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MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT-PART I

SOIL DATA

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DEPARTMENT OF THE ARMY
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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 west bank of the Mississippi River from the vicinity of Jesuit Bend to Venice, Louisiana, a distance of about 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 west (right 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.

[1] All mileages in this report are those above Head of Passes of the Mississippi River. This report was originally prepared to present soil data between river miles 10 and 66 AHP; however, the borings and soil profile within the limits of three additional miles (miles 66 to 69 AHP) have been included.

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 1,500 years ago, the Mississippi River shifted westward to the Lafouche 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 ft per century.

6. As a result of subsidence and wave erosion, the seaward facing edges of the shoreline and the shorelines of the ponds, lakes, and bays within the marshlands are retreating.

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 the production of these resources.

III - SOIL DATA

8. Considerable soil and related data were obtained from the west 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 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 method 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 247 general type and undisturbed soil borings have been made on the west bank of the Mississippi River within the study area 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 ground surface to about elevation -40 to -220 feet mean sea level[2] for borings made for levee projects, and down to about -110 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 247 soil borings mentioned above, 13 general type borings were made in the river bottom between river miles 22 and 24 AHP to locate a possible source of sand borrow. Eight of the borings were made by the Louisiana Department of Highways and 5 by the Corps of Engineers. Also, a total of 54 auger borings were made to depths of 10 to 15 feet on the west bank batture between Empire and Venice, Louisiana, for investigations of this area as a possible source of borrow material for use in levee construction.

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

The borrow borings located on the batture 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 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: 2-U or 29-MHU). Boring numbers without the letter "U" indicate general type borings or auger borings.

b. The letters "H" or "MH" indicate borings made for the Mississippi River Hurricane Project. (Example: 9-UH or 25-MHU).

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 "W" or "R" indicates that the boring was made on the west (right descending) bank. (Example: 17-UW or R-43.9-RU). The letter "T" indicates a boring made at the levee toe. (Example: 25-MHUT).

e. The letter "B" indicates a borrow boring. (Example: 4-B, B-7, or 3-BC).

Boring Logs

11. The borings made on the west bank of the river consisted of 187 general type, 60 undisturbed, and 54 auger borings. The detailed logs of the west bank general type borings are shown on plates 16 to 36 and the undisturbed borings on plates 37 to 86. The logs of the 13 general type borings made in the river bottom to locate a source of sand borrow are shown on plates 87 and 88. The auger type borrow borings are shown on plates 89 to 91.

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 91. 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 along the west bank of the river in the study area are shown on plates 92 to 94. 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 west bank, as shown on plates 92 and 93, consists of Recent deposits varying in thickness from 90 feet at mile 69 AHP near the upstream end of the project to 260 feet at mile 10 AHP, the downstream end of the project. 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 minimum of 3 to 5 feet in the vicinity of stations 650+00 (mile 69.2), 2390+00 (mile 37.0), and between stations 3650+00 and 3800+00 (mile 12.9-10.8) to a maximum of 20 to 22 feet in the general vicinity of stations 1040+00 (mile 61.3), 1165+00 (mile 59.8), and 1295+00 (mile 57.5). In the vicinity of stations 967+00 through 1015+00 (mile 63.5-62.9); 1155+00 through

1255+00 (mile 59.9-58.4); 1330+00 through 1575+00 (mile 56.8-52.9); 1920+00 through 2117+00 (mile 45.7-41.9); 2177+00 through 2466+00 (mile 40.7-35.5); 2650+00 through 2770+00 (mile 31.5-29.6); 2895+00 through 3005+00 (mile 27.2-25.3); and 3223+00 through 3277+00 (mile 21.5-20.6), 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 in the vicinity of stations 1450+00 (mile 54.7), 2177+00 (mile 40.7), and 2700+00 (mile 30.6), to 7 to 9 feet between stations 1155+00 and 1255+00 (mile 59.9-58.4). Between stations 690+00 (mile 68.6) and 840+00 (mile 65.8); 925+00 (mile 66.3) and 947+00 (mile 63.9); 2117+00 (mile 41.9) and 2466+00 (mile 35.5); 2650+00 (mile 31.5) and 3066+00 (mile 23.7); 3135+00 (mile 22.8) and 3195+00 (mile 21.8); and 3370+00 (mile 18.5) and 3797+64 (mile 10.8), the natural levee and marsh deposits are underlain by soft, alternating intradelta clays and silts with layers of silty sand and sand. The thickness of the intradelta deposits varies from 25 feet between stations 3157+00 (mile 22.3) and 3195+00 (mile 21.8) to about 97 feet in the general vicinity of station 2685+00 (mile 30.8). The reaches of natural levee and marsh deposits between stations 650+00 (mile 69.2) and 690+00 (mile 68.6); 860+00 (mile 65.4) and 907+00 (mile 64.6); 967+00 (mile 63.5) and 1015+00 (mile 62.6); 1155+00 (mile 59.9) and 1255+00 (mile 58.4); 1280+00 (mile 57.8) and 1575+00 (mile 52.9); 1717+00 (mile 49.6) and 1765+00 (mile 48.6); 1920+00 (mile 45.7) and 2117+00 (mile 41.9); 3210+00 (mile 21.6) and 3230+00 (mile 21.3); and 3242+00 (mile 21.1) and 3310+00 (mile 19.7) are underlain by very soft to soft interdistributary clays with lenses and layers of silt and silty sand. The interdistributary deposits vary in thickness from 20 feet in the general vicinity of station 2080+00 (mile 42.4) to about 78 feet in the vicinity of station 3300+00 (mile 19.8). The remaining reaches of natural levee and marsh deposits are underlain by point bar silts, silty sands, and sands with layers of clay between stations 1015+00 (mile 62.6) and 1155+00 (59.9); 1575+00 (mile 52.9) and 1717+00 (mile 49.6); 1765+00 (mile 48.6) and 1920+00 (mile 45.7); 2466+00

(mile 35.5) and 2650+00 (mile 31.5); and 3310+00 (mile 19.7) and 3370+00 (mile 18.5); and by abandoned distributary silty sands and sands with clay layers between stations 840+00 (mile 65.8) and 860+00 (mile 65.4); 907+00 (mile 64.6) and 925+00 (mile 66.3); 947+00 (mile 63.9) and 967+00 (mile 63.5); 1255+00 (mile 58.4) and 1280+00 (mile 57.8); 3077+00 (mile 23.7) and 3135+00 (mile 22.8); 3195+00 (mile 21.8) and 3210+00 (mile 21.6); and 3230+00 (mile 21.3) and 3242+00 (mile 21.1). The point bar deposits vary in thickness from 66 feet in the vicinity of station 1015+00 (mile 62.6), where the deposits extend down to elevation -73.5, to 127 feet near stations 1765+00 (mile 49.6) and 2600+00 (mile 32.4) where these deposits extend down to elevations -130 and -136.5, respectively. The abandoned distributary deposits vary in thickness from 52 feet in the vicinity of station 1255+00 (mile 58.4), where the deposits extend down to elevation -59.5, to 138 feet in the vicinity of station 3195+00 (mile 21.8) where these deposits extend down to elevation -145. 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 840+00 (mile 65.8) and 860+00 (mile 65.4), and stations 947+00 (mile 63.9) and 967+00 (mile 63.5), where abandoned distributary deposits lie directly over Pleistocene and nearshore deposits, respectively; and between stations 1015+00 (mile 62.6) and 1155+00 (mile 59.9); 1575+00 (mile 52.9) and 1717+00 (mile 49.6); and 1765+00 (mile 48.6) and 1920+00 (mile 45.7), where point bar deposits lie directly over Pleistocene and nearshore deposits. The thickness of the prodelta clays varies from 8.5 feet (to elevation -145) beneath the point bar deposits located between station 2466+00 (mile 35.5) and 2650+00 (mile 31.5), to 135 feet (to elevation -230) in the vicinity of station 3797+64 (mile 10.8). The prodelta deposits are underlain along the entire levee alignment by nearshore sands with shell and shell fragments except between stations 650+00 (mile 69.2) and 907+00 (mile 64.6) where the prodelta lies directly over Pleistocene materials. The nearshore deposits vary in thickness from 3 feet in the vicinity of station 2685+00 (mile 30.8)

to 34 feet in the vicinity of station 1650+00 (mile 50.9). The entire sequence of Recent deposits, including a 60 ft wedge of estuarine sands, silts and clays with shell fragments that underlie the nearshore deposits between stations 1300+00 (mile 57.4) and 1450+00 (mile 54.6), is underlain by stiff to very stiff Pleistocene clays at elevations varying between -83.5 at station 650+00 (mile 69.2) to -260.0 at station 3797+64 (mile 10.8).

Soil Stratification

15. To facilitate levee and bank revetment designs, the bank of the river was divided into soil reaches. The extent of each 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 92 and 93. In addition, the soil stratification for use in bank revetment design at Fort Jackson, Louisiana, was based on the soil profile shown on plate 94.

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 37 to 86. 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, pregressively as completed.

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 0.15 and 0.40 ton per sq ft beneath existing levee fill, and between 0.10 and 0.25 ton per sq ft beyond the influence of levee fill. Below these elevations, the undrained 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 square foot and $\bar{p}$ is the effective overburden pressure in tons per square foot. 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.

TABLE 1

SOIL BORING LOCATIONS

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

SOIL BORING LOCATIONS

SOIL BORING NO.	LEVEE B/L STATION	LOCATION	SOIL BORING NO.	LEVEE B/L STATION	LOCATION
87-MHU	654+00	on C/L	R-60.9 R	1098+50	78' R.S.
86-MH	677+00	66'R.S.@ Toe	MS-27	1101+67	1120'L.S. C/L
85-MH	699+00	57'R.S.@ Toe	69-MH	1111+00	49' L.S. C/L
84-MH	721+00	on C/L	R-60.4 R	1125+50	135' R.S.
83-MH	747+00	52'R.S.@ Toe	68-MH	1137+00	C/L
82-MHUT	773+00	62' L.S.	67-MHUT	1164+00	70' L.S. C/L
81-MH	799+00	C/L	R-59.7 R	1176+00	125'R.S.
R-66.7 UR	804+50	346' R.S.	66-MH	1189+00	50'R.S. C/L
R-66.4 R	818+50	332' R.S. C/L	R-59.5U R	1195+61.8	63' R.S. C/L
80-MH	825+00	55'R.S.@ Toe	8 N.P.	1196+16.8	404'R.S. C/L
R-65.9-R	849+40	64' R.S. C/L	65-MH	1215+00	C/L
79-MH	851+00	50'L.S. @ Toe	R-58.8 RU	1232+50	140'R.S. C/L
R-65.6 R	856+50	114' R.S.	64-MH	1241+00	63'L.S. C/L
78-MH	877+00	C/L	63-MH	1267+00	53'R.S. C/L
77-MH	903+00	50' L.S. C/L	R-57.7 R	1286+12	145'R.S. C/L
R-64.5 R	909+00	78' R.S.	62-MHU	1293+00	C/L
76-MHUT	929+20	65' R.S. C/L	61-MH	1319+00	60'L.S. C/L
75-MH	955+00	C/L	60-MH	1345+00	C/L
R-63.5R	969+00	175' R.S.	59-MH	1371+00	48'R.S. C/L
74-MH	981+00	55' L.S. C/L	R-55.9 R	1379+00	180' R.S.
R-62.9R	1001+50	200' R.S.	58-MH	1397+00	70'L.S. @ Toe
73-MH	1007+00	47' R.S. C/L	57-MHU	1423+00	C/L
72-MH	1033+00	C/L	57-MHUT	1423+00	70' L.S. C/L
1	1041+00	C/L	56-MH	1449+00	62' L.S. @ Toe
71-MH	1059+00	53'L.S. C/L	R-54.5 RU	1453+50	185' R.S.C/L
R-61.6R	1067+50	84' R.S.	55-MH	1476+00	50'R.S. @ Toe
70-MH	1085+00	C/L	54-MH	1501+00	C/L

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

SOIL BORING LOCATIONS

SOIL BORING NO.	LEVEE B/L		SOIL BORING NO.	LEVEE B/L	
	STATION	LOCATION		STATION	LOCATION
R-53.3R	1522+50	110' R.S.	38-MH	1956+00	C/L
53-MH	1527+00	51' L.S.@ Toe	37-MH	1982+00	60' R.S. C/L
52-MH	1555+50	50' R.S.@ Toe	36-MHU	2008+00	C/L
MS-31	1579+19	C/L	36-MHUT	2008+00	56'L.S. C/L
52-UW	1587+00	C/L	R-43.9 RU	2014+50	283'R.S. C/L
52-TUW	1587+00	80' L.S. C/L	35-MH	2034+00	C/L
51-MH	1618+00	54'R.S. C/L	34-MH	2064+00	58'R.S.@Toe
50-MH	1644+00	C/L	33-MH	2087+00	38'L.S.@TOE
R-50.9 R	1650+00	190' R.S.	42-UW	2112+00	C/L
49-MH	1670+00	55'L.S. @Toe	42-UWT	2112+00	111' L.S.
R-50.2 R	1682+00	128' R.S.	32-MH	2141+00	50'L.S.@ Toe
48-MH	1696+00	48'R.S. C/L	31-MH	2167+00	C/L
R-49.7 RU	1709+50	185' R.S.	30-MH	2193+00	52'L.S.@ TOE
47-MH	1722+00	C/L	29-MHUT	2212+75	70' R.S. C/L
R-49.2 R	1739+50	145' R.S.	29-MHU	2219+00	C/L
46-MH	1748+00	65'L.S.@Toe	R-39.8R	2235+00	112'R.S.C/L
R-48.6 R	1766+00	110'R.S.	28-MH	2245+00	45'L.S.@Toe
45-MH	1774+00	50'R.S.@Toe	6	2257+35	100' R.S.
R-48.0 R	1796+00	200' R.S.	1-U	2272+00	57'R.S.
44-MH	1800+00	C/L	5	2272+90	240'L.S.
1-U	1808+15	65'R.S.C/L	3	2273+80	142'R.S.
43-MHUT	1826+00	45'L.S.@Toe	R-38.6 R	2288+00	262'R.S.C/L
42-MH	1852+00	38'R.S.@Toe	27-MH	2299+00	C/L
R-46.7 R	1861+00	327'R.S.	R-38.3R	2311+50	305'R.S.C/L
41-MH	1878+00	C/L	26-MH	2326+93	50'R.S.@Toe
40-MH	1904+00	45'L.S.@Toe	R-38.0 R	2331+50	230'R.S.C/L.
39-MH	1930+00	62'R.S.@Toe	1	2338+00	49'L.S.C/L

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

SOIL BORING LOCATIONS

SOIL BORING NO.	LEVEE B/L		SOIL BORING NO.	LEVEE B/L	
	STATION	LOCATION		STATION	LOCATION
2	2348+00	45'L.S.C/L	1-U	2555+00	C/L
1-U	2357+50	C/L	1-UT	2555+00	82'L.S.C/L
1-UT	2357+50	55'L.S.@Toe	8	2565+00	56'L.S.C/L
3	2368+00	57'L.S.C/L	9	2576+00	40'L.S.C/L
R-37.2 R	2372+50	208'R.S.C/L	10	2588+00	58'L.S.C/L
4	2378+00	55'L.S.C/L	R-32.4 UR	2597+00	710'R.S.
37.0	2388+50	70'R.S.C/L	11	2598+00	49'L.S.C/L
R-36.6 UR	2406+00	185'R.S.C/L	23-MH	2605+00	45'R.S.@Toe
1	2415+00	58'L.S.C/L	12	2608+00	50'L.S.C/L
2	2425+00	60'L.S.C/L	1	2620+00	44'L.S.C/L
R-36.2 R	2428+50	302'R.S.C/L	R-32.0 R	2624+00	135'R.S.
1-U	2435+00	C/L	2	2630+00	63'L.S.C/L
1-UT	2435+00	@L.S. Toe	3	2640+00	50'L.S.C/L
3	2444+00	59'L.S.C/L	1-U	2654+00	C/L
R-35.6 R	2452+00	424'R.S.C/L	1-UT	2654+00	70'L.S.C/L
4	2455+00	62'L.S.C/L	4	2660+00	72'L.S.C/L
25-MH	2470+00	37'R.S.@Toe	5	2670+00	58'L.S. C/L
R-35.4 R	2474+50	440'R.S.C/L	22-MH	2675+00	46'R.S.@Toe
1	2485+15	35'L.S. C/L	6	2680+00	44'L.S. C/L
2	2494+00	40'L.S.C/L	R-30.9UR	2683+58	140'R.S.
R-34.9 R	2498+50	136'R.S.C/L	R-30.8	2695+00	21'R.S.C/L
3	2505+00	54'L.S.C/L	21-MH	2703+00	C/L
4	2515+00	60'L.S.C/L	R-30.3 R	2723+00	227'R.S.
5	2525+00	42'L.S.C/L	20-MH	2730+00	40'R.S.@Toe
24-MH	2530+00	38'R.S.@Toe	19-MH	2755+00	50'L.S.@Toe
6	2536+00	60'L.S.C/L	18-MHU	2781+00	C/L
7	2545+00	50'L.S.C/L	17-MH	2804+00	44'R.S.@Toe

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

SOIL BORING LOCATIONS

SOIL BORING NO.	LEVEES B/L		SOIL BORING NO.	LEVEE B/L	
	STATION	LOCATION		STATION	LOCATION
R-28.55 R	2822+00	70' R.S.	R-23.4	3097+76.3	130' R.S.
16-MH	2833+00	50' L.S.@ Toe	5-MHU	3113+25	C/L
R-28.05-R	2849+50	165'R.S. C/L	5-MHUT	3113+25	75'L.S.C/L
15-MH	2859+00	C/L	5-MH	3113+50	53'R.S.@ Toe
R-27.6UR	2874+25	63' R.S. C/L	R-23.05 RU	3114+00	475' R.S.C/L
14-MH	2885+00	48' L.S.@ Toe	4-MH	3143+00	54' L.S.@Toe
R-27.3 R	2894+75	110'R.S. C/L	3-MHU	3169+00	C/L
13-MH	2911+00	43' R.S.@ Toe	3-MHUT	3169+00	75'L.S.C/L
R-26.8 R	2917+00	168'R.S.C/L	.5	3181+51	5' R.S.
12-MH	2935+00	C/L	5-A	3181+75	60'R.S.
R-26.45 R	2940+50	100'R.S.C/L	4	3201+10	50' R.S.
1	2952+55	125' R.S.	3	3211+45	60' R.S.C/L
11-MH	2961+00	37' R.S.C/L	1-U	3216+00	235'R.S.
R-25.8 R	2975+75	96'R.S. C/L	2-U	3218+00	650'R.S.B/L
10-MHUA	2987+00	C/L	2-MH	3221+00	43' L.S.@Toe
10-MHUT	2987+00	93'L.S. C/L	2	3232+20	27.5' R.S.
2	2991+50	90' R.S.	1	3241+50	290'R.S.C/L
3	3009+15	100' R.S.	1-MH	3247+00	C/L
9-MH	3013+00	C/L	1	3251+00	30'L.S.C/L
4	3021+75	125' R.S.	R-20.8-R	3252+00	125'R.S. C/L
R-24.75 R	3029+00	150'R.S.C/L	2	3261+00	43' L.S. C/L
5	3037+00	180' R.S.	3	3271+00	42' L.S. C/L
8-MH	3039+00	40'R.S.@Toe	1-U	3282+00	C/L
R-24.3 UR	3050+00	167' R.S.	1-UT	3282+00	42'L.S.@Toe
R-24.0	3063+60	242' R.S.	R-20.2-R	3289+00	1235' R.S.C/L
7-MH	3065+00	44'L.S. @Toe	4	3291+00	45'L.S. C/L
6-MH	3091+00	C/L	5	3302+00	50'L.S. C/L

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

SOIL BORING LOCATIONS

SOIL BORING NO.	LEVEES B/L STATION	LEVEES B/L LOCATION	SOIL BORING NO.	LEVEES B/L STATION	LEVEES B/L LOCATION
R-19.6-R	3311+00	1118'-N50°35'W	1-U	3784+00	56' R.S. B/L
6	3312+00	58' L.S. C/L	1-UT	3784+00	30' L.S. B/L
7	3326+00	56' L.S. C/L	15	3787+00	100' L.S.
8	3340+00	46' L.S. C/L	16	3797+00	100' L.S.
9	3354+00	70' L.S. C/L			
9-UH	3355+00	C/L			
9-UHT	3355+35	50' R.S. C/L			
1	3396+00	100' L.S.C/L			
2	3421+00	100' L.S.C/L			
17-UW	3439+75	C/L			
17-UWT	3439+75	72' L.S. C/L			
R-16.9 RU	3439+75	90' R.S. C/L			
3	3478+50	100'L.S. C/L			
4	3504+00	100'L.S. C/L			
5	3531+50	100'L.S. C/L			
6	3560+00	100;L.S. C/L			
7	3587+50	100' L.S.			
8	3626+00	100' L.S.			
9-UT	3650+60	100' L.S.C/L			
10	3674+50	100' L.S.			
11	3697+50	100' L.S.			
R-11.5-RU	3726+00	200' R.S.C/L			
12	3726+00	100' L.S.			
12-UH	3727+00	C/L			
13	3749+50	100' L.S.			
2-UT	3767+56	25' L.S.B/L			
14	3774+00	100' L.S.			

TABLE 2

DESIGN SHEAR STRENGTHS

AND

SOIL STRATIFICATION

(SOIL REACHES A THROUGH V-2)

WEST LEVEE REACH NO. A LOCATION STA 828+00 to 1020+00

UNDIST. BORING NO. 87-MHU UNDIST. BORING NO. 82-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.	BASE	ϕ °			γ (P.C.F.)	C (P.S.F.) AVG.	BASE	ϕ °
CL-ML	6.0	115	600	-	0						
CH	0.0	115	600	-	0	CH	0.0	115	500	-	0
CH	-6.0	53	600	-	0	CH	-6.0	53	500	500	0
CH	-20.0	43	600	600	0	CH	-20.0	43	500	500	0
ML	-26.0	55	200	660	15	ML	-26.0	55	200	560	15
CH	-36.0	43	710	760	0	CH	-36.0	43	610	660	0
ML	-40.0	55	200	800	15	ML	-40.0	55	200	700	15
CH	-80.0	43	1000	1200	0	CH	-80.0	43	900	1100	0
CH	-93.0	50	1265	1330	0	CH	-93.0	50	1165	1230	0
SP-F	-102.0	60	0	-	30	SP-F	-102.0	60	0	-	30
PLEIST	-	60	1320	-	0	PLEIST	-	60	1320	-	0

*Elevations denote bottom of each soil strata.

WEST LEVEE REACH NO. B LOCATION STA. 1020+00 TO 1153+30

UNDIST. BORING NO. 62-MHU UNDIST. BORING NO. 67-MHUT; 70' 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	500	-	0
CH	-2.0	52	800	800	0	CH	-2.0	48	500	500	0
ML	-5.0	55	200	600	15	ML	-5.0	55	200	500	15
CH	-22.0	43	600	600	0	CH	-22.0	40	500	500	0
ML	-25.0	55	200	600	15	ML	-25.0	55	200	500	15
CH	-38.0	43	600	600	0	CH	-38.0	43	500	500	0
ML	-49.0	55	200	690	15	ML	-49.0	55	200	500	15
CL	-57.0	43	730	770	0	CL	-57.0	43	530	570	0
SM-SP	-68.0	60	0	880	30	SM-SP	-68.0	60	0	680	30
CH	-71.0	43	895	910	0	CH	-71.0	43	695	710	0
SP-F	-80.0	60	0	1000	30	SP-F	-80.0	60	0	800	30
CH	-97.0	48	1085	1170	0	CH	-97.0	43	885	970	0
SM	-102.0	60	0	1220	30	SM	-102.0	60	0	1020	30
CH	-122.0	48	1320	1420	0	CH	-122.0	43	1120	1220	0
Pleist.	-	60	1500	-	0	Pleist.	-	60	1500	-	0

WEST LEVEE REACH NO. C-1 LOCATION STA. 1153+30 TO 1255+00

UNDIST. BORING NO. 62-MHU UNDIST. BORING NO. 67-MHUT; 70' 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.	C (P.S.F.) BASE	ϕ °			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ °
CH	3.0	114	800	-	0						
CH	0.0	110	800	-	0	CH	0.0	110	500	-	0
CH	-2.0	48	800	600	0	CH	-2.0	48	500	-	0
CH	-13.0	43	600	-	0	CH	-13.0	40	500	-	0
CHO	-23.0	32	600	-	0	CHO	-23.0	28	500	-	0
CH	-40.0	43	600	600	0	CH	-40.0	43	500	500	0
CH	-50.0	43	650	700	0	CH	-50.0	43	500	500	0
CH	-60.0	43	750	800	0	CH	-60.0	43	550	600	0
CH	-122.0	48	1110	1420	0	CH	-122.0	43	910	1220	0
Pleist.	-	60	1500	-	0	Pleist.	-	60	1500	-	0

WEST LEVEE REACH NO. C-2 LOCATION STA. 1255+00 TO 1334+00

UNDIST. BORING NO. 62-MHU UNDIST. BORING NO. 67-MHUT; 70' 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.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH	5.0	114	800	-	0						
CH	0.0	110	800	-	0	CH	0.0	110	500	-	0
CH	-2.0	48	800	600	0	CH	-2.0	48	500	500	0
CH	-18.0	43	600	-	0	CH	-18.0	40	500	-	0
CHO	-23.0	32	600	-	0	CHO	-23.0	28	500	-	0
CH	-30.0	43	600	600	0	CH	-30.0	43	500	500	0
ML	-40.0	55	200	600	15	ML	-40.0	55	200	500	15
CH	-50.0	43	650	700	0	CH	-50.0	43	500	500	0
CH	-60.0	43	750	800	0	CH	-60.0	43	550	600	0
CH	-117.0	48	1085	1370	0	CH	-117.0	43	885	1170	0
Pleist.	-	60	1500	-	0	Pleist.	-	60	1500	-	0

WEST LEVEE REACH NO. D LOCATION STA. 1334+00 TO 1575+00

UNDIST. BORING NO. 57-MHU UNDIST. BORING NO. 57-MHUT; 70' 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 °
CL	5.0	110	600	-	0						
CH&CL	0.0	110	600	600	0	CH&CL	0.0	110	400	400	0
CH&CL	-4.0	48	600	500	0	CH&CL	-4.0	48	400	300	0
CHO	-12.0	28	500	500	0	CHO	-12.0	28	300	300	0
ML	-16.0	55	200	400	15	ML	-16.0	55	200	400	15
CH	-40.0	43	400	400	0	CH	-40.0	43	400	400	0
CH	-60.0	43	500	600	0	CH	-60.0	43	500	600	0
CH	-100.0	43	800	1000	0	CH	-100.0	34	800	1000	0
CH	-115.0	48	1075	1150	0	CH	-115.0	48	1075	1150	0
SP-F	-118.0	60	0	1180	30	SP-F	-118.0	60	0	1180	30
PLEIST	-	60	1180	-	0	PLEIST	-	60	1180	-	0

WEST LEVEE REACH NO. E LOCATION STA. 1575+00 TO 1678+00

UNDIST. BORING NO. 52-UW UNDIST. BORING NO. 52-TUW; 80' 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.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH	4.0	112	800	500	0						
CH	0.0	112	500	-	0	CH	0.0	110	400	-	0
CH	-5.0	50	500	500	0	CH	-5.0	48	400	400	0
ML	-13.0	55	200	500	15	ML	-13.0	55	200	400	15
CH	-33.0	43	500	500	0	CH	-33.0	43	400	400	0
SP-F	-99.0	60	0	990	30	SP-F	-99.0	60	0	990	30
CH	-116.0	48	1075	1160	0	CH	-116.0	48	1075	1160	0
SP-F	-135.0	60	0	1500	30	SP-F	-135.0	60	0	1500	30
PLEIST	-	60	1500	-	0	PLEIST	-	60	1500	-	0

WEST LEVEE REACH NO. F LOCATION Sta. 1678+00 To 1788+00

UNDIST. BORING NO. 52-UW UNDIST. BORING NO. 43-MHUT; 45' 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	3.0	112	800	500	0						
CH	0.0	112	500	-	0	CH	0.0	110	300	-	0
CH	-11.0	50	500	500	0	CH	-11.0	48	300	300	0
ML	-14.0	55	200	500	15	ML	-14.0	55	200	300	15
CH	-30.0	43	500	-	0	CH	-30.0	43	300	300	0
CH	-40.0	43	500	500	0	CH	-40.0	43	350	400	0
ML	-55.0	55	200	-	15	ML	-55.0	55	200	-	15
SP-F	-93.0	60	0	930	30	SP-F	-93.0	60	0	930	30
CH	-107.0	60	1000	1070	0	CH	-107.0	60	1000	1070	0
SP-F	-135.0	60	0	1500	30	SP-F	-135.0	60	0	1500	30
PLEIST	-	60	1500	-	0	PLEIST	-	60	1500	-	0

WEST LEVEE REACH NO. G LOCATION Sta. 1788+00 to 1890+00

UNDIST. BORING NO. 52-UW UNDIST. BORING NO. 43-MHUT; 45' 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	4.0	112	800	500	0						
CH	0.0	112	500	-	0	CH	0.0	110	300	-	0
CH	-7.0	50	500	500	0	CH	-7.0	48	300	300	0
ML	-11.0	55	200	500	15	ML	-11.0	55	200	300	15
CH	-31.0	43	500	500	0	CH	-31.0	43	300	300	0
SP-F	-93.0	60	0	930	30	SP-F	-93.0	60	0	930	30
CH	-107.0	53	1000	1070	0	CH	-107.0	53	1000	1070	0
SP-F	-124.0	60	0	1500	30	SP-F	-124.0	60	0	1500	30
Pleist.	-	60	1500	-	0	Pleist.	-	60	1500	-	0

WEST LEVEE REACH NO. H LOCATION Sta. 1890+00 to 1920+00

UNDIST. BORING NO. 52-UW UNDIST. BORING NO. 43-MHUT; 45' 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	3.0	112	800	500	0						
CH	0.0	112	500	-	0	CH	0.0	110	300	-	0
CH	-17.0	50	500	500	0	CH	-17.0	48	300	300	0
ML	-23.0	55	200	500	15	ML	-23.0	55	200	300	15
CH	-30.0	43	500	-	0	CH	-30.0	43	300	300	0
CH	-35.0	43	500	500	0	CH	-35.0	43	325	350	0
ML	-41.0	55	200	500	15	ML	-41.0	55	200	410	15
CH	-50.0	43	500	500	0	CH	-50.0	43	455	500	0
ML	-55.0	55	200	-	15	ML	-55.0	55	200	-	15
SP-F	-100.0	60	0	1000	30	SP-F	-100.0	60	0	1000	30
CH	-115.0	53	1075	1150	0	CH	-115.0	53	1075	1150	0
SP-F	-128.0	60	0	1500	30	SP-F	-128.0	60	0	1500	30
PLEIST	-	60	1500	-	0	PLEIST.	-	60	1500	-	0

WEST LEVEE REACH NO. I LOCATION STA. 1920+00 TO 2093+00

UNDIST. BORING NO. 36-MHU UNDIST. BORING NO. 36-MHUT; 56' 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	2.0	110	600	300		CH	2.0				
CH	0.0	94	300	-	0	CH	0.0	90	300	-	0
CH	-10.0	32	300	300	0	CH	-10.0	28	300	300	0
CH	-25.0	48	500	500	0	CH	-25.0	48	400	-	0
CHO	-30.0	38	600	-	0	CHO	-30.0	33	400	-	0
CH	-40.0	45	600	-	0	CH	-40.0	45	400	400	0
CH	-50.0	45	600	600	0	CH	-50.0	45	450	500	0
CH	-122.0	45	960	1320	0	CH	-122.0	45	860	1220	0
SP-F	-132.0	60	0	1320	30	SP-F	-132.0	60	0	1320	30
Pleist.	-	60	1320	-	0	Pleist.	-	60	1320	-	0

WEST LEVEE REACH NO. J LOCATION Sta. 2093+00 to 2130+00

UNDIST. BORING NO. 42-UW UNDIST. BORING NO. 42-UWT; 111' 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.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH	3.0	110	800	500	0						
CH	0.0	110	500	-	0	CH	0.0	110	200	-	0
CH	-10.0	48	500	500	0	CH	-10.0	48	200	200	0
ML	-16.0	55	200	560	15	ML	-16.0	55	200	260	15
CL	-19.0	48	575	590	0	CL	-19.0	48	275	290	0
ML	-32.0	55	200	720	15	ML	-32.0	55	200	420	15
CH	-35.0	48	735	750	0	CH	-35.0	48	435	450	0
ML	-38.0	55	200	-	15	ML	-38.0	55	200	-	15
SM	-46.0	60	0	860	30	SM	-46.0	60	0	560	30
CH	-50.0	48	880	900	0	CH	-50.0	48	580	600	0
SP-F	-90.0	60	0	1000	30	SP-F	-90.0	60	0	1000	30
CH	-129.0	53	1195	1390	0	CH	-129.0	53	1195	1390	0
SP-F	-135.0	60	0	1500	30	SP-F	-135.0	60	0	1500	30
PLEIST.	-	60	1500	-	0	PLEIST.	-	60	1500	-	0

WEST LEVEE REACH NO. K LOCATION Sta. 2130+00 to 2338+00

UNDIST. BORING NO. 29-MHU UNDIST. BORING NO. 29-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-CL	3.0	110	800	400	0						
CH	0.0	110	400	-	0	CH	0.0	100	350	-	0
CH	-8.0	48	400	-	0	CH	-8.0	38	350	-	0
CHO	-13.0	43	400	400	0	CHO	-13.0	38	350	350	0
ML	-16.0	55	200	400	15	ML	-16.0	55	200	350	15
CH	-20.0	48	400	400	0	CH	-20.0	38	350	-	0
CH	-27.0	43	600	-	0	CH	-27.0	38	350	350	0
CH	-44.0	43	600	600	0	CH	-44.0	38	600	600	0
ML	-50.0	55	200	600	15	ML	-50.0	55	200	600	15
CH	-60.0	48	600	600	0	CH	-60.0	48	600	600	0
CH	-80.0	48	700	800	0	CH	-80.0	48	700	800	0
CH	-100.0	48	900	1000	0	CH	-100.0	43	900	1000	0
CH	-135.0	48	1175	1350	0	CH	-135.0	48	1175	1350	0
SP-F	-140.0	60	0	1400	30	SP-F	-140.0	60	0	1400	30
PLEIST.	-	60	1400	-	0	PLEIST.	-	60	1400	-	0

West LEVEE REACH NO. L LOCATION Sta. 2338+00 To 2383+00

UNDIST. BORING NO. I-U UNDIST. BORING NO. 1-UT; 55' 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	2.0	110	800	400	0						
CH	0.0	110	400	-	0	CH	0.0	110	200	-	0
CH	-5.0	48	400	-	0	CH	-5.0	48	200	200	0
CHO	-10.0	28	400	-	0	CHO	-10.0	28	200	200	0
CH	-25.0	48	400	400	0	CH	-25.0	43	275	350	0
SP-F	-30.0	60	0	400	30	SP-F	-30.0	60	0	400	30
CH	-40.0	43	400	400	0	CH	-40.0	43	400	400	0
ML	-46.0	55	200	450	15	ML	-46.0	55	200	450	15
CL	-55.0	48	500	550	0	CL	-55.0	43	500	550	0
CH	-80.0	48	675	800	0	CH	-80.0	43	675	800	0
CH	-100.0	48	900	1000	0	CH	-100.0	48	900	1000	0
ML	-106.0	55	200	1060	15	ML	-106.0	55	200	1060	15
CH	-135.0	48	1200	1350	0	CH	-135.0	48	1200	1350	0
SP-F	-155.0	60	0	1600	30	SP-F	-155.0	60	0	1600	30
Pleist.	-	60	1600	-	0	Pleist.	-	60	1600	-	0

West LEVEE REACH NO. M LOCATION Sta. 2383+00 To 2457+00

UNDIST. BORING NO. 1-U UNDIST. BORING NO. 1-UT; 46' 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.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH	3.0	120	800	500	0						
CH	0.0	110	500	-	0	CH	0.0	110	400	-	0
CH	-6.0	48	500	-	0	CH	-6.0	48	400	200	0
CHO	-12.0	33	500	-	0	CHO	-12.0	28	200	-	0
CH	-20.0	43	500	-	0	CH	-20.0	38	200	200	0
CH	-35.0	43	500	500	0	CH	-35.0	38	275	350	0
ML	-41.0	55	200	570	15	ML	-41.0	55	200	410	15
CH	-50.0	48	610	650	0	CH	-50.0	48	455	500	0
ML	-60.0	55	200	750	15	ML	-60.0	55	200	600	15
CH	-140.0	48	1150	1550	0	CH	-140.0	48	1000	1400	0
SP-F	-150.0	60	0	1550	30	SP-F	-150.0	60	0	1550	30
CH	-165.0	48	1600	1650	0	CH	-165.0	48	1600	1650	0
SP-F	-170.0	60	0	1700	30	SP-F	-170.0	60	0	1700	30
Pleist.	-	60	1700	-	0	Pleist.	-	60	1700	-	0

WEST LEVEE REACH NO. N-1 LOCATION Sta. 2457+00 to 2570+00

UNDIST. BORING NO. 1-U UNDIST. BORING NO. 1-UT; 82' 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.	C (P.S.F.) BASE	ϕ °			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ °
CH	3.0	115	600	400	0						
CH	0.0	115	400	-	0	CH	0.0	115	400	-	0
CH	-4.0	53	400	400	0	CH	-4.0	53	400	400	0
ML	-11.0	55	200	400	15	ML	-11.0	55	200	300	15
CH	-18.0	48	400	400	0	CH	-18.0	48	300	300	0
SP-F	-138.0	60	0	1380	30	SP-F	-138.0	60	0	1380	30
CH	-158.0	48	1480	1580	0	CH	-158.0	48	1480	1580	0
Pleist.	-	60	1580	-	0	Pleist.	-	60	1580	-	0

WEST LEVEE REACH NO. N-2 LOCATION STA. 2570+00 TO 2635+00

UNDIST. BORING NO. 1-U UNDIST. BORING NO. 1-UT; 82' 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	3.0	115	600	400	0						
CH	0.0	115	400	-	0	CH	0.0	115	400	-	0
CH	-2.0	53	400	-	0	CH	-2.0	53	400	300	0
CH	-20.0	48	400	400	0	CH	-20.0	48	300	-	0
CH	-24.0	48	420	440	0	CH	-24.0	48	300	300	0
ML	-34.0	55	200	-	15	ML	-34.0	55	200	-	15
SP-F	-138.0	60	0	1380	30	SP-F	-138.0	60	0	1380	30
CH	-158.0	48	1480	1580	0	CH	-158.0	48	1480	1580	0
Pleist.	-	60	1580	-	0	Pleist.	-	60	1580	-	0

West LEVEE REACH NO. 0-1 LOCATION Sta. 2635+00 To 2765+00

UNDIST. BORING NO. 1-U UNDIST. BORING NO. 1-UT; 70' 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	2.0	114	550	-	0						
CH	0.0	110	550	-	0	CH	0.0	110	350	-	0
CH	-6.0	48	550	-	0	CH	-6.0	48	350	-	0
CHO	-13.0	33	550	550	0	CHO	-13.0	28	350	350	0
SM&SP	-23.0	60	0	550	30	SM&SP	-23.0	60	0	350	30
CH	-30.0	48	550	-	0	CH	-30.0	48	350	350	0
CH	-35.0	48	550	550	0	CH	-35.0	48	375	400	0
CH	-50.0	43	625	700	0	CH	-50.0	43	475	550	0
CH	-75.0	48	825	950	0	CH	-75.0	48	675	800	0
CH	-100.0	53	1075	1200	0	CH	-100.0	53	925	1050	0
SP-F	-111.0	60	0	1200	30	SP-F	-111.0	60	0	1200	30
CH	-165.0	53	1450	1700	0	CH	-165.0	53	1450	1700	0
Pleist.	-	60	1700	-	0	Pleist.	-	60	1700	-	0

West LEVEE REACH NO. 0-2 LOCATION Sta. 2765+00 To 2850+00

UNDIST. BORING NO. 18-MHU UNDIST. BORING NO. 10-MHUT; 52' 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.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH	2.0	114	600	-	0						
CH	0.0	110	600	-	0	CH	0.0	102	300	-	0
CH	-12.0	48	600	600	0	CH	-12.0	40	300	300	0
SM	-22.0	60	0	-	30	SM	-22.0	60	0	-	30
ML	-26.0	55	200	600	15	ML	-26.0	55	200	300	15
CH	-30.0	48	600	-	0	CH	-30.0	48	300	300	0
CH	-35.0	48	600	600	0	CH	-35.0	48	325	350	0
SP-F	-40.0	60	0	600	30	SP-F	-40.0	60	0	400	30
CH	-50.0	38	600	600	0	CH	-50.0	38	450	500	0
CL	-56.0	48	630	660	0	CL	-56.0	48	530	560	0
SM-SP	-64.0	60	0	740	30	SM-SP	-64.0	60	0	840	30
CH	-170.0	48	1270	1800	0	CH	-170.0	48	1170	1700	0
SP-F	-180.0	60	0	1800	30	SP-F	-180.0	60	0	1800	30
Pleist.	-	60	1800	-	0	Pleist.	-	60	1800	-	0

WEST LEVEE REACH NO. 0-3 LOCATION Sta. 2850+00 To 3000+00

UNDIST. BORING NO. 18-MHU UNDIST. BORING NO. 10-MHUT; 52' 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.	C (P.S.F.) BASE	ϕ °			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ °
CH	2.0	114	600	-	0						
CH	0.0	110	600	-	0	CH	0.0	110	300	-	0
CH	-6.0	48	600	-	0	CH	-6.0	48	300	-	0
CHO	-12.0	33	600	600	0	CHO	-12.0	28	300	300	0
ML	-19.0	55	200	-	15	ML	-19.0	55	200	-	15
SP&SM	-30.0	60	0	600	30	SP&SM	-30.0	60	0	300	30
CH	-40.0	48	600	-	0	CH	-40.0	43	350	400	0
CH	-50.0	38	600	600	0	CH	-50.0	38	450	500	0
SP&SM	-56.0	60	0	-	30	SP&SM	-56.0	60	0	-	30
ML	-66.0	55	200	760	15	ML	-66.0	55	200	660	15
CH	-185.0	48	1355	1950	0	CH	-185.0	48	1255	1850	0
SP-F	-205.0	60	0	2100	30	SP-F	-205.0	60	0	2100	30
Pleist.	-	60	2100	-	0	Pleist.	-	60	2100	-	0

WEST LEVEE REACH NO. P LOCATION STA. 3000+00 TO 3100+00

UNDIST. BORING NO. 5-MHU UNDIST. BORING NO. 5-MHUT; 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.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH&CL	1.0	110	700	400	0						
CH&CL	0.0	110	400	-	0	CH&CL	0.0	110	250	-	0
CH&CL	-15.0	48	400	400	0	CH&CL	-15.0	48	250	250	0
CH	-25.0	48	450	500	0	CH	-25.0	48	300	350	0
SP-F	-32.0	60	0	-	30	SP-F	-32.0	60	0	-	30
ML	-35.0	55	200	600	15	ML	-35.0	55	200	450	15
CL	-45.0	48	650	700	0	CL	-45.0	48	500	550	0
SP-F	-74.0	60	0	800	30	SP-F	-74.0	60	0	800	30
CH	-95.0	48	800	800	0	CH	-95.0	48	800	800	0
CH	-190.0	53	1275	1750	0	CH	-190.0	53	1275	1750	0
SP-F	-210.0	60	0	1950	30	SP-F	-210.0	60	0	1950	30
Pleist	-	60	1950	-	0	Pleist.	-	60	1950	-	0

WEST LEVEE REACH NO. Q LOCATION STA. 3100+00 TO 3130+00

UNDIST. BORING NO. 5-MHU UNDIST. BORING NO. 5-MHUT; 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.	C (P.S.F.) BASE	ϕ°			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ°
CH&CL	1.0	110	700	400	0						
CH&CL	0.0	110	400	-	0	CH&CL	0.0	110	250	-	0
CH&CL	-15.0	48	400	400	0	CH&CL	-15.0	48	250	250	0
CH&CL	-23.0	48	440	480	0	CH&CL	-23.0	48	290	330	0
ML	-33.0	55	200	-	15	ML	-33.0	55	200	-	15
SP-F	-110.0	60	0	950	30	SP-F	-110.0	60	0	950	30
CH	-198.0	53	1390	1830	0	CH	-198.0	53	1390	1830	0
SP-F	-209.0	60	0	1940	30	SP-F	-209.0	60	0	1940	30
Pleist.	-	60	1940	-	0	Pleist.	-	60	1940	-	0

WEST LEVEE REACH NO. R LOCATION STA 3130+00 to 3218+00

UNDIST. BORING NO. 3-MHU UNDIST. BORING NO. 3-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	2.0	114	900	500	0						
CH&CL	0.0	114	500	-	0	CH&CL	0.0	102	200	-	0
CH&CL	-5.0	52	500	-	0	CH&CL	-5.0	40	200	-	0
CH	-13.0	38	500	500	0	CH	-13.0	28	200	200	0
SM	-25.0	60	0	-	30	SM	-25.0	60	0	-	30
ML	-30.0	55	200	500	15	ML	-30.0	55	200	370	15
CH	-55.0	48	625	750	0	CH	-55.0	48	495	620	0
CH	-70.0	43	825	900	0	CH	-70.0	43	695	770	0
CH	-203.0	48	1565	2230	0	CH	-203.0	48	1430	2100	0
SP-F	-208.0	60	0	2300	30	SP-F	-208.0	60	0	2300	30
PLEIST	-	60	2300	-	0	PLEIST	-	60	2300	-	0

WEST LEVEE REACH NO. S LOCATION Sta. 3218+00 to 3299+50

UNDIST. BORING NO. 1-U UNDIST. BORING NO. 1-UT; 42'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	1.0	110	550	350	0						
CH	0.0	100	350	-	0	CH	0.0	95	200	-	0
CH	-17.0	38	350	350	0	CH	-17.0	83	200	200	0
ML	-30.0	55	200	500	15	ML	-30.0	55	200	400	15
CH	-60.0	45	650	800	0	CH	-60.0	45	550	700	0
CH	-70.0	45	800	-	0	CH	-70.0	45	750	800	0
CH	-80.0	45	800	800	0	CH	-80.0	45	800	800	0
CH	-206.0	45	1430	2060	0	CH	-206.0	45	1430	2060	0
Pleist.	-	60	2060	-	0	Pleist.	-	60	2060	-	0

WEST LEVEE REACH NO. T LOCATION STA. 3299+50 to 3370+00

UNDIST. BORING NO. 9-UH UNDIST. BORING NO. 9-UHT

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-ML	2.0	110	550	350	0						
CH	0.0	105	350	-	0	CH	0.0	105	300	-	0
CH	-10.0	43	350	350	0	CH	-10.0	43	300	300	0
ML	-14.0	55	200	350	15	ML	-14.0	55	200	300	15
CH	-20.0	43	350	-	0	CH	-20.0	43	300	300	0
CH	-25.0	43	350	350	0	CH	-25.0	43	325	350	0
CH	-32.0	43	385	420	0	CH	-32.0	43	385	420	0
SP-F	-62.0	60	0	720	30	SP-F	-62.0	60	0	720	30
CH	-70.0	43	760	800	0	CH	-70.0	43	760	800	0
CH	-85.0	43	800	800	0	CH	-85.0	43	800	800	0
SP-F	-93.0	60	0	-	30	SP-F	-93.0	60	0	-	30
ML	-97.0	55	200	920	15	ML	-97.0	55	200	920	15
CH	-203.0	48	1450	1980	0	CH	-203.0	48	1450	1980	0
SP-F	-209.0	60	0	2040	30	SP-F	-209.0	60	0	2040	30
PLEIST.	-	60	2040	-	0	PLEIST	-	60	2040	-	0

WEST LEVEE REACH NO. U-1 LOCATION Sta. 3370+00 to 3450+00

UNDIST. BORING NO. 17-UW UNDIST. BORING NO. 17-UWT; 72' 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	1.0	110	600	400	0						
CH	0.0	110	400	-	0	CH	0.0	110	350	-	0
CH	-9.0	48	400	-	0	CH	-9.0	48	350	-	0
CHO	-13.0	38	400	-	0	CHO	-13.0	33	350	-	0
CH	-16.0	40	400	400	0	CH	-16.0	40	350	350	0
ML	-25.0	55	200	-	15	ML	-25.0	55	200	-	15
SM&SP	-32.0	60	0	520	30	SM&SP	-32.0	60	0	470	30
CL	-43.0	53	575	630	0	CL	-43.0	53	525	580	0
CH	-70.0	48	765	900	0	CH	-70.0	48	715	850	0
CH	-205.0	53	1575	2250	0	CH	-205.0	53	1525	2200	0
SP-F	-225.0	60	0	2400	30	SP-F	-225.0	60	0	2400	30
PLEIST.	-	60	2400	-	0	PLEIST.	-	60	2400	-	0

WEST LEVEE REACH NO. U-2 LOCATION Sta. 3450+00 to 3640+00

UNDIST. BORING NO. 17-UW UNDIST. BORING NO. 17-UWT; 72' 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°
CL	2.0	110	600	400	0						
CH	0.0	110	400	-	0	CH	0.0	110	350	-	0
CH	-6.0	48	400	-	0	CH	-6.0	48	350	-	0
CHO	-12.0	38	400	400	0	CHO	-12.0	33	350	350	0
ML	-16.0	55	200	-	15	ML	-16.0	55	200	-	15
SM&SP	-26.0	60	0	460	30	SM&SP	-26.0	60	0	410	30
CL	-43.0	53	545	630	0	CL	-43.0	53	495	580	0
CH	-70.0	48	765	900	0	CH	-70.0	48	715	850	0
CH	-205.0	53	1575	2250	0	CH	-205.0	53	1525	2200	0
SP-F	-225.0	60	0	2400	30	SP-F	-225.0	60	0	2400	30
PLEIST.	-	60	2400	-	0	PLEIST.	-	60	2400	-	0

WEST LEVEE REACH NO. V-1 LOCATION STA. 3640+00 TO 3778+50

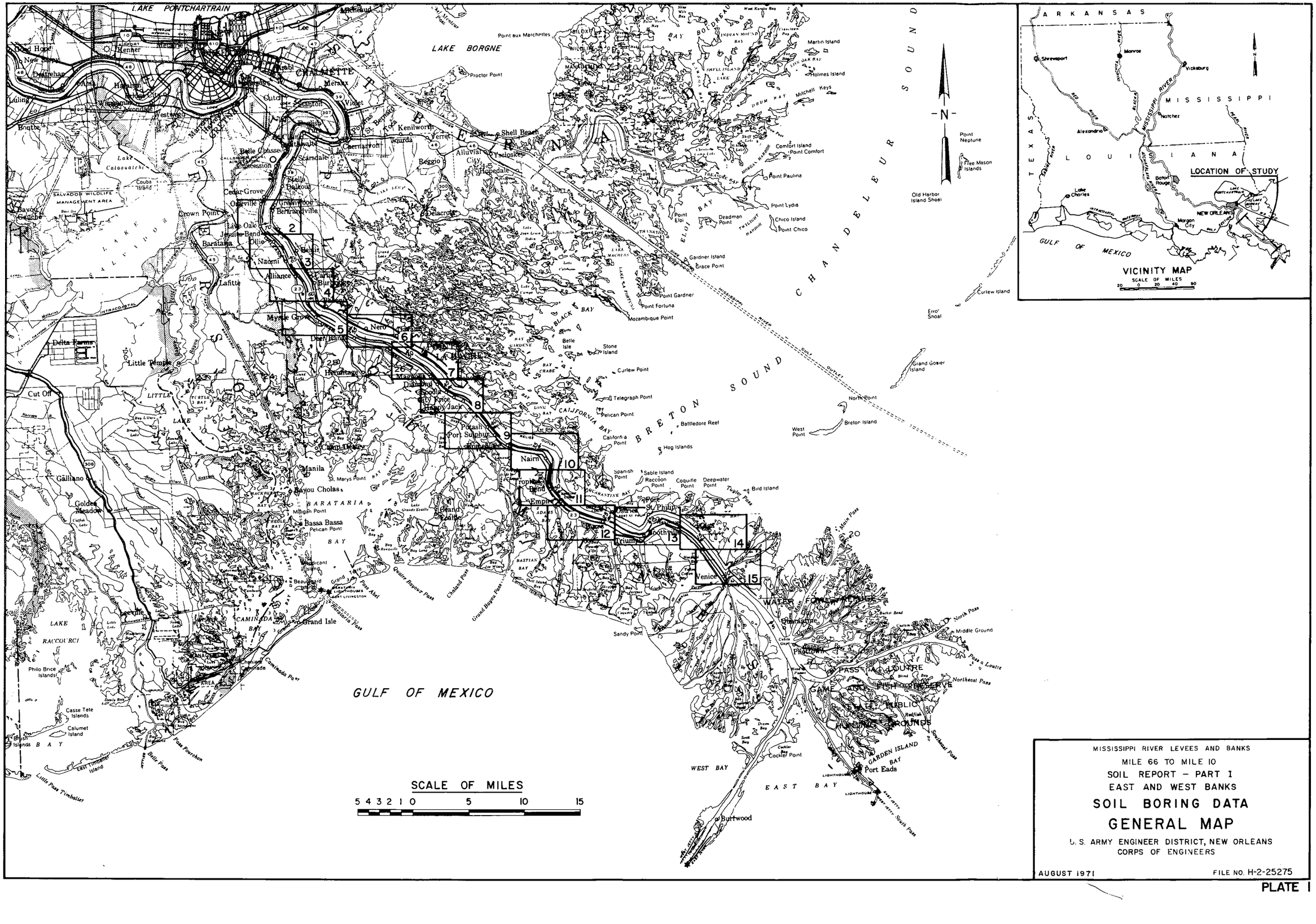
UNDIST. BORING NO. 12-UH UNDIST. BORING NO. 9-UT; 100' L.S.

