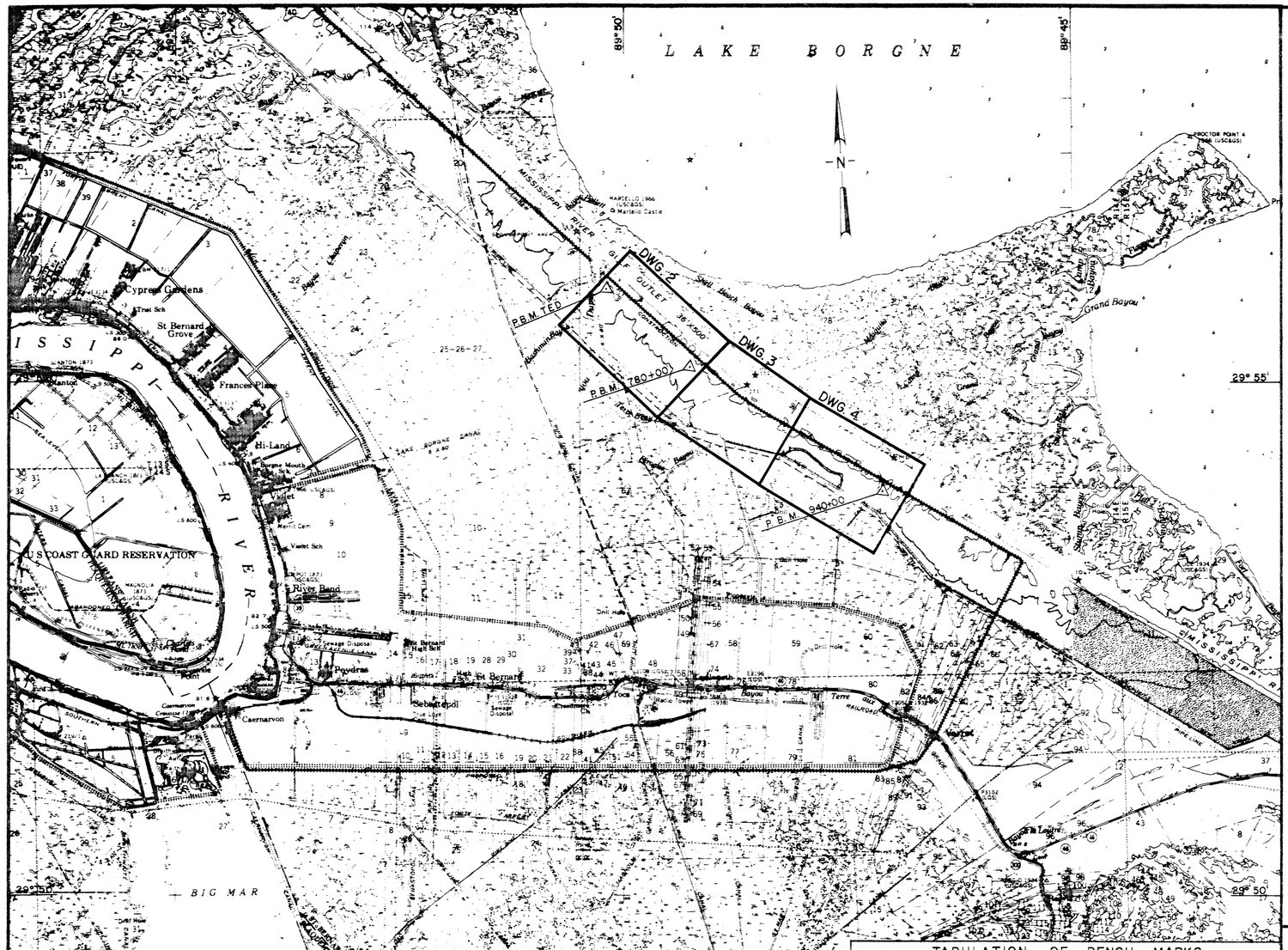
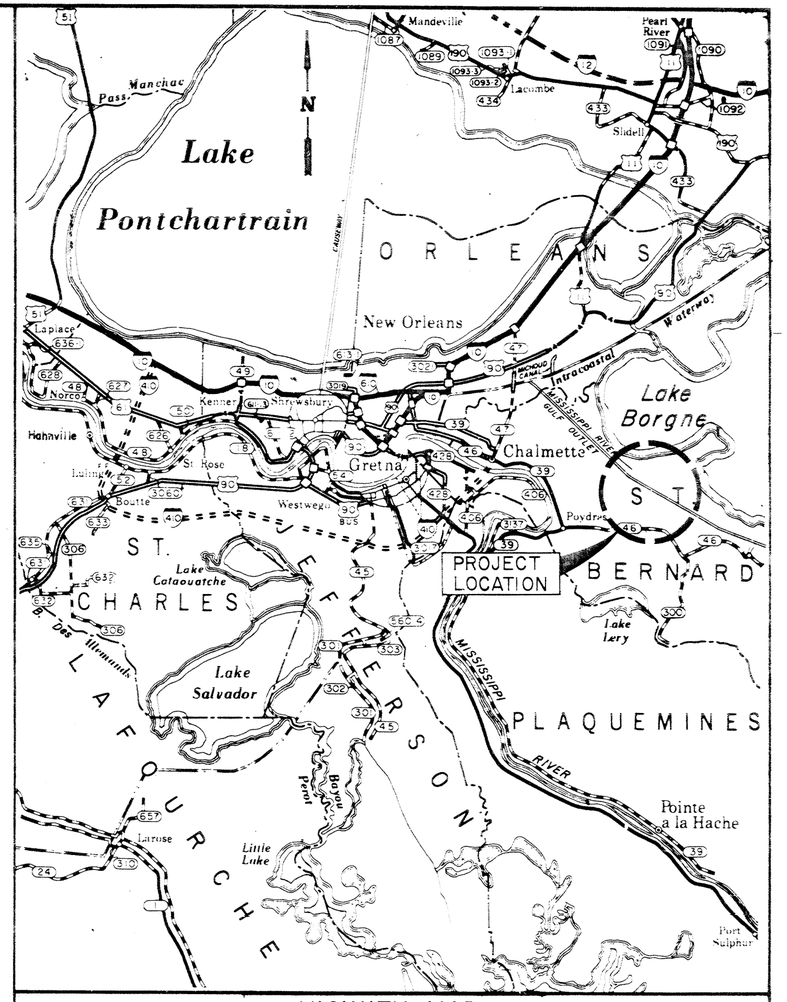




