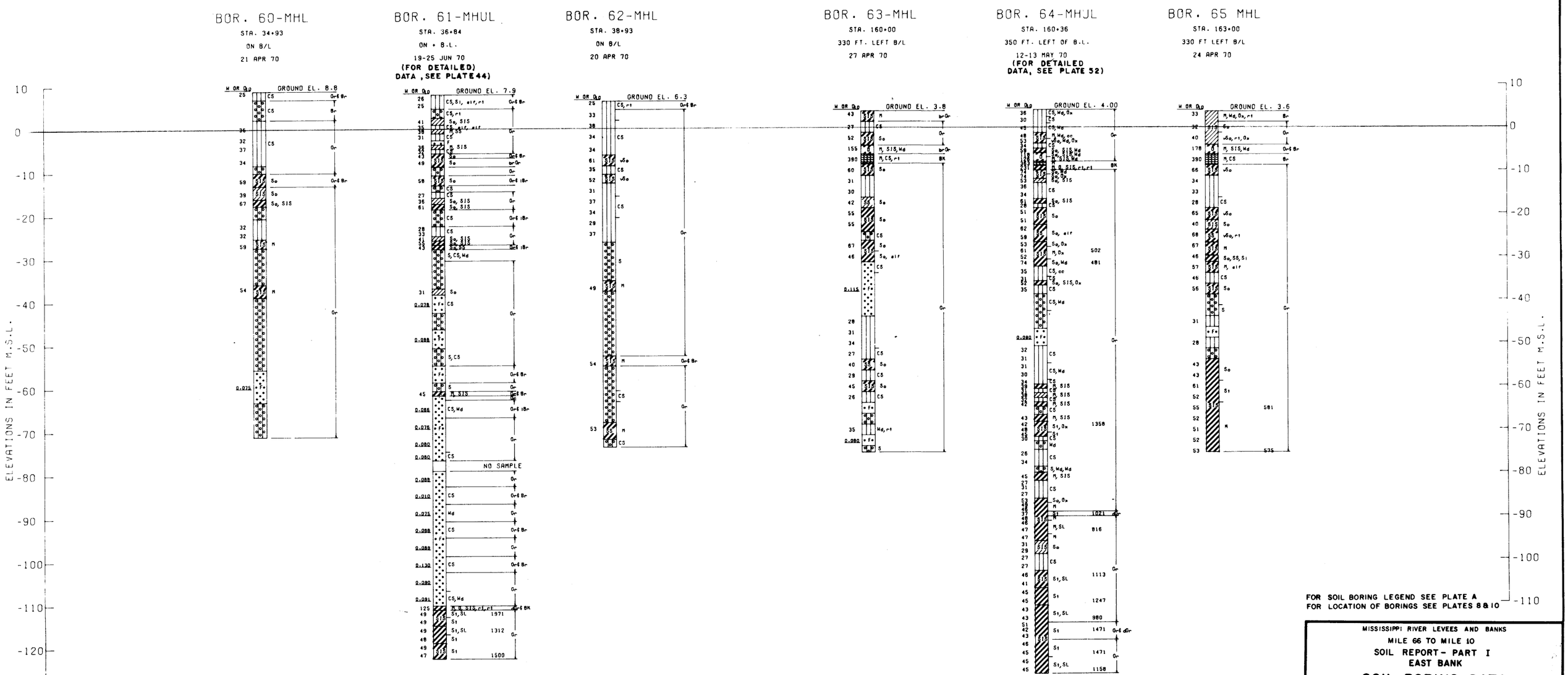
AUGUST 1971

FILE NO H-2-25275

PLATE 25

BOHEMIA SPILLWAY FRESH WATER STRUCTURE

BAYOU LAMOQUE FRESH WATER DIVERSION STRUCTURE



FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATES 8 & 10

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

BOHEMIA SPILLWAY AND BAYOU LAMOQUE STRUCTURES

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

AUGUST 1971

FILE NO H-2-25275

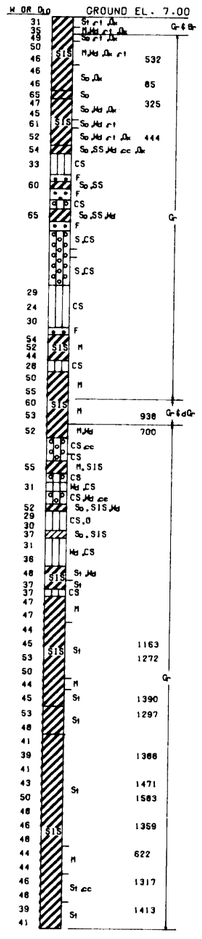
BOR. 66-MHUL

STA. 553+00

360 FT. LEFT OF B.L.

25 MAY 70

(FOR DETAILED DATA, SEE PLATE 57)

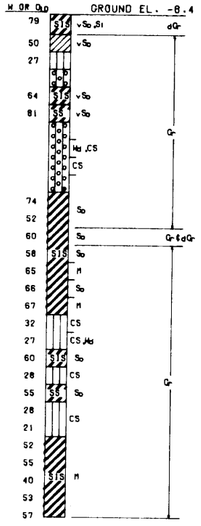


BOR. 67-MHL

STA. 553+00

600 FT. LEFT B/L

23 APR 70



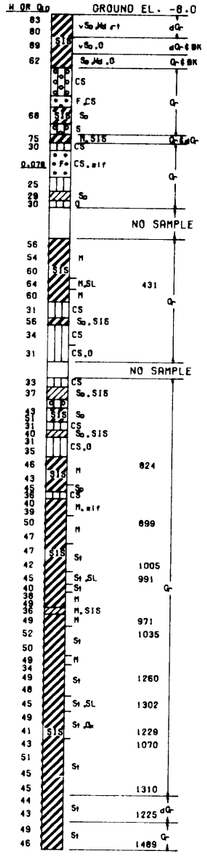
BOR. 68-MHUL

STA. 554+00

475 FT. LEFT OF B.L.

18-21 MAY 1970

(FOR DETAILED DATA SEE PLATE 58)

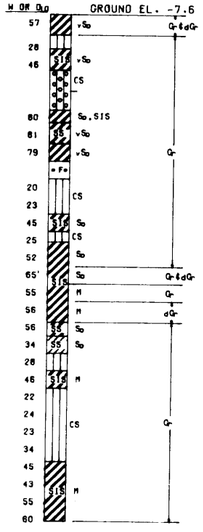


BOR. 69-MHL

STA. 555+35

380 FT. LEFT B/L

22 APR 70

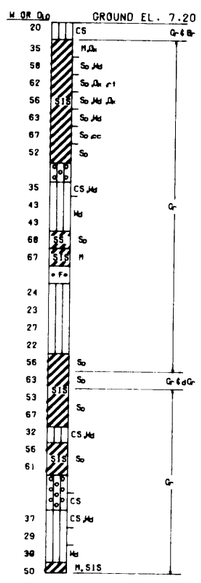


BOR. 70-MHL

STA. 555+35

600 FT. LEFT B/L

29 APR 70



ELEVATIONS IN FEET M.S.L.

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 12

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

OSTRICA LOCK

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

AUGUST 1971

FILE NO H-2-25275

BOR. 71-MHL

STA. 368+10
225 FT. LEFT B/L
5 MAY 70

BOR. 72-MHL

STA. 371+00
140 FT. LEFT B/L
30 APR 70

BOR. 73-MHUL

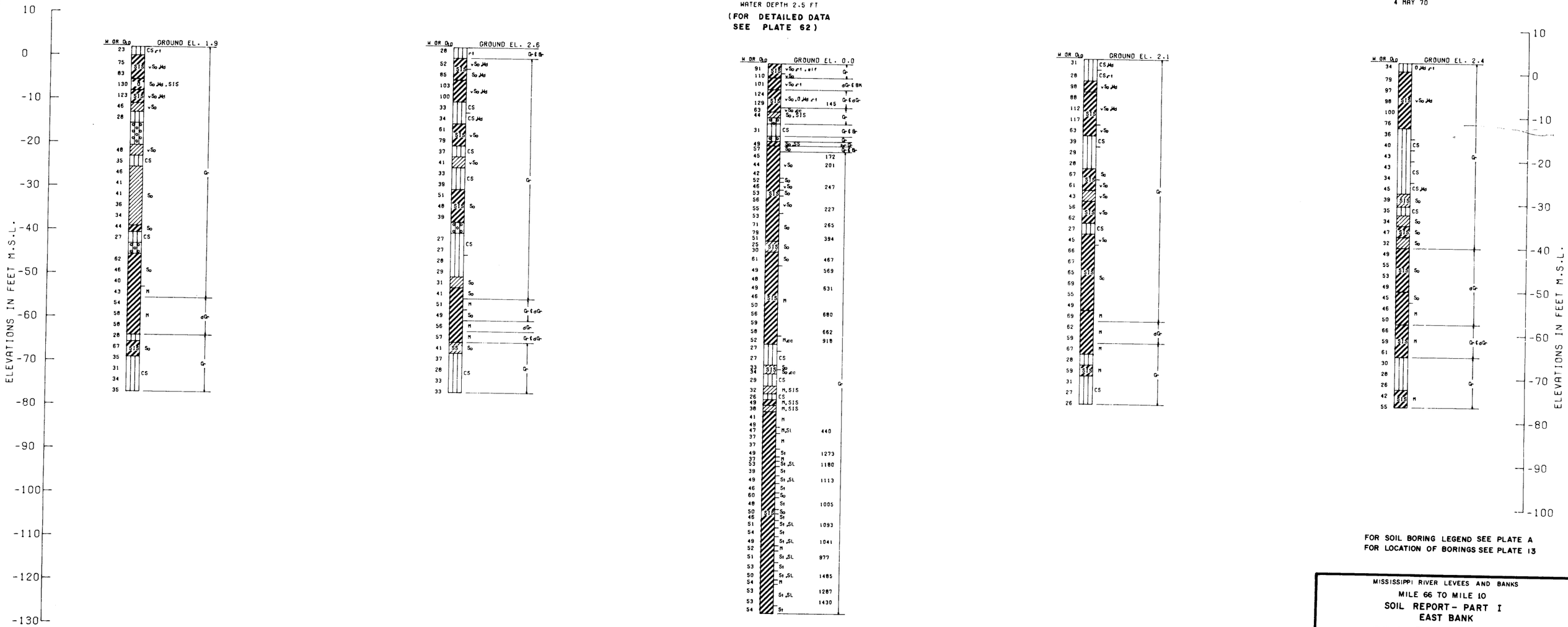
STA. 371+00
275 FT. LEFT OF B.L.
9-10 SEPT 70
WATER DEPTH 2.5 FT
(FOR DETAILED DATA SEE PLATE 62)

BOR. 74-MHL

STA. 371+20
420 FT. LEFT B/L
1 MAY 70

BOR. 75-MHL

STA. 372+50
250 FT. LEFT B/L
4 MAY 70



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 13

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

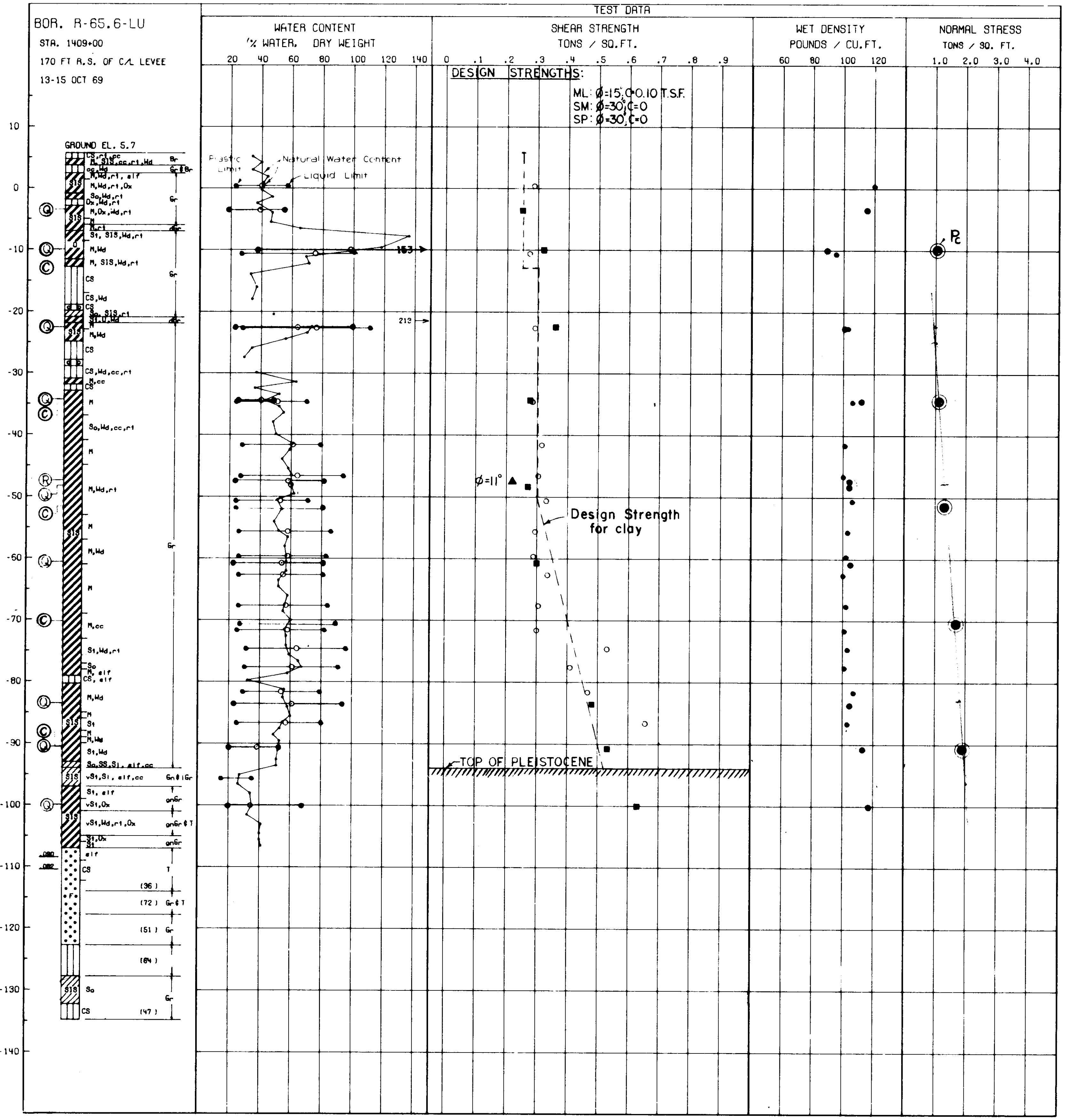
SOIL BORING DATA

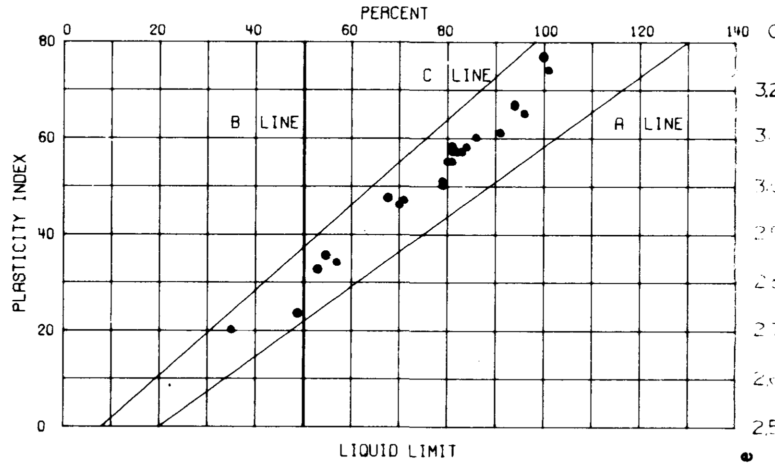
FRESHWATER CULVERT
VICINITY MILE 18.2 AHP
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

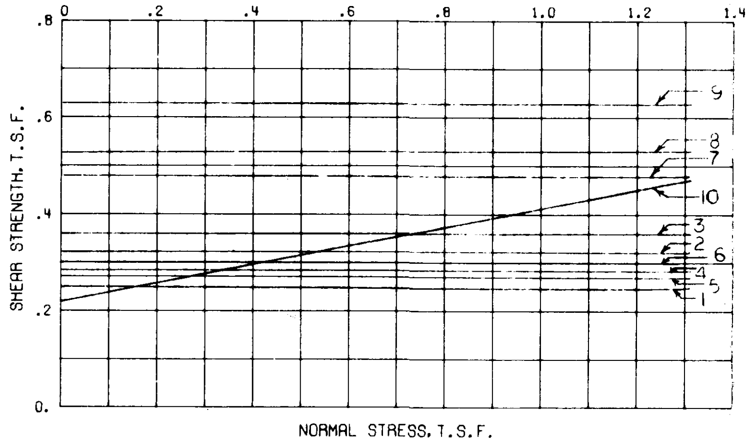
FILE NO. H-2-25275

PLATE 28



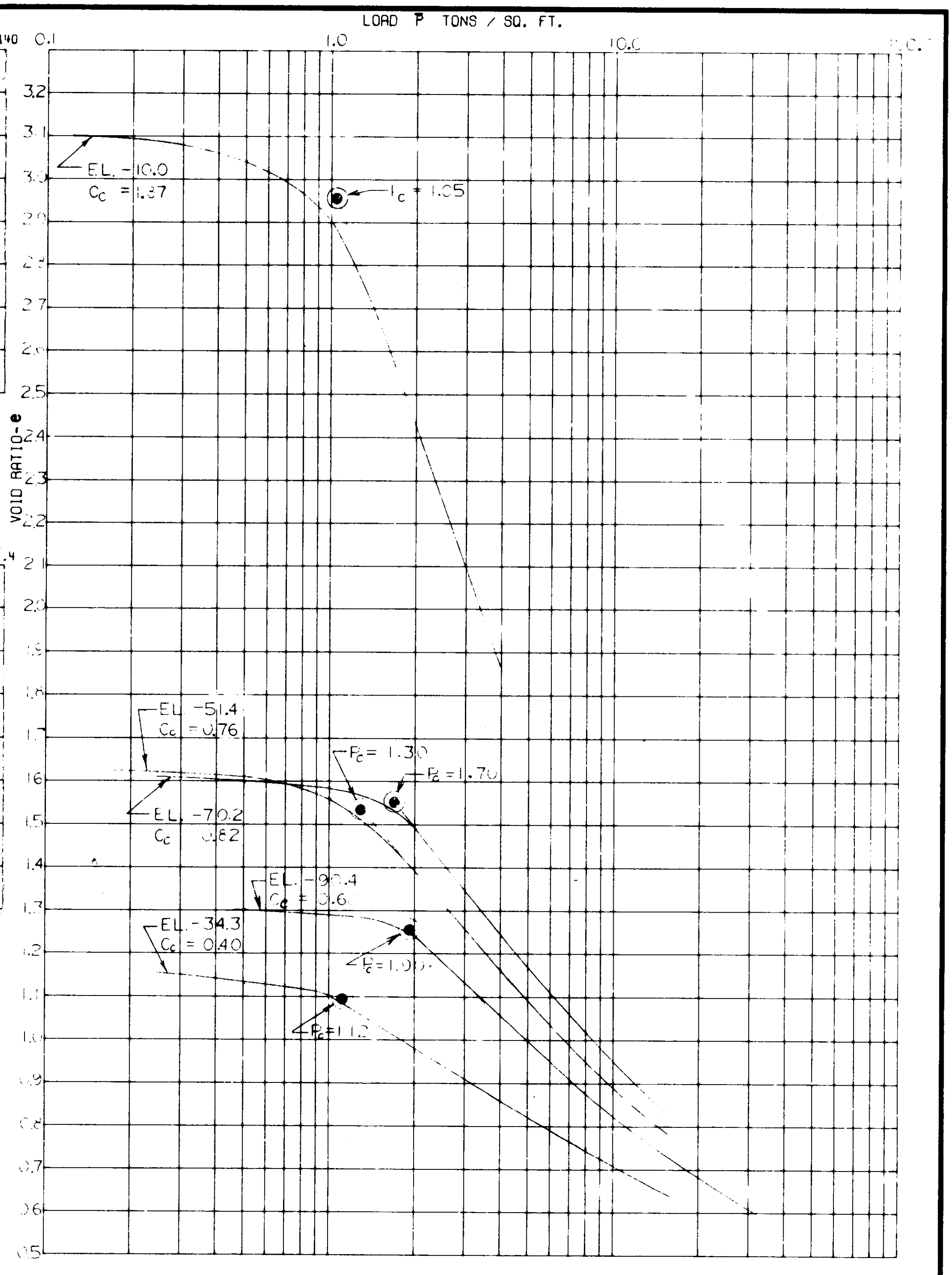


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-65.6-LU	1	-3.3	Q	0°	.25	CH
	2	-10.0			.32	
	3	-22.4			.36	
	4	-34.3			.28	CL
	5	-48.1			.27	CH
	6	-60.7			.30	
	7	-83.4			.48	
	8	-90.4			.53	
	9	-100.1			.63	
	10	-47.3	R	11°	.22	



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
□ - (S) CONSOLIDATED - DRAINED SHEAR TEST
BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 3

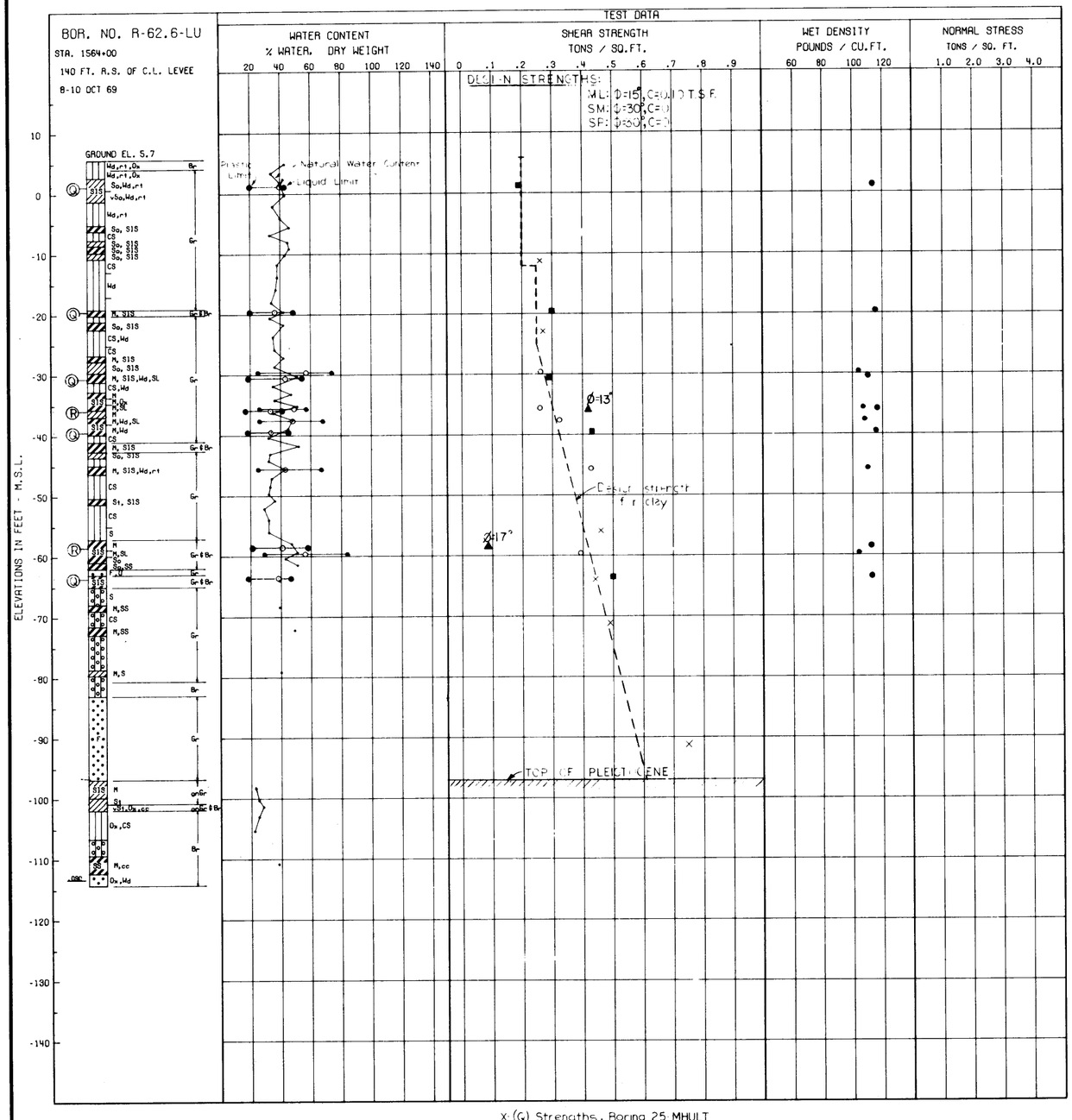
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

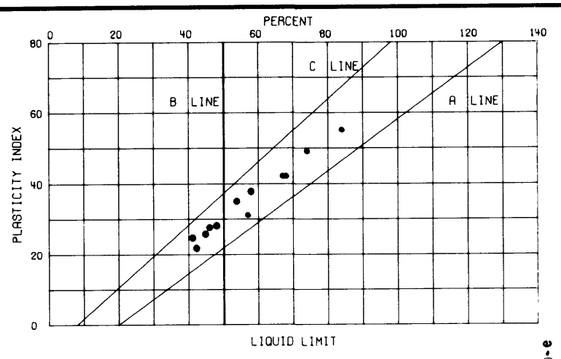
R-65.6-LU

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

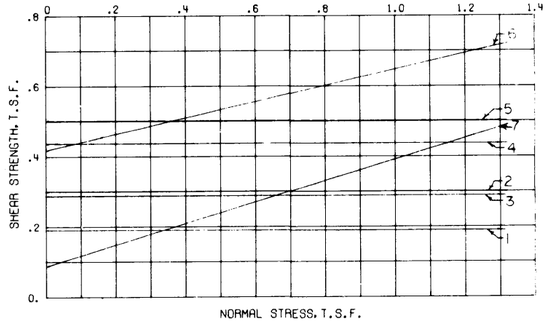
AUGUST 1971 FILE NO H-2-25275



X (Q) Strengths. Boring 25 MHULT



PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-62.6-LU	1	+1.2	Q	0°	19	CL
	2	-19.5		3°	30	CL
	3	-30.5		3°	29	CH
	4	-34.3		0°	44	CL
	5	-63.3		0°	50	CL
	6	-35.9	R	13°	42	CL
	7	-58.3		17°	09	CH

CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 4

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

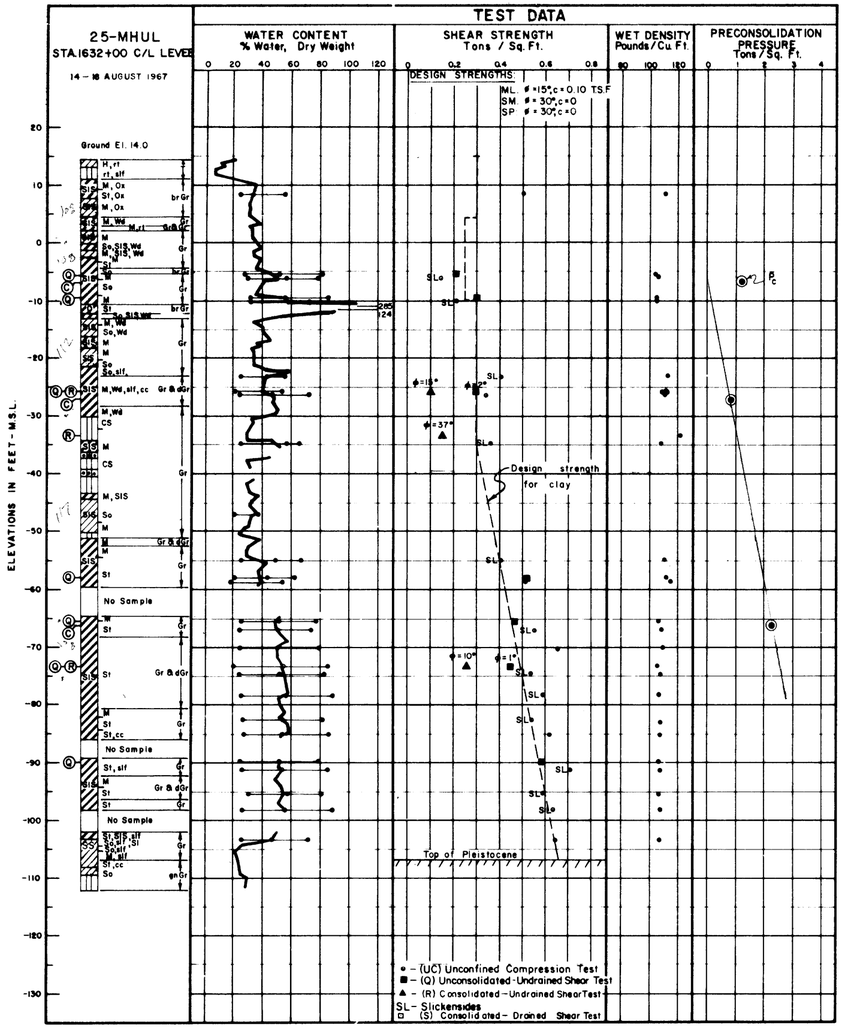
R-62.6-LU

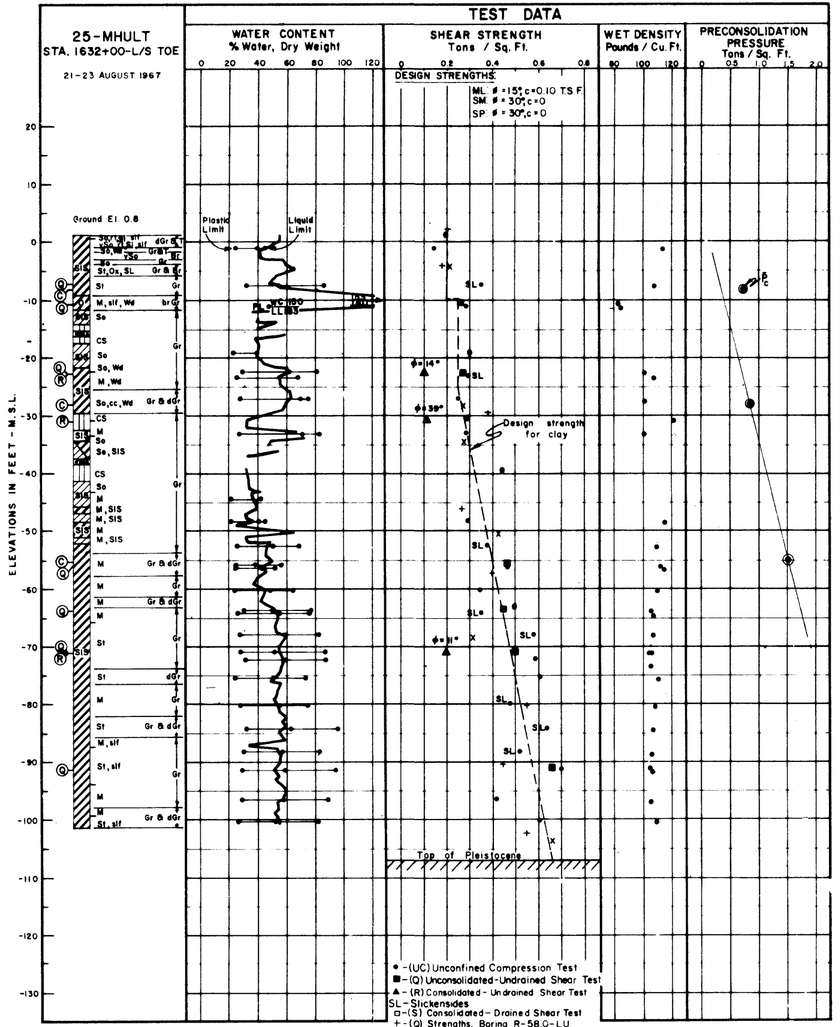
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

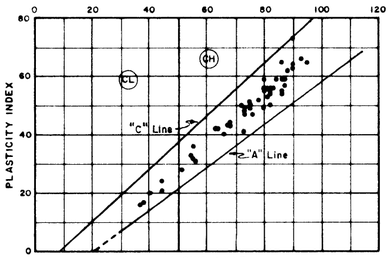
AUGUST 1971

FILE NO H-2-25275

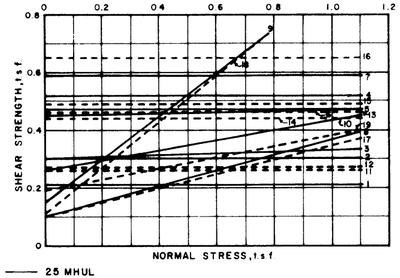
PLATE 30







PLASTICITY CHART

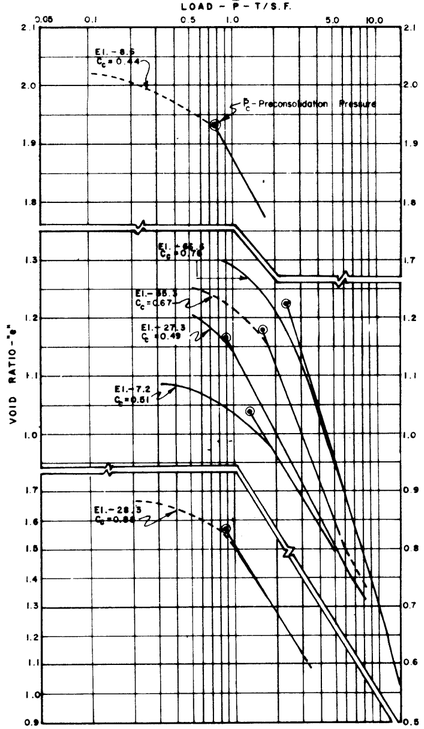


—— 25 MHUL
– – 25 MHULT

BORING NO	ENVELOPE NO	ENVELOPE EL	TYPE	STRENGTH ϕ°	STRENGTH c (t s f)	CLASS
25 MHUL	1	- 5.9	Q	0	0.21	CH
	2	- 9.9		0	0.30	CH
	3	- 26.1		2	0.30	CH
	4	- 58.3		0	0.52	CH
	5	- 65.9		0	0.47	CH
	6	- 73.7		1	0.45	CH
	7	- 90.1		0	0.59	CH
	8	- 26.1	R	15	0.10	CH
	9	- 33.7		* 37	0.15	ML
	10	- 73.7		10	0.26	CH
25 MHULT	11	- 11.0	Q	0	0.26	CH
	12	- 23.0		0	0.27	CH
	13	- 56.1		0	0.46	CH
	14	- 64.0		0	0.44	CH
	15	- 71.2		0	0.49	CH
	16	- 91.3		0	0.65	CH
	17	- 23.0	R	14	0.10	CL
	18	- 31.1		* 39	0.11	ML
	19	- 71.2		11	0.19	CH

* BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE: ϕ = 18.8°, C = 0.20 TSF

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. 25 MHUL
– – Boring No. 25 MHULT
For soil boring legend see plate A
For location of borings see plate 4

Borings were taken with a 5" diameter steel tube piston type sampler.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK
SOIL BORING DATA
25-MHUL AND 25 MHULT
STA. 1632 + 00
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO H-2-25275

PLATE 31

BOR. R-60.3-UL

STA. 1695+00

152 FT. R.S. OF C.L. LEVEE

9-14 JULY 69

GROUND EL. 5.5

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

WET DENSITY
POUNDS / CU.FT.