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.	C (P.S.F.) BASE	ϕ °			γ (P.C.F.)	C (P.S.F.) AVG.	C (P.S.F.) BASE	ϕ °
CH	4.0	110	600	400	0						
CH	0.0	102	400	-	0	CH	0.0	102	400	200	0
CH	-10.0	40	400	-	0	CH	-10.0	40	200	-	0
CHO	-15.0	33	400	-	0	CHO	-15.0	33	200	200	0
CH	-20.0	40	400	400	0	CH	-20.0	33	260	315	0
ML	-30.0	55	200	-	15	ML	-30.0	55	200	-	15
SM	-40.0	60	0	680	30	SM	-40.0	60	0	485	30
CH	-60.0	48	740	855	0	CH	-60.0	48	600	715	0
CH	-80.0	48	970	1085	0	CH	-80.0	48	830	945	0
CH	-100.0	48	1200	1315	0	CH	-100.0	48	1060	1170	0
CH	-120.0	48	1430	1545	0	CH	-120.0	48	1285	1400	0
CH	-220.0	48	2115	2685	0	CH	-220.0	48	1965	2545	0
SP-F	-245.0	60	0	2830	30	SP-F	-245.0	60	0	2830	30
Pleist.	-	60	2830	-	0	Pleist.	-	60	2830	-	0

WEST LEVEE REACH NO. V-2 LOCATION STA. 3778+50 TO 3797+64

UNDIST. BORING NO. 1-U UNDIST. BORING NO. 1-UT; 30' 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	110	400	350	0						
CL&CH	-10.0	48	350	-	0	CL&CH	-10.0	48	300	-	0
CH	-20.0	43	350	350	0	CH	-20.0	38	300	-	0
CH	-30.0	43	400	-	0	CH	-30.0	38	300	300	0
CH	-40.0	43	400	400	0	CH	-40.0	38	350	400	0
CH	-230.0	43	1350	2300	0	CH	-230.0	43	1350	2300	0
SP-F	-260.0	60	0	2600	30	SP-F	-260.0	60	0	2600	30
PLEIST.	-	60	2600	-	0	PLEIST	-	60	2600	-	0



MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT – PART I

EAST AND WEST BANKS

SOIL BORING DATA

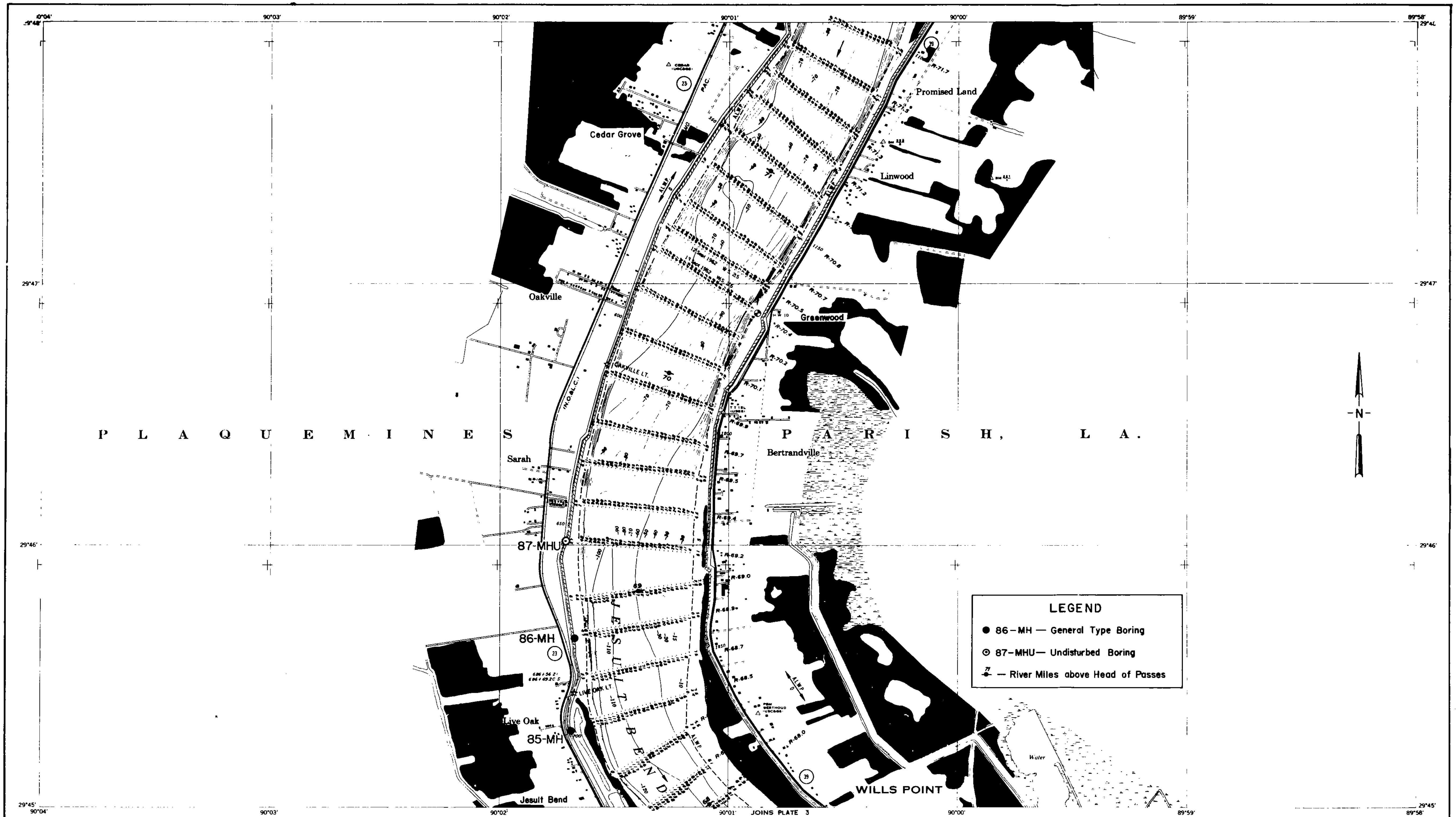
GENERAL MAP

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

AUGUST 1971

FILE NO. H-2-25275

PLATE I



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
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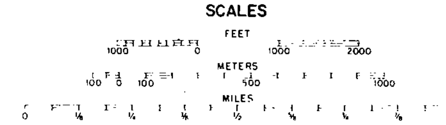
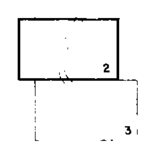
1962 and 1942 surveys
Polyconic Projection North American Datum
Polyconic Projection Gulf Coast Datum is indicated by ticks
A L W P —Average Low Water Plane





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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

90°03' 90°02' JOINS PLATE 2 90°01' 90°00' 89°59' 89°58' 89°57'
29°45'

84-MH
83-MH
Ollie
Fanny
82 MH
81 MH
R-66.7-UR
R-66.4-R
80 MH
R-65.9-R
79 MH
R-65.6-R
R 65.6 LU
Belair
78 MH
77-MH
R-64.5-R
Naomi
76-MHUT
Water

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

29°44'
29°43'
29°42'
90°03' 90°02' 90°01' 90°00' 89°59' JOINS PLATE 4 89°58' 89°57'

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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A.L.W.L. Average Low Water Plane

SCALES
FEET
METERS
MILES

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MILE 68.0 TO MILE 63.7

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

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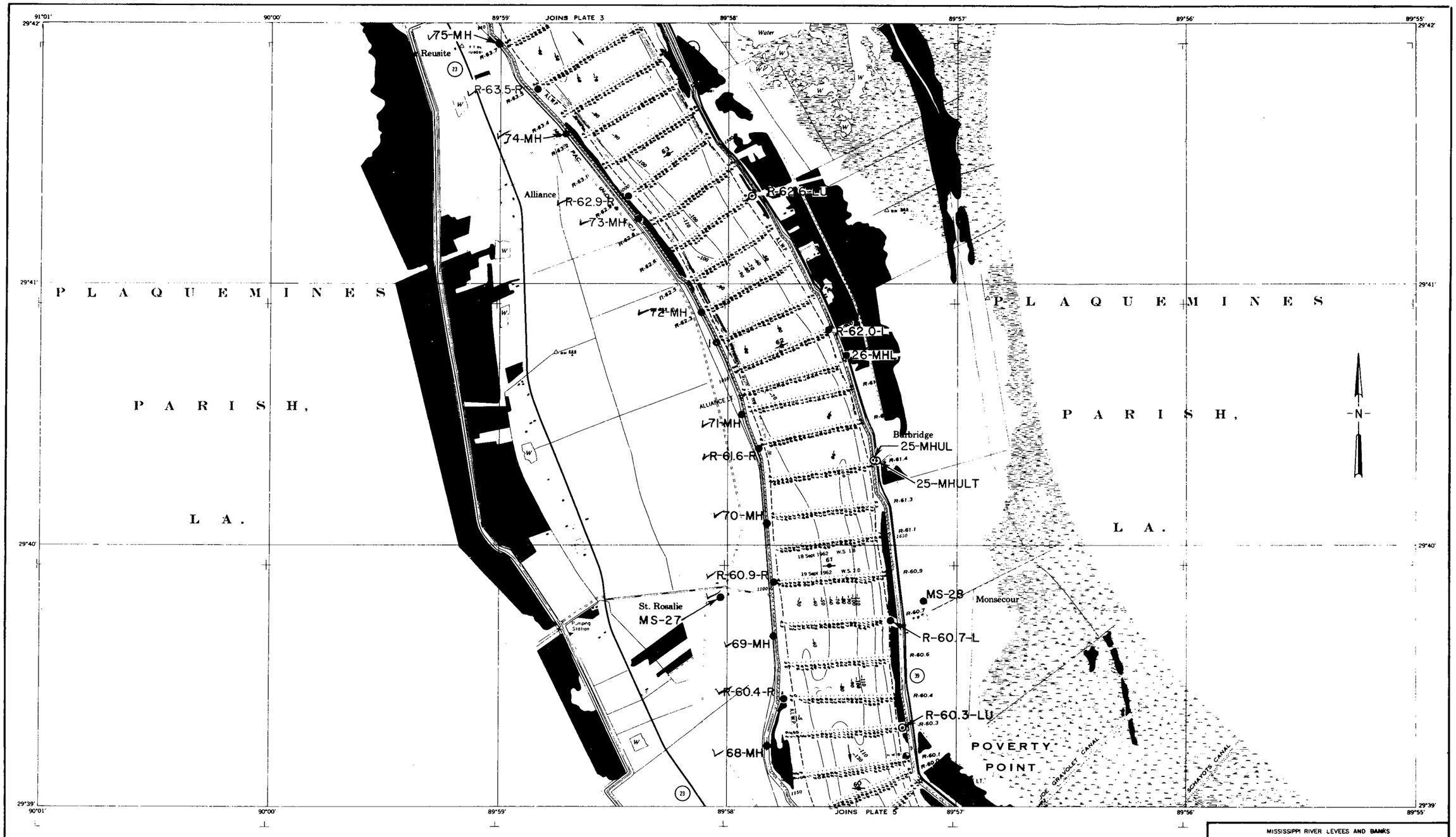
PLATE 3



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Planimetry from aerial photographs flown November 1962
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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 1 1/2

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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

PLAQUEMINES PARISH, LA.

PLAQUEMINES PARISH, LA.

JOINS PLATE 4

JOINS PLATE 6

Ironton

Phoenix

Myrtle Grove

Harlem

30-MHL
29-MHL
28-MHL
27-MHL
24-MHL
23-MHL
22-MHL
67-MHUT
R-59.7-R
66-MH
R-59.5-UR
8
65-MH
R-59.3-R
64-MH
63-MH
R-57.7-R
62-MHU
61-MH
60-MH
59-MH
R-55.9-R
58-MH
57-MHU
57-MHUT
R-58.0-L
56-UE
56-UET

Water

BACK LEVEE CANAL

ALWP

Sand

-N-

89°59'30"
89°59'
89°58'
89°57'
89°56'
89°55'
89°54'
89°53'30"
29°39'
29°38'
29°37'
29°36'

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
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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 1/8 1/2 1/8 1/4 1/8

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5
6

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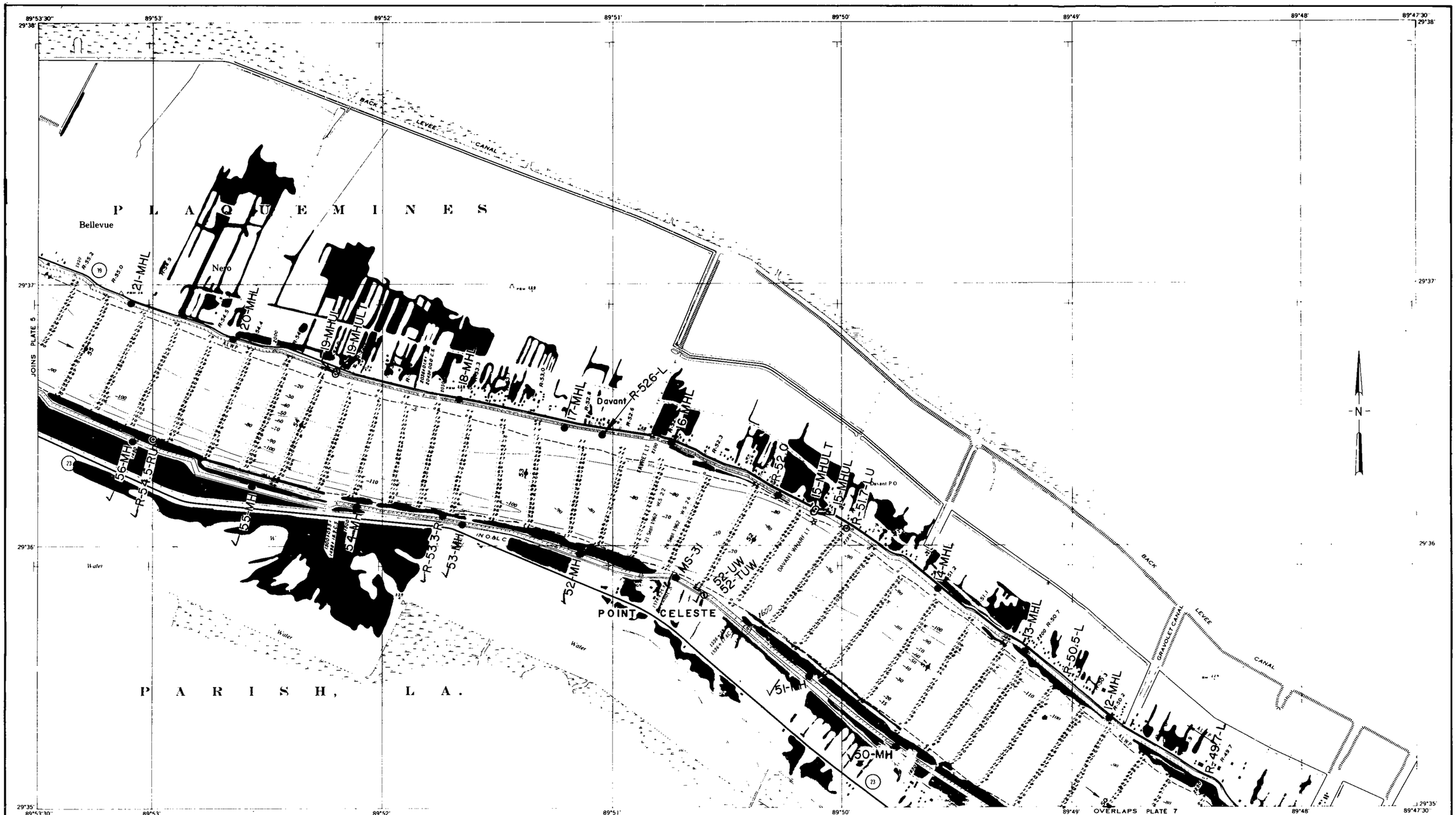
MILE 60.0 TO MILE 55.2

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

AUGUST 1971

FILE NO H-2-25275

PLATE 5



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1962 and 1942 surveys
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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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MILE 55.2 TO MILE 50.0

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

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PLATE 6

OVERLAPS PLATE 5

OVERLAPS SHEET 6

JOINS PLATE 8

89°50' 89°49' 89°48' 89°47' 89°46' 89°45' 89°44'

29°36' 29°35' 29°34' 29°33'

14-MHL
13-MHL
12-MHL
11-MHL
10-MHUL
10-MHUL
Pointe a la Hache
9-MHL
8-MHL
7-MHL
6-MHL
5-MHL
4 W
1 U
2-W
3-W
1-U
49-MH
Woodland
48-MH
47-MH
46-MH
45-MH
West Pointe a la Hache
44-MH
43-MHUT
42-MH
Martin
47-UET
47-UE
Magnolia
R-50.9-R
R-50.5-L
R-50.2-R
R-49.7-RU
R-49.7-L
R-49.2-R
R-48.6-R
R-48.0-R
R-46.95-LU
R-46.7-R

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

BACK LEVEE CANAL

DAIRY CANAL

UNITED GAS PIPE LINE CO. GAS PIPE LINES

TENNESSEE NATURAL GAS PIPE LINES

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
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Polyconic Projection Gulf Coast Datum is indicated by ticks
A.L.W.P. Average Low Water Plane

SCALES

FEET 0 1000 2000

METERS 0 500 1000

MILES

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6 7 8

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BORING LOCATIONS
MILE 51.4 TO MILE 46.3

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

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PLATE 7

89°47'30" 89°47' JOINS PLATE 7 89°46' 89°45' 89°44' 89°43' 89°42' 89°41'30"
29°33' 29°32' 29°31' 29°30'

41-MH
40-MH
39-MH
38-MH
37-MH
36-MH
36-MHUL
35-MH
34-MH
33-MH
32-MH
4-MHL
3-MH
2-MHULT
1-MHL
60-MHL
61-MHUL
62-MHL
42-UW
42-UWT

Diamond
Bohemia
POINTE A LA HACHE
Socola
City Price
Point Michel
Enclade
Water

R-44.2-L
R-43.7-L
R-43.9-RU
R-43.2-L
R-42.5-L
R-41.8-LU
R-41.2-L

SOCOLA CANAL
FOSTERS CANAL
HERNANDEZ CANAL
RAILWAY CANAL LINE
BACK LEVEE CANAL
OUTLET
TENN. GAS TRANS. CO. 30" PIPELINE HOUMA LI

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
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Planimetry from aerial photographs flown November 1967
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

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MILE 46.3 TO MILE 41.2

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

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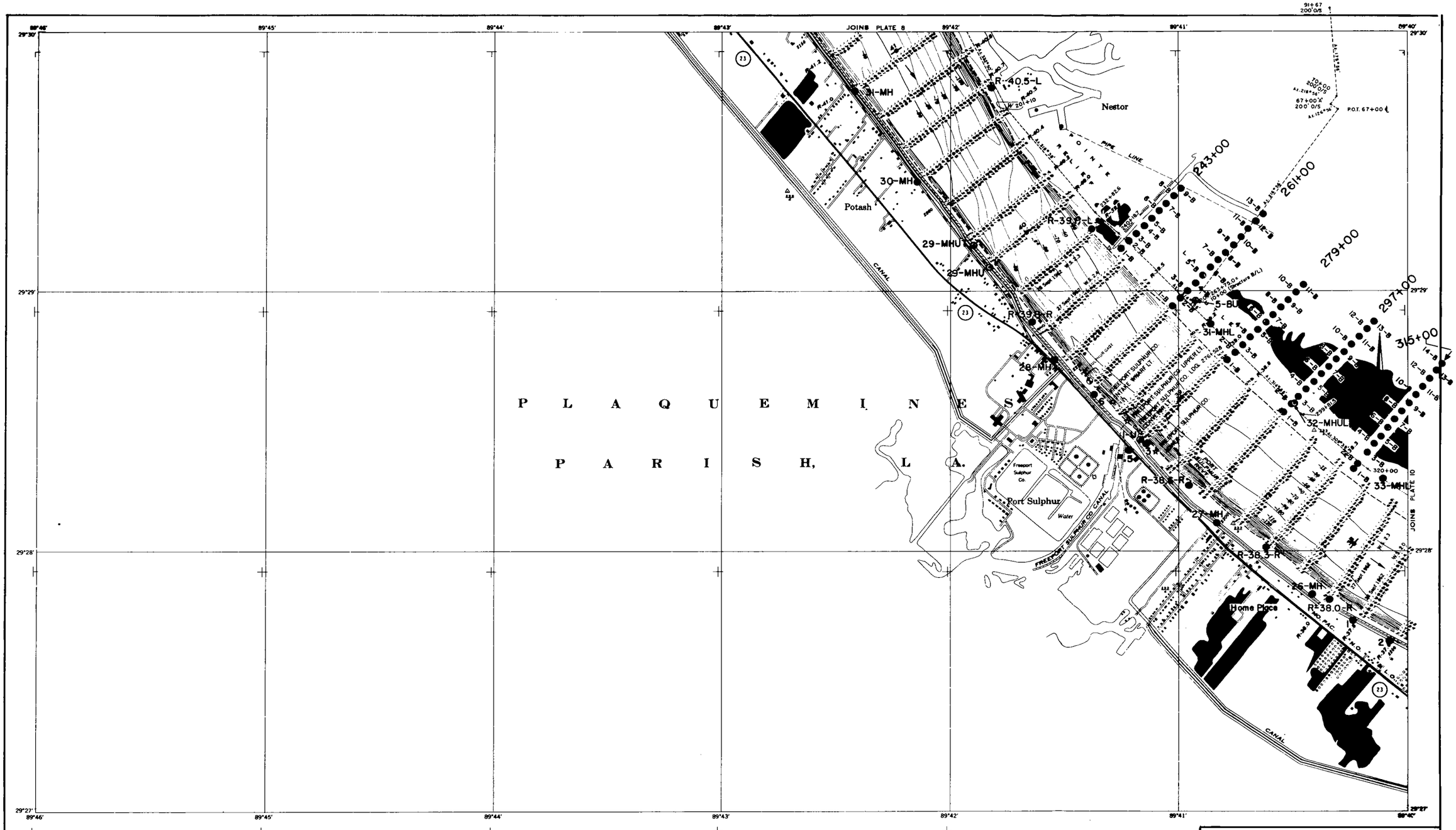
PLATE 8



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Planimetry from aerial photographs flown November 1962
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1962 and 1942 surveys
Polyconic Projection North American Datum
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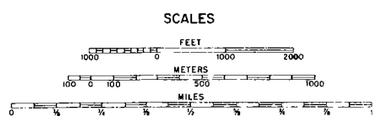
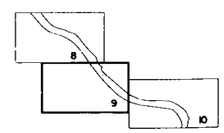
A.L.W.P. —Average Low Water Plane

SCALES





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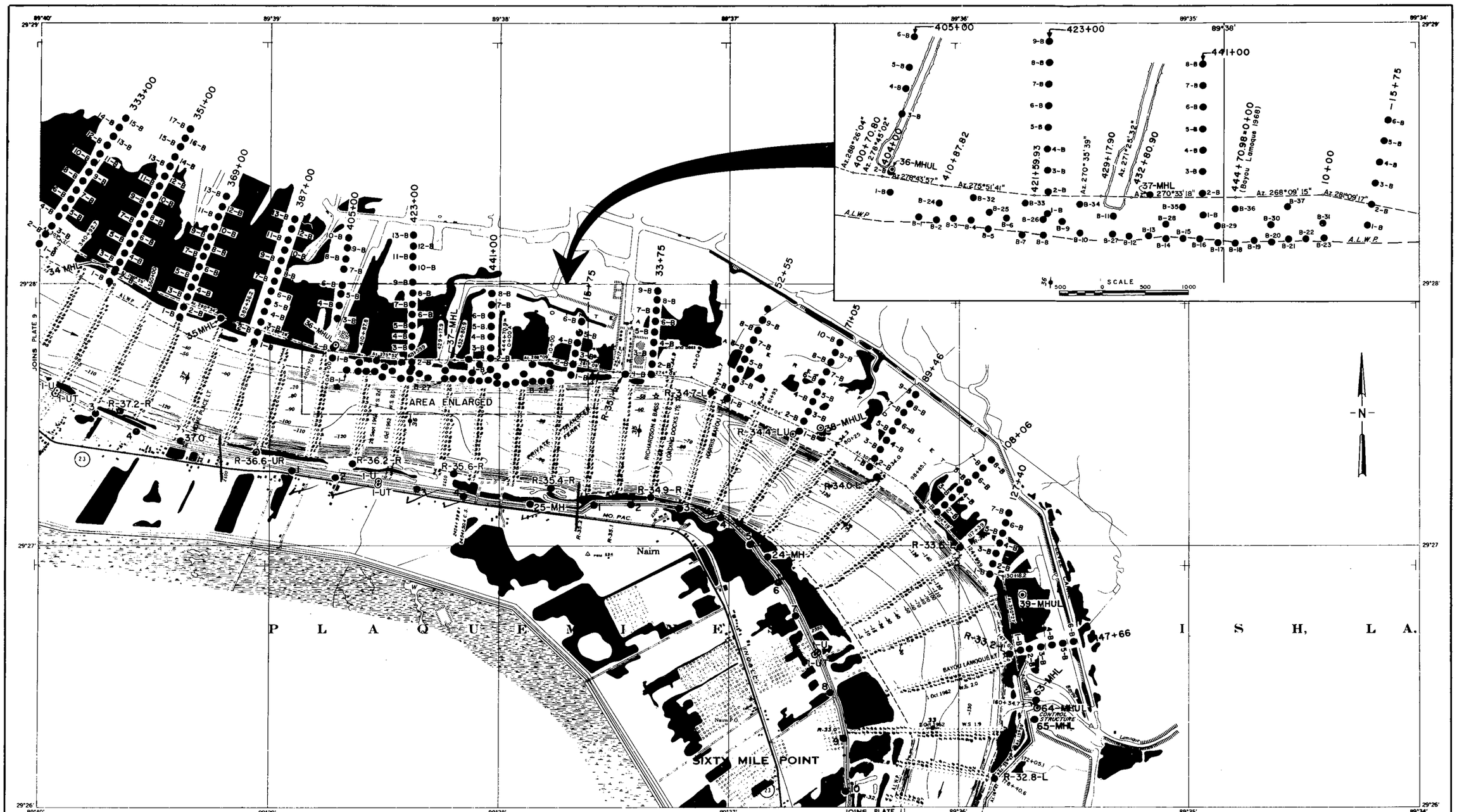
MILE 41.2 TO MILE 37.8

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

AUGUST 1971

FILE NO. H-2-23275

PLATE 9



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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
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Polyconic Projection Gulf Coast Datum is indicated by ticks
A L W P - Average Low Water Plane

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
CORPS OF ENGINEERS

AUGUST 1971

FILE NO. H-2-25275

PLATE 10

JOINS PLATE 10

JOINS PLATE 12

PLAQUEMINES PARISH, LA.

Zibilich

Tropical Bend

PT. PLEASANT

Empire

EMPIRE LOCK
Length 600' Width 40'
Elev of Sill -10 M.L.G.

WATERWAY FROM EMPIRE, LA. TO THE GULF OF MEXICO

BACK LEVEE - CANAL

R-32.0-R

R-32.0-L

R-31.6-L

R-32.3-LU

R-30.9-UR

R-30.8-R

R-30.3-RL

R-31.4-UR

23-MH

22-MH

21-MH

20-MH

19-MH

18-MHU

41-MHL

42-MHL

43-MHU

44-MHL

45-MHL

11-B

TRANS. GAS TRANS. CO. 24" GAS PIPE LINE

SHELL OIL CO. 1-12" PIPE LINE

1-16" OIL PIPE LINE

1-24" PIPE LINE

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
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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 0 1000 2000

METERS 100 0 100 500 1000

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

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MILE 32.6 TO MILE 28.5

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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PLATE 11

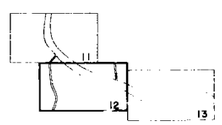
All elevations are expressed in feet and refer to Mean Sea Level
Contours below Average Low Water Plane are expressed in feet at 5 and 10 ft intervals
Contours above Average Low Water Plane are expressed in feet at 5 ft intervals
Planimetry from aerial photographs flown November 1962
Distances on Mississippi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

SCALES

FEET 4000 0 4000 8000

METERS 1000 0 1000 2000

MILES 1 0 1 2



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MILE 28.5 TO MILE 24.2

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

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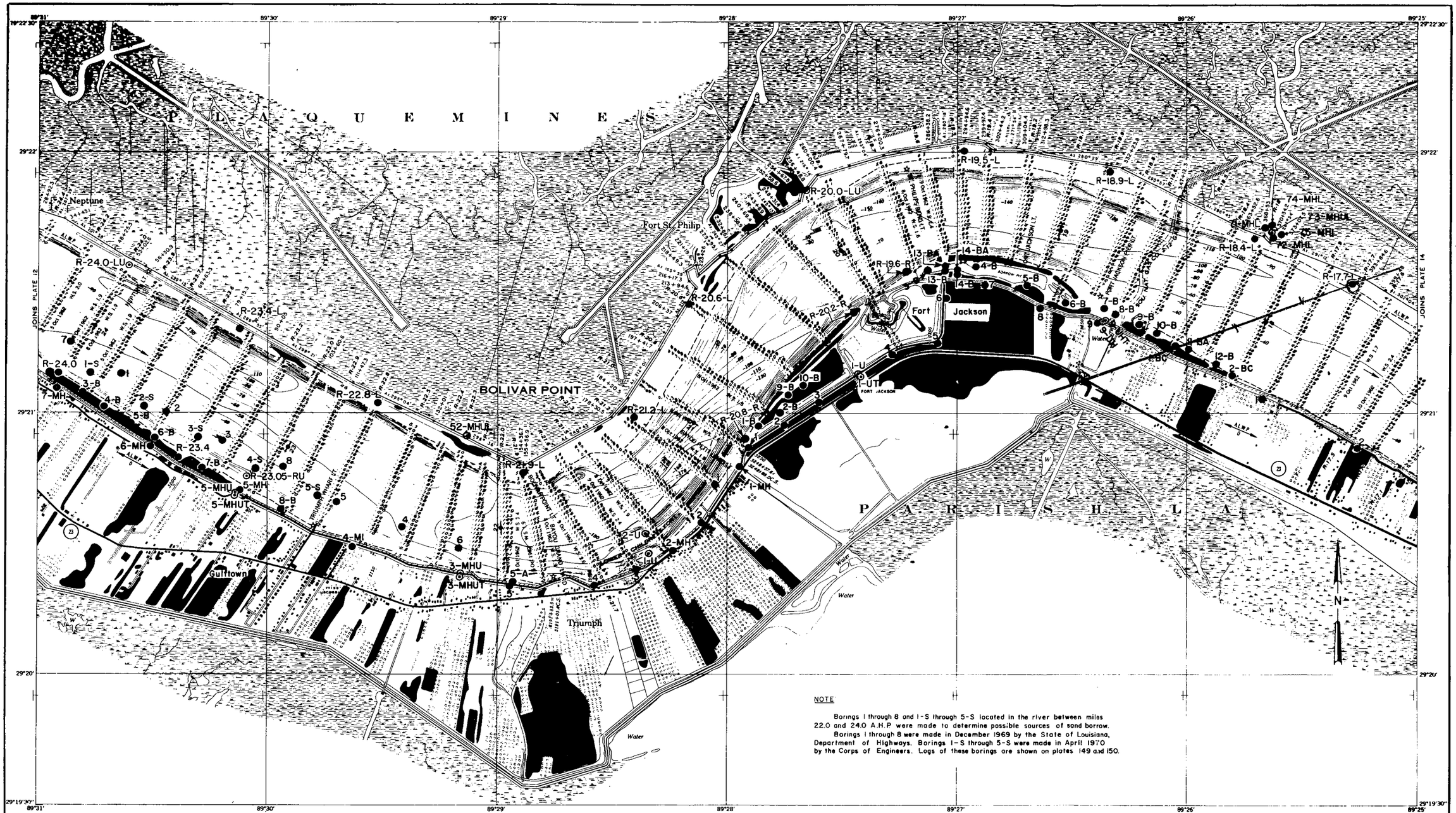
PLATE 12



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
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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 1/2 1

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MILE 24.2 TO MILE 17.1

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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PLATE 13

P L A Q U E M I N E S

P A R I S H

L A.

Olga

Boothville

Bay Crow

Carrion

Duvic

JOINS PLATE 13

JOINS PLATE 15

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

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PLATE 14

JOINS PLATE 14

89°24' 89°23' 89°22' 89°21' 89°20' 89°19' 89°18'

29°19' 29°18' 29°17' 29°16'

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

Water

Bayou Baptiste

Benneys Bay

Spanish Pass

Grand Pass

Venice

THE JUMP

U.S. Army Engineer District, New Orleans, Venice Sub Office

Aerial Photos 6 Feb 1963

8-BC 9-BC 11-BC 12-BC 13-BC 14-BC 15-BC 17-BC 18-BC 19-BC 20-BC 21-BC

11.5-RU 12-UT 13 14 15 16

R-13 R-12.5-L R-12-L R-11.5-L R-11-L

55-MHL 56-MHL 57-MHL 58-MHUL 59-MHL

1-UT 2-UT

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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MILE 14.0 TO MILE 10.0

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PLATE 15

87-MHU
For log see plate 37

82-MHUT
For log see plate 37

R-66.7-UR
For log see plate 38

BOR. 86-MH
STA. 677+00
66 FT. R.S. TOE
13 SEPT 66

BOR. 85-MH
STA. 699+00
57 FT. R.S. OF TOE
12-13 SEPT 66

BOR. 84-MH
STA. 721+00
ON C.L. LEVEE
12 SEPT 66

BOR. 83-MH
STA. 747+00
52 FT. R.S. TOE
9 SEPT 66

BOR. 81-MH
STA. 799+00
ON C.L. LEVEE
8 SEPT 66

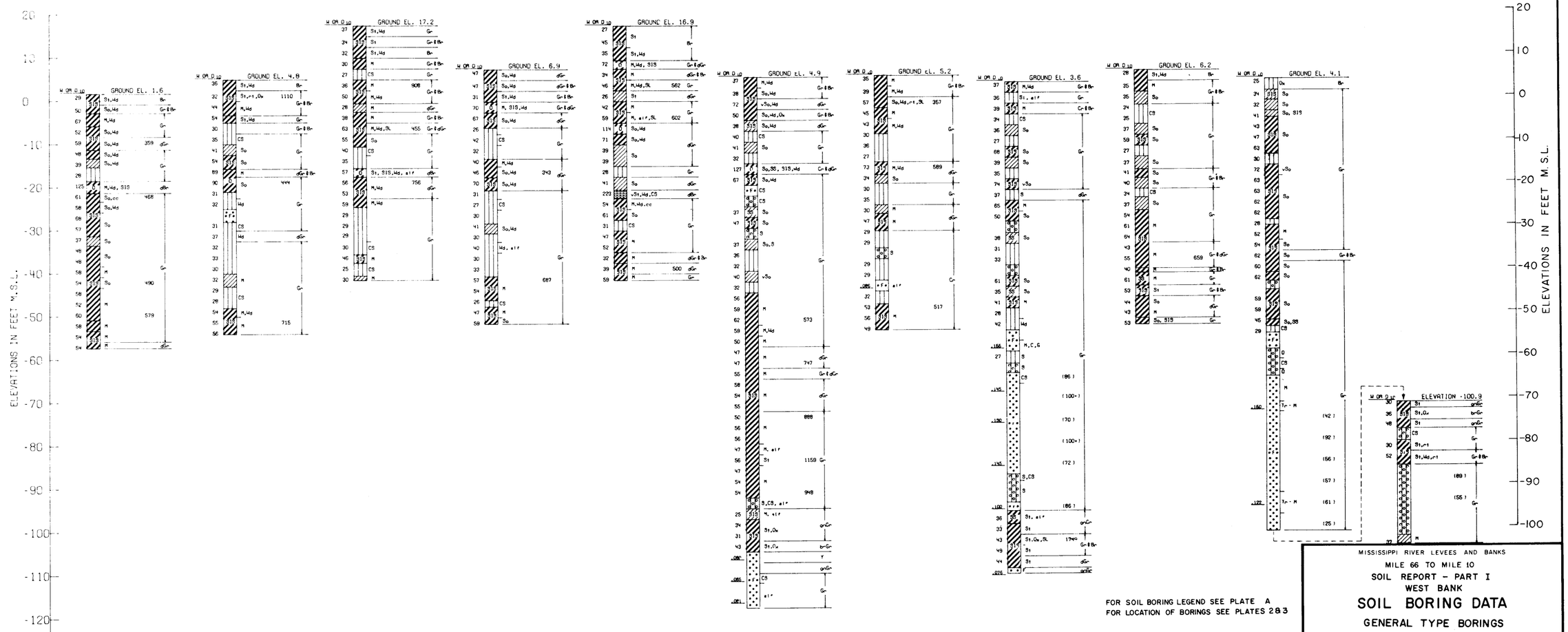
BOR. R-66.4-R
STA. 818+50
332 FT. R.S. C/L LEVEE
26-27 OCT 66

BOR. 80-MH
STA. 825+00
55 FT R.S. TOE
8 SEPT 66

BOR. R-65.9-R
STA. 849+40
64 FT. R.S. OF C/L LEVEE
27-28 OCT. 1966

BOR. 79-MH
STA. 851+00
50 FT L.S. OF TOE
6-7 SEPT 1966

BOR. R 65.6 R
STA. 856+50
114 FT. R.S.
17 SEP 69



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 2 & 3

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PLATE 16

76-MHUT

For log see plate 39

BOR. 78-MH
STA. 877+00
ON C/L LEVEE
2-6 SEPT 1966

BOR. 77-MH
STA. 903+00
50 FT L.S. OF C/L
2 SEPT 1966

BOR. R-64.5-R
STA. 909+00
78 FT. R.S.
18 SEP 69

BOR. 75-MH
STA. 955+00
ON C/L LEVEE
26 AUG. 1966

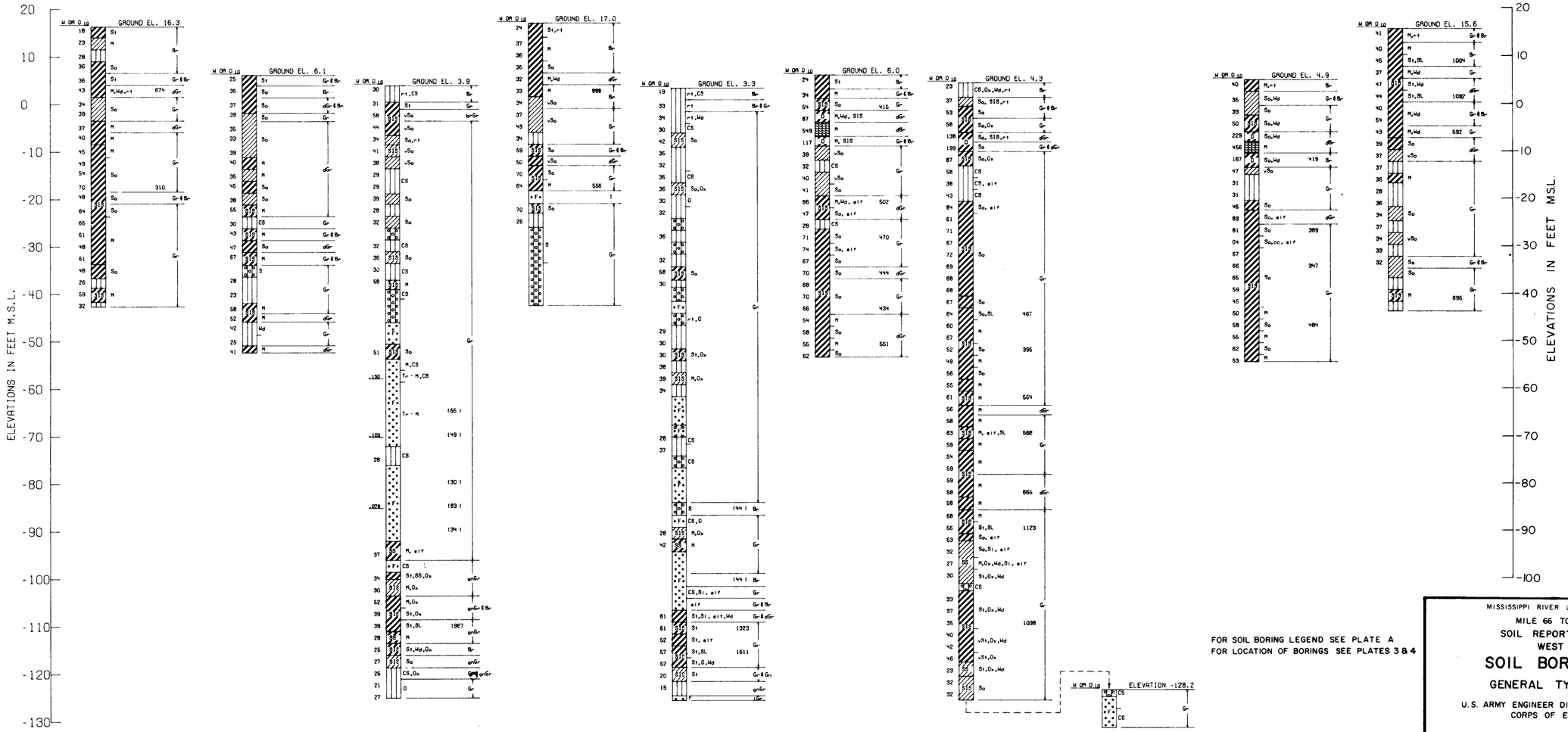
BOR. R 63.5-R
STA. 969+00
175 FT. R.S.
19 SEP 69

BOR. 74-MH
STA. 981+00
55 FT. L.S. OF C/L LEVEE
25 AUG 1966

BOR. R-62.9-R
STA. 1001+50
200 FT. R.S.
23 SEP 69

BOR. 73-MH
STA. 1007+00
47 FT. R.S. OF C/L LEVEE
25 AUG 1966

BOR. 72-MH
STA. 1033+00
ON C/L LEVEE
24 AUG 1966



FOR SOIL BORING LEGEND SEE PLATE A
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PLATE 17

BOR. 1
STA. 1041+00
ON C/L
17-18 MAR 1959

BOR. 71-MH
STA. 1059+00
53 FT. L.S. OF C/L LEVEE
24 AUG 1966

BOR. R-61.6-R
STA. 1067+50
84 FT. R.S.
24 SEP 69

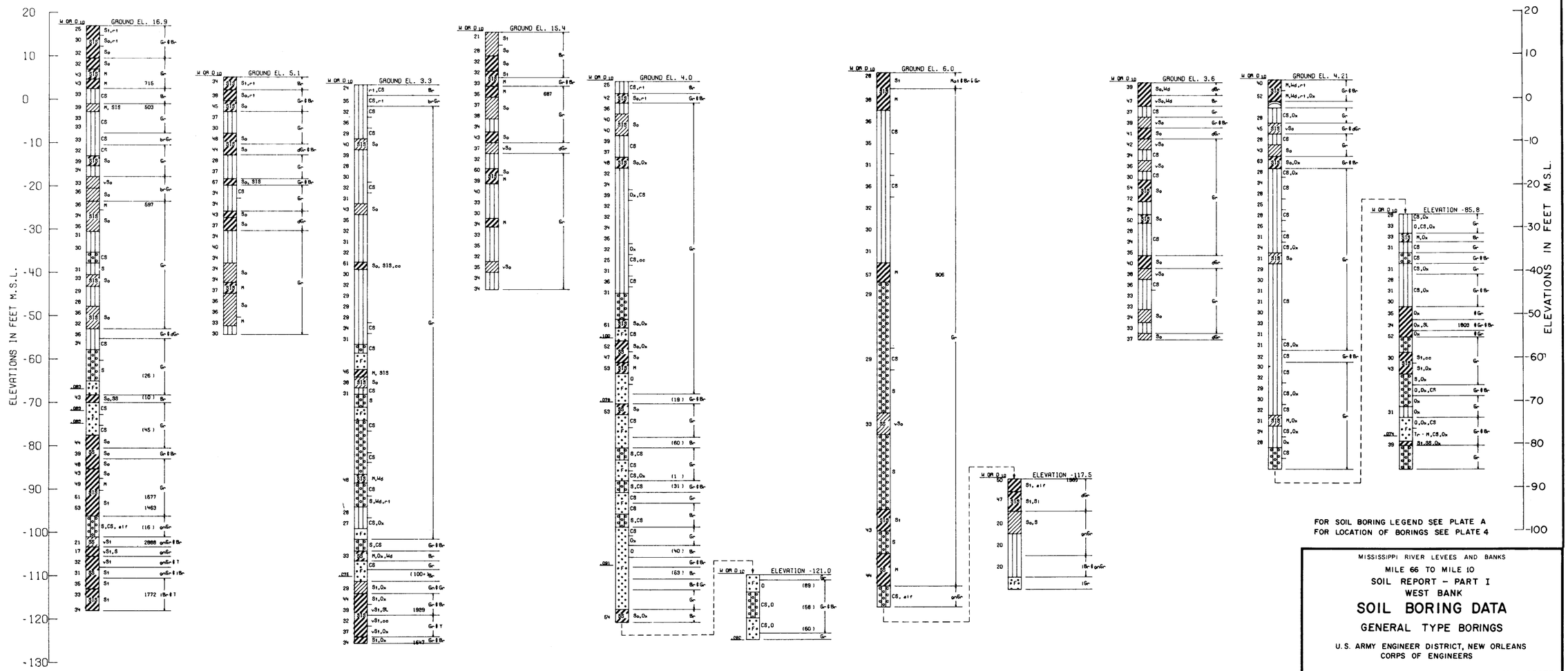
BOR. 70-MH
STA. 1085+00
ON C/L LEVEE
23-24 AUG 66

BOR. R-60.9-R
STA. 1098+50
78 FT. R.S.
26 SEP 69

BOR. MS-27
STA. 1101+67
1120 FT. L.S. C/L LEVEE
23-24 JUN 59

BOR. 69-MH
STA. 1111+00
49 FT. L.S. C/L LEVEE
23 AUG 66

BOR. R-60.4R
STA. 1125+50
135 FT. R.S.
30 DEC 68 1 JAN 69



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 4

MISSISSIPPI RIVER LEVEES AND BANKS
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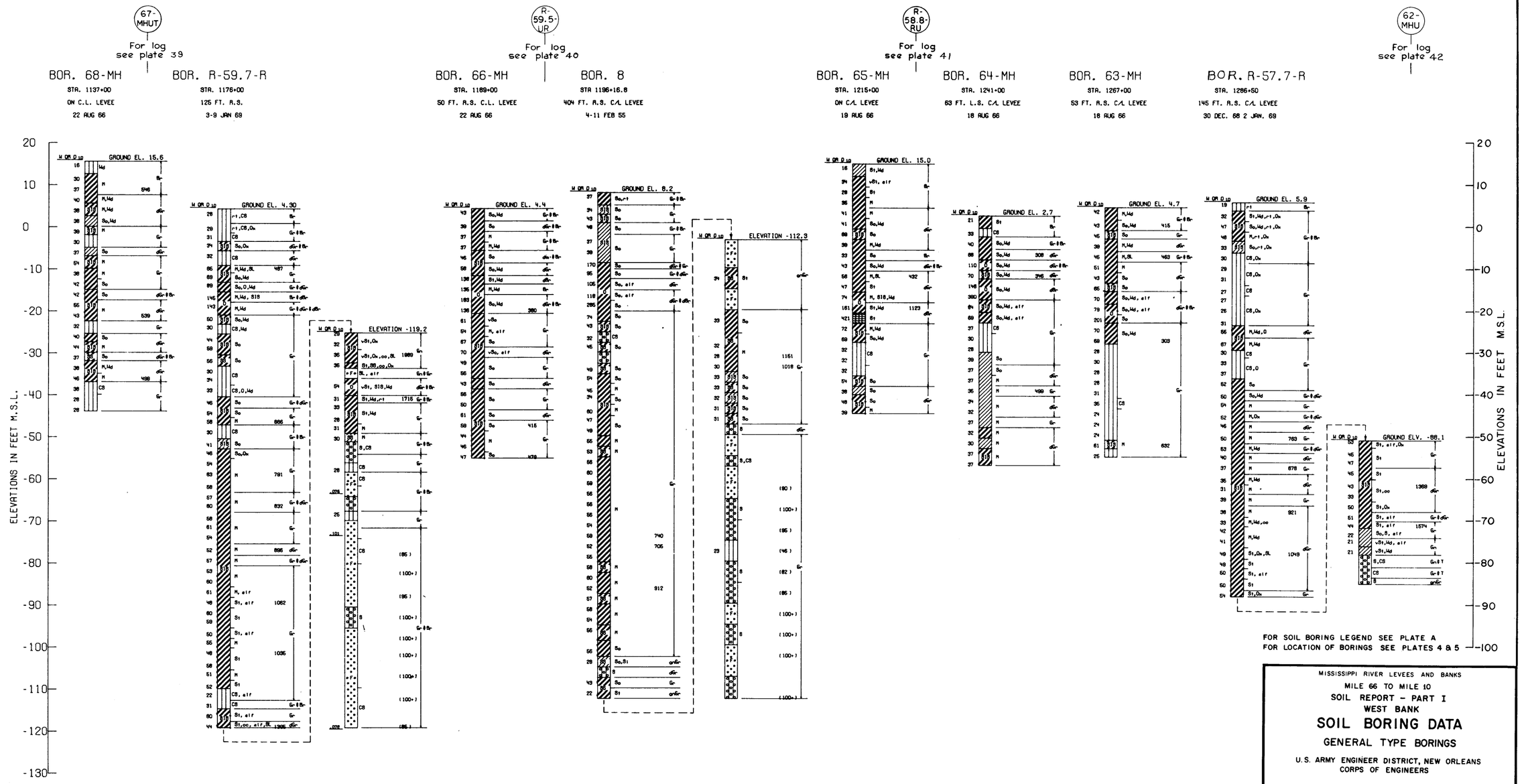
PLATE 18



MISSISSIPPI RIVER LEVEES AND BANKS

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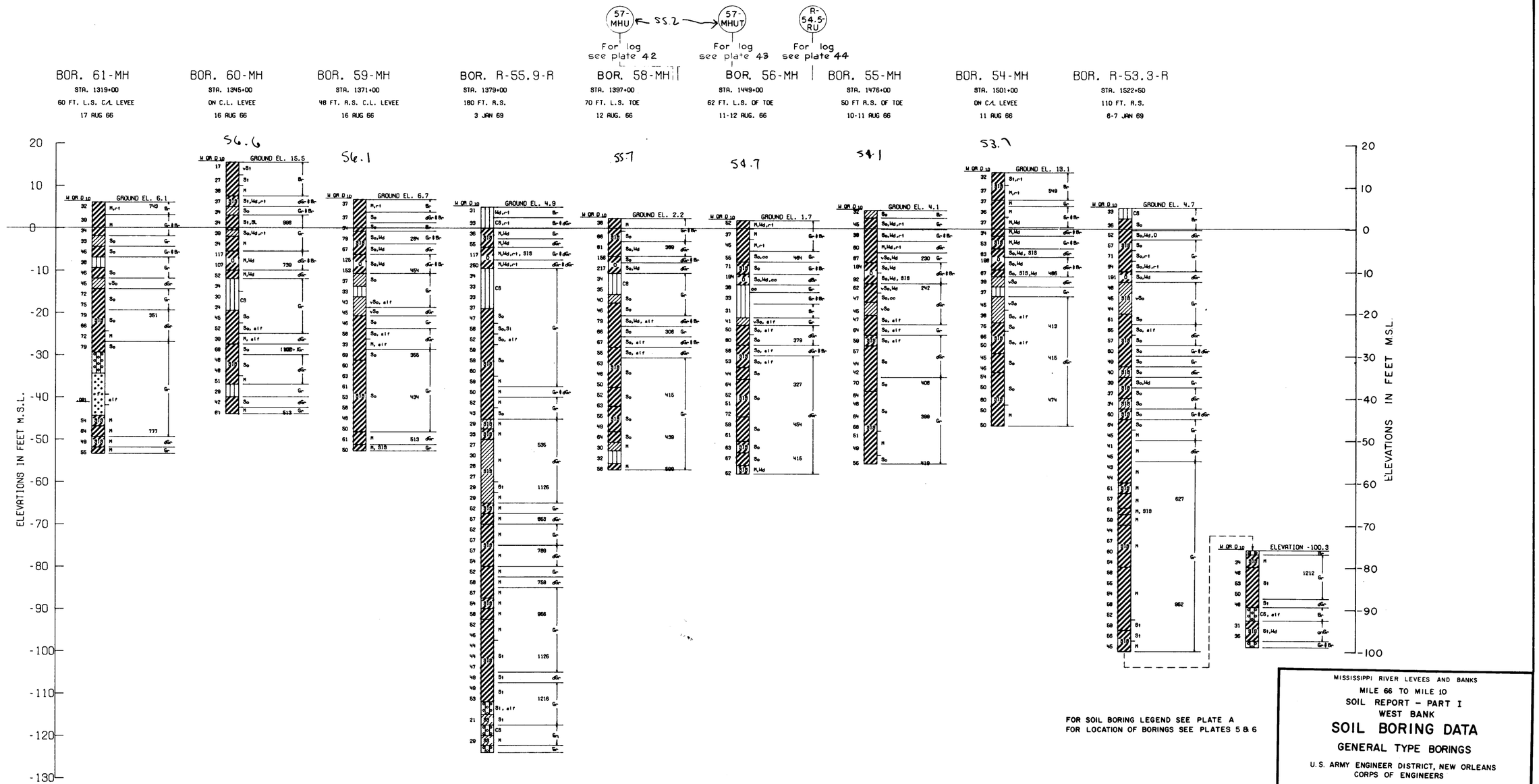

FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 5 & 6

MISSISSIPPI RIVER LEVEES AND BANKS
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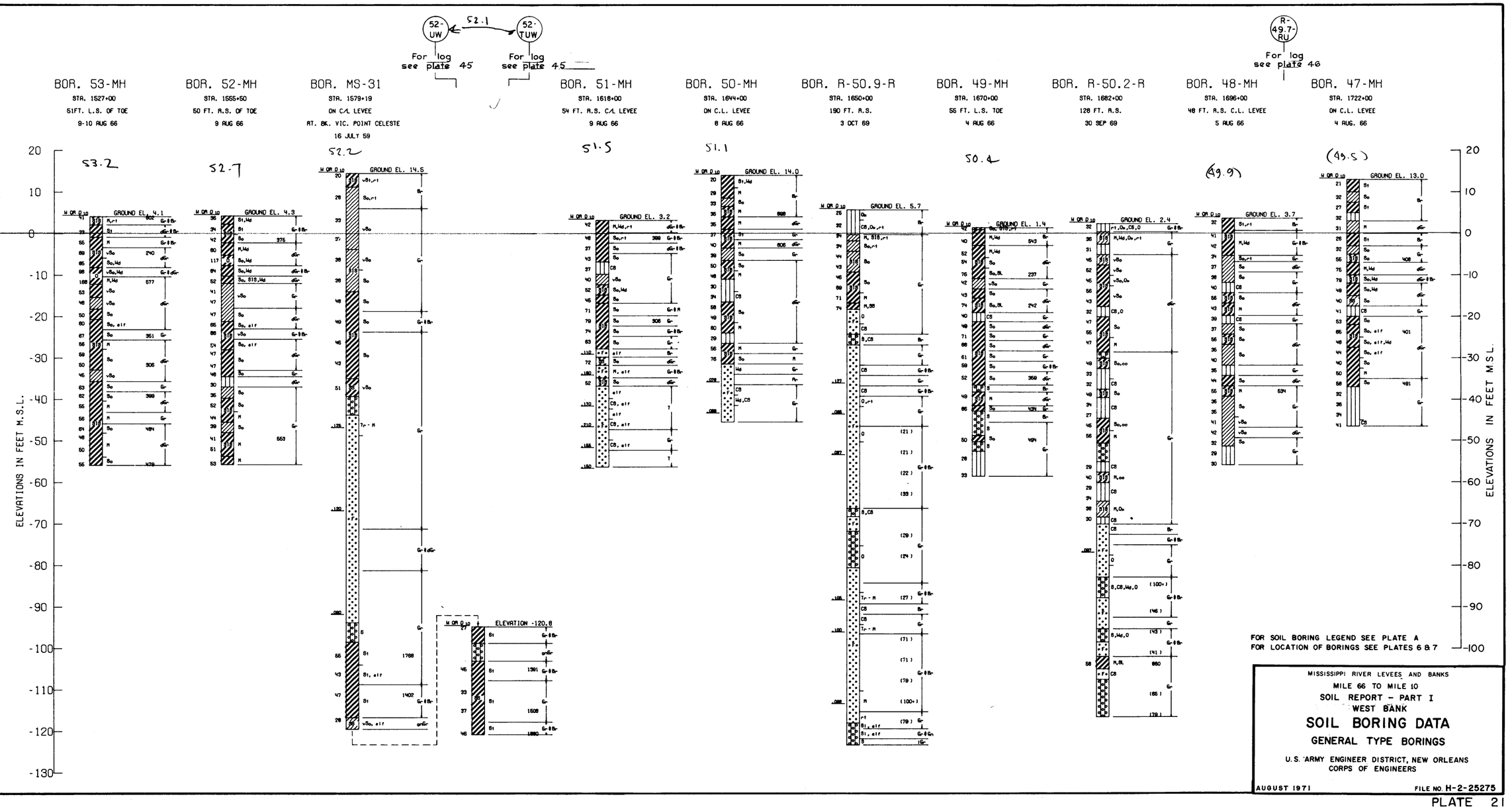
FILE NO. H-2-25275

PLATE 20



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 6 & 7

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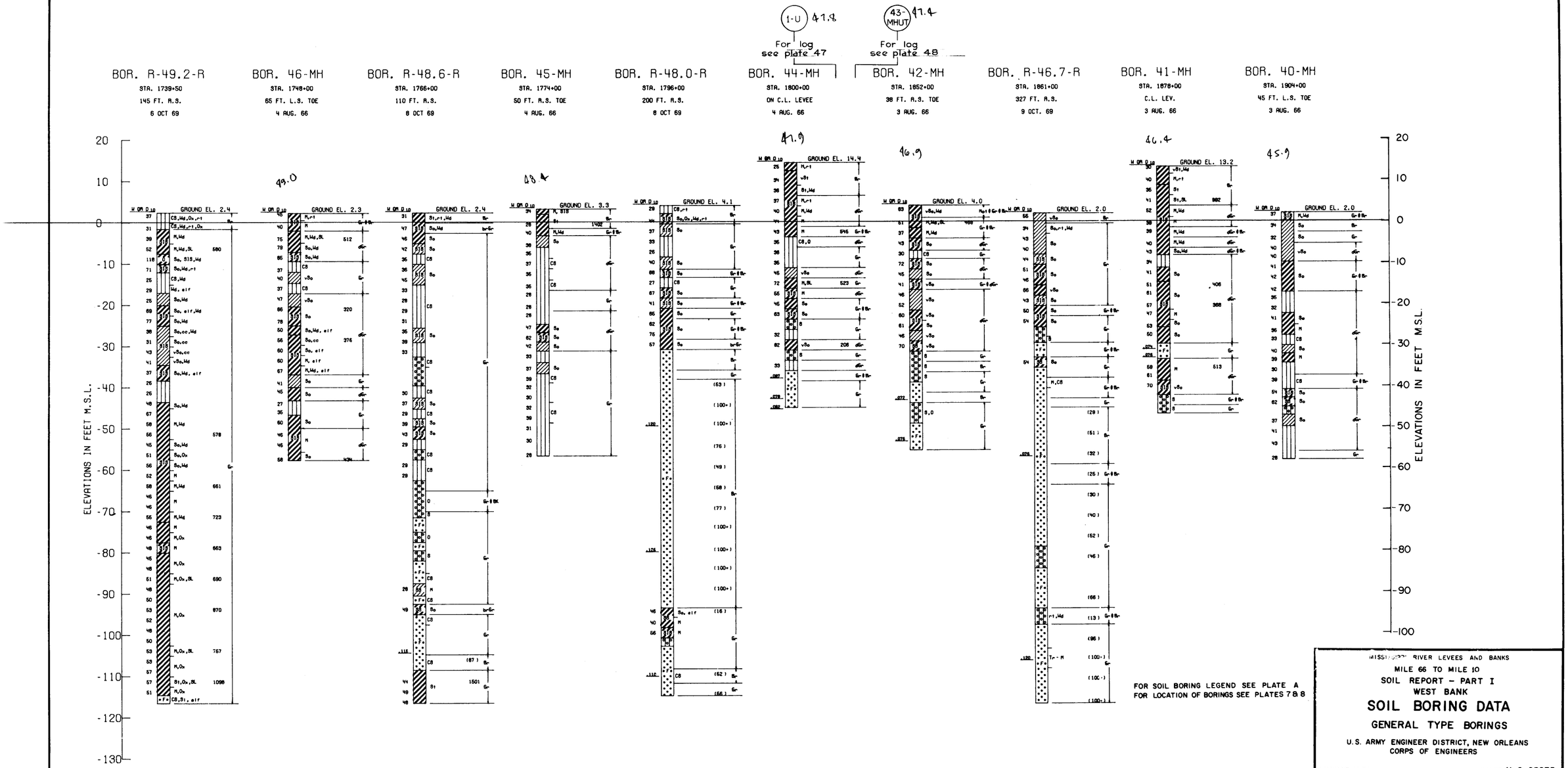
PLATE 21