VICINITY MAP

SCALE IN MILES

TABULATION OF BENCH MARKS

B.M.	ELEVATION	LOCATION AND DESCRIPTION
P.B.M. 780+00	7.692' M.S.L.	MARK IS TOP OF BRASS CAP SET ON A BRASS ROD DRIVEN 90 FEET INTO THE GROUND ENCASED IN CONCRETE ON SOUTH BANK OF MISSISSIPPI RIVER-GULF OUTLET; APPROXIMATELY 173 FEET LANDSIDE OF STATION 780+00 MISSISSIPPI RIVER-GULF OUTLET BASELINE. CAP IS STAMPED P.B.M. 780+00-173 1977.
P.B.M. TED	7.881' M.S.L.	GALVANIZED PIPE, 1 1/2 INCHES IN DIAMETER, WAS SET IN BORE HOLE AT A DEPTH OF 95 FEET. THE 1 1/2-INCH DIAMETER PIPE WAS THEN DRIVEN AN ADDITIONAL 10.5 FEET INTO STRATA. PBM IS ON THE EAST SIDE OF BAYOU DUPRE, SOUTH SIDE OF THE STRUCTURE, 105 FEET FROM BAYOU DUPRE AND 282 FEET FROM THE WALL OF THE STRUCTURE. THE 1 1/2 INCH PIPE IS PROTECTED BY 3-INCH DIAMETER GALVANIZED PIPE WITH CAP AND THREE 1 1/2-INCH GUARD POSTS PAINTED YELLOW.
P.B.M. 940+00	10.334' M.S.L.	MARK IS TOP OF BRASS CAP SET ON A BRASS ROD DRIVEN 95 FEET INTO THE GROUND ENCASED IN CONCRETE ON SOUTH BANK OF MISSISSIPPI RIVER-GULF OUTLET; APPROXIMATELY 176 FEET LANDSIDE OF STATION 940+00 MISSISSIPPI RIVER-GULF OUTLET BASELINE. CAP IS STAMPED P.B.M. 940+00-176 1977.

INDEX TO DRAWINGS

DWG.	DESCRIPTION
1	LOCATION MAP, VICINITY MAP, & INDEX TO DRAWINGS
2	PLAN AND PROFILE – ℄ STA. 0+00 TO ℄ STA. 72+05
3	PLAN AND PROFILE – ℄ STA. 72+05 TO ℄ STA. 141+32.58
4	PLAN AND PROFILE – ℄ STA. 141+32.58 TO ℄ STA. 239+34
5	DESIGN SECTIONS
6	DETAIL (Bayou Dupre Floodgate) AND SECTION
7	HYDROGRAPHS
8	SOIL BORINGS
9	SOIL BORING LEGEND

VALUE ENGINEERING INCENTIVE CLAUSE – YOUR KEY TO HIGHER PROFITS

REVISION	DATE	DESCRIPTION	BY

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
FIRST ENLARGEMENT

Safety is a Part of Your Contract

NOTE: DRAWING REDUCED TO ONE HALF SCALE

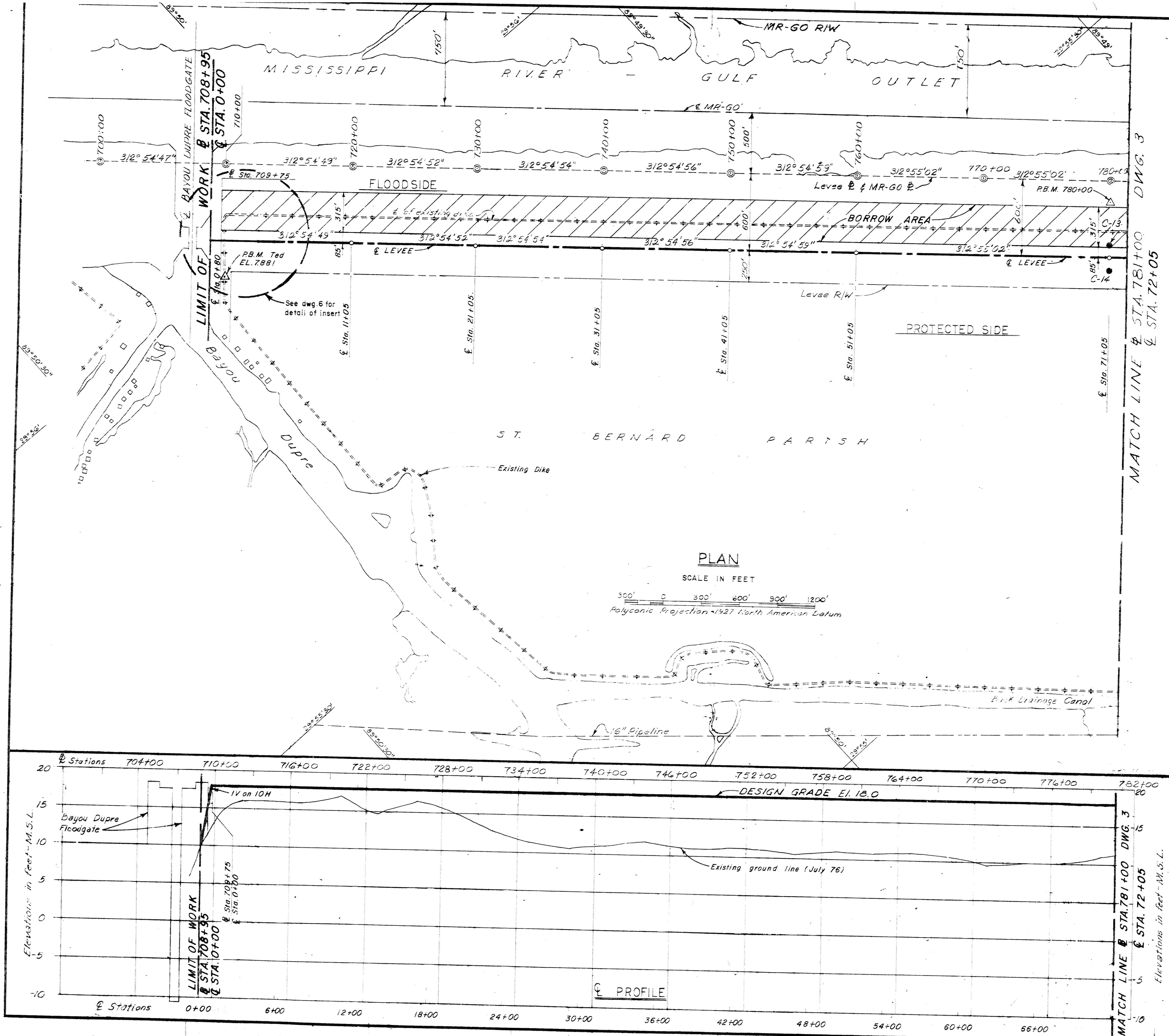
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