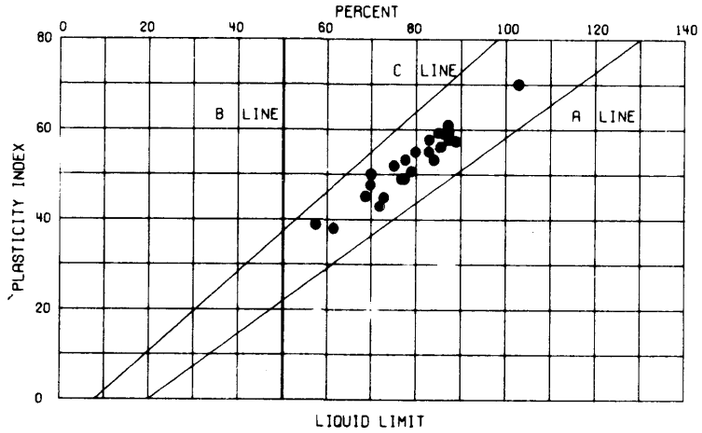
NORMAL STRESS
TONS / SQ. FT.

DESIGN STRENGTHS:
ML: Ø=15°, C=0.10 T.S.F.
SM: Ø=30°, C=0
SP: Ø=30°, C=0

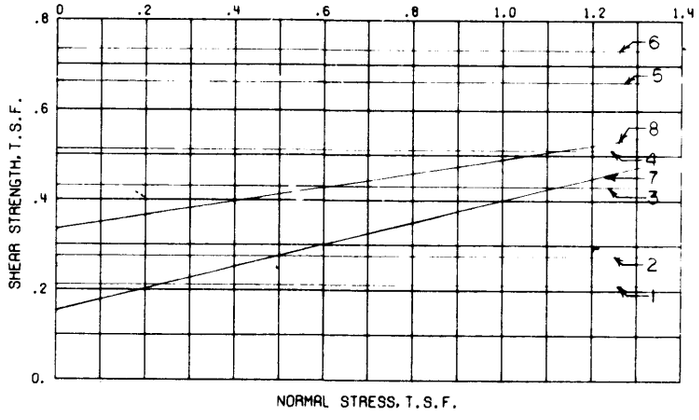
Natural Water Content
Liquid Limit
Plastic Limit

Ø=14°
Ø=9°
Design Strength for clay
Top of Pleistocene

X - (Q) Strengths, Boring 25-MHULT



PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-60.3-UL	1	-4.4	Q	0°	.21	CH
	2	-28.4			.27	CH
	3	-50.5			.43	CH
	4	-68.4			.31	CH
	5	-103.5			.66	CH
	6	-134.7			.73	CH
	7	-26.6	R	14	.15	CH
	8	-102.6		9	.33	CH

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 4

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

R-60.3-LU

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 32

BOR. R-58.0-LU
STA. 1800+00
100 FT R.S. OF C.L. LEV.
16 OCT 69

GROUND EL. 3.7

TEST DATA

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

Plastic Limit
Natural Water Content
Liquid Limit

SHEAR STRENGTH
TONS / SQ. FT.
0 .1 .2 .3 .4 .5 .6 .7 .8 .9

DESIGN STRENGTHS:
ML: Ø=15, C=0.10 T.S.F.
SM: Ø=30, C=0
SP: Ø=30, C=0

Design Strength for clay
Ø = 20°
Ø = 0°
Top of Pleistocene

WET DENSITY
POUNDS / CU. FT.
60 80 100 120

NORMAL STRESS
TONS / SQ. FT.
1.0 2.0 3.0 4.0

P_c

ELEVATIONS IN FEET - M.S.L.
10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100 -110 -120 -130 -140

NO SAMPLE

X - (Q) Strengths. Boring 25-MHULT

PLASTICITY CHART

PERCENT
0 20 40 60 80 100 120 140
80 60 40 20 0
PLASTICITY INDEX
C LINE
B LINE
A LINE
LIQUID LIMIT

SHEAR STRENGTH DATA

SHEAR STRENGTH, T.S.F.
0. .2 .4 .6 .8 1.0 1.2 1.4
.8 .6 .4 .2 0.
NORMAL STRESS, T.S.F.
5
5.7
9
6
2
4
3
1

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ°	STRENGTH C - TSF	CLASS
R-58.0-LU	1	-4.4	Q	3	.18	CL
	2	-29.4		2	.37	CH
	3	-46.2		0	.26	CH
	4	-57.2		0	.40	CH
	5	-80.4		0	.55	CH
	6	-90.3		0	.45	CH
	7	-102.3		0	.55	CH
	8	-129.2		0	.66	CH
	9	-89.4	R	10	.31	CH

LOAD P TONS / SQ. FT.
.1 1 10 100
VOID RATIO e
2.0 1.8 1.6 1.4 1.2 1.0 0.8 0.6
EL. -46.2
C_c = .98
P_c = 1.35
EL. +89.4
C_c = .88
P_c = 2.40
EL. -9.2
C_c = 0.40
EL. -112.2 C_c = 0.14
EL. -68.3
C_c = .50
P_c = .98
P_c = 2.30
P_c = 3.15

CONSOLIDATION DATA

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

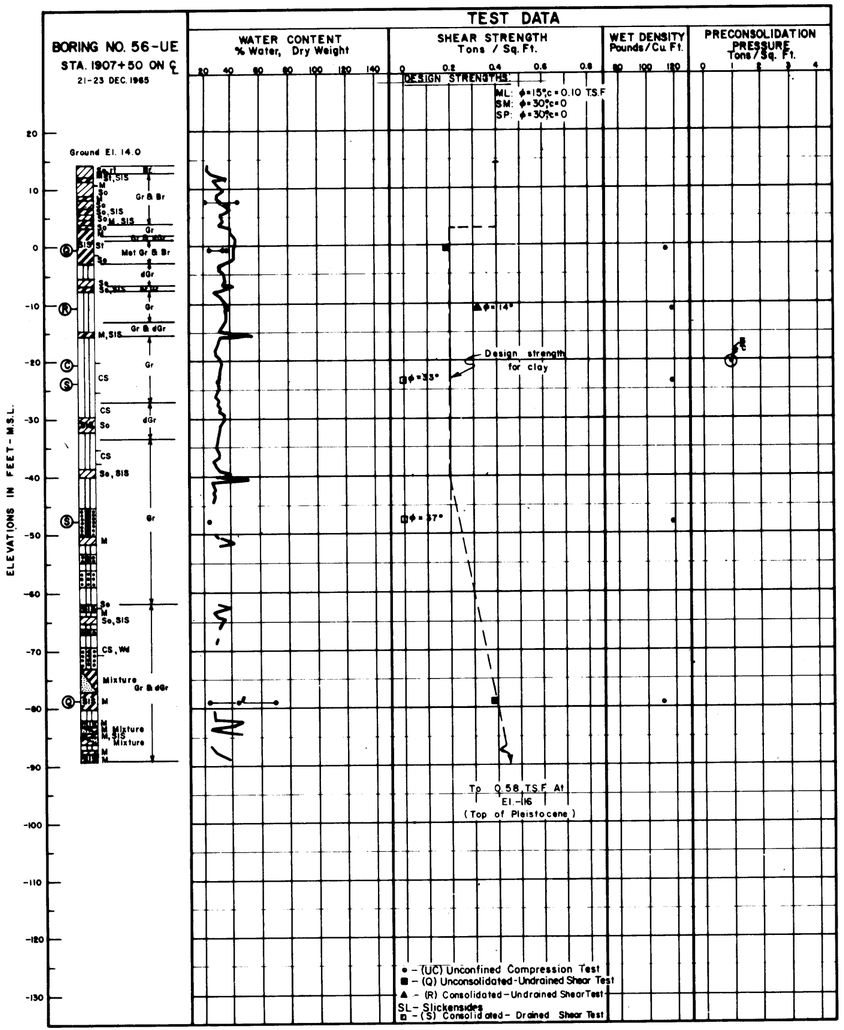
R - 58 . 0 - LU

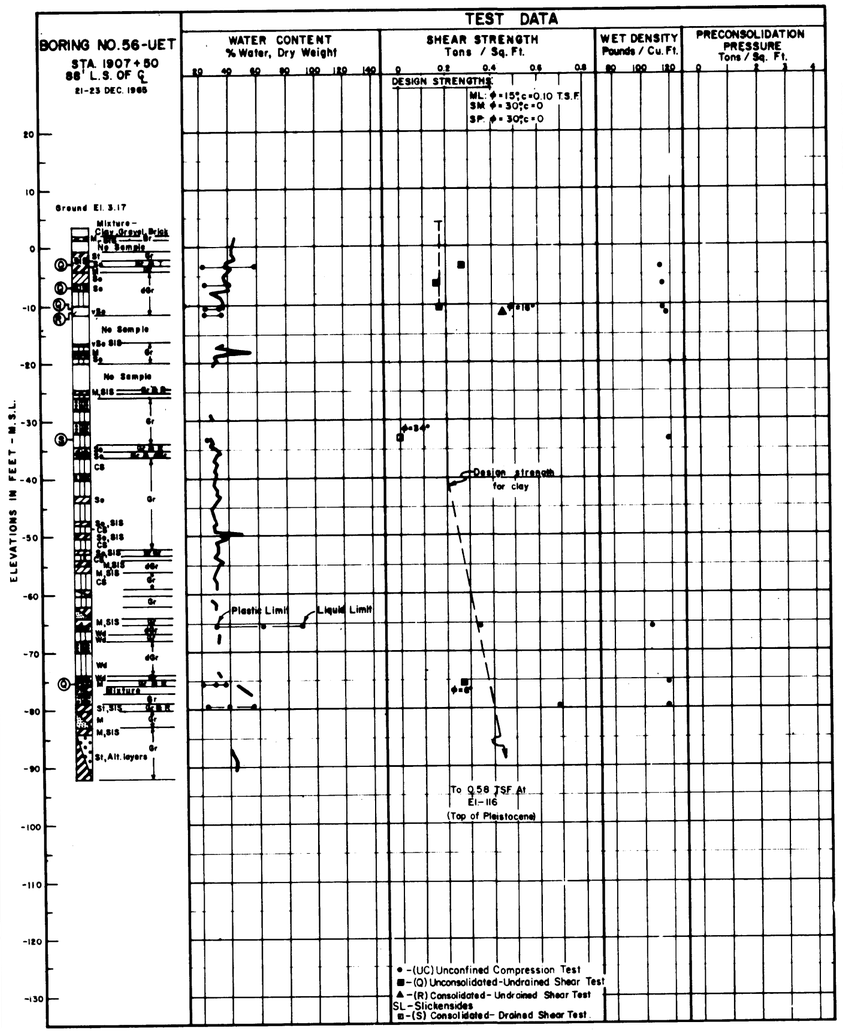
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

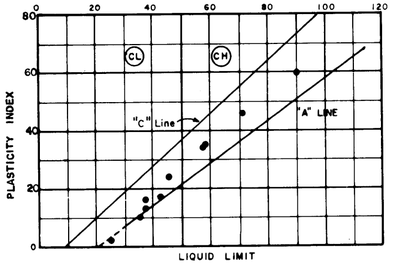
AUGUST 1971

FILE NO H-2-25275

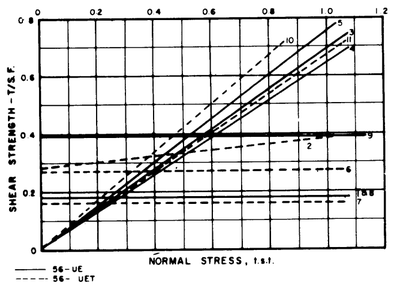
PLATE 33







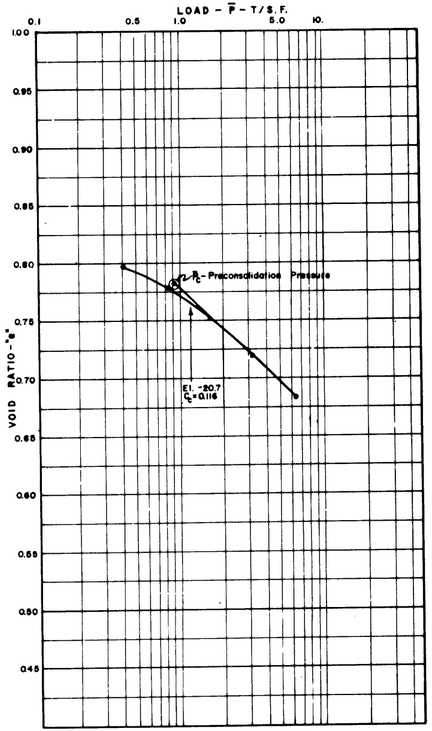
PLASTICITY CHART



BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH ϕ	STRENGTH c (t.s.f.)	CLASS
56-UE	1	-0.7	Q	0	0.18	ML
	2	-79.0		0	0.39	CH
	3	-11.1	R #	35	0.00	ML
	4	-23.8	S	33	0.00	ML
	5	-47.9		37	0.00	SM
56 UET	6	-3.3	Q	0	0.27	CH
	7	-6.7		0	0.16	CL
	8	-10.6		0	0.18	ML
	9	-75.6		6	0.28	CL
	10	-11.5	R	40	0.00	CL
	11	-33.2	S	34	0.00	ML

#BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE: ϕ= 15°, C= 0.10 TSF

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. 56-UE
– – Boring No. 56-UET
For soil boring legend see plate A
For location of borings see plate 5

Borings were taken with a 5" diameter steel tube piston type sampler.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART I
EAST BANK

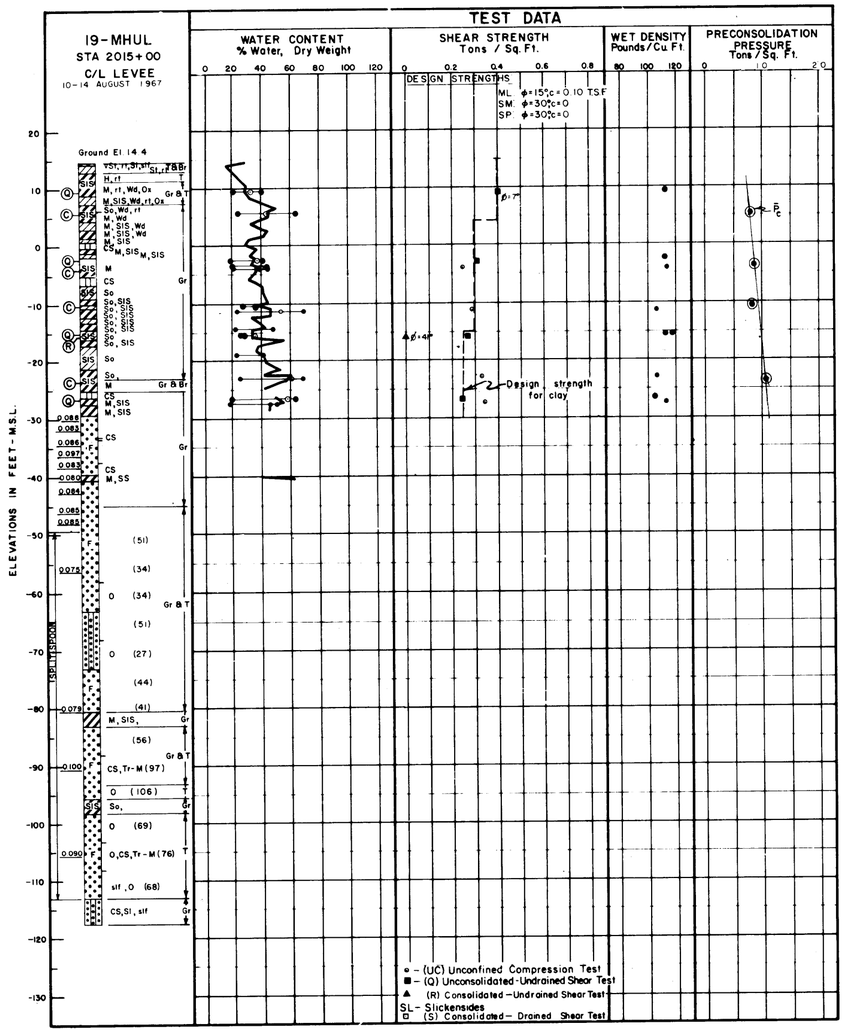
SOIL BORING DATA

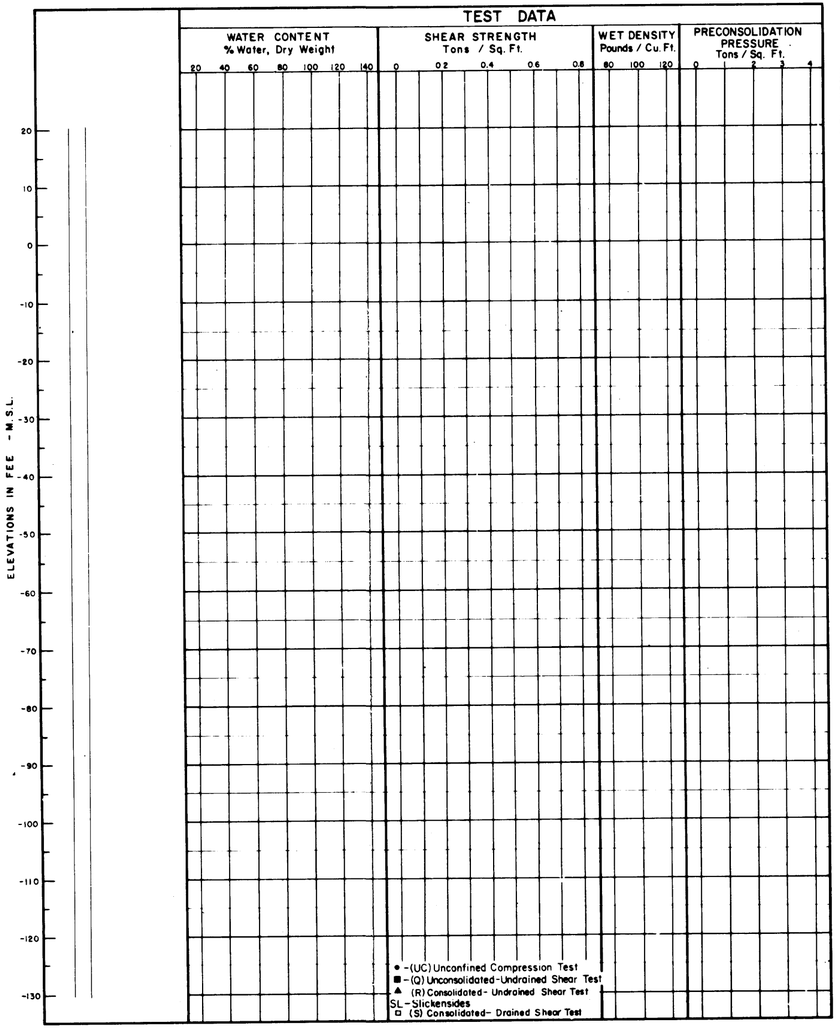
56-UE AND 56-UET
STA. 1907+50
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

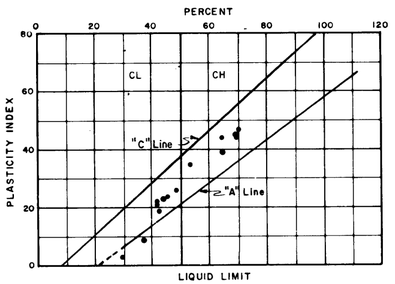
AUGUST 1971

FILE NO. H-2-25275

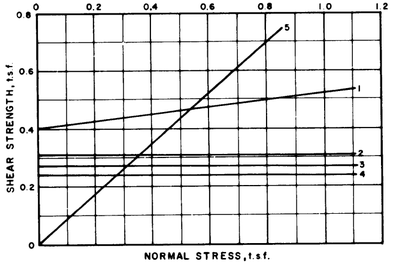
PLATE 34







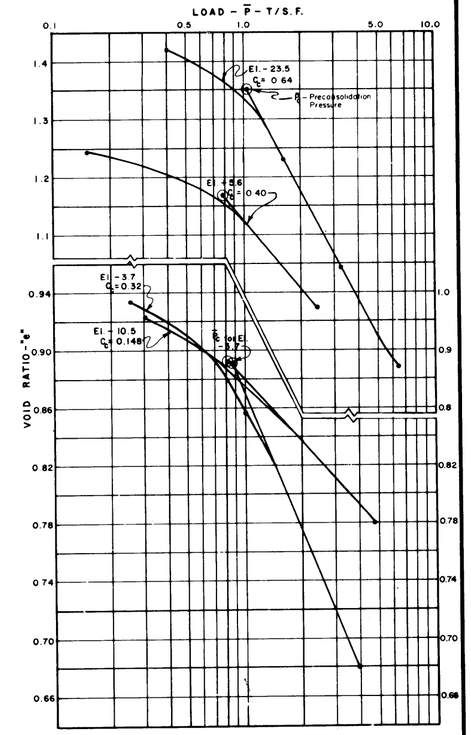
PLASTICITY CHART



BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH φ°	STRENGTH C (t.s.f.)	CLASS
19-MHUL	1	+9.2	Q	7	0.40	CL
	2	-2.6		0	0.31	CL
	3	-15.6		0	0.27	ML
	4	-26.7		0	0.24	CH
	5	-15.6	* R	41	0.00	ML

* BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE: φ=15.7°, C=0.28 TSF

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. 19-MHUL
—— Boring No.
For soil boring legend see plate A
For location of borings see plate 6

Borings were taken with a 5" diameter steel tube piston type sampler.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

19-MHUL
STA. 2015+00

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 35

BOR. 19 MHULT

STA. 2015+00

70 FT. R.S. OF C.L. LEVEE

24 OCT. 69

TEST DATA

WATER CONTENT % WATER, DRY WEIGHT

SHEAR STRENGTH TONS / SQ.FT.

WET DENSITY POUNDS / CU.FT.

NORMAL STRESS TONS / SQ. FT.

DESIGN STRENGTHS:
ML: ϕ = 15°, c = 0.10 T.S.F.
SM: ϕ = 30°, c = 0
SP: ϕ = 30°, c = 0

GROUND EL. 3.6

ELEVATIONS IN FEET - M.S.L.

Plastic Limit

Natural Water Content

Liquid Limit

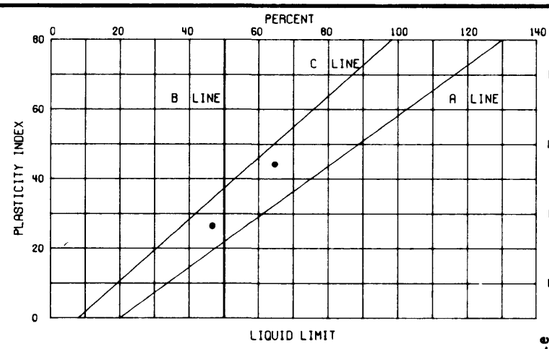
Design Strength for clay

ϕ = 17.5°

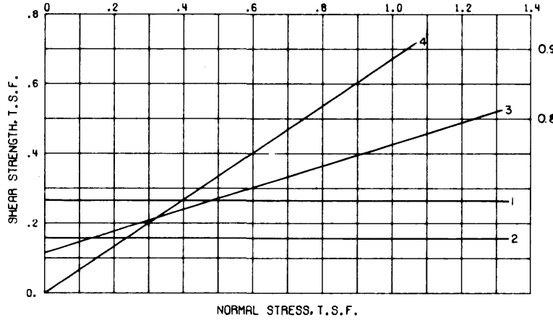
Φ = 34°

$\bar{P}_c$

NO SAMPLE



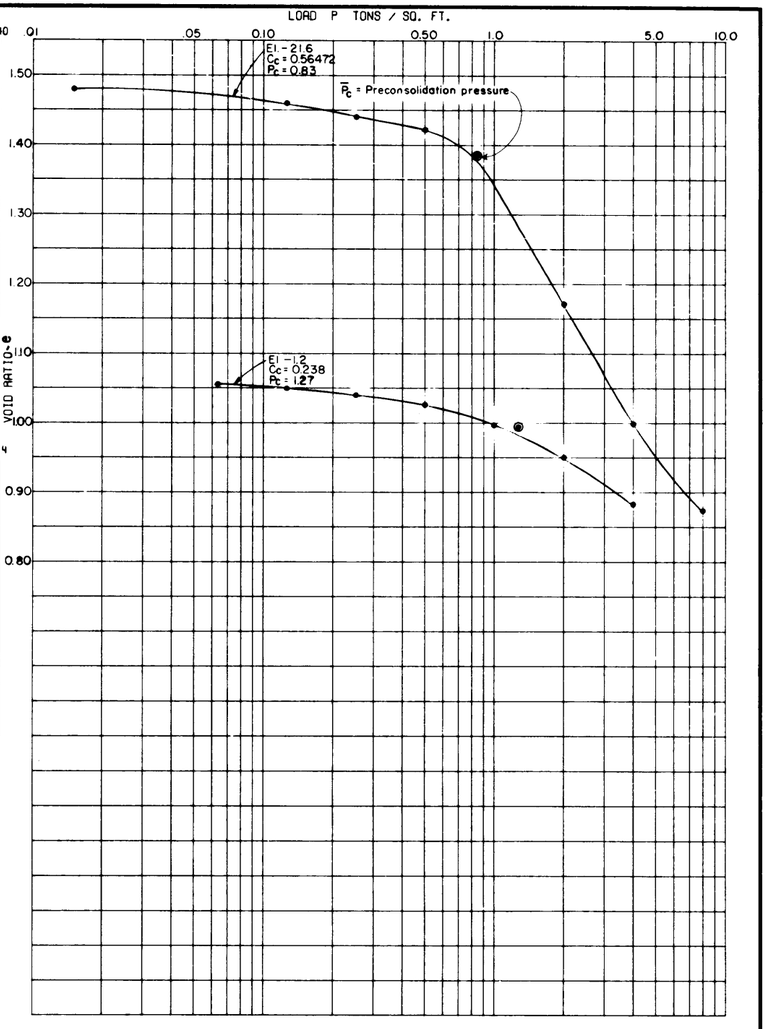
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C TSF	CLASS
19- MHULT	1	- 1.2	Q	0	0.270	CL
	2	-22.5		0	0.160	CH
	3	-13.3	R*	17.5°	0.120	ML
	4	-29.2	S	34°	0.00	SM

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE



CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 6

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

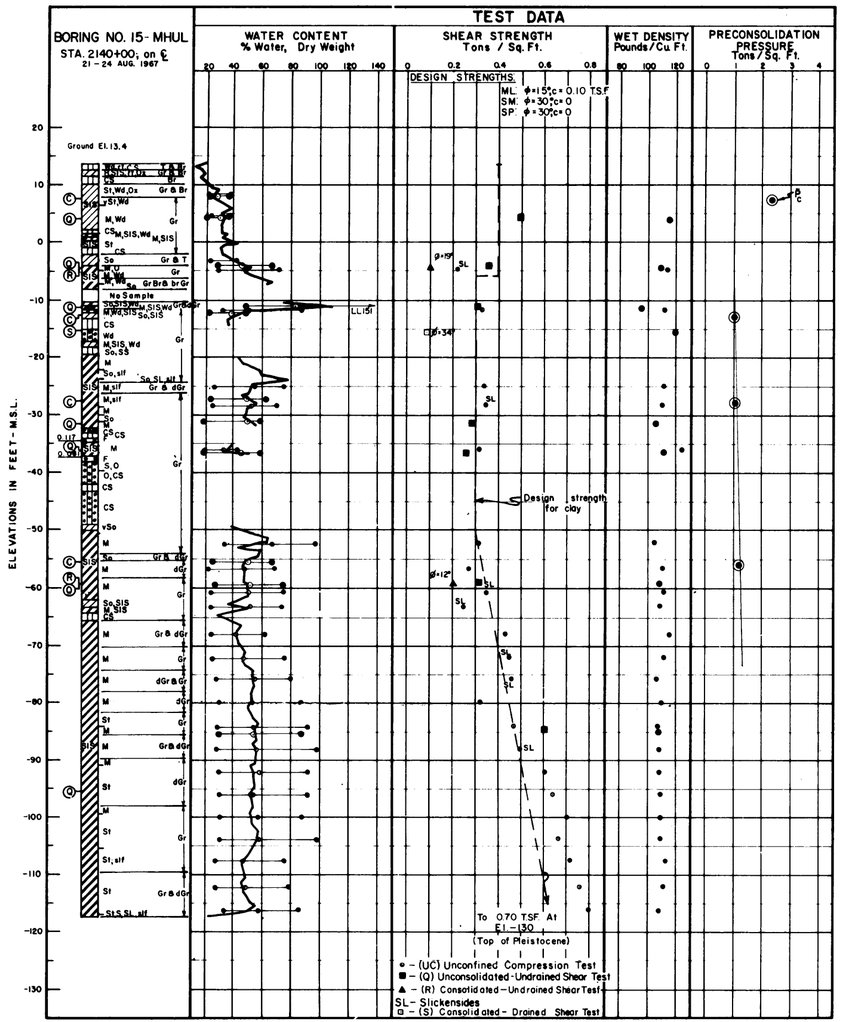
19- MHULT

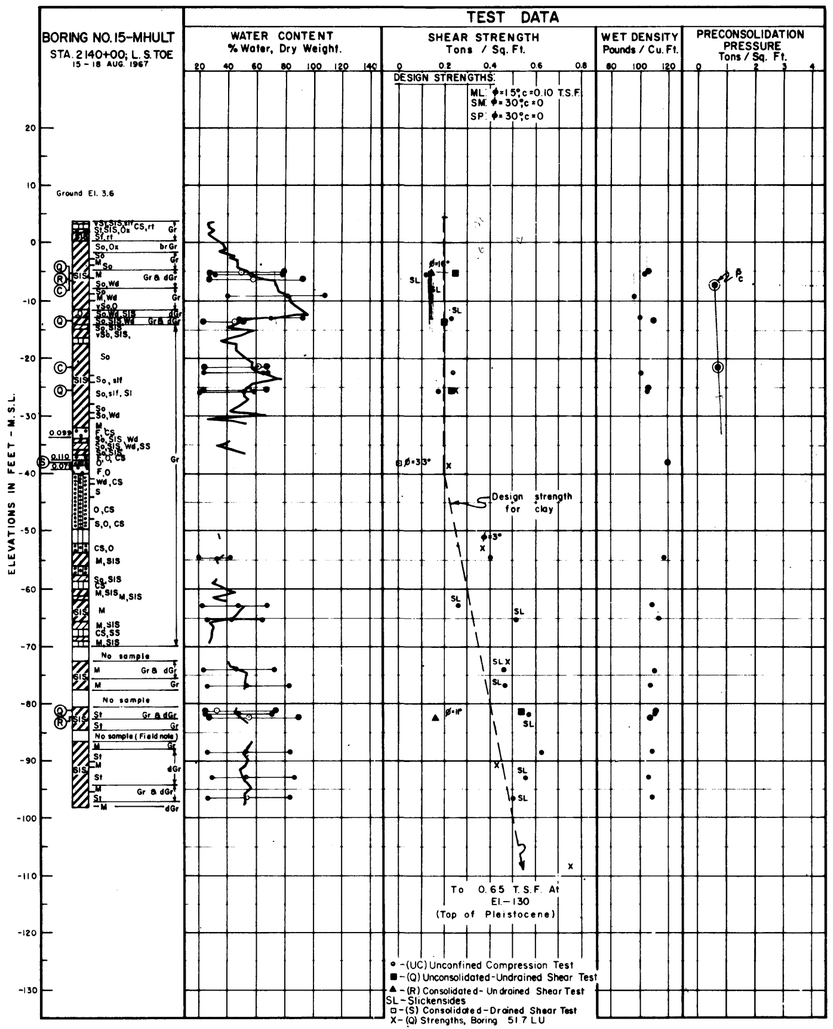
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

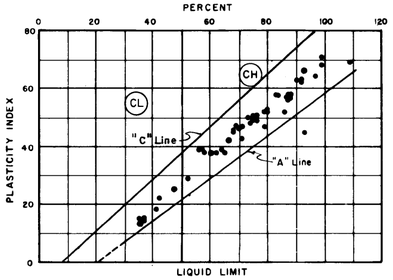
AUGUST 1971

FILE NO H-2-25275

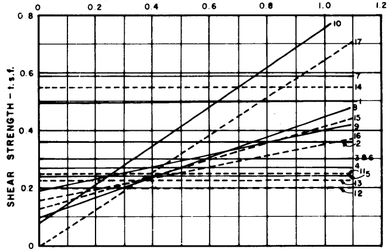
PLATE 36





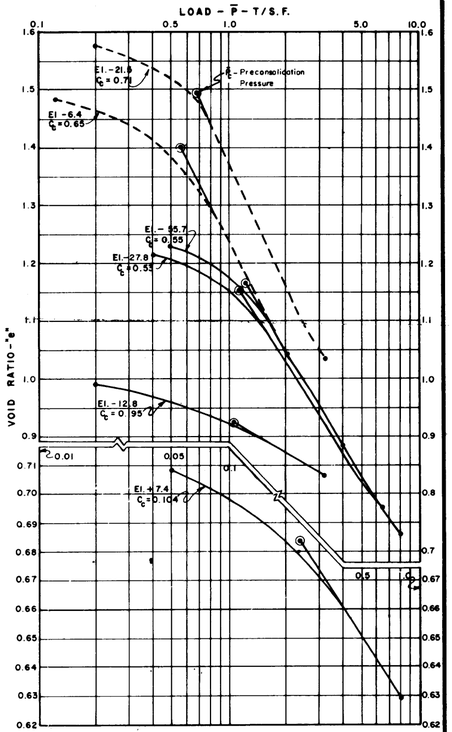


PLASTICITY CHART



BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH ϕ°	STRENGTH c (t.s.f.)	CLASS
15-MHUL	1	3.8	Q	0	0.50	SM
	2	- 4.6			0.36	CH
	3	- 11.5			0.30	CH
	4	- 31.8			0.27	CH
	5	- 36.7			0.24	CH
	6	- 59.8			0.30	CH
	7	- 85.6		0	0.59	CH
	8	- 4.6	R	19	0.10	CH
	9	- 59.8		12	0.19	CH
	10	- 15.6	S	34	0.08	SM
15-MHULT	11	- 5.3	Q	0	0.25	CH
	12	- 13.5			0.20	CH
	13	- 25.5			0.23	CH
	14	- 81.1		0	0.53	CH
	15	- 5.3	R	16	0.13	CH
	16	- 82.2		11	0.16	CH
	17	- 38.3	S	33	0.00	SM

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. 15-MHUL
— — Boring No. 15-MHULT
For soil boring legend see plate A
For location of borings see plate 6

Borings were taken with a 5" diameter steel tube piston type sampler.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART I
EAST BANK

SOIL BORING DATA

15-MHUL AND 15-MHULT
STA. 2140+00

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

AUGUST 1971

FILE NO H-2-25275

PLATE 37

BORING NO. R-51.7-LU

STA. 2148+50

60 FT. R.S. OF LEVEE C/L

11-16 DEC 68

GROUND EL. 3.4

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT % WATER, DRY WEIGHT

SHEAR STRENGTH TONS / SQ.FT.