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

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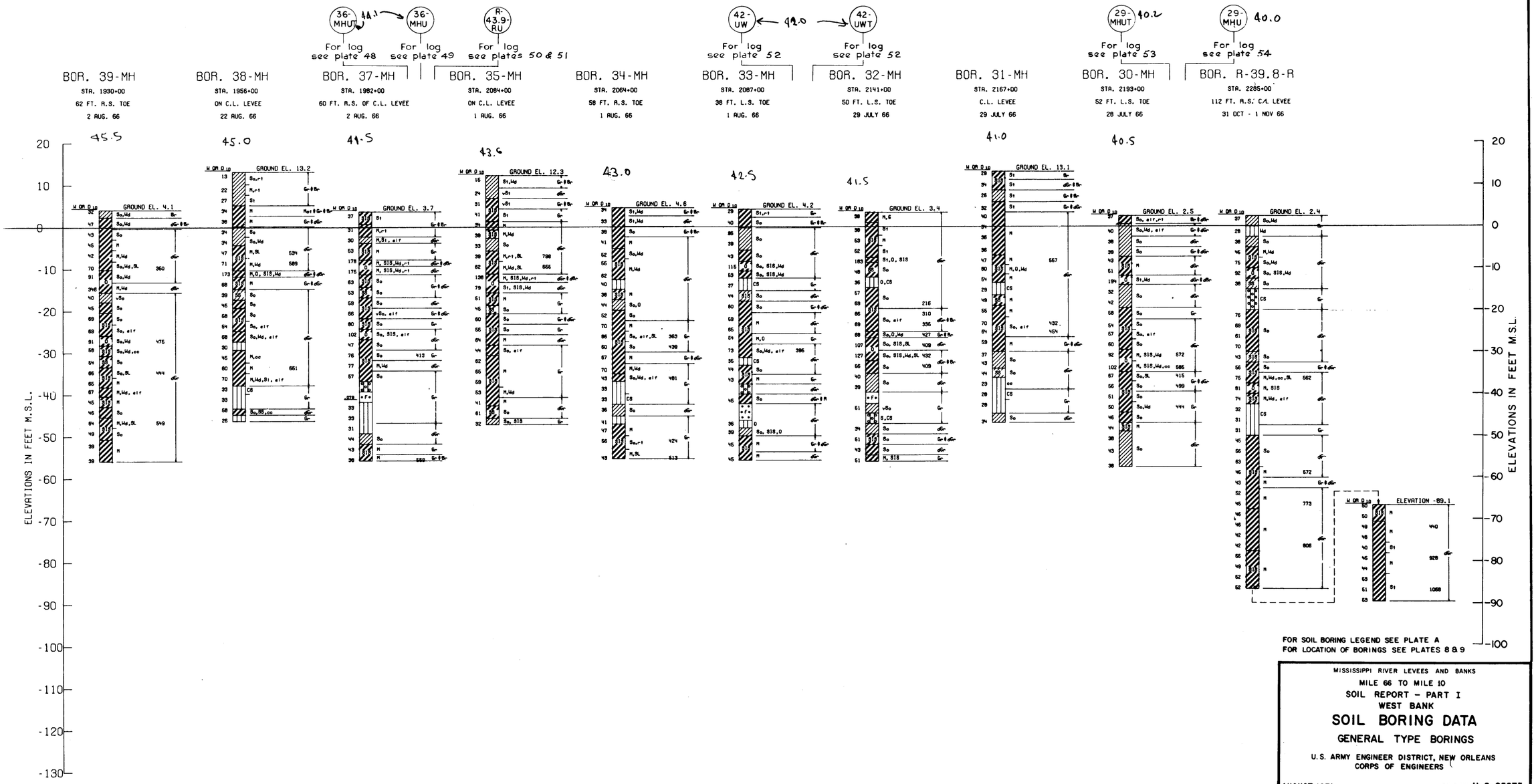
PLATE 22



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

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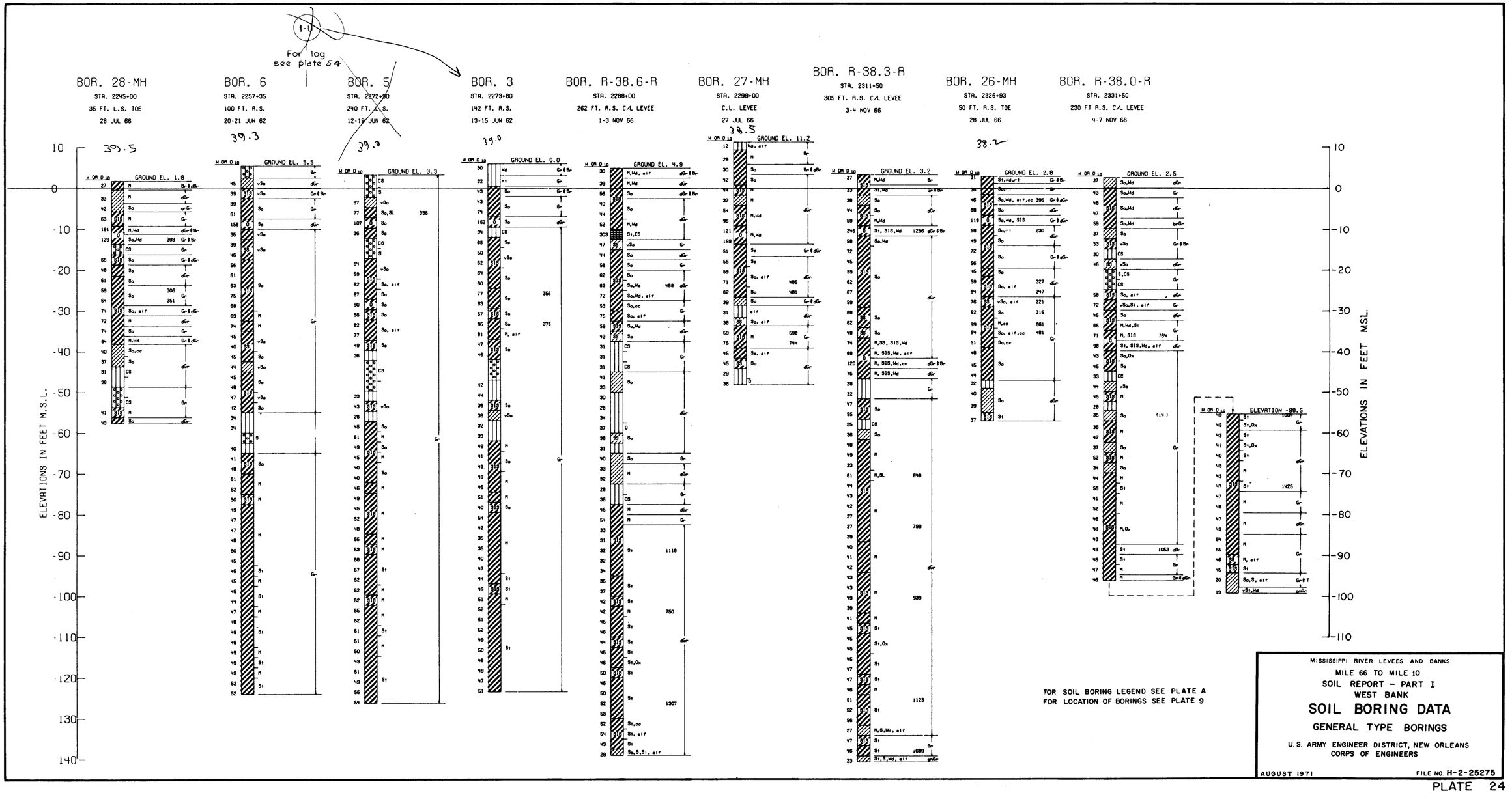
PLATE 23



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

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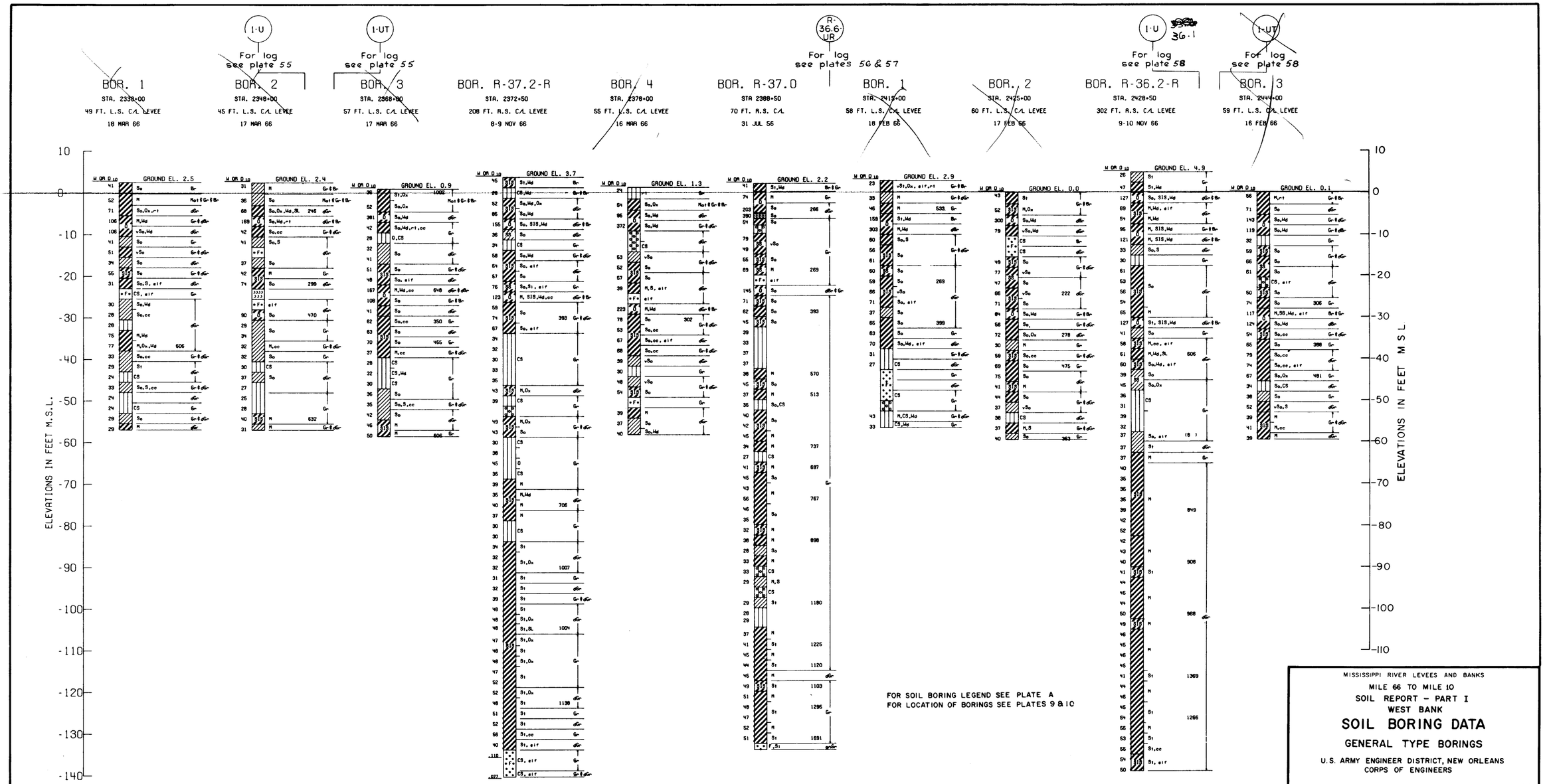
PLATE 24



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

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BOR. R-35.6-R
STA. 2452+00
424 FT. R.S. C/L LEVEE
14-15 NOV 66

BOR. 4
STA. 2456+00
62 FT. L.S. C/L LEVEE
15-16 FEB 66

BOR. 25-MH
STA. 2470+00
37 FT. R.S. TOE
27 JUL 66

BOR. R-35.4-R
STA. 2474+50
440 FT. R.S. C/L LEVEE
17-18 NOV 66

BOR. 1
35 FT. AT. OF STA. 2485+15
1 MAR 66

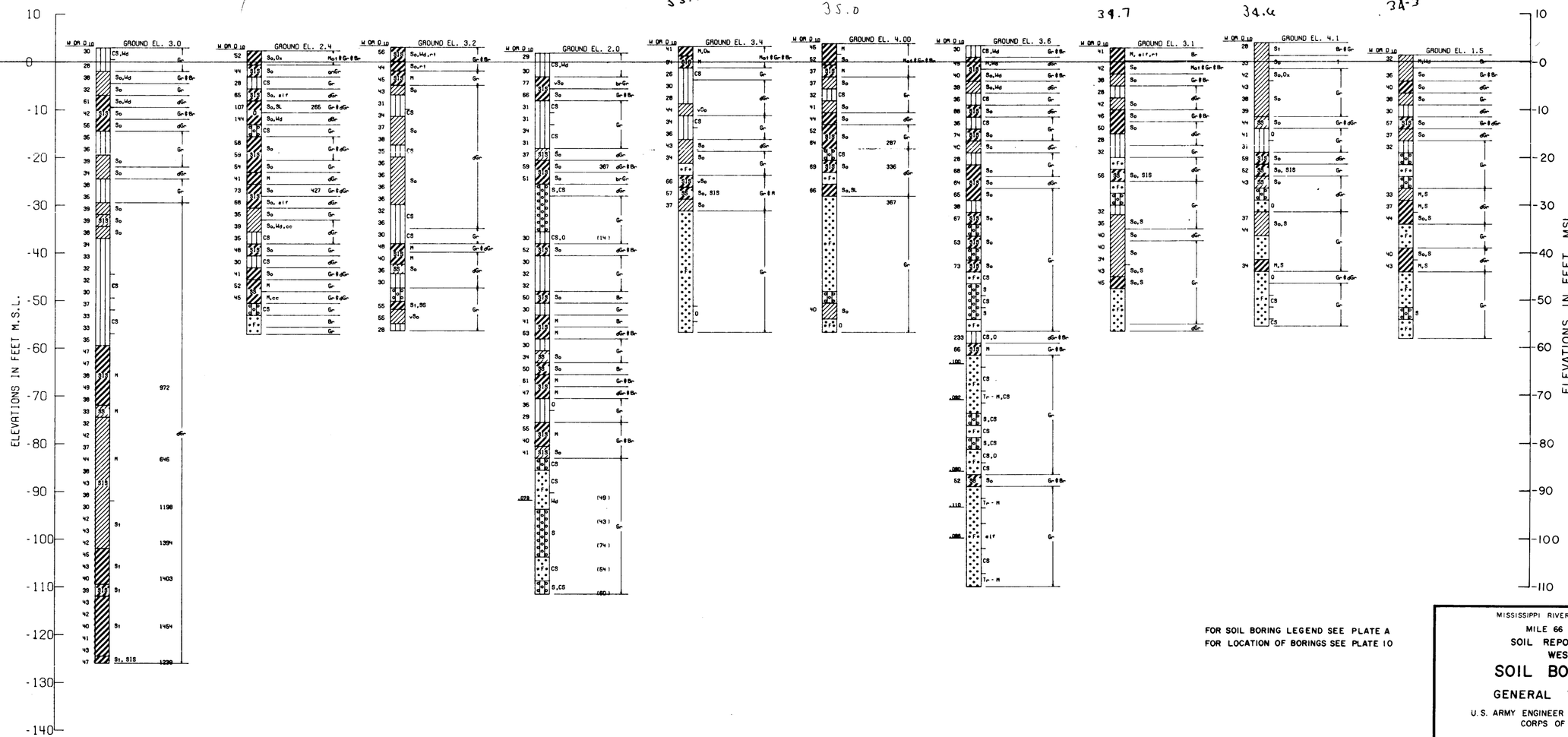
BOR. 2
40 FT. AT. OF STA. 2494+00
1 MAR 1966

BOR. R-34.9-R
STA. 2498+50
136 FT. R.S. C/L LEVEE
18-21 NOV 66

BOR. 3
STA. 2505+00
54 FT. L.S. C/L LEVEE
11 MAR 1966

BOR. 4
STA. 2515+00
60 FT. L.S. C/L LEVEE
10 MAR 66

BOR. 5
STA. 2525+00
42 FT. L.S. C/L LEVEE
9-10 MAR 66



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

MISSISSIPPI RIVER LEVEES AND BANKS
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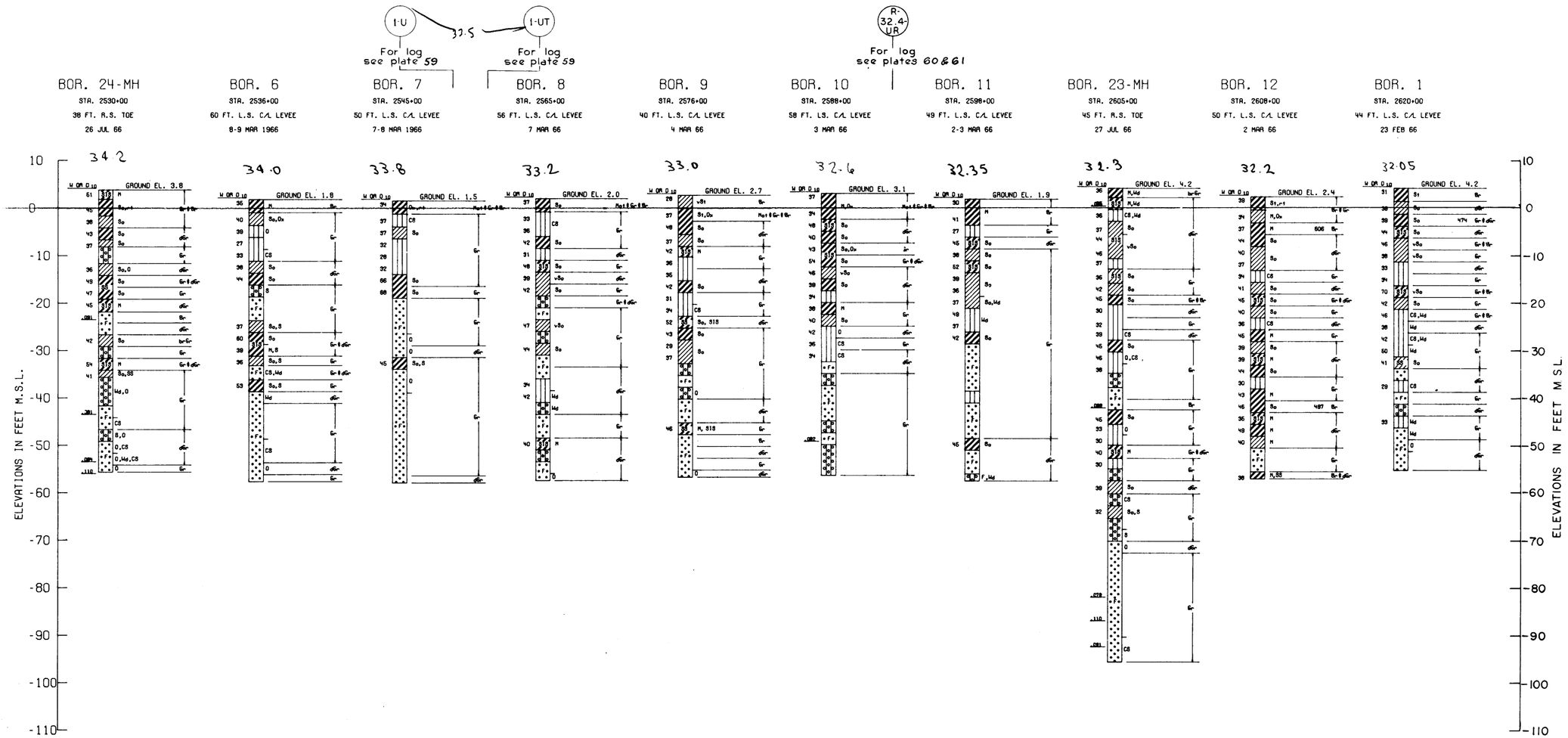

FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATES 10 & 11

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PLATE 27

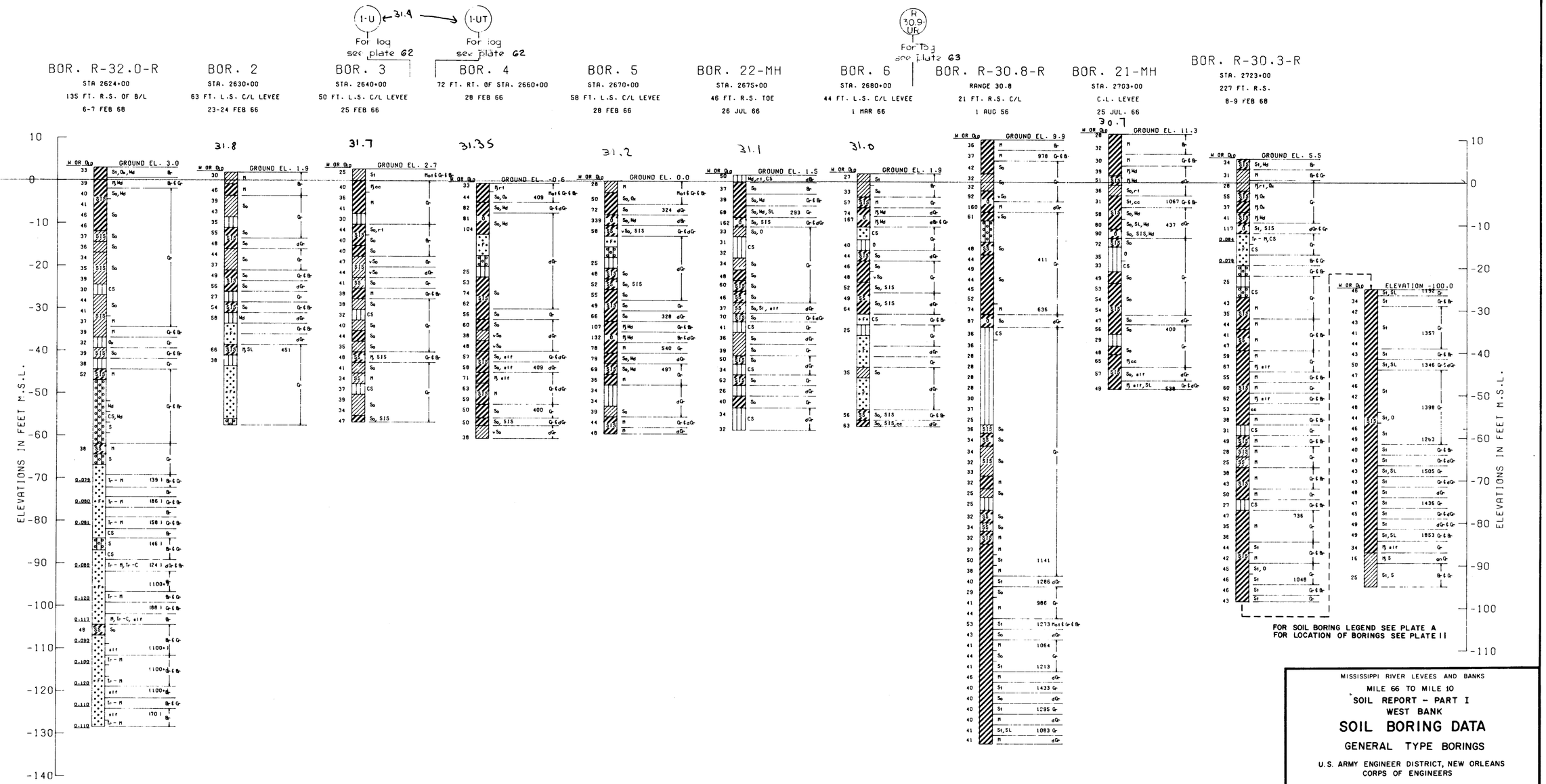

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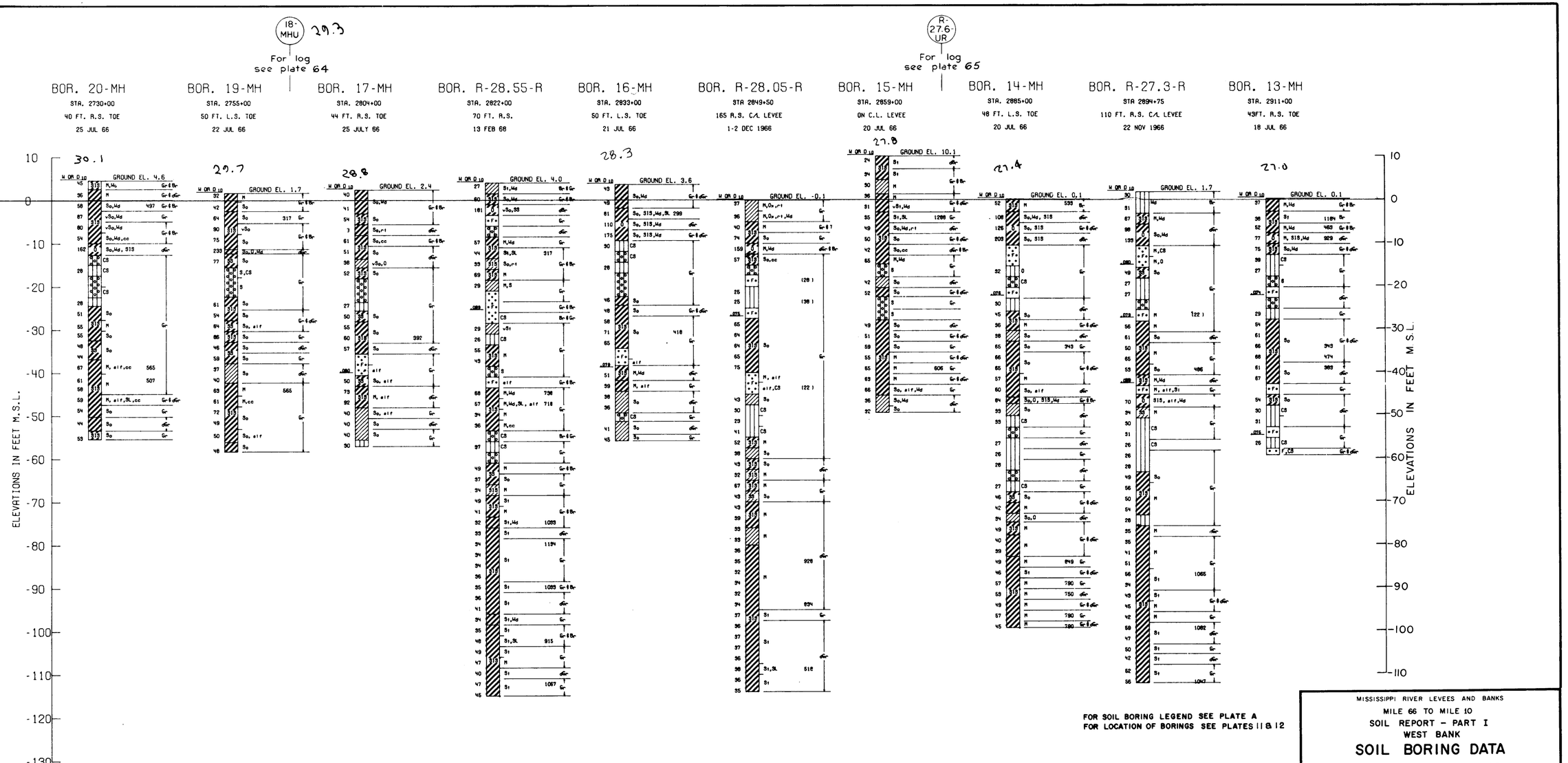
PLATE 28



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

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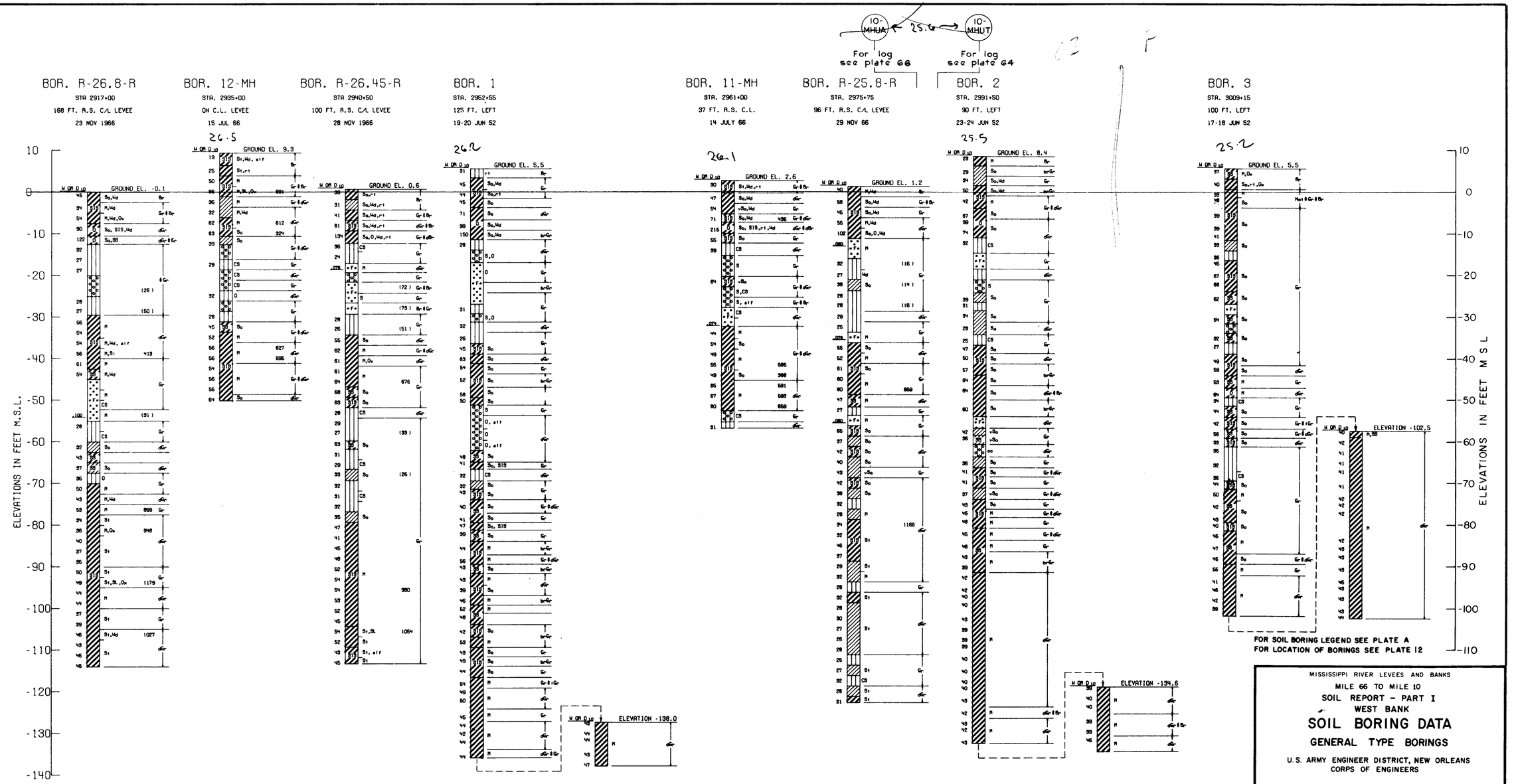
PLATE 29



MISSISSIPPI RIVER LEVEES AND BANKS

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PLATE 30

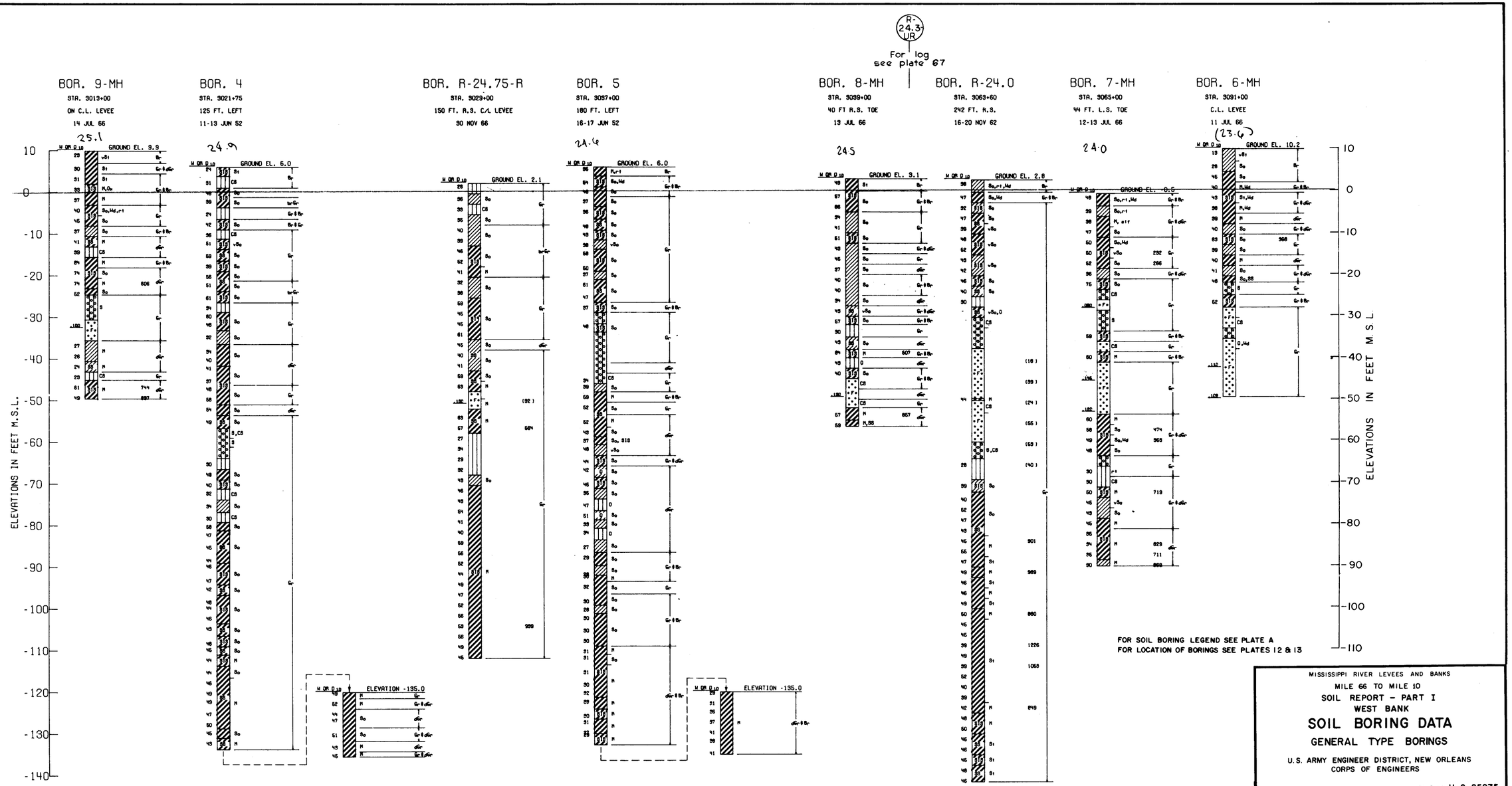
BOR. 9-MH
STA. 3013+00
ON C.L. LEVEE
14 JUL 66
25.1
GROUND EL. 9.9
BOR. 4
STA. 3021+75
125 FT. LEFT
11-13 JUN 52
24.9
GROUND EL. 6.0
ELEVATION -135.0
BOR. R-24.75-R
STA. 3029+00
150 FT. R.S. C/L LEVEE
30 NOV 66
GROUND EL. 2.1
BOR. 5
STA. 3037+00
180 FT. LEFT
16-17 JUN 52
24.4
GROUND EL. 6.0
ELEVATION -135.0
R-24.3 UR
For log see plate 67
BOR. 8-MH
STA. 3039+00
40 FT R.S. TOE
13 JUL 66
24.5
GROUND EL. 3.1
BOR. R-24.0
STA. 3063+60
242 FT. R.S.
16-20 NOV 62
GROUND EL. 2.8
BOR. 7-MH
STA. 3065+00
44 FT. L.S. TOE
12-13 JUL 66
24.0
GROUND EL. 0.5
BOR. 6-MH
STA. 3091+00
C.L. LEVEE
11 JUL 66
(23.6)
GROUND EL. 10.2
ELEVATIONS IN FEET M.S.L.
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
-100
-110
-120
-130
-140
ELEVATIONS IN FEET M. S. L.
FOR SOIL BORING LEGEND SEE PLATE A
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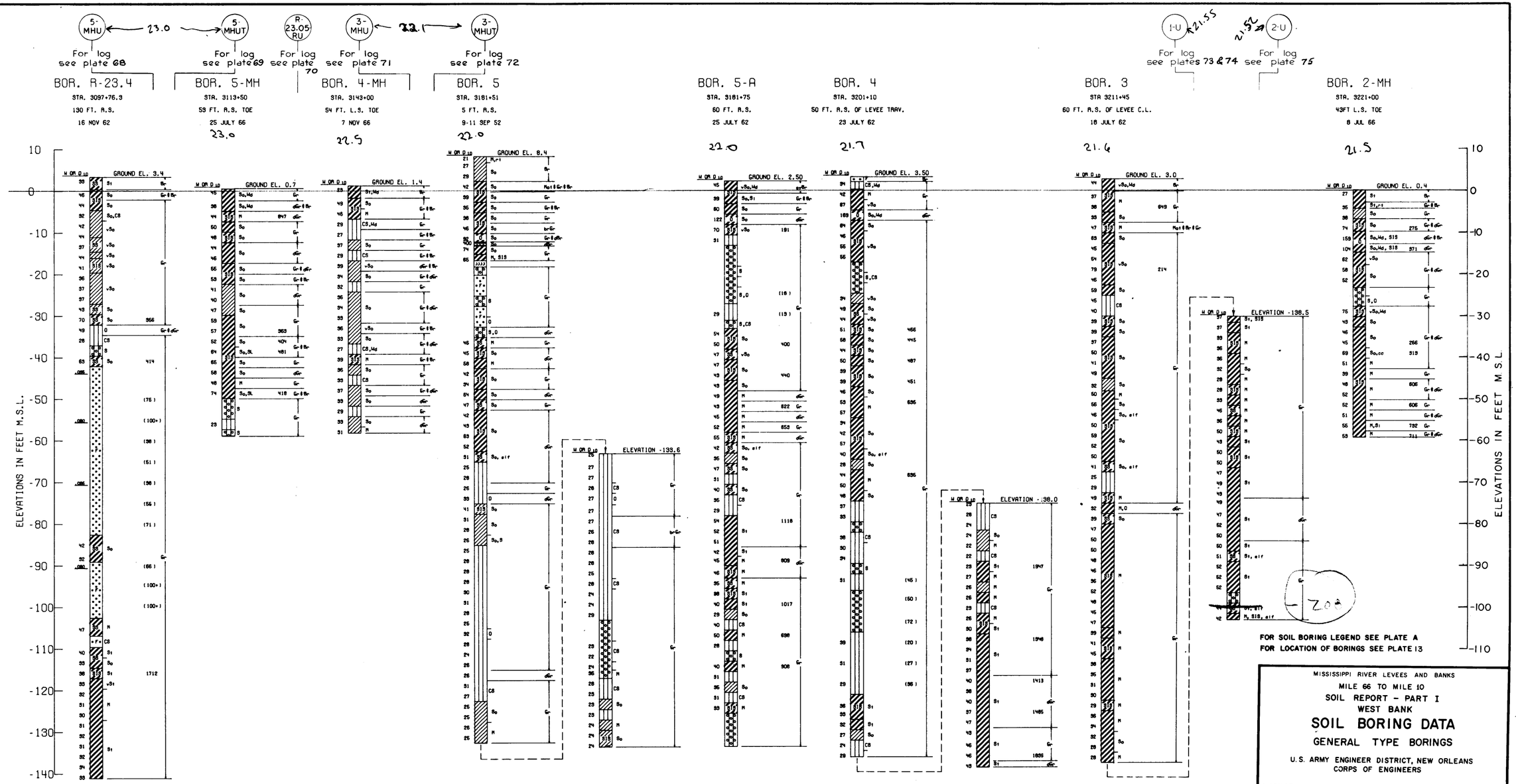
PLATE 31



MISSISSIPPI RIVER LEVEES AND BANKS
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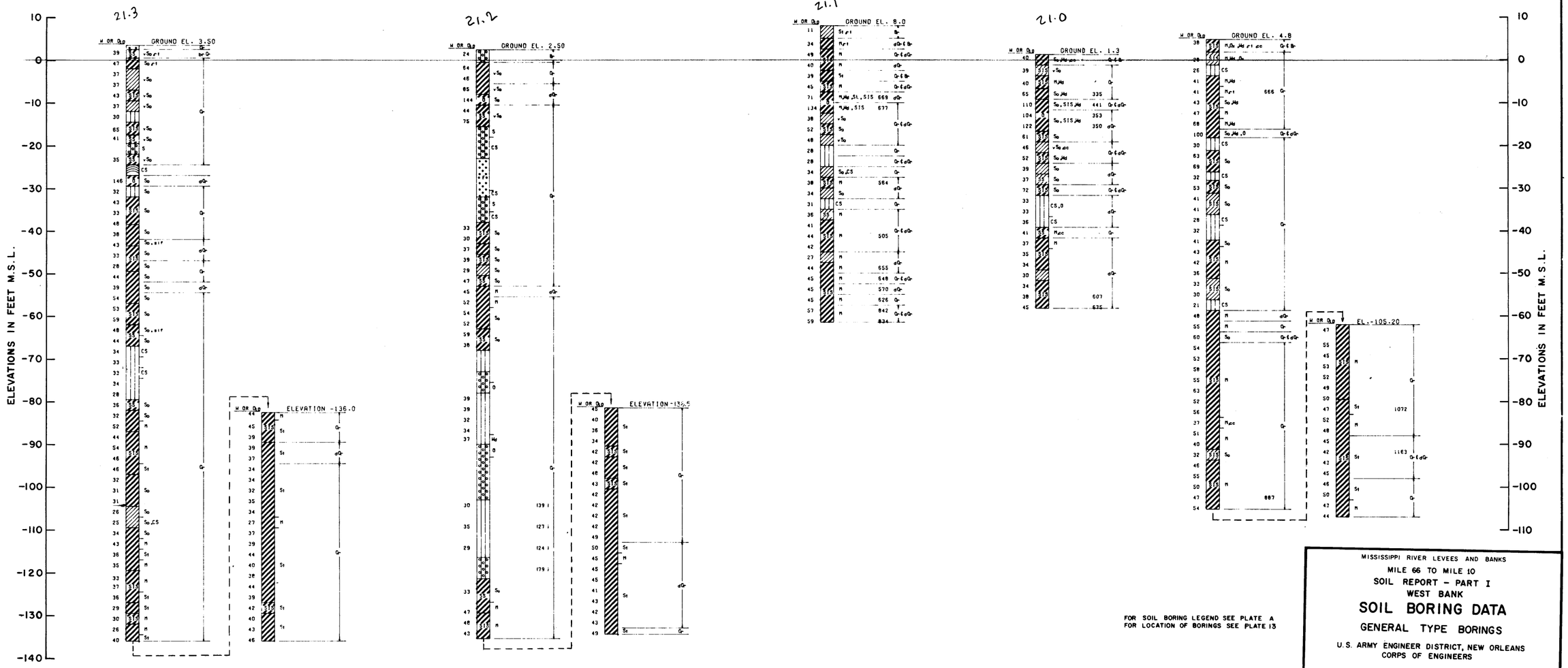
BOR. 2
STA. 3232+20
27.5 FT. R.S. LEVEE
17 JULY 62

BOR. 1
STA. 3241+50
290 FT. R.S. LEVEE C.L.
11 JULY 62

BOR. 1-MH
STA. 3247+00
ON C.L. LEVEE
7 JUL 66

BOR. 1
STA. 3251+00
30 FT. L.S. C/L LEVEE TOE
31 JAN 66

BOR. R-20.8-R
STA. 3252+00
125 FT. R.S. OF C.L. LEVEE
12-13 MAR 70



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

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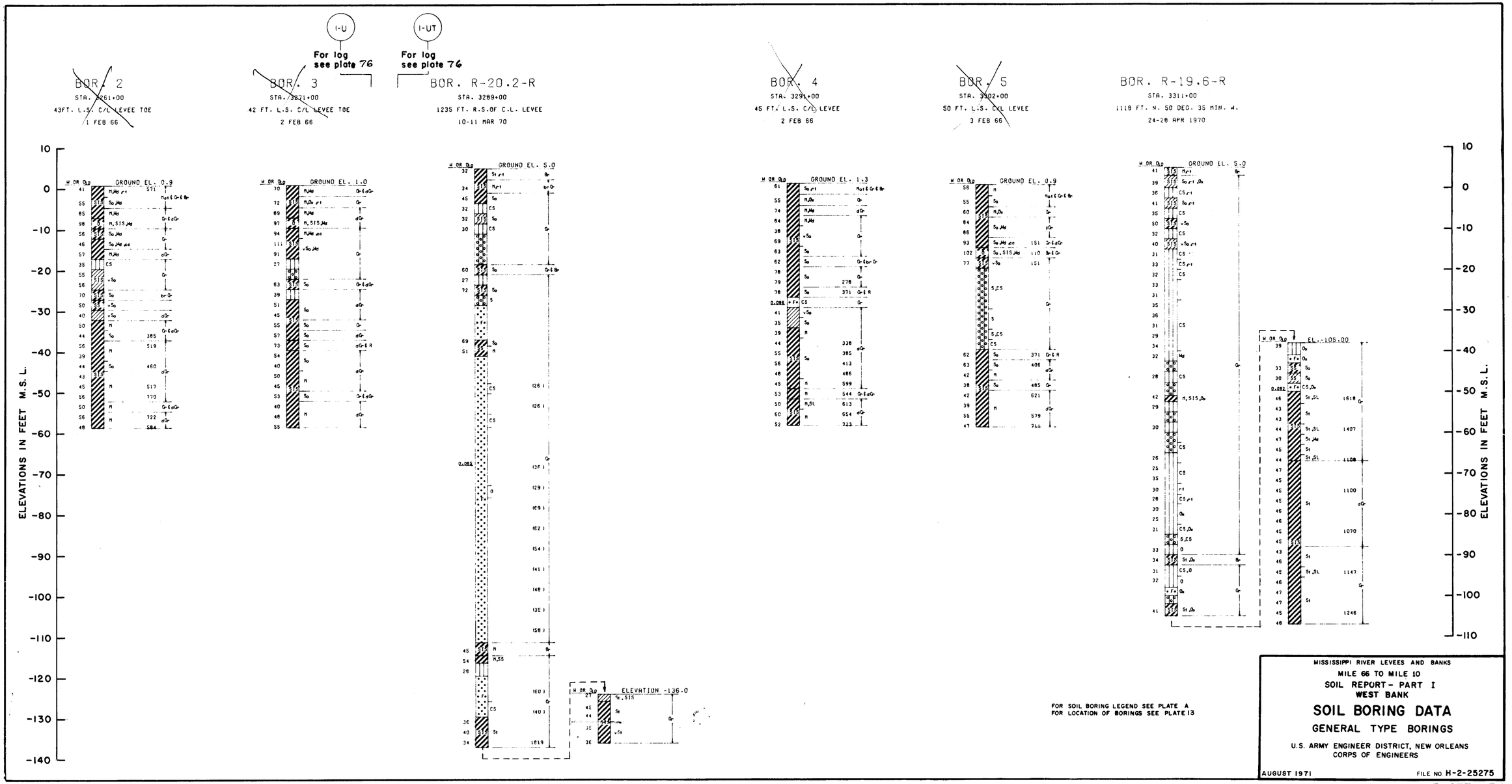

FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 13

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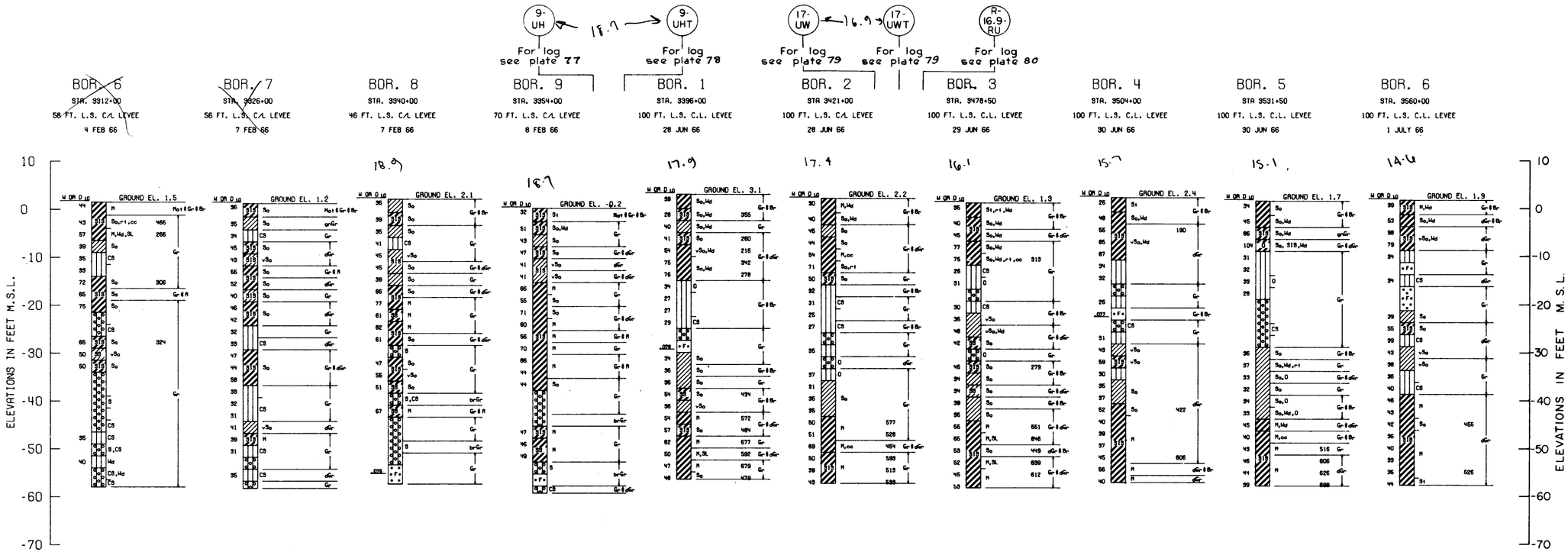
PLATE 34



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

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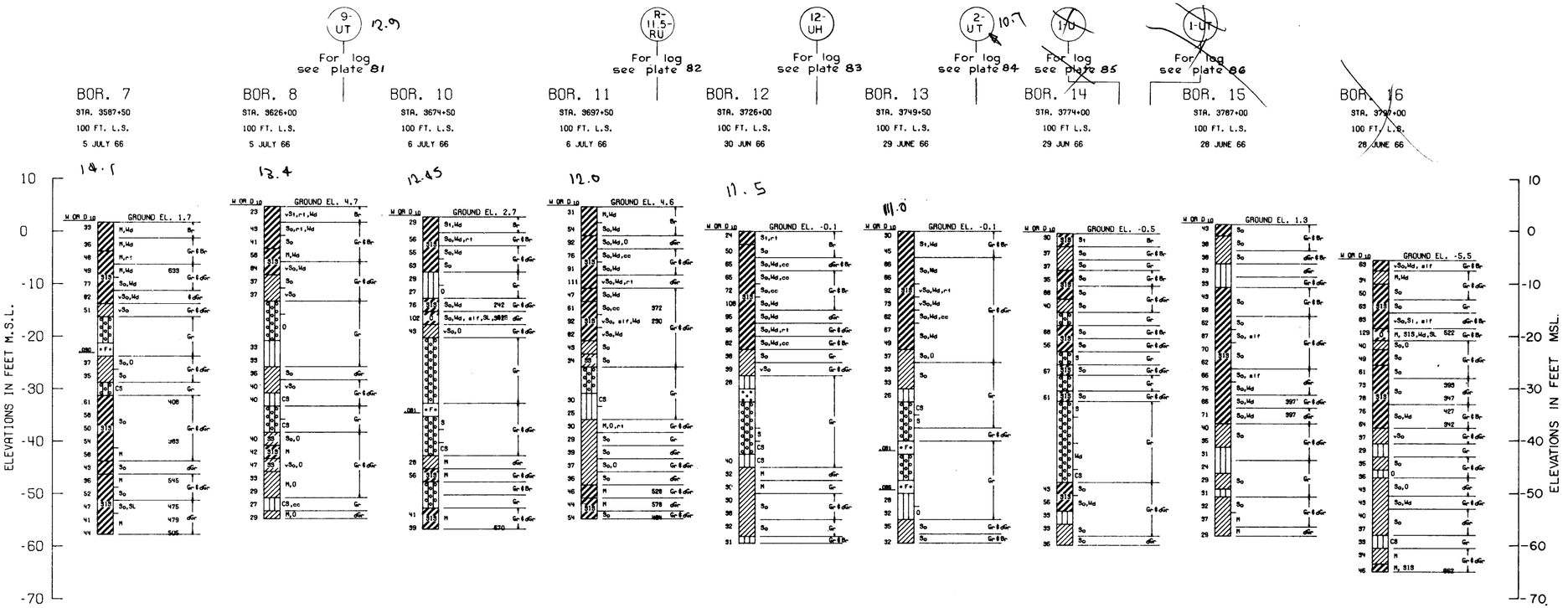
PLATE 35



FOR SOIL BORING LEGEND SEE PLATE A
FOR LOCATION OF BORINGS SEE PLATE 15

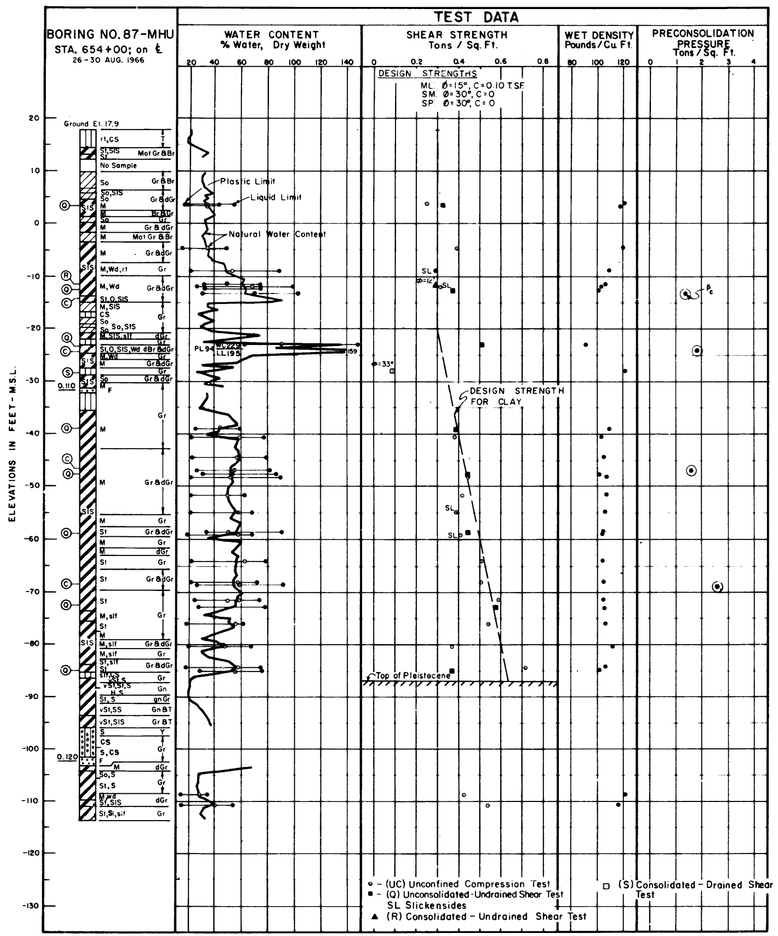
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
WEST BANK

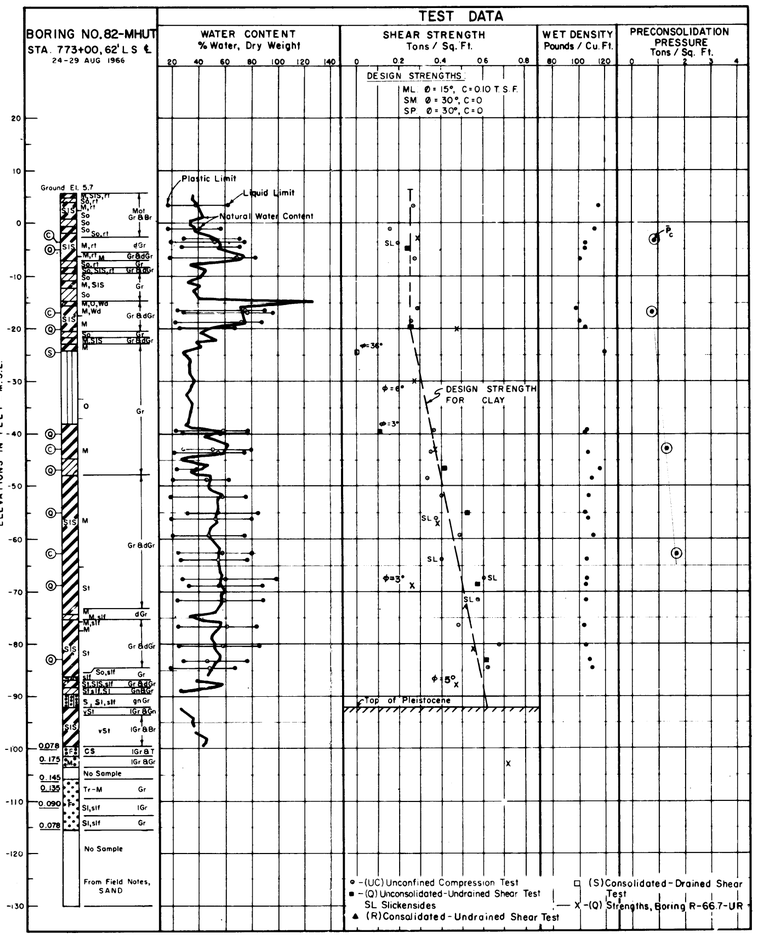
SOIL BORING DATA

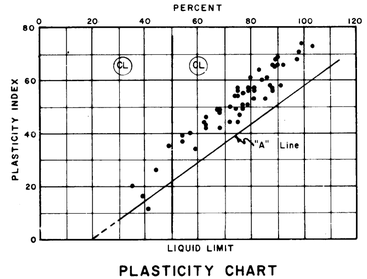
GENERAL TYPE BORINGS

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

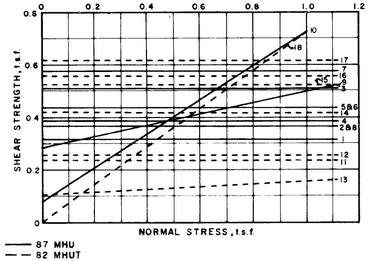
AUGUST 1971 FILE NO. H-2-25275





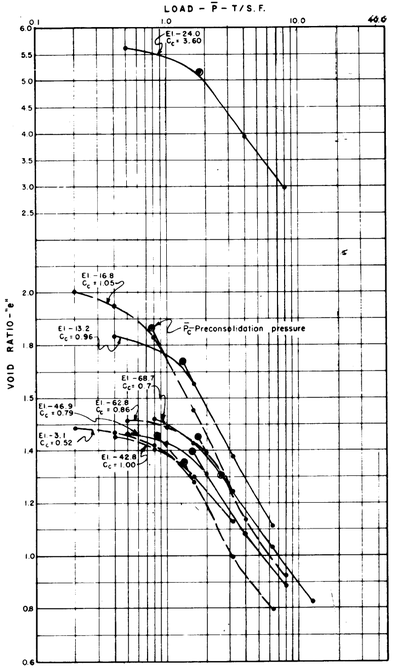


PLASTICITY CHART



BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH φ°	STRENGTH (t.s.f.)	CLASS
87 MHU	1	- 3.4	Q	0	0.32	CL
	2	- 12.5		0	0.37	CH
	3	- 23.1		0	0.51	OH
	4	- 39.0		0	0.39	CH
	5	- 47.7		0	0.44	CH
	6	- 58.6		0	0.44	CH
	7	- 72.8		0	0.58	CH
	8	- 85.1		0	0.37	CH
	9	- 11.4	R	12	0.29	CH
	10	- 28.1	S	33	0.08	ML
82 MHUT	11	- 4.8	Q	0	0.24	CH
	12	- 19.7		0	0.26	CH
	13	- 39.8		3	0.11	CH
	14	- 46.7		0	0.42	CL
	15	- 55.0		0	0.53	CH
	16	- 68.7		0	0.56	CH
	17	- 82.9		0	0.62	CH
	18	- 24.5	S	36	0.00	ML

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. 87-MHU
– – Boring No. 82-MHUT
For soil boring legend see plate A
For location of borings see plates 2 & 3

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
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SOIL BORING DATA

87-MHU - STA. 654+00
82-MHUT - STA. 773+00

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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PLATE 37

BOR. R-66.7-UR

STA. 804+50

346 FT. R.S.

24 SEPT 66

GROUND EL. 5.6

NO SAMPLE

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 TSF

SM ø=30°, C=0

SP ø=30°, C=0

Plastic Limit — Natural Water Content — Liquid Limit

WC 191 LL 178

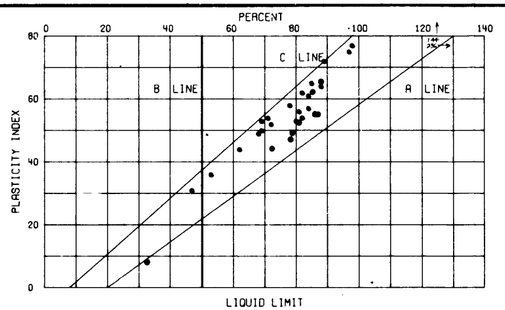
Design strength for clay

Top of Pleistocene

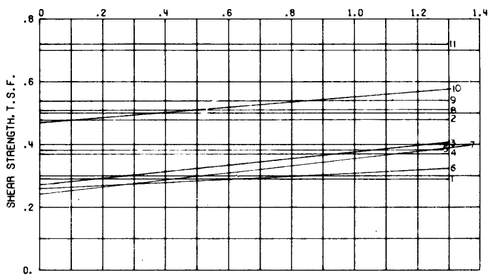
WET DENSITY POUNDS / CU.FT.