SUBMITTED: E. R. Bruchhaus, CHIEF, ENGINEERING DIVISION
APPROVED: CHIEF, ENGINEERING DIVISION
APPROVED: COL. CORPS OF ENGINEERS, DISTRICT ENGINEER

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
FIRST ENLARGEMENT
B/L STA. 708+95 TO B/L STA. 945+85
ST. BERNARD PARISH, LA.
LOCATION MAP, VICINITY MAP AND INDEX TO DRAWINGS

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO
T.W.M.	C.C.P.	R.P.L.	APRIL 1978	AS SHOWN	H-8-28274

SUBMITTED: Ronald P. Lee, CHIEF, PLANNING DIVISION
SPEC NO DACW29-78-B-0099
DWG 1 OF 9



GENERAL NOTES

1. Unless otherwise noted, all elevations are expressed in feet and refer to Mean Sea Level (M.S.L.)
2. All azimuths are turned in a clockwise direction from 0° (Due South).
3. See dwg. 1 for the description of bench marks.
4. All the R/W and borrow area lines are parallel to or perpendicular with the levee ℄, unless otherwise indicated.

BORING LEGEND

- ● General type boring
- ◉ Undisturbed boring

VALUE ENGINEERING INCENTIVE CLAUSE "YOUR KEY TO HIGHER PROFITS"