WET DENSITY POUNDS / CU.FT.

NORMAL STRESS TONS / SQ. FT.

DESIGN STRENGTHS:
ML: Ø=15, C=0.10 T.S.F.
SM: Ø=30, C=0
SP: Ø=30, C=0

Plastic Limit, Natural Water Content, Liquid Limit

Ø=14°

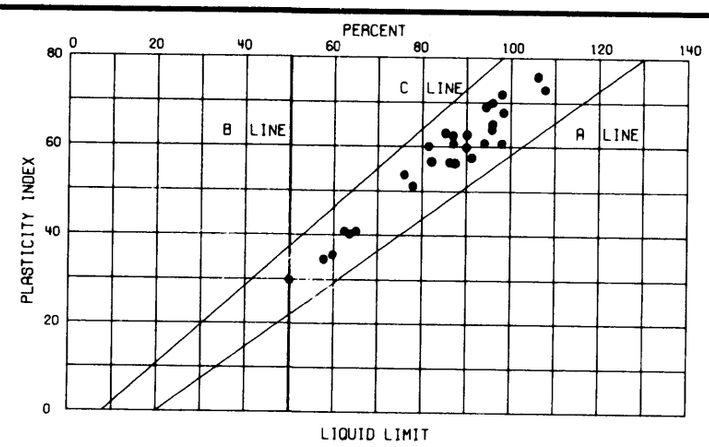
Design Strength for clay

Ø=3°

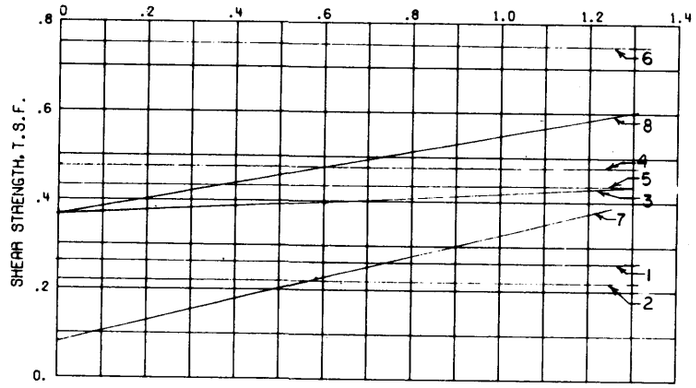
Ø=10°

Top of Pleistocene

X- (Q) Strengths, Boring 15-MHULT



PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-51.7-LU	1	-25.5	Q	0°	.26	CH
	2	-38.6			.22	CH
	3	-53.0		3°	.37	CH
	4	-72.7			.48	CH
	5	-90.3		0°	.43	CH
	6	-108.8			.75	CH
	7	-26.4	R	14°	.08	CH
	8	-93.7		10°	.37	CH

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 6

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

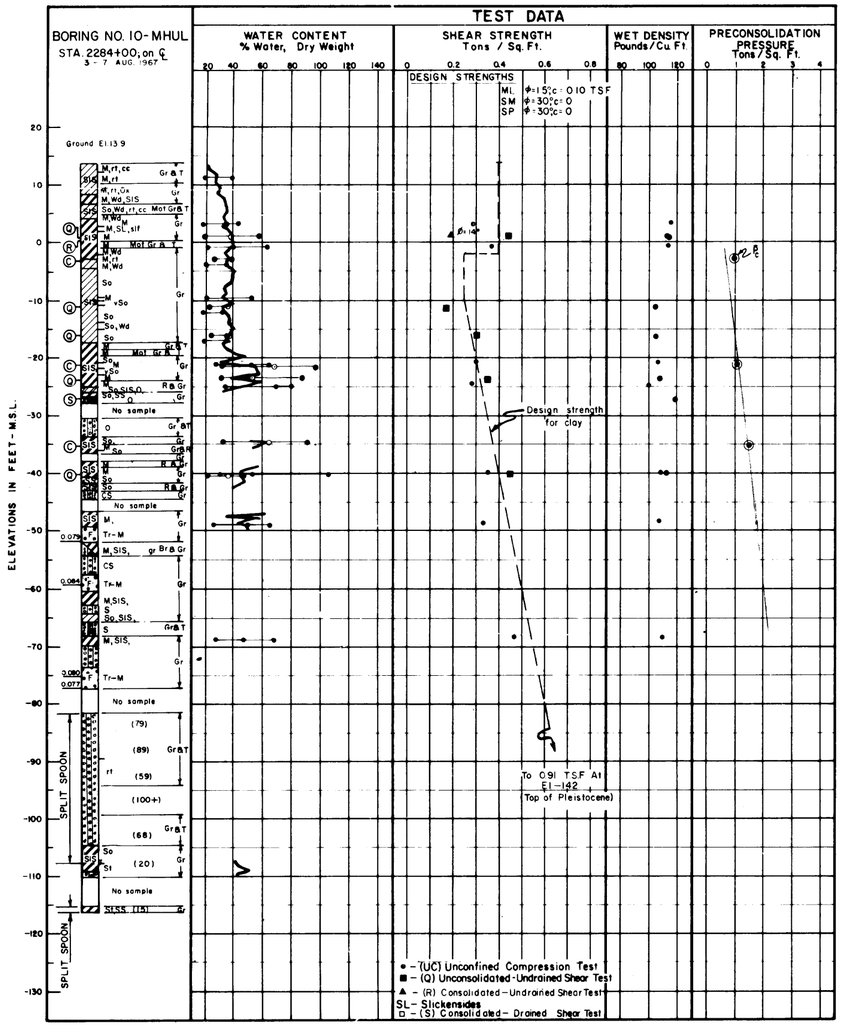
R-51.7-LU

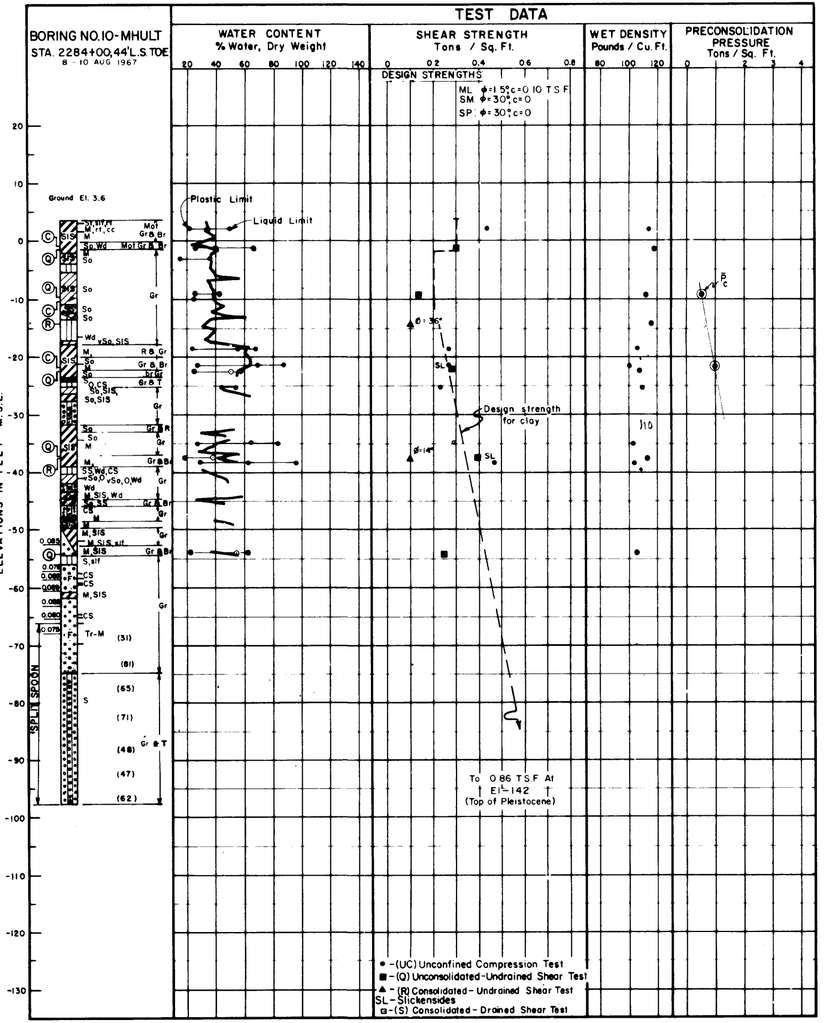
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

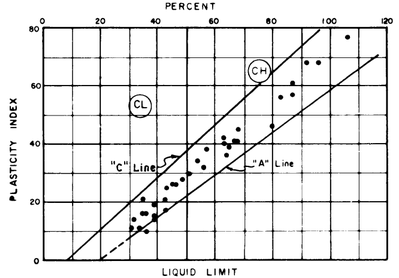
AUGUST 1971

FILE NO. H-2-25275

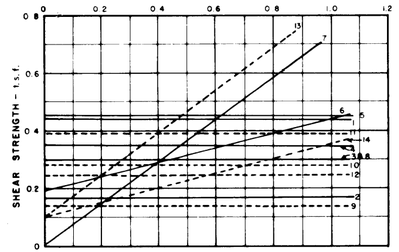
PLATE 38







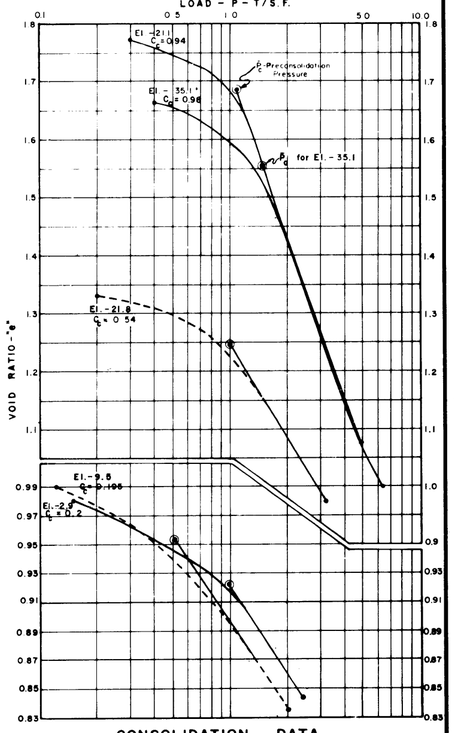
PLASTICITY CHART



BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH φ°	STRENGTH c (t.s.f.)	CLASS
10-MHUL	1	1.0	Q	0	0.44	CH
	2	-11.2			0.17	CL
	3	-16.0			0.30	CL
	4	-23.7			0.35	CH
	5	-40.1		0	0.45	CL, SM
	6	1.0	R	14	0.19	CH
	7	-27.1	S	36	0.00	SM
10-MHULT	8	-1.1	Q	0	0.44	CH
	9	-9.5			0.14	ML
	10	-22.5			0.28	CH
	11	-37.6			0.39	CL
	12	-54.0		0	0.25	CH
	13	-143	R	*36	0.10	ML
	14	-37.6		14	0.10	CL

* BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE : φ = 18°, C = 0.08 TSF

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. 10-MHUL
– – Boring No. 10-MHULT
For soil boring legend see plate A
For location of borings see plate 7

Borings were taken with a 5" diameter steel tube piston type sampler.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT — PART I
EAST BANK

SOIL BORING DATA

10-MHUL AND 10-MHULT
STA. 2284+00

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 39

BORING NO. I-U

STA. 2296+25; 122' R.S. ℄ LEVEE

20-27 JUN. 1951

Ground El. 7.0

TEST DATA

WATER CONTENT % Water, Dry Weight

SHEAR STRENGTH Tons / Sq. Ft.

WET DENSITY Pounds / Cu. Ft.

PRECONSOLIDATION PRESSURE Tons / Sq. Ft.

ELEVATIONS IN FEET - M.S.L.

No Test

No Test

No Test

● - (UC) Unconfined Compression Test
■ - (Q) Unconsolidated-Undrained Shear Test
▲ - (R) Consolidated - Undrained Shear Test
SL - Slickensides
□ - (S) Consolidated - Drained Shear Test

TEST DATA

WATER CONTENT % Water, Dry Weight

SHEAR STRENGTH Tons / Sq. Ft.

WET DENSITY Pounds / Cu. Ft.

PRECONSOLIDATION PRESSURE Tons / Sq. Ft.

ELEVATIONS IN FEET - M.S.L.

● - (UC) Unconfined Compression Test
■ - (Q) Unconsolidated-Undrained Shear Test
▲ - (R) Consolidated - Undrained Shear Test
SL - Slickensides
□ - (S) Consolidated - Drained Shear Test

NORMAL STRESS - T/S.F.

SHEAR STRENGTH - T/S.F.

(Q) - UNCONSOLIDATED - UNDRAINED

NORMAL STRESS - T/S.F.

SHEAR STRENGTH - T/S.F.

(R) - CONSOLIDATED - UNDRAINED

NORMAL STRESS - T/S.F.

SHEAR STRENGTH - T/S.F.

(S) - CONSOLIDATED - DRAINED

SHEAR TEST DATA

LOAD - $\bar{P}$ - T/S.F.

VOID RATIO - "e"

CONSOLIDATION DATA

—— Boring No. I-U
– – Boring No.
For soil boring legend see plate A
For location of borings see plate 7

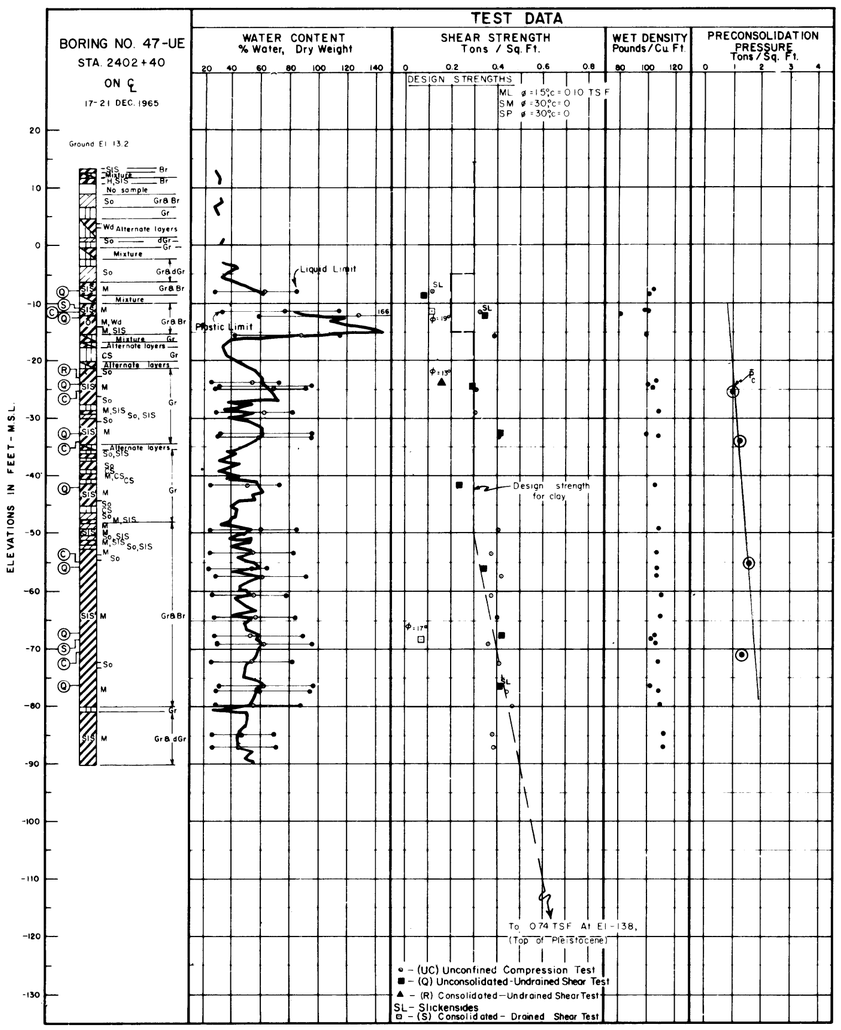
Borings were taken with a 5" diameter steel tube piston type sampler.

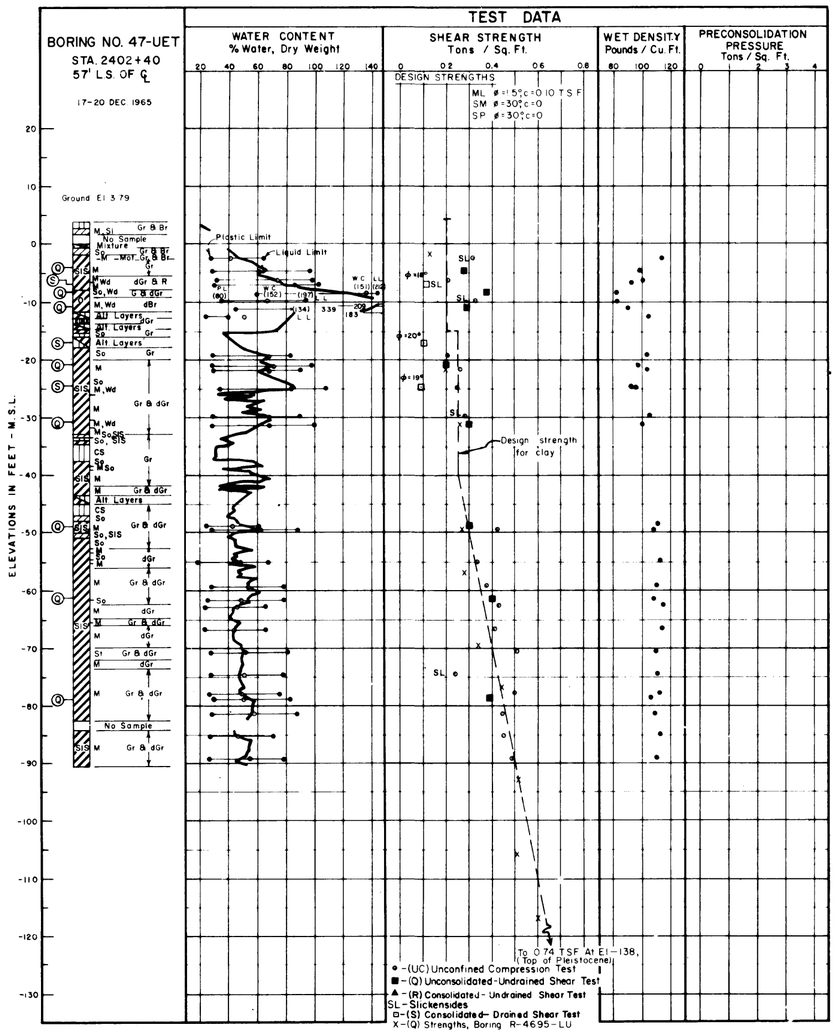
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

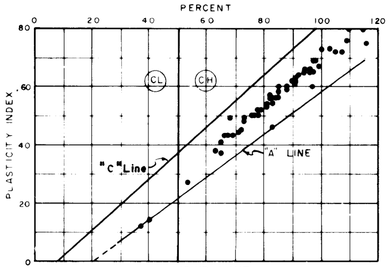
SOIL BORING DATA

I-U
STA. 2296+95
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

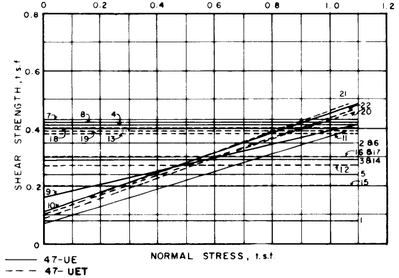
PLATE 40

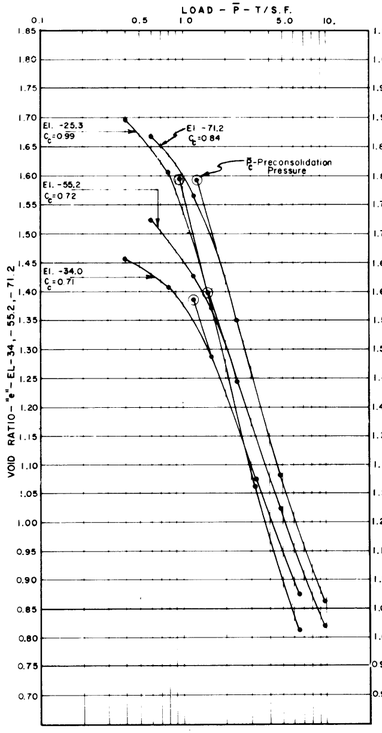






PLASTICITY CHART





CONSOLIDATION DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH φ	STRENGTH c (t.s.f.)	CLASS
47-UE	1	- 8.4	Q	0	0.08	CH
	2	-11.9		0	0.35	CH
	3	-24.1		0	0.29	CH
	4	- 32.8		0	0.41	CH
	5	-41.7		0	0.24	CH
	6	- 56.0		0	0.35	CH
	7	- 67.6		0	0.43	CH
	8	- 76.6		0	0.42	CH
	9	-23.3	R	13	0.16	CH
	10	-11.0	S	19	0.11	CH
	11	-68.3		17	0.07	CH
47-UET	12	- 4.5	Q	0	0.27	CH
	13	- 8.5		0	0.38	CH
	14	-11.0		0	0.29	CH
	15	-20.9		0	0.20	CH
	16	-31.1		0	0.30	CH
	17	-48.5		0	0.30	CH
	18	-61.4		0	0.40	CH
	19	-78.7		0	0.39	CH
	20	-7.0	S	18	0.11	CH
	21	-17.3		20	0.10	CH/ML
	22	-24.6		19	0.09	CH

SHEAR STRENGTH DATA

—— Boring No. 47-UE
– – Boring No. 47-UET
For soil boring legend see plate A
For location of borings see plate 7

Borings were taken with a 5" diameter steel tube piston type sampler.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

47-UE AND 47-UET
STA. 2402+40

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

AUGUST 1971 FILE NO H-2-25275

PLATE 41

BOR. R-46.95-LU

STA. 2402+40

185 FT. R.S. OF C.L. LEVEE

29 OCT. 69

GROUND EL. 4.9

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ. FT.

WET DENSITY
POUNDS / CU. FT.

NORMAL STRESS
TONS / SQ. FT.

DESIGN STRENGTHS:
ML: Ø=5°, C=0.1 0 T.S.F.
SM: Ø=30°, C=0
SP: Ø=30°, C=0

Plastic Limit

Natural Water Content

Liquid Limit

279

Design Strength for clay

Ø=13°

To 0.73 t.s.f. at el.-136.0, Top of Pleistocene

X - (Q) Strengths, Boring 47-UET

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

A LINE

B LINE

C LINE

PLASTICITY CHART

SHEAR STRENGTH, T.S.F.

NORMAL STRESS, T.S.F.

SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R46.95LU	1	-2.0	Q	0°	.13	CH
	2	-21.7			.20	
	3	-31.2			.26	
	4	-49.6			.27	
	5	-56.8			.28	
	6	-69.7			.34	
	7	-76.8			.44	
	8	-92.9			.52	
	9	-105.7			.51	
	10	-116.7			.60	
	11	-60.7	R	13°	.16	

LOAD P TONS / SQ. FT.

VOID RATIO-e

EL. - 30.3
C_c = 1.12
P_c = 1.07

EL. - 121.5
C_c = 0.51
P_c = 2.50

EL. - 94.3
C_c = 0.46
P_c = 1.70

EL. - 70.3
C_c = 0.41
P_c = 1.40

EL. - 61.9
C_c = 0.32
P_c = 1.47

CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 7

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

R-46.95-LU

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 42

BORING NO. 2-MHULT
STA. 2518+00
40' R.S. ℄ LEVEE
27 Jul.-2 AUG. 1967

Ground El. 4.8

TEST DATA

WATER CONTENT
% Water, Dry Weight

SHEAR STRENGTH
Tons / Sq. Ft.

DESIGN STRENGTHS
ML ϕ=15° c=0.10 TS.F
SM ϕ=30° c=0
SP ϕ=30° c=0

WET DENSITY
Pounds / Cu. Ft.

PRECONSOLIDATION PRESSURE
Tons / Sq. Ft.

Plastic Limit
Liquid Limit

Design strength for clay

To 0.67 TSF At El.-134 (Top of Pleistocene)

ELEVATIONS IN FEET - M.S.L.

- (UC) Unconfined Compression Test
- (Q) Unconsolidated-Undrained Shear Test
- (R) Consolidated-Undrained Shear Test
SL - Slickensides
- (S) Consolidated-Drained Shear Test

TEST DATA

WATER CONTENT
% Water, Dry Weight

SHEAR STRENGTH
Tons / Sq. Ft.

WET DENSITY
Pounds / Cu. Ft.

PRECONSOLIDATION PRESSURE
Tons / Sq. Ft.

ELEVATIONS IN FEET - M.S.L.

- (UC) Unconfined Compression Test
- (Q) Unconsolidated-Undrained Shear Test
- (R) Consolidated-Undrained Shear Test
SL - Slickensides
- (S) Consolidated-Drained Shear Test

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

"C" Line

"A" Line

PLASTICITY CHART

SHEAR STRENGTH, t.s.f.

NORMAL STRESS, t.s.f.

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH ϕ°	STRENGTH c (t.s.f.)	CLASS
2-MHULT	1	-0.3	Q	1	0.38	ML
	2	-7.6		0	0.26	CL
	3	-16.4		0	0.21	CL
	4	-49.1		0	0.20	CH
	5	-70.4		1	0.42	CH
	6	-81.9		0	0.33	CL
	7	-92.4		3	0.32	CL
	8	-106.1		2	0.45	CH
	9	-16.8	R	14	0.18	CL
	10	-12.4	S	32	0.0	ML

SHEAR STRENGTH DATA

LOAD - $\bar{P}$ - T/S.F.

VOID RATIO - "e"

El. -9.0
C_c = 0.37

Preconsolidation Pressure

CONSOLIDATION DATA

—— Boring No. 2-MHULT
— — Boring No.
For soil boring legend see plate A
For location of borings see plate B

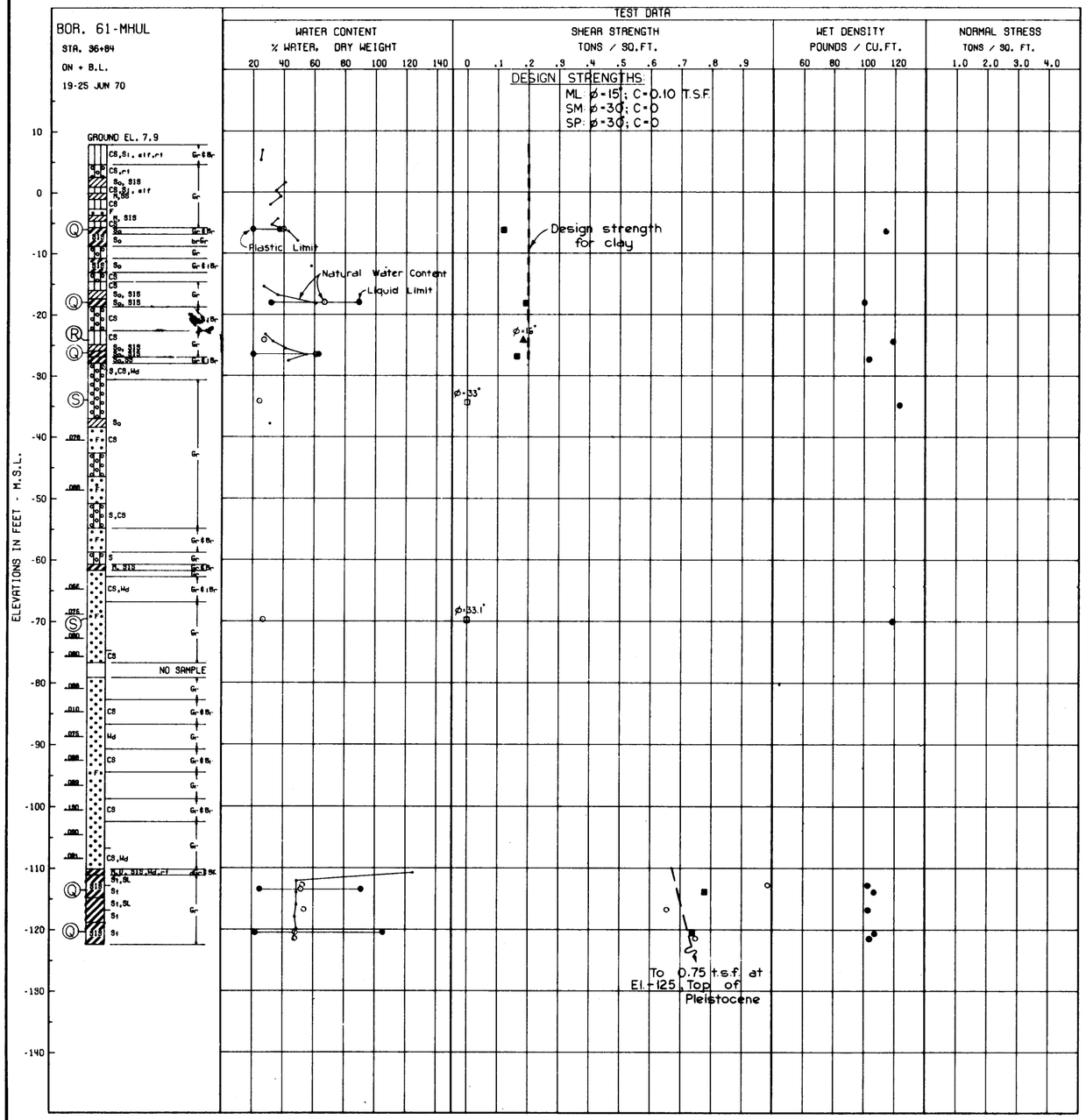
Borings were taken with a 5" diameter steel tube piston type sampler.