NORMAL STRESS TONS / SQ. FT.

X-(Q) Strengths, Boring 87-MHUT

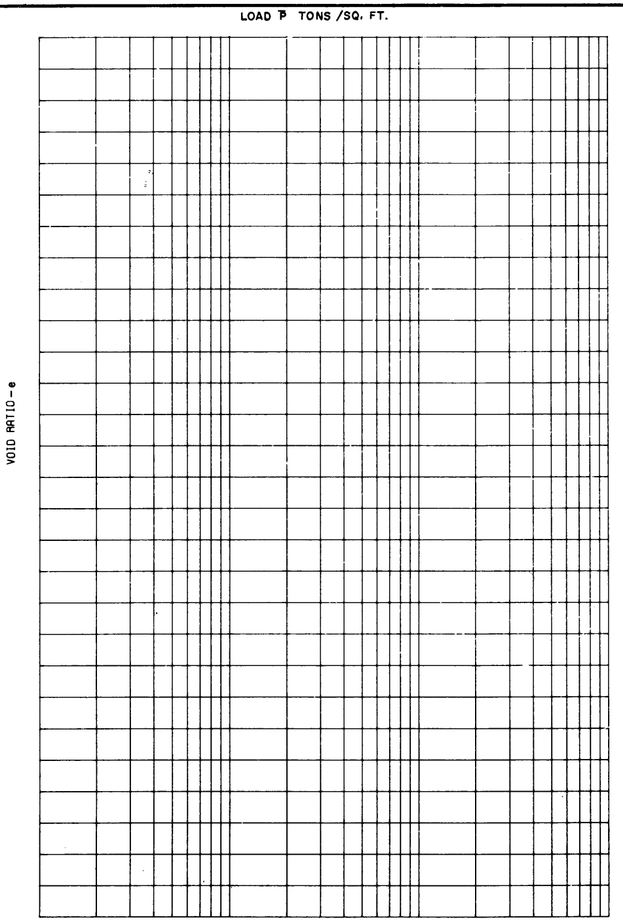


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-66.7-UR	1	- 3.0	Q	0°	0.29	CH
	2	-20.0	Q	0°	0.48	OH
	3	-30.1	Q	6°	0.27	ML
	4	-43.0	Q	0°	0.37	CH
	5	-56.9	Q	0°	0.38	CH
	6	-68.8	Q	3°	0.26	CH
	7	-68.8	R	12°	0.24	CH
	8	-72.6	Q	0°	0.51	CH
	9	-80.8	Q	0	0.54	CH
	10	-67.9	Q	5°	0.47	CH
	11	-102.9	Q	0°	0.72	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 3

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

WEST BANK

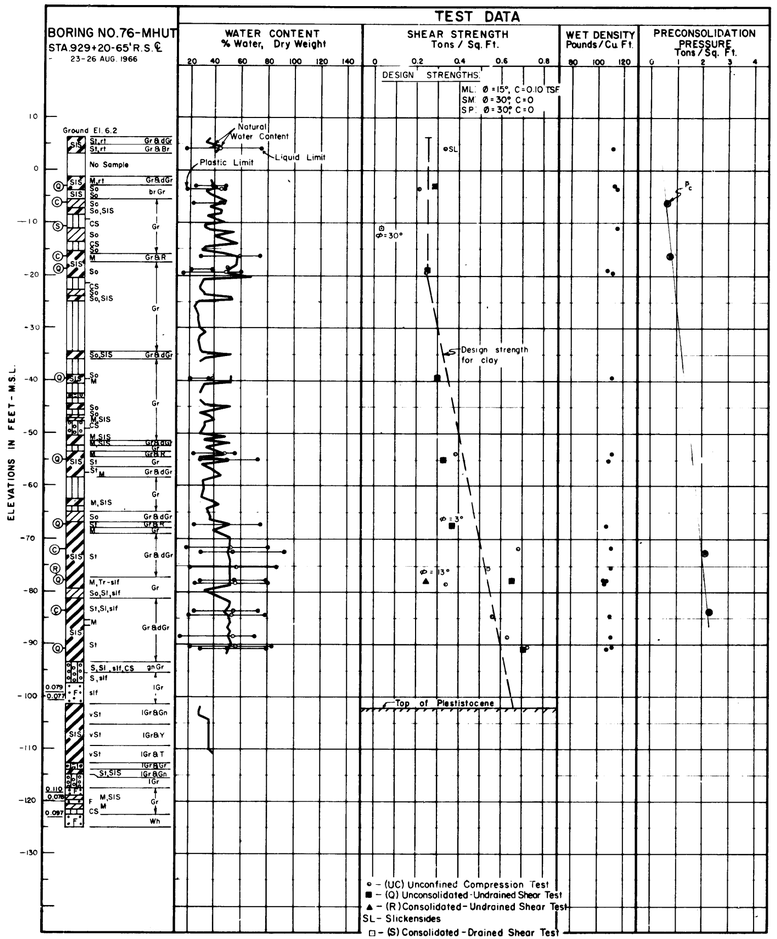
SOIL BORING DATA

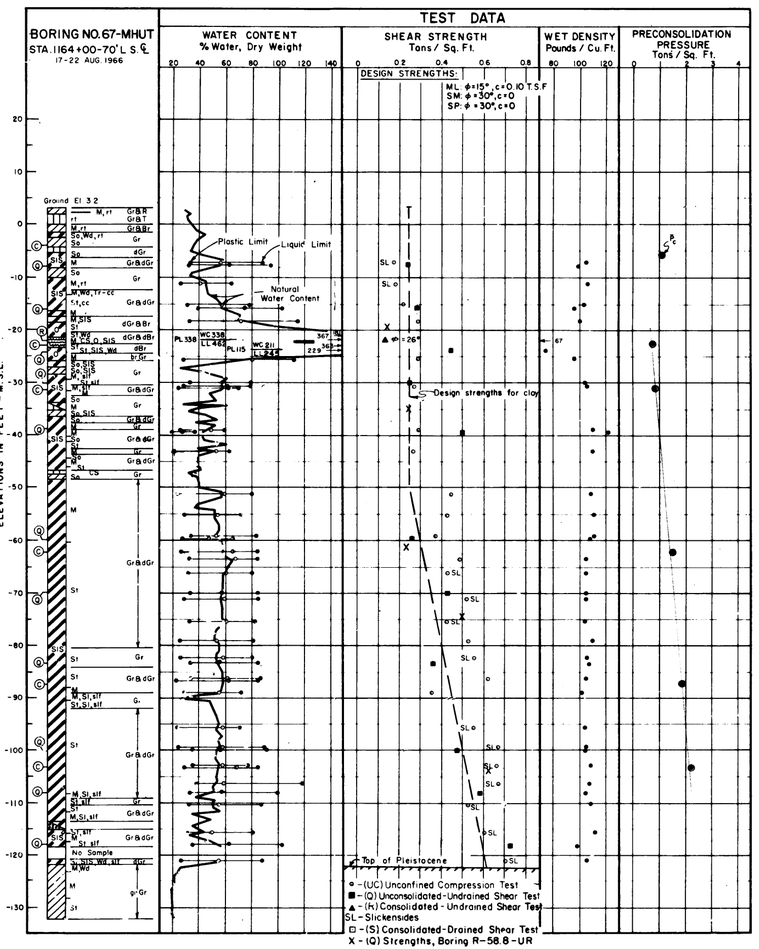
R-66.7-UR

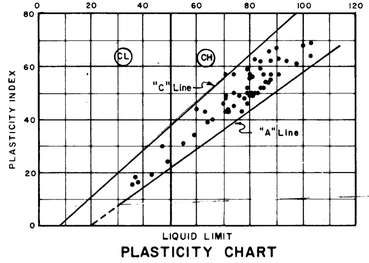
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

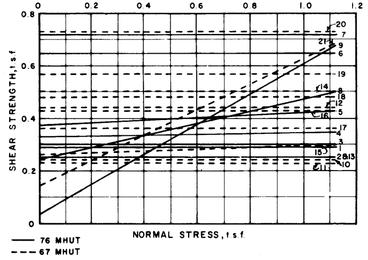
FILE NO. H-2-25275





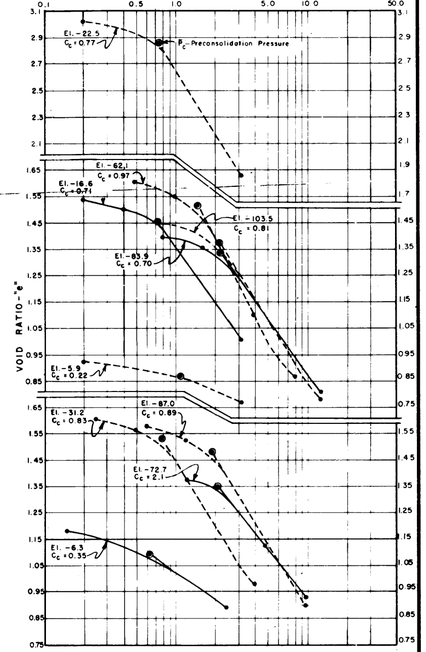


PLASTICITY CHART



BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH φ°	STRENGTH C (t s f)	CLASS
76 MHUT	1	- 3.2	Q	0	0.29	CL
	2	-18.8		0	0.25	CL
	3	-39.4		0	0.30	ML
	4	-55.2		1	0.33	CH
	5	-67.5		3	0.37	CH
	6	-78.0		0	0.65	CH
	7	-91.0		0	0.72	CH
	8	-78.0	R	13	0.24	CH
	9	-103	S	30	0.03	ML
67 MHUT	10	- 7.7	Q	0	0.24	CH
	11	-15.9		0	0.23	CH
	12	-23.9		0	0.44	OH
	13	-30.0		0	0.25	CH
	14	-39.6		0	0.50	CL
	15	-59.8		2	0.26	CH
	16	-70.0		0	0.43	CH
	17	-83.4		0	0.36	CH
	18	-99.8		0	0.48	CH
	19	-107.8		0	0.57	CH
	20	-118.0		0	0.73	CH
	21	-21.9	R	26	0.14	P1

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. 76 - MHUT
– – Boring No. 67 - MHUT
For soil boring legend see plate A
For location of borings see plates 3 & 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
WEST BANK

SOIL BORING DATA

76-MHUT - STA. 929+20
67-MHUT - STA. 1164+00

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

PLATE 39

BOR. R-59.5-UR

STA. 1195+61.8

63 FT R.S. C/L LEVEE

25 JUNE 56

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.

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

GROUND EL. 3.6

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

WC 171 LL 233 167
PL 242 WC 314 LL 443 331
PL 151 WC 272 LL 347 260

ϕ = 6°

Design strength for clay

ϕ = 3°

ϕ = 5°

NO SAMPLE

Top of Pleistocene

X - (Q) Strengths, Boring 67-MHUT

PLASTICITY INDEX

PERCENT
0 20 40 60 80 100 120 140

80 60 40 20 0

B LINE

C LINE

A LINE

LIQUID LIMIT

PLASTICITY CHART

SHEAR STRENGTH, T.S.F.

.8 .6 .4 .2 0.

0 .2 .4 .6 .8 1.0 1.2 1.4

NORMAL STRESS. T.S.F.

SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS

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 5

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

WEST BANK

SOIL BORING DATA

R-59.5-UR

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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AUGUST 1971

FILE NO H-2-25275

PLATE 40

BORING NO. R-58.8-RU

STA. 1232+50

140 FT. R.S. LEVEE C/L

20-27 DEC 68

GROUND EL. 5.8

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

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

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

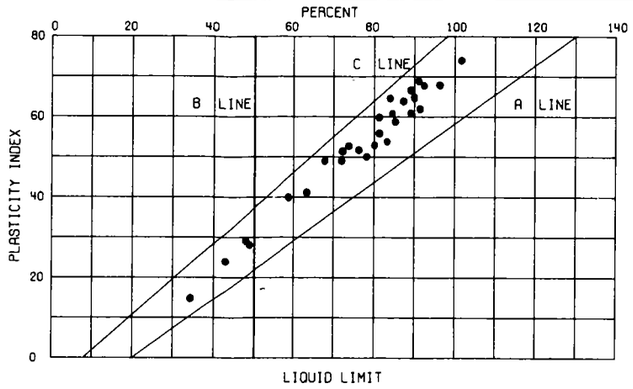
NORMAL STRESS
TONS / SQ. FT.
1.0 2.0 3.0 4.0

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

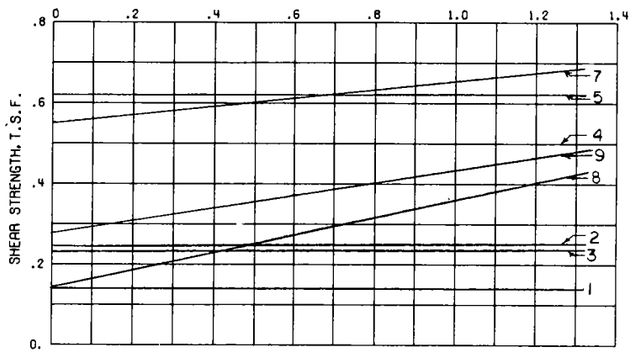
Natural Water Content
Liquid Limit
Plastic Limit
307
LL 200
210.0
Φ = 12°
Φ = 9°
Design strength for clay
Top of Pleistocene

NO SAMPLE

X-(Q) Strengths, Boring 67-MHUT



PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-58.8-RU	1	-19.5	Q	0°	.14	CH
	2	-34.4			.25	CH
	3	-63.3			.23	CH
	4	-74.3			.50	CH
	5	-103.2			.62	CH
	6	-126.3			.91	CH
	7	-142.2		6°	.55	CL
	8	-46.2	R	12°	.14	CH
	9	-94.2		9°	.28	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 5

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

SOIL BORING DATA

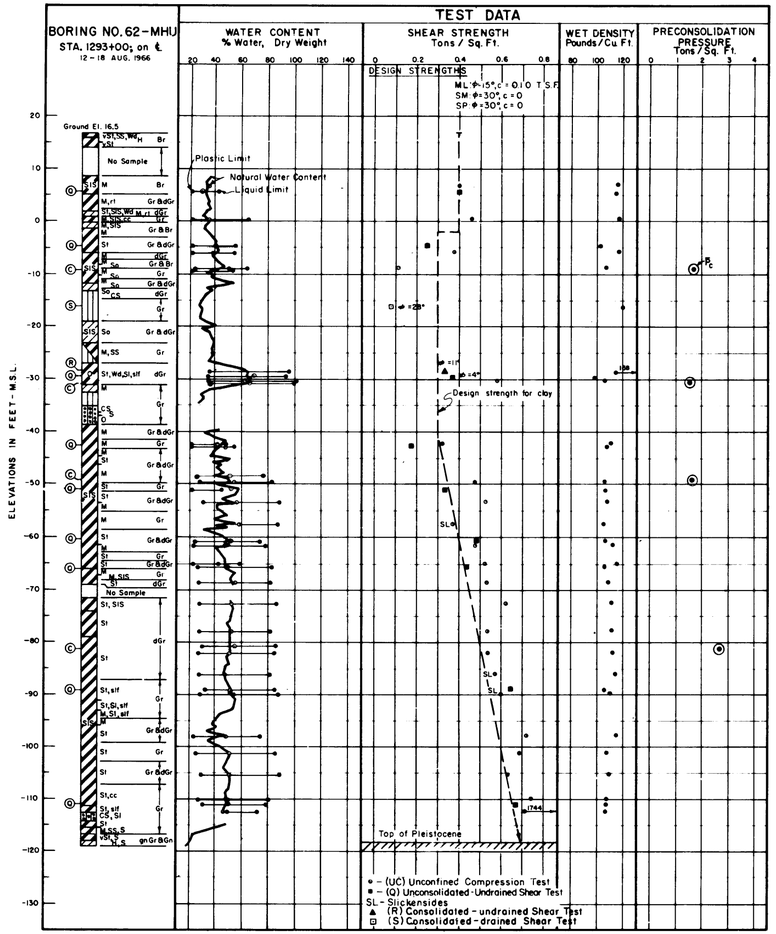
R-58.8-RU

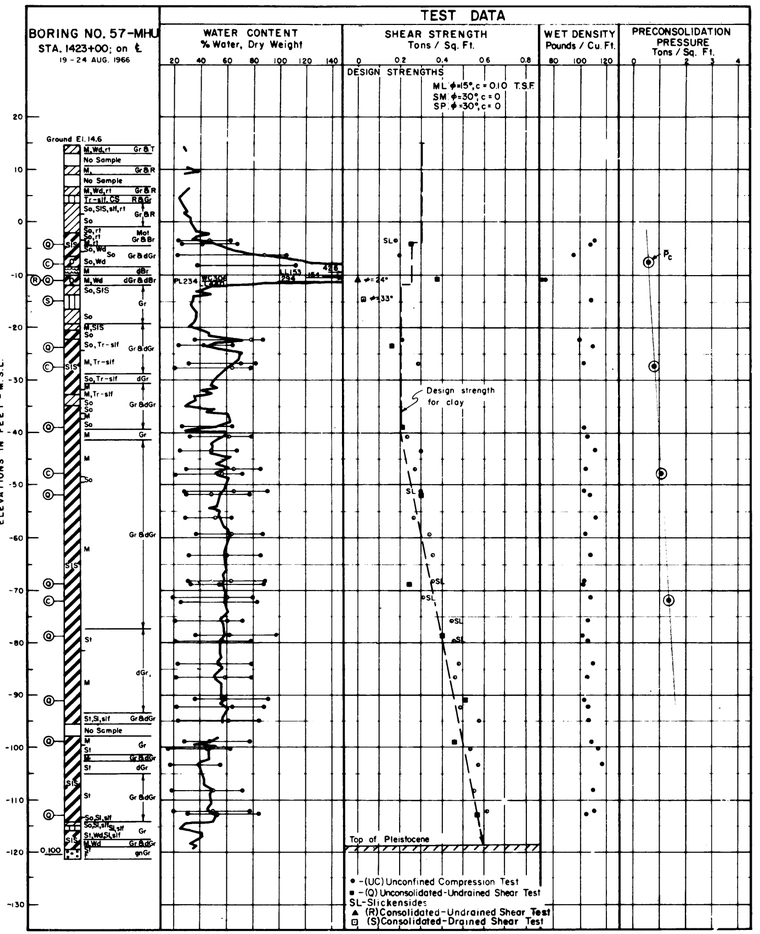
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

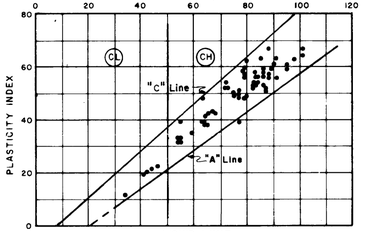
AUGUST 1971

FILE NO. H-2-25275

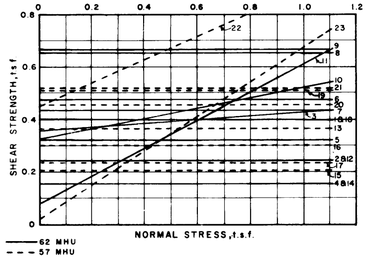
PLATE 41

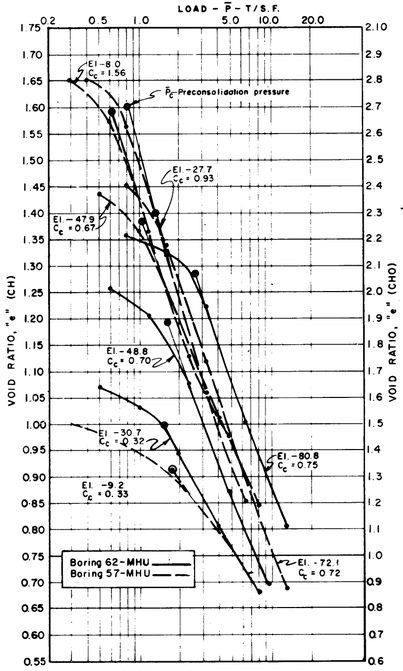






PLASTICITY CHART





CONSOLIDATION DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH φ°	STRENGTH (t.s.f.)	CLASS
62 MHU	1	+ 5.6		0	0.40	CL
	2	- 4.7		0	0.25	CH
	3	-29.4		4	0.36	CH
	4	-42.7		0	0.16	CH
	5	-50.7	Q	0	0.33	CL
	6	-60.5		0	0.48	CH
	7	-65.7		0	0.44	CH
	8	-88.7		0	0.66	CH
	9	-110.7		0	0.67	CH
	10	-28.6	R	11	0.33	CH
	11	-16.3	S	28	0.08	SM
57 MHU	12	- 4.2		0	0.25	CH
	13	-11.0		0	0.37	OH
	14	-23.6		0	0.16	CH
	15	-38.8		0	0.21	CH
	16	-51.8	Q	0	0.30	CH
	17	-68.9		0	0.24	CH
	18	-78.6		0	0.40	CH
	19	-90.7		0	0.51	CH
	20	-98.7		0	0.46	CH
	21	-112.7		0	0.52	CH
	22	-11.0	R	24	0.45	OH
	23	-14.8	S	33	0.02	SM

SHEAR STRENGTH DATA

—— Boring No. 62-MHU
– – Boring No. 57-MHU
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
WEST BANK

SOIL BORING DATA

62-MHU - STA. 1293+00
57-MHU - STA. 1423+00

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

PLATE 42

BOR. NO. 57-MHUT

STA. 1423+00

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

23 OCT 69

GROUND EL. 5.0

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

Plastic Limit
Natural Water Content
Liquid Limit
PL 509, LL 697, WC 535

SHEAR STRENGTH
TONS / SQ. FT.

DESIGN STRENGTHS:
ML: φ = 15° c = 0.10 TSF
SM: φ = 30° c = 0
SP: φ = 30° c = 0

Design strength for clay

To 1.00 t.s.f. at El. -200, Top of Pleistocene

X(Q) STRENGTHS, BORING R-54.5RU

WET DENSITY
POUNDS / CU. FT.

NORMAL STRESS
TONS / SQ. FT.

$\bar{P}_c$

PLASTICITY CHART

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

B LINE

C LINE

A 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
57 MHUT	1	0.4	Q	0	0.200	CH
	2	-3.9		0	0.140	CH
	3	- 8.2		0	0.400	PT
	4	-24.1		0	0.220	CH
	5	-36.4		0	0.260	CH
	6	-49.1		0	0.250	CH
	7	-60.8		0	0.290	CH
	8	-76.1		0	0.400	CH
	9	-88.9		0	0.360	CH
	10	-100.1		0	0.550	CH

LOAD P TONS / SQ. FT.

VOID RATIO - e

El. -4.8
Cc = 0.980
Pc = .718

El. -23.2
Cc = 1.262
Pc = 0.88

El. -77.0
Cc = 0.664
Pc = 1.71

El. -42.1
Cc = 0.698
Pc = 1.03

El. -9.1
Cc = 4.983
Pc = 0.760

P_c = Preconsolidation 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 BOPING 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

WEST BANK

SOIL BORING DATA

57-MHUT

U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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AUGUST 1971

FILE NO. H-2-25275

BORING NO. R-54.5-RU

STA. 1453+50

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

17-19 DEC 68

GROUND EL. 3.0

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

Natural Water Content

Liquid Limit

Plastic Limit

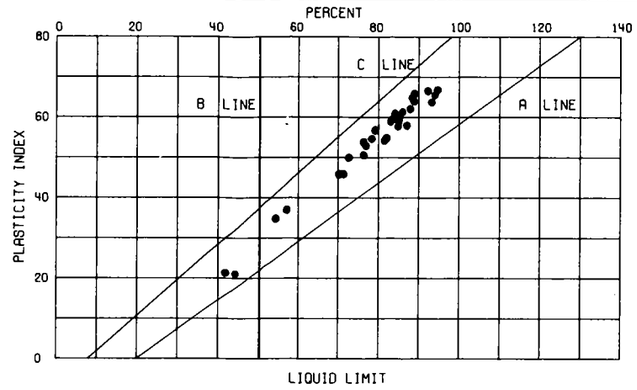
Ø=15°

Design strength for clay

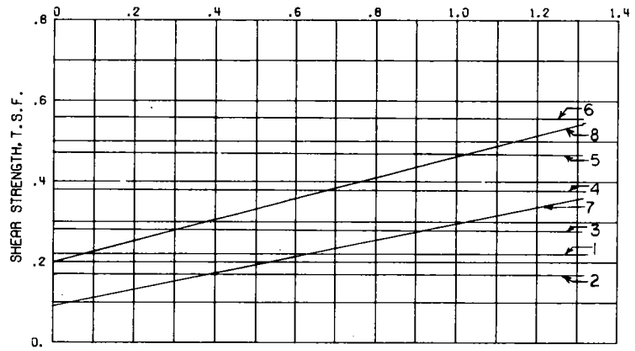
ØH2°

Top of Pleistocene

X-(Q) Strengths, Boring 57-MHUT



PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-54.5-RU	1	-22.1	Q	0°	.22	CH
	2	-35.0			.17	CL
	3	-50.1			.28	CH
	4	-73.1			.38	CH
	5	-90.1			.47	CH
	6	-110.5			.56	CH
	7	-29.2	R	15°	.09	CH
	8	-85.1		12°	.20	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 3 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

WEST BANK

SOIL BORING DATA

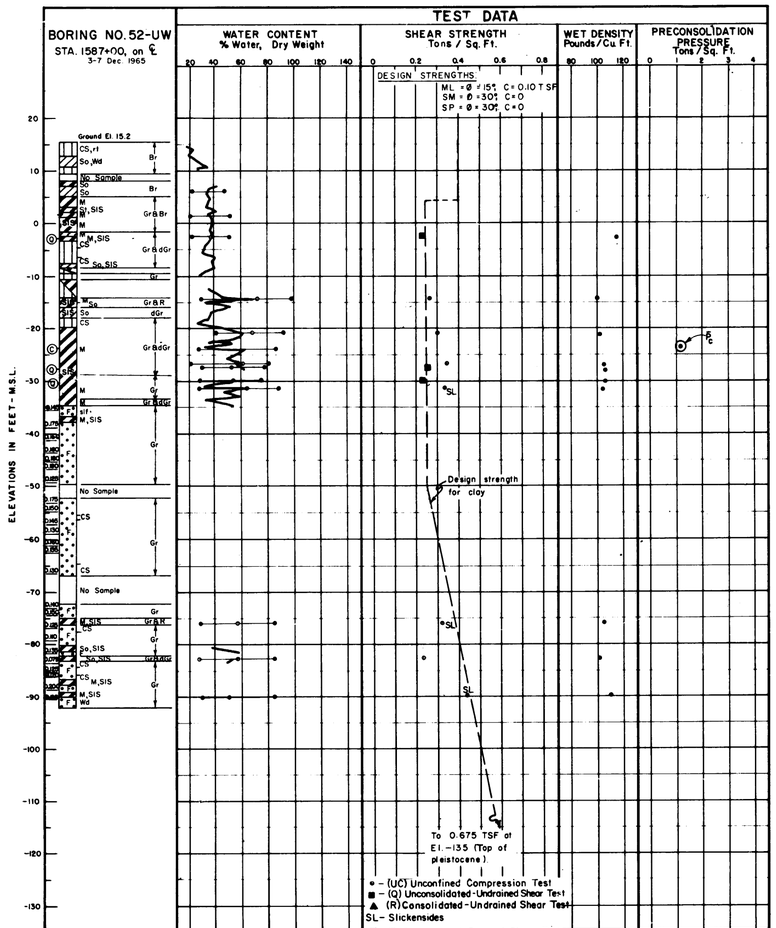
R-54.5-RU

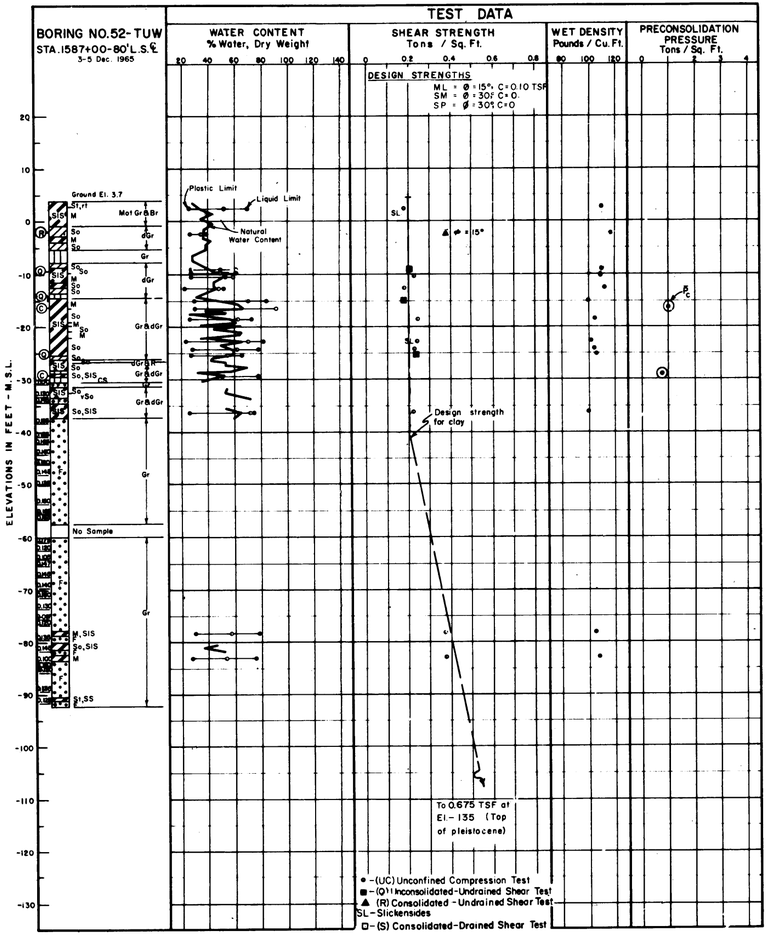
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

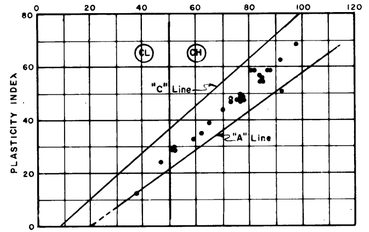
AUGUST 1971

FILE NO. H-2-25275

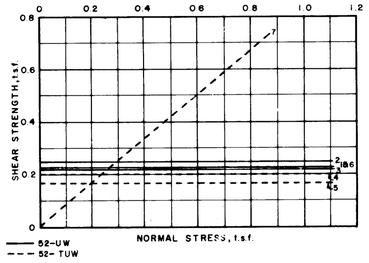
PLATE 44

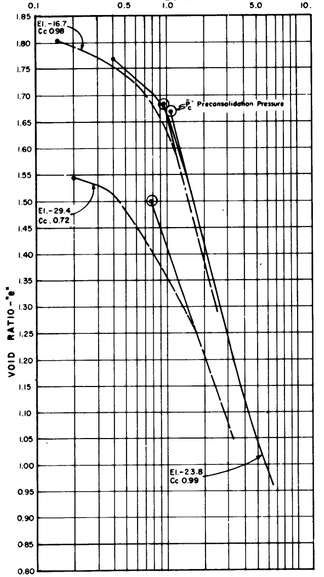






PLASTICITY CHART





BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Ø°	STRENGTH C (t.s.f.)	CLASS
52-UW	1	-2.5	Q	0	0.23	CH
	2	-27.8		0	0.25	CH
	3	-30.1		0	0.22	CH
52-TUW	4	-9.7	Q	0	0.20	CH
	5	-15.1		0	0.17	CH
	6	-25.5		0	0.23	CH
	7	-2.3	✱ R	40	0.00	CL

✱ BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE: Ø = 18.3°, C = 0.06 TSF

SHEAR STRENGTH DATA

CONSOLIDATION DATA

—— Boring No. 52-UW
— — Boring No. 52-TUW
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
WEST BANK

SOIL BORING DATA

52-UW AND 52-TUW
STA. 1587+00
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 45

BOR. R-49.7-RU

STA. 1709+50

185 FT. R.S.

16 OCT 69

GROUND EL. 3.2

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

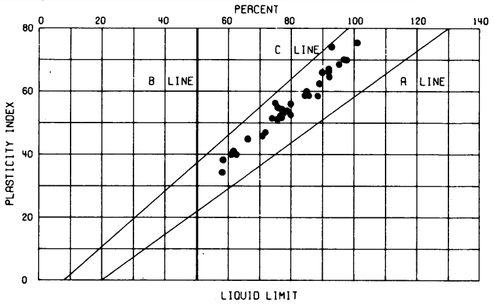
Natural Water Content

Liquid Limit

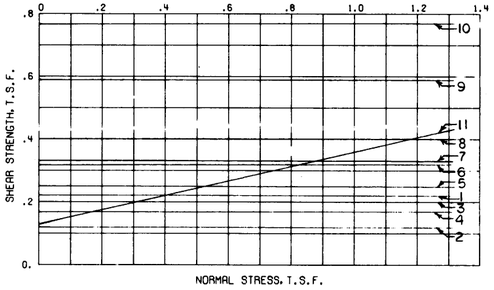
Design Strength for clay

To 0.69 t.s.f at El-138.5, Top of Pleistocene

X-(Q) Strengths. Boring 43-MHUT

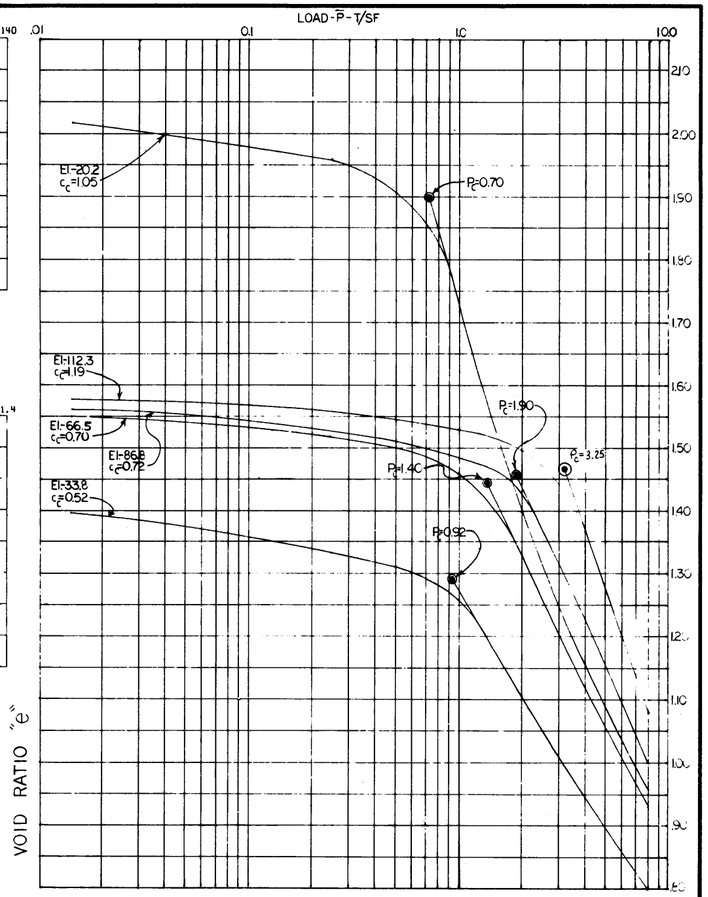


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-49.7-RU	1	-4.9			.22	CH
	2	-10.9			.12	CH
	3	-22.9			.20	CH
	4	-32.2			.17	CH
	5	-41.9	Q	0°	.25	CH
	6	-48.3			.32	CH
	7	-72.7			.33	CH
	8	-82.9			.40	CH
	9	-94.0			.59	CH
	10	-109.1			.77	CH
	11	-68.2	R	13°	.13	CH



CONSOLIDATION DATA
E-LOG. P CURVES

○- (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
WEST BANK

SOIL BORING DATA

R-49.7-RU

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

AUGUST 1971

FILE NO. H-2-25275

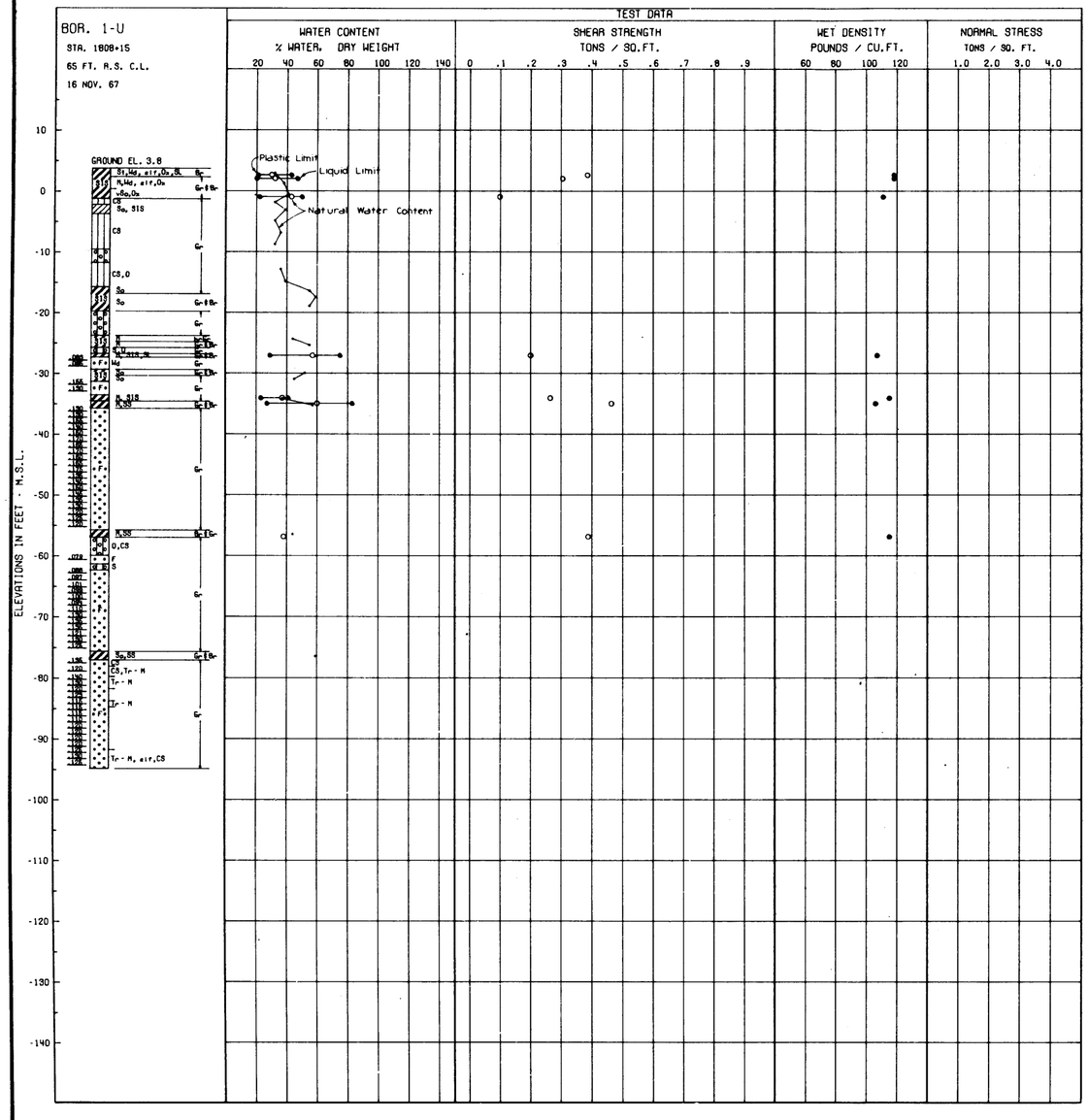
PLATE 46

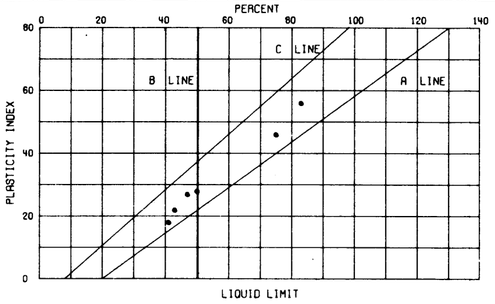
BOR. 1-U

STA. 1808+15

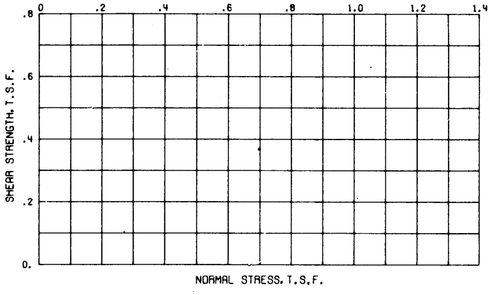
65 FT. R.S. C.L.

16 NOV. 67



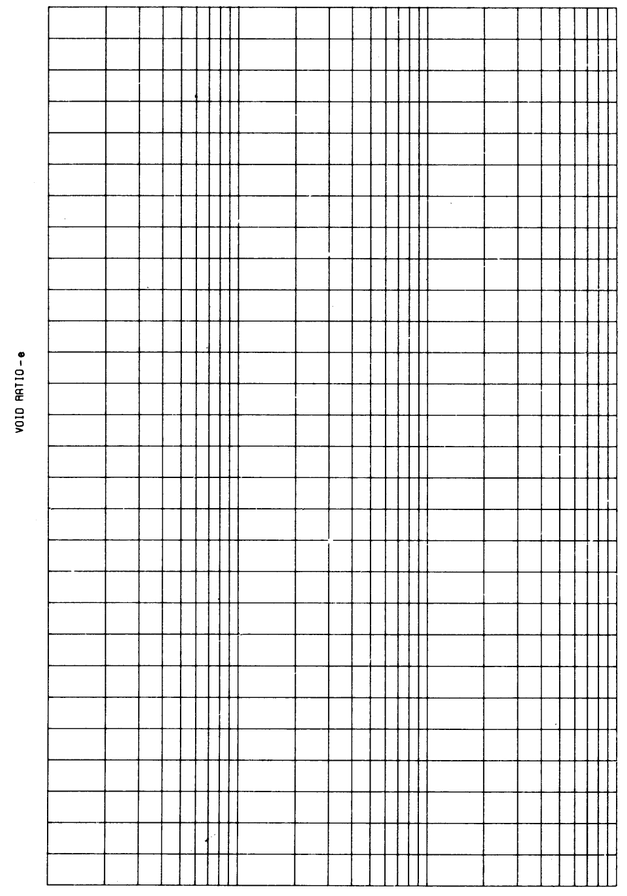


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS



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

WEST BANK

SOIL BORING DATA

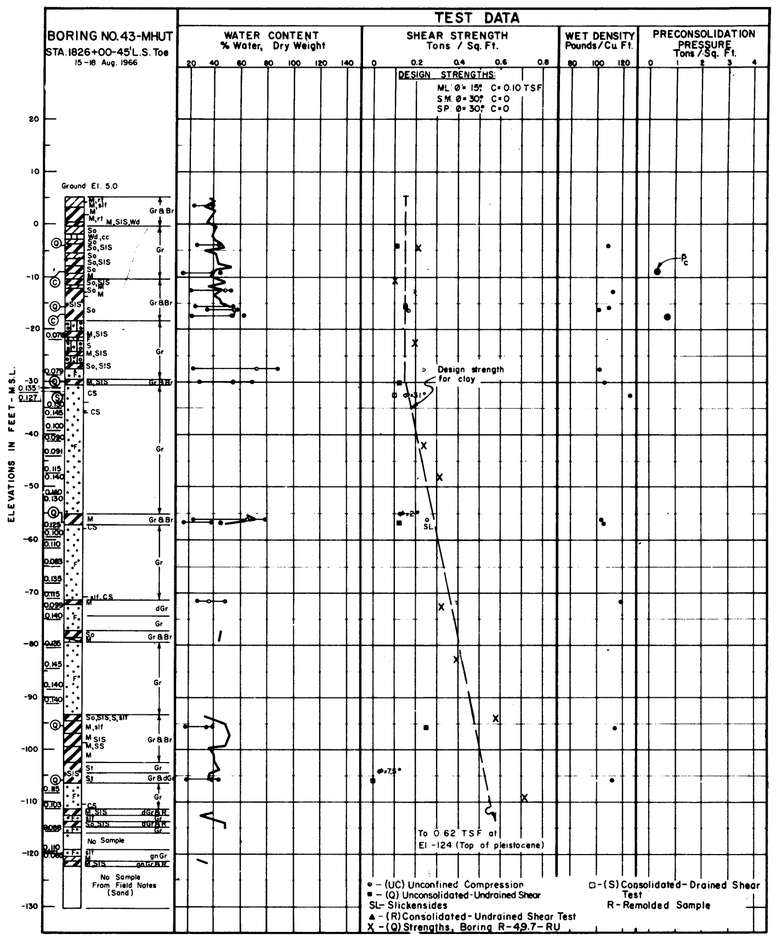
I-U

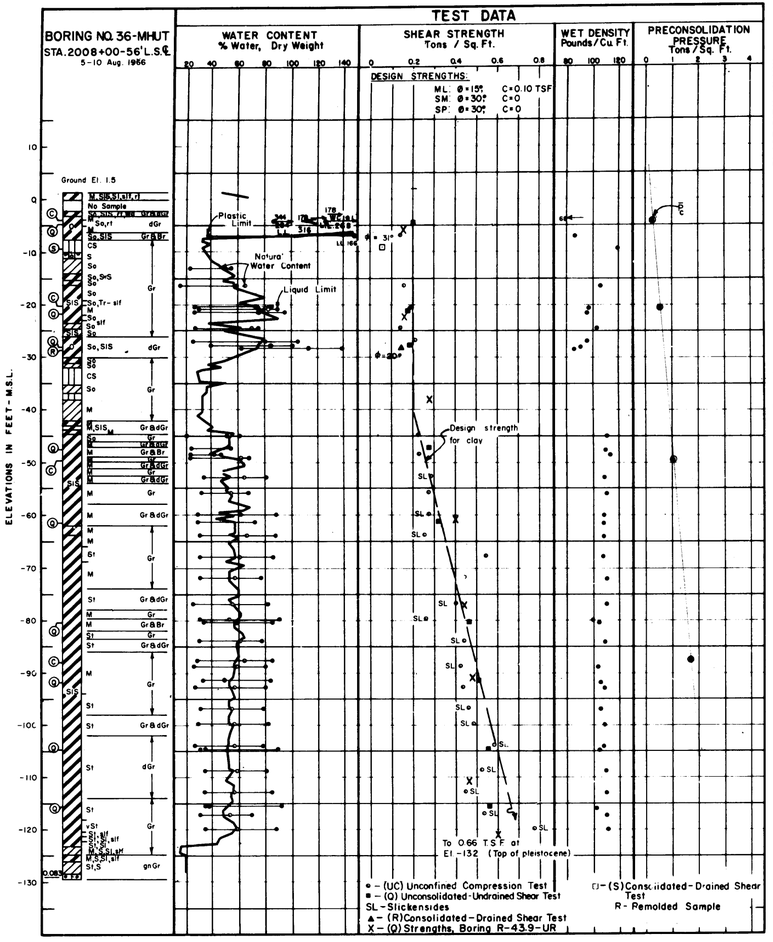
STA. 1808+15

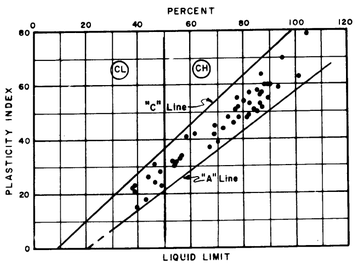
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

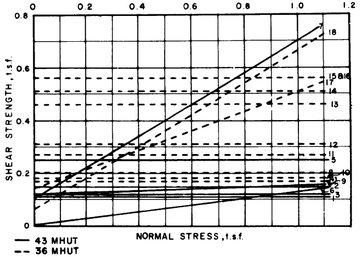
FILE NO. M-2-25275





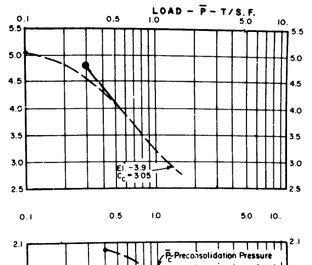


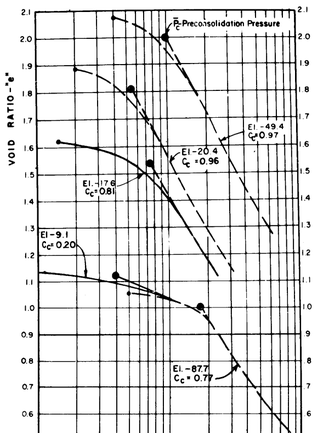
PLASTICITY CHART



BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Ø°	STRENGTH C (t.s.f.)	CLASS
43 MHUT	1	- 4.0	Q	0	0.11	CL
	2	- 15.7		0	0.15	CH
	3	-30.0		0	0.12	CH
	4	-56.8		2	0.12	CL
	5	-95.8		0	0.25	CL
	6	-105.8		7.5	0.00	CL
	7	-32.3	S	31	0.10	SM
36 MHUT	8	- 4.6	Q	0	0.20	CH
	9	- 21.5		0	0.17	CH
	10	- 27.8		0	0.18	CH
	11	- 47.5		0	0.27	CH
	12	- 61.5		0	0.31	CH
	13	- 80.5		0	0.46	CH
	14	- 91.7		0	0.51	CH
	15	-104.7		0	0.56	CH
	16	-115.7		0	0.56	CH
	17	- 28.5	R	20	0.14	OH
	18	- 9.3	S	31	0.06	SM

SHEAR STRENGTH DATA





CONSOLIDATION DATA

—— Boring No. 43-MHUT
– – Boring No. 36-MHUT
For soil boring legend see plate A
For location of borings see plates 7 & 8

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
WEST BANK

SOIL BORING DATA

43-MHUT - STA. 1826+00
36-MHUT - STA 2008+00

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

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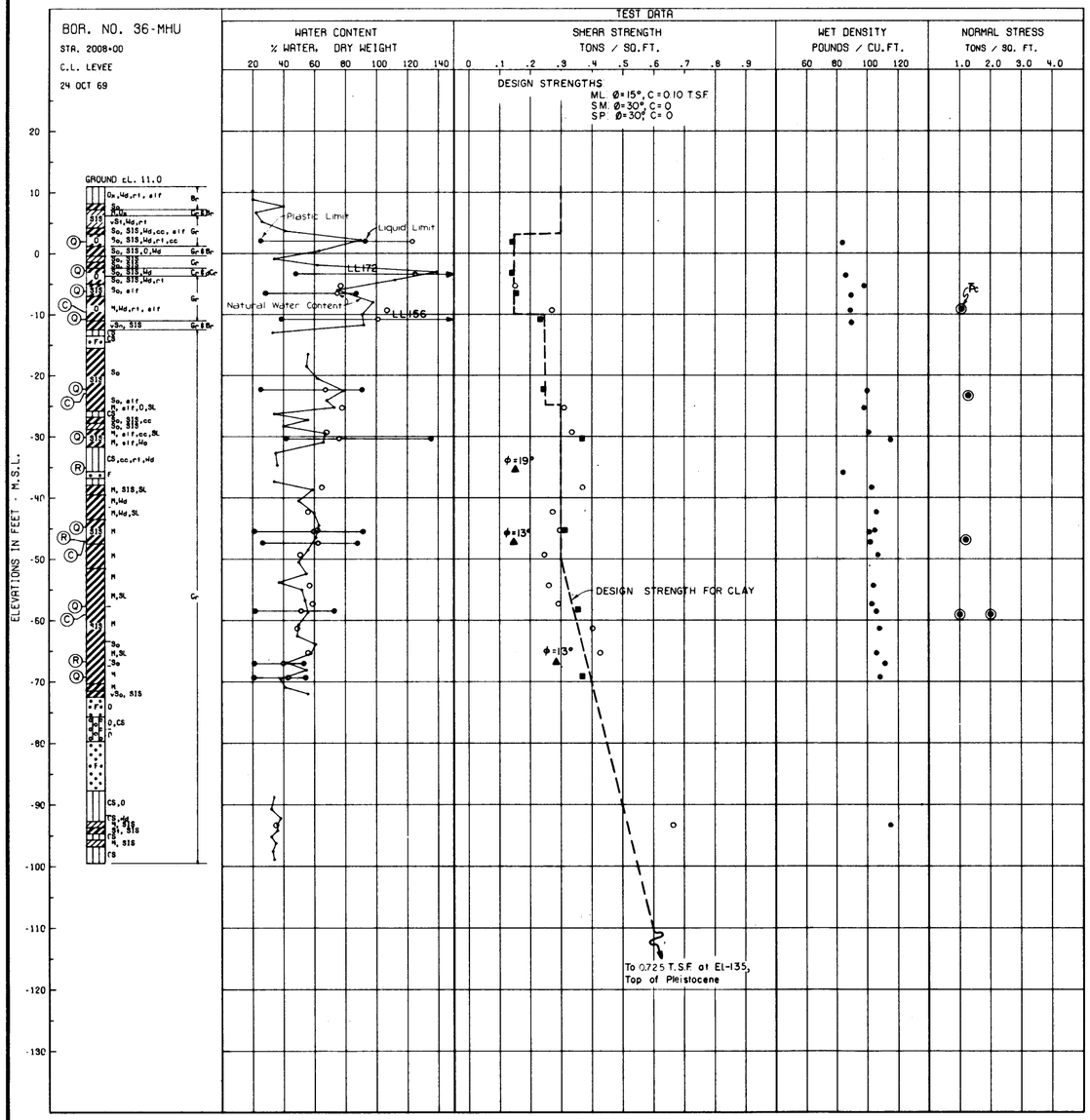
PLATE 48