Safety is a Part of Your Contract

NOTE: DRAWING REDUCED TO ONE HALF SCALE

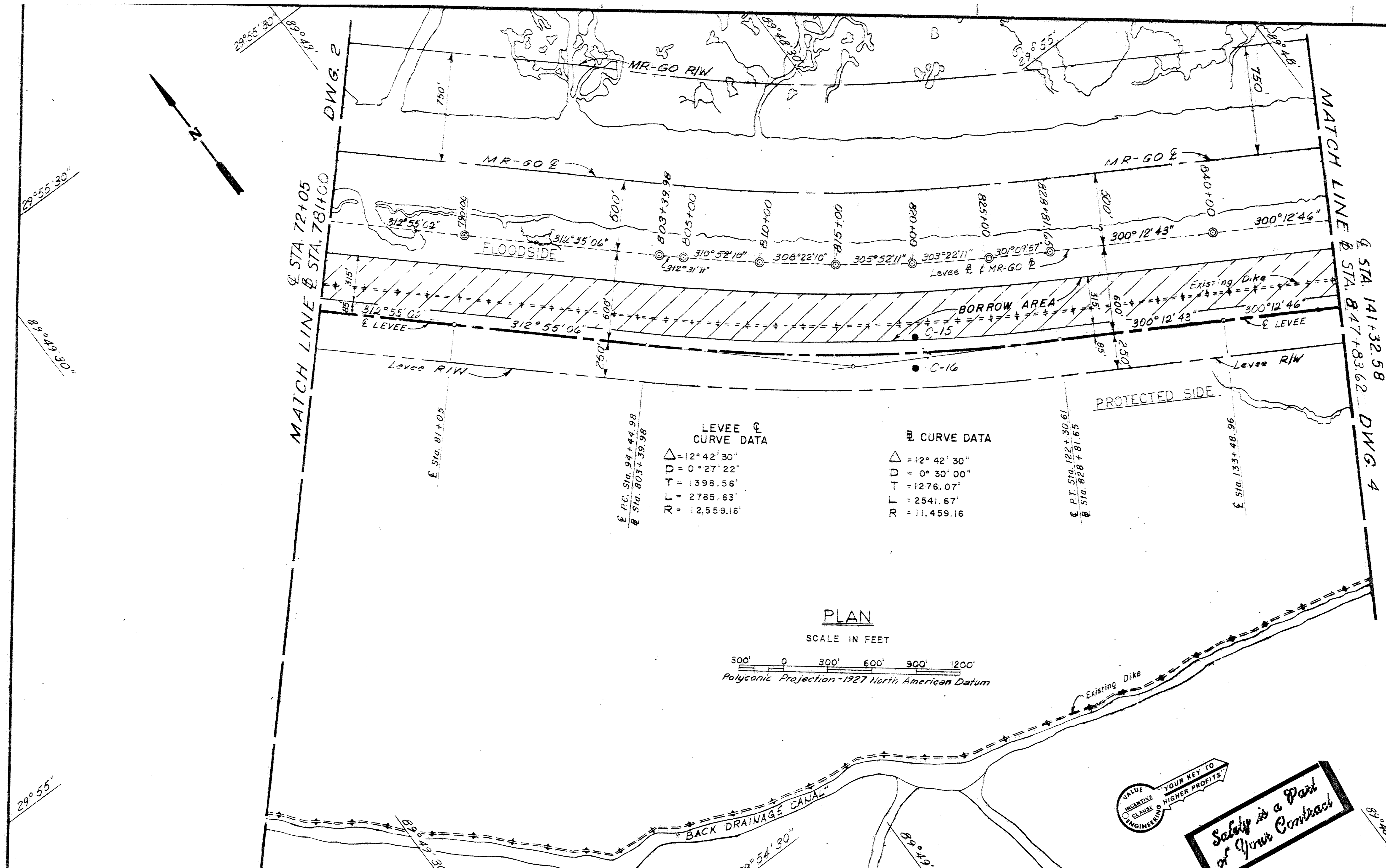
REVISION	DATE	DESCRIPTION	BY

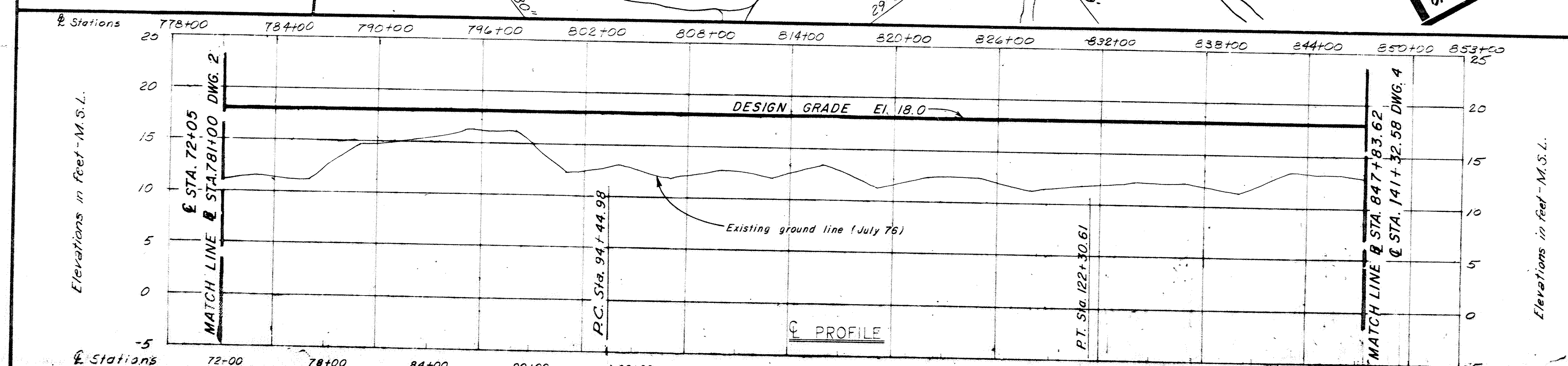
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
FIRST ENLARGEMENT
B/L STA. 708+95 TO B/L STA. 945+85
ST. BERNARD PARISH, LA.

PLAN AND PROFILE
℄ STA. 0+00 TO ℄ STA. 72+05

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
T. W. M.	C.C.P.	R.P.L.	APRIL 1978	AS SHOWN	H-8-28274
Ronald V. Lee, ENGINEER			SPEC. NO. DACW29-78-B-0099		DWG. 2 OF 9