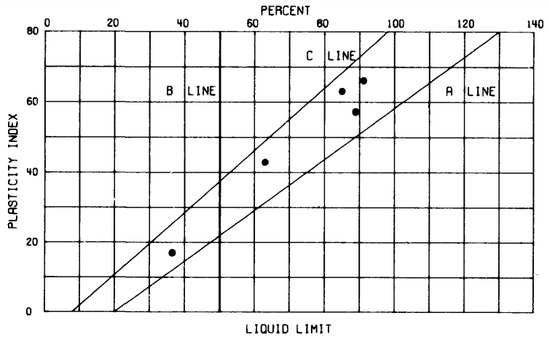
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK
SOIL BORING DATA
2-MHULT
STA. 2518+00
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 43

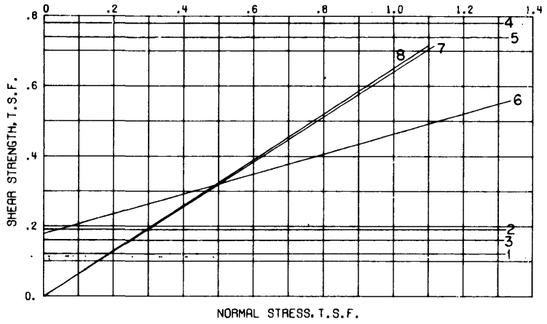
BOR. 61-MHUL
STA. 36+84
ON + B.L.
19-25 JUN 70

TEST DATA





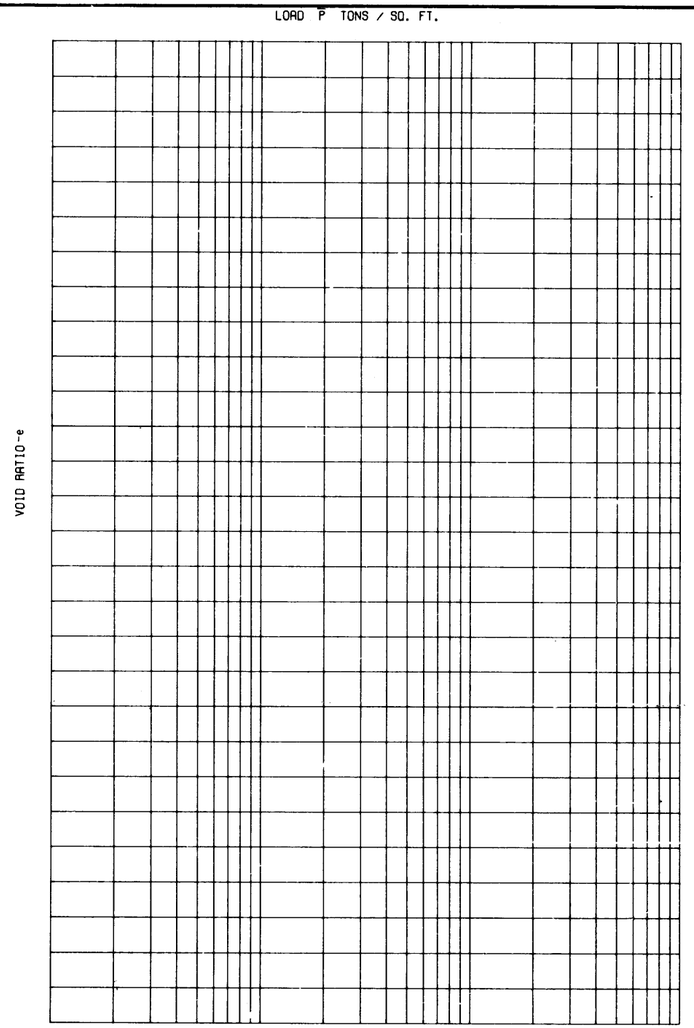
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
61-MHUL	1	-6.0	Q	0	0.12	CL
	2	-17.7		0	0.19	CH
	3	-26.0		0	0.16	CH
	4	-113.3		0	0.78	CH
	5	-120.2		0	0.74	CH
	6	-24.1	R*	16.0°	0.18	ML
	7	-33.9	S	33.0°	0	SM
	8	-69.9		33.1°	0	SM

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.



CONSOLIDATION DATA

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA
61-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 44

BOR. R-41.8-LU

STA. 137+00

300 FT. R.S.

6-9 JAN 70

GROUND EL. 6.9

ELEVATIONS IN FEET - N.S.L.

TEST DATA

WATER CONTENT % WATER, DRY WEIGHT

SHEAR STRENGTH TONS / SQ.FT.

DESIGN STRENGTHS:
ML: Φ=15°, C=.010 TSF
SM: Φ=30°, C=0
SP: Φ=30°, C=0

WET DENSITY POUNDS / CU.FT.

NORMAL STRESS TONS / SQ. FT.

Plastic Limit
Natural Water Content
Liquid Limit

DESIGN STRENGTH FOR CLAY

To 0.79 t.s.f. at El -133, Top of Pleistocene

PLASTICITY CHART

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

A LINE
B LINE
C LINE

SHEAR STRENGTH, T.S.F.

NORMAL STRESS, T.S.F.

SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-41.8-LU	1	- 1.9	Q	0.0	.348	CL
	2	- 6.1		0.0	.222	CH
	3	-14.9		0.0	.193	CH
	4	-21.7		0.0	.275	CH
	5	-43.9		0.0	.370	CH
	6	-70.8		0.0	.655	CH
	7	-87.6		0.0	.555	CH
	8	-105.8		0.0	.730	CH
	9	-114.8		0.0	.610	CH
	10	-7.7	R	13°	.140	CH

LOAD P TONS / SQ. FT.

VOID RATIO e

EL.-6.8
C_c=0.87
P=0.25
EL.-115.7
C_c=0.85
P=3.80
EL.-18.5
C_c=0.53
P=0.35
EL.-45.9
C_c=0.52
P=1.45
EL.-71.6
C_c=0.26
P=1.91

CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 8

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

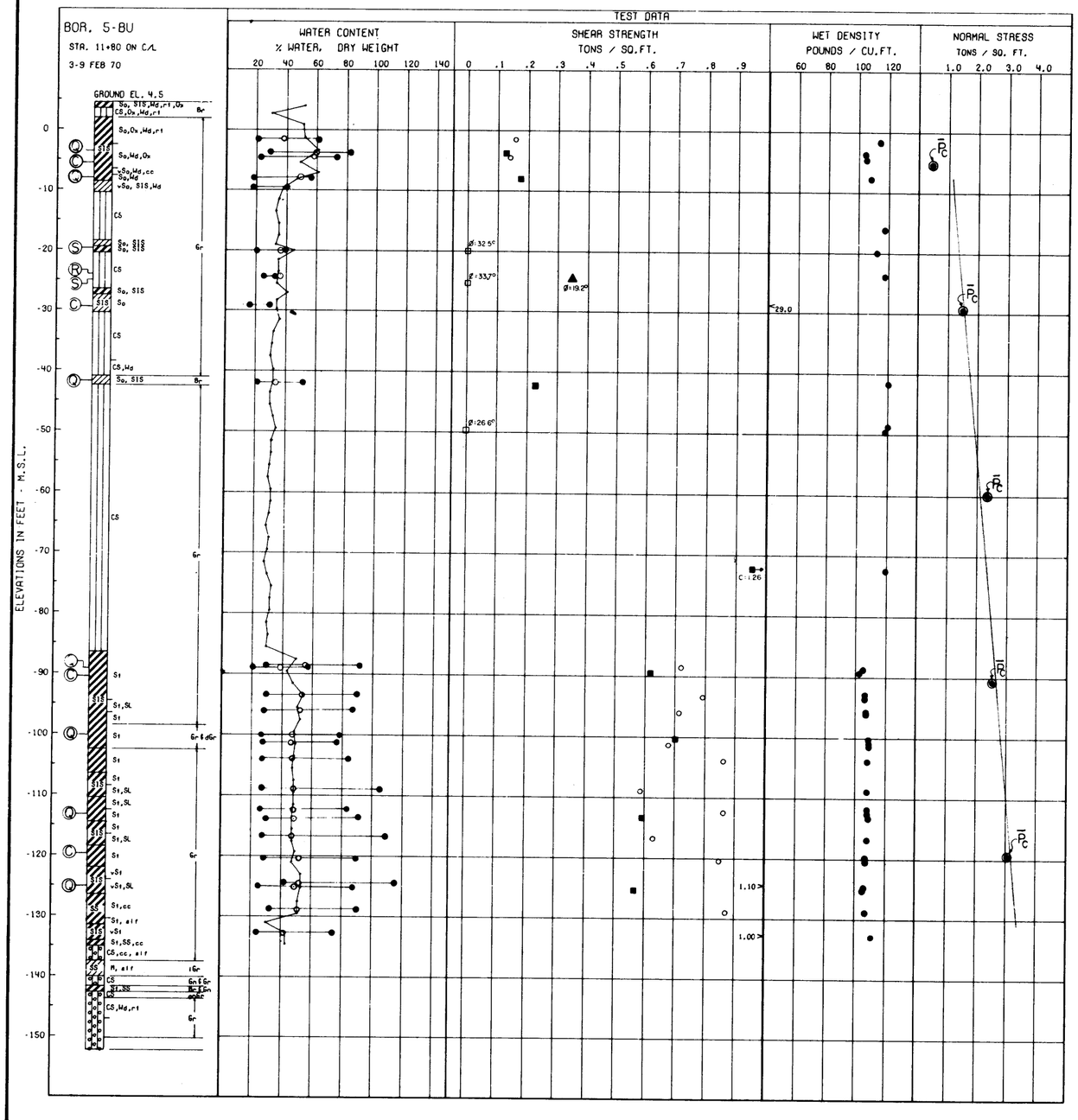
R-41.8-LU

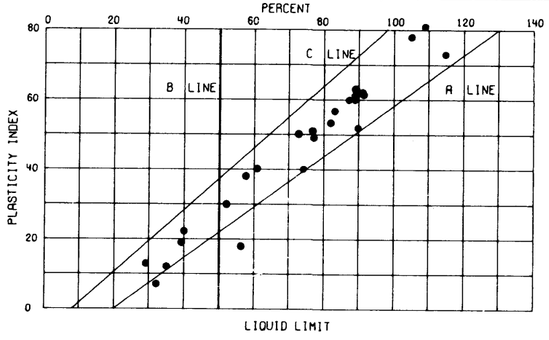
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

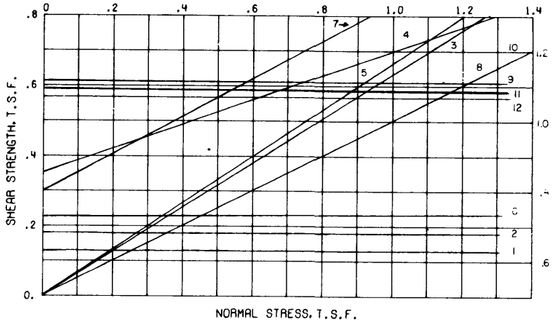
FILE NO. H-2-25275

PLATE 45





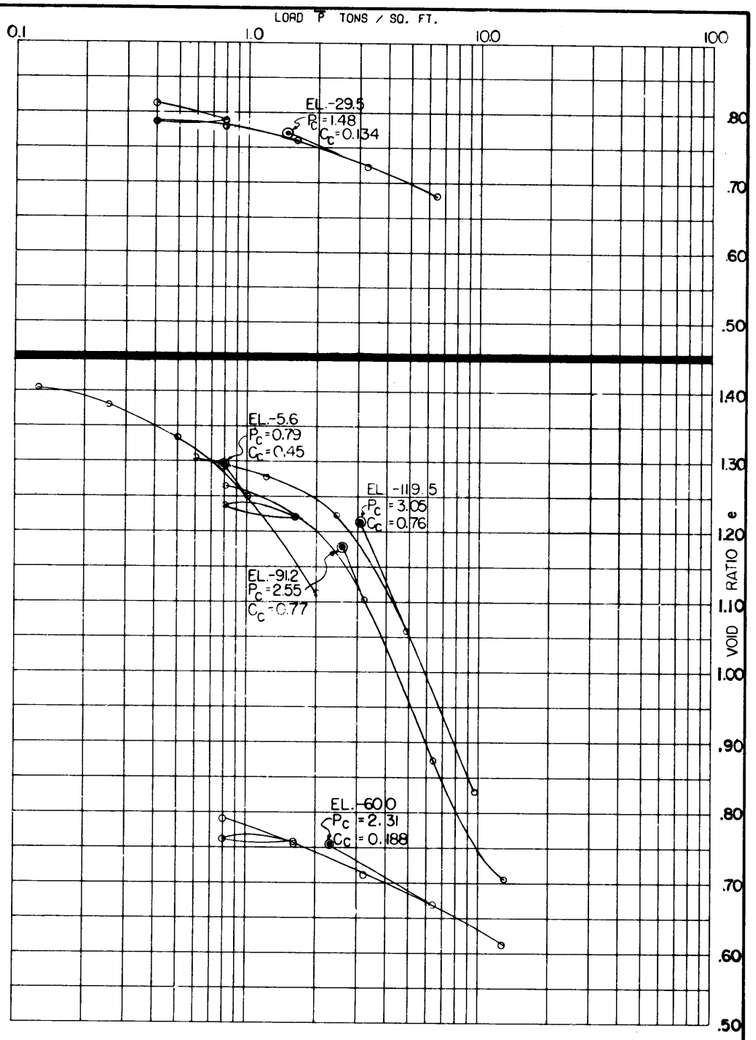
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
5-BU	1	-3.8	Q	0°	0.130	CH
	2	-8.0	Q	0°	0.180	CH
	3	-20.0	S	32.5°	0	CL
	4	-24.0	R*	19.2°	0.350	ML
	5	-24.9	S	33.7	0	ML
	6	-41.9	Q	0	0.230	CL
	7	-48.7	R**	28°	0.800	ML
	8	-49.6	S	26.6°	0	ML
	9	-99.1	Q	0	0.613	CH
	10	-100.1	Q	0	0.700	CH
	11	-113.1	Q	0°	0.591	CH
	12	-125.1	Q	0°	0.568	CH

BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE: * Ø = 15.5°, C = 0.18 TSF
** Ø = 17.2°, C = 0.20 TSF



CONSOLIDATION DATA

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

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 9

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

5-BU

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 46

BOR. 32-MHUL

STA. 297+00

80 FT L.S. OF B.L.

18 FEB 70

GROUND EL. 5.4

TEST DATA

WATER CONTENT % WATER, DRY WEIGHT

SHEAR STRENGTH TONS / SQ.FT.

WET DENSITY POUNDS / CU.FT.

NORMAL STRESS TONS / SQ. FT.

DESIGN STRENGTHS:
ML: ϕ = 15°, C = 0.10 t.s.f.
SM: ϕ = 30°, C = 0
SP: ϕ = 30°, C = 0

ϕ = 19°

ϕ = 33°

ϕ = 16.1°

ϕ = 28.8°

Plastic Limit

Natural Water Content

Liquid Limit

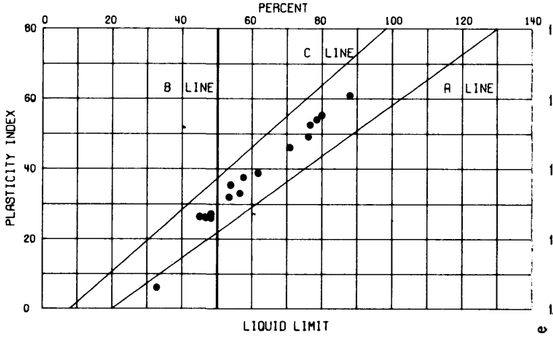
$\bar{P}_c$

Design strength for clay

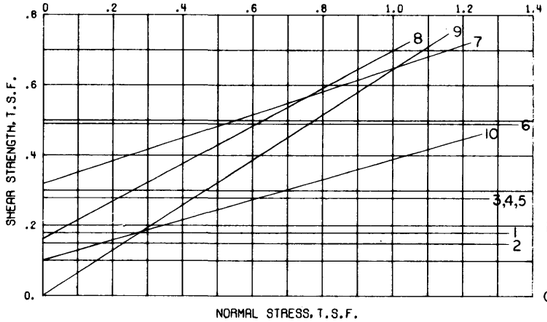
To 0.810 t.s.f. at El -142, Top of Pleistocene

NO SAMPLE

ELEVATIONS IN FEET - M.S.L.



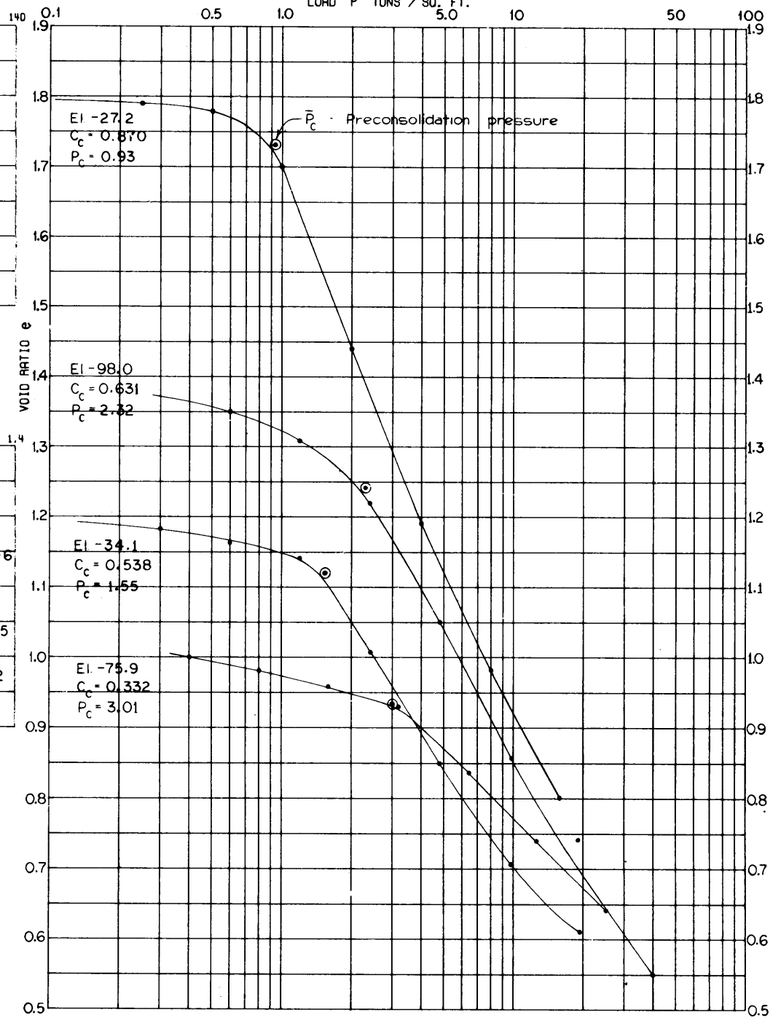
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
32-MHUL	1	-1.6	Q	0	0.18	CH
	2	-12.6		0	0.15	CH
	3	-30.6		0	0.28	CL
	4	-35.0		0	0.28	CH
	5	-62.0		0	0.28	CH
	6	-76.6		0	0.49	CL
	7	4.7	R*	19.0°	0.32	ML
	8	-10.8		16.1°	0.10	ML
	9	-7.6	S	33.0°	0	CL
	10	-46.7		28.8°	0.16	SM

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.



CONSOLIDATION DATA

o - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
□ - (S) CONSOLIDATED - DRAINED SHEAR TEST
BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 9

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA
32 — MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 47

BOR. 36-MHUL

STA. 405+00

110 FT L.S. OF B.L.

2-3 MAR 70

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.

DESIGN STRENGTHS:
ML: ø=15°, C=0.10 t.s.f
SM: ø=30°, C=0
SP: ø=30°, C=0

GROUND EL. 5.2

Plastic Limit
Liquid Limit
Natural Water Content

ø=19.3°

Design strength for clay

To 0.925 t.s.f at El -150, Top of Pleistocene

P_c

ELEVATIONS IN FEET - M.S.L.

PLASTICITY CHART

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

A LINE

B LINE

C LINE

SHEAR STRENGTH DATA

SHEAR STRENGTH, T.S.F.

NORMAL STRESS, T.S.F.

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
36-MHUL	1	0.2	Q	0	0.16	ML
	2	-3.7		0	0.19	CL
	3	-17.4		0	0.27	CL
	4	-23.4	R*	19.3°	0.12	ML

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.

CONSOLIDATION DATA

LOAD P TONS / SQ. FT.

VOID RATIO e

El -8.7
C_c=0.191
P_c=0.46

El -26.8
C_c=0.116
P_c=1.54

P_c - Preconsolidation pressure

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 10

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA
36-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 48

BOR. R-34.4-UL
STA. 70+10
240 FT. RS. C.F. &L.
4 APRIL 1967

GROUND EL. 4.2

ELEVATIONS IN FEET - M.S.L.

TEST DATA

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

SHEAR STRENGTH
TONS / SQ. FT.
0 .1 .2 .3 .4 .5 .6 .7 .8 .9

WET DENSITY
POUNDS / CU. FT.
60 80 100 120

NORMAL STRESS
TONS / SQ. FT.
1.0 2.0 3.0 4.0

DESIGN STRENGTHS:
ML: Ø=15, C=0.10
SM: Ø=30, C=0
SP: Ø=30, C=0

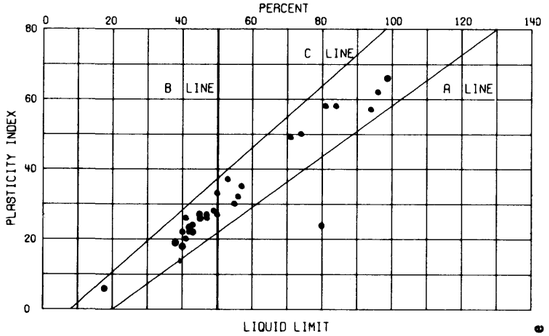
Natural Water Content
Liquid Limit
Plastic Limit

Ø=16°
Ø=24°
DESIGN STRENGTH FOR CLAY
Ø=3°
Ø=5°
Ø=11°
Ø=3°
1.51
1.00

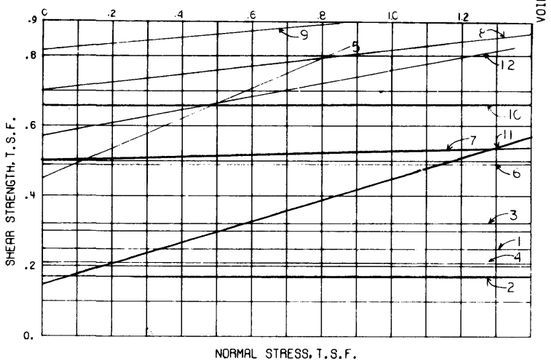
Top of Pleistocene

NO SAMPLE
NO SAMPLE
NO SAMPLE
NO SAMPLE

X-(Q) STRENGTH, BORING 38-MHUL



PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-34.4-UL	1	- 9.8	Q	0°	0.25	C H
	2	-22.2	Q	0°	0.17	C H
	3	-32.1	Q	0°	0.32	C L
	4	-46.0	Q	0°	0.21	C L
	5	-56.0	Q	24°	0.45	SM
	6	-65.6	Q	0°	0.45	C L
	7	-76.0	Q	3°	0.50	C L
	8	-102.0	Q	5°	0.70	C L
	9	-117.3	Q	3°	0.82	C L
	10	-136.2	Q	0°	0.66	C H
	11	- 22.2	R	16°	0.15	C H
	12	-114.3	R	11°	0.57	C H

LOAD P TONS / SQ. FT.

CONSOLIDATION DATA

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

BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 10

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

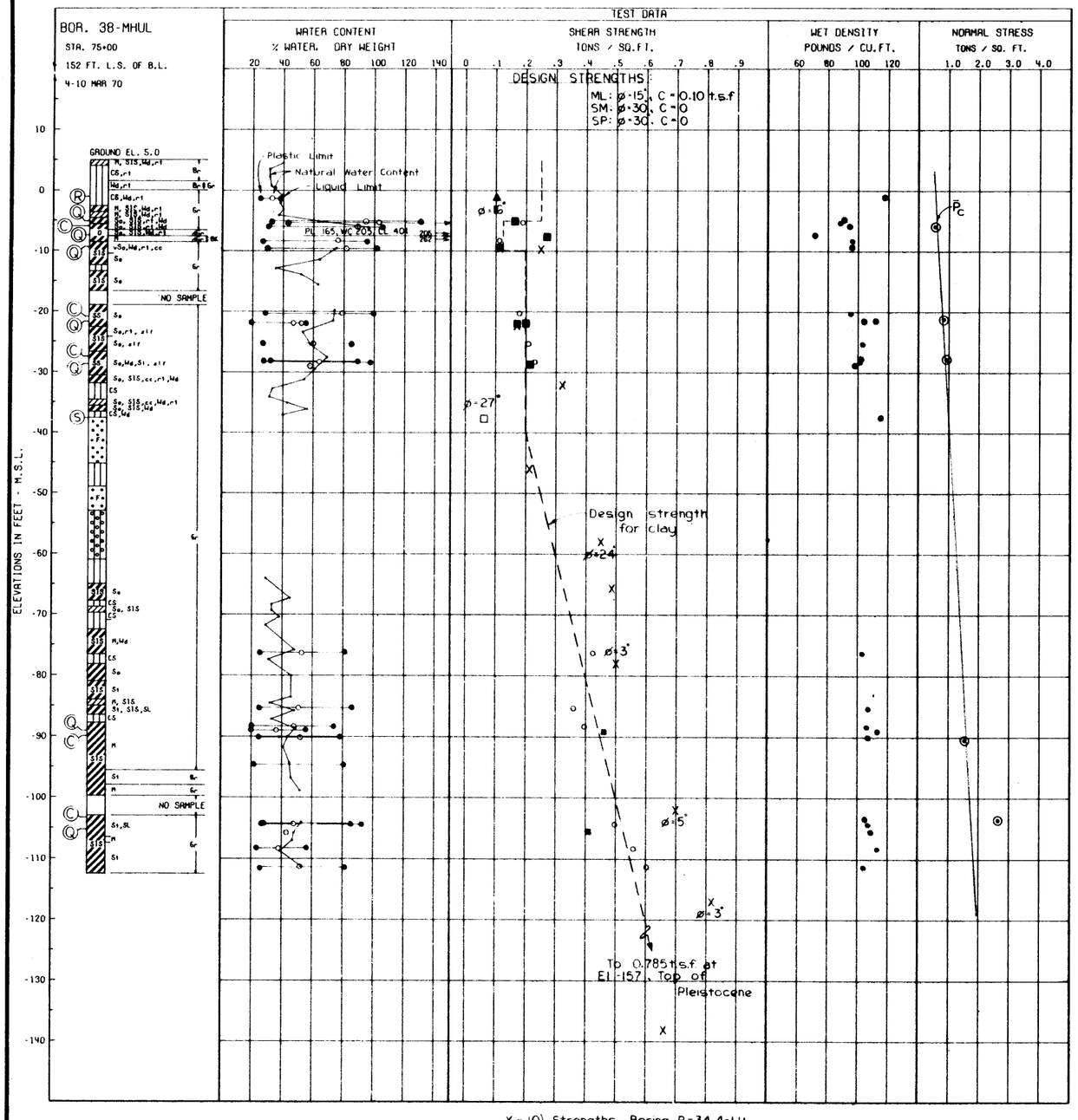
R-34.4-LU

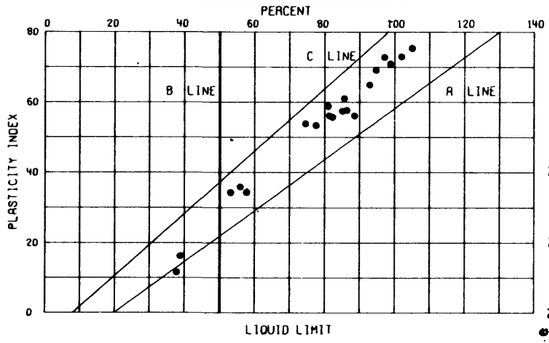
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

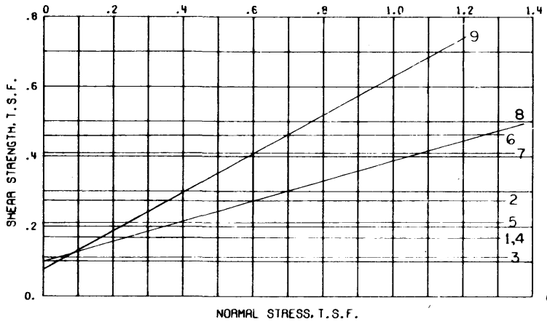
FILE NO H-2-25275

PLATE 49





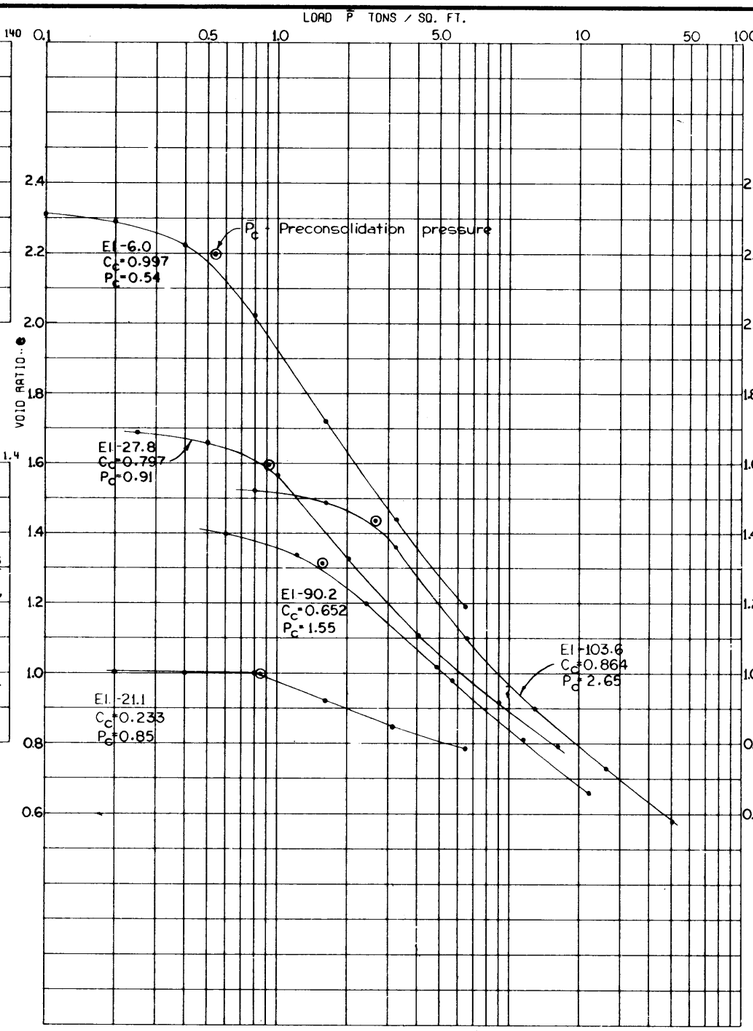
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
38-MHUL	1	-5.1	Q	0	0.17	CH
	2	-7.5		0	0.27	CH
	3	-9.5		0	0.11	CH
	4	-21.8		0	0.17	CH
	5	-28.8		0	0.21	CH
	6	-89.1		0	0.46	CH
	7	-105.4		0	0.41	CH
	8	-1.1	R*	16.0°	0.10	ML
	9	-37.4	S	27.0°	0.06	CL

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.



CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 10

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

38-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

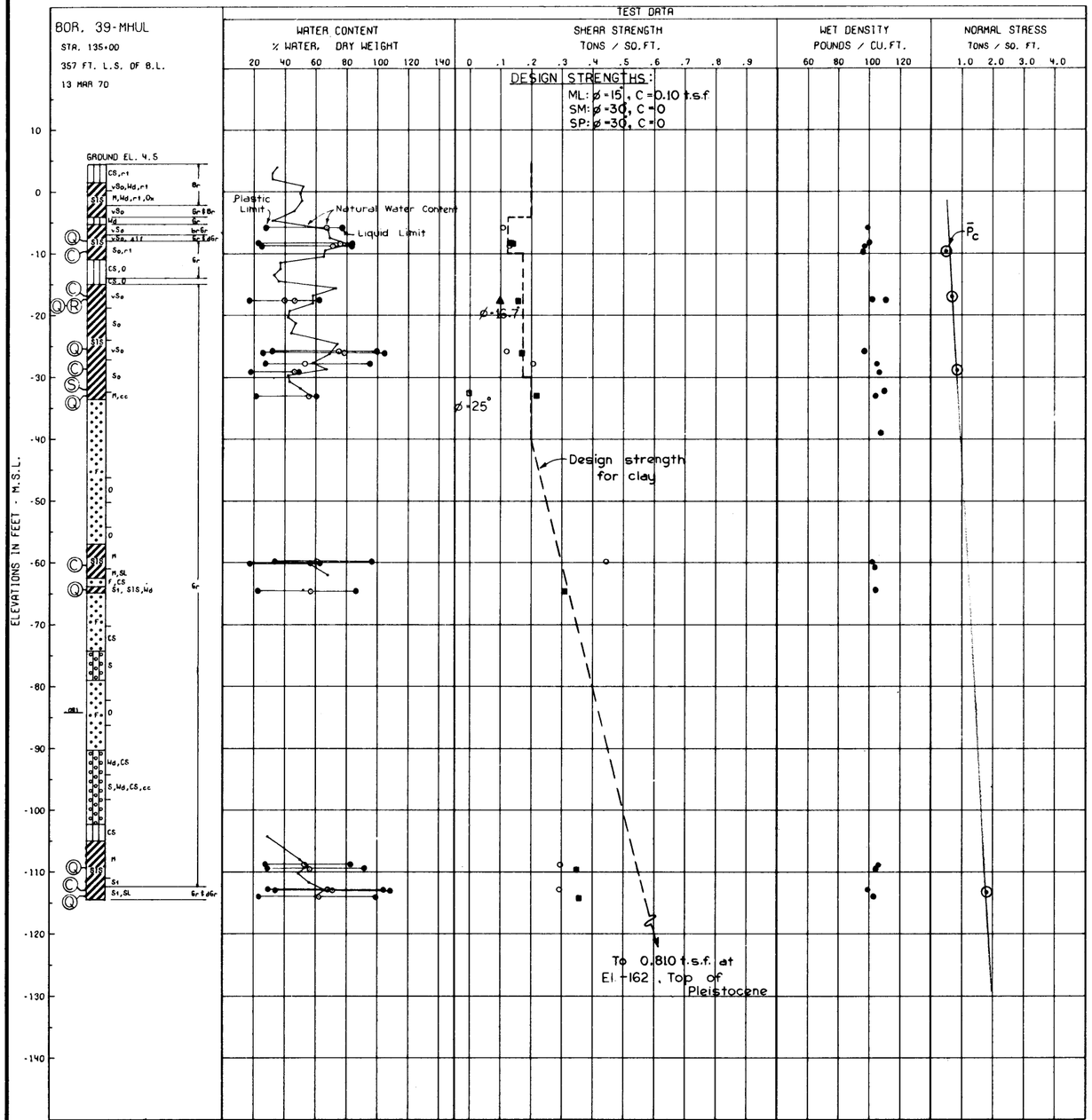
PLATE 50

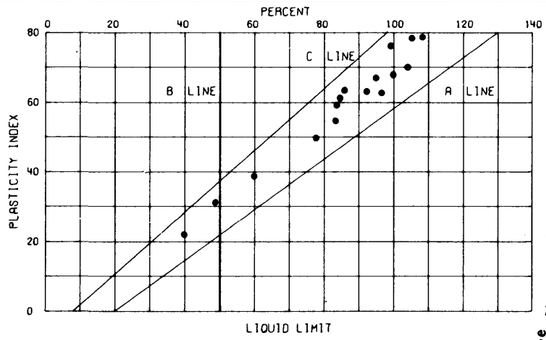
BOR. 39-MHUL

STA. 135+00

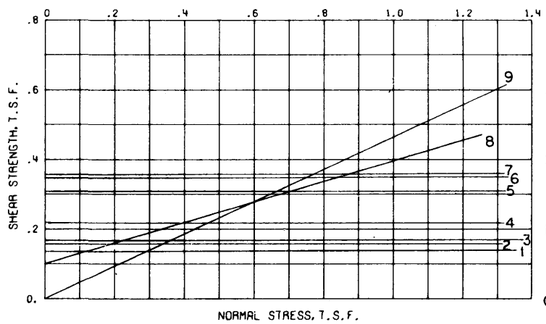
357 FT. L.S. OF B.L.

13 MAR 70



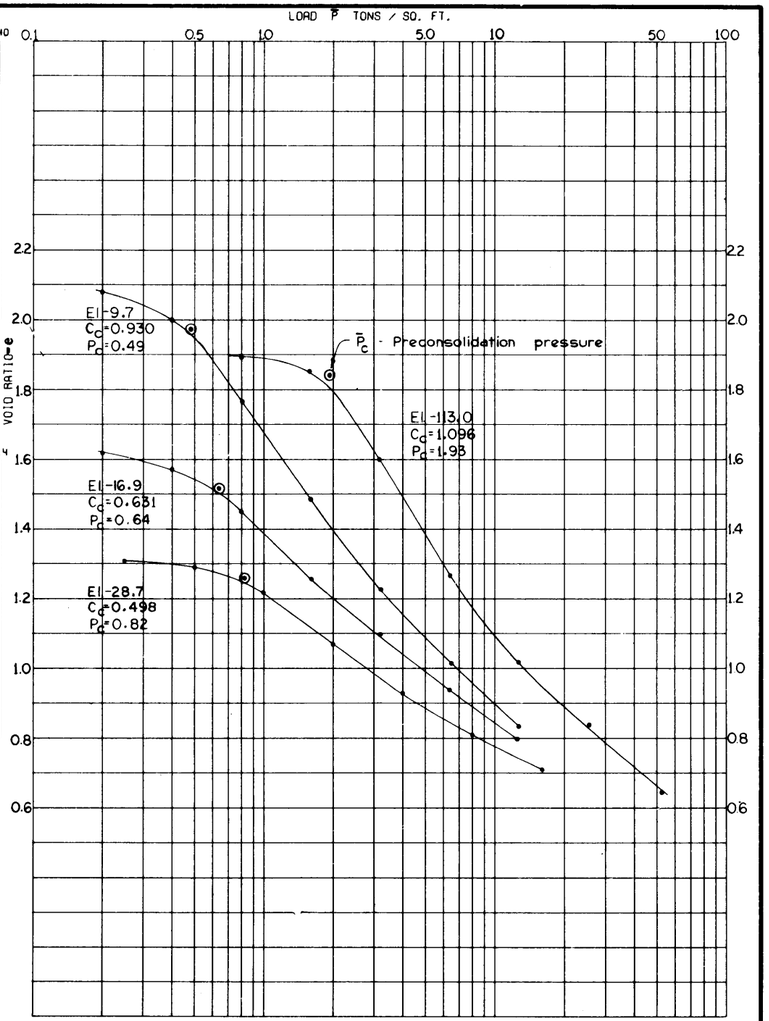


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
39-MHUL	1	-8.3	Q	0	0.14	CH
	2	-17.6		0	0.16	CL
	3	-25.8		0	0.17	CH
	4	-33.0		0	0.22	CH
	5	-64.4		0	0.31	CH
	6	-109.6		0	0.35	CH
	7	-114.0		0	0.36	CH
	8	-17.6	R	16.7°	0.10	CL
	9	-32.1	S	25.0°	0	CL



CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 10

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

39-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 51

BOR. 64-MHUL

STA. 160+36

350 FT. LEFT OF B.L.

12-13 MAY 70

GROUND EL. 4.0

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.

DESIGN STRENGTHS:
ML: ø=15° ; C=0.10 T.S.F.
SM: ø=30° ; C=0
SP: ø=30° ; C=0

Plastic Limit

Natural Water Content

Liquid Limit

LL 260 WC 216

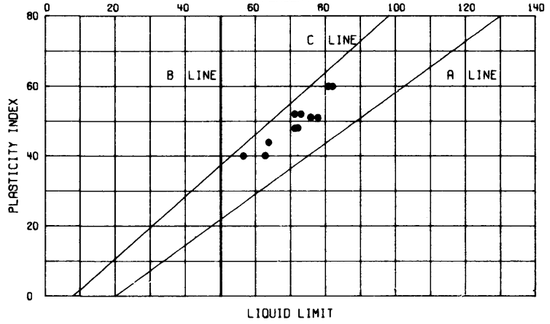
ø=17.5°
ø=12.9°

ø=31°

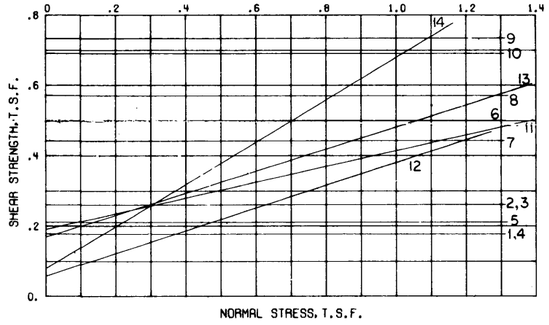
ø=18.1°

Design strength for clay

To 0.85 t.s.f at El.-160, Top of Pleistocene



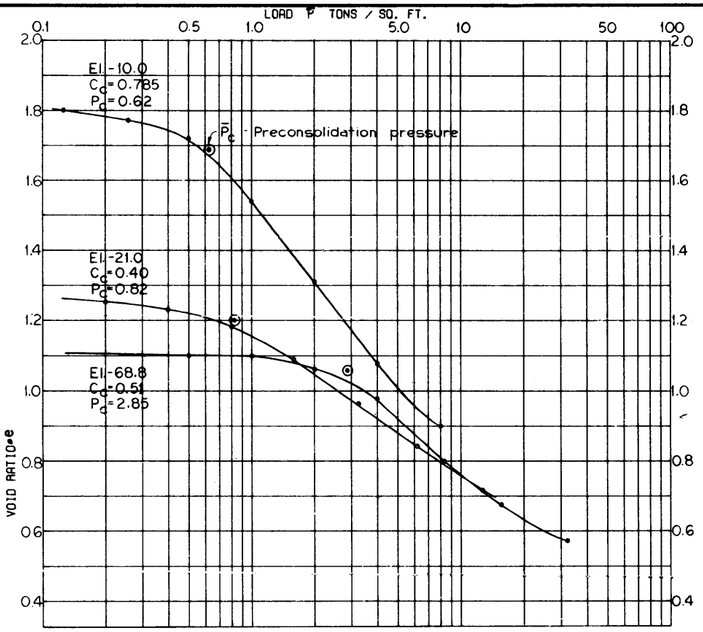
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
64-MHUL	1	-2.5	Q	0	0.18	CH
	2	-9.1		0	0.26	CH
	3	-17.0		0	0.26	CH
	4	-24.0		0	0.18	CH
	5	-29.8		0	0.21	CH
	6	-69.9		0	0.50	CH
	7	-93.0		0	0.44	CH
	8	-105.0		0	0.57	CH
	9	-112.0		0	0.73	CH
	10	-124.0		0	0.69	CH
	11	-29.8	R	12.9°	0.19	CH
	12	-53.0		*18.1°	0.06	SP
	13	-28.2	S	17.5°	0.17	CH
	14	-44.0		31.0°	0.08	SM

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE



CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 10

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

64-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 52

BOR. R-32.3-UL
STA. 204+80
90 FT. R.S. BL
11 APRIL 1967
GROUND EL. 6.7

TEST DATA

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

SHEAR STRENGTH
TONS / SQ.FT.
0 .1 .2 .3 .4 .5 .6 .7 .8 .9

WET DENSITY
POUNDS / CU.FT.
60 80 100 120

NORMAL STRESS
TONS / SQ. FT.
1.0 2.0 3.0 4.0

ELEVATIONS IN FEET - M.S.L.

DESIGN STRENGTHS:
ML: Ø=15° C=0.10
SM: Ø=30° C=0
SP: Ø=30° C=0

Liquid Limit
Natural Water Content
Plastic Limit
DESIGN STRENGTH FOR CLAY
Top of Pleistocene
NO SAMPLE

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

A LINE
B LINE
C LINE

PLASTICITY CHART

SHEAR STRENGTH, T.S.F.

NORMAL STRESS, T.S.F.

SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-32.3-UL	1	-7.0	Q	0°	0.13	CH
	2	-21.9	Q	0°	0.17	CL
	3	-35.7	Q	0°	0.28	CH
	4	-47.5	Q	0°	0.23	CL
	5	-59.7	Q	0°	0.30	CH
	6	-71.8	Q	0°	0.32	CH
	7	-83.3	Q	2°	0.25	CH
	8	-96.0	Q	1°	0.40	CL
	9	-114.3	Q	1°	0.60	CH
	10	-138.0	Q	2°	0.70	CL
	11	-6.0	R	10°	0.27	CH
↓	12	1.8	R	12°	0.25	CH

LOAD P TONS / SQ. FT.

VOID RATIO e

CONSOLIDATION DATA

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

R-32.3-LU

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 53

BOR. 43-MHUL
STA. 330+00
525 FT. R.S. BAL
16 MARCH 70

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

DESIGN STRENGTHS
ML: ϕ=15, C=0.10 tsf
SM: ϕ=30, C=0
SP: ϕ=30, C=0

Plastic Limit
Natural Water Content
Liquid Limit
Design strength for clay
ϕ=18.4°
ϕ=27°
ϕ=15.6°
ϕ=31.4°

WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.
$\bar{P}_c$

ELEVATIONS IN FEET - M.S.L.

GROUND EL. 5.3
NO SAMPLE
NO SAMPLE

PLASTICITY CHART

PERCENT
PLASTICITY INDEX
LIQUID LIMIT
A LINE
B LINE
C LINE

SHEAR STRENGTH DATA

SHEAR STRENGTH, T.S.F.
NORMAL STRESS, T.S.F.

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
43-MHUL	1	-0.4	Q	0	0.31	CL
	2	-7.6		0	0.12	CH
	3	-23.3		0	0.16	CH
	4	-33.0		0	0.12	CH
	5	-11.5	R	*18.4°	0.10	ML
	6	-19.7		15.6°	0.10	CL
	7	-19.7	S	27.0°	0	CL
	8	-35.2		31.4°	0	CL

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.

CONSOLIDATION DATA

LOAD P TONS / SQ. FT.
VOID RATIO-e
El-21.5 C_c=0.565 P_c=0.60
El-28.9 C_c=0.598 P_c=0.89
El-5.9 C_c=0.299 P_c=0.55
$\bar{P}_c$ - Preconsolidation pressure

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

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

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

43-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 54

BOR. 47-MHUL

STA. 430+00

60 FEET R.S. B/L

20-23 MAR 70

GROUND EL. 4.3

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.

DESIGN STRENGTHS:
ML: ϕ=15°, C=0.10 t.s.f.
SM: ϕ=30°, C=0
SP: ϕ=30°, C=0

Plastic Limit

Natural Water Content

Liquid Limit

ϕ=18.4°

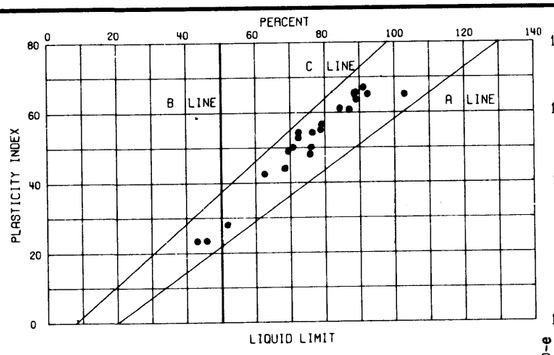
ϕ=30.1°

Design strength for clay

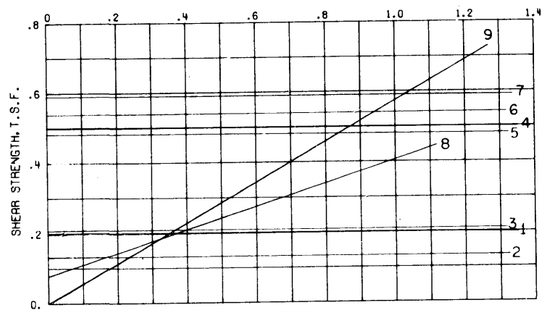
$\bar{P}_c$

NO SAMPLE

To 0.950 t.s.f. at El -185. Top of Pleistocene



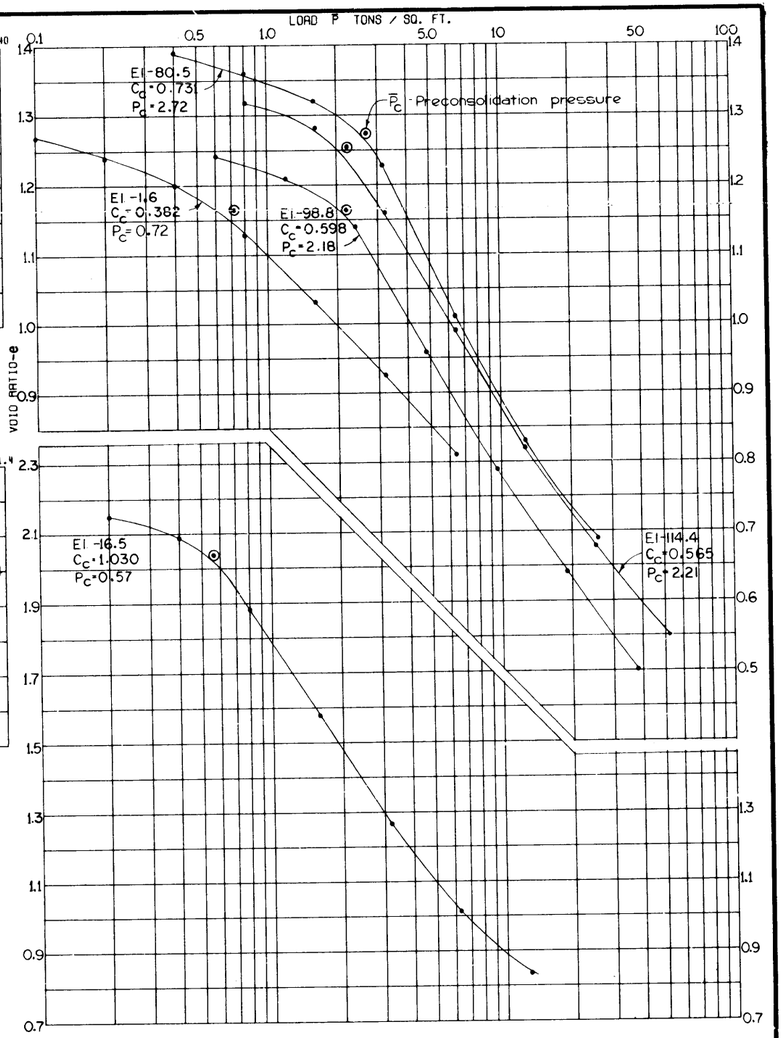
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
47-MHUL	1	1.5	Q	0	0.21	CL
	2	-13.5		0	0.11	CH
	3	-28.8		0	0.21	CH
	4	-84.8		0	0.50	CH
	5	-94.3		0	0.48	CH
	6	-102.5		0	0.54	CH
	7	-113.5		0	0.59	CH
	8	-10.1	R*	18.4°	0.08	ML
	9	-26.1	S	30.1°	0	CL

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.



CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 12

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

47-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 55

BOR. 50-MHUL

STA. 539+75

365 FT. L.S. OF B.L.

24-26 MAR 70

GROUND EL. 7.8

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.

DESIGN STRENGTHS:
ML: ø=15°, C=0.10 t.s.f.
SM: ø=30°, C=0
SP: ø=30°, C=0

Plastic Limit

Natural Water Content

Liquid Limit

ø=18.0°

Design strength for clay

To 1.05 t.s.f. at El.-210, Top of Pleistocene

NO SAMPLE

NO SAMPLE

NO SAMPLE

NO SAMPLE

PERCENT

PLASTICITY INDEX.

LIQUID LIMIT

B LINE

C LINE

A LINE

PLASTICITY CHART

SHEAR STRENGTH, T.S.F.

NORMAL STRESS, T.S.F.

SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
50-MHUL	1	2.3	Q	0	0.19	CH
	2	-22.0		0	0.18	CL
	3	-74.3		0	0.40	CH
	4	-91.2		0	0.41	CH
	5	-103.0		0	0.42	CH
	6	-37.4	R*	18.0°	0.20	CL

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.

LOAD P TONS / SQ. FT.

VOID RATIO-e

El-90.4
C_c=0.897
P_c=2.80

$\bar{P}_c$ - Preconsolidation pressure

El-110.9
C_c=0.565
P_c=2.92

El-6.1
C_c=0.310
P_c=0.58

El-14.1
C_c=0.203
P_c=0.90

El-78.3
C_c=0.266
P_c=2.20

CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 12

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA
50-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 56

BOR. 66-MHUL
STA 553+00
360 FT. LEFT OF B.L.
25 MAY 70

GROUND EL. 7.0

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS/SQ FT.

DESIGN STRENGTHS
ML ϕ=15°, C=0.10 TSF
SM ϕ=30, C=0
SP ϕ=30, C=0

Plastic Limit
Natural Water Content
Liquid Limit

ϕ=23.3°
ϕ=13.1°
ϕ=34.2°
ϕ=20°

Design strength for clay

To 1.00 t.s.f. at El.-210, Top of Pleistocene

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

C LINE
B LINE
A LINE

PLASTICITY CHART

SHEAR STRENGTH, T.S.F.

NORMAL STRESS, T.S.F.

SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
66-MHUL	1	4.1	Q	0	0.15	CH
	2	-2.9		0	0.17	CH
	3	-10.5		0	0.20	CH
	4	-38.6		0	0.26	CH
	5	-49.4		0	0.37	CH
	6	-78.9		0	0.47	CH
	7	-91.0		0	0.48	CH
	8	-102.7		0	0.47	CH
	9	-115.0		0	0.50	CH
	10	-10.5	R	13.1°	0.17	CH
	11	-34.5		*20.0°	0.30	ML
	12	-8.7	S	23.3°	0.15	CH
	13	-28.8		34.2°	0	SM

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE

LOAD P TONS / SQ. FT.

VOID RATIO = e

$\bar{P}_c$ Preconsolidation pressure

El.-50.0
C_c=0.55
P_c=1.16

El.-77.4
C_c=0.448
P_c=2.05

El.+9.8
C_c=0.635
P_c=0.70

El.-101.1
C_c=0.600
P_c=2.60

El.-122.1
C_c=0.690
P_c=3.40

CONSOLIDATION DATA

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

BORINGS WERE TAKEN WITH A 3 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 12

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

66-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 57

BOR. 68-MHUL

STA. 554+00

475 FT. LEFT OF B.L.

18-21 MAY 1970

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.

DESIGN STRENGTHS
ML ø=15°, C=0.10 TSF
SM ø=30°, C=0
SP ø=30°, C=0

GROUND EL. -8.0

Plastic Limit

Natural Water Content

Liquid Limit

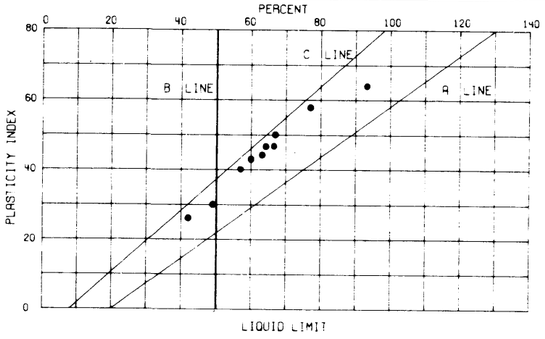
NC SAMPLE

NC SAMPLE

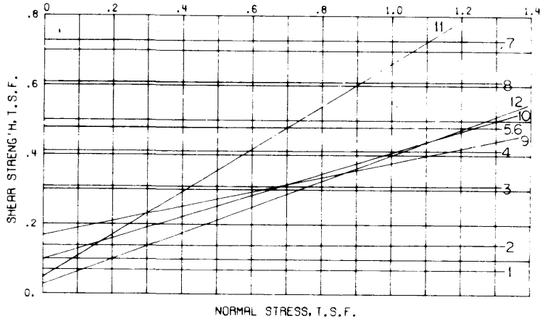
Design strength for clay

To 1.00 t.s.f. at El -210. Top of Pleistocene

ELEVATIONS IN FEET - M.S.L.



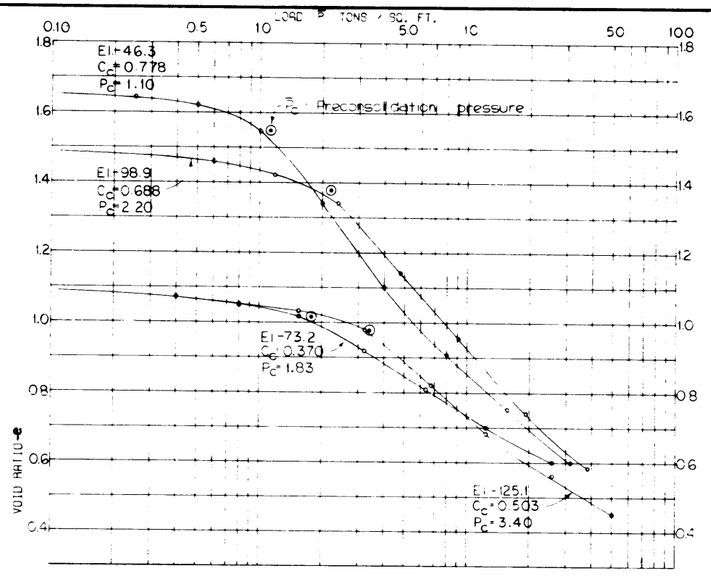
PLASTICITY CHART

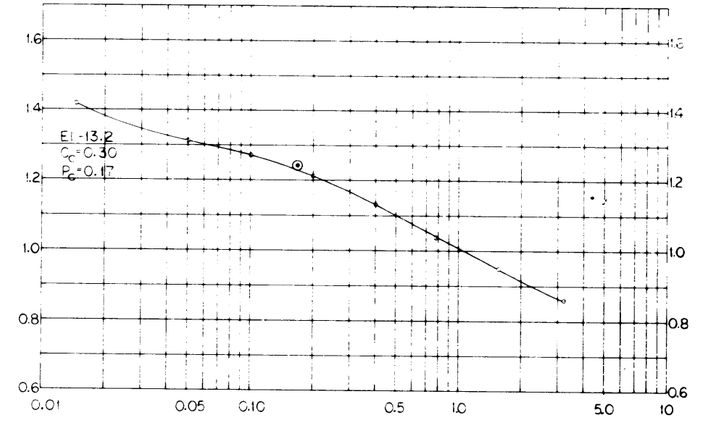


SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
68-MHUL	1	-15.0	Q	0	0.07	CH
	2	-22.0		0	0.14	CH
	3	-45.2		0	0.31	CH
	4	-74.8		0	0.41	CL
	5	-97.9		0	0.48	CH
	6	-110.7		0	0.48	CH
	7	-125.1		0	0.73	CH
	8	-127.0		0	0.61	CH
	9	-45.2	R	12.0°	0.17	CH
	10	-54.0		*17.2°	0.10	ML
	11	-30.3	S	31.8°	0.05	ML
	12	-43.1		20.8°	0.03	CH

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE





CONSOLIDATION DATA

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

BORINGS WERE TAKEN WITH A 3 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 12

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

68-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 58

BOR. R-24.0-LU

STA. 53+00

125 FT. R.S. OF B.L.

18-24 MAR 70

GROUND EL. 3.8

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT % WATER, DRY WEIGHT

SHEAR STRENGTH TONS / SQ.FT.

WET DENSITY POUNDS / CU.FT.

NORMAL STRESS TONS / SQ. FT.

Plastic Limit

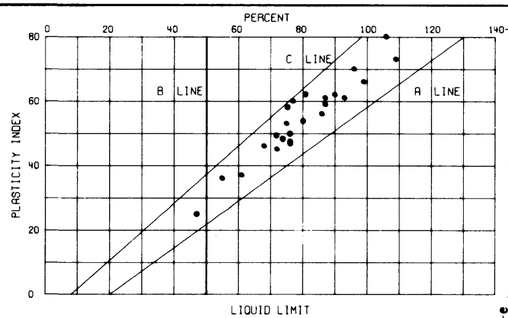
Natural Water Content

Liquid Limit

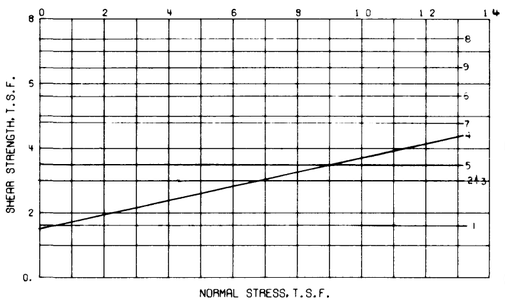
DESIGN STRENGTHS:
ML: C=0.10 TSF, Ø=15°
SM: C=0, Ø=30°
SP: C=0, Ø=30°

DESIGN STRENGTH FOR CLAY

TO 1.12 TSF AT EL-209
TOP OF PLEISTOCENE

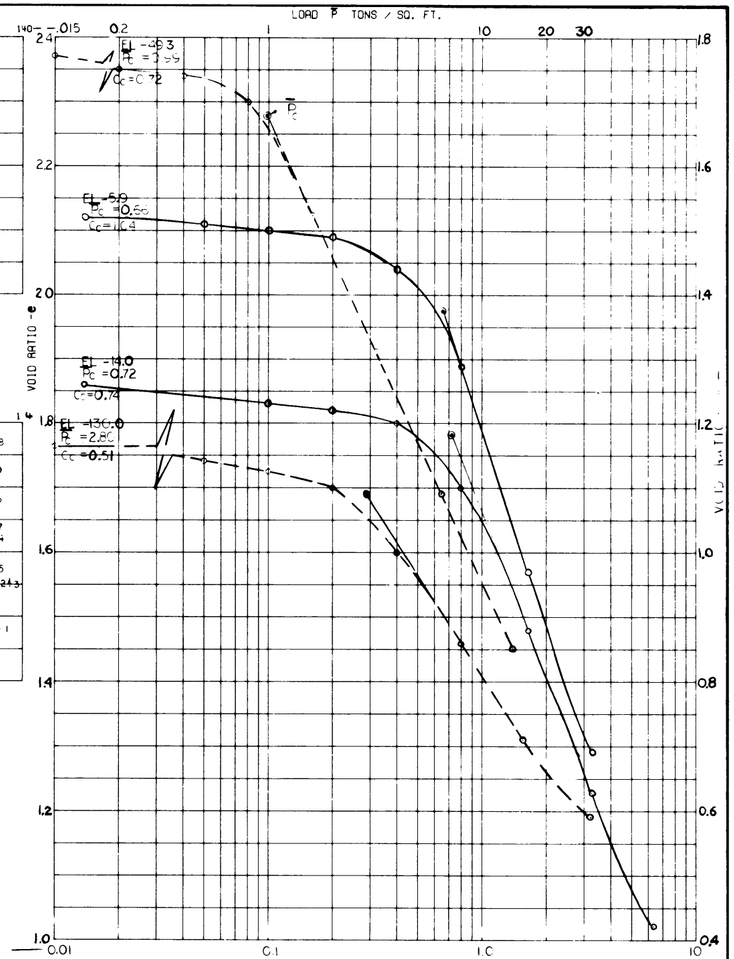


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-24.0-LU	1	-5.9	Q	0°	0.16	CH
	2	-40.0	Q	0°	0.30	CL
	3	-45.4	Q	0°	0.30	CH
	4	-49.3	R	13°	0.15	CH
	5	-53.5	Q	0°	0.35	CH
	6	-100.9	Q	0°	0.56	CH
	7	-106.4	Q	0°	0.48	CH
	8	-114.2	Q	0°	0.74	CH
	9	-130.0	Q	0°	0.65	CH



CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 13

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

R-24.0-LU

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

AUGUST 1971

FILE NO H-2-25275

PLATE 59

BOR. 52-MHUL

STA. 140+00

30 FT. LS. OF B.L. & C.L. LEVEE

27 MAR 70 1 APR 70

GROUND EL. 1.8

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

DESIGN STRENGTHS:
ML: ø=15°, C=0.10 t.s.f.
SM: ø=30°, C=0
SP: ø=30°, C=0

WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.