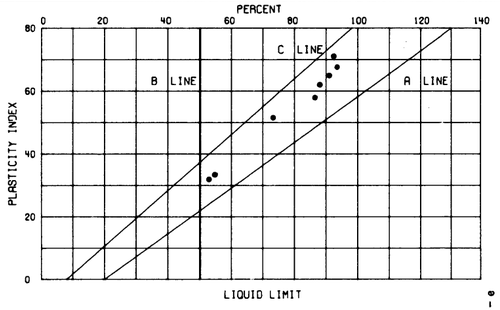
BOR. NO. 36-MHU

STA. 2008+00

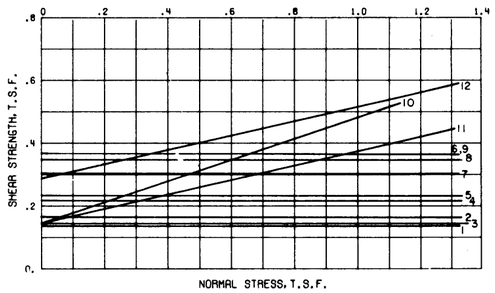
C.L. LEVEE

24 OCT 69





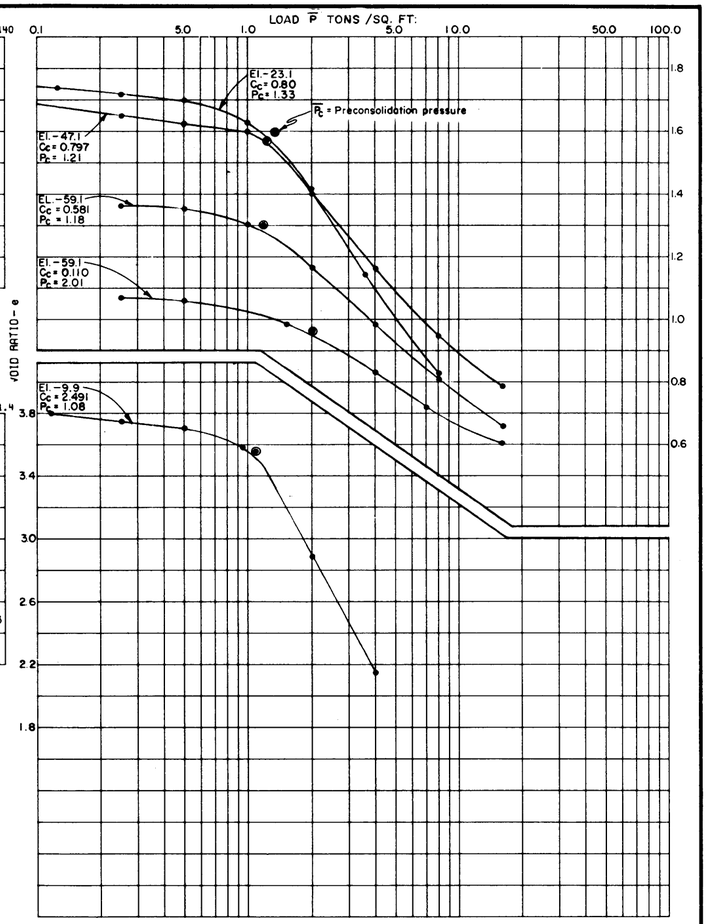
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
36-MHU	1	1.9	Q	0	0.140	CH
	2	-3.1		0	0.170	CH
	3	-6.2		0	0.150	CH
	4	-10.8		0	0.220	CH
	5	-22.2		0	0.240	CH
	6	-30.2		0	0.370	CH
	7	-45.3		0	0.310	CH
	8	-58.2		0	0.350	CH
	9	-69.3		0	0.370	CH
	10	-35.2	R	*19°	0.150	ML
	11	-47.1		13°	0.150	CH
	12	-66.7		13°	0.290	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 5 INCH DIAMETER STEEL TUBE PISTON TYPE SAMPLER

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE B

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

WEST BANK

SOIL BORING DATA

36-MHU

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

AUGUST 1971

FILE NO. H-2-25275

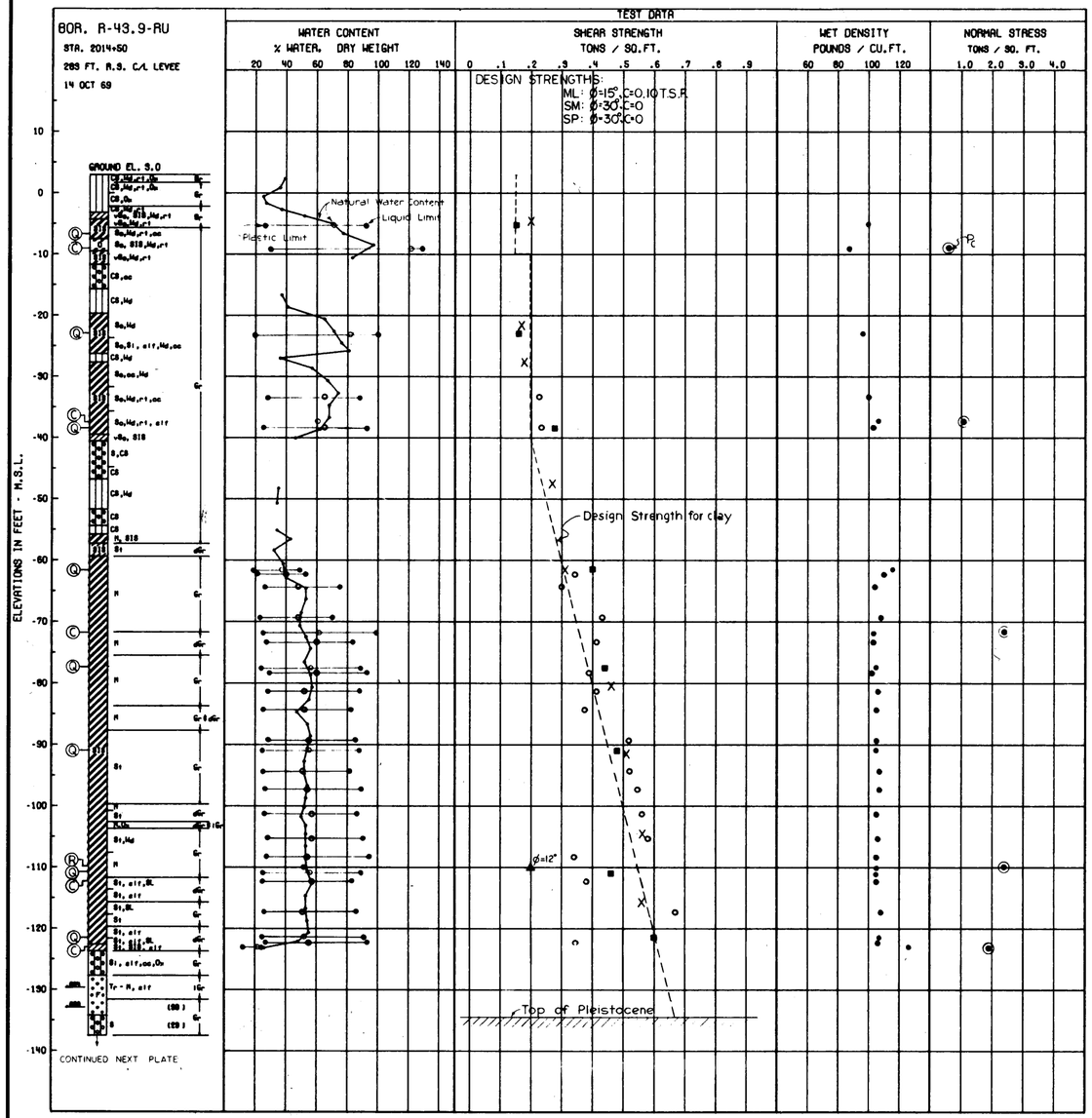
PLATE 49

BOR. R-43.9-RU

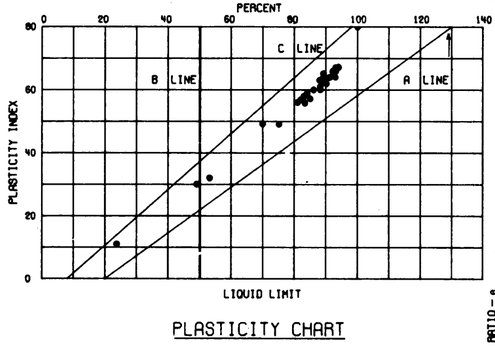
STA. 2014+50

289 FT. R.S. C/L LEVEE

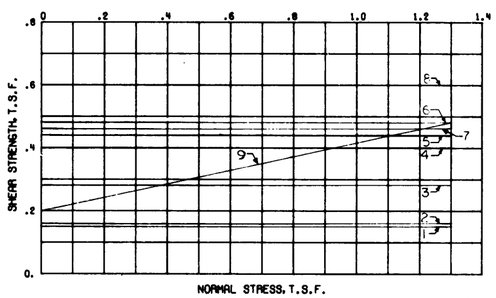
14 OCT 69



X-(Q) Strengths, Boring 36-MHUT

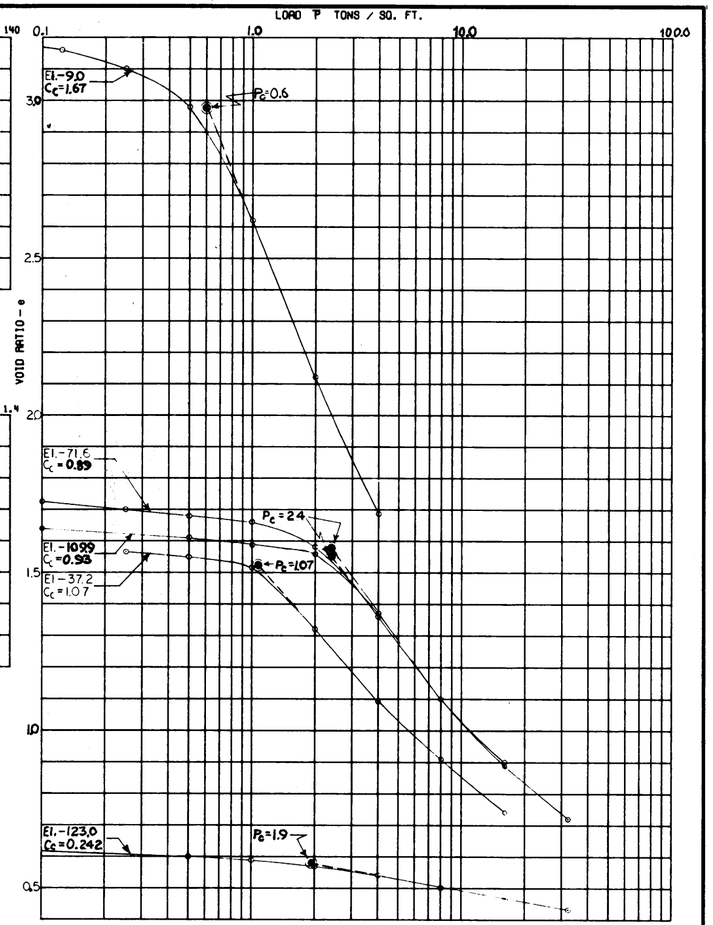


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-43.9-RU	1	-6.4	Q	0	0.15	CH
	2	-22.8	Q	0	0.16	
	3	-38.1	Q	0	0.28	
	4	-61.2	Q	0	0.40	
	5	-77.1	Q	0	0.44	
	6	-90.8	Q	0	0.48	
	7	-110.8	Q	0	0.46	
	8	-121.2	Q	0	0.60	
	9	-109.9	R	12°	0.20	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 8

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

WEST BANK

SOIL BORING DATA

R-43.9-RU

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

AUGUST 1971

FILE NO H-2-25275

PLATE 50

BOR. R-43.9-RU

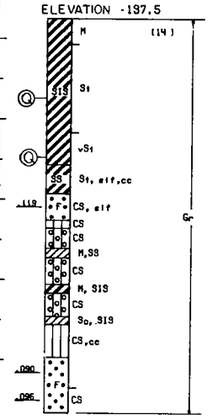
CONTINUED

STA. 2014+50

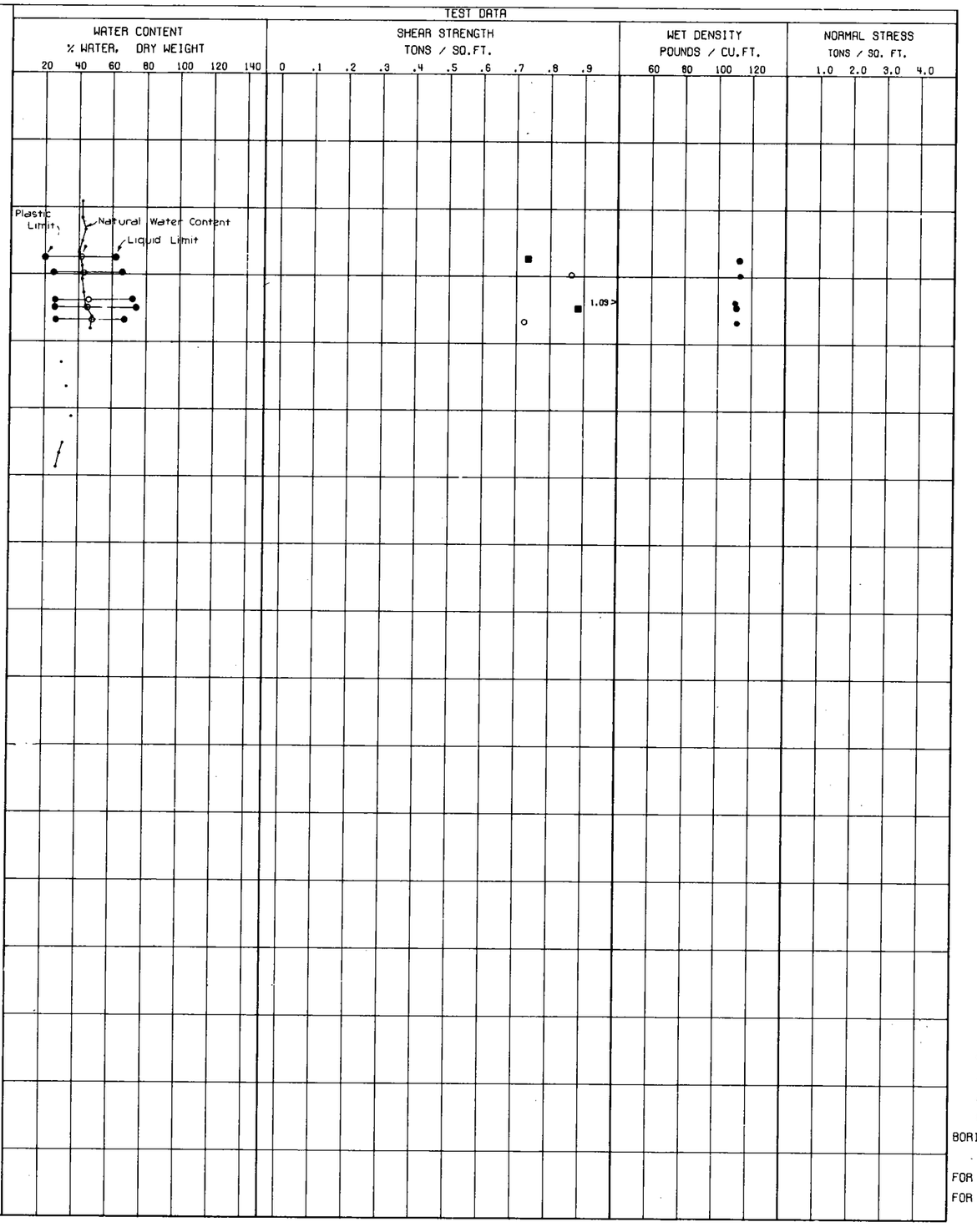
283 FT. R.S. C/L LEVEE

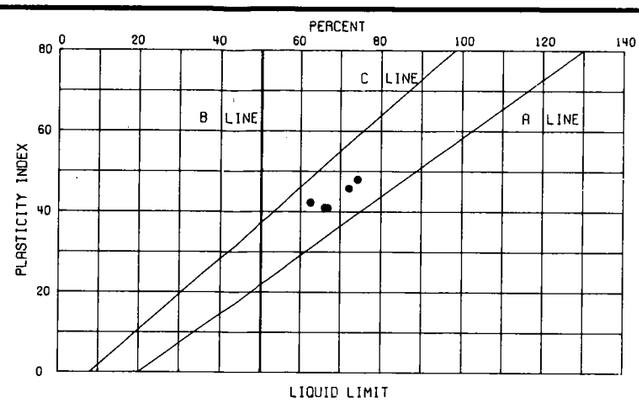
14 OCT 69

ELEVATION -197.5

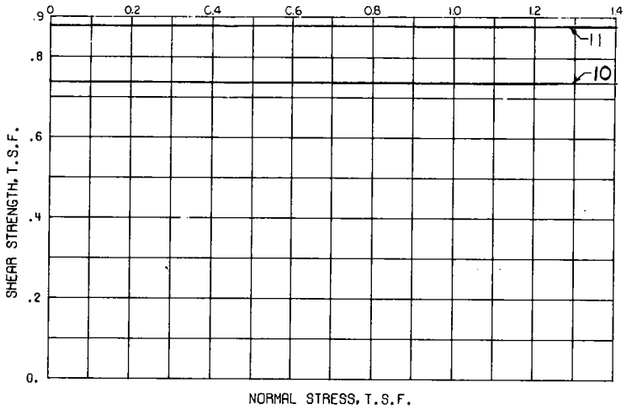


TEST DATA





PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-43.9-RU	10	-147.1	Q	0	0.74	CH
	11	-154.8		0	0.88	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 8

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

WEST BANK

SOIL BORING DATA

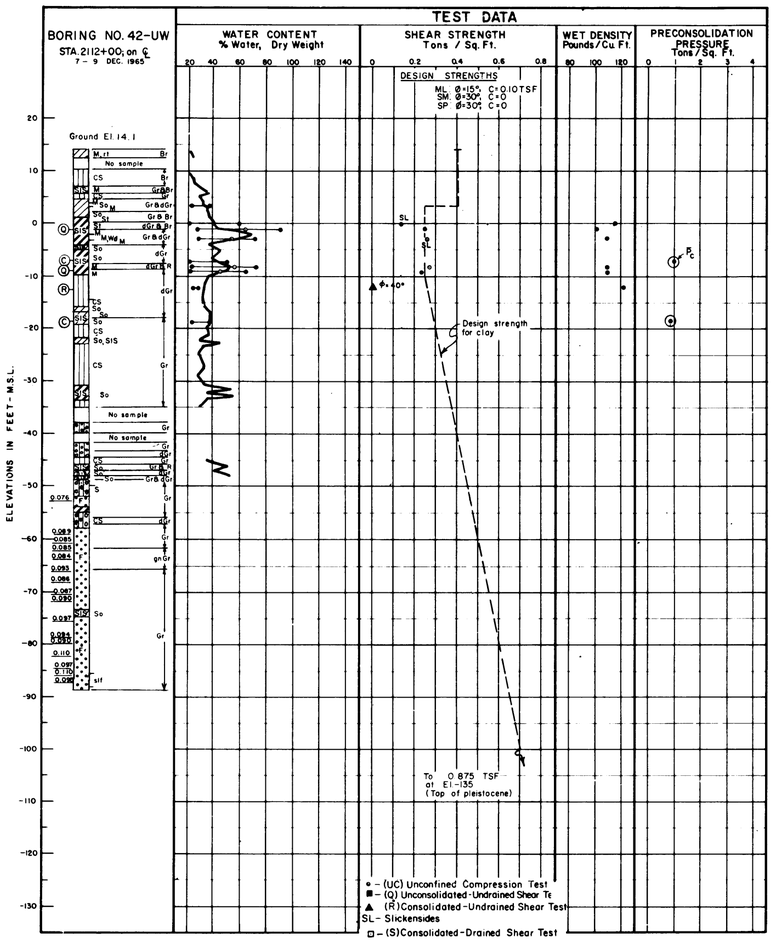
R-43.9-RU (CONT'D.)

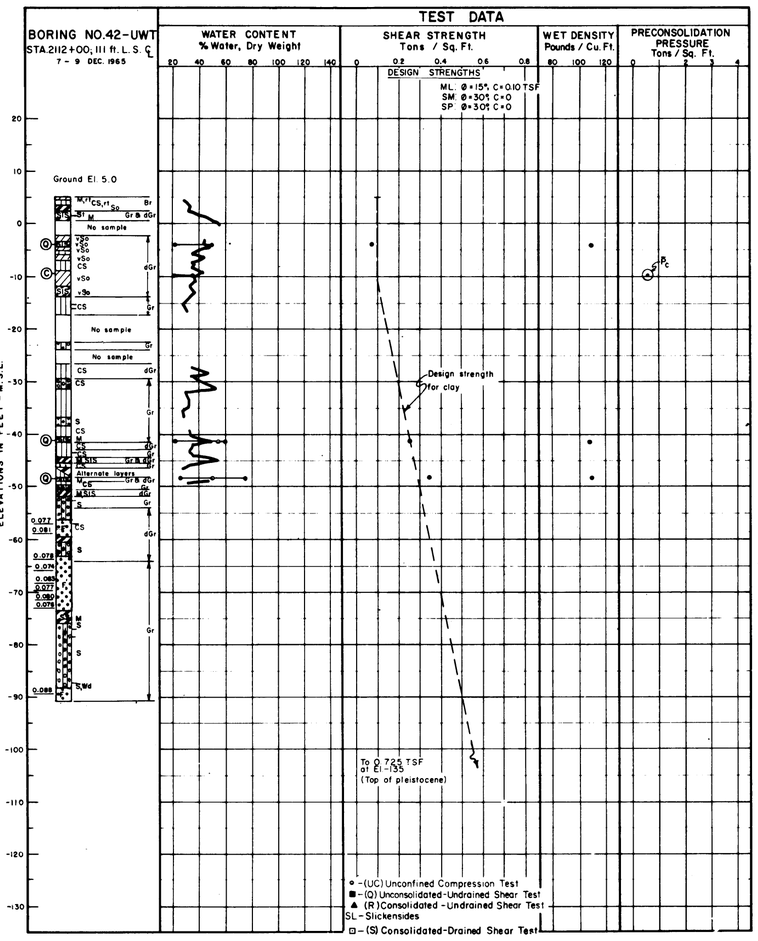
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

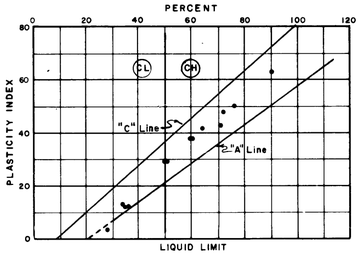
AUGUST 1971

FILE NO. H-2-25275

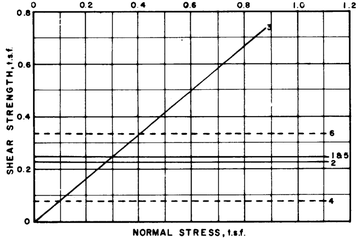
PLATE 51



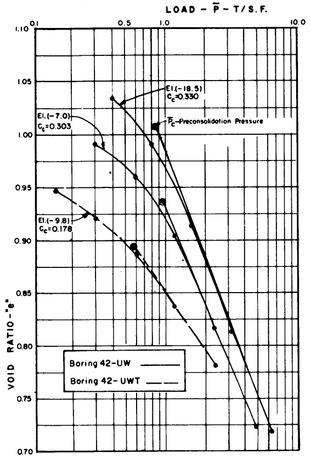




PLASTICITY CHART



—— 42-UW
- - - 42-UWT



CONSOLIDATION DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH ϕ°	STRENGTH C (t.s.f.)	CLASS
42 UW	1	- 0.9	Q	0	0.25	CH
	2	- 8.9		0	0.23	CH
	3	- 11.9	R*	40	0.00	ML
42 UWT	4	- 4.0		0	0.08	CH
	5	-41.3	Q	0	0.25	CH
	6	-48.2		0	0.34	CH

* BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE: ϕ = 18.5°, C = 0.18 TSF

SHEAR STRENGTH DATA

—— Boring No. 42-UW
- - Boring No. 42-UWT
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.

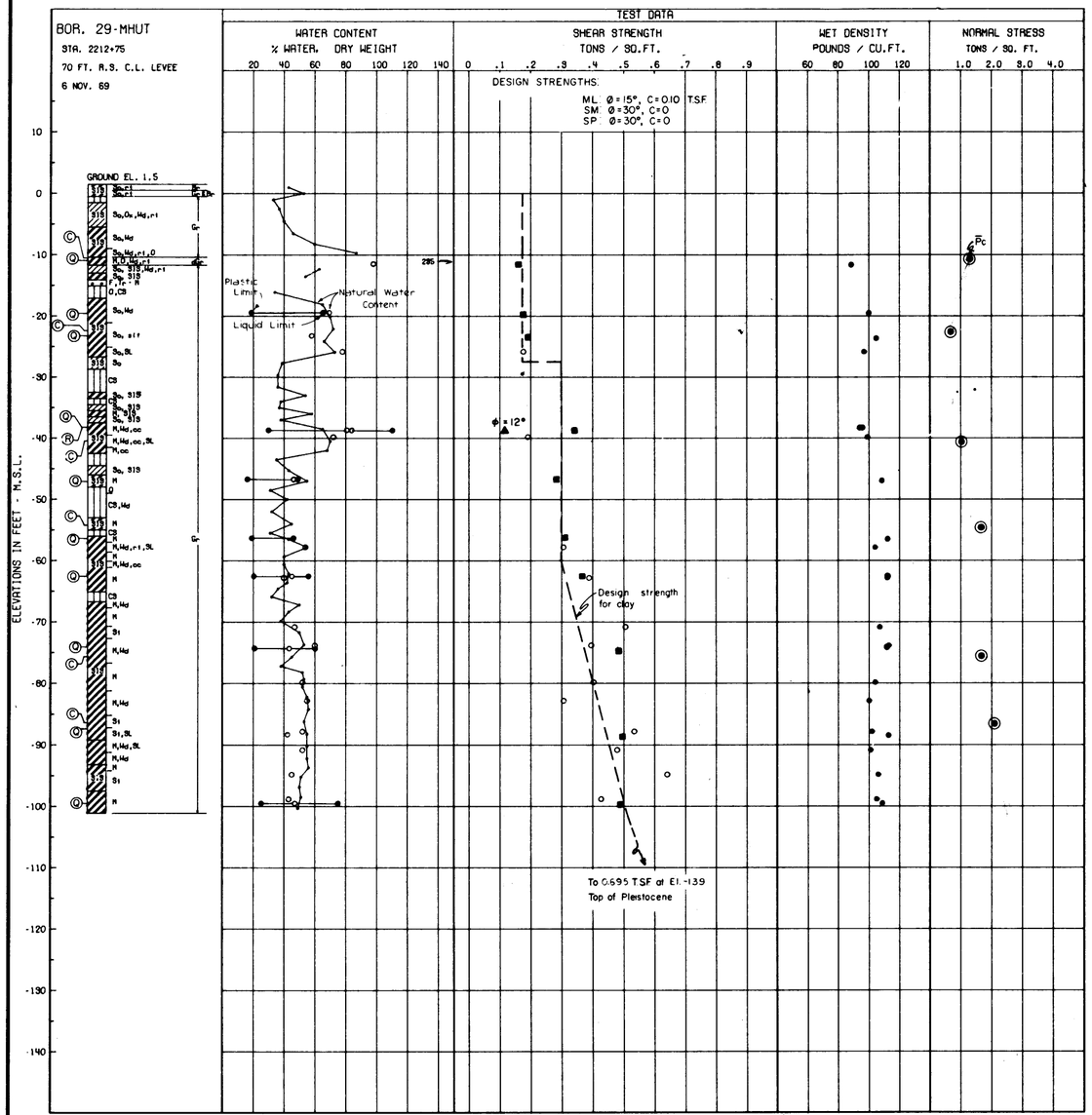
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
WEST BANK

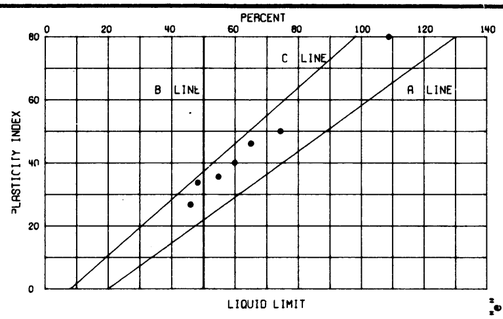
SOIL BORING DATA

42-UW AND 42-UWT
STA. 2112+00
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

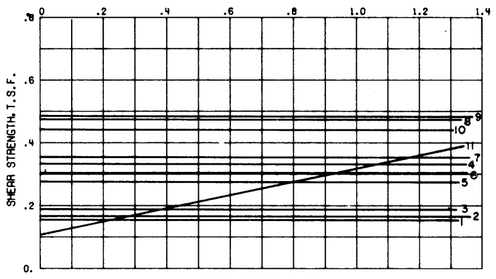
AUGUST 1971 FILE NO. H-2-25275

PLATE 52



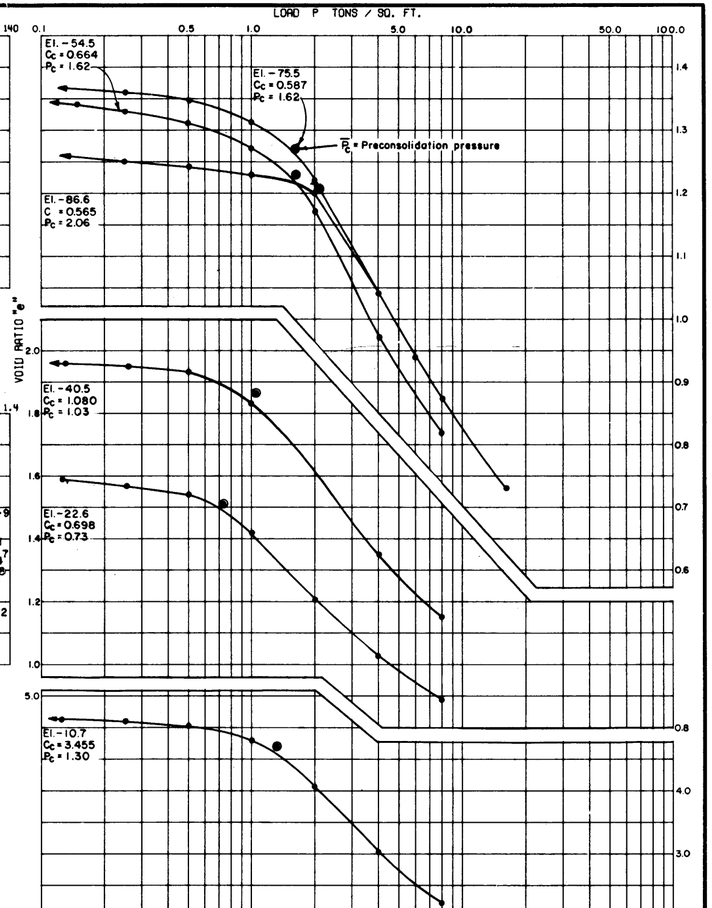


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
29-MHUT	1	-11.4	Q	0	0.160	CH
	2	-19.8		0	0.170	CH
	3	-23.5		0	0.190	CH
	4	-38.7		0	0.340	CH
	5	-46.7		0	0.280	CL
	6	-56.3		0	0.310	CL
	7	-62.6		0	0.360	CH
	8	-74.6		0	0.480	CH
	9	-88.4		0	0.490	CH
	10	-99.7		0	0.450	CH
	11	-38.7	R	12°	0.110	CH



CONSOLIDATION DATA

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

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

FOR SOIL BORING LEGEND SEE PLATE A

FOR LOCATION OF BORINGS SEE PLATE 9

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

SOIL BORING DATA

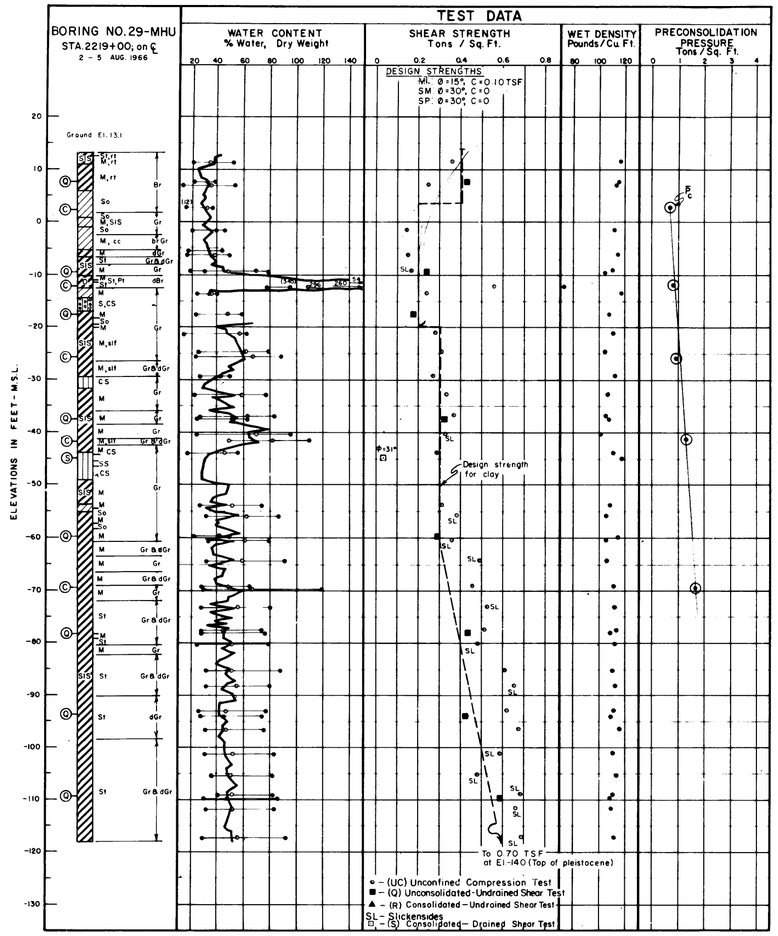
29-MHUT

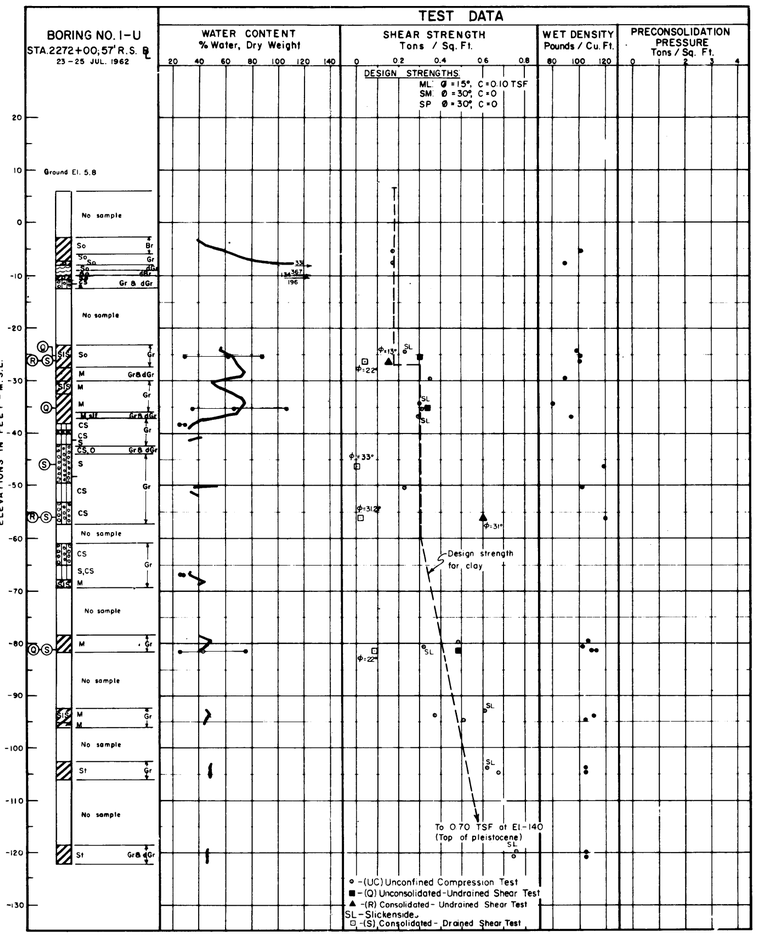
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

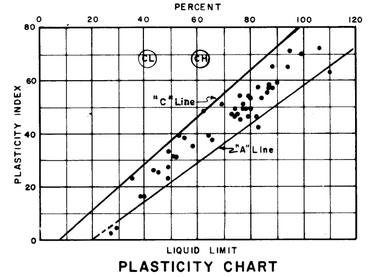
AUGUST 1971

FILE NO. H-2-25275

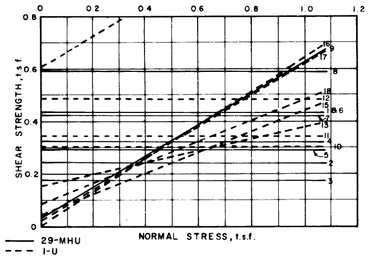
PLATE 53

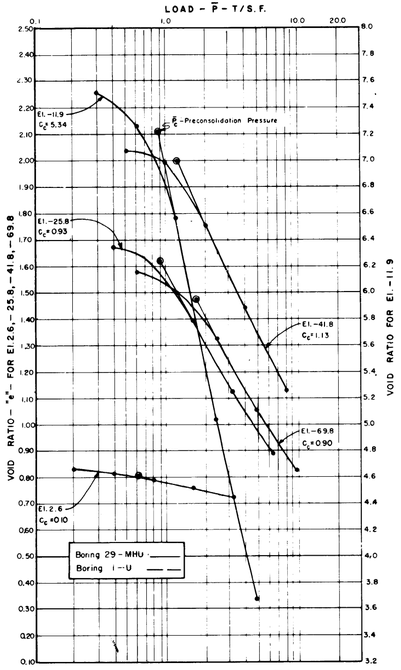






PLASTICITY CHART





CONSOLIDATION DATA

BORING NO.	ENVELOPE NO	ENVELOPE EL	TYPE	STRENGTH φ°	STRENGTH C (t.s.f.)	CLASS
29-MHU	1	+ 7.4	Q	0	0.43	CL
	2	- 9.6			0.24	CH
	3	- 17.5			0.17	Ch
	4	- 37.4			0.32	CH
	5	- 59.7			0.29	CL
	6	- 78.0			0.43	CH
	7	- 93.7			0.42	CH
	8	-109.7		0	0.59	CH
	9	- 44.9	S	31	0.03	SM
1-U	10	- 25.6	Q	0	0.30	CH
	11	- 35.5		0	0.34	CH
	12	- 81.4		0	0.48	CH
	13	- 26.5	R	13	0.15	CH
	14	- 56.2		31	0.60	SM
	15	- 26.5	S	22	0.04	CH
	16	- 46.4		33	0.00	SM
	17	- 56.2		31	0.02	SM
	18	- 81.4		22	0.08	CH

SHEAR STRENGTH DATA

—— Boring No. 29 - MHU
– – Boring No. 1 - U
For soil boring legend see plate A
For location of borings see plate 9

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
WEST BANK

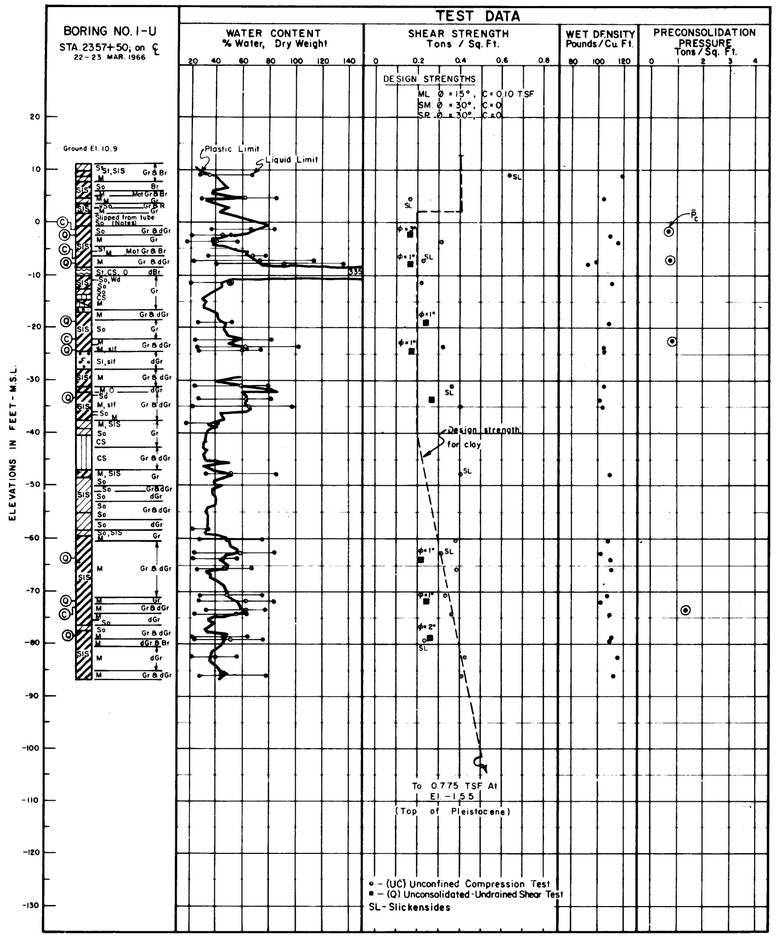
SOIL BORING DATA

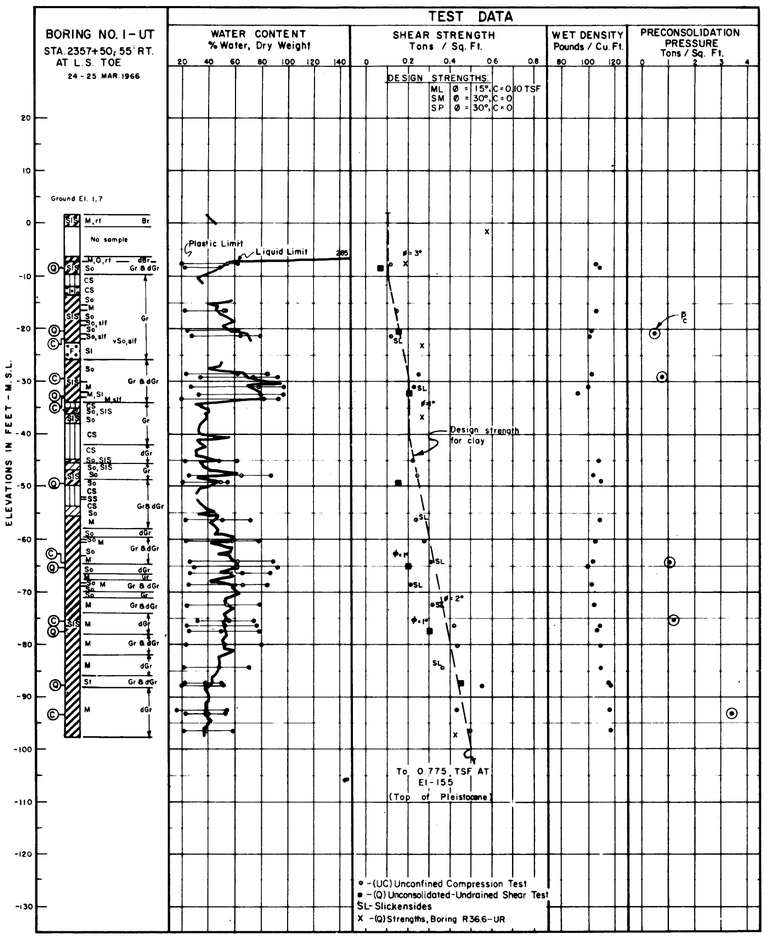
29 - MHU - STA. 2219+00
1 - U - STA. 2272+00

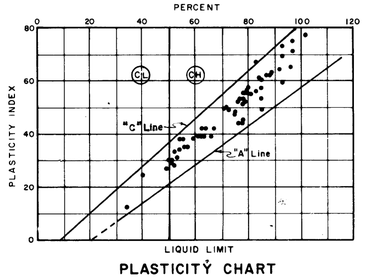
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971 FILE NO. H-2-25275

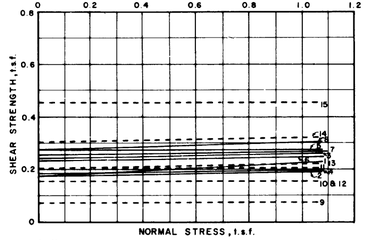
PLATE 54





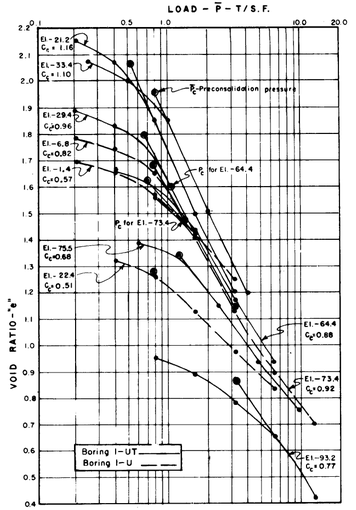


PLASTICITY CHART



BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH φ°	STRENGTH C (t.s.f.)	CLASS
I-U	1	- 2.1	Q	3	0.17	CH
	2	- 7.9		1	0.17	CH
	3	- 19.1		1	0.24	CH
	4	- 24.2		1	0.18	CH
	5	- 33.5		0	0.27	CH
	6	- 64.0		1	0.23	CH
	7	- 72.0		1	0.25	CH
	8	- 78.9		2	0.27	CH
I-UT	9	- 8.4	Q	0	0.07	CL
	10	- 20.3		0	0.15	CH
	11	- 32.4		0	0.20	CH
	12	- 49.1		0	0.15	CH
	13	- 65.2		1	0.20	CH
	14	- 77.3		1	0.30	CH
	15	- 87.3		0	0.45	CH

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. I-UT
– – Boring No. I-U
For soil boring legend see plate A
For location of borings see plate 10

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
WEST BANK

SOIL BORING DATA
I-U AND I-UT
STA. 2357+50

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

AUGUST 1971 FILE NO. H-2-25275

PLATE 55

BOR. R-36.6-UR

2406+00

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

8-14 DEC 66

GROUND EL. 5.4

ELEVATIONS IN FEET - M.S.L.

CONTINUED NEXT PLATE

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

Plastic Limit
Natural Water Content
Liquid Limit

Design Strength for clay

WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.

X-(Q) Strengths, Boring tUT (2357+50)

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-36.6-UR	1	-1.8	Q	0°	0.58	OH
	2	-7.6	Q	3°	0.19	CH
	3	-23.6	Q	0°	0.27	CH
	4	-36.8	Q	1°	0.27	CH
	5	-72.9	Q	2°	0.36	CH
	6	-97.1	Q	0°	0.42	CH
	7	-130.9	Q	0°	0.79	CH
	8	-7.6	R	17°	0.07	CH
	9	-130.9	R	7°	0.49	CH

LOAD $\bar{P}$ 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 10

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

SOIL BORING DATA
R-36.6-UR

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

AUGUST 1971

FILE NO. H-2-25275

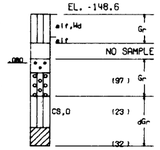
PLATE 56

BOR. R-36.6-UR

2406+00

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

8-14 DEC 66



ELEVATIONS IN FEET - M.S.L.

-150 -160 -170 -180 -190 -200 -210 -220 -230 -240 -250 -260 -270 -280 -290 -300

TEST DATA

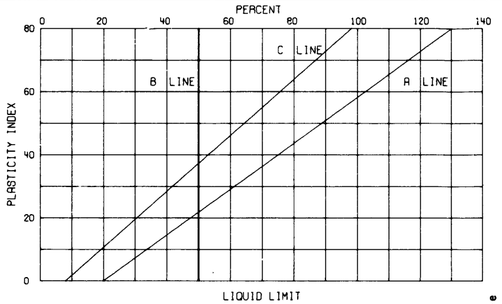
WATER CONTENT
% WATER, DRY WEIGHT
20 40 60 80 100 120 140

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

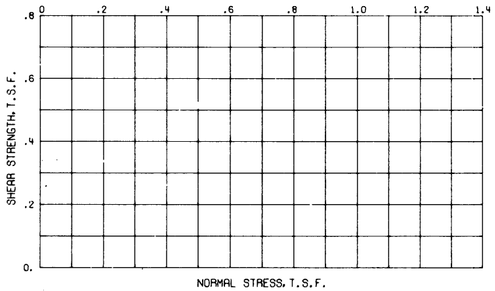
Top of Pleistocene

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

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

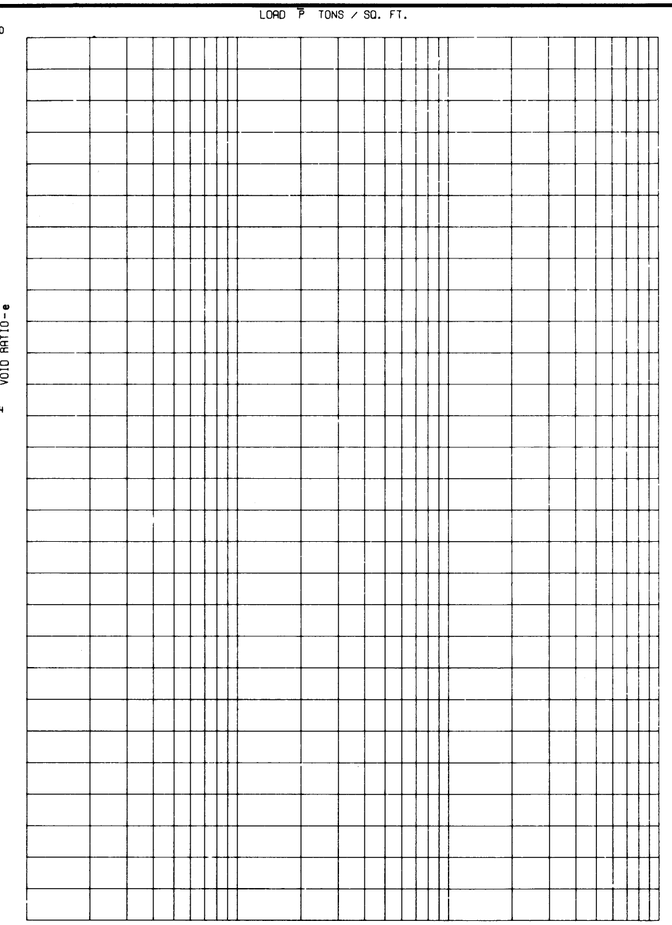


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS



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

WEST BANK

SOIL BORING DATA

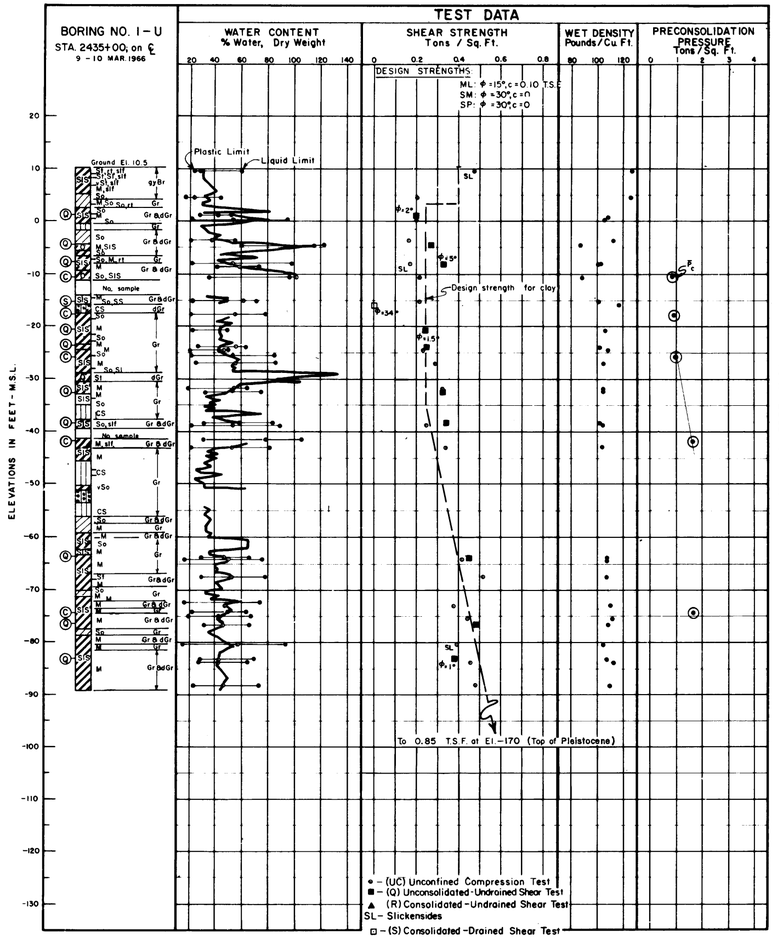
R-36.6-UR(CONT'D.)