NOTE: DRAWING REDUCED TO ONE HALF SCALE

Notes

1. For general notes and boring legend, see dwg. 2

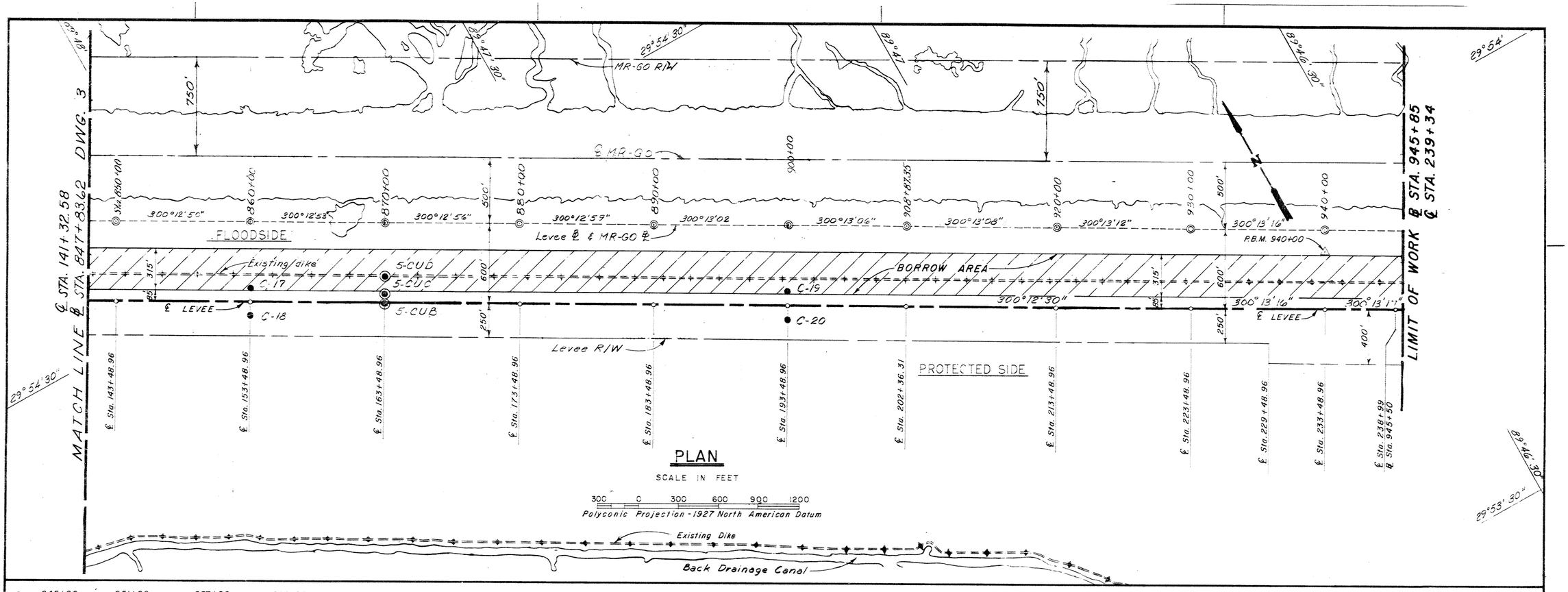
REVISION	DATE	DESCRIPTION	BY

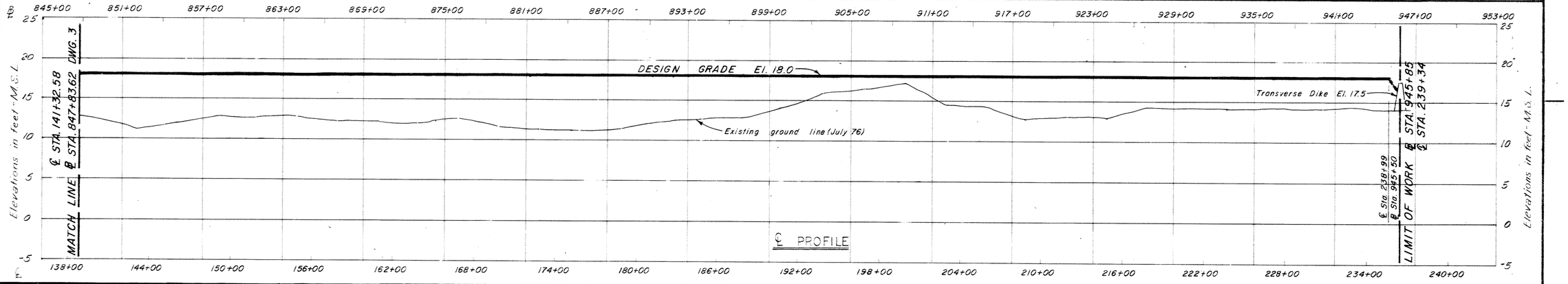
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
FIRST ENLARGEMENT
B/L STA. 708+95 TO B/L STA. 945+85
ST. BERNARD PARISH, LA.

PLAN AND PROFILE
℄ STA. 72+05 TO ℄ STA. 141+32.58

T.W.M.	C.C.P.	R.P.L.	APRIL 1978		H-8-28274
			78-B-0095		3 of 9





Note

1. For general notes and boring legend, see dwg. 2.

VALUE RECEIVED WHEN CLAUSE ENGINEERING IS YOUR KEY TO HIGHER PROFITS

Safety is a Part of Your Contract

NOTE: DRAWING REDUCED TO ONE HALF SCALE

REVISION	DATE	DESCRIPTION	BY

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

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
FIRST ENLARGEMENT
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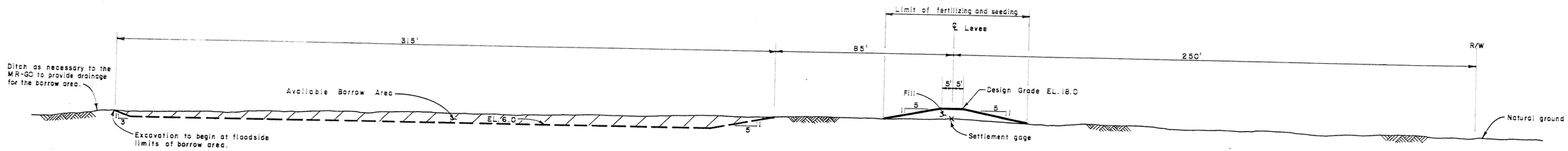
ST. BERNARD PARISH, LA.

PLAN AND PROFILE
℄ STA. 141+32.58 TO ℄ STA. 239+34

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO.
T.W.M.	C.C.P.	R.P.L.	APRIL 1978	AS SHOWN	H-8-28274
SUBMITTED			SPEC. NO.		SHEET NO.
Ronald P. Lee			DACW29-78-B-0099		4 OF 9

FLOODSIDE

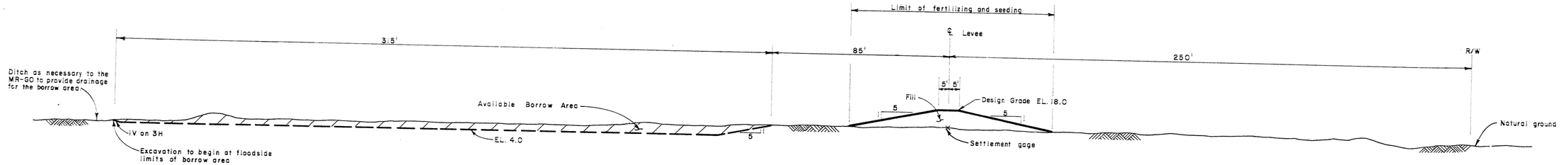
PROTECTED SIDE



DESIGN SECTION

NOT TO SCALE

℄ STA. 0+80 TO ℄ STA. 1+90 (Semicompacted Fill)
℄ STA. 1+90 TO ℄ STA. 41+05 (Uncompacted Fill)
℄ STA. 74+05 TO ℄ STA. 172+50 (Uncompacted Fill)
℄ STA. 187+50 TO ℄ STA. 238+99 (Uncompacted Fill)



DESIGN SECTION

NOT TO SCALE

℄ STA. 41+05 TO ℄ STA. 74+05 (Uncompacted Fill)
℄ STA. 172+50 TO ℄ STA. 187+50 (Uncompacted Fill)

SETTLEMENT GAGE SPECIFICATIONS

Should the contractor desire payment for placing additional fill due to foundation settlement during construction he shall furnish and install settlement gages at the locations shown on the design section in conformance with the provisions of Section 3, of the specifications.

The settlement measurement range for each settlement gage shall be for a distance of 250 feet in each direction from each settlement gage measured along the centerline of the levee, except where settlement gages are placed at less than 500 feet intervals, in which case, the settlement measurement range shall be to a point 1/2 the distance between settlement gages.

1/4" Steelplate
Minimum 4'X4'

NOTES

1. For general notes and boring legend, see dwg. 2.
2. A smooth transition will be constructed between all changes in borrow section.