Plastic Limit

Natural Water Content

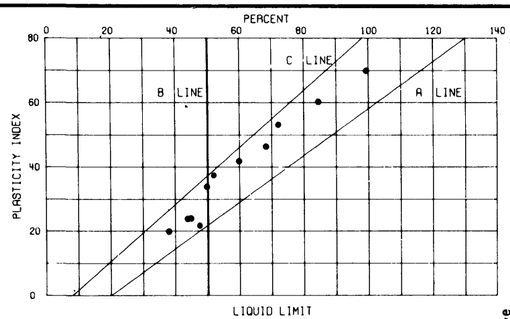
Liquid Limit

ø=16°

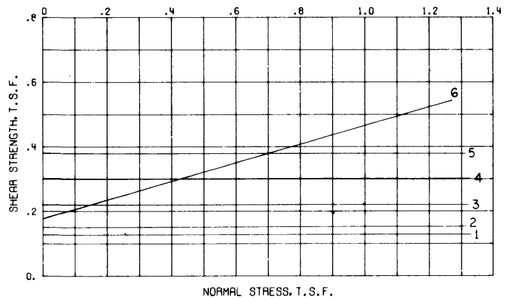
Design strength for clay

To 1.115 t.s.f at El -208, Top of Pleistocene

NO SAMPLE



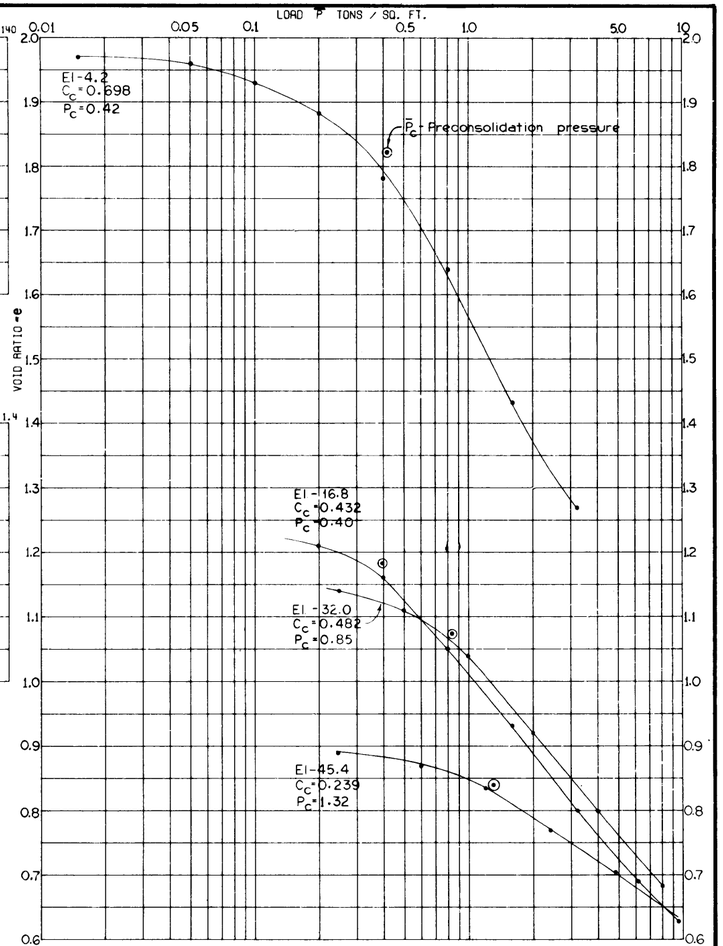
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
52-MHUL	1	-5.1	Q	0	0.13	CH
	2	-14.6		0	0.15	CH
	3	-30.9		0	0.22	CH
	4	-39.2		0	0.30	CL
	5	-47.4		0	0.38	CL
	6	-24.6	R*	16°	0.18	CL

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.



CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 13

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

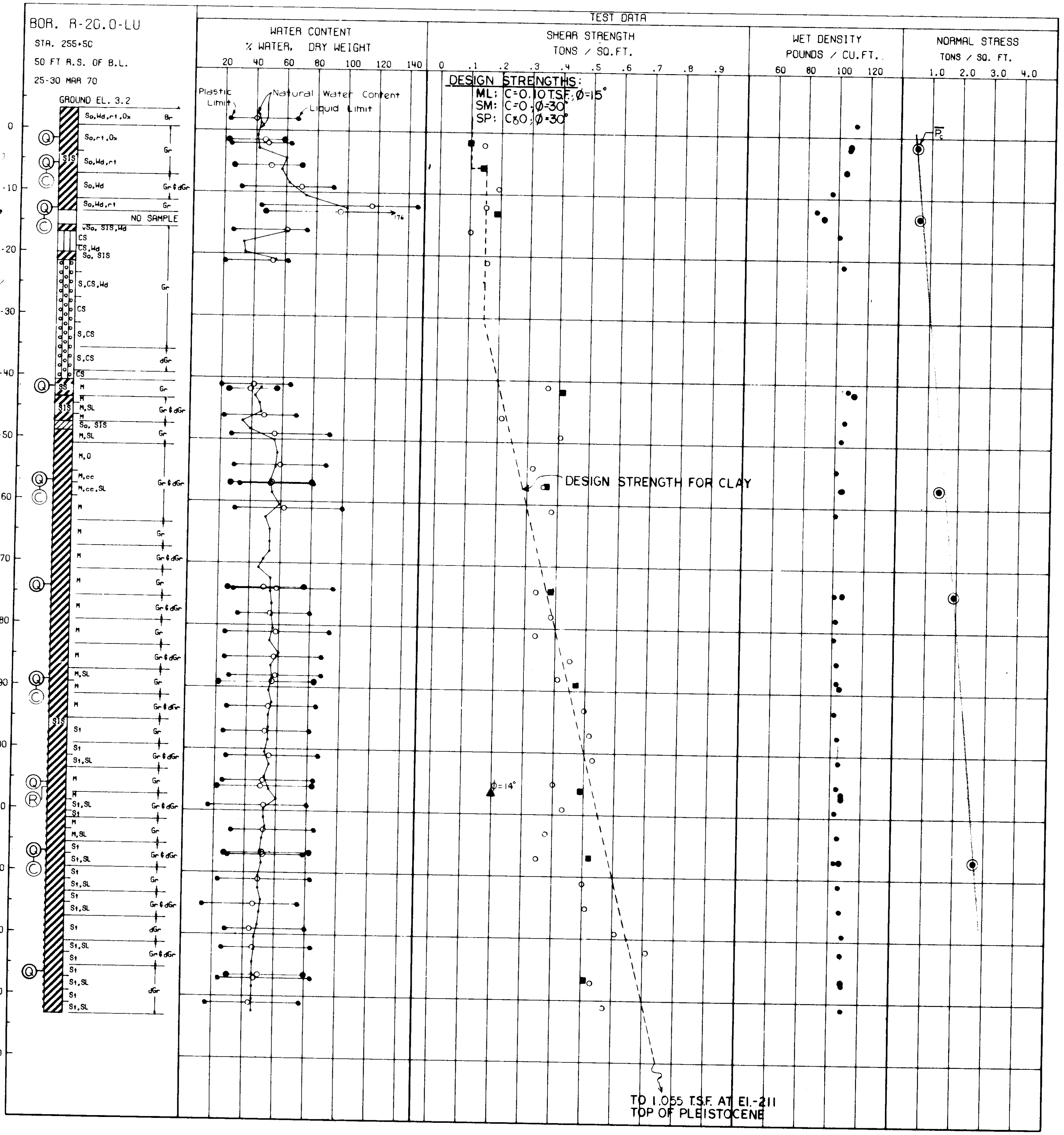
52-MHUL

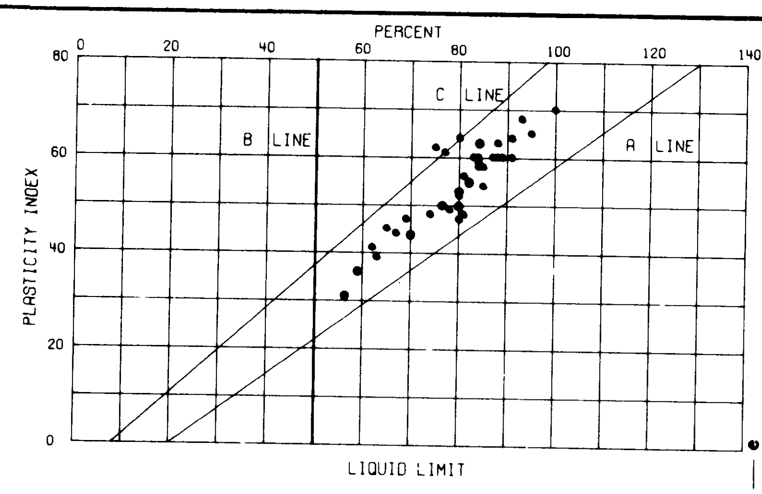
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

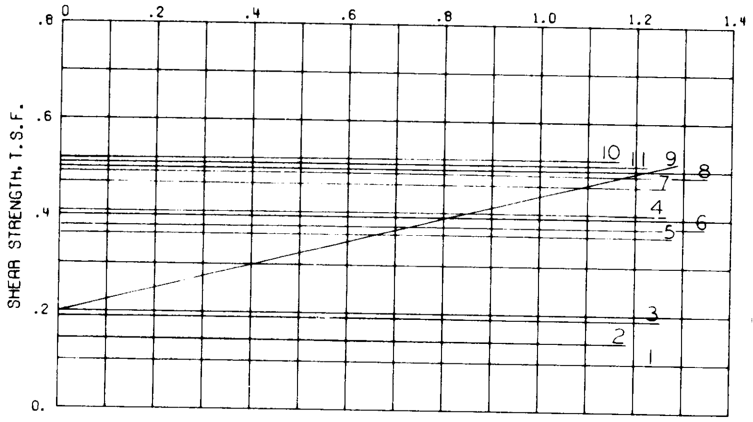
FILE NO. H-2-25275

PLATE 60



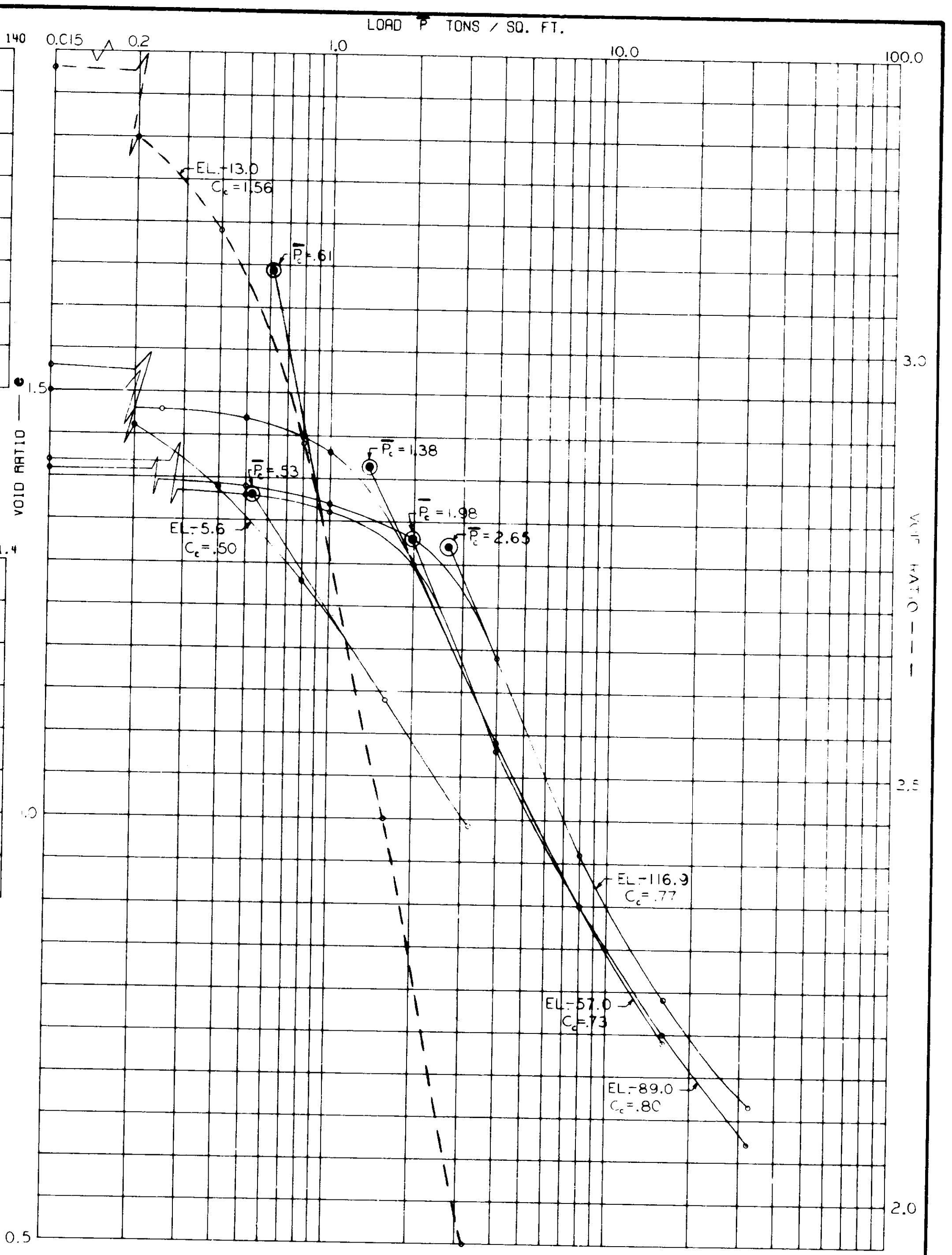


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-20.0-LU	1	-1.5	Q	0.0	.10	CH
	2	-5.6		0.0	.145	
	3	-13.0		0.0	.19	
	4	-4 .8		0.0	.4	
	5	-57.0		0.0	.36	
	6	-74.0		0.0	.38	
	7	-89.0		0.0	.47	
	8	-105.9		0.0	.49	
	10	-116.9		0.0	.52	
	11	-136.8		0.0	.51	
	9	-106.8	R	14.0	.20	



CONSOLIDATION DATA

○ - (UC) UNCONFINED COMPRESSION TEST
■ - (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲ - (R) CONSOLIDATED - UNDRAINED SHEAR TEST
⊡ - (S) CONSOLIDATED - DRAINED SHEAR TEST
BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 13

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT- PART I
EAST BANK

SOIL BORING DATA

R-20.0-LU

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

AUGUST 1971 FILE NO H-2-25275

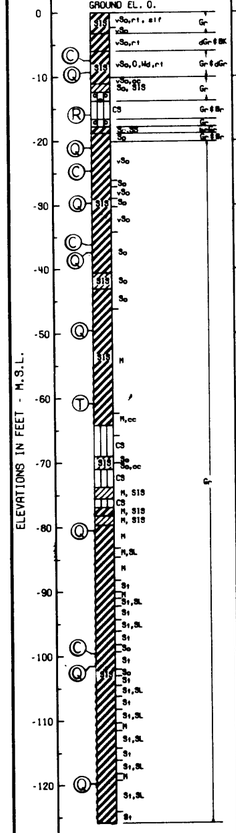
BOR. 73-MHUL

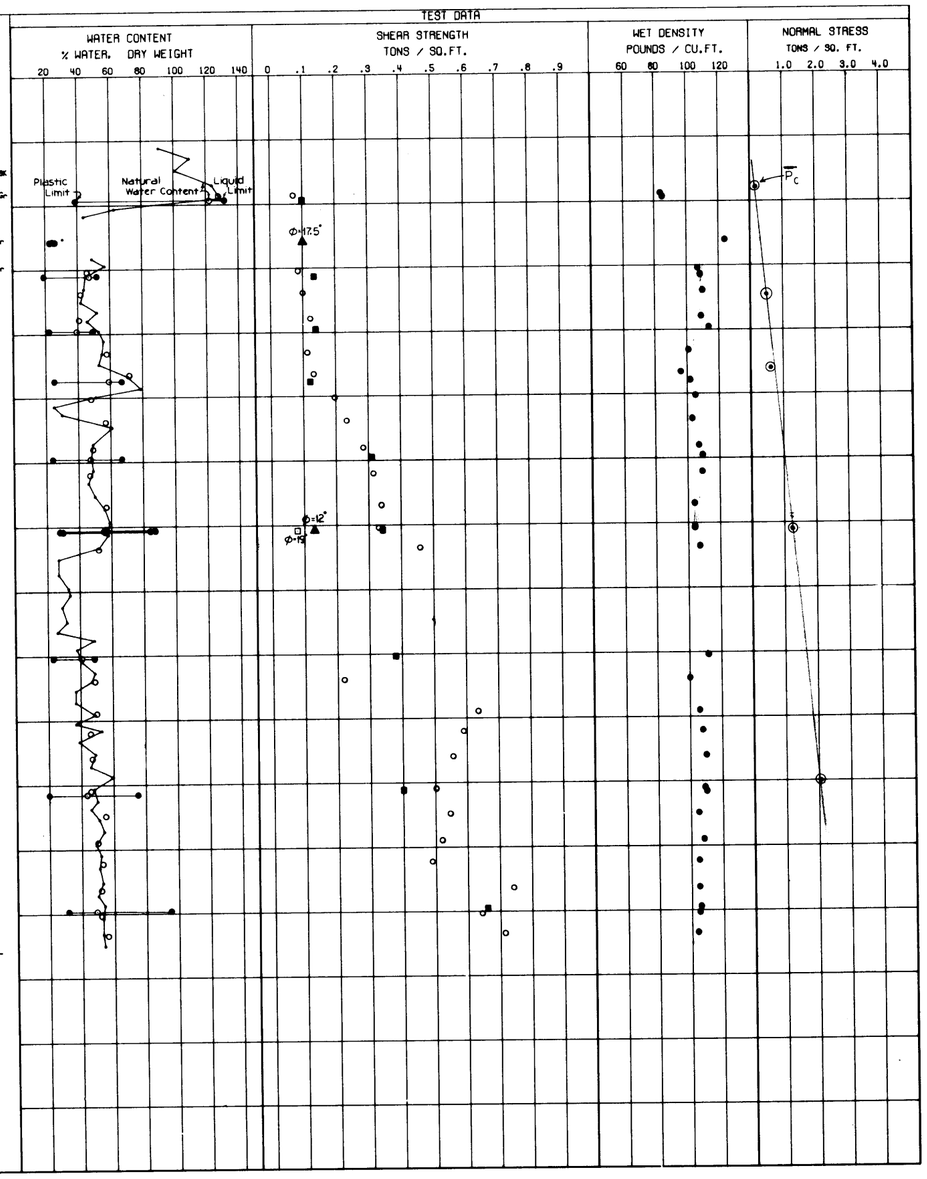
STA. 371+00

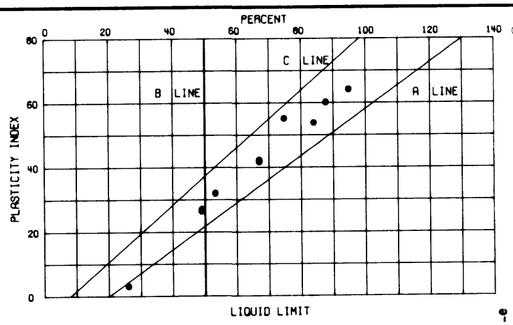
275 FT. LEFT OF B.L.

9-10 SEPT 70

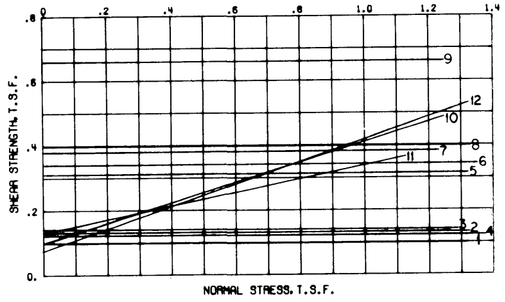
GROUND EL. 0.0







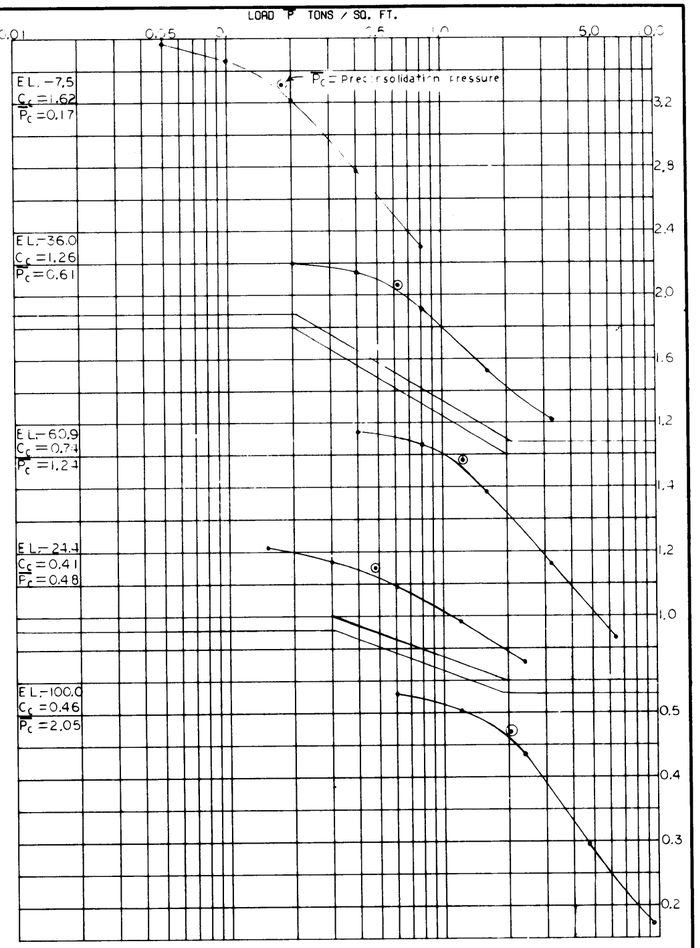
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
73-MHUL	1	-9.2	Q	0	0.10	CH
	2	-21.0		0	0.13	CH
	3	-29.3		0	0.14	CL
	4	-37.1		0	0.12	CH
	5	-49.5		0	0.31	CH
	6	-59.7		0	0.34	CH
	7	-80.3		0	0.38	CL
	8	-101.5		0	0.40	CH
	9	-119.6		0	0.66	CH
	10	-16.1	R	*17.5°	0.10	ML
	11	-59.7		12.0°	0.13	CH
	12	-61.5	S	19.0°	0.08	CH

*BASED ON DEVIATOR STRESS AT MAXIMUM PORE PRESSURE



CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 13

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

EAST BANK

SOIL BORING DATA

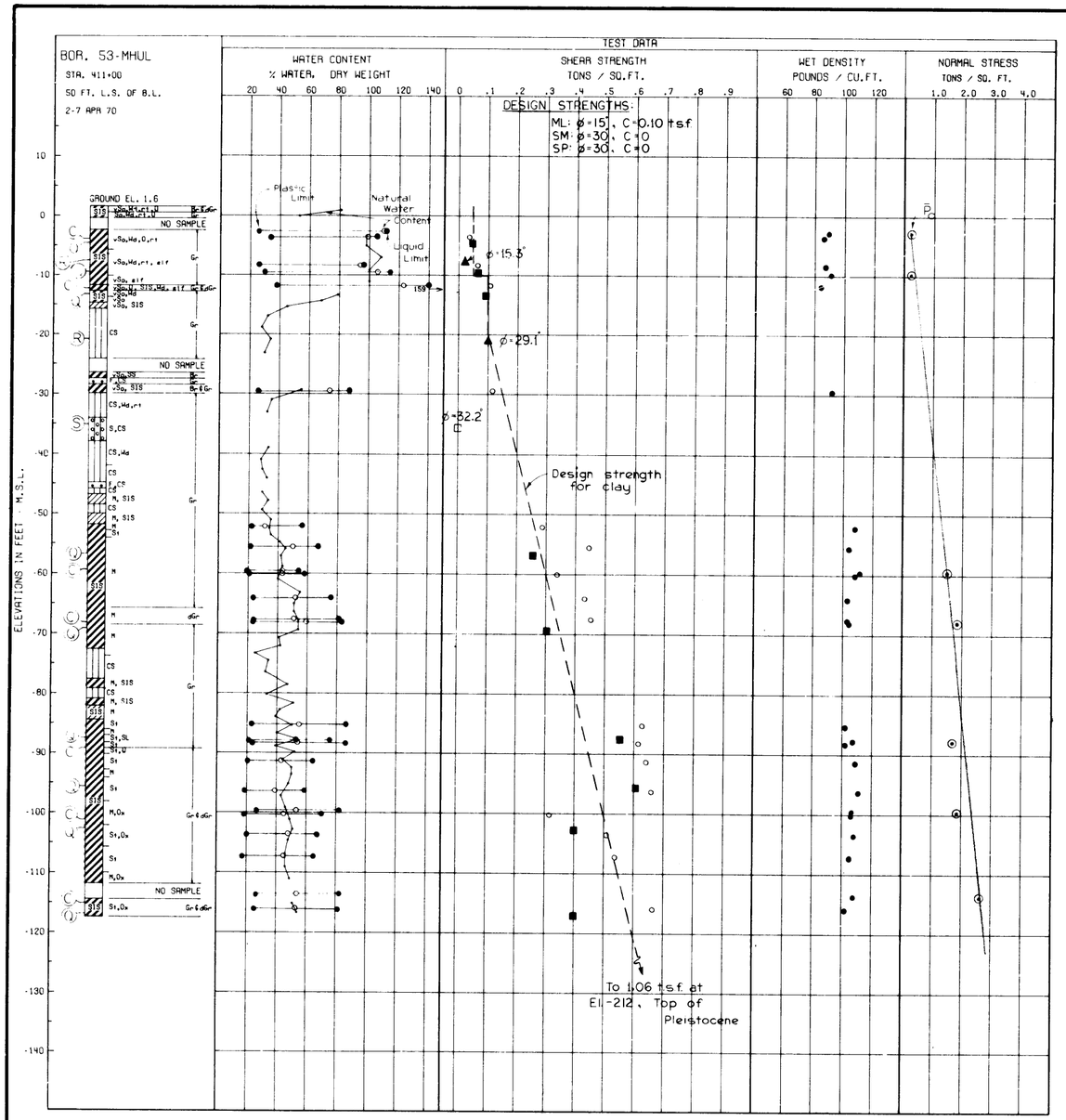
73-MHUL

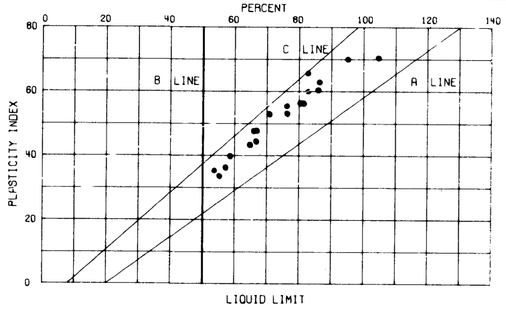
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

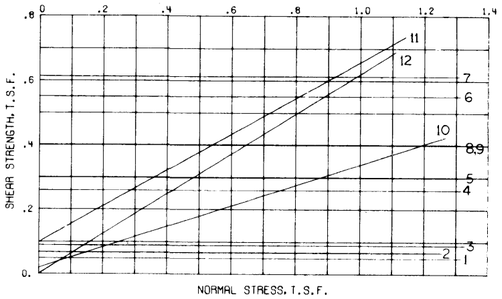
FILE NO. H-2-25275

PLATE 62





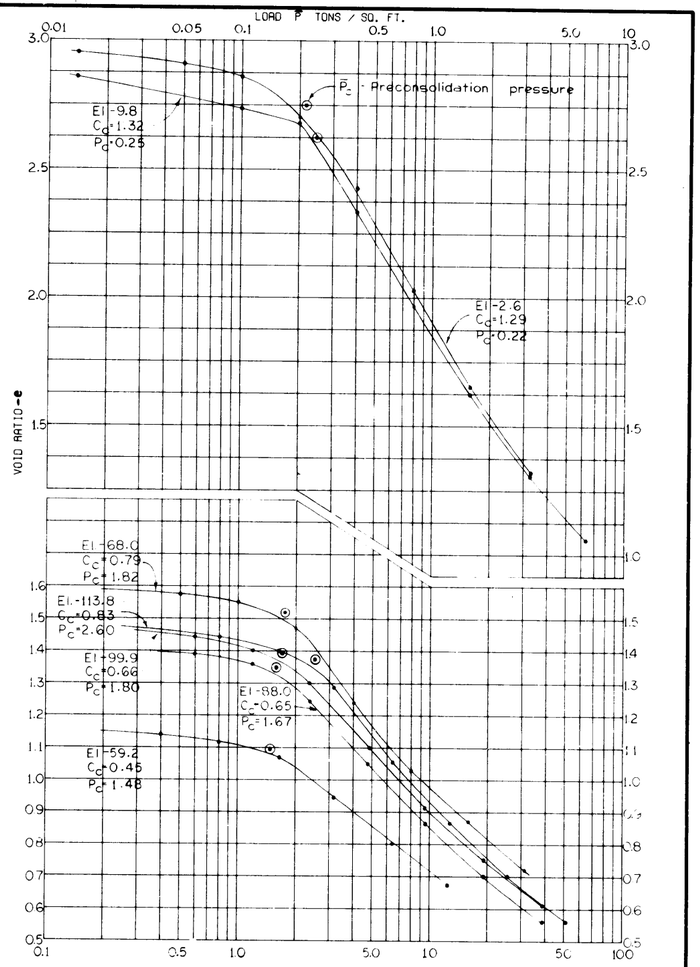
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
53-MHUL	1	-4.5	Q	0	0.05	CH
	2	-9.3		0	0.07	CH
	3	-13.1		0	0.09	CH
	4	-56.5		0	0.26	CH
	5	-68.9		0	0.30	CH
	6	-87.4		0	0.55	CH
	7	-95.5		0	0.61	CH
	8	-104.5		0	0.40	CH
	9	-116.9		0	0.40	CH
	10	-7.5	R	15.3°	0.02	CH
	11	-20.8		*29.1°	0.10	ML
	12	-35.1	S	32.2°	0	SM

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE



CONSOLIDATION DATA

○- (UC) UNCONFINED COMPRESSION TEST
■- (Q) UNCONSOLIDATED - UNDRAINED SHEAR TEST
▲- (R) CONSOLIDATED - UNDRAINED SHEAR TEST
□- (S) CONSOLIDATED - DRAINED SHEAR TEST
BORINGS WERE TAKEN WITH A 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER
FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 14

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

53-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 63

BOR. R-15.9-LU

STA. 487+00

175 FT R/S OF B/L

8-9 APR 70

GROUND EL. 4.0

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ. FT.

WET DENSITY
POUNDS / CU. FT.

NORMAL STRESS
TONS / SQ. FT.

DESIGN STRENGTHS:
ML: C=0.10 T.S.F., Ø=15°
SM: C=0, Ø=30°
SP: C=0, Ø=30°

Plastic Limit
Natural Water Content
Liquid Limit

DESIGN STRENGTH FOR CLAY

TO 1.07 T.S.F. AT EL-214, TOP OF PLEISTOCENE

ELEVATIONS IN FEET - M.S.L.

NO SAMPLE

NO SAMPLE

PLASTICITY CHART

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

A LINE

B LINE

C LINE

SHEAR STRENGTH, T.S.F.

NORMAL STRESS, T.S.F.

SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-15.9-LU	1	+1.9	Q	0°	.32	CL
	2	-6.0		0°	.17	CH
	3	-12.7		0°	.16	CH
	4	-48.2		0°	.37	CH
	5	-57.1		0°	.39	CH
	6	-66.0		0°	.34	CH
	7	-73.1		0°	.45	CH
	8	-81.2		0°	.38	CH
	9	-89.9		0°	.44	CH
	10	-98.0		0°	.50	CL
	11	-58.0	R	12.5°	.20	CH

LOAD P TONS / SQ. FT.