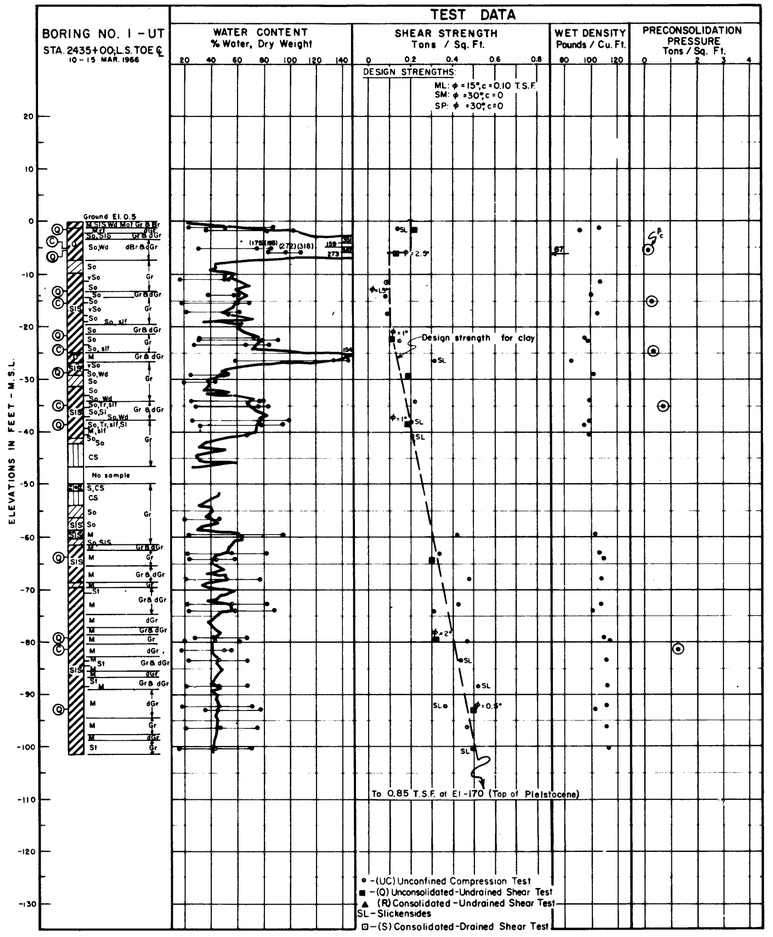
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

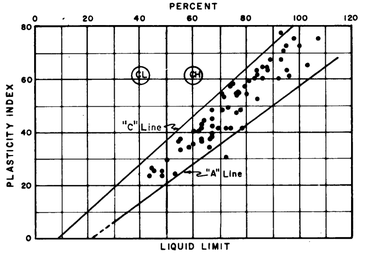
AUGUST 1971

FILE NO. H-2-25275

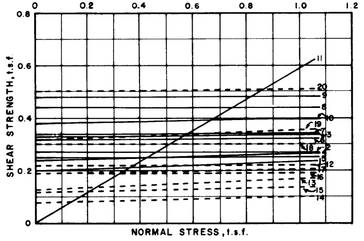
PLATE 57

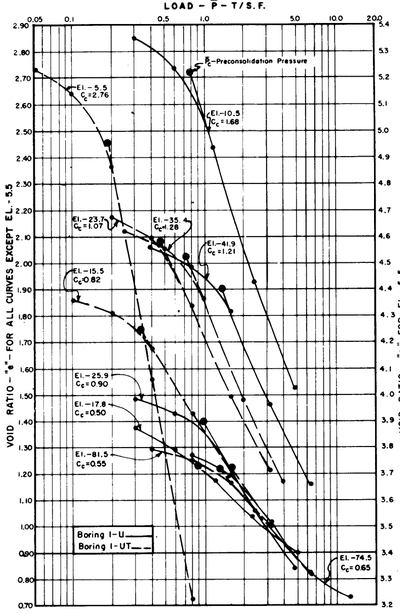






PLASTICITY CHART





CONSOLIDATION DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH ϕ°	STRENGTH c (t.s.f.)	CLASS
I-U	1	+ 1.5	Q	2	0.20	CH
	2	- 4.2		0	0.27	MH
	3	- 8.0		0.5	0.33	MH
	4	-20.3		1.5	0.24	CL
	5	-23.3		0	0.25	CH
	6	-31.8		0	0.32	CH
	7	-37.9		0	0.34	CH
	8	- 63.4		0	0.44	CH
	9	- 76.3		0	0.48	CH
	10	- 82.7		1	0.38	CH
	11	- 15.7	S	30.5	0.00	ML
I-UT	12	- 1.3	Q	0	0.32	CH
	13	- 5.3		2.5	0.13	OH
	14	-13.5		1.5	0.08	MH
	15	-21.5		1	0.12	CH
	16	-28.5		0	0.19	CL
	17	- 39.2		1	0.19	CH
	18	- 63.6		0	0.30	CH
	19	- 78.6		2	0.32	CH
	20	- 92.5		0.5	0.50	MH

SHEAR STRENGTH DATA

—— Boring No. I - U
– – Boring No. I - UT
For soil boring legend see plate A
For location of borings see plate 10

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

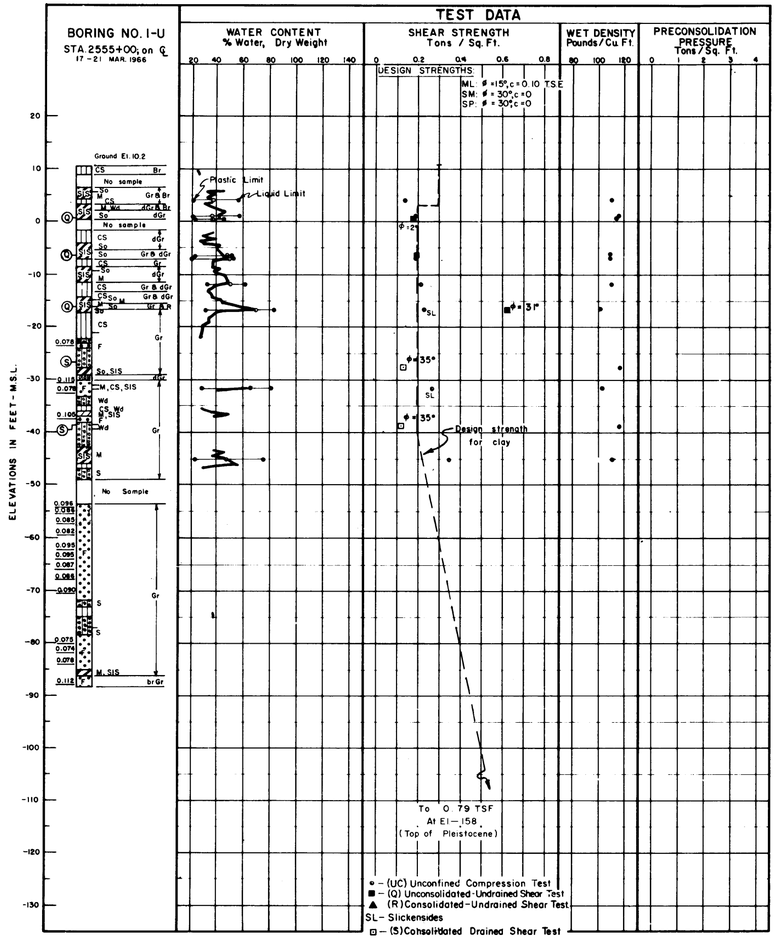
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
WEST BANK

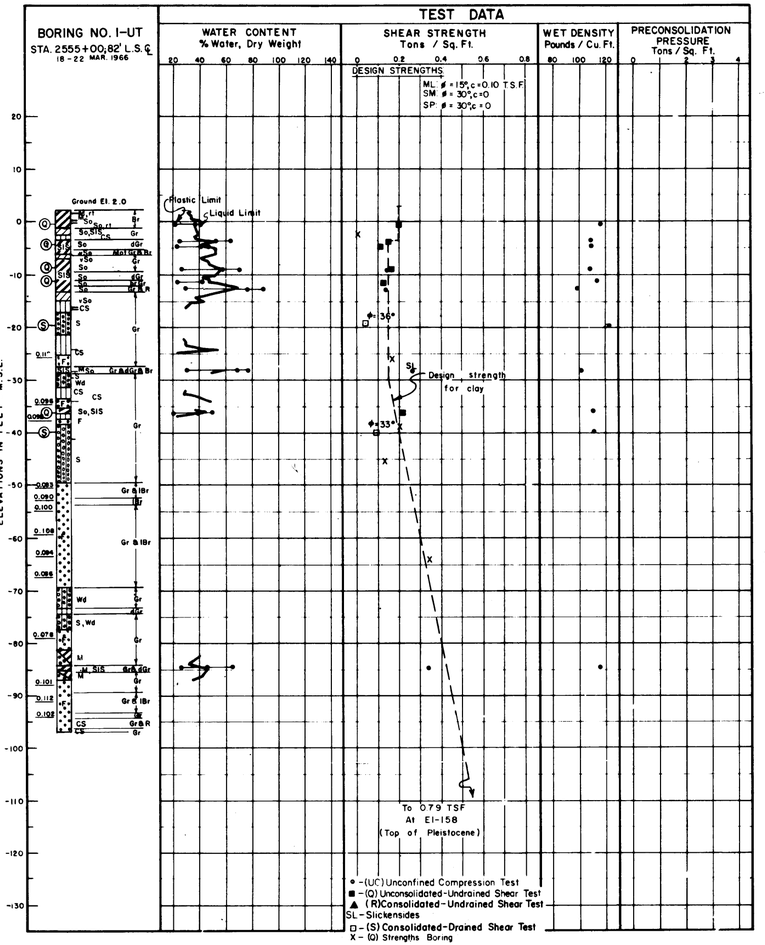
SOIL BORING DATA
I-U AND I-UT
STA. 2435+00

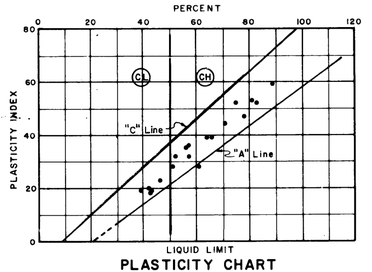
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971 FILE NO H-2-25275

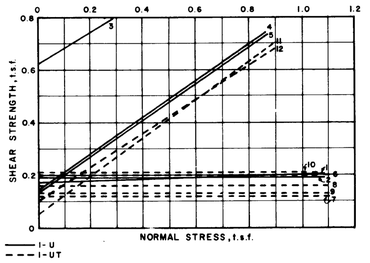
PLATE 58





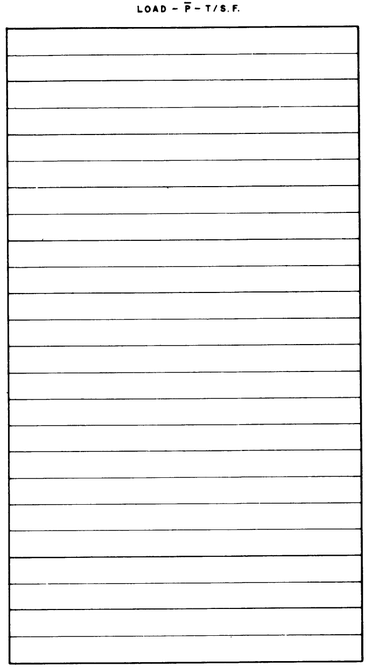


PLASTICITY CHART



BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH ϕ°	STRENGTH (t.s.f.)	CLASS
I-U	1	+ 0.7	Q	2	0.17	CL
	2	- 6.2		0	0.19	CH
	3	- 16.0		31	0.62	ML
	4	- 27.2	S	35	0.14	SM
	5	- 59.0		35	0.13	SM
I-UT	6	- 0.5	Q	0	0.20	CL
	7	- 4.7		0	0.12	CL
	8	- 8.8		0	0.16	CH
	9	- 11.4		0	0.13	CL
	10	- 36.0		0	0.21	CL
	11	- 19.4	S	36	0.05	SP-SM
	12	- 40.2		33	0.10	SM

SHEAR STRENGTH DATA



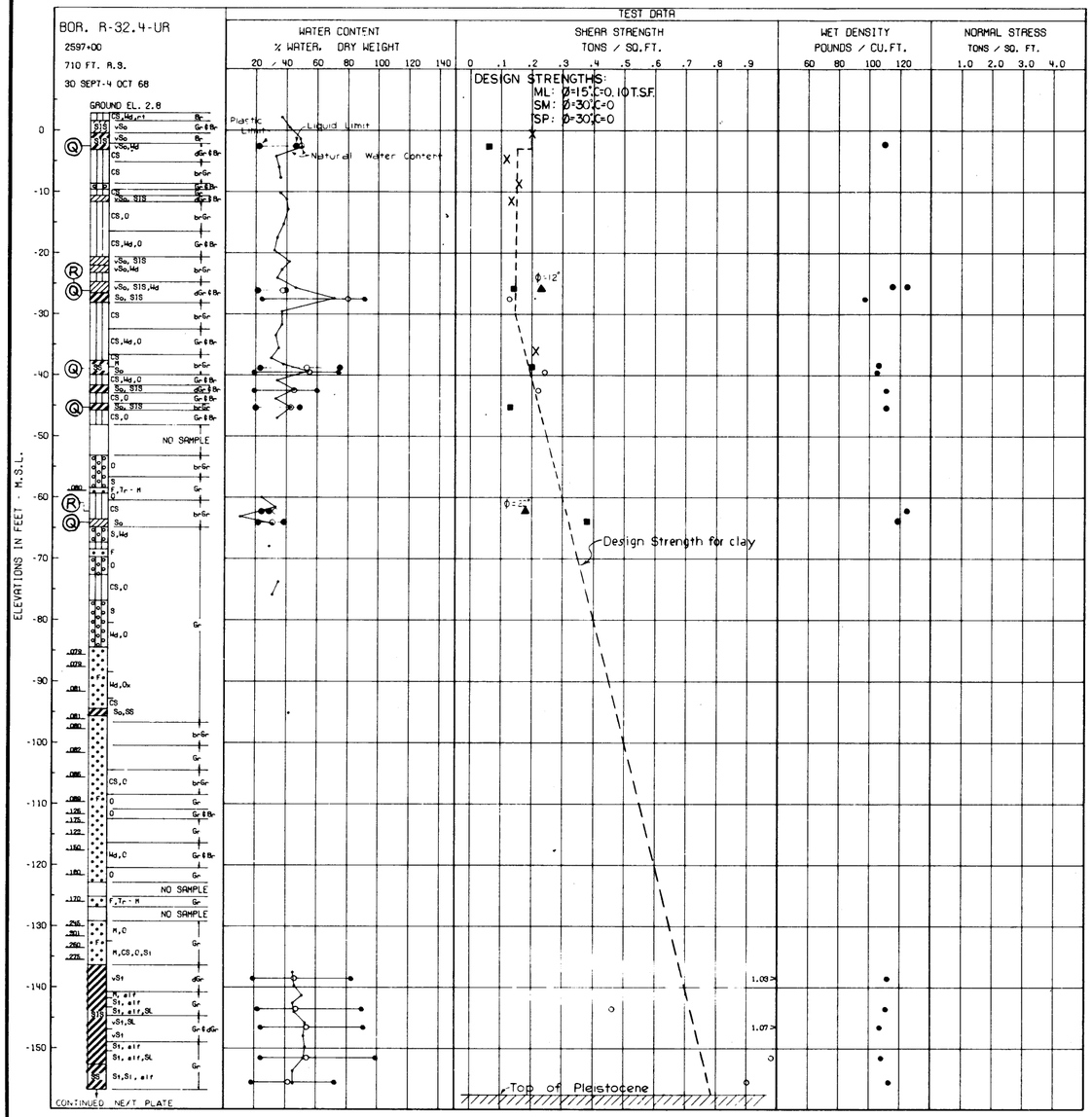
CONSOLIDATION DATA

—— Boring No. I - U
– – Boring No. I - UT
For soil boring legend see plate A
For location of borings see plate 10

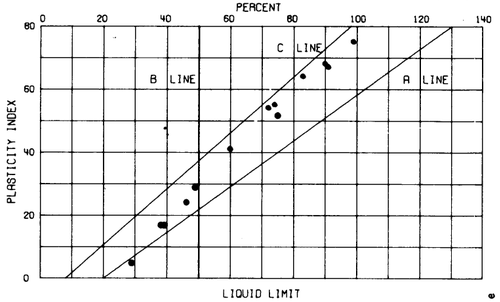
Borings were taken with a 5" diameter steel tube piston type sampler.

MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
WEST BANK
SOIL BORING DATA
I-U AND I-UT
STA. 2555+00
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

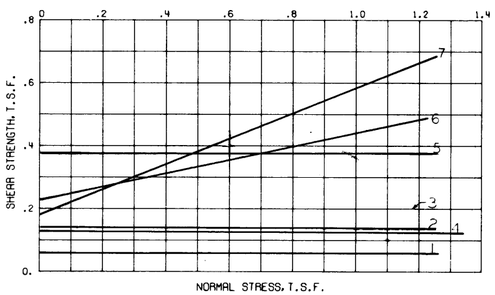
PLATE 59



X-(Q) Strengths. Boring 1-UT (2555+00)



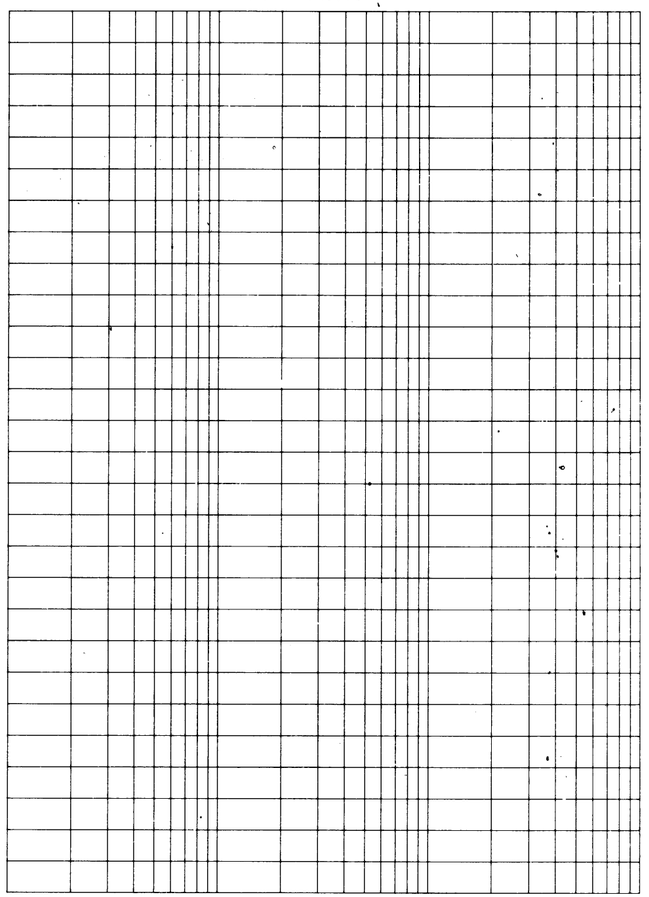
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ°	STRENGTH C - TSF	CLASS
R-32.4-UR	1	-2.7	Q	0	0.06	CH
	2	-26.1		0	0.14	CL
	3	-39.0		0	0.20	CH
	4	-45.4		0	0.13	CH
	5	-64.2		0	0.38	CL
	6	-26.1	R	12	0.23	CL
	7	-62.2		*22	0.18	ML

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE : Ø= 18.8°, C=0.01 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 II

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

WEST BANK

SOIL BORING DATA

R-32.4-UR

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 60

BOR. R-32.4-UR

2597+00

710 FT. A.S.

30 SEPT-4 OCT 68

EL. -159.6

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.
-150 -160 -170 -180 -190 -200 -210 -220 -230 -240 -250 -260 -270 -280 -290 -300

PERCENT
0 20 40 60 80 100 120 140

PLASTICITY INDEX
80 60 40 20 0

B LINE
C LINE
A LINE

LIQUID LIMIT

PLASTICITY CHART

SHEAR STRENGTH, T.S.F.
.8 .6 .4 .2 0.

0 .2 .4 .6 .8 1.0 1.2 1.4

NORMAL STRESS, T.S.F.

SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS

LOAD $\bar{P}$ 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 11

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

SOIL BORING DATA

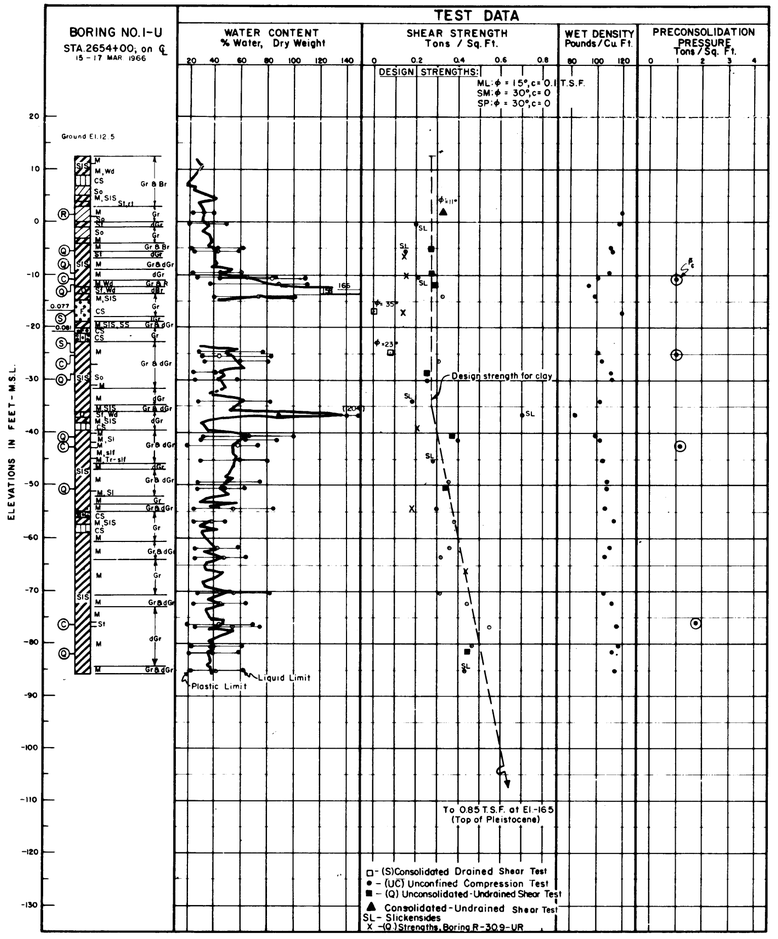
R-32.4-UR(CONT'D)

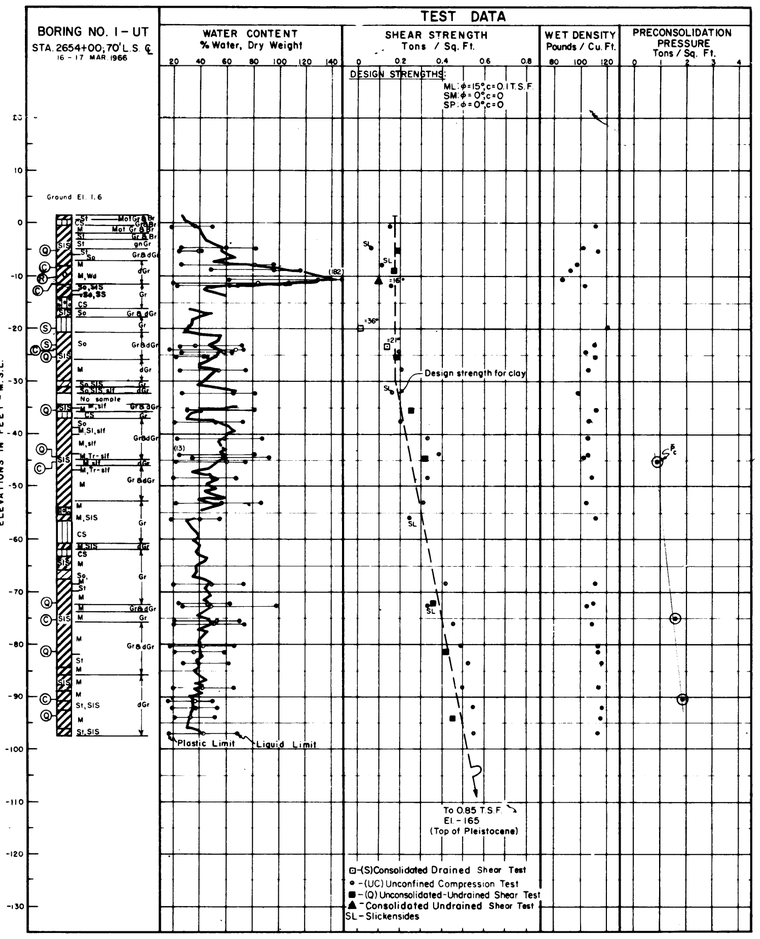
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

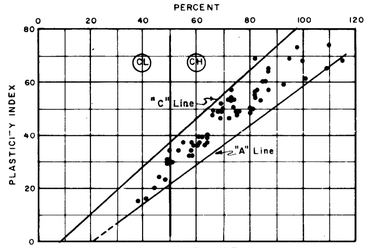
AUGUST 1971

FILE NO H-2-25275

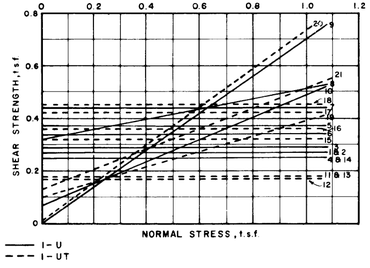
PLATE 61

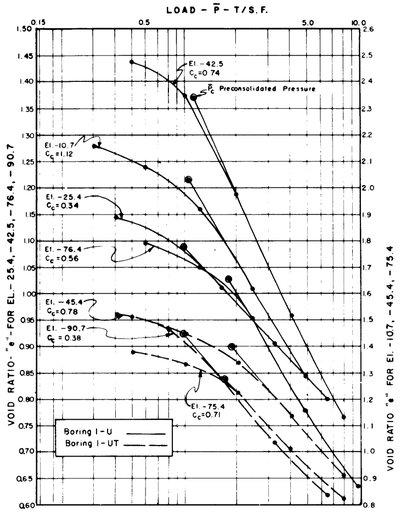






PLASTICITY CHART





CONSOLIDATION DATA

BORING NO	ENVELOPE NO	ENVELOPE EL.	TYPE	STRENGTH ϕ°	STRENGTH c (t.s.f.)	CLASS
I-U	1	- 5.0	Q	0	0.27	CH
	2	- 9.6			0.27	CH
	3	- 11.9			0.29	CH
	4	- 28.6			0.25	CL
	5	- 40.7			0.37	CH
	6	- 50.4			0.34	CH
	7	- 81.7			0.44	CH
	8	+ 1.8	R	11	0.32	CL
	9	- 17.0	S	35	0.00	SM
	10	- 24.7		23	0.07	CH
I-UT	11	- 5.4	Q	0	0.18	CL
	12	- 9.0			0.17	OH
	13	- 25.3			0.18	CL
	14	- 35.5			0.25	CH
	15	- 44.6			0.32	CH
	16	- 72.3			0.36	CH
	17	- 81.4			0.42	CH
	18	- 93.2		0	0.45	CH
	19	- 10.8	R	16	0.10	CH
	20	- 20.1	S	36	0.01	SM
	21	- 23.3		21	0.13	CH

SHEAR STRENGTH DATA

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

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
WEST BANK

SOIL BORING DATA

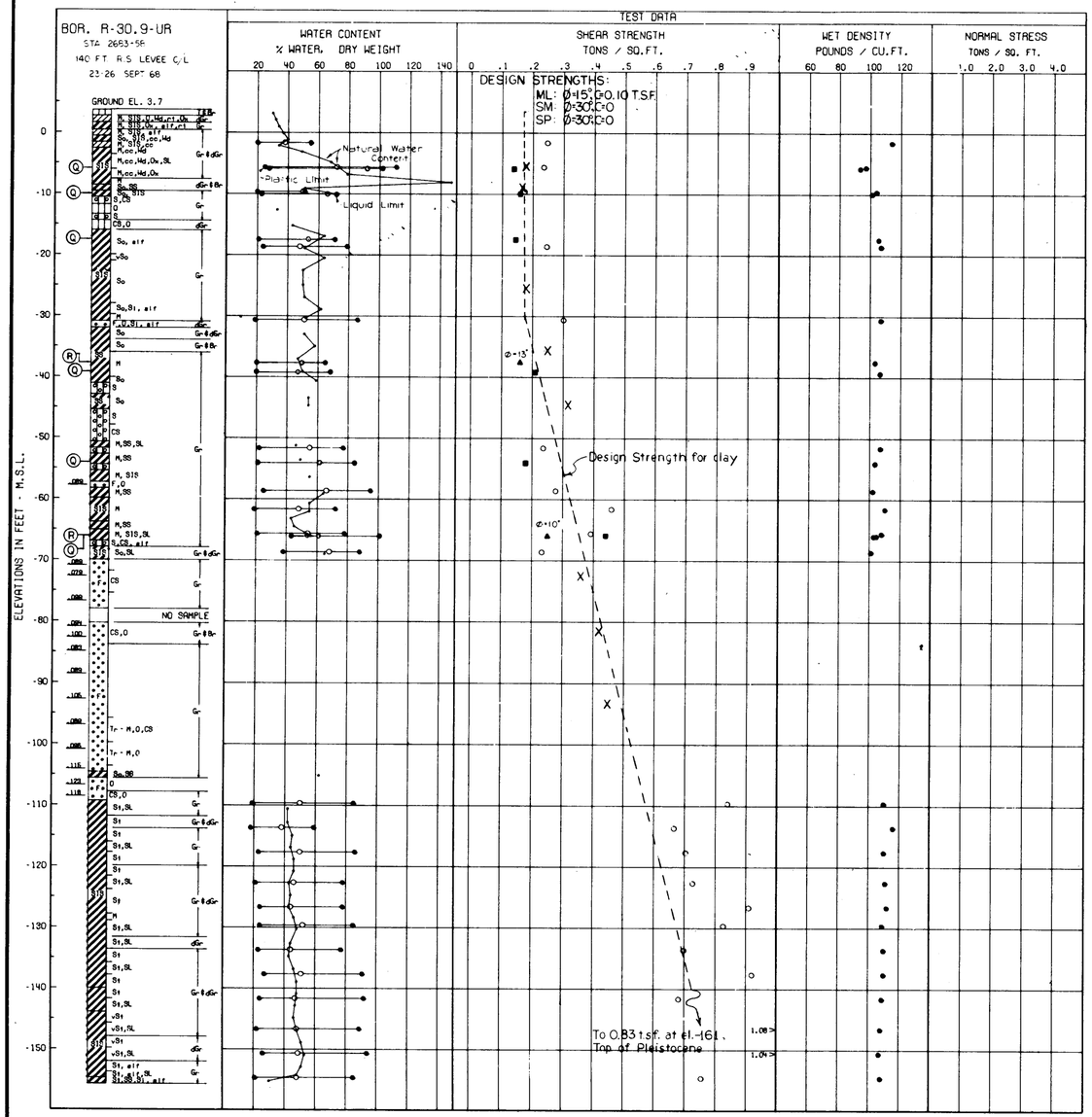
I-U AND I-UT
STA. 2654 + 00

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

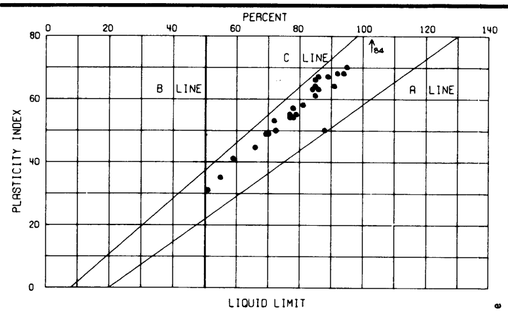
AUGUST 1971

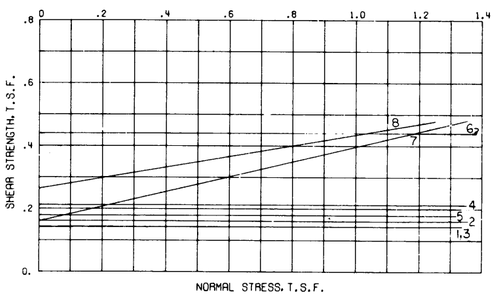
FILE NO. H-2-25275

PLATE 62

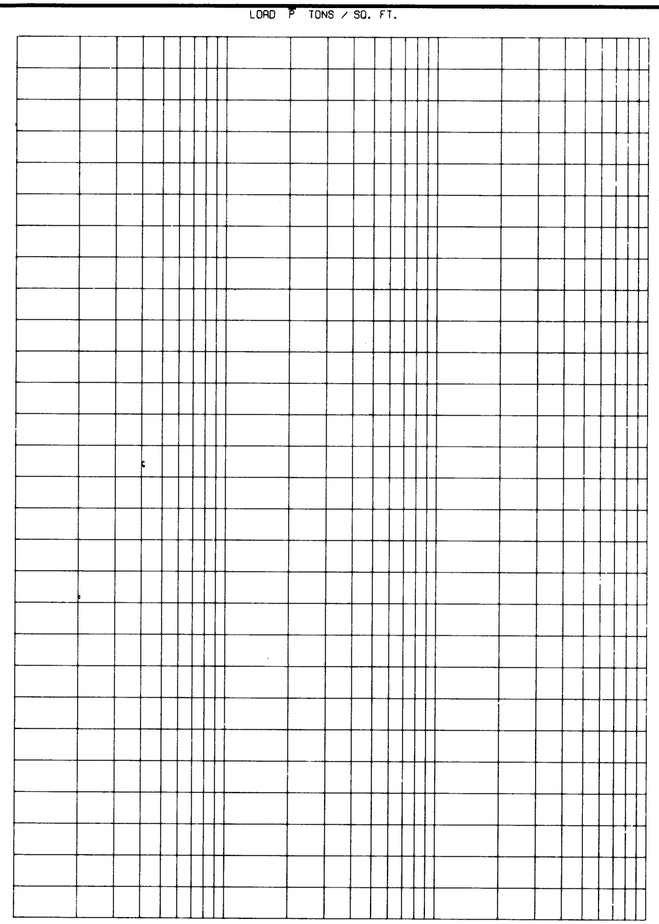


X-(Q) Strengths, Boring 1-UT (2654+00)





BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-30.9-UR	1	- 6.5	Q	0°	0.14	CH
	2	- 10.0	Q	0°	0.16	CH
	3	- 17.4	Q	0°	0.14	CH
	4	- 39.3	Q	0°	0.21	CH
	5	- 54.1	Q	0°	0.18	CH
	6	- 66.0	Q	0°	0.44	CH
	7	- 37.7	R	13°	0.16	CH
↓	8	- 66.0	R	10°	0.25	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 3 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
WEST BANK

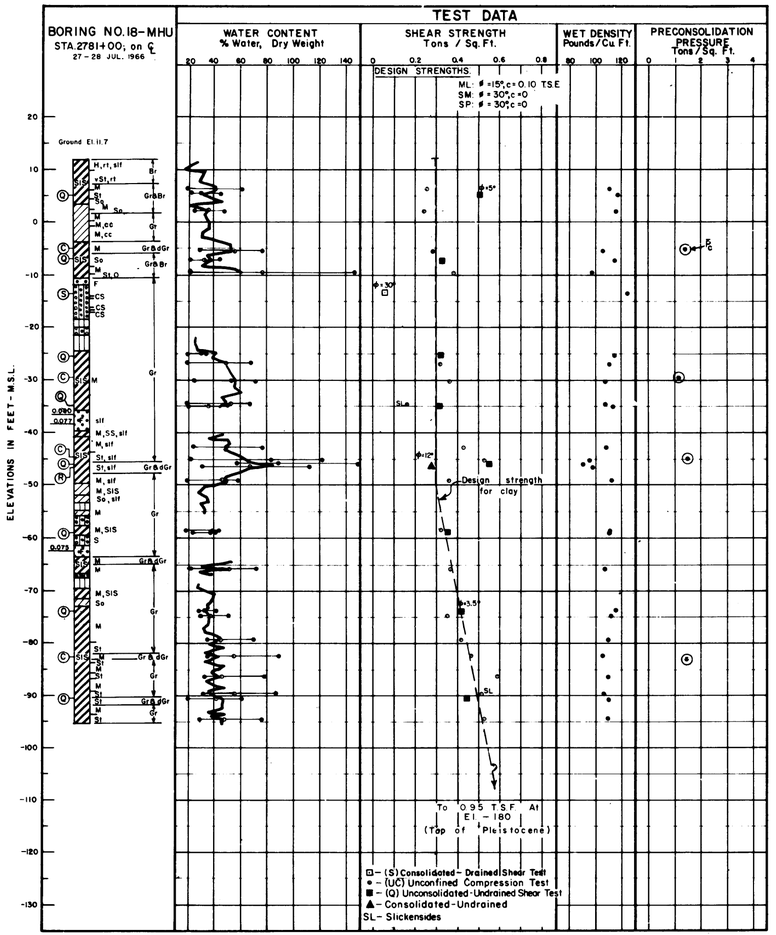
SOIL BORING DATA
R-30.9-UR

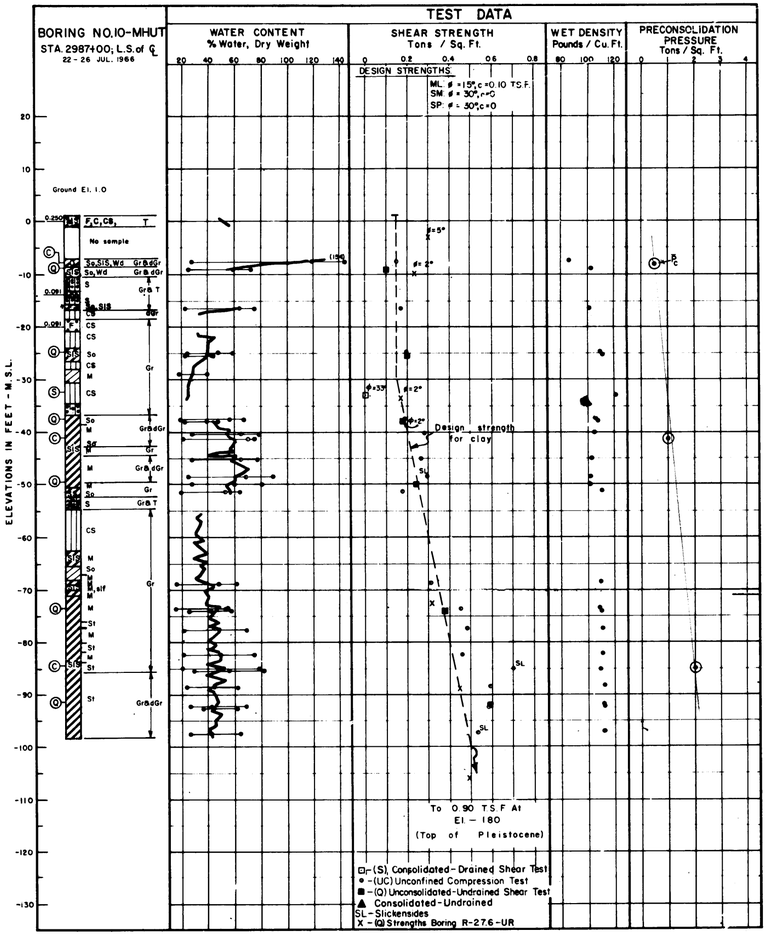
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

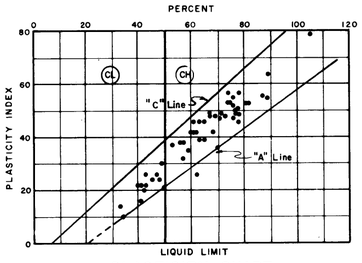
AUGUST 1971

FILE NO. H-2-25275

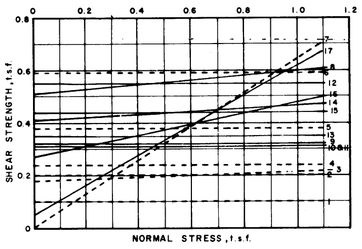
PLATE 63





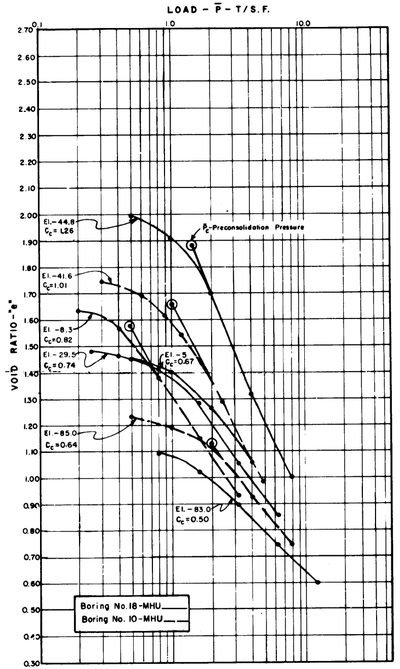


PLASTICITY CHART



BORING NO.	ENVELOPE NO	ENVELOPE EL.	TYPE	STRENGTH ϕ°	STRENGTH c (t.s.f.)	CLASS
10-MHUT	1	- 9.0	Q	0	0.10	CH
	2	-25.5		0	0.20	CL
	3	-38.0		2	0.18	CH
	4	-50.0		0	0.24	CH
	5	-74.0		0	0.38	CH
	6	-92.0		0	0.59	CH
	7	-33.0	S	33	0	ML
18-MHU	8	+ 5.2	Q	5	0.51	CL
	9	- 7.3		0	0.32	CL
	10	-25.3		0	0.31	CL
	11	-35.0		0	0.31	CL
	12	-46.2		0	0.55	OH
	13	-59.1		0	0.35	CL
	14	-74.3		3.5	0.41	CL
	15	-90.8		0	0.44	CH
	16	-46.8	R	12	0.27	CH
	17	-13.6	S	30	0.05	SP

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. 18 - MHU
– – Boring No. 10 - MHUT
For soil boring legend see plate A
For location of borings see plates 11 & 12

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
WEST BANK

SOIL BORING DATA

18-MHU - STA. 2781+00
10-MHUT - STA. 2987+00

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

PLATE 64

BOR. R-27.6-UR

2874+75

63 FT. A.S. OF C.L. LEVEE

15 - 19 DEC 66

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

Liquid Limit

Natural Water Content

Design Strength for clay

To 0.88 t.s.f. at el-176
Top of Pleistocene

ELEVATIONS IN FEET - M.S.L.

GROUND EL. -.4

X-(Q) Strengths, Boring 10-MHUT

PLASTICITY CHART

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

A LINE

B LINE

C LINE

SHEAR STRENGTH, T.S.F.

NORMAL STRESS, T.S.F.

VOID RATIO - e

LOAD P TONS / SQ. FT.

SHEAR STRENGTH DATA

CONSOLIDATION DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-27.6-UR	1	-3.5	Q	5°	0.30	CH
	2	-10.0	Q	2°	0.13	CH
	3	-33.9	Q	2°	0.17	CH
	4	-72.6	Q	0°	0.32	CH
	5	-89.8	Q	0°	0.45	CH
	6	-106.8	Q	0°	0.49	CH
	7	-121.0	Q	0°	0.77	CH
	8	-10.9	R	19°	0.01	CH
	8	-121.0	R	8°	0.45	CH

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

WEST BANK

SOIL BORING DATA

R-27.6-UR

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

AUGUST 1971

FILE NO. H-2-25275

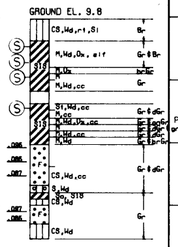
PLATE 65

BOR. 10-MHU-A

STA. 2987+00

C/L OF EXISTING LEVEE

9-20-68



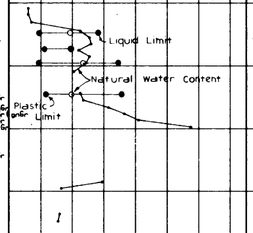
TEST DATA

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

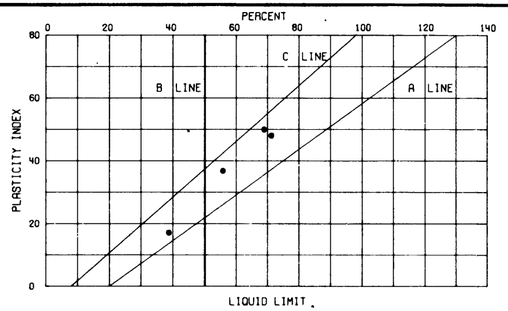
WET DENSITY
POUNDS / CU.FT.
60 80 100 120

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

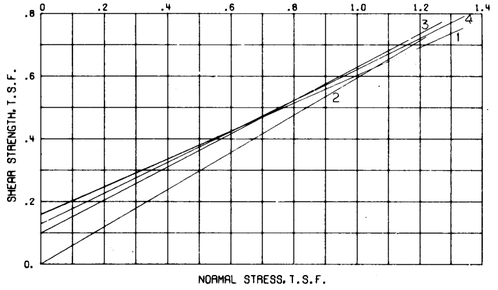


ELEVATIONS IN FEET - M.S.L.

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

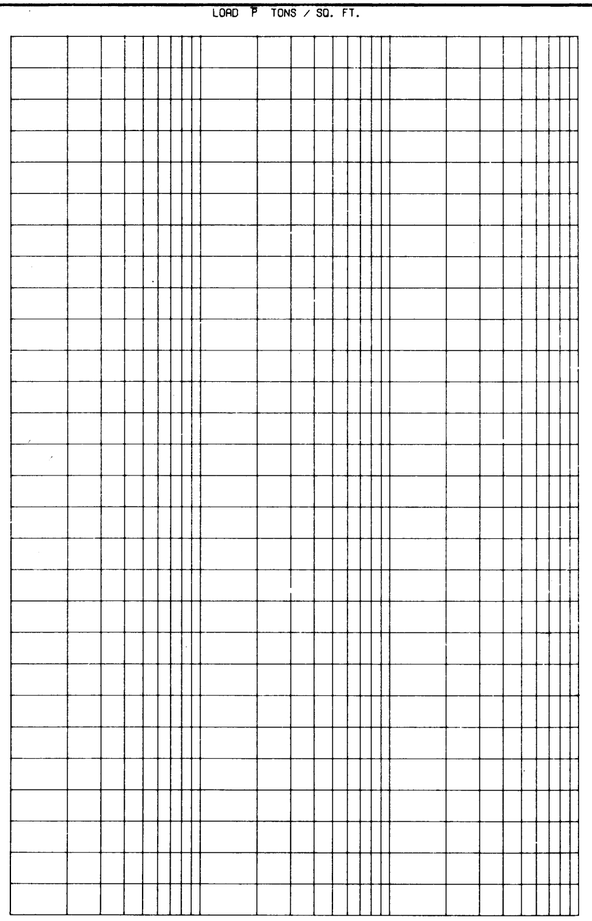


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
10-MHU-A	1	+5.4	S	24°	0.16	CH
	2	+2.8		31°	0	CL
	3	+0.3		28°	0.10	CH
	4	-4.4		26°	0.13	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 12

MISSISSIPPI RIVER LEVEES AND BANKS

MILE 66 TO MILE 10

SOIL REPORT - PART I

WEST BANK

SOIL BORING DATA

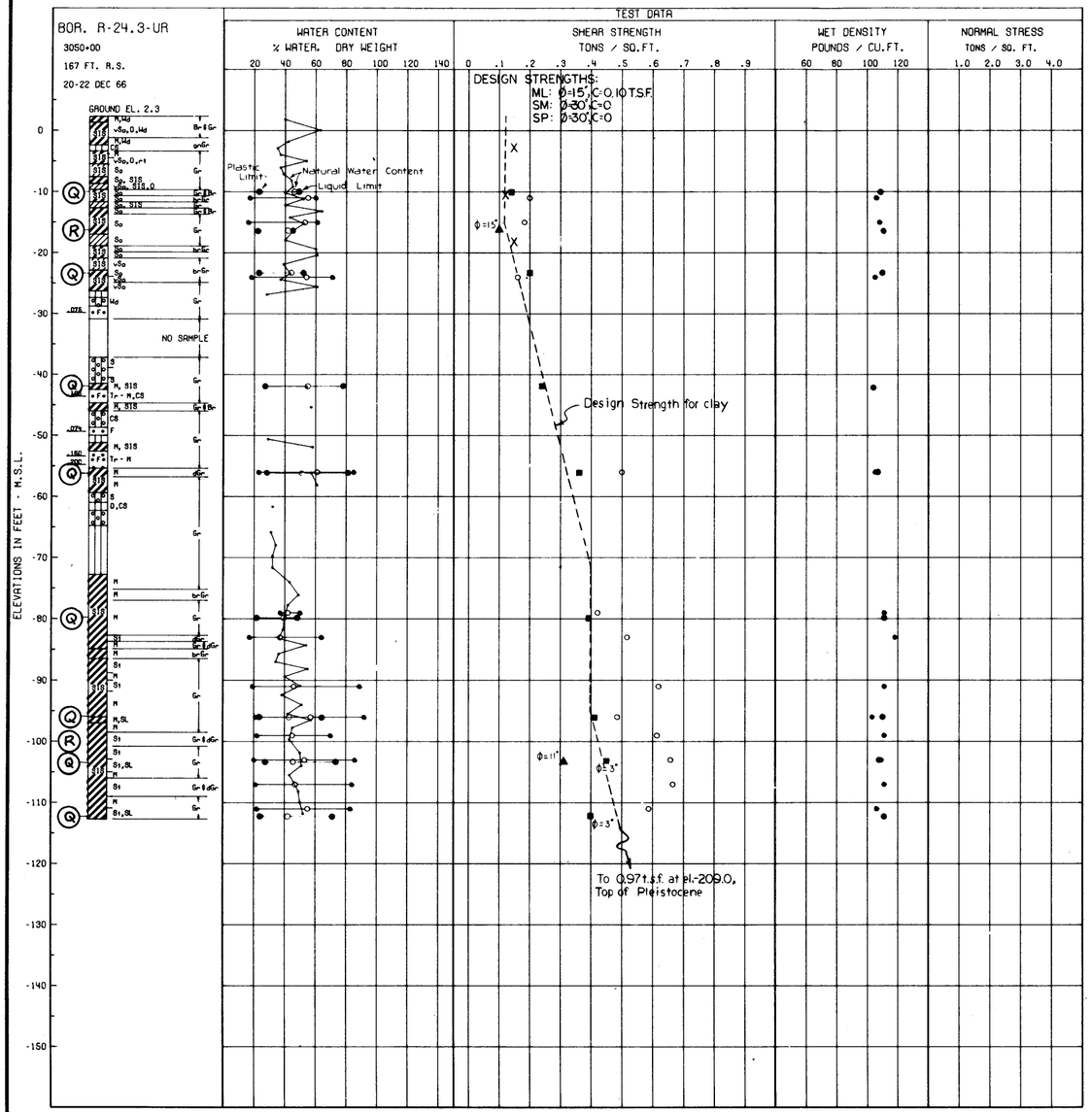
10-MHU-A

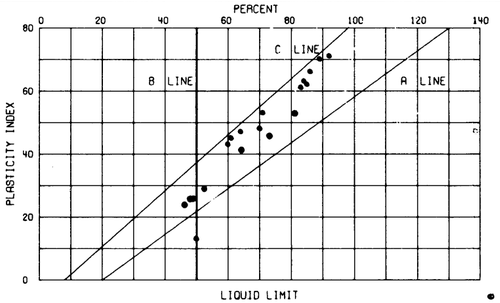
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

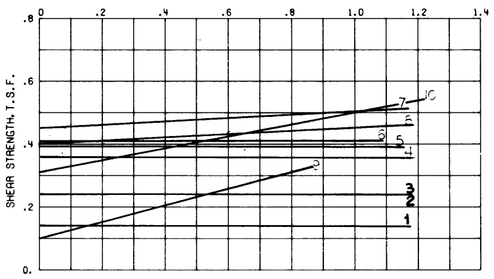
FILE NO. H-2-25275

PLATE 66



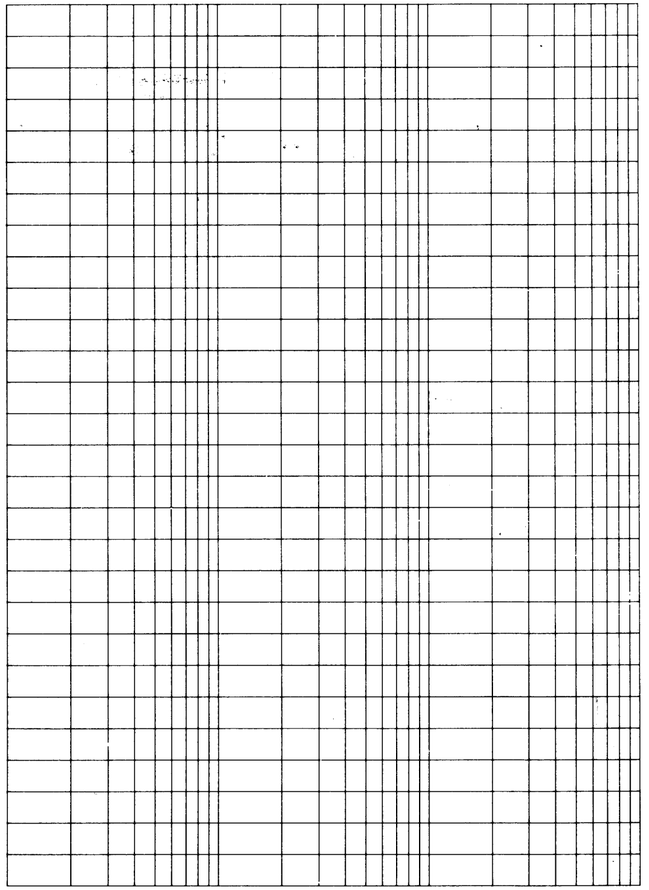


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ°	STRENGTH C - TSF	CLASS
R-24.3-UR	1	-10.1	Q	0	0.14	CL
	2	-23.3		0	0.20	CH
	3	-41.9		0	0.24	CH
	4	-56.2		0	0.36	CH
	5	-79.8		0	0.39	CL
	6	-95.7		0	0.41	CH
	7	-103.3		3	0.45	CH
	8	-112.2		3	0.40	CH
	9	-16.2	R	15	0.10	CL
	10	-103.3		11	0.31	CH



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 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
WEST BANK

SOIL BORING DATA

R-24.3 - UR

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

AUGUST 1971

FILE NO. H-2-25275

BOR. S-MHU
STA. 3113+25
C.L. LEVEE
29 OCT 69

GROUND EL. 9.5

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
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

Ø=16.5°

Design Strength for clay

To 1.10 T.S.F. at El.-209, Top of Pleistocene

WET DENSITY
POUNDS / CU.FT.

135

NORMAL STRESS
TONS / SQ. FT.

Pc

PLASTICITY CHART

PERCENT

PLASTICITY INDEX

LIQUID LIMIT

B LINE

C 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
5-MHU	1	1.2	Q	0	0.350	CH
	2	- 6.9		0	0.190	CH
	3	-14.6		0	0.190	CH
	4	-18.6		0	0.220	CL
	5	-24.6	R*	16.5°	0.10	ML

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.

CONSOLIDATION DATA

LOAD P TONS / SQ FT.