VALUE ENGINEERING INCENTIVE CLAUSE — YOUR KEY TO HIGHER PROFITS

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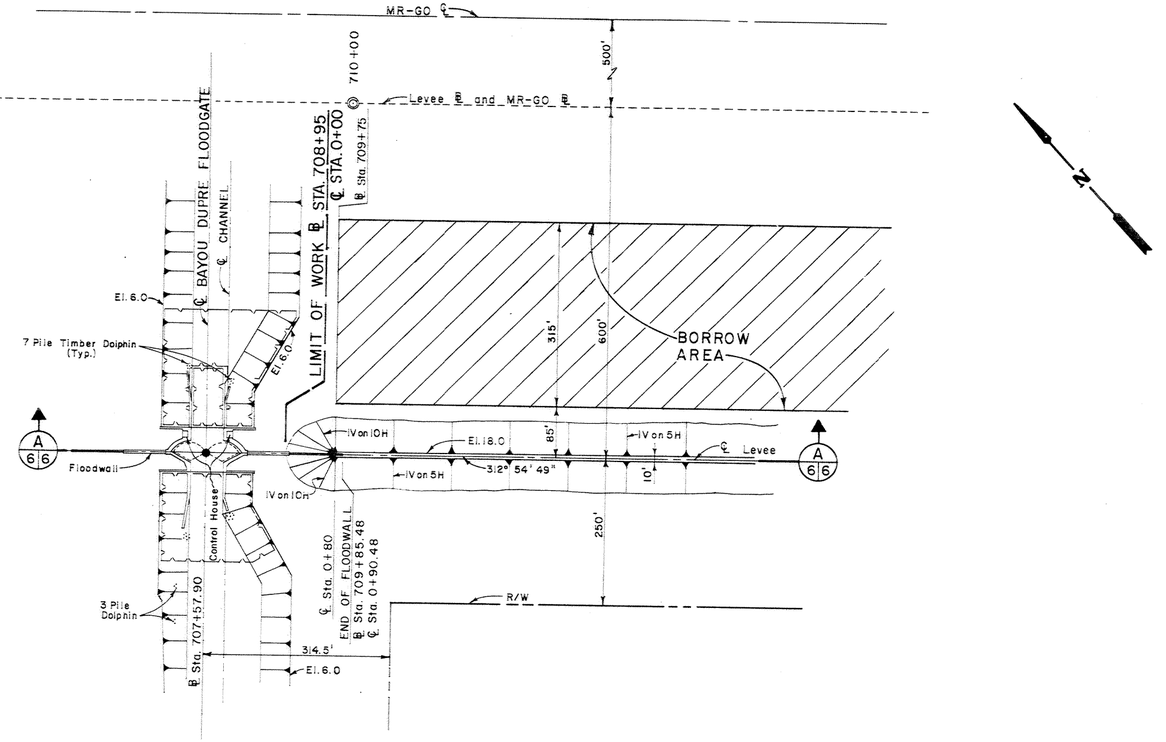
U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
CORPS OF ENGINEERS
NEW ORLEANS, LA.

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
FIRST ENLARGEMENT
B/L STA. 708+95 TO B/L STA. 945+85
ST. BERNARD PARISH, LA.

DESIGN SECTIONS

DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
T. W. M.	C.C.P.	R. P. L.	APRIL 1978	AS SHOWN	H-8-28274

SUBMITTED: Kenneth P. Lee, CHIEF ENGINEERING DIVISION
SPEC. NO. DACW29-78-B-0099
DWG. 5 OF 9

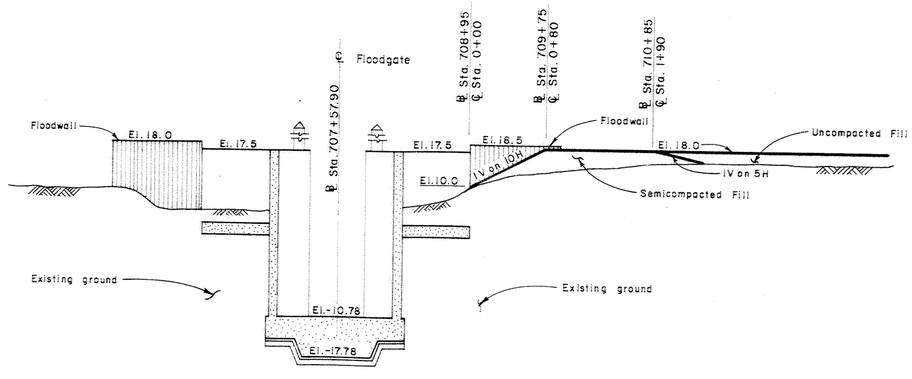


NOTE

1. For general notes and boring legend, see dwg. 2.
2. Semicompacted fill shall be placed at the tie-in of the floodwall at Bayou Dupre Floodgate and the levee, ℄ Sta. 0+00 to ℄ Sta. 1+90.

DETAIL 1-(Bayou Dupre Floodgate)

NOT TO SCALE



SECTION

NOT TO SCALE

A 6 6

VALUE ENGINEERING INCENTIVE CLAUSES "YOUR KEY TO HIGHER PROFITS"

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U. S. ARMY ENGINEER DISTRICT, NEW ORLEANS
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FIRST ENLARGEMENT
B/L STA. 708+95 TO B/L STA. 945+85
ST. BERNARD PARISH, LA.

DETAIL 1 (Bayou Dupre Floodgate) AND SECTION

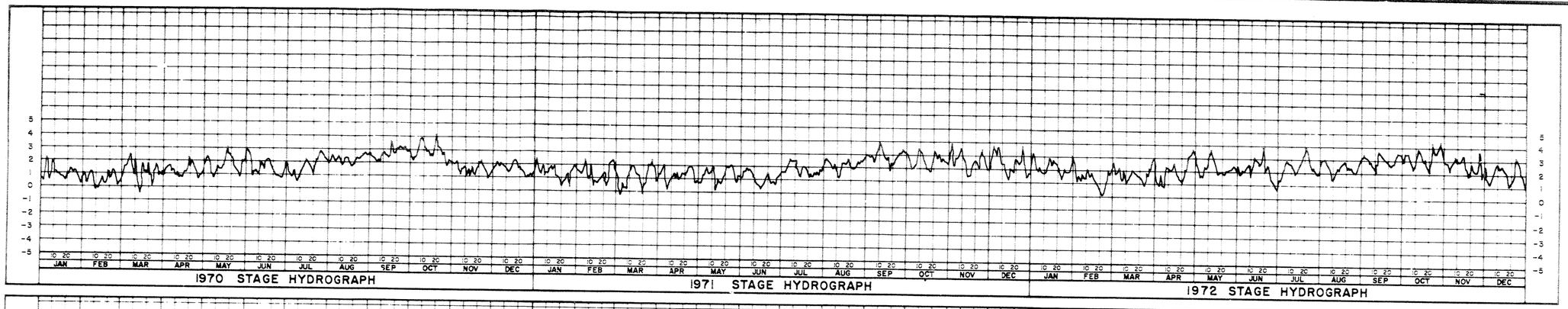
DESIGNED:	DRAWN:	CHECKED:	DATE:	SCALE:	FILE NO.
T. W. M.	C.C.P.	R. P. L.	APRIL 1978	AS SHOWN	H-8-28274