VOID RATIO - e

$\bar{P}_c$=1.04
C_c=0.74
El -50.2

$\bar{P}_c$=0.74
C_c=0.59
El.-5.3

$\bar{P}_c$=0.545
C_c=0.57
El-12.0

$\bar{P}_c$=1.45
C_c=0.87
El-65.3

$\bar{P}_c$=1.23
C_c=0.44
El-82.1

CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 14

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

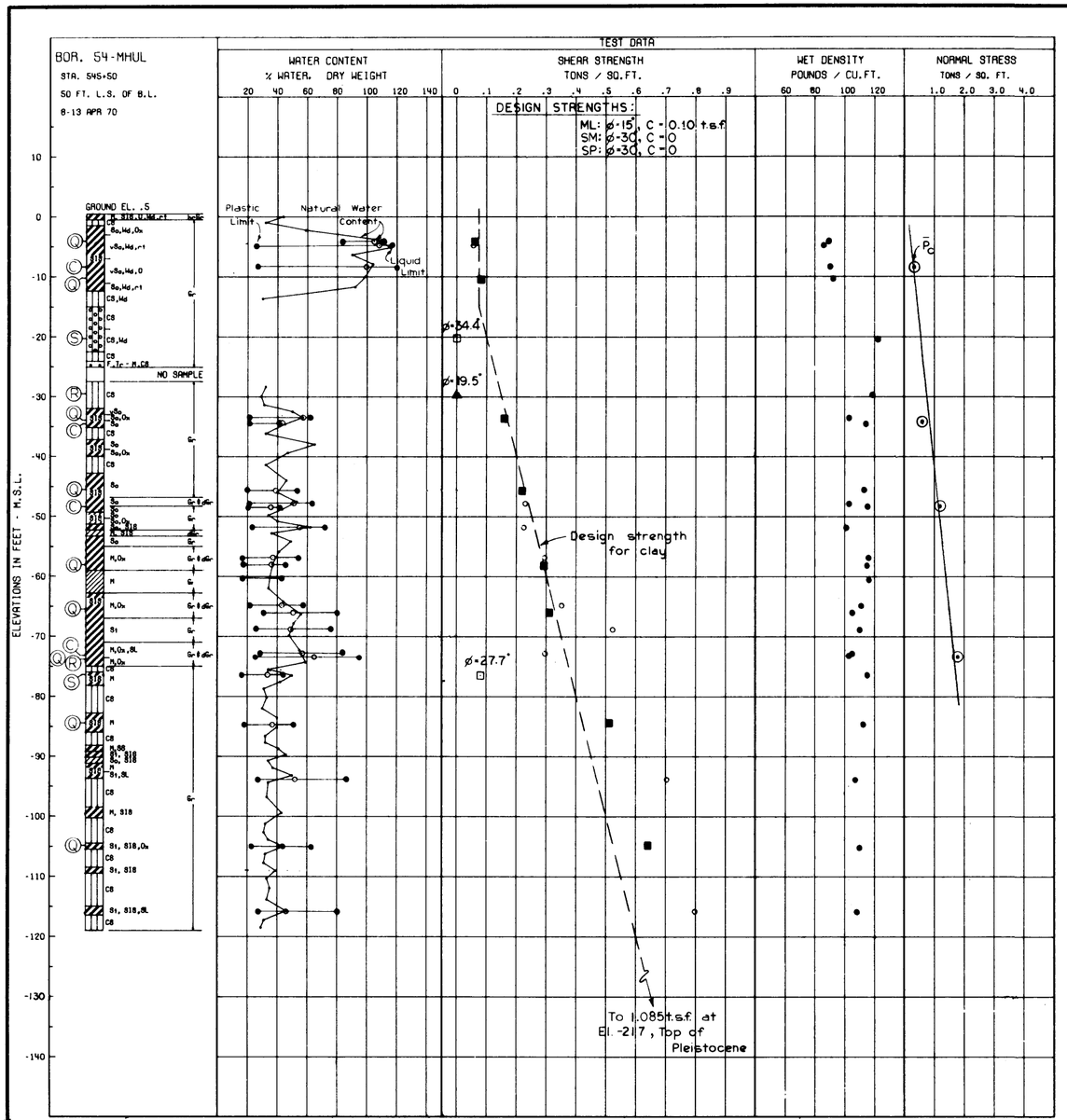
R-15.9-LU

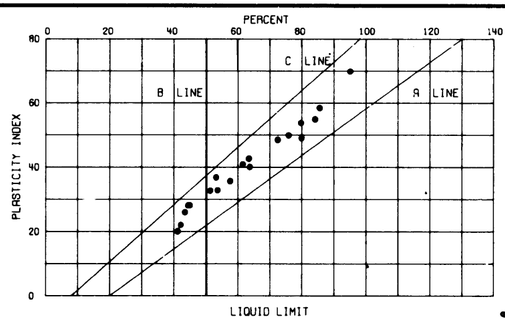
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

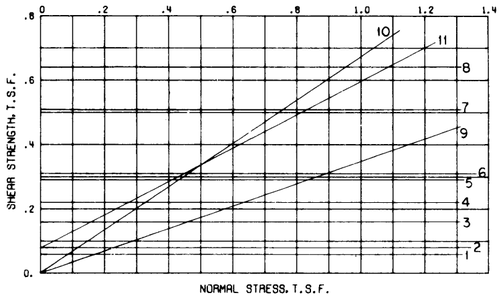
FILE NO H-2-25275

PLATE 64





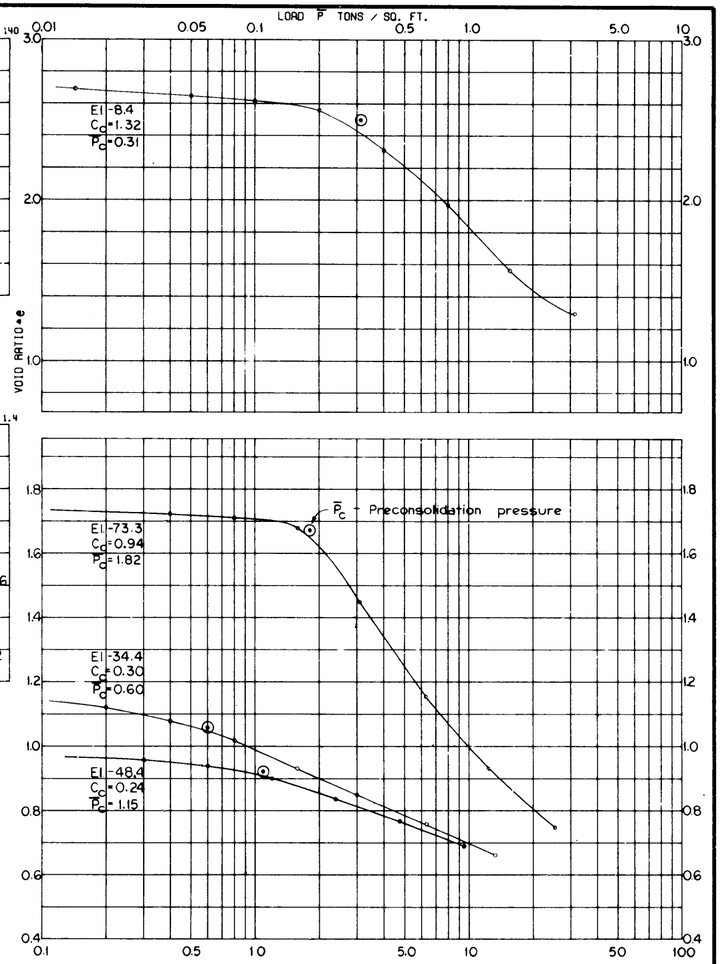
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
54-MHUL	1	- 4.2	Q	0	0.06	CH
	2	-10.3		0	0.08	CH
	3	-33.5		0	0.16	CH
	4	-45.6		0	0.22	CH
	5	-58.1		0	0.29	CL
	6	-66.0		0	0.31	CH
	7	-84.6		0	0.51	CH
	8	-105.0		0	0.64	CH
	9	-29.6	R*	19.5°	0	ML
	10	-20.3	S	34.4°	0	SM
	11	-76.5		27.7°	0.08	CL

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.



CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 14

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

54-MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 65

BOR. R-11.6-LU

STA. 734+00

340 FT. R.S. OF B.L.

13-14 APR 70

GROUND EL. 5.3

TEST DATA

WATER CONTENT % WATER, DRY WEIGHT

SHEAR STRENGTH TONS / SQ.FT.

WET DENSITY POUNDS / CU.FT.

NORMAL STRESS TONS / SQ. FT.

DESIGN STRENGTHS:
ML: C=0.10TSF, Ø=15°
SM: C=0, Ø=30°
SP: C=0 Ø=30°

Plastic Limit

Natural Water Content

Liquid Limit

DESIGN STRENGTH FOR CLAY (USE ALONG BANK OF MISSISSIPPI RIVER)

DESIGN STRENGTH FOR CLAY (USE ALONG BANKS OF BAPTISTE COLLETTE BAYOU)

TO 1.462 TSF AT EL-237, TOP OF PLEISTOCENE

TO 1.240TSF AT EL-241, TOP OF PLEISTOCENE

ELEVATIONS IN FEET - M.S.L.

PLASTICITY CHART

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

C LINE

B LINE

A LINE

SHEAR STRENGTH DATA

SHEAR STRENGTH, T.S.F.

NORMAL STRESS, T.S.F.

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-11.6-LU	1	-2.6	Q	0°	0.11	CH
	2	-6.4	Q	0°	0.08	CH
	3	-10.9	R	14°	0.10	CH
	4	-11.8	Q	0°	0.12	CH
	5	-19.6	Q	0°	0.16	CH
	6	-61.0	Q	0°	0.40	CH
	7	-76.6	Q	0°	0.52	CH

LOAD P TONS / SQ. FT.

VOID RATIO

EL-10.1 C_c=1.34 C_r=0.46 $\bar{P}_c$

EL+20.6 C_c=0.96 C_r=0.54 $\bar{P}_c$

EL-37 C_c=1.88 C_r=0.386 $\bar{P}_c$=2.11

EL-75.8 C_c=0.73 $\bar{P}_c$=2.11

CONSOLIDATION DATA

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

BORINGS WERE TAKEN WITH A 3 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 15

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

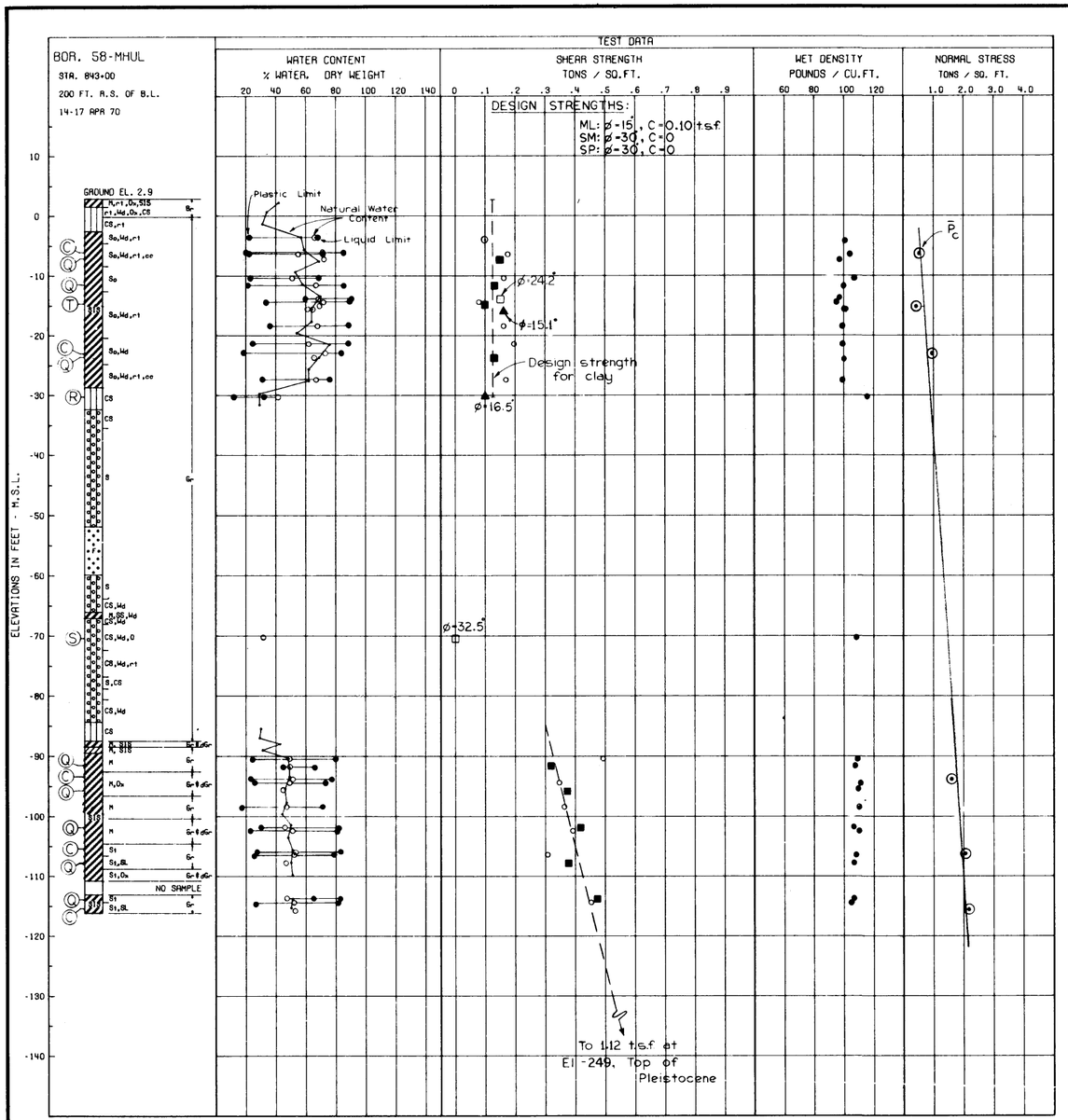
R-11.6-LU

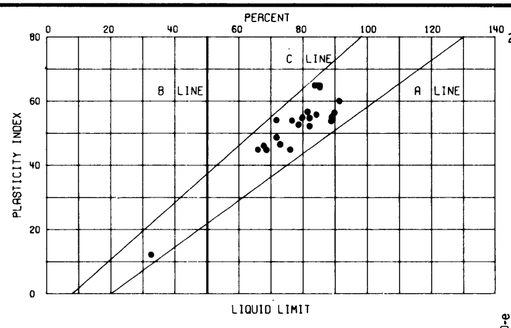
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

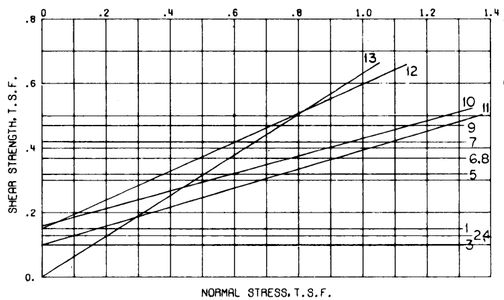
FILE NO H-2-25275

PLATE 66





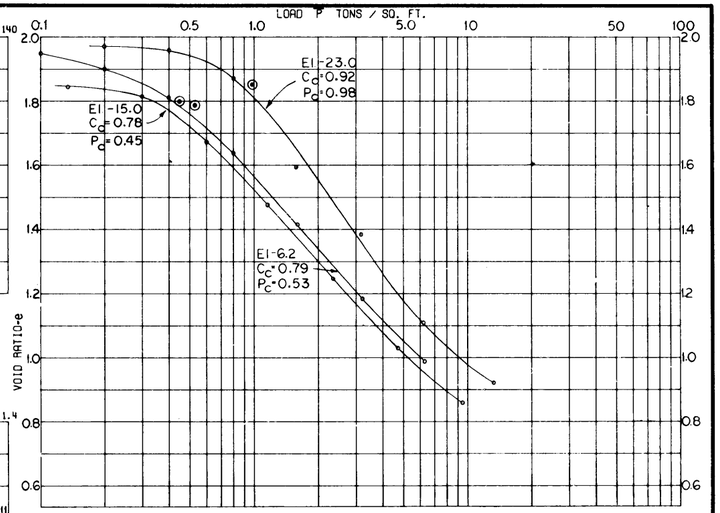
PLASTICITY CHART

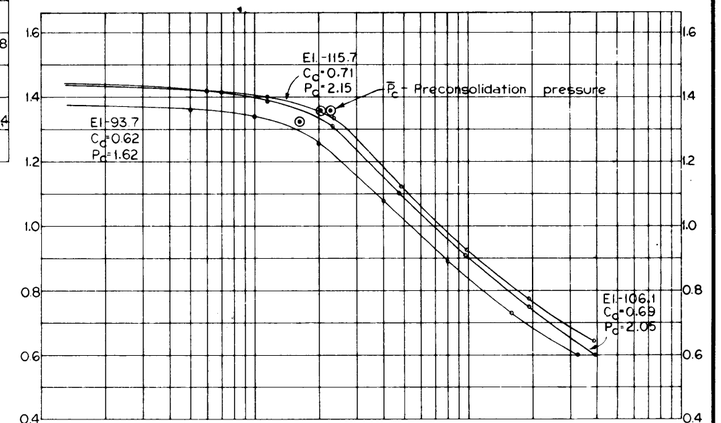


SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
58-MHUL	1	-7.2	Q	0	0.15	CH
	2	-11.6		0	0.13	CH
	3	-15.7		0	0.10	CH
	4	-23.9		0	0.13	CH
	5	-91.6		0	0.32	CH
	6	-95.5		0	0.37	CH
	7	-101.9		0	0.42	CH
	8	-107.9		0	0.37	CH
	9	-113.9		0	0.47	CH
	10	-15.7	R	15.1°	0.16	CH
	11	-30.3		*16.5°	0.10	CL
	12	-13.8	S	24.2°	0.15	CH
	13	-70.3		32.5°	0	SM

*BASED ON DEVIATOR STRESS AT MAXIMUM PORE PRESSURE.





CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 15

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

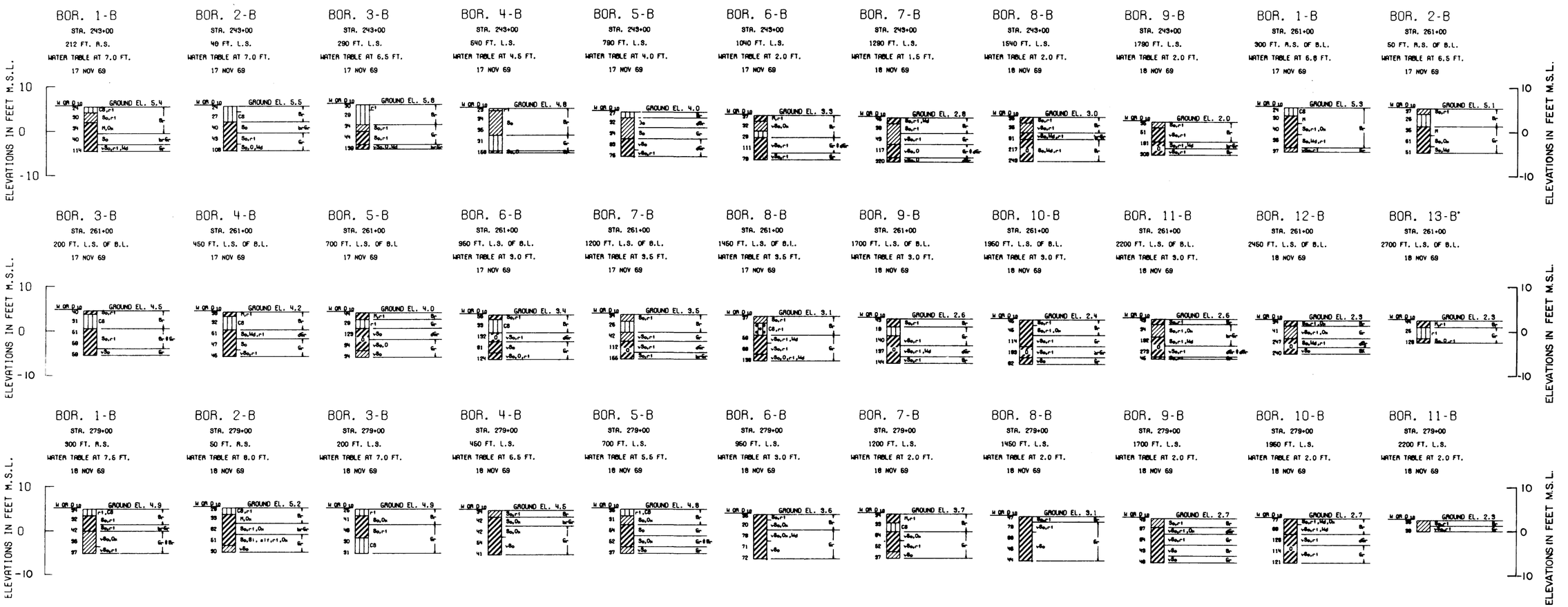
58 - MHUL

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 67



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 9

NOTE: GENERAL TYPE BORING LOGS WERE TAKEN WITH A 4 INCH DIAMETER POST HOLE AUGER.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

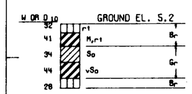
SOIL BORING DATA

BORROW BORINGS
POINTE-A-LA-HACHE - RELIEF OUTLET
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

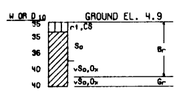
AUGUST 1971 FILE NO H-2-25275

PLATE 68

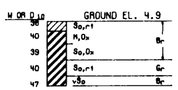
BOR. 1-B
STA. 297+00
250 FT. R.S. OF B.L.
18 NOV 69



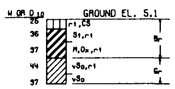
BOR. 2-B
STA. 297+00
ON B.L.
18 NOV 69



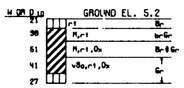
BOR. 3-B
STA. 297+00
250 FT. L.S.
WATER TABLE AT 7.0 FT.
18 NOV 69



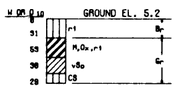
BOR. 4-B
STA. 297+00
500 FT. L.S.
WATER TABLE AT 7.5 FT.
18 NOV 69



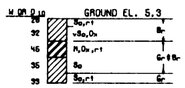
BOR. 5-B
STA. 297+00
750 FT. L.S.
WATER TABLE AT 8.0 FT.
18 NOV 69



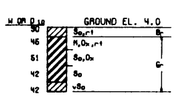
BOR. 6-B
STA. 297+00
1000 FT. L.S.
19 NOV 69



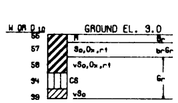
BOR. 7-B
STA. 297+00
1250 FT. L.S.
WATER TABLE AT 8.0 FT.
19 NOV 69



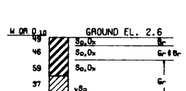
BOR. 8-B
STA. 297+00
1500 FT. L.S.
WATER TABLE AT 5.0 FT.
19 NOV 69



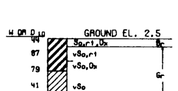
BOR. 9-B
STA. 297+00
1750 FT. L.S.
WATER TABLE AT 2.0 FT.
19 NOV 69



BOR. 10-B
STA. 297+00
2000 FT. L.S.
WATER TABLE AT 3.0 FT.
19 NOV 69



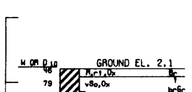
BOR. 11-B
STA. 297+00
2250 FT. L.S.
19 NOV 69



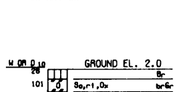
ELEVATIONS IN FEET M.S.L.

10
0
-10

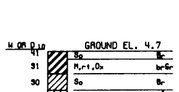
BOR. 12-B
STA. 297+00
2500 FT. L.S.
WATER TABLE AT 2.5 FT.
19 NOV 69



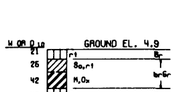
BOR. 13-B
STA. 297+00
2750 FT. L.S.
WATER TABLE AT 2.5 FT.
19 NOV 69



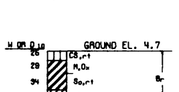
BOR. 1-B
STA. 315+00
200 FT. R.S. OF B.L.
19 NOV 69



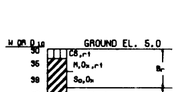
BOR. 2-B
STA. 315+00
50 FT. L.S.
19 NOV 69



BOR. 3-B
STA. 315+00
300 FT. L.S.
WATER TABLE AT 8.0 FT.
20 NOV 69



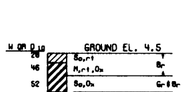
BOR. 4-B
STA. 315+00
550 FT. L.S.
WATER TABLE AT 8.0 FT.
20 NOV 69



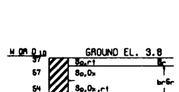
BOR. 5-B
STA. 315+00
800 FT. L.S.
WATER TABLE AT 8.0 FT.
20 NOV 69

BOR. 6-B
STA. 315+00
1050 FT. L.S.
WATER TABLE AT 8.0 FT.
20 NOV 69

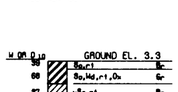
BOR. 7-B
STA. 315+00
1300 FT. L.S.
20 NOV 69



BOR. 8-B
STA. 315+00
1550 FT. L.S.
WATER TABLE AT 6.5 FT.
20 NOV 69



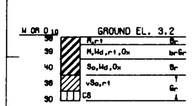
BOR. 9-B
STA. 315+00
1800 FT. L.S.
WATER TABLE AT 2.0 FT.
20 NOV 69



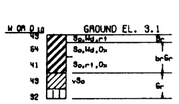
ELEVATIONS IN FEET M.S.L.

10
0
-10

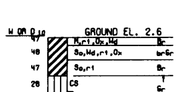
BOR. 10-B
STA. 315+00
2050 FT. L.S.
WATER TABLE AT 4.5 FT.
20 NOV 69



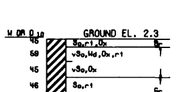
BOR. 11-B
STA. 315+00
2300 FT. L.S.
WATER TABLE AT 3.0 FT.
20 NOV 69



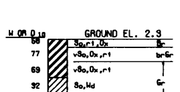
BOR. 12-B
STA. 315+00
2550 FT. L.S.
WATER TABLE AT 2.0 FT.
20 NOV 69



BOR. 13-B
STA. 315+00
2800 FT. L.S.
WATER TABLE AT 3.0 FT.
20 NOV 69



BOR. 14-B
STA. 315+00
3000 FT. L.S.
WATER TABLE AT 2.0 FT.
20 NOV 69



ELEVATIONS IN FEET M.S.L.

10
0
-10

FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 9

NOTE: GENERAL TYPE BORING LOGS WERE TAKEN WITH A 4 INCH DIAMETER POST HOLE AUGER.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

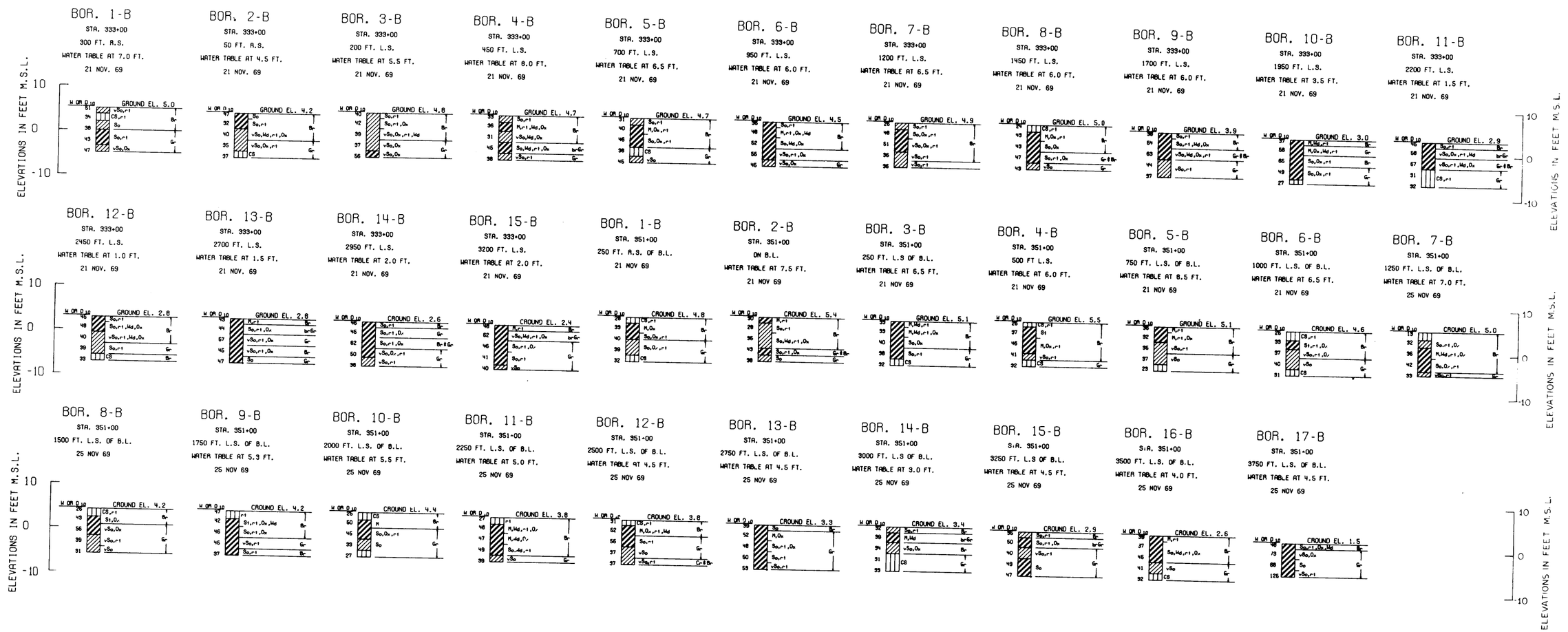
SOIL BORING DATA

BORROW BORINGS
POINTE-A-LA-HACHE - RELIEF OUTLET
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

FILE NO H-2-25275

PLATE 69



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 10

NOTE: GENERAL TYPE BORING LOGS WERE TAKEN WITH A 4 INCH DIAMETER POST HOLE AUGER.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

BORROW BORINGS
POINTE-A-LA-HACHE - RELIEF OUTLET
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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AUGUST 1971

FILE NO H-2-25275

PLATE 70

BOR. 1-B
STA. 369+00
350 FT. R.S.
25 NOV 69

BOR. 2-B
STA. 369+00
100 FT. R.S.
WATER TABLE AT 8.0 FT.
25 NOV 69

BOR. 3-B
STA. 369+00
150 FT. L.S.
WATER TABLE AT 8.0 FT.
25 NOV 69

BOR. 4-B
STA. 369+00
400 FT. L.S.
WATER TABLE AT 6.0 FT.
25 NOV 69

BOR. 5-B
STA. 369+00
650 FT. L.S.
WATER TABLE AT 6.0 FT.
25 NOV 69

BOR. 6-B
STA. 369+00
900 FT. L.S.
WATER TABLE AT 4.5 FT.
25 NOV 69

BOR. 7-B
STA. 369+00
1150 FT. L.S.
WATER TABLE AT 5.0 FT.
25 NOV 69

BOR. 8-B
STA. 369+00
1400 FT. L.S.
WATER TABLE 4.5 FT.
25 NOV 69

BOR. 9-B
STA. 369+00
1650 FT. L.S.
WATER TABLE AT 3.5 FT.
25 NOV 69

BOR. 10-B
STA. 369+00
1900 FT. L.S.
WATER TABLE AT 2.0 FT.
25 NOV 69

BOR. 11-B
STA. 369+00
2150 FT. L.S.
WATER TABLE AT 3.0 FT.
25 NOV 69

ELEVATIONS IN FEET M.S.L.

BOR. 12-B
STA. 369+00
2400 FT. L.S.
WATER TABLE AT 2.0 FT.
25 NOV 69

BOR. 13-B
STA. 369+00
2650 FT. L.S.
WATER TABLE AT 1.0 FT.
25 NOV 69

BOR. 1-B
STA. 387+00
300 FT. R.S.
2 DEC. 69

BOR. 2-B
STA. 387+00
50 FT. R.S.
WATER TABLE AT 6.0 FT.
2 DEC. 69

BOR. 3-B
STA. 387+00
200 FT. L.S.
WATER TABLE AT 8.0 FT.
2 DEC 69

BOR. 4-B
STA. 387+00
450 FT. L.S.
WATER TABLE AT 7.0 FT.
2 DEC 69

BOR. 5-B
STA. 387+00
700 FT. L.S.
WATER TABLE AT 8.0 FT.
2 DEC 69

BOR. 6-B
STA. 387+00
950 FT. L.S.
WATER TABLE AT 5.0 FT.
2 DEC. 69

BOR. 7-B
STA. 387+00
1200 FT. L.S.
WATER TABLE AT 4.5 FT.
2 DEC. 69

BOR. 8-B
STA. 387+00
1450 FT. L.S.
WATER TABLE AT 4.5 FT.
2 DEC. 69

BOR. 9-B
STA. 387+00
1700 FT. L.S.
WATER TABLE AT 4.5 FT.
2 DEC. 69

ELEVATIONS IN FEET M.S.L.

BOR. 10-B
STA. 387+00
1950 FT. L.S.
WATER TABLE AT 3.0 FT.
2 DEC. 69

BOR. 11-B
STA. 387+00
2200 FT. L.S.
WATER TABLE AT 1.5 FT.
2 DEC 69

BOR. 12-B
STA. 387+00
2450 FT. L.S.
WATER TABLE AT 1.0 FT.
2 DEC. 69

BOR. 13-B
STA. 387+00
2700 FT. L.S.
WATER TABLE AT 1.0 FT.
2 DEC. 69

ELEVATIONS IN FEET M.S.L.

FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 10

NOTE: GENERAL TYPE BORING LOGS WERE TAKEN WITH A 4 INCH DIAMETER POST HOLE AUGER.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

BORROW BORINGS
POINTE-A-LA-HACHE - RELIEF OUTLET
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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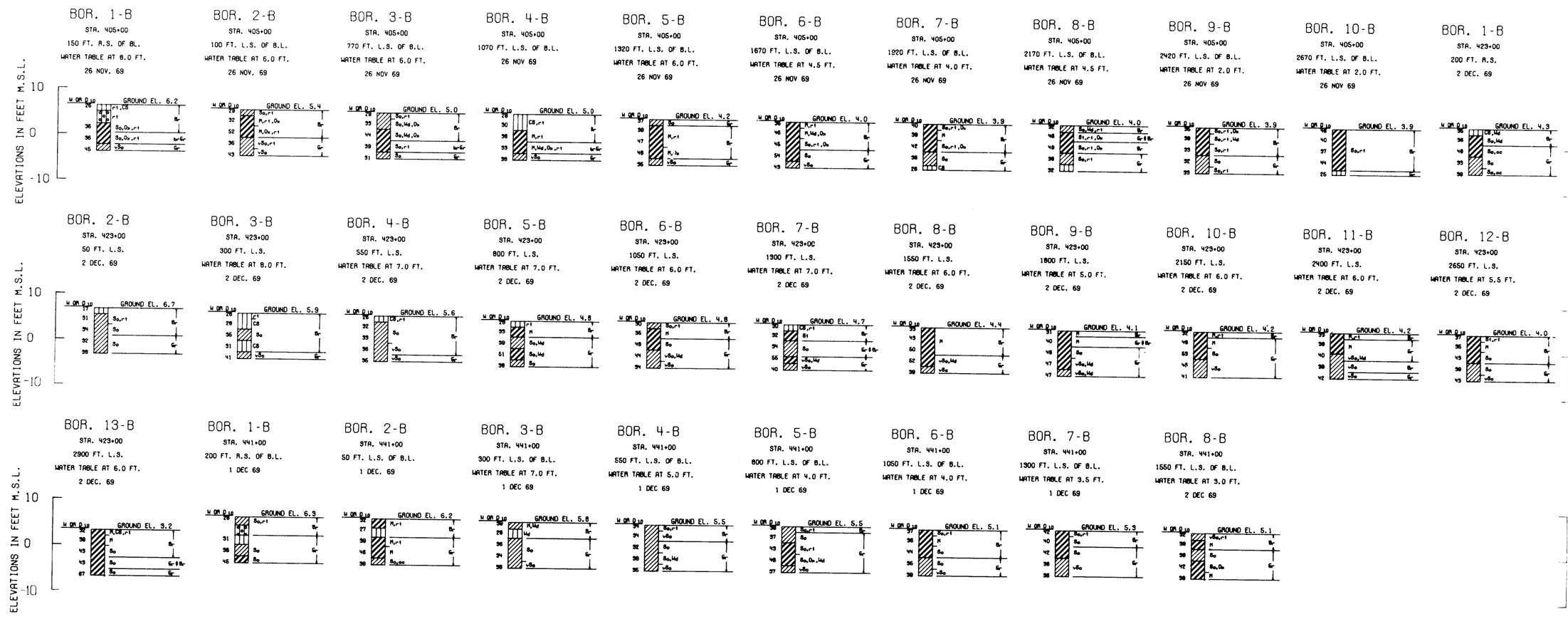
AUGUST 1971

FILE NO H-2-25275

PLATE 71



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 10

NOTE: GENERAL TYPE BORING LOGS WERE TAKEN WITH A 4 INCH DIAMETER POST HOLE AUGER.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

BORROW BORINGS
POINTE-A-LA-HACHE - RELIEF OUTLET
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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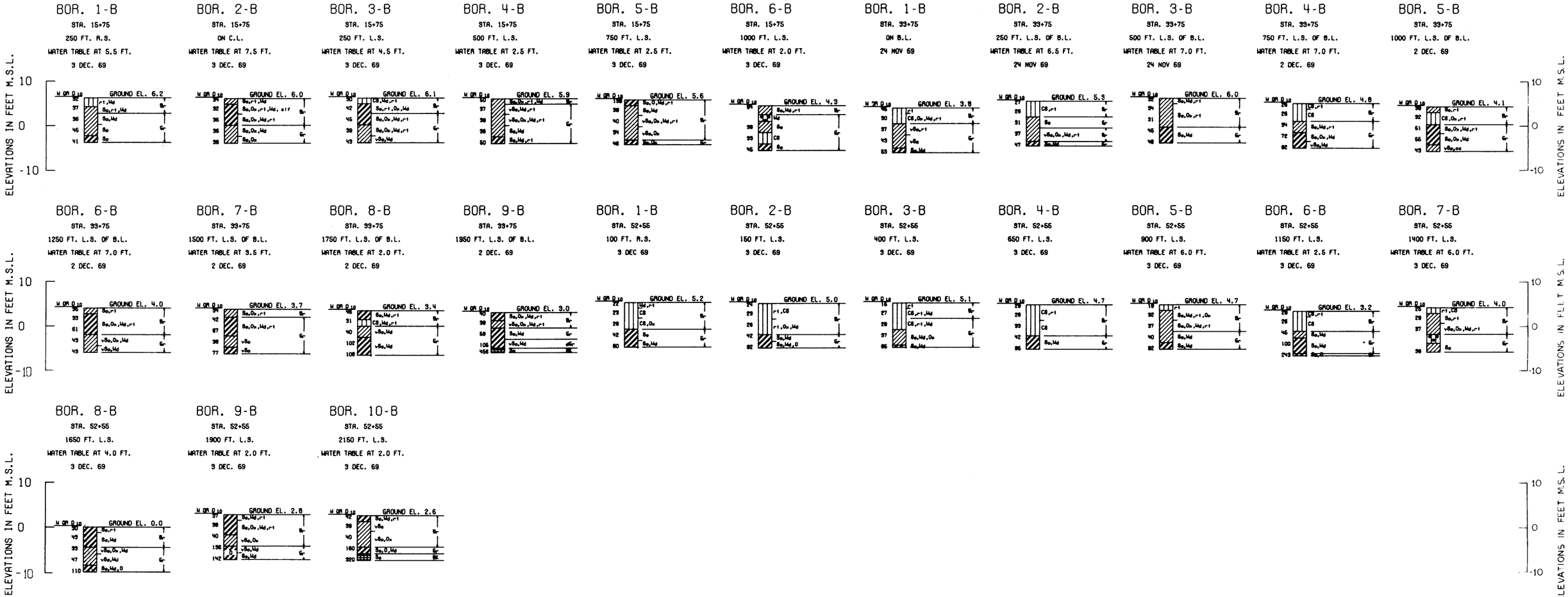
AUGUST 1971

FILE NO H-2-25275

PLATE 72



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 10

NOTE: GENERAL TYPE BORING LOGS WERE TAKEN WITH A 4 INCH DIAMETER POST HOLE AUGER.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

BORROW BORINGS
POINTE-A-LA-HACHE - RELIEF OUTLET
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AUGUST 1971

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PLATE 73

BOR. 1-B
STA. 71+05
100 FT. R.S. OF B.L.
2 DEC 69

BOR. 2-B
STA. 71+05
150 FT. L.S. OF B.L.
2 DEC 69

BOR. 3-B
STA. 71+05
400 FT. L.S. OF B.L.
2 DEC 69

BOR. 4-B
STA. 71+05
650 FT. L.S. OF B.L.
2 DEC. 69

BOR. 5-B
STA. 71+05
900 FT. L.S. OF B.L.
WATER TABLE AT 5.0 FT.
3 DEC 69

BOR. 6-B
STA. 71+05
1150 FT. L.S. OF B.L.
WATER TABLE AT 4.0 FT.
3 DEC 69

BOR. 7-B
STA. 71+05
1400 FT. L.S. OF B.L.
WATER TABLE AT 3.0 FT.
3 DEC 69

BOR. 8-B
STA. 71+05
1650 FT. L.S. OF B.L.
WATER TABLE AT 2.0 FT.
3 DEC 69

BOR. 9-B
STA. 71+05
1900 FT. L.S. OF B.L.
WATER TABLE AT 2.0 FT.
3 DEC 69

BOR. 10-B
STA. 71+05
2150 FT. L.S. OF B.L.
WATER TABLE AT 2.0 FT.
3 DEC 69

BOR. 1-B
STA. 89+46
100 FT. R.S.
3 DEC. 69

ELEVATIONS IN FEET M.S.L.
10
0
-10

BOR. 2-B
STA. 89+46
150 FT. L.S.
3 DEC. 69

BOR. 3-B
STA. 89+46
400 FT. L.S.
3 DEC. 69

BOR. 4-B
STA. 89+46
650 FT. L.S.
WATER TABLE AT 3.0 FT.
3 DEC. 69

BOR. 5-B
STA. 89+46
900 FT. L.S.
WATER TABLE AT 4.0 FT.
3 DEC. 69

BOR. 6-B
STA. 89+46
1150 FT. L.S.
WATER TABLE AT 2.5 FT.
3 DEC. 69

BOR. 7-B
STA. 89+46
1400 FT. L.S.
WATER TABLE AT 1.5 FT.
3 DEC. 69

BOR. 8-B
STA. 89+46
1650 FT. L.S.
WATER TABLE AT 2.0 FT.
3 DEC. 69

BOR. 9-B
STA. 89+46
1900 FT. L.S.
WATER TABLE AT 1.0 FT.
3 DEC. 69

BOR. 1-B
STA. 108+06
100 FT. L.S. B.L.
WATER TABLE AT 4.0 FT.
3 DEC 69

BOR. 2-B
STA. 108+06
350 FT. L.S. OF B.L.
3 DEC 69

BOR. 3-B
STA. 108+06
600 FT. L.S. OF B.L.
WATER TABLE AT 4.0 FT.
3 DEC 69

ELEVATIONS IN FEET M.S.L.
10
0
-10

BOR. 4-B
STA. 108+06
850 FT. L.S. OF B.L.
3 DEC 69

BOR. 5-B
STA. 108+06
1100 FT. L.S. OF B.L.
WATER TABLE AT 2.0 FT.
4 DEC 69

BOR. 6-B
STA. 108+06
1350 FT. L.S. OF B.L.
WATER TABLE AT 2.0 FT.
4 DEC 69

BOR. 7-B
STA. 108+06
1600 L.S. OF B.L.
WATER TABLE AT 1.5 FT.
4 DEC 69

BOR. 8-B
STA. 108+06
1850 FT. L.S. OF B.L.
WATER TABLE AT 1.5 FT.
4 DEC 69

ELEVATIONS IN FEET M.S.L.
10
0
-10

FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 10

NOTE: GENERAL TYPE BORING LOGS WERE TAKEN WITH A 4 INCH DIAMETER POST HOLE AUGER.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA

BORROW BORINGS
POINTE-A-LA-HACHE - RELIEF OUTLET
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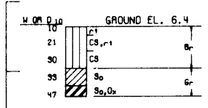
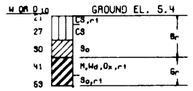
PLATE 74

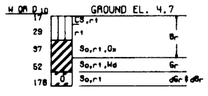
BOR. 1-B
STA. 127+40
50 FT. R.S.
WATER TABLE AT 8.0 FT.
3 DEC. 69



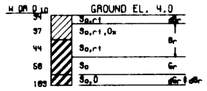
BOR. 2-B
STA. 127+40
200 FT. L.S.
WATER TABLE AT 8.0 FT.
3 DEC. 69



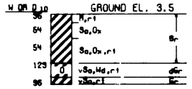
BOR. 3-B
STA. 127+40
450 FT. L.S.
WATER TABLE AT 7.0 FT.
3 DEC. 69



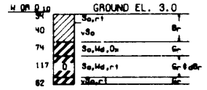
BOR. 4-B
STA. 127+40
700 FT. L.S.
WATER TABLE AT 4.0 FT.
3 DEC. 69



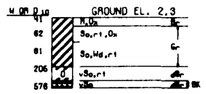
BOR. 5-B
STA. 127+40
950 FT. L.S.
WATER TABLE AT 2.5 FT.
3 DEC. 69



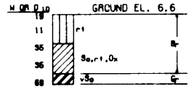
BOR. 6-B
STA. 127+40
1200 FT. L.S.
WATER TABLE AT 2.0 FT.
3 DEC. 69



BOR. 7-B
STA. 127+40
1450 FT. L.S.
WATER TABLE AT 1.5 FT.
3 DEC. 69

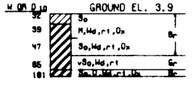


BOR. 1-B
STA. 147+66
100 FT. L.S. OF B.L.
4 DEC 69

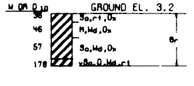


BOR. 2-B
STA. 147+66
350 FT. L.S. OF B.L.
WATER TABLE AT 8.0 FT.
4 DEC 69

BOR. 3-B
STA. 147+66
600 FT. L.S. OF B.L.
WATER TABLE AT 5.0 FT.
4 DEC. 69

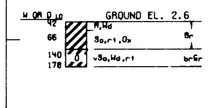


BOR. 4-B
STA. 147+66
850 FT. L.S. OF B.L.
WATER TABLE AT 4.0 FT.
4 DEC. 69

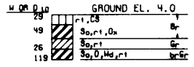


ELEVATIONS IN FEET M.S.L.
10
0
-10

BOR. 5-B
STA. 147+66
1100 FT. L.S. OF B.L.
WATER TABLE AT 2.0 FT.
4 DEC. 69



BOR. 6-B
STA. 147+66
1350 FT. L.S. OF B.L.
4 DEC. 69



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 10

NOTE: GENERAL TYPE BORING LOGS WERE TAKEN WITH A 4 INCH DIAMETER POST HOLE AUGER.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

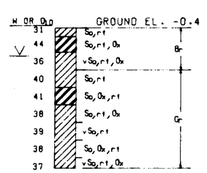
SOIL BORING DATA

BORROW BORINGS
POINTE-A-LA-HACHE-RELIEF OUTLET
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

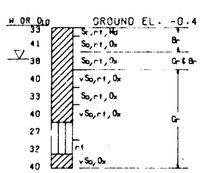
AUGUST 1971 FILE NO H-2-25275

PLATE 75

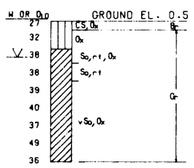
BOR. B-1
STA. 408+88
400 FT. RT. OF B.L.
WATER TABLE 4.0 FT.
15 SEPT 70



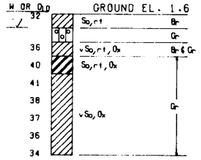
BOR. B-2
STA. 410+88
400 FT. RT. OF B.L.
WATER TABLE 4.5 FT.
16 SEPT 70



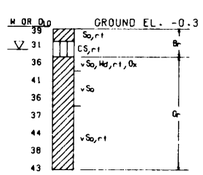
BOR. B-3
STA. 412+71
360 FT. RT. OF B.L.
WATER TABLE 5.0 FT.
16 SEPT 70



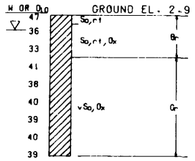
BOR. B-4
STA. 414+71
360 FT. RT. OF B.L.
WATER TABLE 2.0 FT.
16 SEPT 70



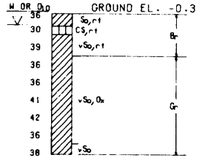
BOR. B-5
STA. 416+71
450 FT. RT. OF B.L.
WATER TABLE 3.0 FT.
17 SEPT 70



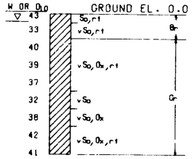
BOR. B-6
STA. 418+71
300 FT. RT. OF B.L.
WATER TABLE 2.0 FT.
17 SEPT 70



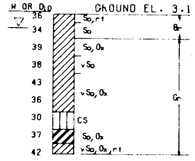
BOR. B-7
STA. 420+70
470 FT. RT. OF B.L.
WATER TABLE 1.5 FT.
17 SEPT 70



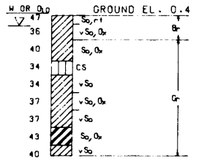
BOR. B-8
STA. 422+71
470 FT. RT. OF B.L.
WATER TABLE 1.3 FT.
17 SEPT 70



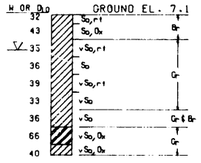
BOR. B-9
STA. 424+71
300 FT. RT. OF B.L.
WATER TABLE 2.0 FT.
17 SEPT 70



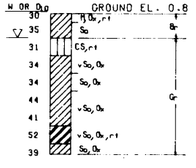
BOR. B-10
STA. 426+71
430 FT. RT. OF B.L.
WATER TABLE 2.0 FT.
17 SEPT 70



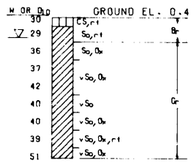
BOR. B-11
STA. 430+71
230 FT. RT. OF B.L.
WATER TABLE 5.0 FT.
18 SEPT 70



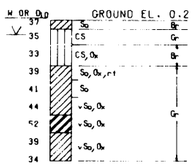
BOR. B-12
STA. 432+71
450 FT. RT. OF B.L.
WATER TABLE 3.5 FT.
18 SEPT 70



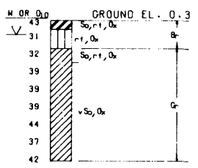
BOR. B-13
STA. 434+71
450 FT. RT. OF B.L.
WATER TABLE 3.0 FT.
18 SEPT 70



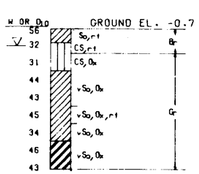
BOR. B-14
STA. 436+71
480 FT. RT. OF B.L.
WATER TABLE 2.0 FT.
18 SEPT 70



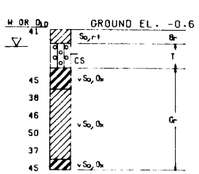
BOR. B-15
STA. 438+71
480 FT. RT. OF B.L.
WATER TABLE 2.0 FT.
18 SEPT 70



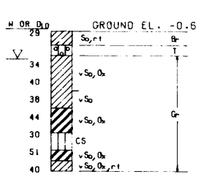
BOR. B-16
STA. 440+71
480 FT. RT. OF B.L.
WATER TABLE 2.5 FT.
18 SEPT 70



BOR. B-17
STA. 442+71
525 FT. RT. OF B.L.
WATER TABLE 2.5 FT.
21 SEPT 70



BOR. B-18
STA. 0+00
525 FT. RT. OF B.L.
WATER TABLE 4.0 FT.
21 SEPT 70



ELEVATIONS IN FEET M.S.L.
10
0
-10
-20
-30

ELEVATIONS IN FEET M.S.L.
10
0
-10
-20

ELEVATIONS IN FEET M.S.L.
10
0
-10
-20

ELEVATIONS IN FEET M.S.L.
10
0
-10
-20

WATER TABLE LOCATION SHOWN ON BORING LOG IS THAT OBSERVED ON DATE BORING WAS MADE

ALL BORINGS SHOWN ON THIS PLATE WERE MADE WITH A 4-IN DIAMETER POST HOLE AUGER

FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 10

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA
BANK BORROW BORINGS
VICINITY MILE 36.0 A.H.P.

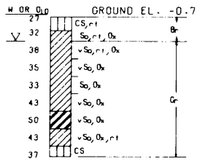
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

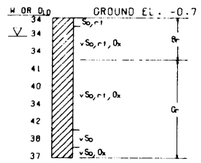
FILE NO H-2-25275

PLATE 76

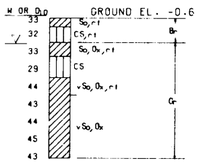
BOR. B-19
STA. 2+00
500 FT. RT. OF B.L.
WATER TABLE 3.9 FT.
21 SEPT 70



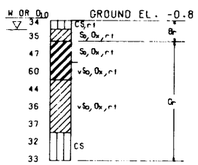
BOR. B-20
STA. 4+00
525 FT. RT. OF B.L.
WATER TABLE 3.0 FT.
21 SEPT 70



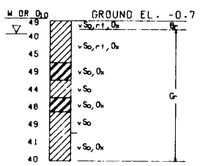
BOR. B-21
STA. 6+00
500 FT. RT. OF B.L.
WATER TABLE 4.0 FT.
21 SEPT 70



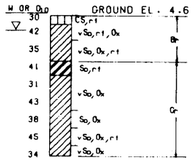
BOR. B-22
STA. 8+00
500 FT. RT. OF B.L.
WATER TABLE [illegible] FT.
14 SEPT 70



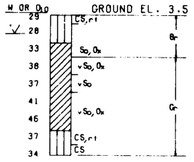
BOR. B-23
STA. 10+00
500 FT. RT. OF B.L.
WATER TABLE 2.3 FT.
14 SEP 1970



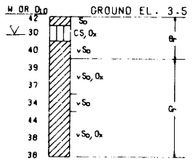
BOR. B-24
STA. 410+88
200 FT. RT. OF B.L.
WATER TABLE 2.5 FT.
SEPT 22 1970



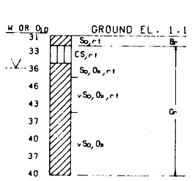
BOR. B-25
STA. 416+71
250 FT. RT. OF B.L.
WATER TABLE 3.0 FT.
22 SEPT 70



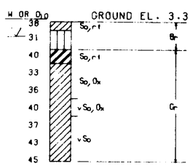
BOR. B-26
STA. 422+71
270 FT. RT. OF B.L.
WATER TABLE 3.0 FT.
22 SEPT 70



BOR. B-27
STA. 430+71
430 FT. RT. OF B.L.
WATER TABLE 5.0 FT.
22 SEPT 70

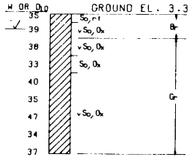


BOR. B-28
STA. 436+71
310 FT. RT. OF B.L.
WATER TABLE 2.5 FT.
22 SEPT 70

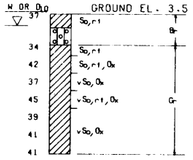


ELEVATIONS IN FEET M.S.L.
10
0
-10
-20
-30

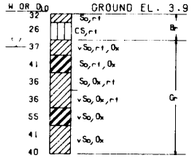
BOR. B-29
STA. 442+71
325 FT. RT. OF B.L.
WATER TABLE 2.5 FT.
22 SEPT 70



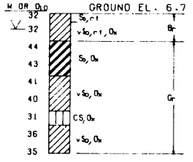
BOR. B-30
STA. 4+00
325 FT. RT. OF B.L.
WATER TABLE 2.0 FT.
22 SEPT 70



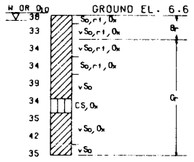
BOR. B-31
STA. 10+00
325 FT. RT. OF B.L.
WATER TABLE 5.0 FT.
22 SEPT 70



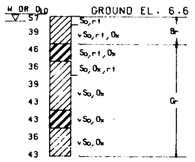
BOR. B-32
STA. 414+71
100 FT. RT. OF B.L.
WATER TABLE 2.5 FT.
22 SEPT 70



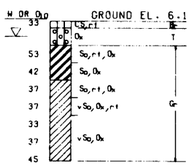
BOR. B-33
STA. 420+71
100 FT. RT. OF B.L.
WATER TABLE 1.0 FT.
22 SEPT 70



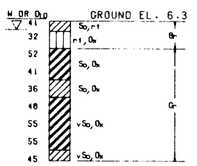
BOR. B-34
STA. 426+71
100 FT. RT. OF B.L.
WATER TABLE 1.0 FT.
24 SEPT 70



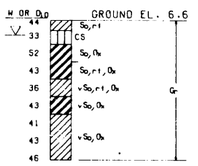
BOR. B-35
STA. 438+71
110 FT. RT. OF B.L.
WATER TABLE 2.5 FT.
23 SEPT 70



BOR. B-36
STA. 0+00
125 FT. RT. OF B.L.
WATER TABLE 1.5 FT.
23 SEPT 70



BOR. B-37
STA. 6+00
125 FT. RT. OF B.L.
WATER TABLE 2.5 FT.
24 SEPT 70



ELEVATIONS IN FEET M.S.L.
10
0
-10
-20

WATER TABLE LOCATION SHOWN ON BORING LOG IS THAT OBSERVED ON DATE BORING WAS MADE

ALL BORINGS SHOWN ON THIS PLATE WERE MADE WITH A 4-IN DIAMETER POST HOLE AUGER

FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 10

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL BORING DATA
BANK BORROW BORINGS
VICINITY MILE 36.0 A.H.P.

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

AUGUST 1971 FILE NO H-2-25275

PLATE 77

STATIONING ALONG LEVEE BASELINE

1300 1400 1500 1600 1700 1800 1900 2000 2100 2200 2300 2400 2500 2544+90°= 0+00 100 200 300 400

SOIL REACHES → AE-1 | AE-2 | AE-3 | AE-4 | AE-5 | BE | CE | DE | EE | FE | GE-1 | GE-2 | HE-1 | HE-2 | HE-3 | HE-4 | IE | JE

℄ BORINGS → 25-MHUL 30-MHL 28-MHL 24-MHL 56-UE 21-MHL 19-MHUL 16-MHL 15-MHL 14-MHL 10-MHUL 8-MHL 47-UE 6-MHL 3-MHL 1-MHL

TOE BORINGS → R-65.6-LU (65) BELAIR | R-62.6-LU | 26-MHL | MS-28 | R-60.3-UL (60) POVERTY POINT | 29-MHL | R-58.0-LU | 27-MHL | 23-MHL | 22-MHL | (55) 20-MHL | 18-MHL | 17-MHL DAVANT | 13-MHL | 12-MHL (50) | 11-MHL | 1-U POINTE-A-LA HACHE | 9-MHL | 7-MHL | 5-MHL | 4-MHL BOHEMIA | (45) 2-MHUL | R-44.2-L | R-43.7-L | R-43.2-L | R-42.5-L | R-41.8-LU | R-41.2-L | R-40.5-L | (40) R-39.8-L | 31-MHL | 32-MHUL | 33-MHL | 34-MHL

TOP OF LEVEE

POINTE-A-LA HACHE RELIEF OUTLET

BOHEMIA STRUCTURE (STATE OF LA.)

NESTOR

LEVEE | GROUND AT TOE | LEVEE | NATURAL LEVEE | NATURAL LEVEE

MARSH | INTRADELTA | INTRADELTA | INTRADELTA | INTRADELTA | INTRADELTA | MARSH | INTERDISTRIBUTARY

PRODELTA | POINT BAR | ABANDONED DISTRIBUTARY | PRODELTA | POINT BAR | R-52.6-L | R-50.5-L | PRODELTA | POINT BAR | PRODELTA | R-46.95-LU | POINT BAR | PRODELTA | ABANDONED DISTRIBUTARY | POINT BAR

PRODELTA at -116
NEARSHORE at -140
PLEISTOCENE at -146

PLEISTOCENE | NEARSHORE | PLEISTOCENE | NEARSHORE | PLEISTOCENE

R-51.7-LU

ELEVATIONS IN FEET – M.S.L.

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

ELEVATIONS IN FEET – M.S.L.

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

LEGEND

NATURAL LEVEE – Soft to stiff clays with lenses and layers of silt
MARSH – Very soft clay with organic material and peat
INTERDISTRIBUTARY – Very soft to soft clays with lenses and layers of silt.
INTRADELTA – Soft alternating clays and silts with layers and areas of silt, silty sands and sands.
POINT BAR – Sands, silts and silty sands with lenses and layers of clay.
ACCRETIONARY – Sands, silts, silty sands and lenses, layers and areas of clay.
ABANDONED DISTRIBUTARY – Silts, silty sands and sands with lenses and layers of clay.
PRODELTA – Medium to stiff clays.
NEARSHORE – Sands with shell and shell fragments and lenses and layers of clay.
PLEISTOCENE – Stiff to very stiff clays with silt strata.

NOTE:
For location of borings, see plates 2 through 10.

LEGEND

CH and CHO, w.c>75%
CH, w.c. 50% to 75%
CH w.c.<50%
CL, Lean Clay
ML, Silt
SM, Silty Sand
SP, Sand, poorly graded
(55) River Miles Above Head of Passes

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT – PART I
EAST BANK

SOIL AND GEOLOGIC PROFILE (MILE 66.2 TO 37.5 A.H.P.)

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 78

STATIONING ALONG LEVEE BASELINE

300 400 444+70= 0+00 100 200 300 400 500 559+81.93= 0+00 19+06.01= 0+00 100 200 300 400 500 600 700 800 900

SOIL REACHES → JE | KE | LE | ME | NE | OE-1 | OE-2 | PE-1 | PE-2 | QE-1 | QE-2 | RE-1 | RE-2 | SE-1 | SE-2 | SE-3 | TE-1 | TE-2 | UE | VE | WE | XE-1 | XE-2 | YE | ZE

(35) (30) (25) (20) (15) (10)

BORINGS → 35-MHL 36-MHUL 37-MHL R-35.1L R-34.7L R-34.4LU 38-MHUL R-34.0L R-33.6L 39-MHUL R-33.2L R-32.8L R-32.3LU R-32.0L R-31.6L 40-MHL 41-MHL 42-MHL 43-MHUL 44-MHL 45-MHL 46-MHL 47-MHUL 48-MHL 49-MHL R-26.2L 50-MHUL R-25.6L 51-MHL R-24.8L R-24.0LU R-23.4L R-22.8L 52-MHUL R-21.9L R-21.2L R-20.6L R-20.0LU R-19.5L R-18.9L R-18.4L R-17.7L 53-MHUL R-17.0L R-16.4L R-15.9LU R-15.3L 54-MHUL R-14.7L R-14.0L R-13.4L R-12.8L R-12.2L R-11.6LU 55-MHL 56-MHL 57-MHL 58-MHUL 59-MHL

POINTE-A-LA HACHE RELIEF OUTLET | BAYOU LAMOQUE STRUCTURE | POINT PLEASANT | OSTRICA LOCK | BOLIVAR POINT | FORT ST. PHILIP | FRESHWATER CULVERT | OLGA | BANKS OF BAPTISTE COLLETTE BAYOU — NORTH BANK, SOUTH BANK

NATURAL GROUND

MARSH

NATURAL LEVEE

INTRADELTA

POINT BAR

ACCRETIONARY

PRODELTA

ABANDONED DISTRIBUTARY

NEARSHORE

NEARSHORE at -149
PLEISTOCENE at -160

NEARSHORE (absent)
PLEISTOCENE at -162

NEARSHORE at -155
PLEISTOCENE at -159

NEARSHORE at -170
PLEISTOCENE at -175

NEARSHORE at -180
PLEISTOCENE at -195

NEARSHORE at -184
PLEISTOCENE at -210

NEARSHORE at -190
PLEISTOCENE at -210

PRODELTA at -197
NEARSHORE at -210
PLEISTOCENE at -213

NEARSHORE at -205
PLEISTOCENE at -211

NEARSHORE at -201
PLEISTOCENE at -215

NEARSHORE at -210
PLEISTOCENE at -231

NEARSHORE at -225
PLEISTOCENE at -252

ELEVATIONS IN FEET - M.S.L.

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

NOTE:
For legend see plate
For location of borings, see plates 10 through 15.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
EAST BANK

SOIL AND GEOLOGIC PROFILE (MILE 37.5 TO 10.0 A.H.P.)

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 79

CORPS OF ENGINEERS

U.S. ARMY

UNIFIED SOIL CLASSIFICATION

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

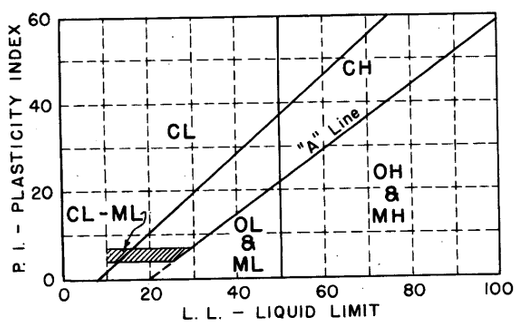
NOTE: Soils possessing characteristics of two groups are designated by combinations of group symbols

DESCRIPTIVE SYMBOLS

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

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

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



PLASTICITY CHART

For classification of fine - grained soils

NOTES:

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

- Are natural water contents in percent dry weight
- When underlined denotes D_{10} size in mm *

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

- Are liquid and plastic limits, respectively

SYMBOLS TO LEFT OF BORING

- ▽ Ground-water surface and date observed
- (C) Denotes location of consolidation test **
- (S) Denotes location of consolidated-drained direct shear test **
- (R) Denotes location of consolidated-undrained triaxial compression test **
- (Q) Denotes location of unconsolidated-undrained triaxial compression test **
- (T) Denotes location of sample subjected to consolidation test and each of the above three types of shear tests **
- FW Denotes free water encountered in boring or sample

FIGURES TO RIGHT OF BORING

- Are values of cohesion in lbs./sq. ft. from unconfined compression tests
- In parenthesis are driving resistances in blows per foot determined with a standard split spoon sampler ($1\frac{3}{8}$" I.D., 2" O.D.) and a 140 lb. driving hammer with a 30" drop
- Where underlined with a solid line denotes laboratory permeability in centimeters per second of undisturbed sample
- Where underlined with a dashed line denotes laboratory permeability in centimeters per second of sample remoulded to the estimated natural void ratio

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

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

GENERAL NOTES:

While the borings are representative of subsurface conditions at their respective locations and for their respective vertical reaches, local variations characteristic of the sub-surface materials of the region are anticipated and, if encountered, such variations will not be considered as differing materially within the purview of clause 4 of the contract.

Ground-water elevations shown on the boring logs represent ground-water surfaces encountered on the dates shown. Absence of water surface data on certain borings implies that no ground-water data is available, but does not necessarily mean that ground water will not be encountered at the locations or within the vertical reaches of these borings.

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

REVISION	DATE	DESCRIPTION	BY
3	5-3-71	ADDED UPPER LIMIT LINE (P.I.=0.9 (LL-8)) ON PLASTICITY CHART	LMVED-G LETTER D'T'D 29 APRIL 1971
2	6-8-64	SYMBOL FW, NOTE REVISED	ORAL FROM L.M.V.G.G. 5 JUNE 1964
1	9-17-63	IST. PAR. OF GENERAL NOTES REVISED	L. M. V. D. MULTIPLE LETTER, DATED 5 SEPT., 1963

SOIL BORING LEGEND

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

PLATE A