VOID RATIO - e

Pc = Preconsolidation pressure

El.-15.7
Cc = 0.1993
Pc = 0.86

El.-19.6
Cc = 0.3322
Pc = 0.86

El.-2.4
Cc = 0.2658
Pc = 1.85

○ - (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
WEST BANK

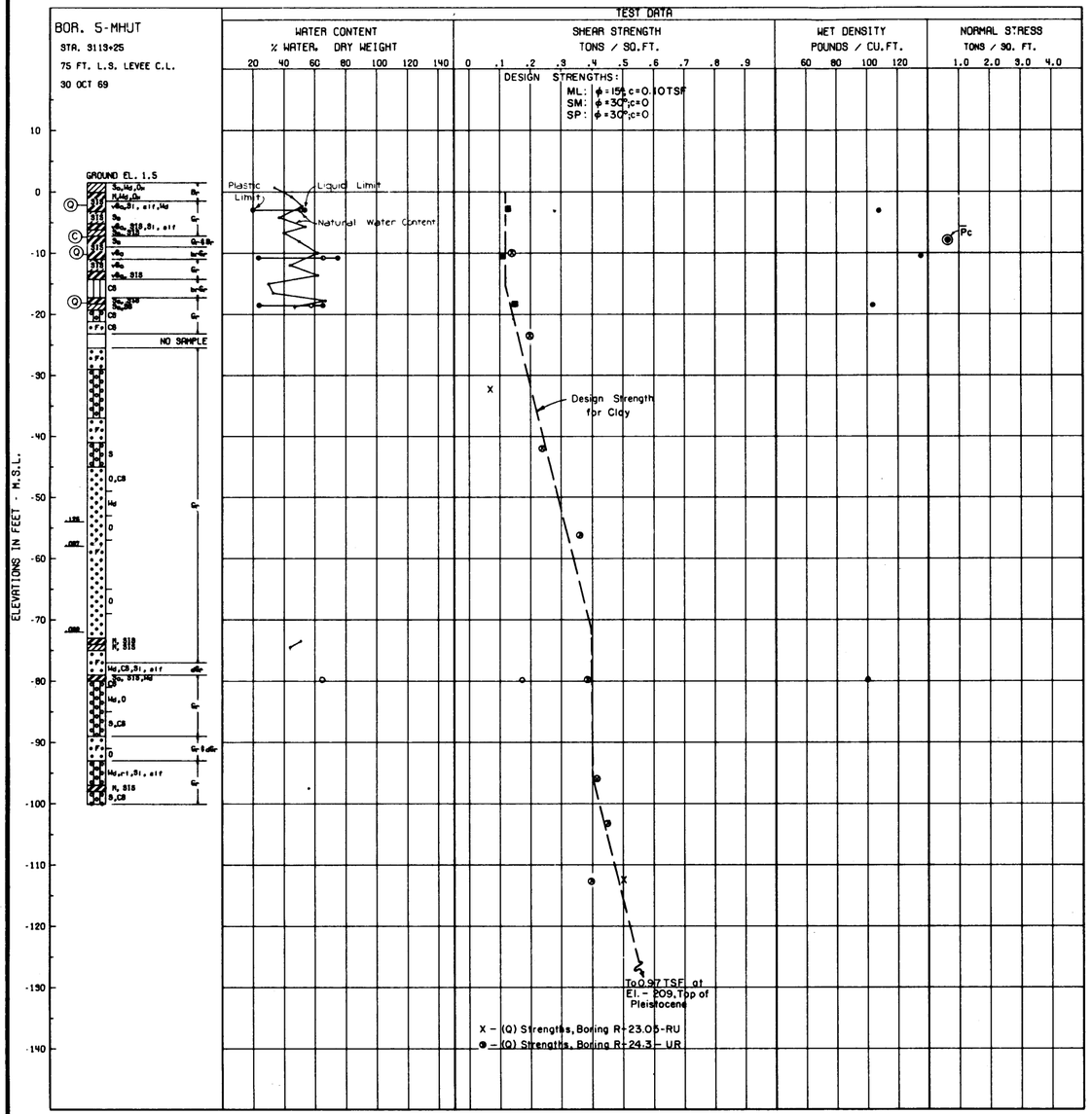
SOIL BORING DATA
5-MHU

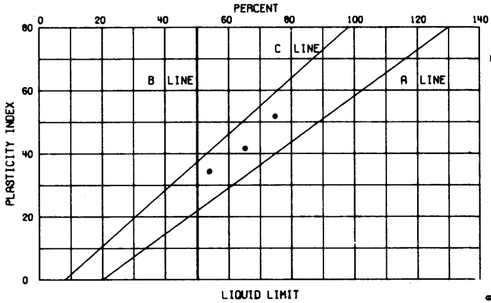
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

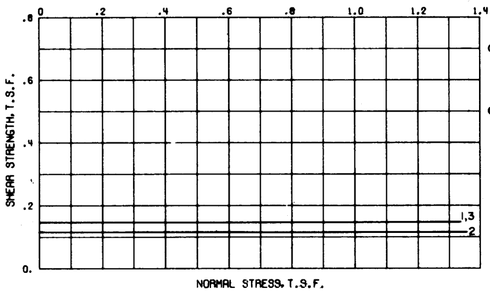
FILE NO. H-2-25275

PLATE 68



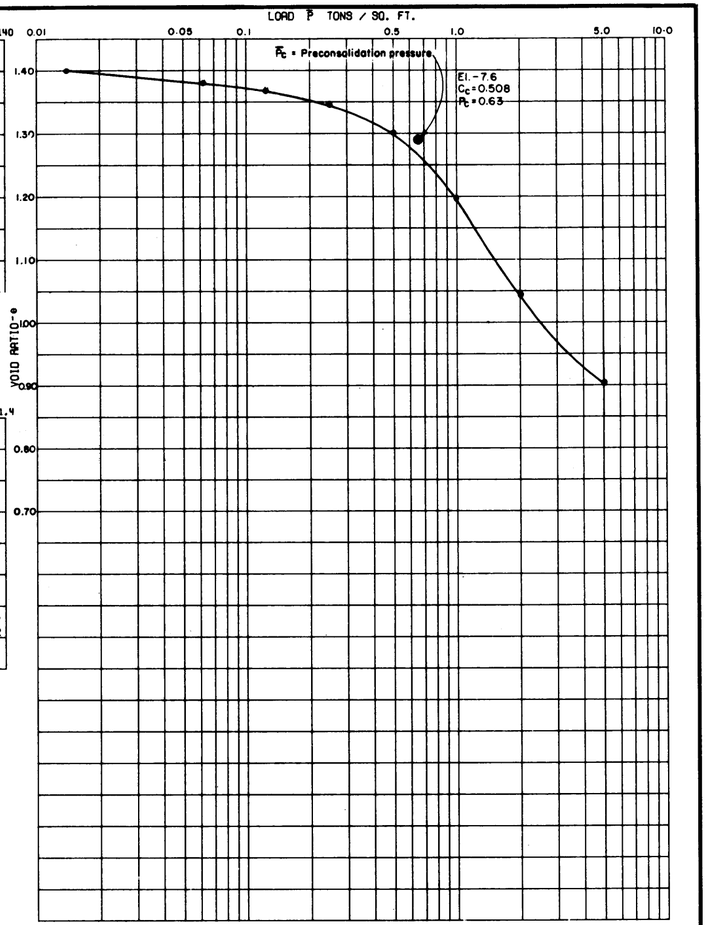


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
5-MHUT	1	-2.7	Q	0	0.150	CH
	2	-10.5		0	0.120	CH
	3	-18.1		0	0.150	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
WEST BANK

SOIL BORING DATA

5-MHUT

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

AUGUST 1971

FILE NO. H-2-25275

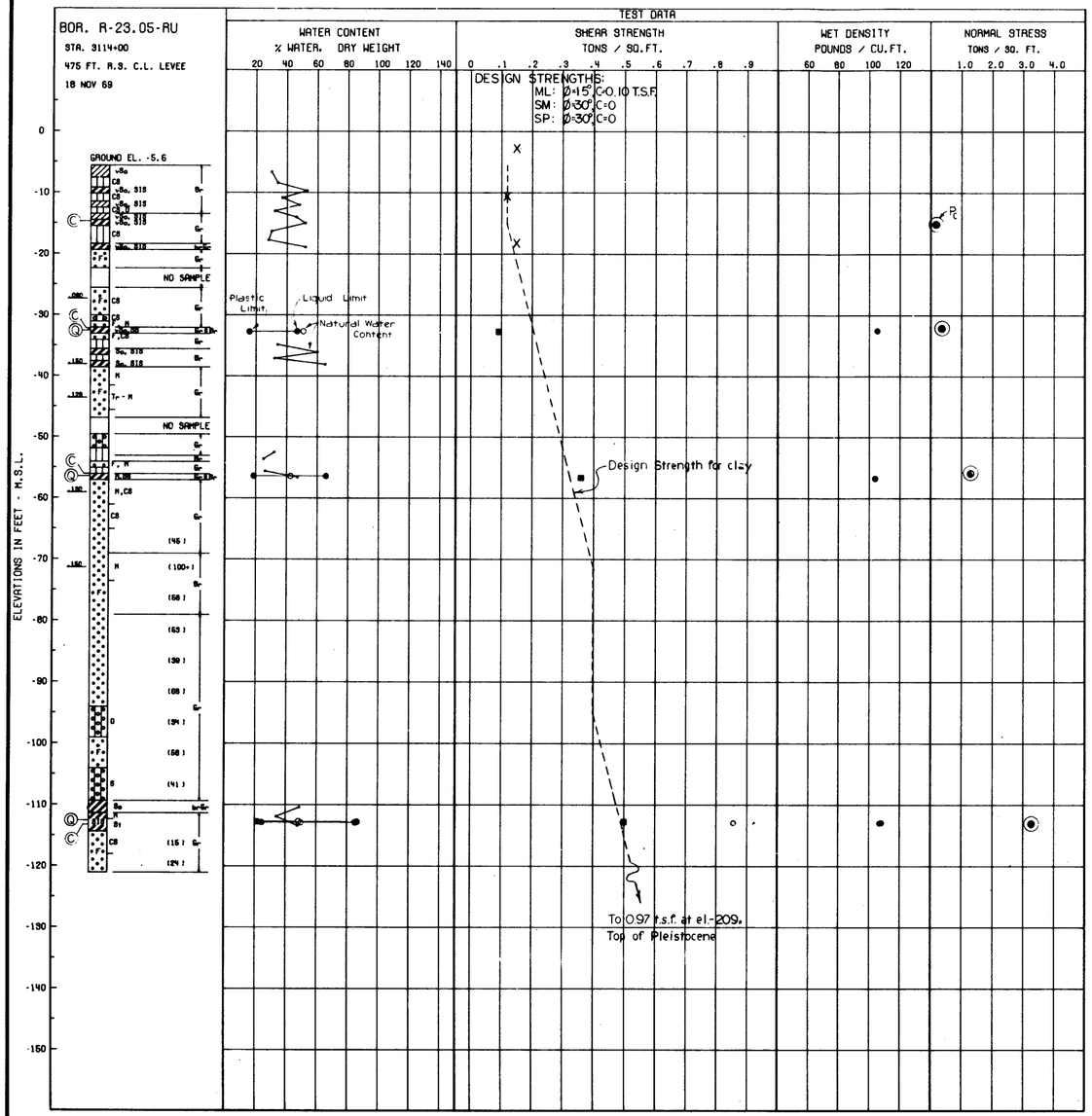
PLATE 69

BOR. R-23.05-RU

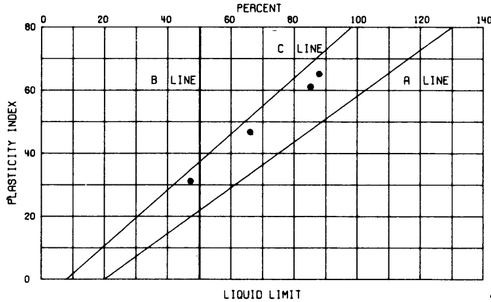
STA. 3114+00

475 FT. R.S. C.L. LEVEE

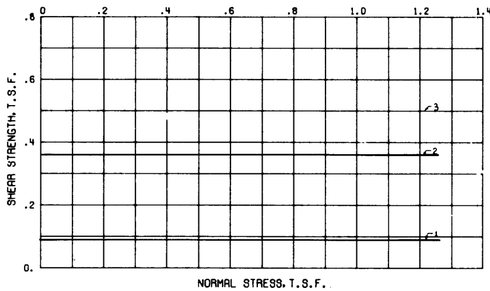
18 NOV 69



X-(Q) Strengths, Boring 5-MHUT

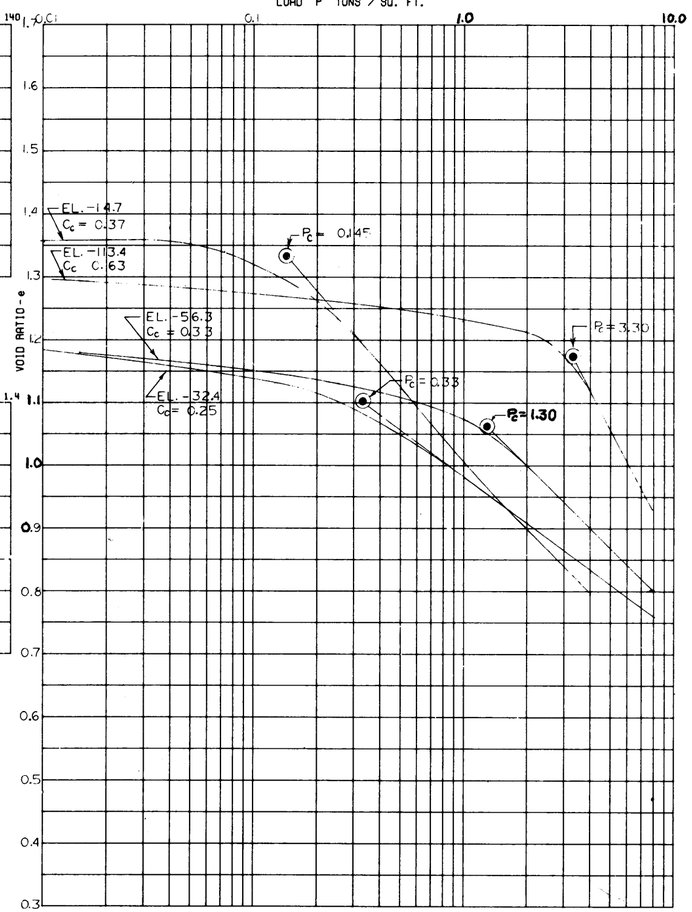


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
R-23.05-RU	1	-32.4	Q	0.0	.09	CL
	2	-56.3		0.0	.36	CH
	3	-112.6		0.0	.50	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

WEST BANK

SOIL BORING DATA

R - 23.05 - RU

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 70

BORING NO. 3-MHU
STA. 3169+00; on ℄
19-21 JUL. 1966

TEST DATA

WATER CONTENT
% Water, Dry Weight

SHEAR STRENGTH
Tons / Sq. Ft.

WET DENSITY
Pounds / Cu. Ft.

PRECONSOLIDATION PRESSURE
Tons / Sq. Ft.

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

Ground El. 9.1

No sample

Design strength for clay

To 1.14 TSF At El. -208 ' (Top of Pleistcene)

ELEVATIONS IN FEET - M.S.L.

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

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

PERCENT

PLASTICITY INDEX

"C" Line

"A" Line

LIQUID LIMIT

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
3-MHU	1	+ 2.1	Q	0	0.53	CL
	2	- 8.9		0	0.26	CH
	3	-29.4		0	0.27	CH
	4	-40.6		32.5	0	SP
	5	-51.6		0	0.38	CH
	6	-60.9		0	0.41	CH
	7	-103.9		0	0.61	CH
	8	-29.4	R	13	0.16	CH

SHEAR STRENGTH DATA

LOAD - P̄ - T/S.F.

VOID RATIO - e

$\bar{P}_c$ - Preconsolidation Pressure

El. -9.7 C_c = 1.30

El. -60.1 C_c = 0.86

El. -28.9 C_c = 0.81

El. -48.3 C_c = 0.81

Boring 3-MHU

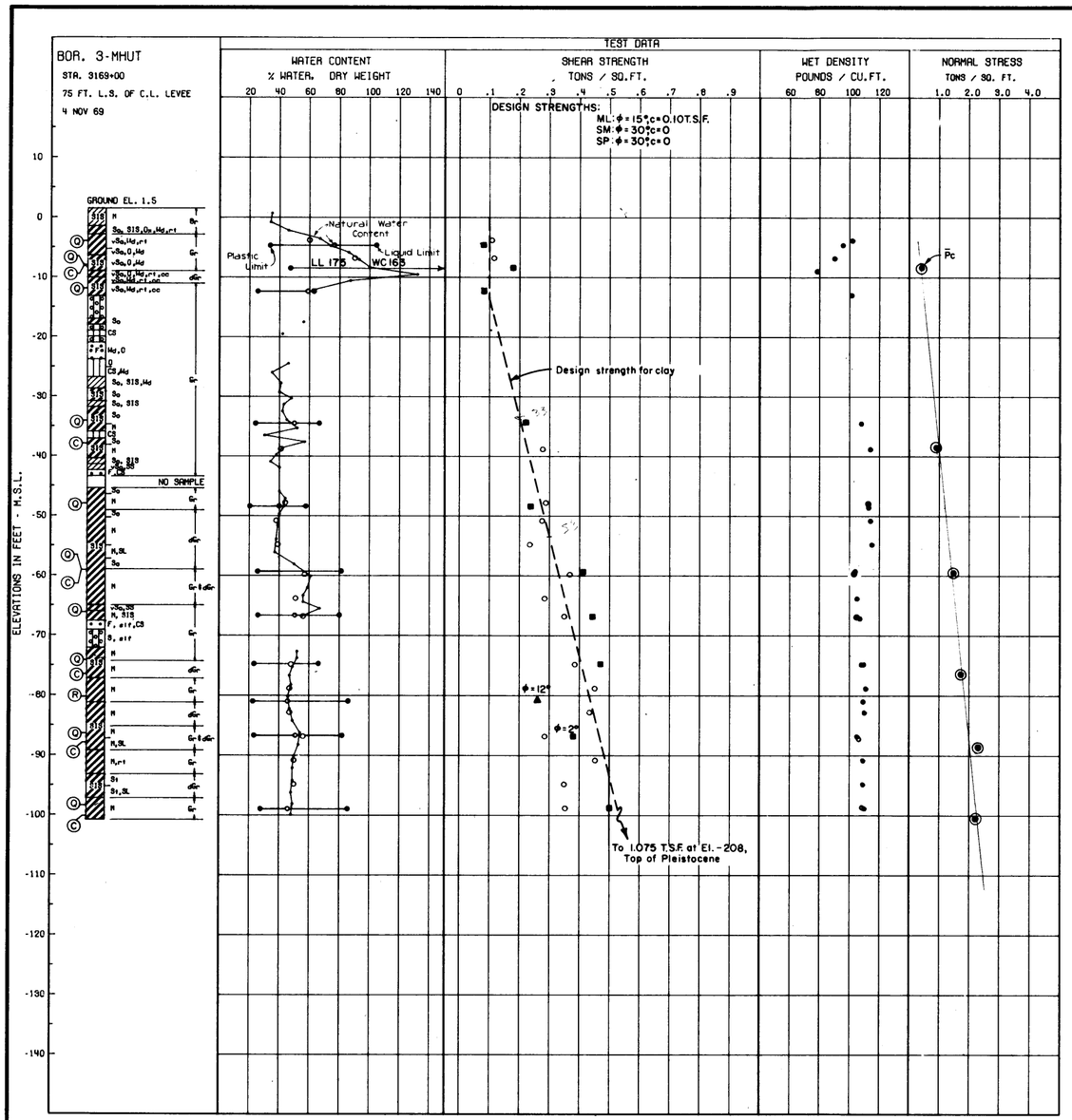
CONSOLIDATION DATA

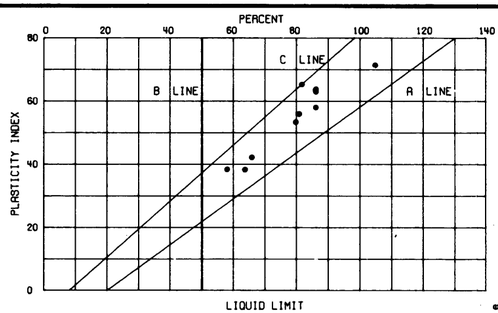
—— Boring No. 3-MHU
– – Boring No.
For soil boring legend see plate A
For location of borings see plate 13

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

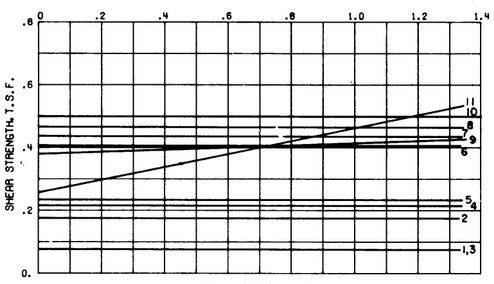
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
WEST BANK
SOIL BORING DATA
3-MHU
STA. 3169+00
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 71



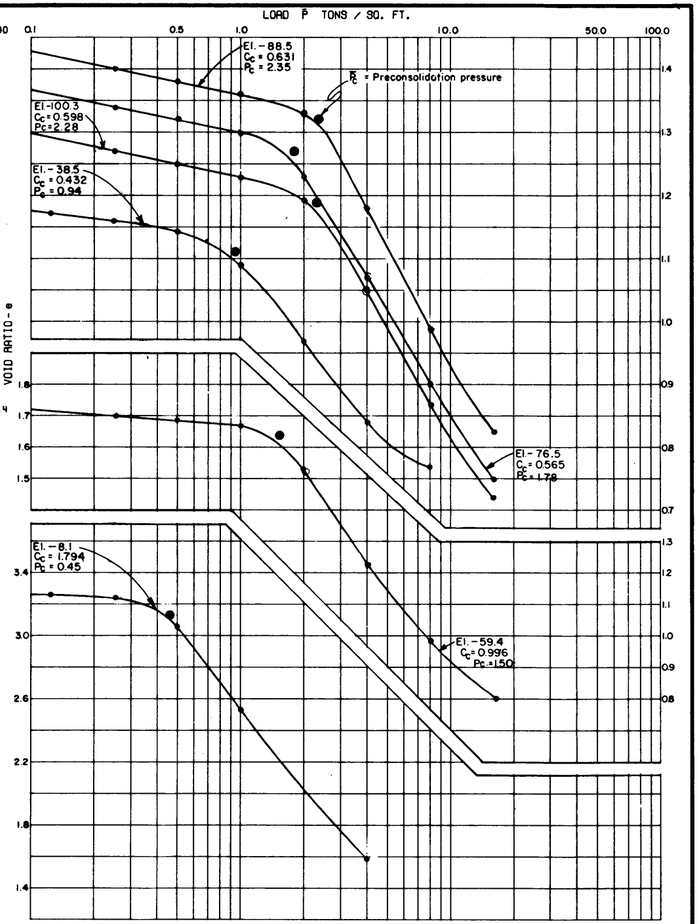


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH ϕ	STRENGTH C - TSF	CLASS
3-MHUT	1	- 4.6	Q	0	0.080	CH
	2	- 8.1		0	0.180	CH
	3	-12.3		0	0.080	CH
	4	-34.4		0	0.220	CH
	5	-48.2		0	0.240	CH
	6	-59.4		0	0.410	CH
	7	-66.4		0	0.440	CH
	8	-74.7		0	0.470	CH
	9	-86.7		2°	0.380	CH
	10	-98.5		0	0.500	CH
	11	-80.5	R	12°	0.260	CH



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 13

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

SOIL BORING DATA

3-MHUT

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 72

BOR. 1-U
STA 3216+00
235 FT. R.S. BL
25 SEPT 62

GROUND EL. 4.3

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

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

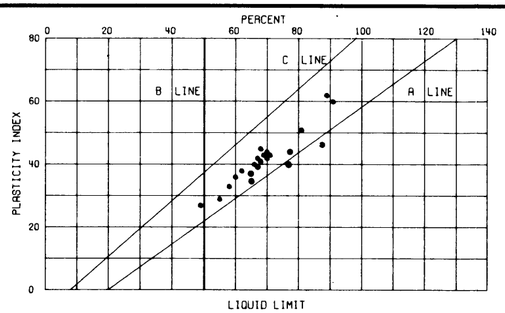
WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.

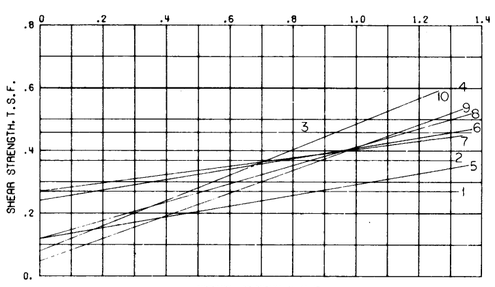
LL 185
Plastic Limit
Natural Water Content
Liquid Limit
ϕ=10°
ϕ=16.4°
Design strength for clay
ϕ=19.9°
ϕ=9.75°
ϕ=22.1°
ϕ=8°

ELEVATIONS IN FEET - M.S.L.

CONTINUED NEXT PLATE



PLASTICITY CHART



SHEAR STRENGTH DATA

CONSOLIDATION DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1-U	1	-13.8	Q	0	0.27	OH
	2	-61.0		0	0.37	CH
	3	-89.8		0	0.46	CH
	4	-109.0	I	0	0.60	CH
	5	-14.7		10°	0.12	CH
	6	-62.7	R	9.75°	0.24	OH
	7	-109.8	I	8°	0.27	CH
	8	-14.7		16.4°	0.12	CH
	9	-62.7	S	19.9°	0.05	OH
	10	-109.0		22.1°	0.08	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 13

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

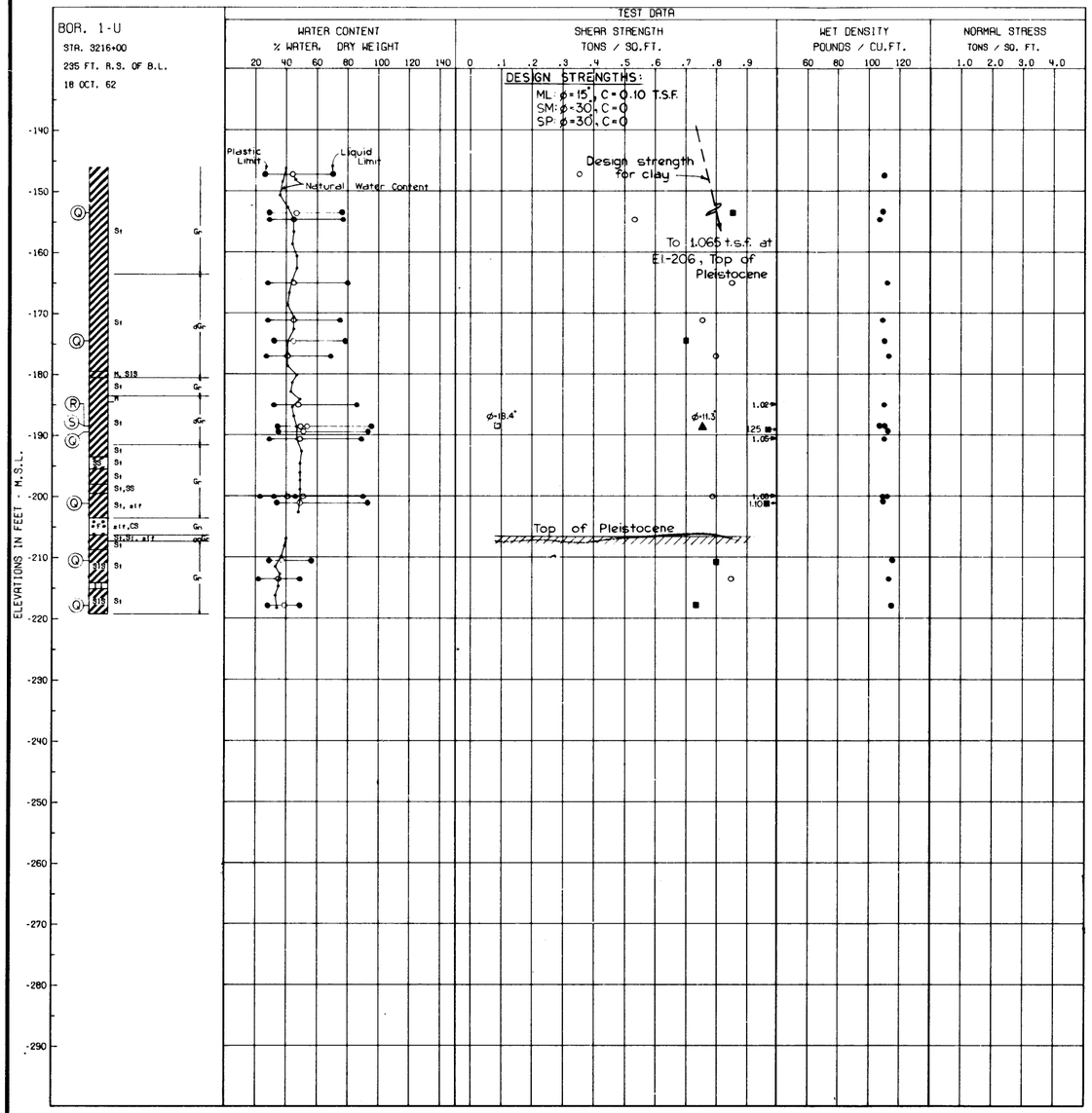
SOIL BORING DATA
I-U
STA. 3216+00

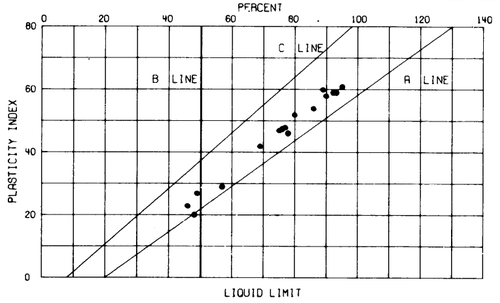
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

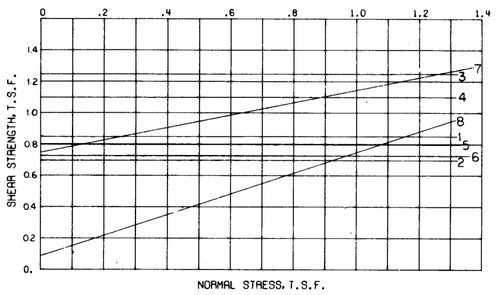
FILE NO. H-2-25275

PLATE 73



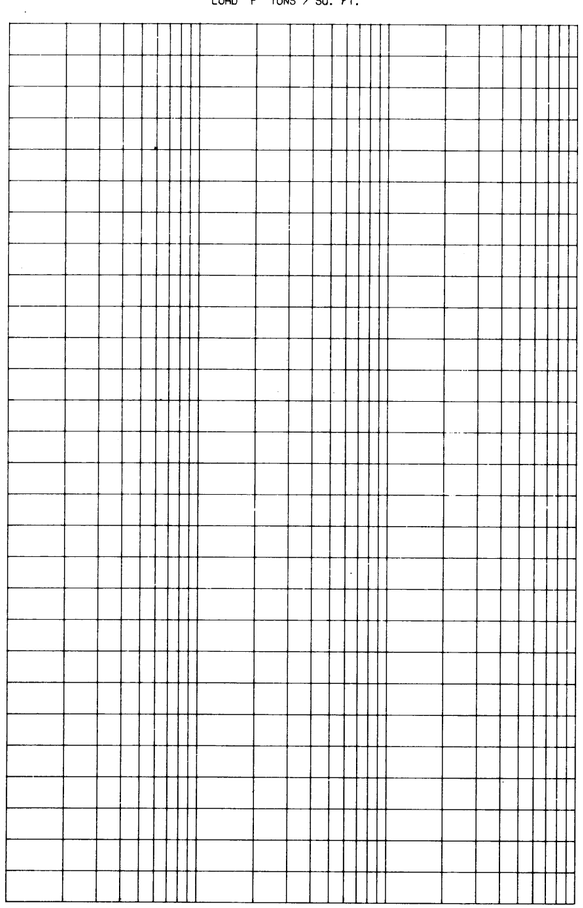


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
1-U	1	-153.6	Q	0	0.85	CH
	2	-174.6		0	0.70	CH
	3	-189.5		0	1.25	CH
	4	-201.0		0	1.10	CH
	5	-210.5		0	0.80	CH
	6	-217.9		0	0.73	OL
	7	-188.6	R	11.3°	0.75	CH
	8	-188.6	S	18.4°	0.09	CH



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 13

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

SOIL BORING DATA
1-U (CONT.)
STA. 3216+00

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

AUGUST 1971

FILE NO. H-2-25275

BOR. 2-U

650 FT. R.S. OF B.L.

6 NOV 62

STA 3218+00

Water Surface El 2.0

GROUND EL. -119.9

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.

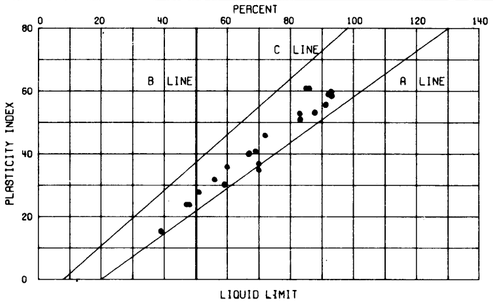
Plastic Limit

Natural Water Content

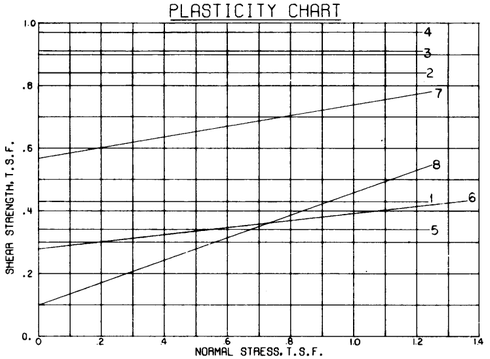
Liquid Limit

Ø = 19.7°

Ø = 9.8°



PLASTICITY CHART



CONSOLIDATION DATA

SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
2-U	1	-172.0	Q	0	0.43	CH
	2	-180.0		0	0.84	CH
	3	-189.0		0	0.91	CH
	4	-201.0		0	0.97	CH
	5	-210.4		0	0.34	CH
	6	-220.0		6.8°	0.28	CL
	7	-188.0	R	9.8°	0.57	CH
	8	-188.0	S	19.7°	0.10	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 13

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

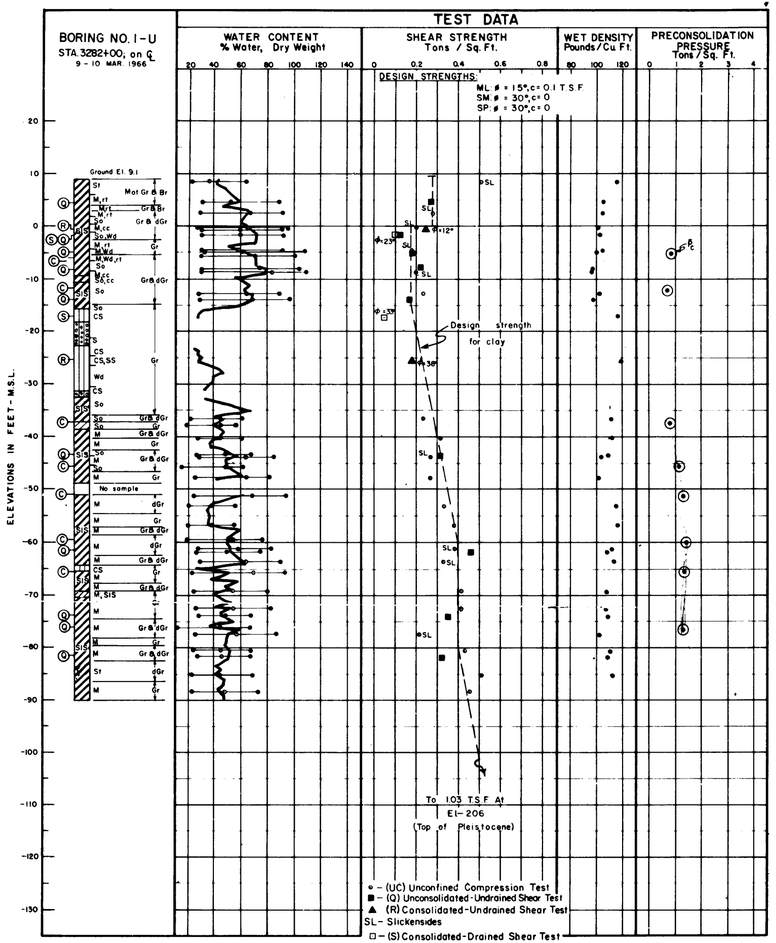
SOIL BORING DATA
2-U
STA. 3218+00

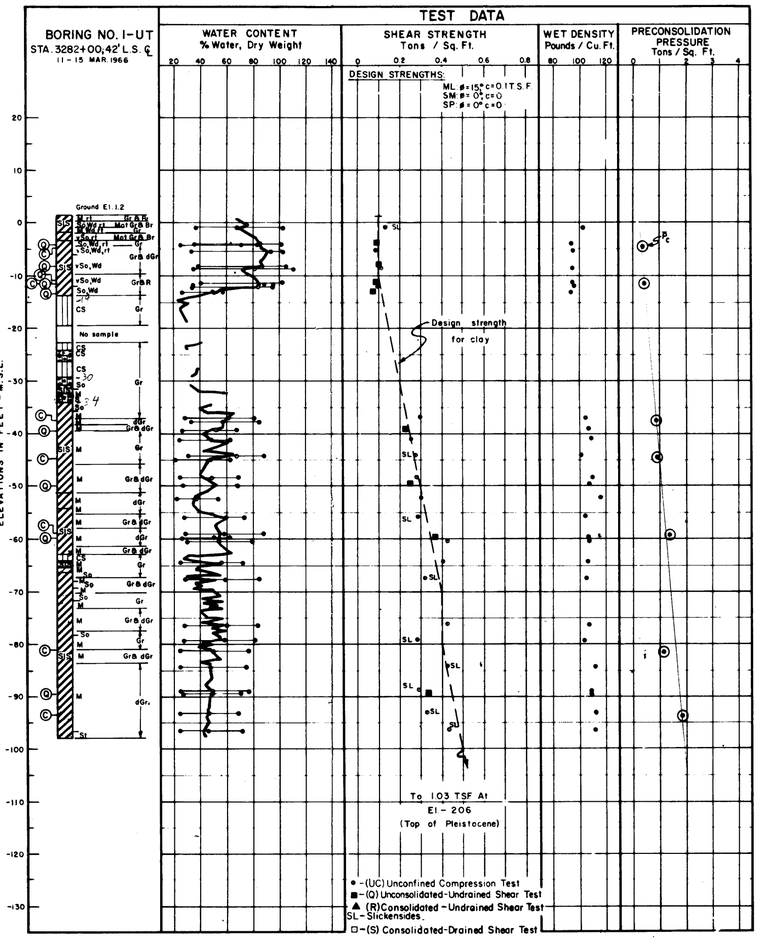
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

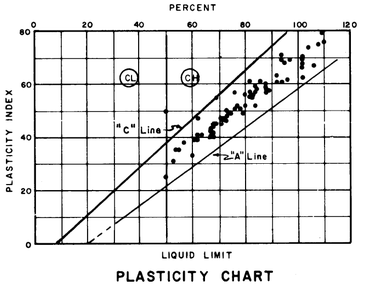
AUGUST 1971

FILE NO. H-2-25275

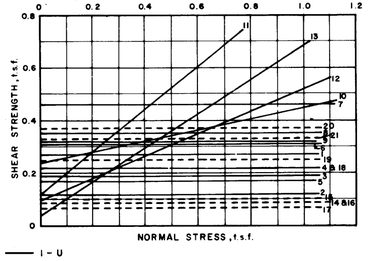
PLATE 75

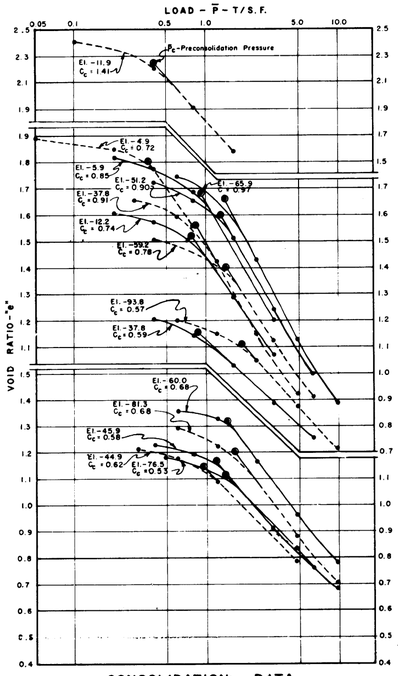






PLASTICITY CHART





CONSOLIDATION DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH ϕ°	STRENGTH (t.s.f.)	CLASS
I-U	1	+ 4.7	Q	0	0.27	CH
	2	- 1.5			0.12	CH
	3	- 4.9			0.19	CH
	4	- 8.1			0.22	CH
	5	- 13.9			0.17	CH
	6	-43.3			0.31	CH
	7	- 61.8			0.46	CH
	8	- 73.9			0.35	CH
	9	- 81.8		0	0.32	CH
	10	- 0.7	R	12	0.24	CH
	11	- 25.5		39	0.12	SP
	12	- 1.5	S	23	0.10	CH
	13	- 17.1		33	0.04	ML
I-UT	14	- 3.7	Q	0	0.09	CH
	15	- 7.9			0.10	CH
	16	- 10.9			0.09	CH
	17	- 12.7			0.07	CH
	18	- 38.9			0.22	CH
	19	- 49.5			0.25	CH
	20	- 59.7			0.37	CH
	21	- 89.2		0	0.33	CH

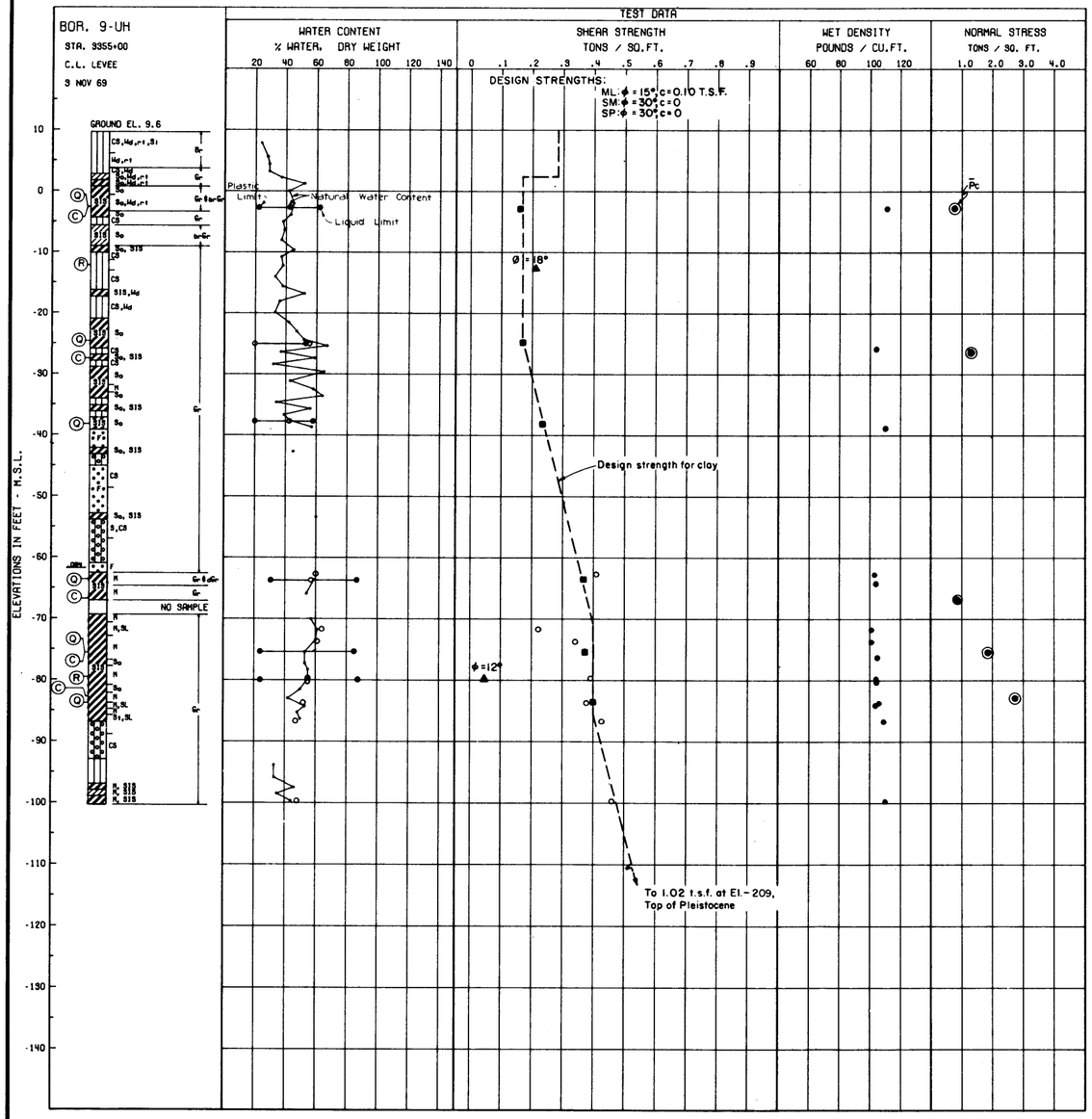
SHEAR STRENGTH DATA

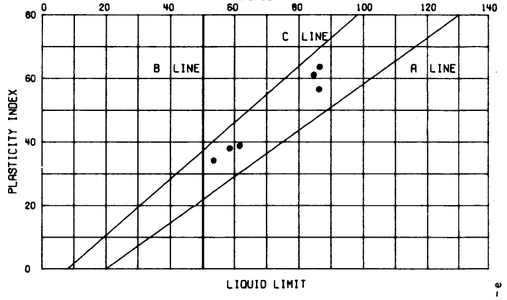
—— Boring No. I - U
– – Boring No. I - UT
For soil boring legend see plate A
For location of borings see plate 13

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

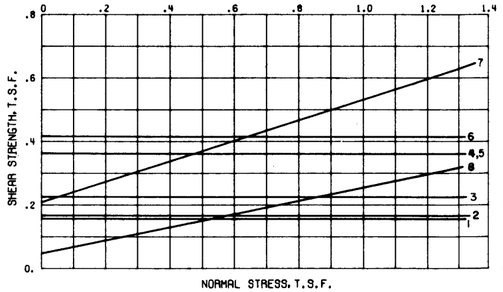
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
WEST BANK
SOIL BORING DATA
I-U AND I-UT
STA. 3282+00
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 76





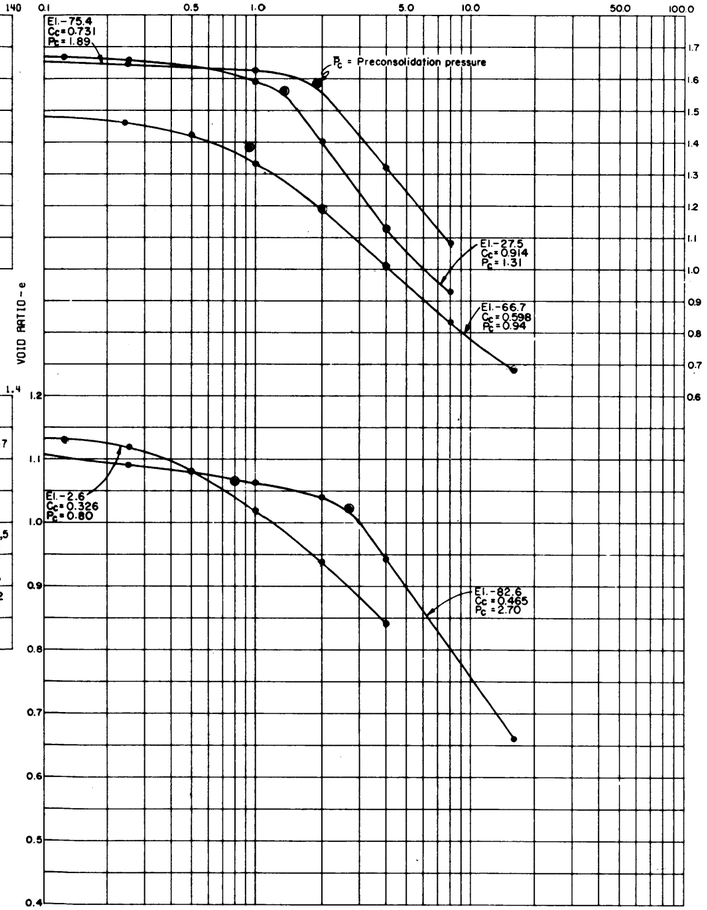
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH ϕ	STRENGTH C - TSF	CLASS
9-UH	1	-2.6	Q	0	0.160	CH
	2	-24.5		0	0.170	CH
	3	-38.1		0	0.230	CH
	4	-63.7		0	0.370	CH
	5	-75.4		0	0.370	CH
	6	-83.5		0	0.420	CH
	7	-12.4	R	*18°	0.210	ML
	8	-80.0		12°	0.050	CH

*BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE : ϕ = 17°, C = 0.03 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 13

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

SOIL BORING DATA

9-UH

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

AUGUST 1971

FILE NO. H-2-25275

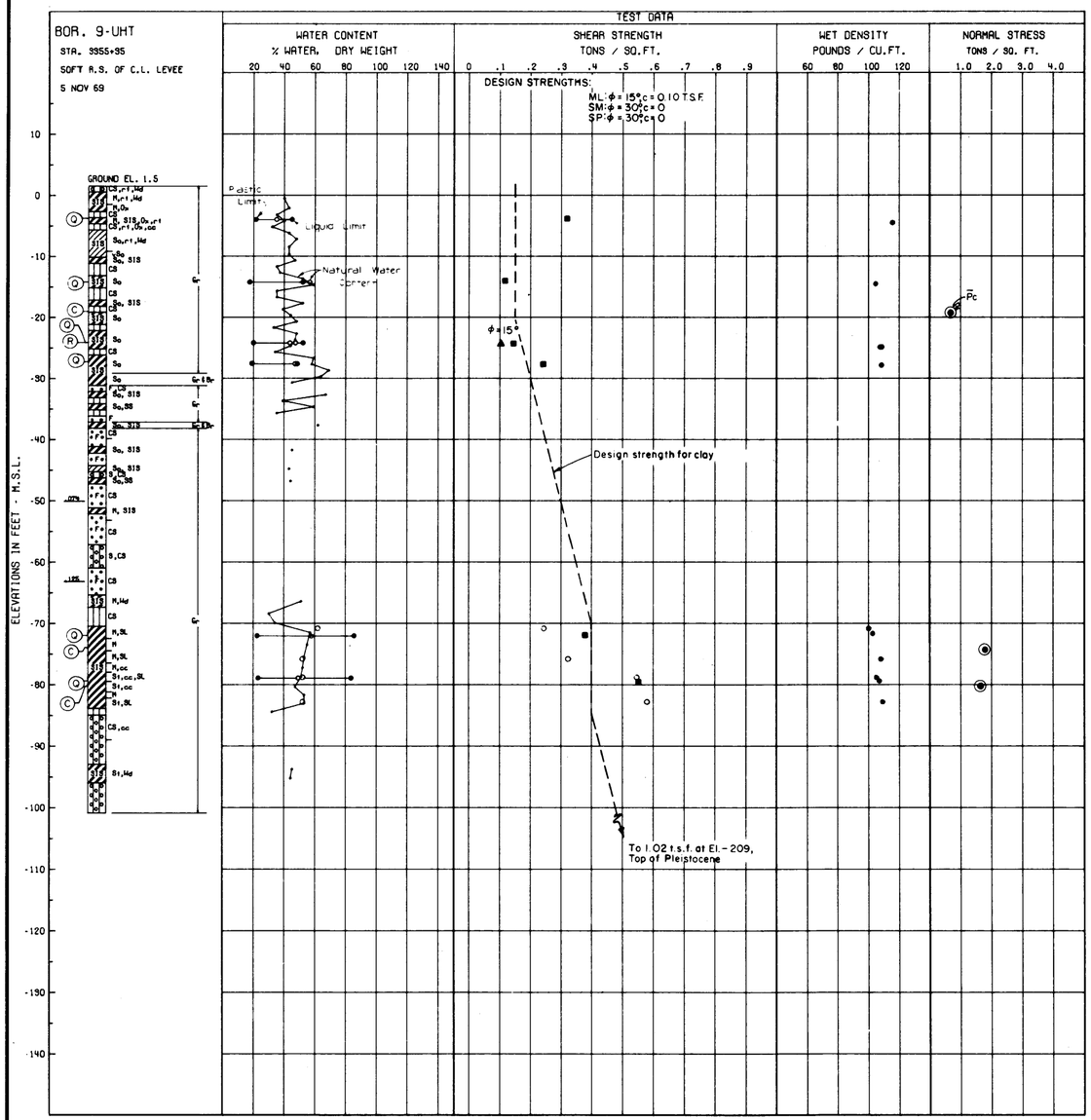
PLATE 77

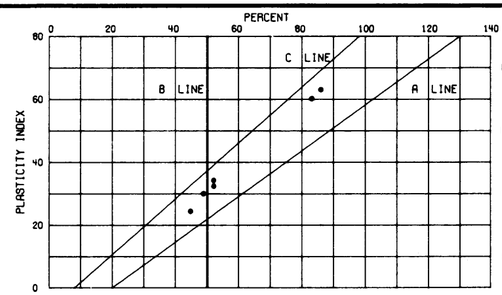
BOR. 9-UHT

STA. 3955+95

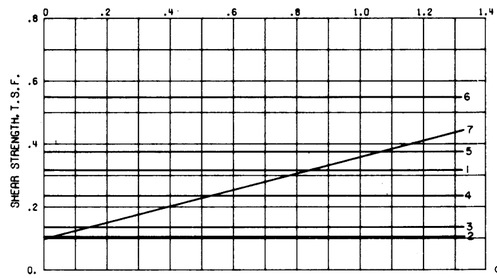
SOFT R.S. OF C.L. LEVEE

5 NOV 69



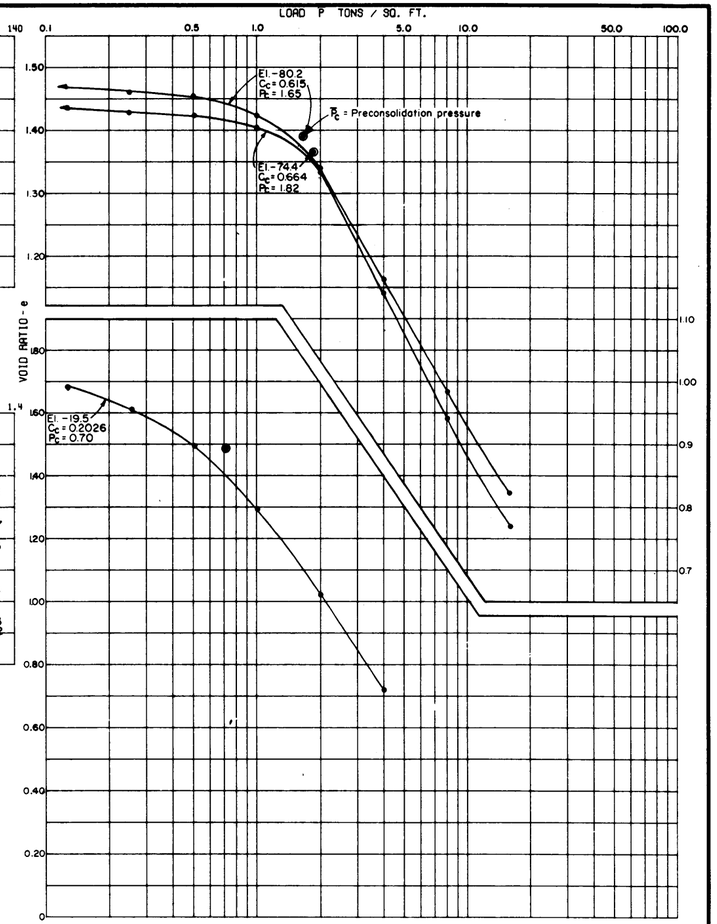


PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
9-UT	1	-4.0	Q	0	0.320	CH
	2	-14.5		0	0.110	CH
	3	-24.3		0	0.140	CH
	4	-27.5		0	0.240	CL
	5	-72.1		0	0.380	CH
	6	-79.3		0	0.550	CH
	7	-24.3	R	15°	0.100	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

WEST BANK

SOIL BORING DATA

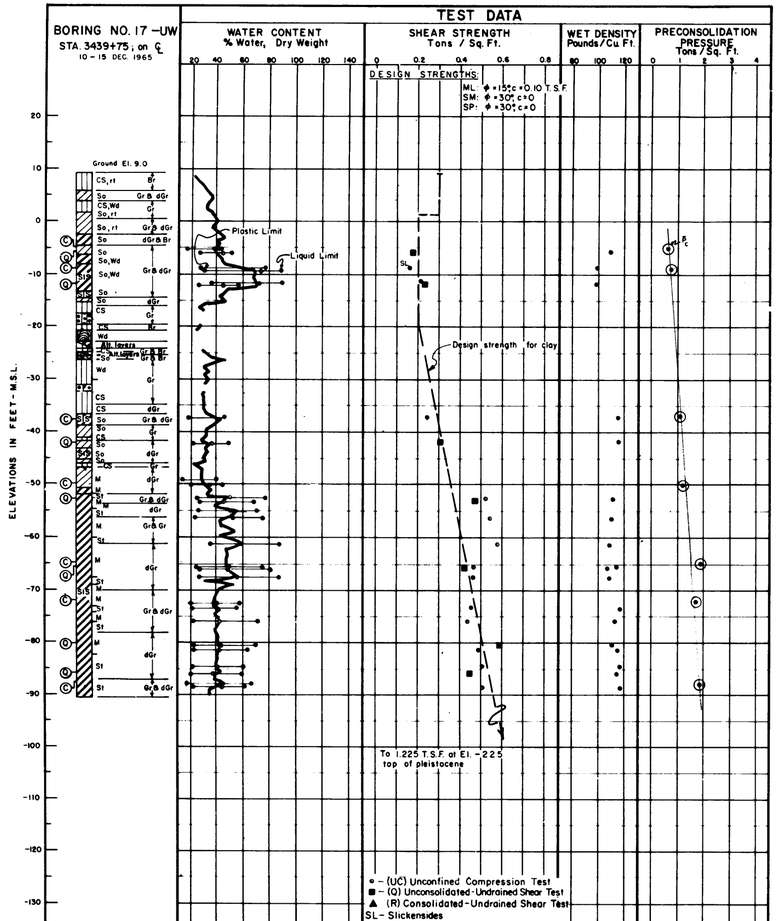
9-UHT

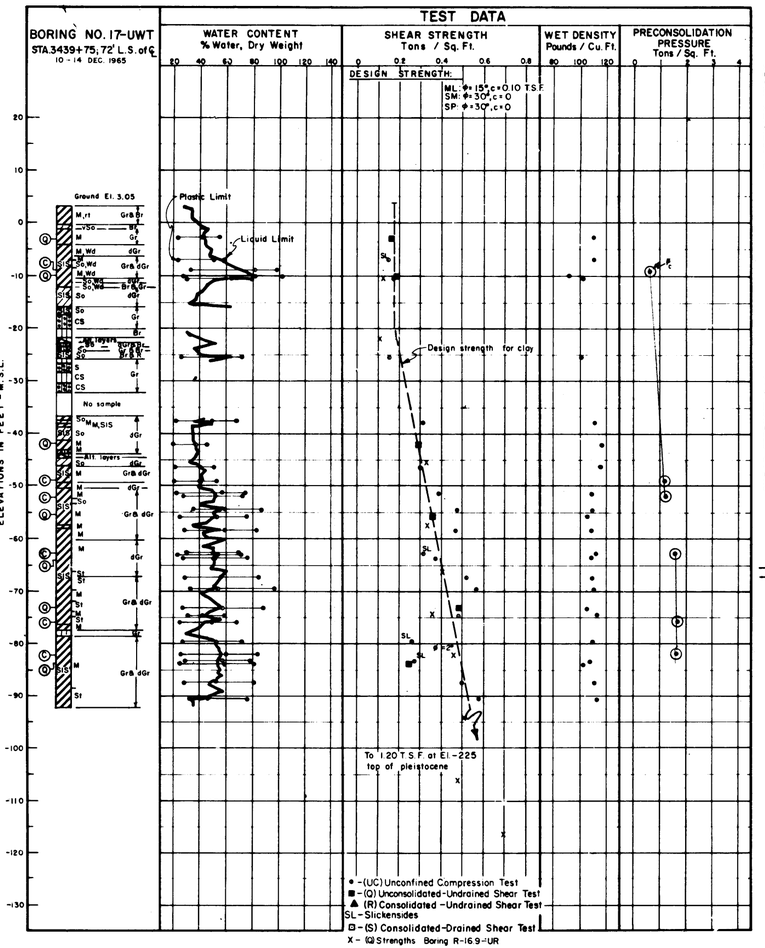
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

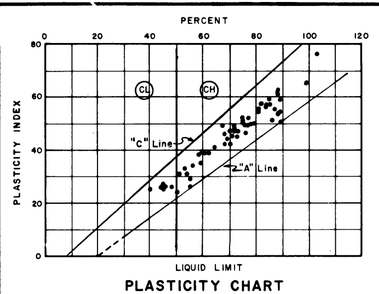
AUGUST 1971

FILE NO. H-2-25275

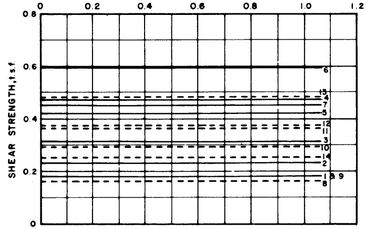
PLATE 78







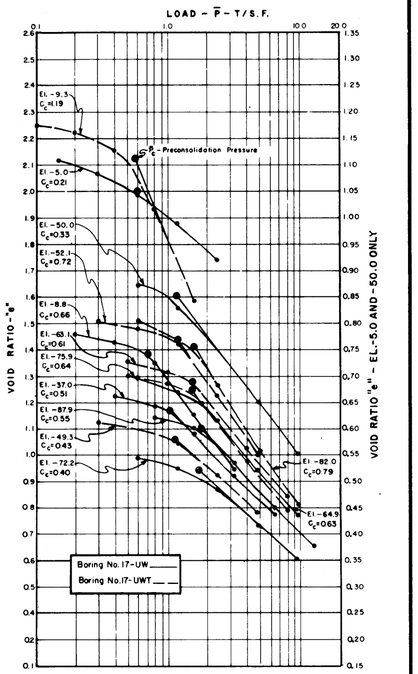
PLASTICITY CHART



17 - UW
17 - UWT

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH φ°	STRENGTH c (t.s.f.)	CLASS
17-UW	1	- 6.0	Q	0	0.18	CL
	2	- 12.0			0.23	CH
	3	- 42.0			0.31	CL
	4	- 53.2			0.47	CH
	5	- 66.0			0.42	CH
	6	- 80.3			0.59	CH
	7	- 86.0		0	0.45	CH
17-UWT	8	- 2.9	Q	0	0.16	CH
	9	- 10.2			0.18	CH
	10	- 42.2			0.29	CL
	11	- 55.9			0.36	CH
	12	- 63.9			0.37	CH
	13	- 73.3			0.48	CH
	14	- 83.9		0	0.25	CH

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. 17 - UW
– – Boring No. 17 - UWT
For soil boring legend see plate A
For location of borings see plate 14

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
WEST BANK

SOIL BORING DATA

17 - UW AND 17-UWT
STA. 3439+75
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 79

BOR. R-16.9-RU

STA. 3439 + 75

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

10 NOV 69

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: 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

Design Strength for clay

Φ=2°

To 1.135 t.s.f. at el.-212, Top of Pleistocene

X-(Q) Strengths. Boring 17-UWT

PLASTICITY CHART

PLASTICITY INDEX

LIQUID LIMIT

PERCENT

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
R-16.9-RU	1	-11.0	Q		.13	CH
	2	-22.6			.12	CL
	3	-45.6			.34	CL
	4	-57.6		0°	.34	CH
	5	-66.4			.41	CH
	6	-74.5			.37	CL
	7	-82.4			.46	CH
	8	-94.4		2°	.51	CL
	9	-106.3		0°	.48	CH
	10	-116.6		0°	.70	CL

CONSOLIDATION DATA

LOAD P TONS / SQ. FT.