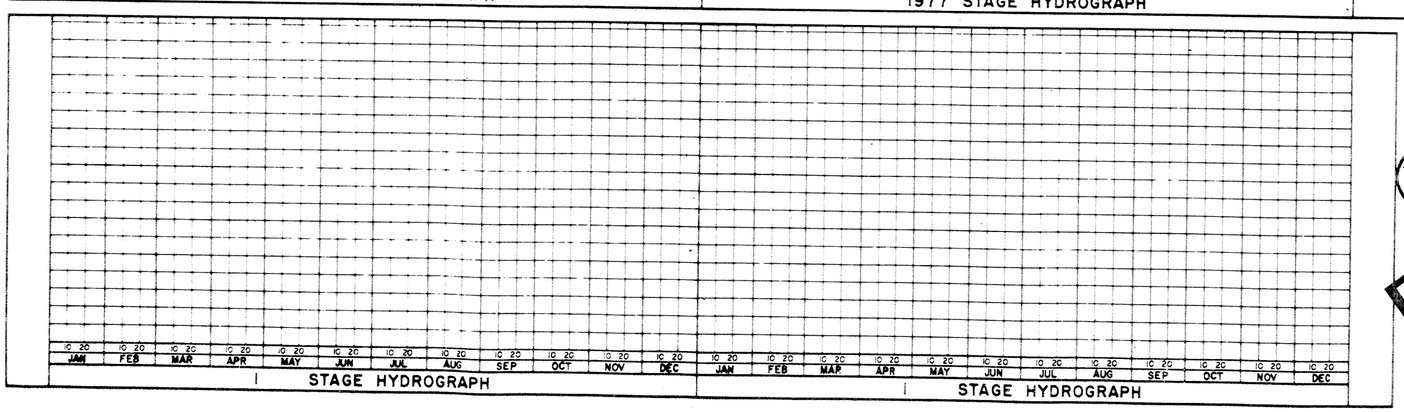
SUBMITTED: Ronald E. Lester, ENGINEER

SPEC. NO. DACW29-78-B-0099

DWG. 6 OF 9

GAGE READINGS IN FEET





GAGE READINGS IN FEET

HYDROGRAPHS

INTRACOASTAL WATERWAY NEAR PARIS ROAD BRIDGE, NEW ORLEANS, LA.
GAGE ZERO, M.S.L.

VALUE INCREASES CLAUDE ENGINEERING "YOUR KEY TO HIGHER PROFITS"

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REVISION	DATE	DESCRIPTION	BY

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

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
FIRST ENLARGEMENT
B/L STA. 708+95 TO B/L STA. 945+85
ST. BERNARD PARISH, LA.

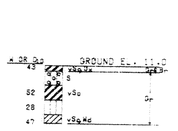
HYDROGRAPHS

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO
T.W.M.	C.C.P.	R.P.L.	APRIL 1978	AS SHOWN	H-8-28274

SUBMITTED: Ronald P. Lee, ENGINEER
SPEC. NO. DACW29-78-B-0099
DWG 7 OF 9

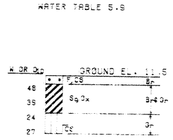
BOR. C-13

STA. 780+00
100 FT. F.S. C/L
12 APRIL 76
WATER TABLE 5.8



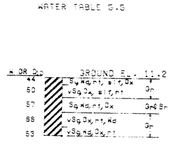
BOR. C-14

STA. 780+00
100 FT. F.S. C/L
12 APRIL 76
WATER TABLE 5.8



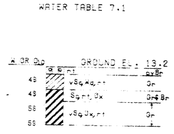
BOR. C-15

STA. 820+00
100 FT. F.S. C/L
13 APRIL 76
WATER TABLE 6.6



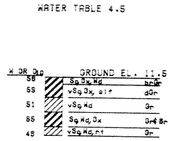
BOR. C-16

STA. 820+00
100 FT. F.S. C/L
12 APR 76
WATER TABLE 7.1



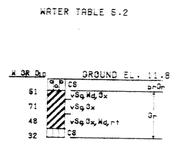
BOR. C-17

STA. 860+00
100 FT. F.S. C/L
13 APR 76
WATER TABLE 4.5



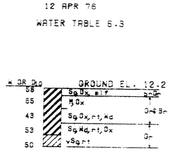
BOR. C-18

STA. 860+00
100 FT. F.S. C/L
13 APRIL 76
WATER TABLE 5.2



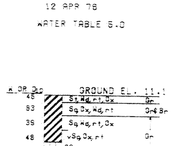
BOR. C-19

STA. 900+00
100 FT. F.S. C/L
12 APR 76
WATER TABLE 6.3



BOR. C-20

STA. 900+00
100 FT. F.S. C/L
12 APR 76
WATER TABLE 6.0

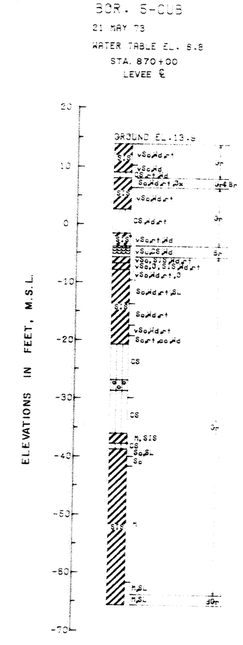


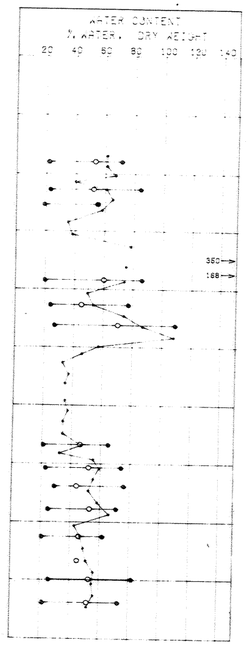
ELEVATIONS IN FEET, M.S.L.

GENERAL TYPE BORINGS

BOR. S-CUB

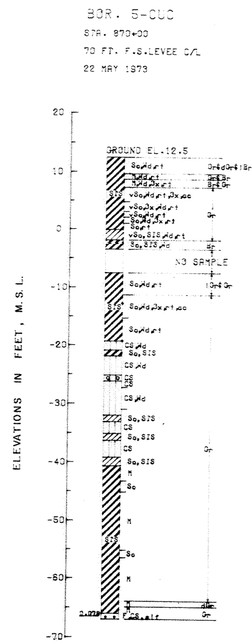
21 MAY 73
WATER TABLE EL. 5.6
STA. 870+00
LEVEE ℄

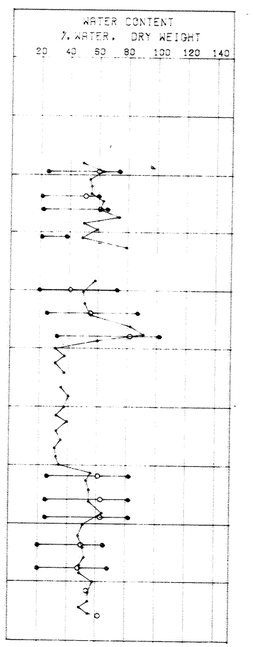




BOR. S-CUC

STA. 870+00
70 FT. F.S.LEVEE C/L
22 MAY 1973

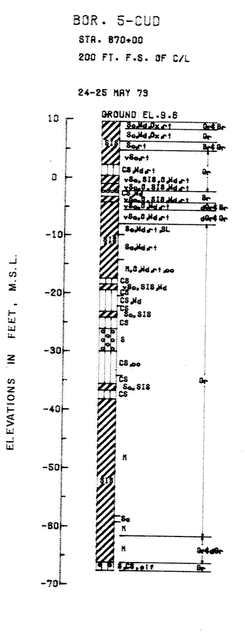


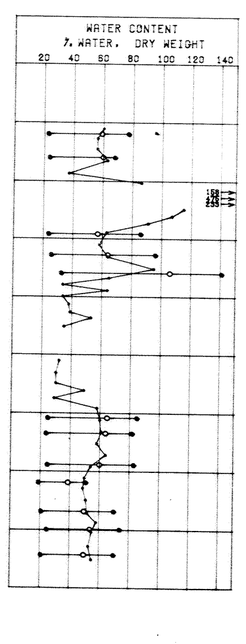


BOR. S-CUD

STA. 870+00
200 FT. F.S. OF C/L

24-25 MAY 73





ELEVATIONS IN FEET, M.S.L.

UNDISTURBED TYPE BORINGS

NOTE

1. For general notes and boring legend, see dwg. 2.
2. For soil boring legend, see dwg. 9.
3. Undisturbed samples were taken with a 5 inch diameter steel tube piston type sampler.
4. General type soil samples were taken with a 1 7/8" I.D. core barrel sampler.

REVISION	DATE	DESCRIPTION	BY

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

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
FIRST ENLARGEMENT
B/L STA. 708+95 TO B/L STA. 945+85
ST. BERNARD PARISH, LA.

SOIL BORINGS

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO.
T.W.M.	C.C.P.	R.P.L.	APRIL 1978	AS SHOWN	H-8-28274

SUBMITTED ..... CHIEF, ENGINEERING DIVISION
SPEC NO. DACW29-78-B-0099
DWG 8 OF 9

UNIFIED SOIL CLASSIFICATION

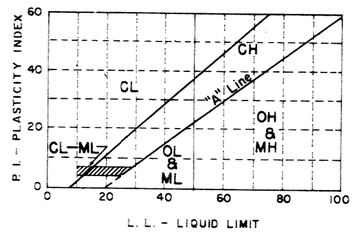
MAJOR DIVISION		TYPE	LETTER SYMBOL	SYMBOL	TYPICAL NAMES
COARSE-GRAINED SOILS More than half of material is larger than No. 200 sieve size.	GRAVELS More than half of coarse fraction is larger than No. 4 sieve size	CLEAN GRAVEL (Little or No Fines)	GW		GRAVEL, Well Graded, gravel-sand mixtures, little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

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

DESCRIPTIVE SYMBOLS

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

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



PLASTICITY CHART
For classification of fine-grained soils

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

NOTES:

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

Are natural water contents in percent dry weight

When underlined denotes D_{10} size in m.m*

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

Are liquid and plastic limits, respectively

SYMBOLS TO LEFT OF BORING

▽ Ground-water surface and date observed

Ⓒ Denotes location of consolidation test**

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

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

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

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

FW Denotes free water encountered in boring or sample

FIGURES TO RIGHT OF BORING

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

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

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

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

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

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

TYPICAL NOTES:

Whiie 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 represents 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

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

LAKE PONTCHARTRAIN, LOUISIANA AND VICINITY
CHALMETTE AREA PLAN, CHALMETTE EXTENSION
HURRICANE PROTECTION LEVEE
FIRST ENLARGEMENT
B/L STA. 708+95 TO B/L STA. 945+85
ST. BERNARD PARISH, LA.

SOIL BORING LEGEND

DESIGNED	DRAWN	CHECKED	DATE	SCALE	FILE NO.
T.W.M.	E.M.M.	R.P.L.	APRIL 1978	AS SHOWN	H-8-28274

SUBMITTED: Harold F. Lee, ENGINEER
SPEC. NO. DACW29-78-B-0099
DWG. 9 OF 9