VOID RATIO 'e'

El-90.4 P_c=2.25 C_c=0.49

El-106.3 P_c=3.3 C_c=0.37

El-78.1 P_c=1.85 C_c=0.33

El-46.4 P_c=1.12 C_c=0.30

- ○- (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

WEST BANK

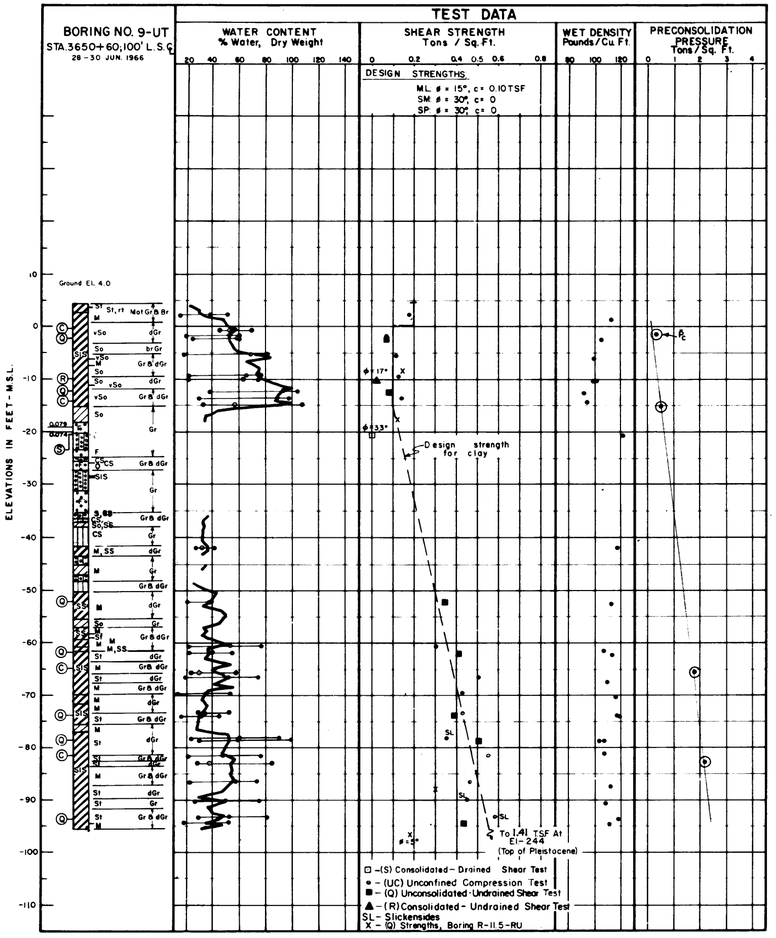
SOIL BORING DATA

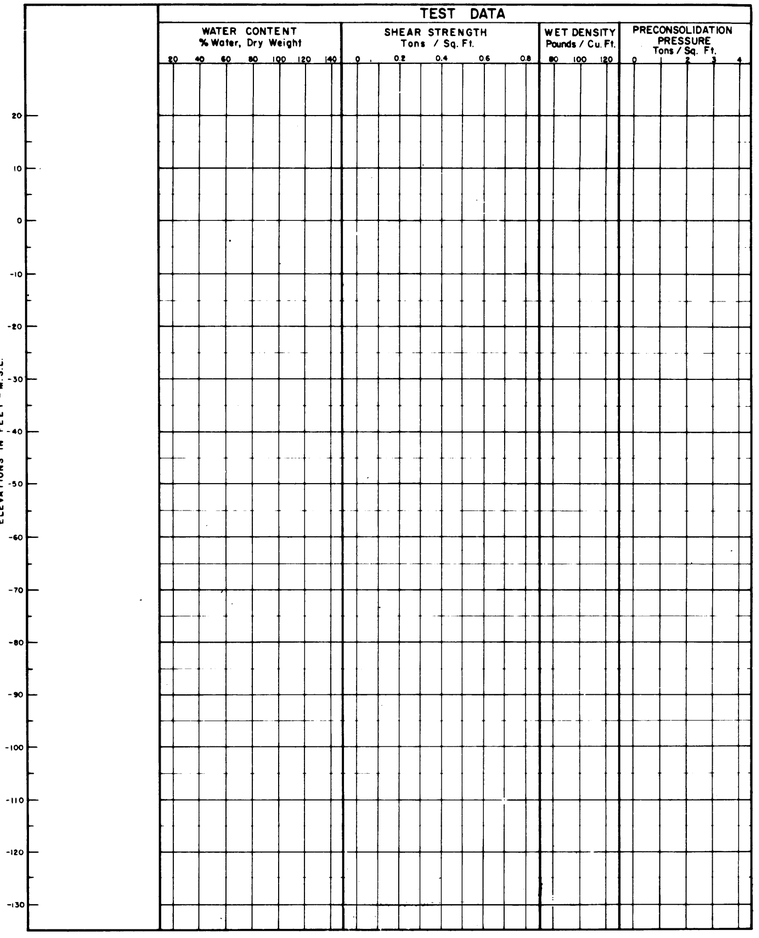
R-16.9-RU

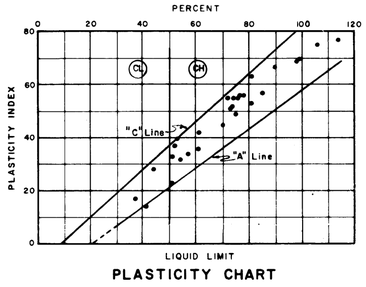
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971

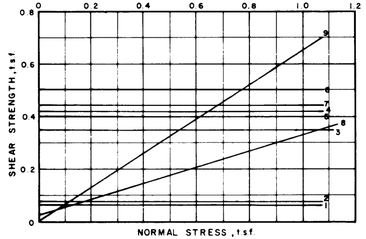
FILE NO. H-2-25275





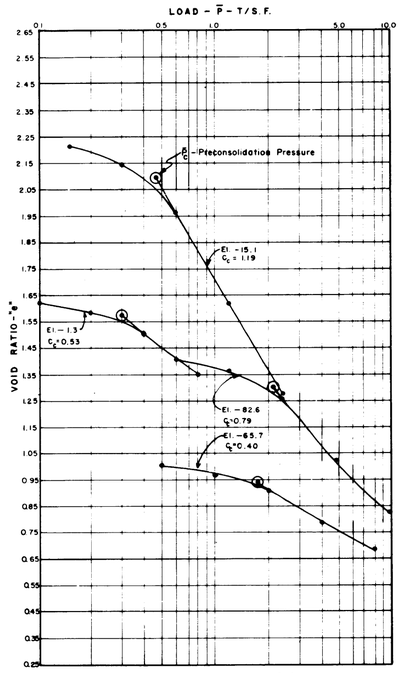


PLASTICITY CHART



BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH ϕ°	STRENGTH c (t.s.f.)	CLASS
9-UT	1	- 3.1	Q	0	0.07	CH
	2	- 13.2			0.08	CH
	3	- 53.1			0.35	CL
	4	- 62.7			0.42	CH
	5	- 74.6			0.40	CL
	6	- 79.3			0.50	CH
	7	- 94.8		0	0.44	CH
	8	- 10.8	R	17	0.02	CH
	9	- 21.3	S	33	0.00	SM

SHEAR STRENGTH DATA



CONSOLIDATION DATA

—— Boring No. 9-UT
– – Boring No.
For soil boring legend see plate A
For location of borings see plate 15

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
WEST BANK
SOIL BORING DATA
9-UT
STA. 3650+60
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 81

BOR. R-11.5-RU

STA. 3726+00

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

3 NOV 69

GROUND EL. -2.5

NO SAMPLE

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: Φ=15, C=0.10 T.S.F.
SM: Φ=30, C=0
SP: Φ=30, C=0

Design Strength for clay

To 1.93 t.s.f. at el -248
Top of Pleistocene

X - (Q) Strengths, Boring 9-UT

PLASTICITY CHART

PLASTICITY INDEX

PERCENT

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
R-11.5-RU	1	-8.5	Q	0°	.15	CH
	2	-17.4		0°	.12	CH
	3	-87.4		0°	.30	CH
	4	-96.3		5°	.18	CL
	5	-104.4		0°	.73	CH
	6	-112.5		0°	.58	CH
	7	-120.5		0°	.62	CH
	8	-63.6	R	*18°	.10	ML
	9	-101.2		11°	.40	CH
	10	-57.2	S	31°	0	SM

* BASED ON DEVIATOR STRESS AT MAXIMUM POSITIVE PORE PRESSURE.

E-LOG P
CONSOLIDATION DATA

LOAD P TONS / SQ. FT.

VOID RATIO e

El-16.5
Pc=.64
Cc=0.57

El-107.1
Pc=3.7
Cc=0.78

El-118.9
Pc=3.65
Cc=0.70

El-88.3
Pc=2.80
Cc=0.33

- ○ - (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

WEST BANK

SOIL BORING DATA

R-11.5-RU

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 82

BOR. 12-UH
STA. 3727 + 00
C.L. LEVEE
170CT69

GROUND EL. 9.6

NO SAMPLE
NO SAMPLE

ELEVATIONS IN FEET - M.S.L.

TEST DATA

WATER CONTENT
% WATER, DRY WEIGHT

SHEAR STRENGTH
TONS / SQ.FT.

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

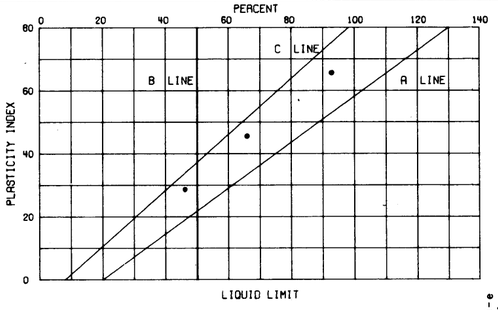
Plastic Limit
Natural Water Content
Liquid Limit

ϕ = 31.4°
ϕ = 34°
Design Strength for clay
ϕ = 18°
To 1.508 T.S.F. at El. -248, Top of Pleistocene

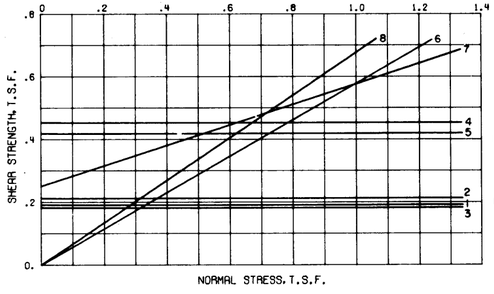
WET DENSITY
POUNDS / CU.FT.

NORMAL STRESS
TONS / SQ. FT.

Pc



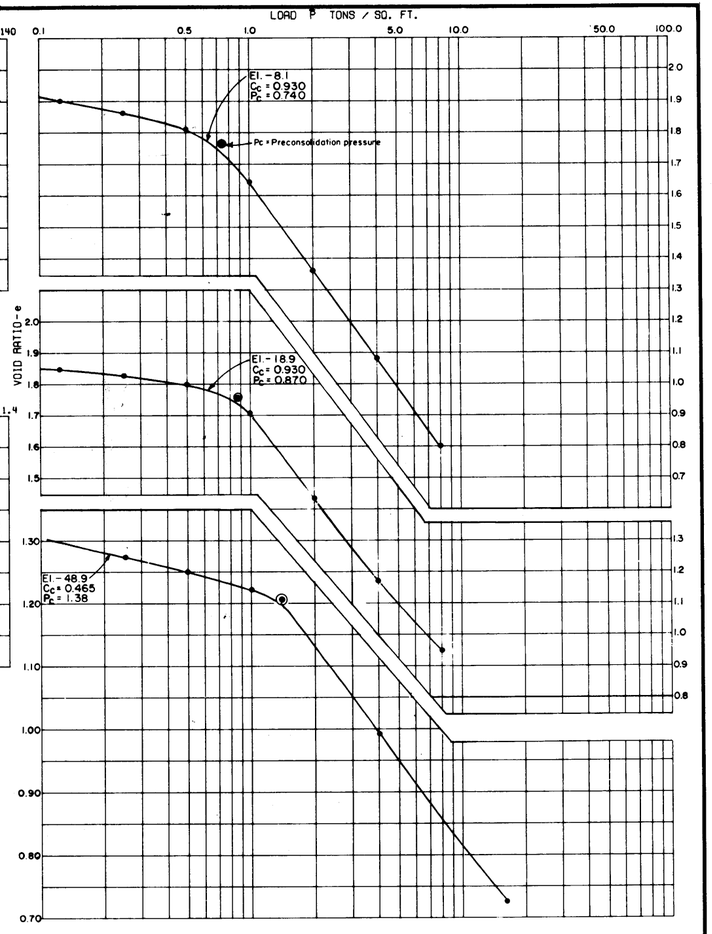
PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
12-UH	1	-8.7	Q	0	0.190	CH
	2	-15.1		0	0.210	CH
	3	-20.7		0	0.180	CH
	4	-47.1		0	0.450	CH
	5	-67.8		0	0.420	CL
	6	-28.1	R*	31.4°	0.0	SM
	7	-56.9		18°	0.250	ML
	8	-35.1	S	34°	0.0	SP

*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
- o - (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
WEST BANK

SOIL BORING DATA

12-UH

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

AUGUST 1971

FILE NO. H-2-25275

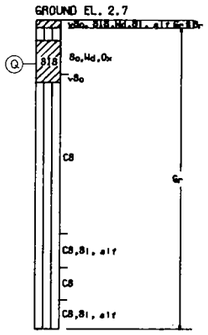
PLATE 83

BOR. 2-UT

STA. 3767+56

25 FT. L.S. OF B.L.

24 JULY 69



TEST DATA

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

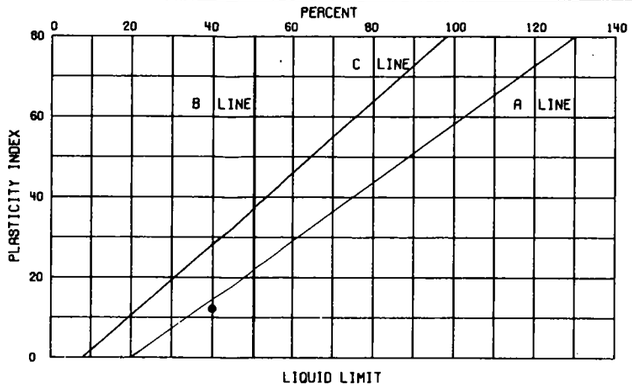
SHEAR STRENGTH
TONS / SQ.FT.
0 .1 .2 .3 .4 .5 .6 .7 .8 .9

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

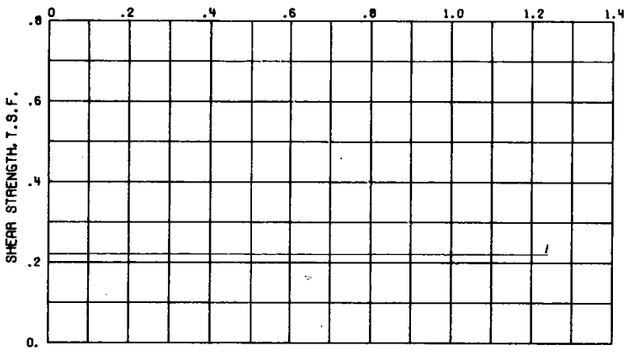
NORMAL STRESS
TONS / SQ. FT.
1.0 2.0 3.0 4.0

Plastic Limit
Liquid Limit
Natural Water Content

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



PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ	STRENGTH C - TSF	CLASS
2-UT	1	-2.7	Q	0	0.22	ML

○ - (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
WEST BANK

SOIL BORING DATA
2-UT
STA. 3767+56

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

AUGUST 1971

FILE NO. H-2-25275

BOR. 1-U

STA. 3784+00

56 FT. R.S. OF B.L.

29 JULY 69

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: $\phi = 15°, c = 0.10$ T.S.F.
SM: $\phi = 30°, c = 0$
SP: $\phi = 30°, c = 0$

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

GROUND EL. 6.1

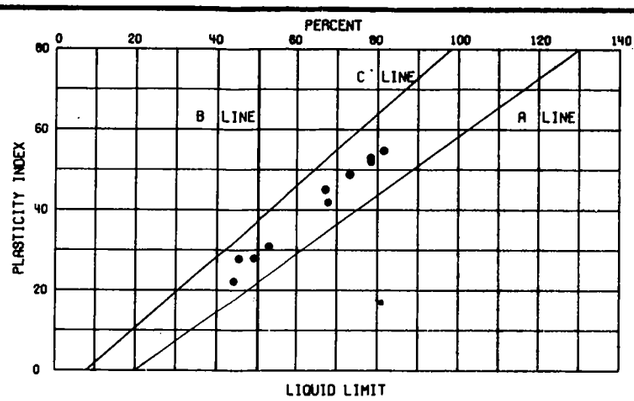
4" AUGER

Plastic Limit
Liquid Limit
Natural Water Content

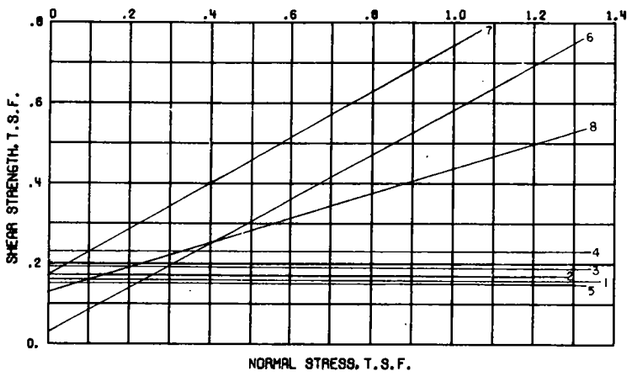
Ø=29°
Ø=30°
Ø=17°

Design Strength for clay

To 1.285 T.S.F. at El. -257
Top of Pleistocene



PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ°	STRENGTH C - TSF	CLASS
1-U	1	-11.0	Q	0	0.16	CL
	2	-19.9		0	0.17	CH
	3	-23.8		0	0.19	CH
	4	-29.2		0	0.23	CH
	5	-47.0		0	0.15	CL
	6	-3.0	S	29°	0.03	CL
	7	-6.7		30°	0.17	ML
	8	-11.9		17°	0.13	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 15

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

SOIL BORING DATA
1-U
STA. 3784+00

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

AUGUST 1971

FILE NO. H-2-25275

BOR. 1-UT

STA. 3784+00

30 FT. L.S. OF B.L.

17 JULY 69

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

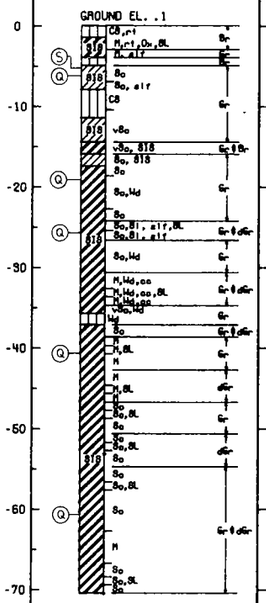
DESIGN STRENGTHS
ML: ϕ = 15°, c = 0.10 T.S.F.
SM: ϕ = 30°, c = 0
SP: ϕ = 30°, c = 0

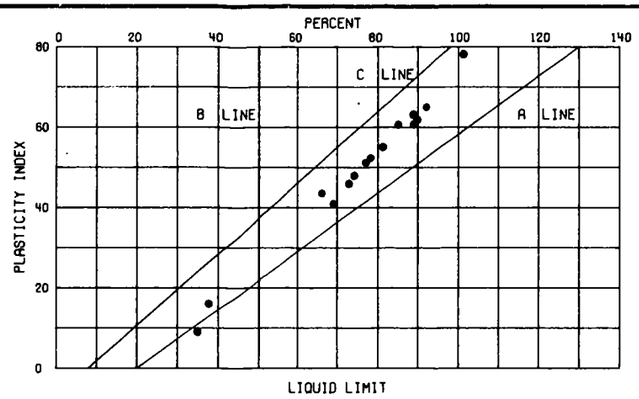
Plastic Limit
Natural Water Content
Liquid Limit
ϕ=31°
Design Strength for clay
ϕ=2°
To 1.285 T.S.F. at El. -257, Top of Pleistocene

ELEVATIONS IN FEET - M.S.L.

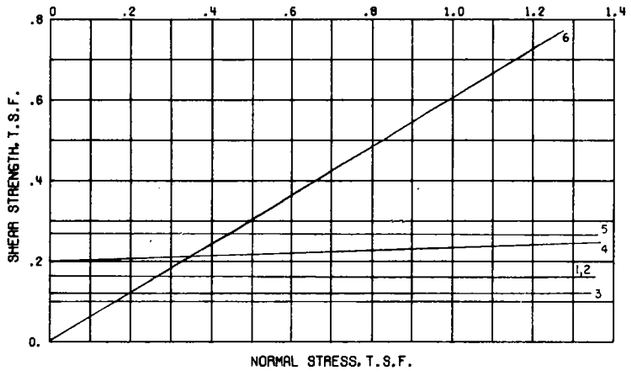
10, 0, -10, -20, -30, -40, -50, -60, -70, -80, -90, -100, -110, -120, -130, -140

GROUND EL. .1





PLASTICITY CHART



SHEAR STRENGTH DATA

BORING NO.	ENVELOPE NO.	ENVELOPE EL.	TYPE	STRENGTH Φ°	STRENGTH C - TSF	CLASS
1-UT	1	-6.1	Q	0	0.16	CL
	2	-19.3		0	0.16	CH
	3	-25.8		0	0.12	CH
	4	-41.0		2	0.20	CH
	5	-60.1		0	0.27	CH
	6	-5.2	S	31°	0.0	ML

○ - (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
WEST BANK

SOIL BORING DATA
I-UT
STA. 3784+00

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

AUGUST 1971 FILE NO. H-2-25275

BOR. 7
STA. 3062+25
1040 FT LEFT C.L.
18 DEC 69

BOR. 1-S
STA. 3070+00
650 FT. LEFT
14-15 APR 70

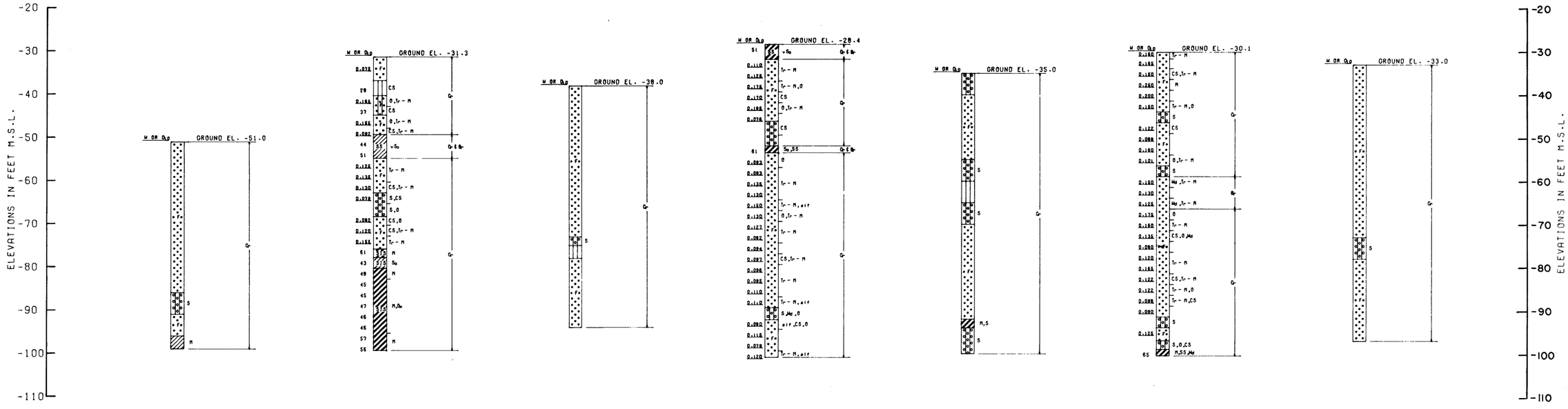
BOR. 1
STA. 3075+70
1010 FT LEFT C.L.
18 DEC 69

BOR. 2-S
STA 3085+00
710 FT. LEFT
16 APRIL 70

BOR. 2
STA. 3090+00
891 FT LEFT C.L.
18 DEC 69

BOR. 3-S
STA. 3100+00
770 FT. LEFT
17 APR 70

BOR. 3
STA. 3105+25
1002 FT LEFT C.L.
18 DEC 69



NOTE

BORINGS 1-S THROUGH 3-S WERE MADE WITH A 1-7/8 IN I.D. CORE BARREL SAMPLER BY THE CORPS OF ENGINEERS.
BORINGS 1 THROUGH 3 AND BORING 7 WERE MADE BY THE STATE OF LOUISIANA, DEPARTMENT OF HIGHWAYS, CLASSIFIED ACCORDING TO A.A.S.H.O. DESIGNATION M145 SPECIFICATIONS, AND CONVERTED TO THE UNIFIED SOIL CLASSIFICATION BY THE CORPS OF ENGINEERS.

FOR SOIL BORING LEGEND SEE PLATE A.
FOR LOCATIONS OF BORINGS SEE PLATE 13.

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

SOIL BORING DATA

RIVER BORROW BORINGS
MILE 22 TO MILE 24 AHP
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971 FILE NO H-2-25275

BOR. 4-S
STA. 3115+00
710 FT. LEFT
20 APRIL 70

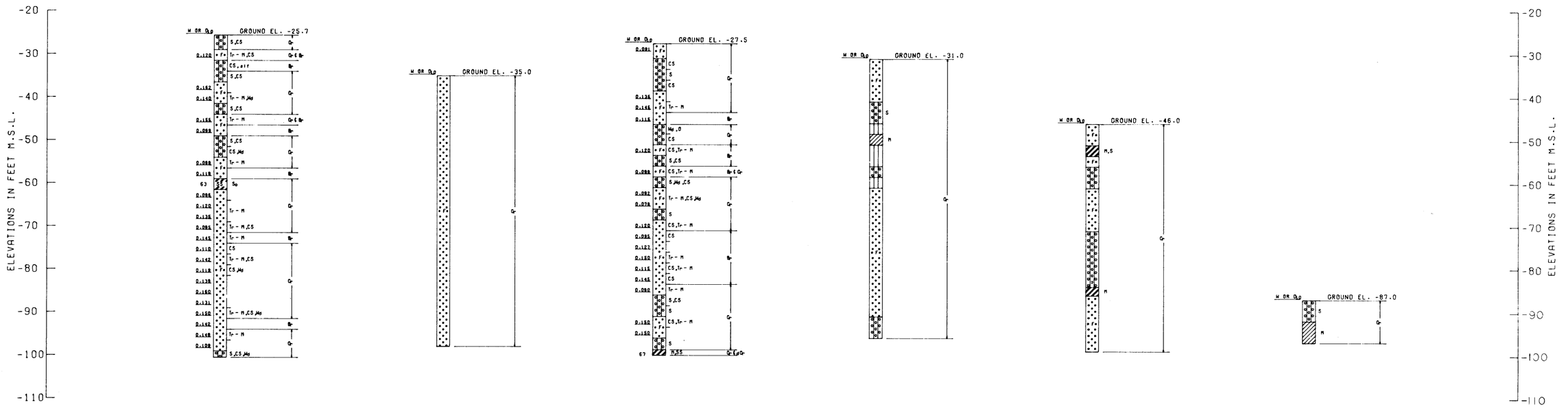
BOR. 8
STA. 3120+80
1060 FT LEFT C.L.
18 DEC 69

BOR. 5-S
STA. 3130+00
800 FT. LEFT
21 APRIL 70

BOR. 5
STA. 3137+35
860 FT LEFT C.L.
18 DEC 69

BOR. 4
STA. 3151+75
745 FT LEFT C.L.
18 DEC 69

BOR. 6
STA. 3167+10
615 FT LEFT C.L.
18 DEC 69



NOTE

BORINGS 4-S AND 5-S WERE MADE WITH A 1-7/8 IN. I.D. CORE BARREL SAMPLER BY THE CORPS OF ENGINEERS.

BORINGS 4 THROUGH 6 AND BORING 8 WERE MADE BY THE STATE OF LOUISIANA, DEPARTMENT OF HIGHWAYS, CLASSIFIED ACCORDING TO A A S H O DESIGNATION M145 SPECIFICATIONS, AND CONVERTED TO THE UNIFIED SOIL CLASSIFICATION BY THE CORPS OF ENGINEERS.

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
WEST BANK

SOIL BORING DATA

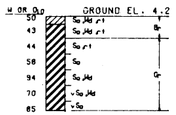
RIVER BORROW BORINGS
MILE 22 TO MILE 24 AHP

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

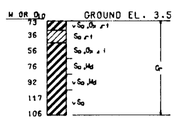
AUGUST 1971

FILE NO H-2-25275

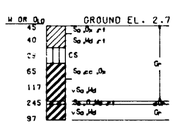
BOR. 11-B
STA. 2787+60
130 FT. R.S. OF LEVEE B.L.
WATER TABLE AT 3.0 FT.
3 SEPT 70



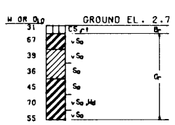
BOR. 12-B
STA. 2794+97
100 FT. R.S. OF LEVEE B.L.
WATER TABLE AT 1.0 FT.
3 SEPT 70



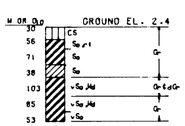
BOR. 13-B
STA. 2812+29
100 FT. R.S. OF B.L.
WATER TABLE AT 7.0 FT.
3 SEPT 70



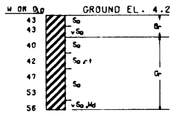
BOR. 14-B
STA. 2824+00
130 FT. R.S. OF LEVEE B.L.
WATER TABLE AT 2.5 FT.
3 SEPT 70



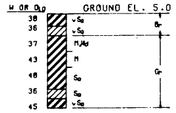
BOR. 15-B
STA. 2865+00
170 FT. R.S. OF LEVEE B.L.
WATER TABLE AT 4.5 FT.
3 SEPT 70



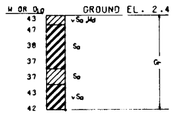
BOR. 1-B
STA. 3000+00
83 FT R/S B/L
7 MAY 70



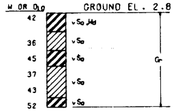
BOR. 2-B
STA. 3004+20
70 FT R/S B/L
7 MAY 70

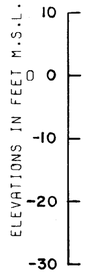


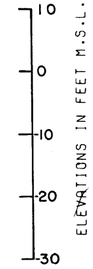
BOR. 3-B
STA. 3070+80
200 FT R/S B/L
7 MAY 70



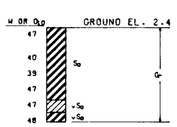
BOR. 4-B
STA. 3077+40
200 FT R/S B/L
7 MAY 70



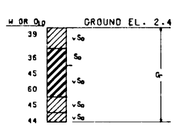




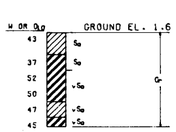
BOR. 5-B
STA. 3084+67
200 FT R/S B/L
8 MAY 70



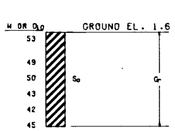
BOR. 6-B
STA. 3091+00
205 FT R/S B/L
8 MAY 70



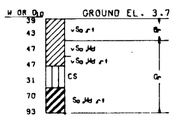
BOR. 7-B
STA. 3104+05
160 FT R/S B/L
11 MAY 70



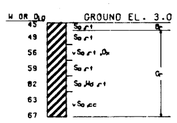
BOR. 8-B
STA. 3124+74
115 FT R/S B/L
11 MAY 70



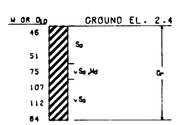
BOR. 1-B
STA. 3256+00
260 FT. R.S.
3 MAR 70



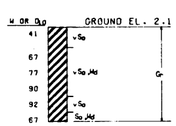
BOR. 2-B
STA. 3261+40
246 FT. R.S.
3 MAR 70

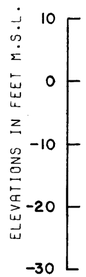


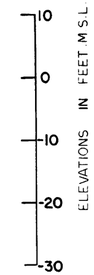
BOR. 9-B
STA. 3265+50
500 FT R/S B/L
11 MAY 70



BOR. 10-B
STA. 3270+00
490 FT R/S B/L
11 MAY 70







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 PLATES 11 THRU 13

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

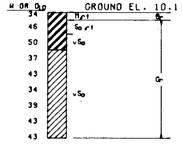
SOIL BORING DATA

BANK BORROW BORINGS
(EMPIRE TO FORT JACKSON)
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971 FILE NO. H-2-25275

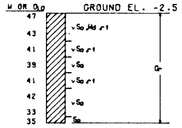
BOR. 3-B

STA A - 4+00
200 FEET R.S. FROM B.L.
5 MAR 70



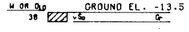
BOR. 13-B

STA. 3316+60
220 FT. R.S. OF B.L.
WATER DEPTH 4.0 FT.
26 OCT 70



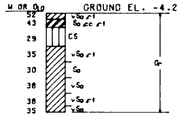
BOR. 13-BA

STA. 3316+60
320 FT. R.S. OF B.L.
WATER DEPTH 15.0 FT.
26 OCT 70



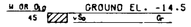
BOR. 14-B

STA. 3319+60
170 FT. R.S. OF B.L.
WATER DEPTH 5.7 FT.
26 OCT 70



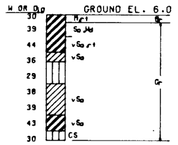
BOR. 14-BA

STA. 3319+60
270 FT. R.S. OF B.L.
WATER DEPTH 16.0 FT.
26 OCT 70



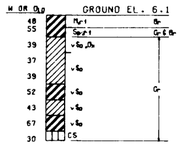
BOR. 4-B

STA. 3324+00
360 FEET R.S. FROM B.L.
5 MAR 70



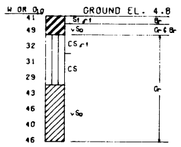
BOR. 5-B

STA. 3335+00
280 FEET R.S.
5 MAR 70



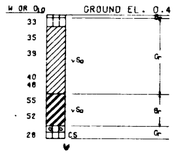
BOR. 6-B

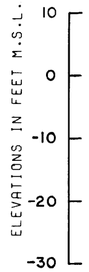
STA. 3345+00
280 FEET R.S. OF B.L.
5 MAR 70

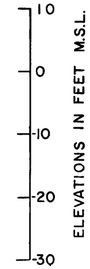


BOR. 7-B

STA. 3353+80
300 FT. R.S. B.L.
22 OCT 70

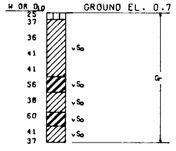






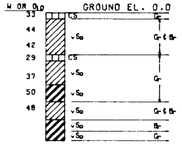
BOR. 8-B

STA. 3356+50
300 FT. R.S. B.L.
22 OCT 70



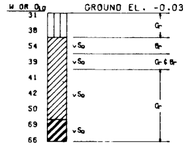
BOR. 9-B

STA. 3362+50
300 FT. R.S. B.L.
23 OCT 70



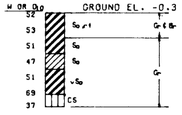
BOR. 10-B

STA. 3367+10
300 FT. R.S. B.L.
23 OCT 70



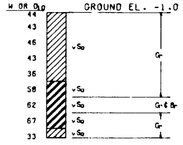
BOR. 1-BC

STA 3372+50
250 FT R.S. C.L. LEV
11 MAR 70



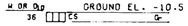
BOR. 11-BA

STA. 3376+10
303 FT. R.S. OF B.L.
WATER DEPTH 2.5 FT.
27 OCT 70



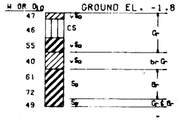
BOR. 12-B

STA. 3383+10
245 FT. R.S. OF B.L.
WATER DEPTH 12.0 FT.
27 OCT 70



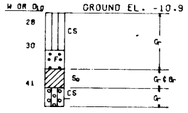
BOR. 2-BC

STA 3387+50
150 FT R.S. OF C.L. LEVEE
11 MAR 70



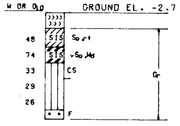
BOR. 3-BC

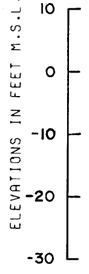
STA 3393+00
150 FT R.S. OF C.L. LEVEE
12 MAR 70

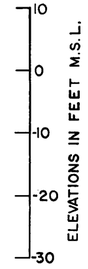


BOR. 3-BC(A)

3393+00
90 FT. R.S. OF C.L. LEVEE
30 MAR 70







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 PLATES 13 & 14

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

SOIL BORING DATA

BANK BORROW BORINGS
(FORT JACKSON)
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS

AUGUST 1971 FILE NO H-2-25275

BOR. 4-BC
STA 3504+00
150 FT R.S. OF C.L. LEVEE
12 MAR 70

BOR. 4-BC(A)
3504+00
95 FT. R.S. OF C.L. LEVEE
30 MAR 70

BOR. 5-BC
STA 3522+00
150 FT R.S. OF C.L. LEVEE
12 MAR 70

BOR. 5-BC(A)
3522+00
98 FT. R.S. OF C.L. LEVEE
30 MAR 70

BOR. 6-BC
STA 3532+00
98 FT. R.S. OF B.L.
31 MAR 70

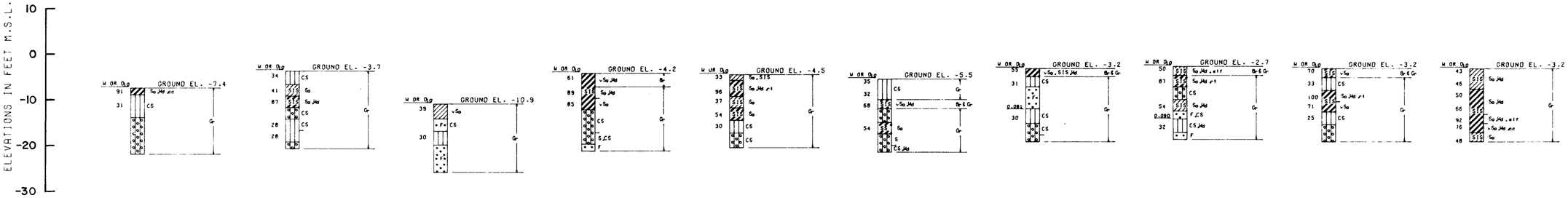
BOR. 7-BC
3542+00
85 FT. R.S. OF B.L.
31 MAR 70

BOR. 8-BC
STA. 3552+00
95 FT. R.S. OF C.L. LEVEE
1 APR 70

BOR. 9-BC
3562+00
115 FT. R.S. OF C.L. LEVEE
1 APR 70

BOR. 10-BC
STA. 3572+00
105 FT. R.S. OF B.L.
1 APR 70

BOR. 11-BC
3658+00
250 FT. R.S. OF C.L. LEVEE
1 APR 70



BOR. 12-BC
3668+00
195 FT. R.S. OF C.L. LEVEE
1 APR 70

BOR. 13-BC
3678+00
200 FT. R.S. OF C.L. LEVEE
3 APR 70

BOR. 14-BC
3688+00
185 FT. R.S. OF C.L. LEVEE
2 APR 70

BOR. 15-BC
3698+00
235 FT. R.S. OF C.L. LEVEE
2 APR 70

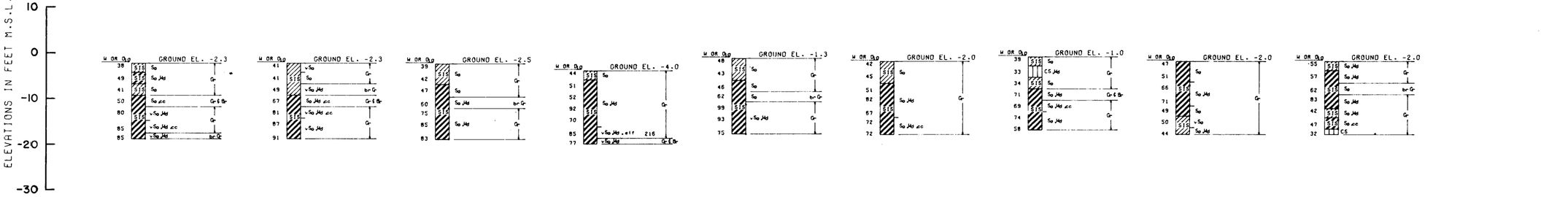
BOR. 17-BC
3718+00
180 FT. R.S. OF C.L. LEVEE
3 APR 70

BOR. 18-BC
3728+00
145 FT. R.S. OF C.L. LEVEE
2 APR 70

BOR. 19-BC
3738+00
137 FT. R.S. OF C.L. LEVEE
2 APR 70

BOR. 20-BC
3748+00
135 FT. R.S. OF C.L. LEVEE
2 APR 70

BOR. 21-BC
3758+00
160 FT. R.S. OF C.L. LEVEE
2 APR 70



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 PLATES 14 & 15

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

SOIL BORING DATA

BANK BORROW BORINGS
(FORT JACKSON TO VENICE)

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

AUGUST 1971

FILE NO H-2-25275

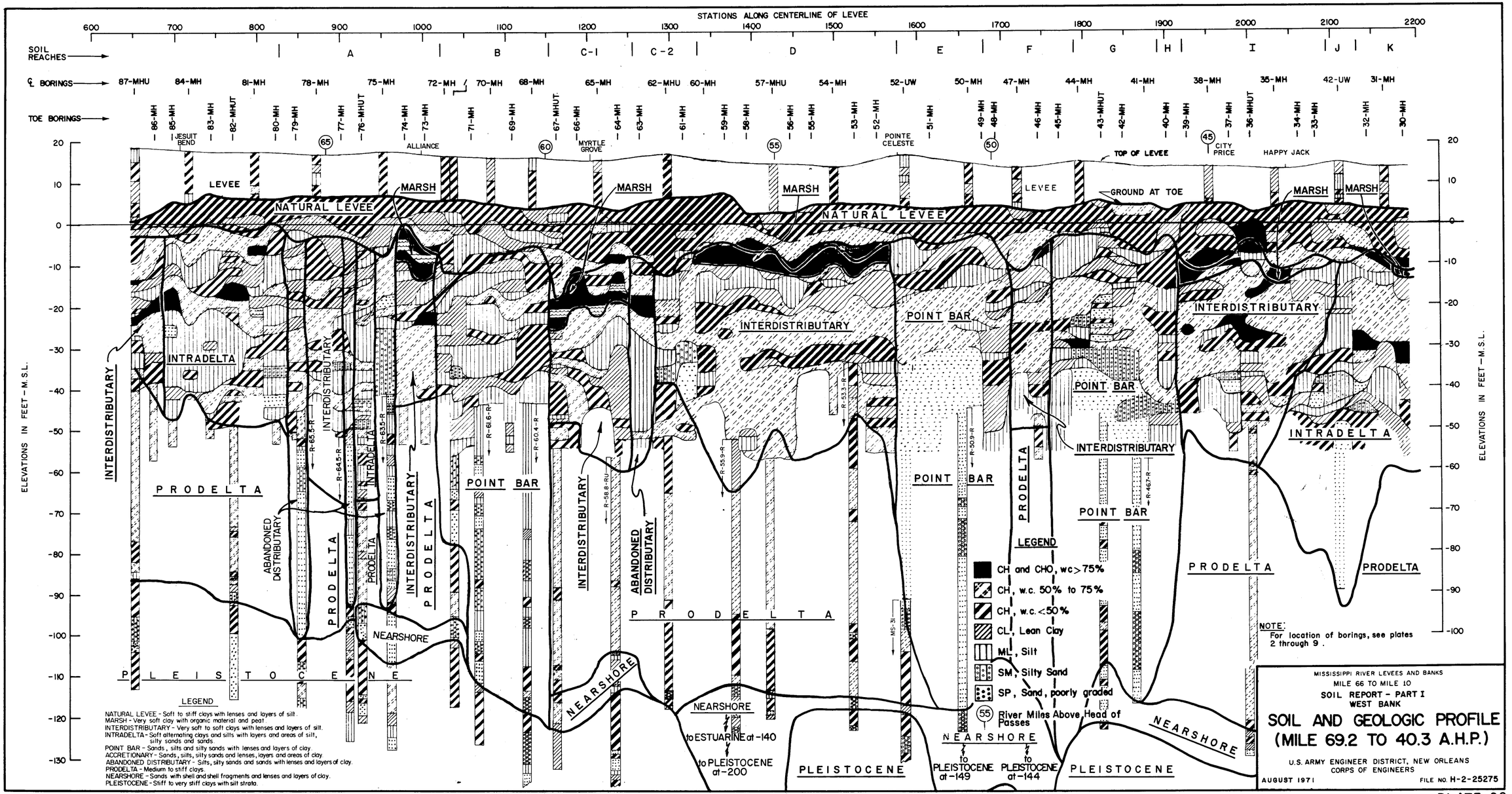

STATIONS ALONG CENTERLINE OF LEVEE
600 700 800 900 1000 1100 1200 1300 1400 1500 1600 1700 1800 1900 2000 2100 2200
SOIL REACHES → A B C-1 C-2 D E F G H I J K
℄ BORINGS → 87-MHU 84-MH 81-MH 78-MH 75-MH 72-MH 70-MH 68-MH 65-MH 62-MHU 60-MH 57-MHU 54-MH 52-UW 50-MH 47-MH 44-MH 41-MH 38-MH 35-MH 42-UW 31-MH
TOE BORINGS → 86-MH 85-MH 83-MH 82-MHUT 80-MH 79-MH 77-MH 76-MHUT 74-MH 73-MH 71-MH 69-MH 67-MHUT 66-MH 64-MH 63-MH 61-MH 59-MH 58-MH 56-MH 55-MH 53-MH 52-MH 51-MH 49-MH 48-MH 46-MH 45-MH 43-MHUT 42-MH 40-MH 39-MH 37-MH 36-MHUT 34-MH 33-MH 32-MH 30-MH
JESUIT BEND
ALLIANCE
MYRTLE GROVE
POINTE CELESTE
CITY PRICE
HAPPY JACK
TOP OF LEVEE
GROUND AT TOE
LEVEE
MARSH
NATURAL LEVEE
INTERDISTRIBUTARY
INTRADELTA
POINT BAR
PRODELTA
ABANDONED DISTRIBUTARY
NEARSHORE
PLEISTOCENE
R-65.5-R
R-64.5-R
R-63.5-R
R-61.6-R
R-60.4-R
R-58.8-RU
R-55.9-R
R-53.3-R
R-50.9-R
R-46.7-R
MS-31
ELEVATIONS IN FEET - M.S.L.
20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100 -110 -120 -130
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.
to ESTUARINE at -140
to PLEISTOCENE at -200
to PLEISTOCENE at -149
to PLEISTOCENE at -144
LEGEND
CH and CHO, wc > 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
NOTE: For location of borings, see plates 2 through 9.
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
WEST BANK
SOIL AND GEOLOGIC PROFILE
(MILE 69.2 TO 40.3 A.H.P.)
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 92

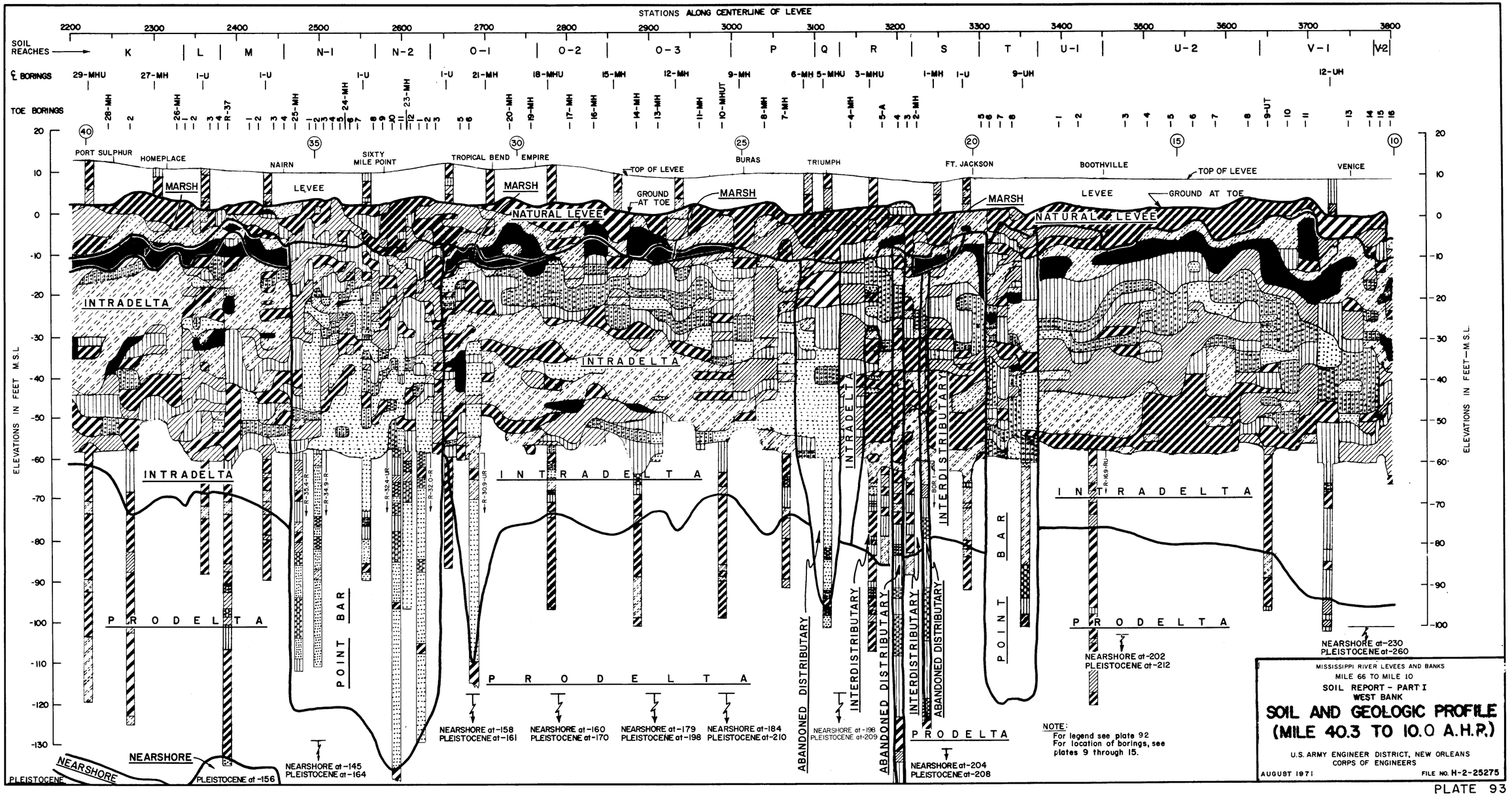
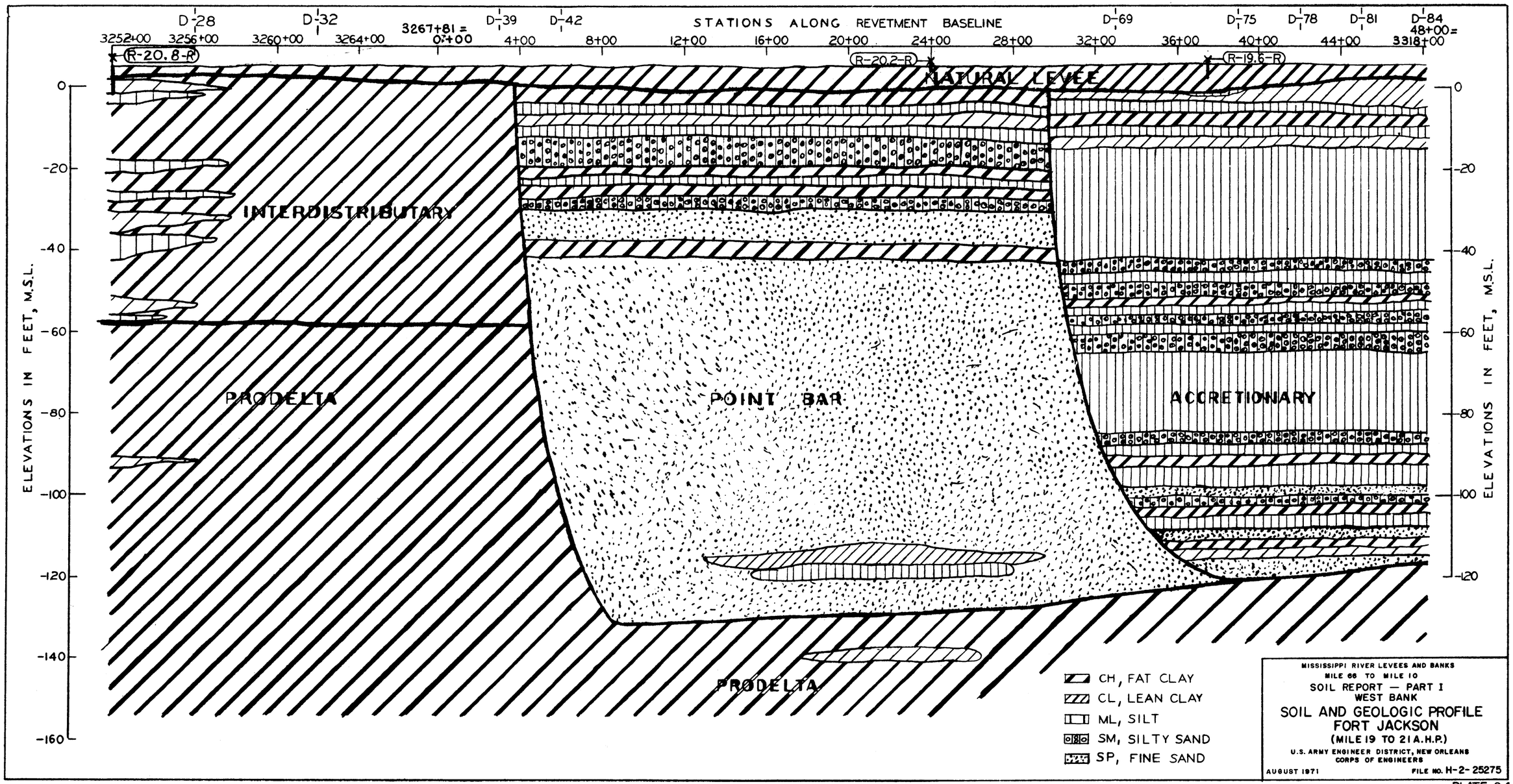

STATIONS ALONG CENTERLINE OF LEVEE
2200
2300
2400
2500
2600
2700
2800
2900
3000
3100
3200
3300
3400
3500
3600
3700
3800
SOIL REACHES
K
L
M
N-1
N-2
O-1
O-2
O-3
P
Q
R
S
T
U-1
U-2
V-1
V-2
℄ BORINGS
TOE BORINGS
PORT SULPHUR
HOMEPLACE
NAIRN
SIXTY MILE POINT
TROPICAL BEND
EMPIRE
TOP OF LEVEE
BURAS
TRIUMPH
FT. JACKSON
BOOTHVILLE
TOP OF LEVEE
VENICE
MARSH
LEVEE
GROUND AT TOE
NATURAL LEVEE
INTRADELTA
PRODELTA
POINT BAR
ABANDONED DISTRIBUTARY
INTERDISTRIBUTARY
ELEVATIONS IN FEET M.S.L.
NEARSHORE
PLEISTOCENE
NEARSHORE at -145
PLEISTOCENE at -164
PLEISTOCENE at -156
NEARSHORE at -158
PLEISTOCENE at -161
NEARSHORE at -160
PLEISTOCENE at -170
NEARSHORE at -179
PLEISTOCENE at -198
NEARSHORE at -184
PLEISTOCENE at -210
NEARSHORE at -196
PLEISTOCENE at -209
NEARSHORE at -204
PLEISTOCENE at -208
NEARSHORE at -202
PLEISTOCENE at -212
NEARSHORE at -230
PLEISTOCENE at -260
NOTE:
For legend see plate 92
For location of borings, see plates 9 through 15.
MISSISSIPPI RIVER LEVEES AND BANKS
MILE 66 TO MILE 10
SOIL REPORT - PART I
WEST BANK
SOIL AND GEOLOGIC PROFILE
(MILE 40.3 TO 10.0 A.H.P.)
U.S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
AUGUST 1971
FILE NO. H-2-25275

PLATE 93



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

SOIL AND GEOLOGIC PROFILE FORT JACKSON

(MILE 19 TO 21 A.H.P.)

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

AUGUST 1971

FILE NO. H-2-25275

PLATE 94

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					

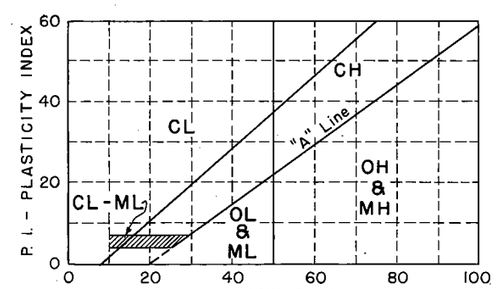
NOTE: Soils possessing characteristics of two groups are designated by combinations of group symbols

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 subsurface 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